City of Biddeford
Conservation Commission
October 20, 2022 6:00 PM Council Chambers & Zoom
https://biddeford.zoom.us/j/97753518545?pwd=dVpjMjFUNUY2YXBDeEgxcjFnbU5RUT09
Webinar ID: 977 5351 8545 Passcode: 030390

Status: Conservation Commission, City Council Chambers 10-20-22 6:00PM

1. **Call to Order**
2. **Secretary's Report**
3. **Planner's Business**
4. **Adjustments to the Agenda**
5. **Consent Agenda**
   5.1. Approval of Meeting Minutes from 7-21-22 & 8-18-22
   BCC_Meeting Notes 7.21.22.pdf
   BCC_Meeting Notes 8.18.22 (1).pdf
6. **Planning Board Items**
   6.1. Hidden Hills:
   Site Visit Report by Mark Ward-Discussion of Invoice
   Attorney Opinion on Density
   Hidden Hills Site Visit report (final).pdf
   Legal Opinion on Net Density 10-4-22.pdf
   6.2. Updates:
   Review Requests from Planning Board-Devine Capital LLC-588 & 590 Alfred Street; Peter & Susan McPheeters-81 Guinea Road & Coastal Oaks, LLC-37 Newtown Road.
   Newtown Road Proposed Subdivision-Mark Ward to Review
   Guinea Road-Mark Ward to Review
   Pool Road Subdivision
   Comp Plan
   Site Law Update Per DEP
   Winding Creek
   Website
   Thatcher Brook
   2022.24 Devine Capital Prelim Review SR.pdf
   Biddeford Residential.Planning Board Application.Architectural plans.pdf
   Biddeford Residential.Planning Board Application.Civil Plans.pdf
   Biddeford Residential.Planning Board Application.written material.pdf
   Biddeford Residential.Planning Board Application.written material_compressed.pdf
   Saucier's Comments.pdf
   1790 McPheeters Binder 04-19-22.pdf
   Locus Deed 18675-261.pdf
   Locus Deed 18675-263.pdf
   McPheeters Guinea SR.pdf
   2022.38 - 37 Newtown Road Sketch Plan SR.pdf

20023 Sketch Plan App 2022-09-12.pdf
20023 Updated Sub Plan 2022-09-09.pdf
Signed Application.pdf

7. Other Business

7.1. Budget

Invoice for Services (Ward BCC 10-2022).pdf
Proposal for Memos on Moors Brook Block Projects.pdf

8. Adjourn-Next Meeting November 17, 2022

Biddeford Conservation Commission
Thursday, July 21, 2022
6:07 - 7:45 pm

Attendees: R. Rhames, M. Lowell, D. Rioux, B. Hadler
Virtually Present: M. Atlas
Absent: T. Craven, C. Gastelum, E. Heumiller
Guests: M. Grooms (City Planner; Staff Liaison)

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1. R. Rhames reads through updated agenda
2. Meeting called to order at 6:07 pm
3. Meeting Minutes motion to approve of May and June 6:08pm by Dennis Rioux
    a. Second by M. Lowell
    b. No discussion
4. Update on the riverfront development for the Saco River Corridor Act (Saco River Corridor Commission)
    a. There will be a public notice for the proposed changes
    b. From SRCC standpoint, the standards will remain in place but the city and residents need to determine what they want
    c. Three separate applications (Gooch St., Pearl St., Diamond Match property)
        - All have gone through sketch review
        - Matt Grooms is willing to provide a full presentation
        - City met with SRCC yesterday; SRCC became aware of proposed changes in Mid-July
        - SRCC commissioners represents the river, not the communities with which the river comes into contact (this is a unique structure)
        - Questions about setbacks on the Diamond Match property
        - R. Rhames is concerned about the shoreline
        - Preliminary concept sketch has been received, but there has not yet been an environmental review
        - The planning board has seen the concept sketches but SRCC has not yet been involved
        - Question from the public:
            - Meaghan Daly: How much does the proposeld 25 ft setback diverge from the agreement with the SRCC?
            - Meaghan Daly doesn't remember it being explicitly stated that there would be a zoning change request and is wondering if there can be clarification as to whether the Planning Board was explicitly aware of the the existing sketch plan
            - Can the Diamond Match project be separated out from the Gooch Street and Pearl Street properties so that they don't have to be treated the same as far as zoning changes?
                - M. Grooms responds that because they will be sharing some development resources, it makes it challenging to fully separate them.
        - M. Grooms – Sketch plan has not been approved, the sketch plan is just an initial request for feedback. He believes that there is a good chance there would not need to be a zoning change.
        - Shoreline development limits the amount of new housing, which is another reason why the zoning may need to change.

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5. Comprehensive Plan // M. Grooms update
    a. Some sections still need to be written
    b. He is hopeful that it will be complete to submit by the end of the year. Requires many layers of approval.
    c. Climate issues will be very prominent in the plan. The Climate Action Committee also submitted feedback. "It's loud and clear through all levels of city leadership that Climate Action is an important topic". These were submitted within the last 3 weeks.
6. City Email Accounts
    a. Richard and Denis are still having a hard time logging in – they will try again this month
7. Site Visit of Hidden Hills
    a. Richard asked Matt Grooms to reach out to the property owners to re-request a site walk. A response has not been received
    b. Mark Ward has asked for three possible dates so we have options, so that we are more likely to find a time
8. Agenda item regarding Mark Ward invoice tabled until we can clarify what specifically is pending approval.
    a. R. Rhames will follow up with Mark to confirm if there are any outstanding payments.
9. Mark Ward Clifford Park update (via R. Rhames)
    a. No new updates, he has been very busy and unable to follow up
10. M. Lowell Thatcher Brook Update
    a. Some new additions are proposed, some pools, some modifications behind Kohls
    b. There are multiple breeding grounds for wild brook trout
        - How do we get them to be able to run through the whole brook
        - Would we naturally stock the brook with trout?
    c. Consider future building – we need greater setbacks along the brook
    d. For context: Thatcher Brook was labeled an "Imparied stream" to now an "urban imparied stream"
    e. We've been working on a setback review, but were told it required a comprehensive plan review
11. Review Winding Creek Letter to the Council
    a. Wants to clarify that he's not sure if the message states that there are species that are only present in Clifford Park – that is a challengeable fact
12. *M. Atlas makes a motion to approve the letter to the council and planning board contingent upon one final review over email. 7:38pm*
    a. *Second D. Rioux 7:38p*
        - Discussion: Word choice of "Community" at the end of the first paragraph
        - Brian votes to amend of word "community" to "local residents and public" at 7:40
        - Second by D. Rioux
        - Unanimous 7:40
    b. Unanimous 7:42
13. *Mike Lowell Motion to adjourn 7:45p*
    a. *Second Brian Hadler 7:45p*

Biddeford Conservation Commission
Thursday, August 18, 2022
6:09 - 7:23 pm

Attendees: R. Rhames, D. Rioux, M. Atlas, C. Gastelum
Absent: E. Heumiller, B. Craven
Guests: M. Grooms (City Planner; Staff Liaison)

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1. Meeting Called to order at 18:09
2. Adjustments to agenda
    a. Member of public requests to review a parcel off Route 9
3. Staff Announcements:
    a. Shoreland Zone (Saco River Corridor) – no major updates
        - Future powerpoint will be provided when the time comes
        - Anticipated in October
        - Currently in Sketplan review with the planning board
        - R. Rhames concern –
    b. City is preparing future land use map – **draft will be presented at the Planning Board September meeting**
4. *Table vote on meeting minutes from 7.21.18 (only three members present tonight that were also present at that meeting)*
    a. *Motion to table meeting minute discussion and vote – R.Rhames 6:22p*
        - *Second – D. Rioux 6:22p*
            - *No discussion*
        - *Unanimous approval*
5. New Business:
    a. Winding Creek - **Final plan submitted, up for review at September 7, 2022 meeting**
        - Question C. Gastelum - Without full understanding of the ramifications of changing the land swap and LOI, how can the planning board and council vote properly?
            - M. Weeks believes
        - Regarding Site Law Review: Additionally, if the future developments mentioned in the initial LOI are submitted, they would be treated as a full development (meaning site review could be triggered, even on the current Winding Creek Lane development)
        - Recommendation to write a letter and potentially prepare a presentation to be made at the PB meeting
    b. Mark Ward Proposal ($646.10)
        - A site walk with developers environmental agent is scheduled for Monday 8.22.22 at 9am
        - *Motion to approve updated proposal - R. Rhames 6:56p*
            - *Second - D. Rioux 6:56p*
                - *Discussion: it would be helpful to have these minutes printed so we can properly review*
            - *Unanimous*
    c. *Motion to table agenda point 6.3 (website updates) - R. Rhames 7:02p*
        - *Second - M. Atlas 7:02 p*
            - *No Discussion*

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        - *Unanimous*
6. Other Business:
    a. Parcel on Pool Street (781 Pool Street), being sold as a single home parcel
        - Too expensive for Biddeford Pool Land Trust
        - Maybe Rachel Carson would be interested
            - Maya to reach out to Rachel Carson to see if they are interested
        - If seller wants to make it work, they can consider selling just the parcel for the home and then a "bargain sale" to conservation for the rest of the parcel
    b. Comp Plan Question
        - The meeting on 8/17 presented a proposed timeline for the future steps
        - Trying to make the draft more accessible and engaging; considering finding a designer help make it more digestible
7. Motion to adjourn - M. Atlas 7:23
    a. Second. D. Rioux
    b. Vote to Approve M. Atlas, C. Gastelum, D. Rioux

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Rapid Reconnaissance Survey of Two Parcels in Western Biddeford, 2022

submitted to the Biddeford Conservation Commission

October 2022

by

Mark Ward

Ecological Consultant

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Background

On August 22, 2022, I met Erik Lema of Basswood Environmental and together we walked the grounds of two parcels, Tax Map 7, Lot 8 and Tax Map 2, Lot 38 in western Biddeford (Figure 1). I had visited both of these parcels in 2007 on behalf of the Conservation Commission as part of a broad ecological assessment of lands located west of I-95 in western Biddeford. The Commission asked me to revisit these lands in 2020 and to report on interim changes. Access to these two parcels was not granted at that time, although I was able to cursorily assess the impact of timber harvesting on the parcels from the boundaries of adjacent parcels. The objective of my 2022 visit was to conduct a rapid reconnaissance, photo document any observed changes, and report on current condition.

Prior to the site visit, I reviewed two documents that had been provided to me by Terradyn Consultants, LLC that relate to recent survey work conducted on the Map 7, Lot 8 parcel. The first was a Rare Plant Habitat Assessment conducted by Mr. Lema of Basswood Environmental dated January 9, 2022. The report included a review of potential rare plant and rare or exemplary natural community occurrences on the parcel (based on data provided by the Maine Natural Areas Program) as well as the results of a site visit conducted by Mr. Lema in either December 2021 or January 2022. The second document was a one-page Vernal Pool Assessment dated May 18, 2020 by Mark Hampton of Mark Hampton Associates Inc. that was based on two site visits "over the course of six weeks beginning the first week of April" presumably in 2020; this report stated that "no vernal pools were found on the property." These documents were labelled as Appendices 9 and 10 respectively and were apparently part of a larger project application put together by Terradyn Consultants.

The acreages referenced in the two documents differed somewhat. The Rare Plant Habitat Assessment refers to an approximately 160-acre site while the Vernal Pool Assessment references a “175-acre portion of parcel on South Street.” I found these acreage references confusing since the actual acreage of the Map 7, Lot 8 parcel is about 314 acres. The photo point locations included in the Rare Plant Habitat Assessment Report indicate that the majority of the Map 7, Lot 8 parcel was visited during the survey. No map or descriptive content was provided in the Vernal Pool Assessment making it difficult to evaluate what area was actually included in that survey.

Figure 1a. Aerial imagery of the subject parcels as they were in 2007.

Figure 1b. Aerial imagery of the subject parcels in 2022.

Mr. Lema and I were met at the site by Matthew Chamberlain and Chico Potvin, who made sure that I understood that the offer to walk the grounds was extended only to Mr. Lema and myself and not to members of the Conservation Commission. The encounter provided the opportunity to ask about the timing of the logging operations at the site. Mr. Chamberlain informed me that the logging had taken place over the course of several years, beginning in either 2017 or 2018 and continuing through 2020. Mr. Chamberlain also mentioned that a Mr. Milligan (affiliation unclear) was soon intending to drop some additional trees into Thacher Brook to enhance water quality.

Methods

Mr. Lema and I walked a good portion of the two parcels (Figure 2), which collectively comprise about 333 acres (314 acres for Map 7, Lot 8 and 19 acres for Map 2, Lot 38). While a one-day site visit did not allow a comprehensive inventory of the site, I got a good sense of the condition of these parcels fifteen years later. The overall amount of field time spent on these parcels in 2022 was comparable to the amount of time I spent on them in 2007.

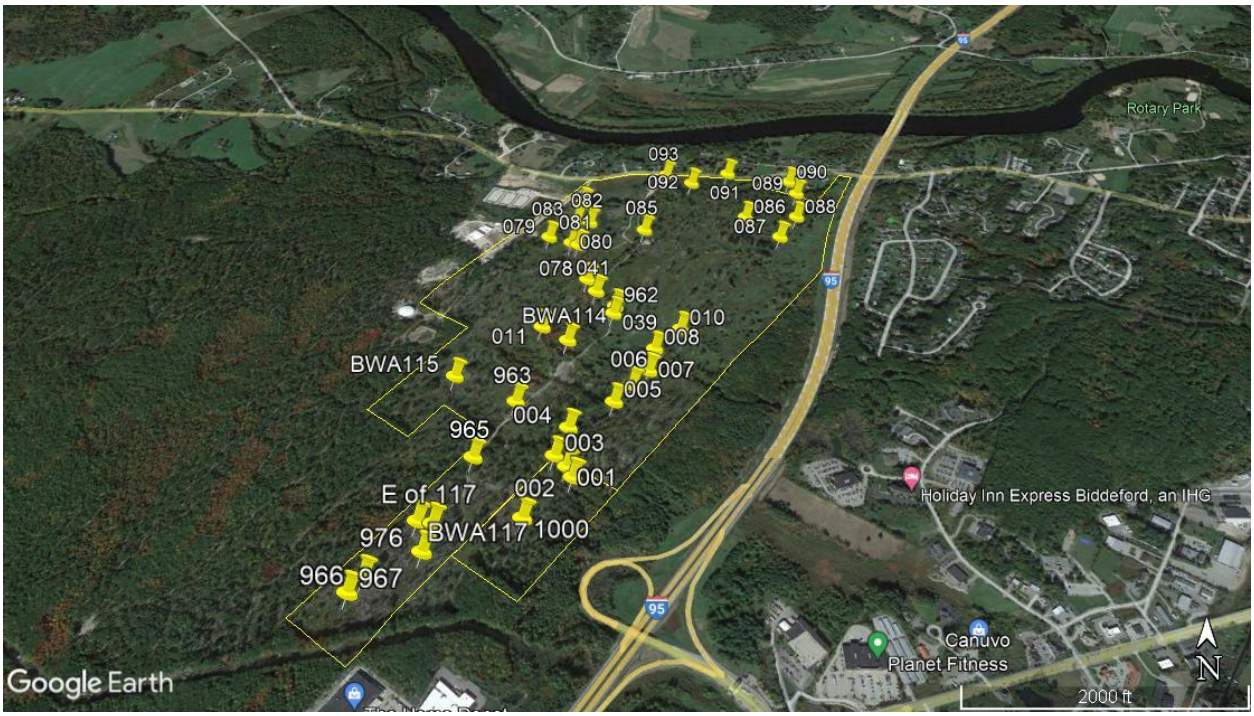

Figure 2. Map of waypoints taken at locations on the subject parcels indicating the approximate terrain covered during the Aug 22, 2022 rapid reconnaissance.

Results

Site Description

The subject parcels include a variety of upland and wetland habitats characterized by rocky upland rises punctuated by lowland swales and wetland basins. There are both perennial and intermittent streams at the site. A powerline corridor runs more or less parallel to South Street about one quarter of the way south at the site (Figure 1a). The southern two thirds of the site drain primarily to the east into Thacher Brook, while the northern third of the site drains north into tributary streams of the Saco River.

Conditions at the site were unusually dry at the time of the visit owing to the drought of 2022.

Timber Harvesting

The most obvious change in the condition of these parcels since my visit in 2007 was the timber harvesting that has taken place. As noted in Mr. Lema's report, the infrequently used ATV trail that I had observed in 2007 running from north to south through the parcel has now become an approximately 25-ft wide logging road. While a significant portion of the northern third of the site was open field or early successional in 2007, the southern two thirds was primarily forested (Figure 1a). Recent aerial imagery (Figure 1b) illustrates the extent to which the formerly wooded land on these parcels has been largely cleared of trees. It appears to have been the same logging operation that occurred on both parcels as there was no indication of any difference between treatments on the two parcels (the parcels are indistinguishable from one another on the ground). These parcels now have a relatively low number of scattered standing trees, except in a few areas that: border perennial or intermittent streams, were difficult to access because of rocky slopes, or were presumably deemed to be low value. The heavy cutting on these parcels is in sharp contrast with uncut, or selectively, cut forested parcels that they abut (Figure 1b). The cutting operation on these parcels has left sections of exposed bedrock on shallow-to-bedrock Lyman soils (Figure 3). The sparse array of remaining trees has made them more susceptible to blowdown (Figure 4). Early successional pioneer species such as blackberry (*Rubus allegheniensis*) and sweet fern (*Comptonia peregrina*) were common in upland areas.

The Maine Forest Service, in a press release dated October 19, 2021, reported that this logging operation had been conducted in violation of Maine's Forest Practices Act, by having created a clearcut of greater than 75 acres without first having submitted the required written harvest plan for approval to the Service. The landowner, South Street Village, LLC agreed to a civic settlement penalty of $30,000 to address this violation. While cutting operations seem largely to have concluded at this site, earth-moving machinery was still present at site at the time of my visit (Figure 5).

Thacher Brook

Land located to the east of Thacher Brook on the Map 7, Lot 8 parcel was also cut during the logging operation in what appeared to be a series of strip cuts. This section of the site was apparently accessed by a temporarily constructed bridge that allowed machinery to cross the brook during the operation (Figure 6). Thacher Brook has a history as an impaired stream with

water quality issues to which the City of Biddeford has devoted significant monetary and human resources to restore. With the help of Mr. Lema and a 100ft measuring tape, I measured the forested buffer along Thacher Brook at several locations (Figure 7). City ordinance requires a 75-ft forested buffer be maintained on streams to maintain water quality. I found measurements of the forested buffer along Thacher Brook on these parcels to routinely fall short of this threshold. Measured buffer widths at five different locations ranged from 0-75 ft, with only one measurement approaching 75 feet and most falling in the 35-50 ft range. For an impaired waterway, such as Thacher Brook, extra caution should have been taken to assure that, at a minimum the required 75-ft forested buffer condition was met. This does not appear to have been the case. The failure to provide an adequate buffer on Thacher Brook was not mentioned in the press release issued by the Maine Forest Service as a component of the violation. It should be considered an additional consequence of a poorly executed cutting operation.

An inadequate forested buffer can subject Thacher Brook to additional sediment input during heavy rainfall events. Increased solar inputs caused by an inadequate forest buffer can raise water temperatures, which can in turn reduce dissolved oxygen levels and further the cycle of impairment.

Discussions of dropping additional trees in this already under-allocated forested buffer to "improve stream habitat" seems ill-advised. If the desired goal is put trees in the stream channel for structural purposes to enhance pool formation, then I would recommend using some of the already downed wind-thrown trees on the property rather than felling additional trees in an inadequate forest buffer.

There was plenty of water in Thacher Brook at the time of the site visit. The clay banks of Thacher Brook often make it cloudy as sediments remain in suspension in the water column (Figures 6 & 7). The floodplain along the margins of the brook is typically occupied by shrubby or tall herbaceous plants (Figure 8), but at one location we came across a floodplain pool (Figure 8) covered with duckweed (*Lemna* sp.) that is probably a remnant livestock pond. Two unidentified waterfowl flew up from a nearby section of Thacher Brook as we approached the floodplain pool.

Wetland Delineation

This site appears to have more wetlands than were indicated on the National Wetland Inventory paper maps based on 1998 data that I consulted prior to visiting. At numerous locations on the parcels, the presence of obligate wetland plant indicator species such as cattail (*Typha* sp.) suggest that wetlands are widespread in swales and lowland basins at this site (Figure 9). At the southern end of the site, formerly forested wetlands had been heavily cut and were characterized by large numbers of sprouting red maple stumps (Figure 10). There was a surprising amount of cattail (and other floral indicators of wetland habitat) present on the west side of the Map 7, Lot 8 parcel in swales that occupy low areas at the base of upland rises with shallow to bedrock soils.

There was little indication at the site (such as extant flagging) that a thorough wetland delineation has been completed on the subject parcels. The only location where we observed

flagging to suggest that some wetland delineation may have occurred was along a wooded stream channel at the northern edge of the site (Figure 11).

I was not provided with a report of wetland delineation for this site by Terradyn Consultants. Wetland delineation is presumably a requirement for any project application on the scale being contemplated at this site. Conducting a wetland delineation prior to the cutting operation would have been a much easier undertaking for a wetland scientist. As Mr. Lema's report suggests the disturbances associated with the harvesting operation has likely expanded habitat that would now be delineated as wetland at this site.

Based on my observations of obligate wetland species throughout the site, I would suggest that the wetland map produced by the Maine Natural Areas Program (MNAP) and included as page 15 of Mr. Lema's report, is a much better proxy for wetland delineation at this site than the NWI maps that I consulted before visiting. The MNAP map (Figure 12) includes a category for "additional NWI wetlands" that more than doubles the amount of wetland habitat at this site. An inquiry to MNAP staff clarified that the "additional NWI wetlands" data are the result of a US Fish and Wildlife Service digital update to NWI maps conducted in 2007. These data are unfortunately not currently available through the Maine Office of GIS (MEGIS) for download, but do constitute the most up-to-date version of NWI mapping for this site. These data should be considered to be the best available wetland data for this site in the absence of an on-the-ground wetland delineation. If a wetland delineation of the site has already been completed, I would be interested to know when it was done and what it includes.

Potential Vernal Pools

I revisited two potential vernal pools on Map 7 Lot 8 (Waypoints BWA115 & BWA117), where I had conducted egg mass counts in early May 2007. I was able to confirm that both of these potential vernal pools were natural basins in surrounding bedrock (a fact that I had neglected to record in my original notes from this site). Both pools had seen heavy cutting in them and in their immediately adjacent uplands. Both potential vernal pools had significant amounts of logging slash deposited in their deeper portions (Figure 13). Although these wetlands lacked standing water at the time of my visit, both included obligate wetland indicator plant species, such as cattail, bur-reed (*Sparganium* sp.), and wild calla (*Calla palustris*) that suggest them as semi-permanent wetlands (Figure 14)—in other words wetlands that retain standing water throughout the summer in some, if not most, years. In combination with the natural basin setting, these indicators should suggest to a trained eye the need for their assessment as potentially "significant vernal pools." During my single day visit to these wetlands in May 2007, one of these wetlands (Waypoint#BWA117) easily exceeded the thresholds for both wood frog and spotted salamander egg mass counts to suggest it as a likely candidate for significant vernal pool designation. Other wetland basins at the site also suggest that they should have been deemed worthy of egg mass counts.

The one-page Vernal Pool Assessment by Mark Hampton in 2020 did not contain a map of the area assessed although it referenced a "175+/- acre portion" of what was presumably Map 7, Lot

8 (a 314-acre parcel). The one-page report did not include any data on potential vernal pools that were visited and/or egg mass counts at assessed pools. If data showing the area assessed, the locations of potential vernal pools investigated, and egg mass counts tallied or species observed exist, I would be very interested to see these. The report implies that there no wetlands at the site were worthy of egg mass counts in the assessed area, which seems questionable. However, without knowing the area that the Vernal Pool Assessment covered it is impossible to evaluate the reasonableness of this claim. If either of the two potential vernal pools that I revisited in 2022 were located within the 175 +/- acre area covered by the 2020 vernal pool assessment, then they should have at least had egg mass counts conducted at them.

The 2020 vernal pool survey was apparently conducted after logging operations were well under way (if not mostly completed). Vernal pool assessments on both parcels should ideally have been conducted prior to the logging operations that took place. The heavy-handed logging has undoubtedly altered both upland and wetland habitats for pool-breeding amphibians on these parcels by dramatically decreasing the amount of forest cover in and around potential vernal pools. The resulting loss of forest cover not only increases exposure of pool-breeding amphibians on their springtime journeys to and from surrounding uplands to breeding pools, it also may decrease the hydroperiod of breeding pools and render them less able to support metamorphosis of amphibian larvae to adults. Cutting within and adjacent to potentially significant vernal pools was not explicitly mentioned in the press release issued by the Maine Forest Service as a component of the violation, but should be considered an additional consequence of a poorly executed cutting operation.

Invasive Species

This site hosts a laundry list of invasive plant species; among the invasive species observed here include bull thistle (*Cirsium vulgare*), Japanese barberry (*Berberis thunbergia*), Morrow's honeysuckle (*Lonicera morrowii*), Japanese knotweed (*Fallopia japonica*), multiflora rose (*Rosa mulitflora*), spotted knapweed (*Centaurea* sp.), Asiatic bittersweet (*Celastrus orbiculatus*), glossy buckthorn (*Frangula alnus*), and purple loosestrife (*Lythrum salicaria*). In addition to a range of invasive plant species at this site, they are also widely distributed. The greatest abundance of invasive plants is currently found in the areas closest to South Street, that have had the longest history of human disturbance. There were, however, large dense stands of 8-10 ft high glossy buckthorn found along the floodplain of Thacher Brook. Some of these invasive plant species were certainly here when I visited the site in 2007, but I did not note any in my report. The severity of the recent cutting operation and the accompanying soil disturbance that it entailed will undoubtedly facilitate the spread of invasive plants at this site by opening up formerly wooded areas and subjecting them to occupancy by these tenacious invaders, yet another consequence of a poorly executed cutting operation that went unmentioned by the Maine Forest Service.

Rare Plant Surveys

This site visit was a rapid reconnaissance, but would benefit from dedicated rare plant survey effort. I collected a small number of plants at the site. None were determined to be rare species. Erik Lema of Basswood Environmental is an experienced and knowledgeable botanist. His rare plant assessment report of January 2022 was thorough for a wintertime assessment. He did a commendable job of winnowing existing information provided by the Maine Natural Areas Program down to a dozen rare plant species that have the highest potential to be found at this location and identifying the best window to survey for each of those species. I found his report beneficial for my own visit to the site and it was nice to have his trained eye at the site in August when it was actually feasible to find rare plants there. It's unfortunate that the only apparent reason for his presence at the site on the date of my visit was to serve as my minder. If this project were truly interested in conducting a thorough rare plant assessment at this site, it would have had him out at the site conducting botanical surveys on its behalf earlier in 2022 during the most appropriate survey windows as recommended in his report.

Conclusions and Recommendations

The overall condition of these parcels in 2022 has been diminished significantly primarily because of a poorly executed logging operation that was conducted from 2017-2020. The most egregious issues associated with the cutting include leaving an inadequate forested buffer on an impaired waterway (Thacher Brook), indiscriminate cutting in and adjacent to a variety of wetlands including likely significant vernal pools, extensive cutting on shallow to bedrock uplands that increased the vulnerability of remaining trees to windthrow, and opening up formerly wooded sections of the site to invasive plant species. Ideally, vernal pool survey work, wetland delineation, and rare plant assessments should have been conducted at this site prior to carrying out this cutting operation. The findings of such survey work could have informed a more ecologically sensitive cutting operation than the one that was undertaken here.

I recommend against dropping additional trees in the already inadequate forested buffer left along Thacher Brook. If putting downed trees in the stream channel is intended to enhance pool formation, then I would recommend using already-downed, wind-thrown trees on the property rather than felling additional trees in the insufficient forest buffer.

I recommend that the Conservation Commission seek details of any wetland delineation work that may have been conducted at this site to find out when the work was done and the extent of the site that it covers. The Maine Natural Areas Program map (Figure 12), which includes the most up-to-date NWI wetland data, should be considered the best available wetland information for this site, in the absence of on-the-ground wetland delineation, and could be useful as a course tool to assess the thoroughness and quality of a wetland delineation.

I recommend that the Conservation Commission seek additional details of the Vernal Pool Assessment conducted in 2020 to determine the area assessed and to seek any data on potential vernal pools that were visited and/or egg mass counts at assessed pools.

Any future field work conducted at the site should clearly identify the area assessed (e.g. does it encompass the entirety of Map 7, Lot 8 or only a portion of it?). This will allow for a better evaluation of the comprehensiveness of the work.

I recommend that the project provide Mr. Lema of Basswood Environmental the opportunity to conduct botanical surveys on its behalf during the most appropriate seasonal survey windows as recommended in his Rare Plant Assessment Report.

Figure 3. Sections of exposed bedrock from the logging operation. (Waypoint#966)

Figure 4. Windthrown trees uprooted after logging operations. (Waypoint#976)

Figure 5. Earth moving machinery observed at site on Aug. 22, 2022 (Waypoint#085).

Figure 6. The location at which a temporary bridge was constructed across Thacher Brook for logging access. The horizontal remains of bridge materials are visible in the distance. (Waypoint#007)

Figure 7. A narrow, forested buffer along Thacher Brook showing cut stumps on a steep bank (left) and a location where felled trees left no forested buffer at all along Thacher Brook (right). (Waypoints#1000 &#006)

Figure 8. A typical section of tall herbaceous vegetation in the floodplain along Thacher Brook (left) and a duckweed covered pool in the floodplain of Thacher Brook (right). Waypoints #004 & #008.

Figure 9. An example of cattails (*Typha* sp.), an obligate wetland plant species, suggesting an area that would be delineated as a wetland. (Waypoint#041).

Figure 10. Purple loosestrife, an invasive wetland plant species, in front of stump sprouting red maples in a formerly forested wetland. (Waypoint#967)

Figure 11. Yellow flagging on a tree along a streambed at the northern edge of the property was the only on the ground indication of potential wetland delineation observed at the site. (Waypoint #091)

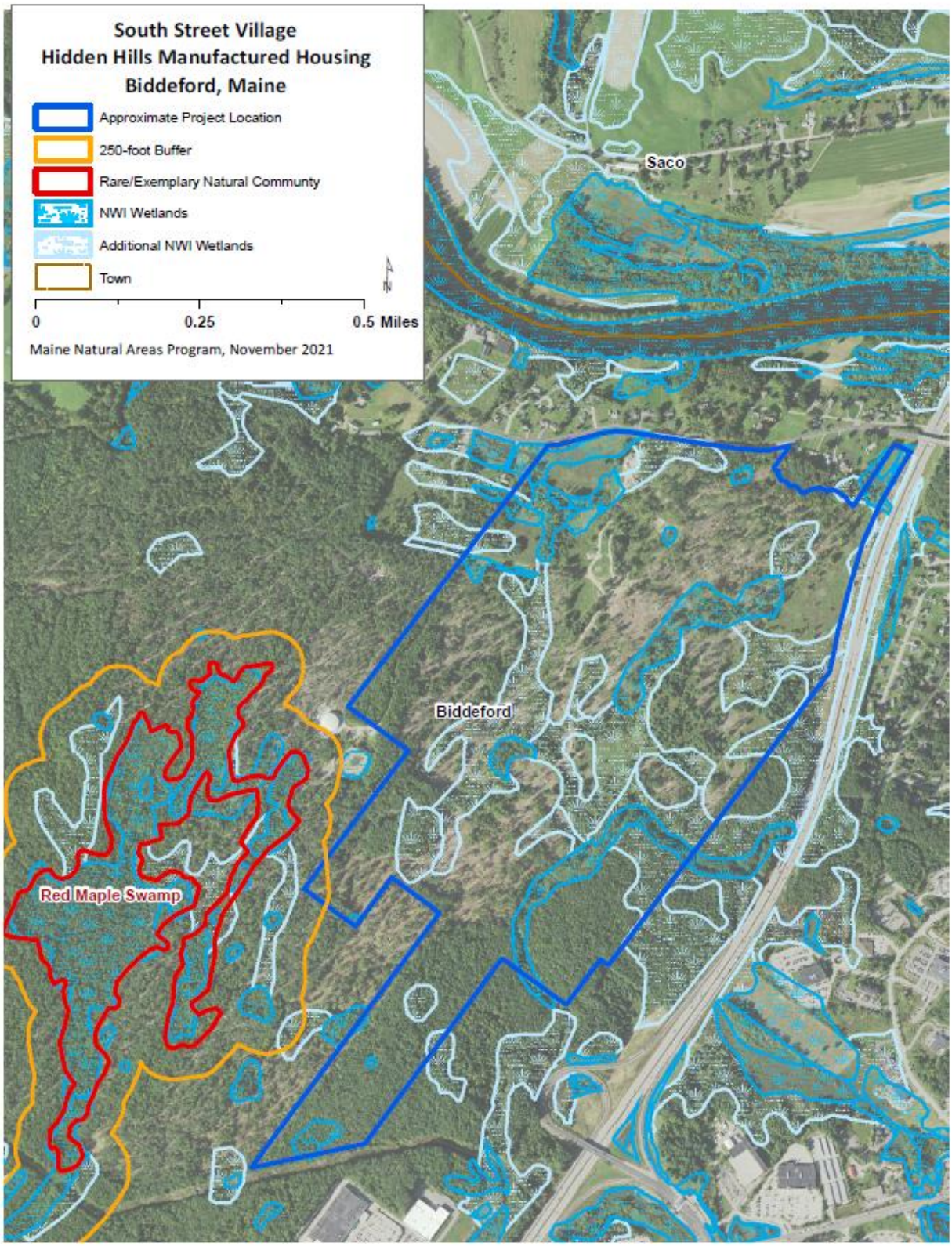

Figure 12. Map of NWI wetlands at the site provided by the Maine Natural Areas Program to Basswood Environmental in November 2021.

Figure 13. Logging slash deposited in a deep section of a potential vernal pool at which a critical threshold of egg masses had been counted in 2007 to suggest its designation as significant wildlife habitat. (Waypoint# BWA117)

Figure 14. A relatively unvegetated section of a potential vernal pool with wild calla (*Calla plaustris*) suggesting the longer hydroperiod of a semi-permanent pool. (Waypoint #BWA117)

Appendix I. Coordinate data for Waypoints taken on Aug 22, 2022

Waypoint #	Latitude	Longitude
962	43.48942	-70.50076
963	43.48588	-70.50398
965	43.48413	-70.50513
BWA117	43.48231	-70.50652
East of BWA117	43.48225	-70.50605
966	43.48089	-70.50777
967	43.48053	-70.50813
976	43.48153	-70.50624
1000	43.48245	-70.50344
001	43.48394	-70.50221
002	43.48362	-70.50201
003	43.48424	-70.50261
004	43.48516	-70.50222
005	43.48593	-70.50076
006	43.48661	-70.50016
007	43.48703	-70.49960
008	43.48789	-70.49937
010	43.48851	-70.49845
011	43.48852	-70.50332
BWA115	43.48661	-70.50607
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041	43.48988	-70.50146
078	43.49030	-70.50179
079	43.49210	-70.50332
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082	43.49298	-70.50180
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085	43.49252	-70.49966
086	43.49295	-70.49570
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089	43.49420	-70.49351
090	43.49485	-70.49371
091	43.49519	-70.49619
092	43.49456	-70.49772
093	43.49516	-70.49872

WOODMAN EDMANDS DANYLIK AUSTIN SMITH & JACQUES, P.A.

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October 4, 2022

Matthew Grooms, City Planner
Planning & Development
City of Biddeford
205 Main Street
Biddeford, Maine 04005

Dear Mr. Grooms:

You have asked our office to opine as to whether the net density calculations required by the Biddeford Land Development Regulations apply to the proposed Hidden Hills Manufactured Housing Park, given that they are to be modular units developed in accordance with Biddeford's manufactured housing/mobile home park criteria set forth in Article VI, Section 45 of the Biddeford Land Development Regulations. It is our opinion that the net density calculations required by the Biddeford Land Development Regulations do not apply to the proposed Hidden Hills Manufactured Housing Park.

Any analysis for review of a municipal ordinance relating to manufactured housing in the State of Maine must be approached with caution. A municipality, such as the City of Biddeford's Home Rule Power (See 30-A M.R.S. §3001) to adopt ordinances, while very broad, is always subject to the exercise of any power or function which the legislature has either expressly or by clear implication denied to local authority. It is well known that the State has significantly pre-empted rules, laws and regulations relating to manufactured housing. An opinion by the Maine Supreme Judicial Court in *Bangs v. Town of Wells, 2000 Me. 186,* sets forth the legislative history of state law relating to manufactured housing. In an effort to address a lack of affordable housing, as early as the 1980's, the Legislature has passed numerous statutory provisions regarding the regulation of manufactured housing and mobile home parks. The intention was to require municipalities to liberally allow for the placement of manufactured homes, setting forth numerous directives which constitute an express limitation on municipalities otherwise broad zoning powers. Keeping these principles in mind, we have reviewed Biddeford's land

development regulations, and the net density provisions and compared them with state laws. As stated, it is ultimately our opinion based upon the foregoing reasons that the City's net density calculations may not be applied to the Hidden Mills Manufactured Housing Park.

The Biddeford Land Development Regulations establishes, in Article VI, Section 44, that net density shall be determined by subtracting unsuitable and marginal areas from the gross area of the parcel in order to determine the net developable area of a parcel of land. Specifically, Article VI, Section 44 requires that the following be subtracted from the gross area of the parcel:

1. Portions of the lot shown to be within the one-hundred-year floodplain as identified by the Federal Flood Boundary and Floodway Maps or Federal Flood Insurance Rate Maps;

2. Portions of the lot which are unsuitable for development in their natural state due to topographical, drainage or subsoil conditions;

3. Portions of the lot subject to recorded rights-of-way, exclusive of drainage or utility easements;

4. Portions of the lot covered by surface waters, such as, but not limited to ponds and wetlands as defined by Article XIV;

5. Soils in the rural farm zone identified by the soils conservation service as being of statewide significance, as prime agricultural soils, and/or as unique soils;

6. Land within the Resource Protection Zone;

7. Land in the rural farm and coastal residential zone within the prescribed setback within the Shoreland Zone as defined in Article XIV; and

8. Land consisting of unreclaimed extractive industry operations.

However, Title 30-A M.R.S. § 4358(3)(B) makes clear that a municipality cannot require the overall area of a "mobile home park", not served by a public sewer, to be greater than the combined area of the mobile home park lots plus: (1) the area required for road rights-of-way; (2) the area required for buffer strips, if any; and (3) the area of any setbacks required under Title 38 or an ordinance adopted pursuant to Title 38. Title 30-A M.R.S. § 4358(1)(B) defines "mobile home park" as a parcel of land under unified ownership approved by the municipality for the placement of 3 or more manufactured homes. This State statute mirrors the definition of "mobile home park" in the Biddeford Land Use Regulations in Article 6, Section 45. Furthermore, the state statute defines "manufactured housing" as "a structural unit or units designed for occupancy and constructed in a manufacturing facility and transported, by the use if its own chassis or an independent chassis, to a building site" and specifically includes units "commonly called

'modular homes' that the manufacturer certifies are constructed in compliance with Title 10, chapter 951, . . . meaning structures, transportable in one or more sections, that are not constructed on a permanent chassis and are designed to be used as dwellings on foundations when connected to required utilities" (*See* 30-A M.R.S. § 4358(1)(A)). This definition also substantially mirrors the definition of "manufactured housing" under Article VI, Section 45 of the Biddeford Land Development Regulations. The only difference of note between the definition of "manufactured housing" in the state statute when compared to the City's Land Development Regulations is that the City's definition specifically states that a "modular home" "may or may not be constructed on a permanent chassis" while the state statute states that a "modular home" is "not constructed on a permanent chassis"; otherwise, the definitions are identical.

Therefore, it is our opinion that the net density calculations required by the Biddeford Land Development Regulations would not apply to Hidden Hills Manufactured Housing Park. We advise the City to apply the net density calculations required by Title 30-A M.R.S. § 4358(3)(B). Please feel free to contact me if you need any further information.

Sincerely,

Harry B. Center, II, Esq.

HBC/jc

N:\Shared\HBC-WIP\Biddeford\Ltr Matthew Grooms, Biddeford City Planner re net density calcuations.docx

CITY OF BIDDEFORD
PLANNING DEPARTMENT

Matthew Grooms, A.I.C.P.
Deputy Director/City Planner
205 Main Street
Biddeford, ME 04005
(207) 284-9115
Matthew.Grooms@Biddefordmaine.org

PLANNING BOARD REPORT

TO: William Southwick, Chair & Members of the Biddeford Planning Board

FROM: Matthew Grooms, AICP, City Planner

DATE: September 29, 2022

RE: 2022.24 – Preliminary Subdivision Approval for 216-unit multi-family development at 588 and 590 Alfred Street.

MEETING DATE: October 5, 2022

---

1. INTRODUCTION

This application contains materials for a Subdivision and Site Plan Preliminary Plan review for a proposed 216-unit multifamily housing development at 588 and 590 Alfred Street (Tax Map 2, Lots 6 and 12). The parcels are located in the B-2 zone, where residential uses are not permitted, so a Contract Zone is required for this project. The project consists of 9 residential buildings, 8 garage structures, a maintenance building, a clubhouse, a pool, a dog park. And community garden. Residential units will be a mixture of studio, 1, 2 and 3 bedrooms, as stipulated by the Joint Development Agreement (JDA), entered into by the applicant and City. When completed, the site would include 497 parking spaces (371 surface spaces and 126 garage spaces), and will also feature landscaped areas and on-site lighting.

The contract zone required for this project has been endorsed by the City Council through execution of the JDA. Additionally, Subdivision Approval, and Site Plan approval, are required from the Planning Board. The Planning Board, through its review, must also develop Contract Zone language to be forwarded back to the City Council for final action.

On August 18, 2022, the Planning Board conducted a Conceptual Review of the project. Overall, the project was well-received, with limited comment being provided by the Board, described in more detail below. At the meeting, the Planning Board determined the project to be a "major" subdivision.

2. PROJECT DATA/INFORMATION

	SUBJECT	*DATA/INFORMATION*
1.	Applicant:	Devine Capital, LLC 30 Milk Street, 3rd Floor Portland, ME 04101
2.	Owner of Property:	New Life Christian Fellowship

		551 Alfred Street Biddeford, ME 04005
3.	Agent:	Roz Anton 40 main Street, Suite 13-404 Biddeford, ME 04005
4.	Engineer/Surveyor:	Richard Meek, P.E., Terradyn Consultants 41 Campus Drive, Suite 301 New Gloucester, ME 04260
5.	Project Location:	588 & 590 Alfred Street
6.	Project Tax Map #/Lot #:	Tax Map 2, Lots 6 & 12
7.	Existing Zoning:	B-2 – Contract Zone required
8.	Overlay Zoning:	None.
9.	Existing Use:	Vacant property
10.	Proposed Use:	216 Unit Multifamily Residential Subdivision
11.	Approvals Required:	Site Plan, Subdivision, Site Location (Local)
12.	Uses in the Vicinity:	Residential, Commercial, Retail
13.	Parcel Size:	44.53 acres
14.	Limits of Disturbance:	17.77 acres
15.	Drainage Watershed:	Thatcher Brook
16.	Water Supply:	Maine Water
17.	Sewerage Disposal:	City of Biddeford
18.	Solid Waste Disposal:	Private Hauler
19.	Fire Protection:	City of Biddeford
20.	Other Non-City Permits Required:	Maine Site Law, Maine Stormwater, DOT Traffic Movement Permit
21.	LDR Attachment A: Fess Paid:	All Required Fees Paid

3. PLANNING BOARD MEETING – AUGUST 18, 2022

The Planning Board considered the concept plan for proposed multifamily development at their August 18, 2022 meeting, and offered the following feedback:

- Applicant will need to coordinate with Maine DEP and DOT to proceed with other permits required for the project.

    - Update: The applicant has submitted applications to Maine DEP, the Army Corps of Engineers, and DOT for outside agency approvals required to move the project forward. The applicant has also submitted a Maine DEP Site Location of Development (SLOD) application, and is requesting that the City of Biddeford, designated as having 'capacity' to review certain SLOD applications by Maine DEP, review this application. This application is included as part of the submission materials. Staff are seeking clarification from Maine DEP as to whether the City has delegated review authority for this project.

- Work closely with the City to identify opportunities to extend pedestrian access to the existing extent of sidewalk along Route 111. (This may be addressed as part of the applicant's Traffic Movement Permit.

- Update: Staff recommend that the applicant contribute a fee in lieu of building out sidewalk infrastructure, to enhance connections between the development site and Biddeford Crossing.

- Identify as part of the plans areas for conservation and outline specific uses for conservation areas.

  - Update: Conservation areas are now identified on the plans, though staff are requesting additional information regarding future use, and whether such conservation areas would be accessible for recreational use. Staff would also recommend that this application be referred to the Biddeford Conservation Commission, for formal input on the plan.

- Provide information on rental rates at other projects completed by the developer.

  - Update: This information is provided as part of the submission packet.

- Continue to coordinate with the Maine Turnpike Authority around the Exit 32 ramp extension project.

4. STAFF REVIEW

a. **APPLICATION COMPLETENESS:** The applicant has submitted a complete application, featuring all required elements as specified under Section 66-35 (Required Information for Preliminary Plan Submissions). As part of the staff's review comments, we've identified aspects of the plan submission to be revised or clarified, which we suggest being made a condition of approval.

b. **ZONING:** The proposed use (Multi-family) is not permitted within the B-2 Business Zone, and therefore, a contract zone is required to facilitate this development.

c. **REVIEW STANDARDS:** Preliminary Plan Review Standards – The applicant has provided a detailed narrative describing project compliance with the City's applicable subdivision. While there is significant overlap between the City's subdivision and site plan standards, the applicant, as part of any future submission, should also detail compliance with the City's site plan standards.

   In general, staff found the application to satisfy City subdivision and site plan requirements, though as mentioned above, the City's third party civil engineer, identified a number of technical plan elements to be addressed in a future submission. These are included as an attachment.

   Staff would also highlight the following items for discussion at the October 5th meeting, which includes:

   - Pedestrian Accessibility: The project proposes 5' foot bituminous sidewalks throughout the development, including out to Andrews Road, and to Alfred Street. Staff are looking for direction from the Planning Board on whether this sidewalk should extend to the current extent of sidewalk along Route 111/Alfred Street, to

connect this development with the Biddeford Crossing Development. Due to the uncertainty around the Exit 32 extension work, and the lack of pedestrian infrastructure currently in place at Biddeford Crossing, it may be more appropriate to collect a contribution fee and have the City coordinate among the various property holders to complete this work.

- Lighting: On the current plans, a sidewalk is shown connecting the development with Route 111/Alfred Street, that traverses a wooded area. For safety purposes, staff would recommend that the pathway be lit and monitored via pole mounted security cameras.

- Off-Street Parking: The development is proposing a total of 497 parking spaces, well in excess of the 432 spaces required by the City's off-street parking requirements. Staff would recommend reducing this number to an amount closer to what is required, as a strategy to reduce the amount of new impervious surface being introduced to the site. In particular, the area proximate to the clubhouse, pool and playground appears over parked. Residents should be encouraged to walk or bike to these facilities.

- Public Transit Access: Staff would encourage the applicant to coordinate with the Biddeford, Saco, Old Orchard Beach (BSOOB) transit agency, to identify whether there are opportunities to directly service this development and provide an alternative transportation option for future residents.

- Existing Features: The applicant should clarify the proposed future condition and use of both the gravel road and clearing area between proposed buildings 5000 and 7000, and the pathway between proposed Buildings 3000 and 5000.

- Conservation Areas: The plans depict significant areas of the site being reserved for future conservation use. Staff is supportive of this direction, however would request additional information on the nature of restrictions being imposed, and whether or not these areas will be accessible to members of the public, or whether the applicant is in discussions with surrounding property owners to provide enhanced access for members by the public.

d. **WAIVERS**: None

e. **OUTSTANDING ITEMS TO BE ADDRESSED PRIOR TO SUBISSION OF A FINAL APPLICATION PACKAGE**: See recommended conditions of approval relating to the potential granting of a Preliminary Subdivision Approval by the Planning Board.

5. STAFF RECOMMENDATION

Consider this application a "complete" application and consider granting a Conditional Preliminary Subdivision Approval conditioned on the following:

- The applicant shall provide a written response to the staff and third party engineering comments provided in review of the preliminary application, and shall update the plans and materials accordingly as part of the Final Plan Submission.

6. NEXT STEPS/SUGGESTED ACTIONS

The applicant will need to submit a Final Subdivision/Site Plan Review Application in order to move the project forward. Accompanying this submittal needs to be an agreed upon DRAFT Contract Zone Agreement. Since this is a Contract Zone proposal, a Public Hearing must be held by the Planning Board.

7. SAMPLE MOTIONS

1. *Motion to determine the application is "complete" for review purposes.*

2. *Motion to refer Application 2022.24 – a request to develop a 216-multifamily development at 588 and 590 Alfred Street to the City of Biddeford Conservation Commission for advisory review to the Planning Board.*

3. *Motion to grant Preliminary Subdivision Approval for the proposal located at 588, 590 Alfred Street (Tax Map 2, Lots 6 and 12) conditioned on a Final Application and Plan Set shall not be submitted to the Planning Board until*
   - *A. The 3rd Party Engineer and City Staff have completed their reviews of the Preliminary Plan Submission package. This includes providing all comments to the Applicant and the applicant responding to Staff satisfactorily.*
   - *B. A DRAFT Contract Zone Agreement has been agreed to between the Applicant and Staff, including the completion of a legal review by the City Attorney.*

FRONT ELEVATION

RESIDENTIAL BUILDINGS

BIDDEFORD RESIDENTIAL

BIDDEFORD, MAINE

3/16" = 1'-0"
AUGUST 8, 2022
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GATE 17
ARCHITECTURE
2045 ROUTE 35
WALL, NEW JERSEY 07719
(856) 429-2001

REAR ELEVATION

LEFT SIDE ELEVATION

RIGHT SIDE ELEVATION

RESIDENTIAL BUILDINGS

1/8" = 1'-0"
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FRONT ELEVATION

CLUBHOUSE

3/16" = 1'-0"
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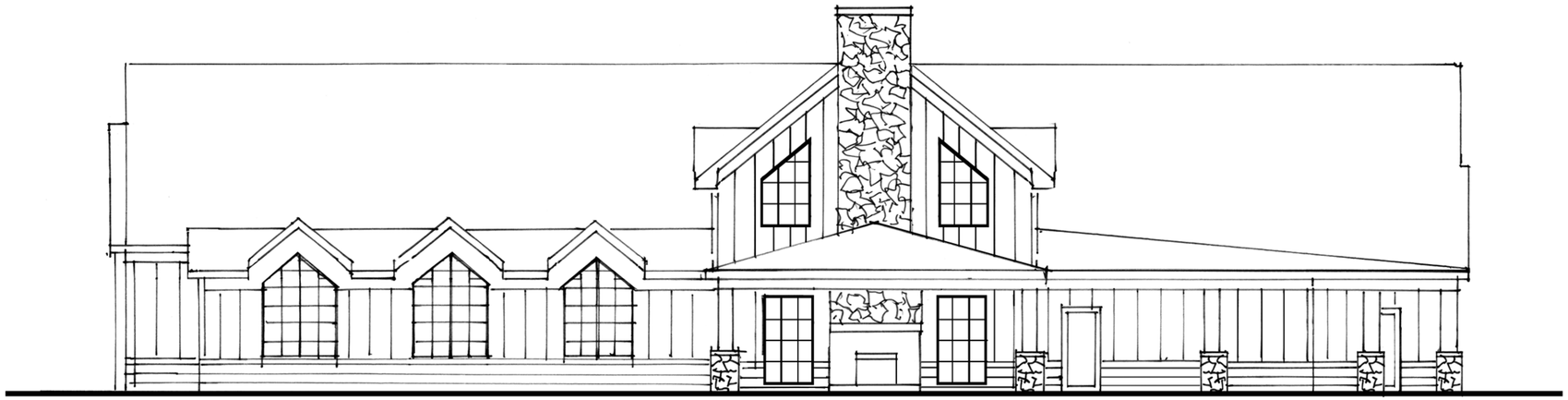

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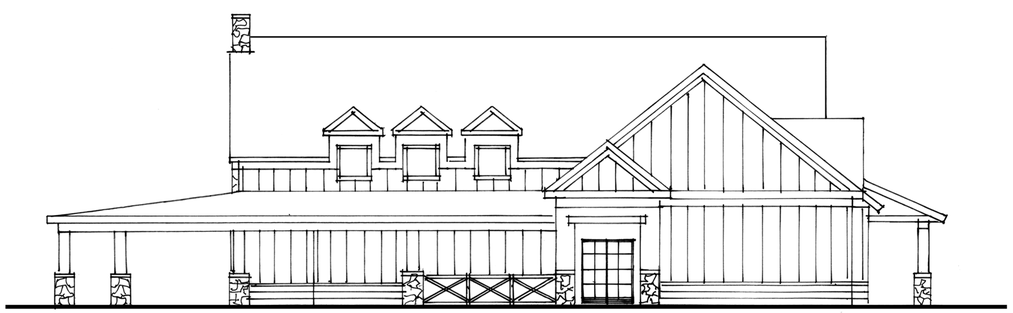

LEFT SIDE ELEVATION

RIGHT SIDE ELEVATION

CLUBHOUSE

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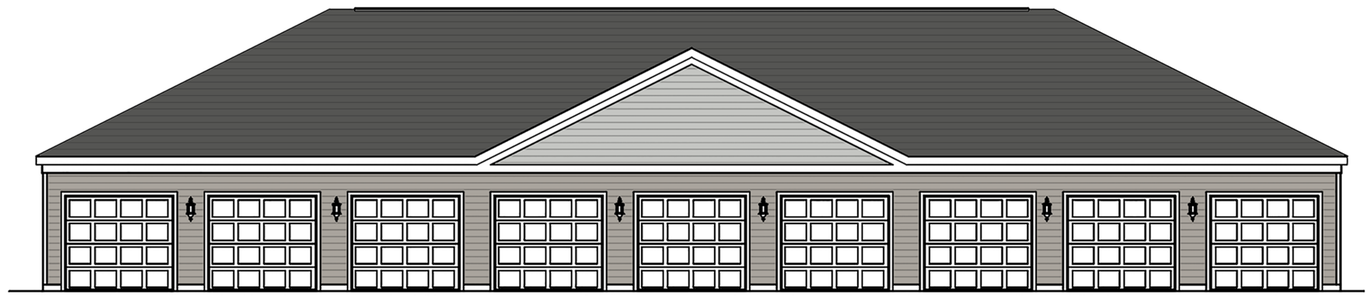
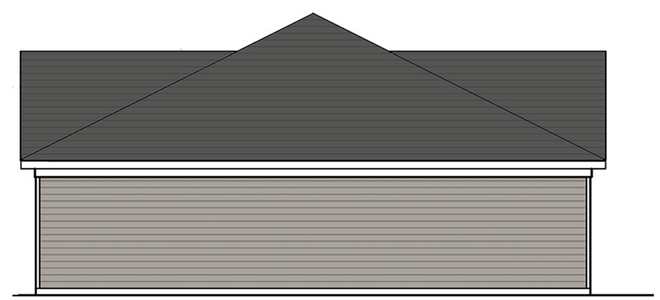


FRONT & REAR ELEVATIONS



SIDE ELEVATIONS

GARAGES

3/16" = 1'-0"
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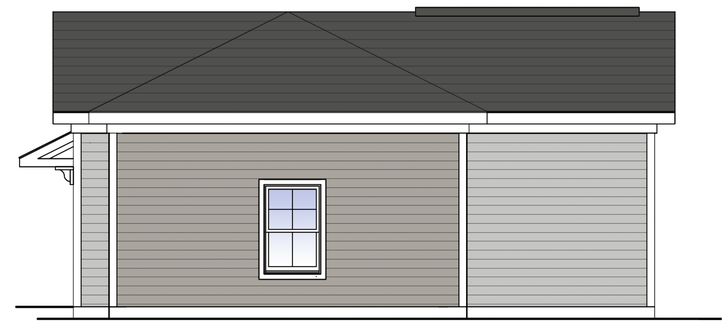
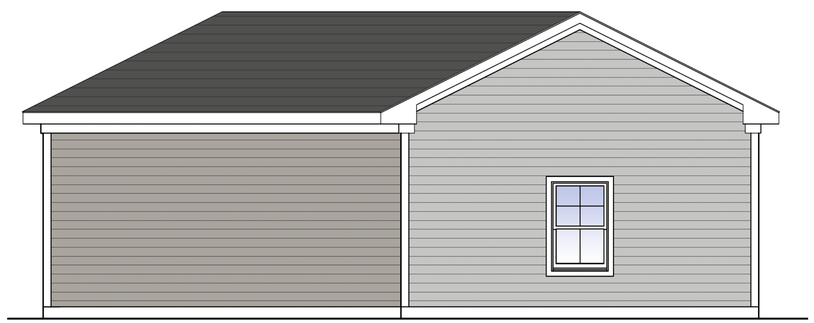
LEFT SIDE ELEVATION



RIGHT SIDE ELEVATION



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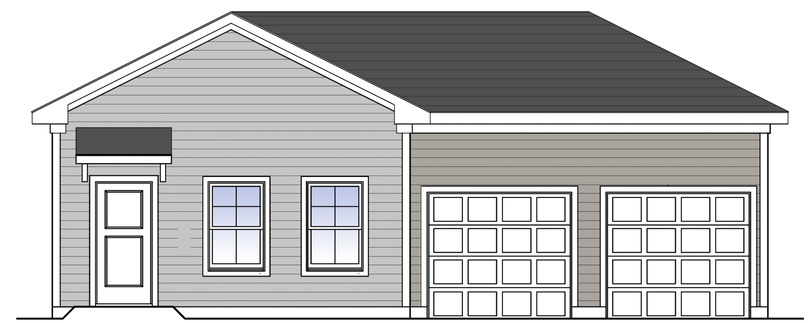

FRONT ELEVATION

MAINTENANCE BUILDING

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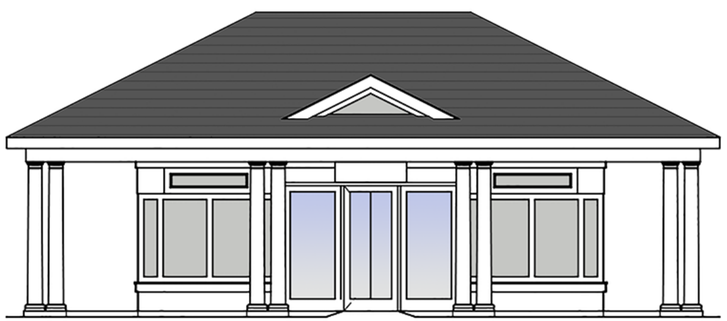

FRONT ELEVATION

REAR ELEVATION

LEFT SIDE ELEVATION

RIGHT SIDE ELEVATION

MAIL & PACKAGE BUILDING

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2045 ROUTE 35
WALL, NEW JERSEY 07719
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BIDDEFORD RESIDENTIAL

ANDREWS ROAD

BIDDEFORD, MAINE

CONSULTANTS:

CIVIL ENGINEER:
TERRADYN CONSULTANTS, LLC
41 CAMPUS DRIVE, SUITE 301
NEW GLOUCESTER, ME 04260
(207) 926-5111

ARCHITECT:
GATE 17 ARCHITECTURE, LLC
2045 ROUTE 35
WALL, NJ 07719

SURVEYOR:
NORTHERN SURVEY ENGINEERING
41 CHURCH ROAD
BRUNSWICK, ME 04011

WETLAND IDENTIFICATION AND MAPPING:
MARK CENCI GEOLOGIC, INC.
93 MILL ROAD
NORTH YARMOUTH, ME 04097

SOIL SURVEY
MARK HAMPTON ASSOCIATES, INC.
P.O. BOX 1931
PORTLAND, ME 04104

APPLICANT:

DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

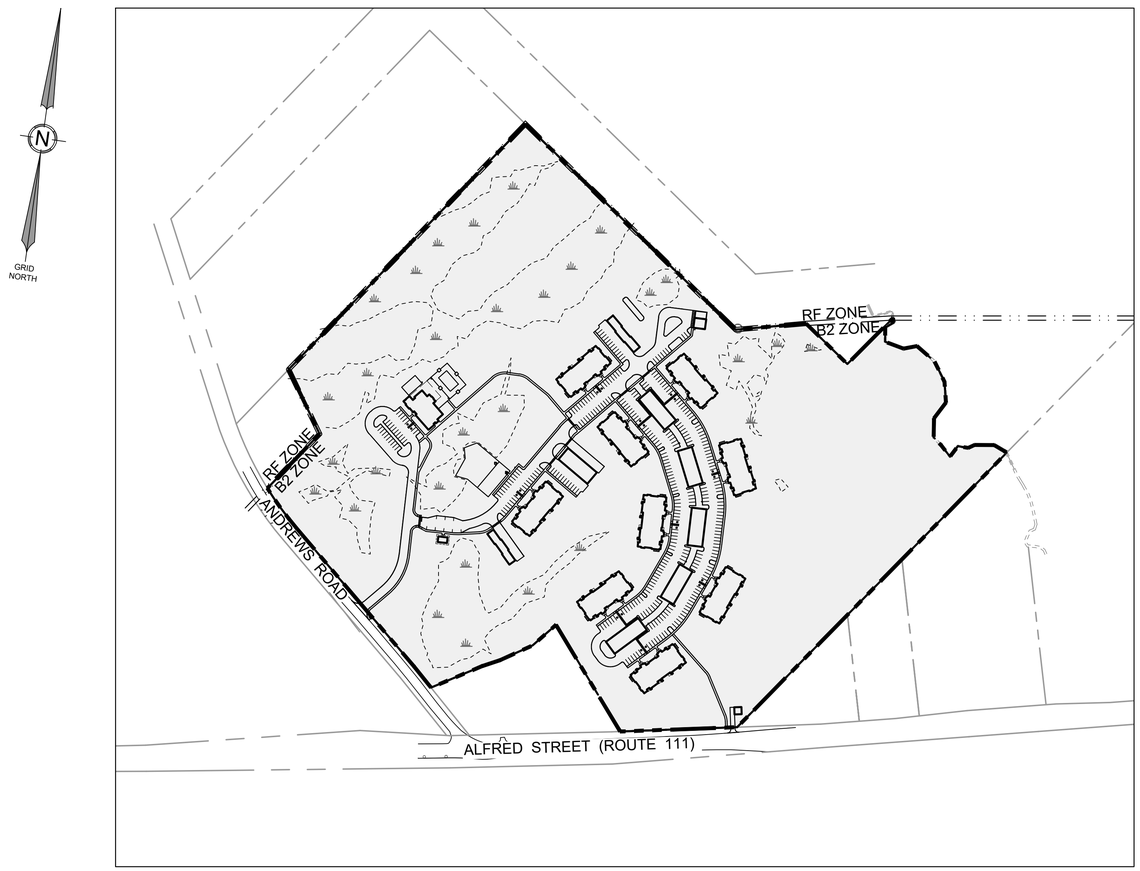
OWNER:

NEW LIFE CHRISTIAN FELLOWSHIP
551 ALFRED STREET
BIDDEFORD, MAINE 04005-9474

PROJECT PARCEL SITE

CITY OF BIDDEFORD TAX ASSESSOR'S MAP & LOT NUMBER

MAP	LOT
2	6 & 12



LOCATION MAP
1" = 200'

APPROVED: CITY OF BIDDEFORD
PLANNING BOARD

_____ DATE

_____

_____

_____

_____

_____

_____

_____

LEGEND

- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- PROPOSED SETBACK LINE
- EXISTING SETBACK LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- ROAD CENTERLINE
- 124 EXISTING MINOR CONTOUR
- 124 EXISTING MAJOR CONTOUR
- 124 PROPOSED CONTOUR
- SD EXISTING STORMDRAIN
- SD PROPOSED STORMDRAIN
- OHE EXISTING OVERHEAD ELECTRIC & TELEPHONE
- OHE PROPOSED OVERHEAD ELECTRIC & TELEPHONE
- UGE EXISTING UNDERGROUND ELECTRIC & TELEPHONE
- UGE PROPOSED UNDERGROUND ELECTRIC & TELEPHONE
- EXISTING EDGE OF PAVEMENT
- PROPOSED EDGE OF PAVEMENT
- EXISTING EDGE OF GRAVEL
- PROPOSED EDGE OF GRAVEL
- EXISTING TREE LINE
- PROPOSED TREE LINE
- CHAIN LINK FENCE
- PROPOSED FENCE
- EXISTING GUARDRAIL
- PROPOSED GUARDRAIL
- SF SILT FENCE
- PROPOSED TRANSFORMER
- PROPOSED LIGHT POLE
- EXISTING UTILITY POLE
- PROPOSED CATCH BASIN
- 30.20 EXISTING SPOT GRADE
- 30.20 PROPOSED SPOT GRADE
- EXISTING SIGN
- PROPOSED SIGN
- EXISTING BUILDING
- PROPOSED BUILDING
- WETLAND AREA
- PROPOSED PAVEMENT
- RIPRAP

SHEET INDEX

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1 of 1	CLASS 'B' HIGH INTENSITY SOIL SURVEY
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C-1.2	SITE PLAN - 2
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C5.2	SITE DETAILS
C-5.3	SITE DETAILS
C-5.4	SITE DETAILS
C-5.5	SITE DETAILS
C-6.1	PHOTOMETRIC PLAN - 1
C-6.2	PHOTOMETRIC PLAN - 2
C-6.3	PHOTOMETRIC PLAN - 3
C-6.4	PHOTOMETRIC PLAN - 4
C-6.5	PHOTOMETRIC PLAN - 5

STATE OF MAINE
RICHARD L. MEEK
No. 10668
PROFESSIONAL ENGINEER

DATE: 09-13-2022
P.E.: RICHARD L. MEEK, P.E. 10668

NO.	DATE	REVISIONS	APP'D BY
I	09-13-2022	SUBMIT SITE/SUBDIVISION APPLICATION TO CITY	RLM
H	08-17-2022	SUBMIT STORMWATER APPLICATION TO D.E.P.	

41 CAMPUS DRIVE
SUITE 301
NEW GLOUCESTER, ME 04260

565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04102

OFFICE: (207) 926-5111 FAX: (207) 221-1317
www.terradynconsultants.com

TERRADYN CONSULTANTS, LLC
Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting

PERMIT DRAWING
NOT FOR CONSTRUCTION

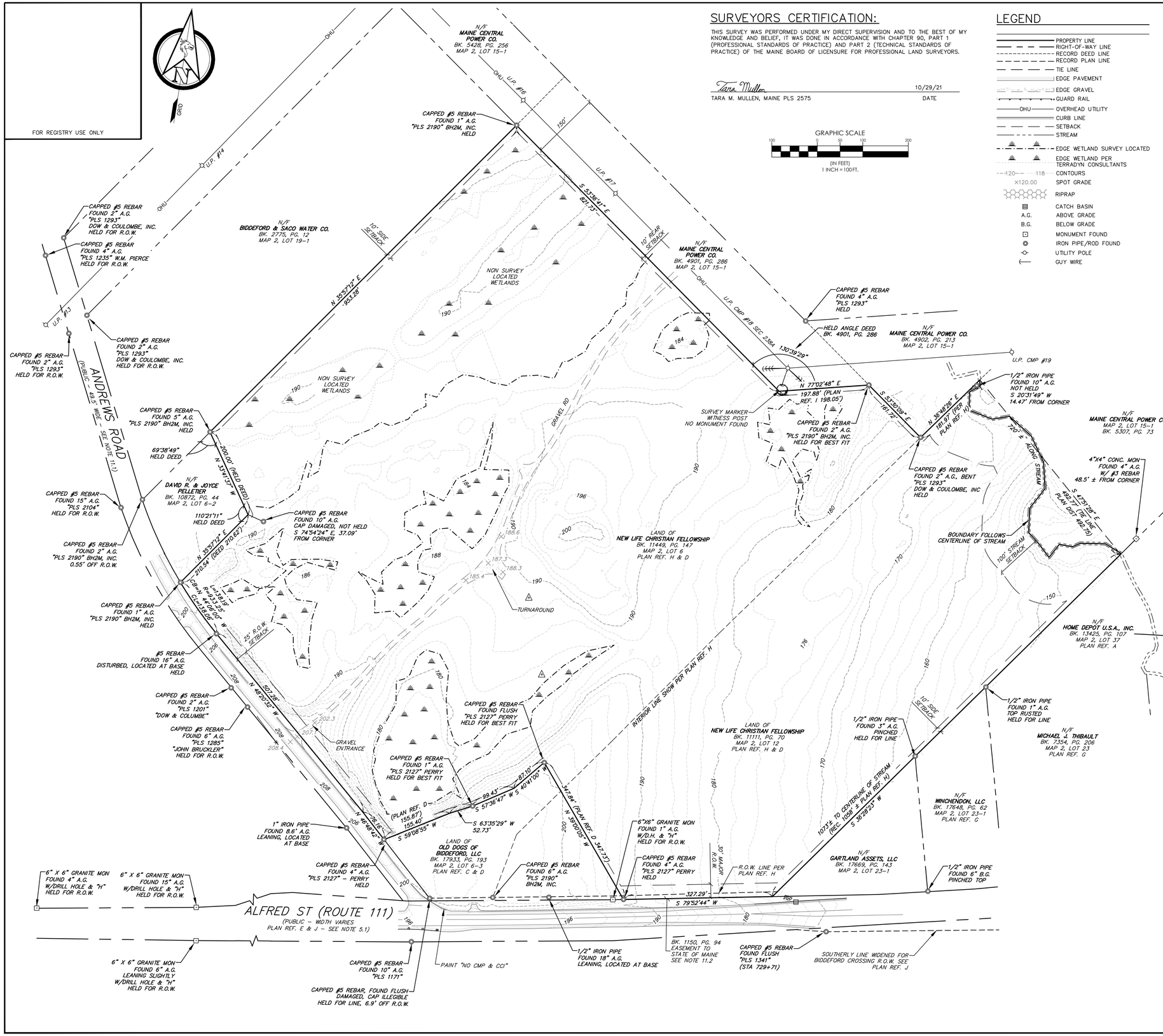
PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET:
COVER SHEET AND LOCATION MAP

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09-13-2022
SCALE:	1" = 200'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2149.C
SHEET	C-0.0

FOR REGISTRY USE ONLY



SURVEYORS CERTIFICATION:

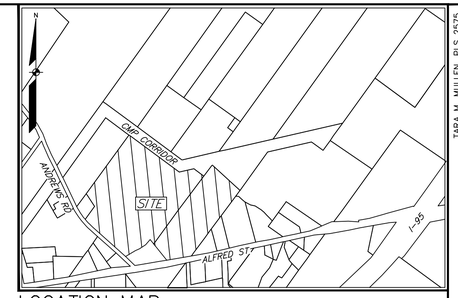
THIS SURVEY WAS PERFORMED UNDER MY DIRECT SUPERVISION AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT WAS DONE IN ACCORDANCE WITH CHAPTER 90, PART 1 (PROFESSIONAL STANDARDS OF PRACTICE) AND PART 2 (TECHNICAL STANDARDS OF PRACTICE) OF THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS.

Tara Mullen — 10/29/21

TARA M. MULLEN, MAINE PLS 2575 — DATE

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- RECORD DEED LINE
- RECORD PLAN LINE
- TIE LINE
- EDGE PAVEMENT
- EDGE GRAVEL
- GUARD RAIL
- OHU — OVERHEAD UTILITY
- CURB LINE
- SETBACK
- STREAM
- EDGE WETLAND SURVEY LOCATED
- EDGE WETLAND PER TERRADYN CONSULTANTS
- 120 — 118 — CONTOURS
- ×120.00 — SPOT GRADE
- RIPRAP
- CATCH BASIN
- A.G. — ABOVE GRADE
- B.G. — BELOW GRADE
- MONUMENT FOUND
- IRON PIPE/ROD FOUND
- UTILITY POLE
- GUY WIRE



LOCATION MAP

N.T.S.

GENERAL NOTES:

1. THE RECORD OWNER OF THE PARCEL IS NEW LIFE CHRISTIAN CHURCH BY DEEDS DATED NOVEMBER 13, 2001 AND MARCH 5, 2002 AND RECORDED AT THE YORK COUNTY REGISTRY OF DEEDS IN BOOK 11111, PAGE 70 AND BOOK 11449, PAGE 148, RESPECTIVELY AND IS SHOWN AS LOTS 6 & 12, RESPECTIVELY, ON THE CITY OF BIDDEFORD TAX MAP 2.
2. THE PROPERTY IS LOCATED IN THE HIGHWAY BUSINESS (B2) DISTRICT.

   LAND USE REGULATIONS ARE AS FOLLOWS:

MINIMUM LOT SIZE:	40,000 SF - NEITHER WATER NOR SEWER
MINIMUM STREET FRONTAGE:	150 FT
MINIMUM FRONT YARD:	30 FT MAJOR ROW. 25 FT OTHER ROW
MINIMUM SIDE & REAR YARD:	10 FT
STREAM SETBACK:	100 FT FROM STREAM**
MAXIMUM BUILDING HEIGHT:	35 FT (3 STORIES)

   * SEE ORDINANCE FOR MORE PARTICULAR INFORMATION.

   ** STREAM SETBACK PER BIDDEFORD SHORELAND ZONING ORDINANCE. LOCATION AND EXTENTS OF THE STREAM CHANNEL SHOWN IS BASED ON VISUAL INTERPRETATION DURING THE FIELD SURVEY.
3. TOTAL AREA OF PARCEL IS APPROXIMATELY 44.53 ACRES.

   MAP 2, LOT 12 600,700 ± S.F. (13.79 ± ACRES)
   MAP 2, LOT 6 1,351,500 ± S.F. (31.03 ± ACRES)
4. BOUNDARY INFORMATION SHOWN HEREON IS BASED UPON PLAN REF. D, E, H & I TIED TO FIELD MEASUREMENTS OBSERVED BY NORTHERN SURVEY ENGINEERING, LLC IN AUGUST & SEPTEMBER, 2021. VERIFIED BY RECORDS SEARCH COMPLETED AS PART OF THIS SURVEY..
5. TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED UPON PUBLICLY AVAILABLE LIDAR DATA SOURCED THROUGH NOAA DATA ACCESS VIEWER, DATED 2008-11-12 WITH A PUBLISHED VERTICAL ACCURACY OF 15 CM, GROUND TRUTHED TO FIELD MEASUREMENTS OBSERVED BY NORTHERN SURVEY ENGINEERING, LLC IN OCTOBER, 2021.

   5.1. ROAD CROWN ELEVATIONS ALONG ROUTE 111 ARE SHOWN PER THE 2008 LIDAR DATA AND HAVE NOT BEEN GROUND TRUTHED.
6. BOOK AND PAGE REFERENCES SHOWN HEREON ARE IN REFERENCE TO THE YORK COUNTY REGISTRY OF DEEDS (Y.C.R.D.).
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   A. "ALTA/ACSM LAND TITLE SURVEY, ROUTE 111, ALFRED ROAD, BIDDEFORD, MAINE MADE FOR GORRILL-PALMER CONSULTING ENGINEERING, INC. PROPERTY OF BERNARD NADEAU & JABENA LTD" BY TITCOMB ASSOCIATES, DATED 2/22/00. RECORDED IN PLAN BOOK 255, PAGE 12.

   B. "PLAN SHOWING A BOUNDARY SURVEY FOR MAURICE GUAY" BY JOHN D. BUCKLER, DATED MAR. 2 1988. RECORDED IN PLAN BOOK 164, PAGE 46.

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   E. "RIGHT OF WAY MAP, STATE HIGHWAY "U" NORTH KENNEBUNKPORT-BIDDEFORD, FEDERAL AID PROJECT NO. F 360(1)" BY MAINE STATE HIGHWAY COMMISSION, DATED JUNE 1948. S.H.C. FILE NO. 16-69.

   F. "PHASE 2, OVERALL SITE LAYOUT PLAN PROPOSED CHURCH/SCHOOL FACILITY, NEW LIFE CHRISTIAN FELLOWSHIP" BY GORRILL-PALMER CONSULTING ENGINEERS, INC., DATED JAN 2003. PROVIDED BY BIDDEFORD CITY ENGINEERS OFFICE (TD-1656).

   G. "BOUNDARY SURVEY AT 580 ALFRED ROAD - ROUTE 111, BIDDEFORD, MAINE MADE FOR DELUCA HOFFMAN ASSOCIATES" BY OWEN HASKELL, INC. DATED JAN 15, 2007. UNRECORDED.

   H. "PLAN OF PROPERTY, ALFRED ROAD & ANDREWS ROAD, BIDDEFORD, MAINE MADE FOR NEW LIFE CHRISTIAN FELLOWSHIP" BY TITCOMB ASSOCIATES. DATED FEBRUARY 1, 2002. UNRECORDED.

   I. "STANDARD BOUNDARY SURVEY, LAND OF EMILY AND LILLINA VERVILLE, 583 ALFRED ST, BIDDEFORD, MAINE" BY BH2M, DATED OCT. 1999. UNRECORDED.

   J. "AMENDED SUBDIVISION PLAN FOR THE SHOPS AT BIDDEFORD CROSSING, ALFRED ROAD, ROUTE 111" BY TITCOMB ASSOCIATES, DATED FEB. 25, 2005 REVISED THROUGH 9/13/05. RECORDED IN PLAN BOOK 304, PAGE 45.
8. BEARINGS SHOWN HEREON ARE IN REFERENCE TO GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1802-NAD83. ELEVATIONS DEPICTED HEREON ARE IN REFERENCE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), BASED GPS OBSERVATIONS.
9. THE LOCUS PROPERTY AS DEPICTED HEREON DOES NOT FALL WITHIN A SPECIAL FLOOD HAZARD AREA AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR CITY OF BIDDEFORD, MAINE, YORK COUNTY, COMMUNITY-PANEL NUMBER 230145 0008 B, HAVING AN EFFECTIVE DATE OF MAY 15, 1984. THE LOCUS FALLS WITHIN AN AREA IDENTIFIED AS ZONE C, AREAS OF MINIMAL FLOODING.
10. A WETLAND DELINEATION WAS PERFORMED ON THIS PROJECT SITE IN AUGUST, 2021 BY MARK CENCI, MARK CENCI GEOLOGIC, INC. AND LOCATED BY NORTHERN SURVEY ENGINEERING AND MARK CENCI GEOLOGIC, INC. THIS DELINEATION CONFORMS TO THE STANDARDS AND METHODS OUTLINED IN THE 1987 WETLANDS DELINEATION MANUAL AND NORTHEAST REGIONAL SUPPLEMENT AUTHORED AND PUBLISHED BY THE U.S. ARMY CORPS OF ENGINEERS.

    10.1. SPECIFIC WETLAND FLAGS WERE SURVEY LOCATED BY NORTHERN SURVEY ENGINEERING, LLC THE REMAINDER WHERE PROVIDED BY TERRADYN CONSULTANTS, LLC - SEE LEGEND.
11. BOUNDARY NOTES:

    11.1. ANDREWS ROAD:THREE RODS WIDE (49.5') ACCEPTED BY THE CITY OF BIDDEFORD, VOLUME 4, PAGE 114, DATED NOVEMBER 7, 1836. EXISTING MONUMENTATION HELD FOR RIGHT OF WAY.

    11.2. ROUTE 111 R.O.W. WAS ESTABLISHED BY MAINE D.O.T. (SEE PLAN REF. E DATED JUNE 1948). THE R.O.W. IS SHOWN HERE BY A BEST FIT OF FOUND HIGHWAY MONUMENTS TO THE RECORDED PLAN. THE R.O.W. FOR ROUTE 111 ON PLAN REF. I & H CONFLICTS WITH THIS LOCATION AS SHOWN. WHEN THE 1948 R.O.W. FOR ROUTE 111 WAS ESTABLISHED AN EASEMENT WAS GRANTED BY THE FORMER OWNER OF MAP 2, LOT 12, VITO MININNI, TO THE STATE OF MAINE, SEE BOOK 1150, PAGE 94 DATED JANUARY 12, 1950. THE LIMITS OF THE EASEMENT ARE SHOWN ON PLAN REF. E AS THE EDGE OF THE R.O.W. OF ROUTE 111 AND WERE HELD FOR THE CURRENT R.O.W. OF ROUTE 111.

TARA M. MULLEN, PLS 2575

STATE OF MAINE — TARA M. MULLEN — 2575 — REGISTERED PROFESSIONAL LAND SURVEYOR

REV:	BY:	DATE:	STATUS:

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION. ANY ALTERATIONS, APPROVED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK.

NORSE
NORTHERN SURVEY ENGINEERING
207.440.3487
41 CHURCH ROAD, BRUNSWICK, MAINE 04011
www.northernsurveyengineering.com

BOUNDARY & EXISTING CONDITIONS SURVEY

OF:

LAND OF NEW LIFE CHRISTIAN FELLOWSHIP

588 ALFRED ST & 590 ALFRED ST
BIDDEFORD, MAINE, 04005

FOR:

TERRADYN CONSULTANTS, LLC
41 CAMPUS DRIVE, SUITE 101
NEW GLOSTER, ME 04260 111

RECORD OWNER:
NEW LIFE CHRISTIAN FELLOWSHIP
551 ALFRED ST, BIDDEFORD, ME 04005
BK 111110, PG 70 & BK 11449, PG 148

DRAWN	CHECKED
TMM	DJH
PROJECT NO.	DATE
21107	10/29/21
SHEET SIZE	SCALE
24" X 36"	1" = 100'

SHEET 1 OF 1

LEGEND

- ABUTTER PROPERTY LINE
- LOCUS PROPERTY LINE
- 124 CONTOUR
- STREAM
- WETLAND AREA
- SS-14 TEST PIT

SOILS LEGEND AND NOTES

1. DRAINAGE CLASS:

EWD	EXCESSIVELY WELL DRAINED
WD	WELL DRAINED
MWD	MODERATLEY WELL DRAINED
SPD	SOMEWHAT POORLY DRAINED
PD	POORLY DRAINED
VPD	VERY POORLY DRAINED

2. SLOPE DESIGNATION:

A	0-3%
B	3-8%
C	8-15%
D	15-25%
E	> 25%

3. THIS HIGH INTENSITY SOIL SURVEY HAS BEEN PREPARED BY MARK HAMPTON ASSOCIATES, INC., IN ACCORDANCE WITH THE STANDARDS ADOPTED BY THE MAINE ASSOCIATION OF PROFESSIONAL SOIL SCIENTISTS AND THE MAINE BOARD OF CERTIFICATION OF GEOLOGISTS AND SOIL SCIENTISTS.

The accompanying soil profile descriptions, soil map, and this soil narrative report were done in accordance with the standards adopted by the Maine Association of Professional Soil Scientists, and the Maine Board of Certification of Geologists and Soil Scientists.

Mark J. Hampton C.S.S. #216, L.S.E. #263 9/24/21
Date

STATE OF MAINE
MARK J. HAMPTON
#216
CERTIFIED SOIL SCIENTIST

DATE: 02-07-2022
P.E.: RICHARD L. MEEK, P.E. 10668

NO.	DATE	REVISIONS	APP'D BY
D	02/07/2022	UPDATE DESIGN PLANS TO REFLECT ALTERNATE SITE LAYOUT #2	RLM
C	01/07/2022	MODIFIED SITE LAYOUT PER OWNER DIRECTION	RLM
B	12/17/2021	REVISED PER OWNER COMMENTS	RLM
A	11/09/2021	PRELIMINARY PLANS TO KGI	RLM

TERRADYN CONSULTANTS, LLC
41 CAMPUS DRIVE SUITE 201 NEW GLOUCESTER, ME 04260
565 CONGRESS STREET SUITE 201 PORTLAND, ME 04102
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Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting

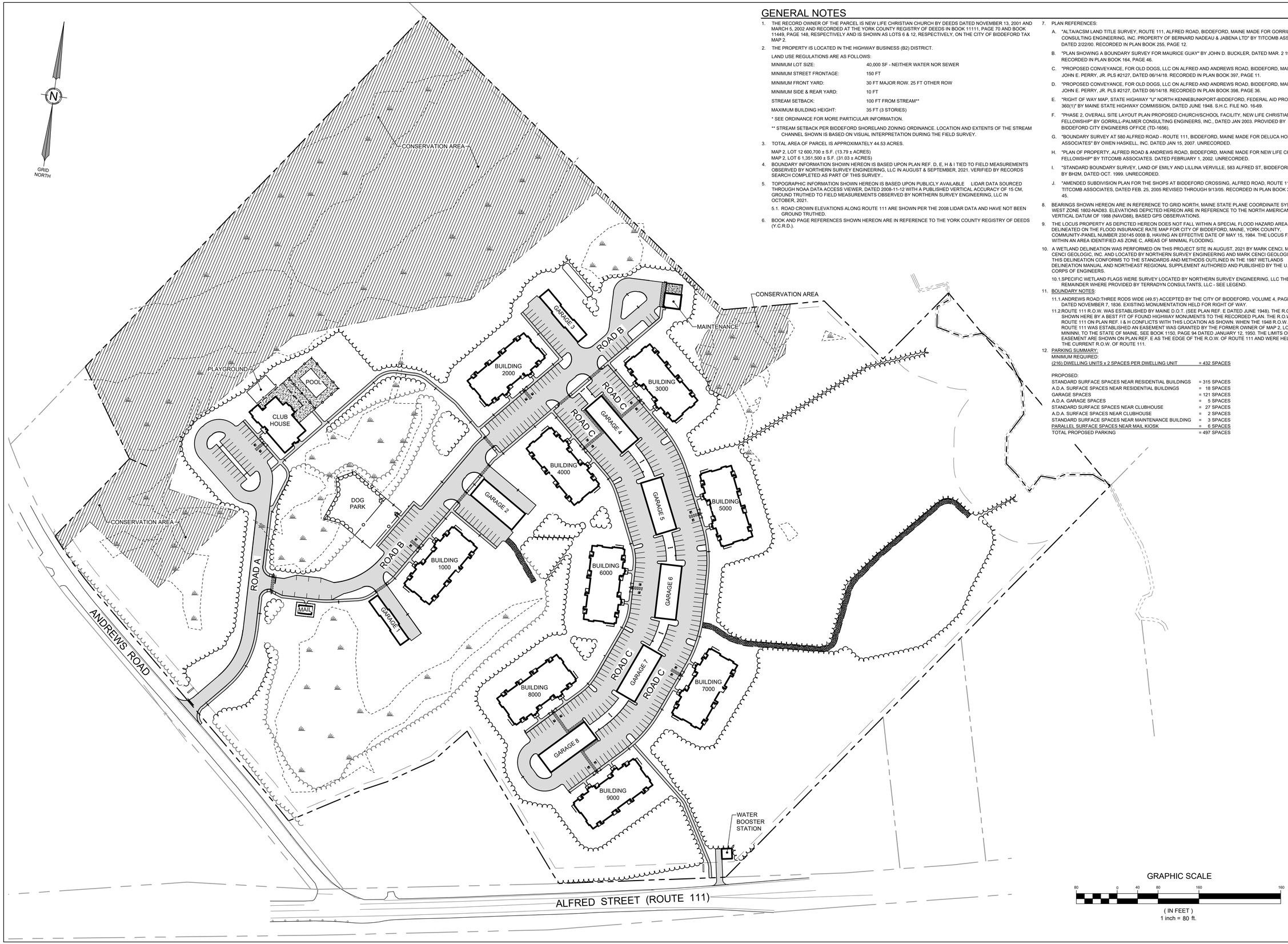
PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

CLASS 'B' HIGH INTENSITY SOIL SURVEY

CLIENT:
KGI PROPERTIES, LLC
10 MEMORIAL BOULEVARD, SUITE 901
PROVIDENCE, RI 02903

DATE:	09/28/2021
SCALE:	1" = 100'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2149.SOILS
SHEET	1 of 1



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12. PARKING SUMMARY:

MINIMUM REQUIRED:	
(216) DWELLING UNITS x 2 SPACES PER DWELLING UNIT	= 432 SPACES
PROPOSED:	
STANDARD SURFACE SPACES NEAR RESIDENTIAL BUILDINGS	= 315 SPACES
A.D.A. SURFACE SPACES NEAR RESIDENTIAL BUILDINGS	= 18 SPACES
GARAGE SPACES	= 121 SPACES
A.D.A. GARAGE SPACES	= 5 SPACES
STANDARD SURFACE SPACES NEAR CLUBHOUSE	= 27 SPACES
A.D.A. SURFACE SPACES NEAR CLUBHOUSE	= 2 SPACES
STANDARD SURFACE SPACES NEAR MAINTENANCE BUILDING	= 3 SPACES
PARALLEL SURFACE SPACES NEAR MAIL KIOSK	= 6 SPACES
TOTAL PROPOSED PARKING	= 497 SPACES

GRAPHIC SCALE

80 0 40 80 160 160

(IN FEET)
1 inch = 80 ft.

STATE OF MAINE
RICHARD L. MEEK
No. 10668
LICENSED
PROFESSIONAL ENGINEER

DATE: 09-13-2022
P.E.: RICHARD L. MEEK, P.E. 10668

NO.	DATE	REVISIONS	APP'D BY
I	09-13-2022	SUBMIT SITE/SUBDIVISION APPLICATION TO CITY	RLM
H	08-17-2022	SUBMIT STORMWATER APPLICATION TO D.E.P.	

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ANDREWS ROAD, BIDDEFORD, MAINE

SHEET:
OVERALL SITE PLAN

CLIENT:
DEVINE CAPITAL, LLC
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DATE:	09-13-2022
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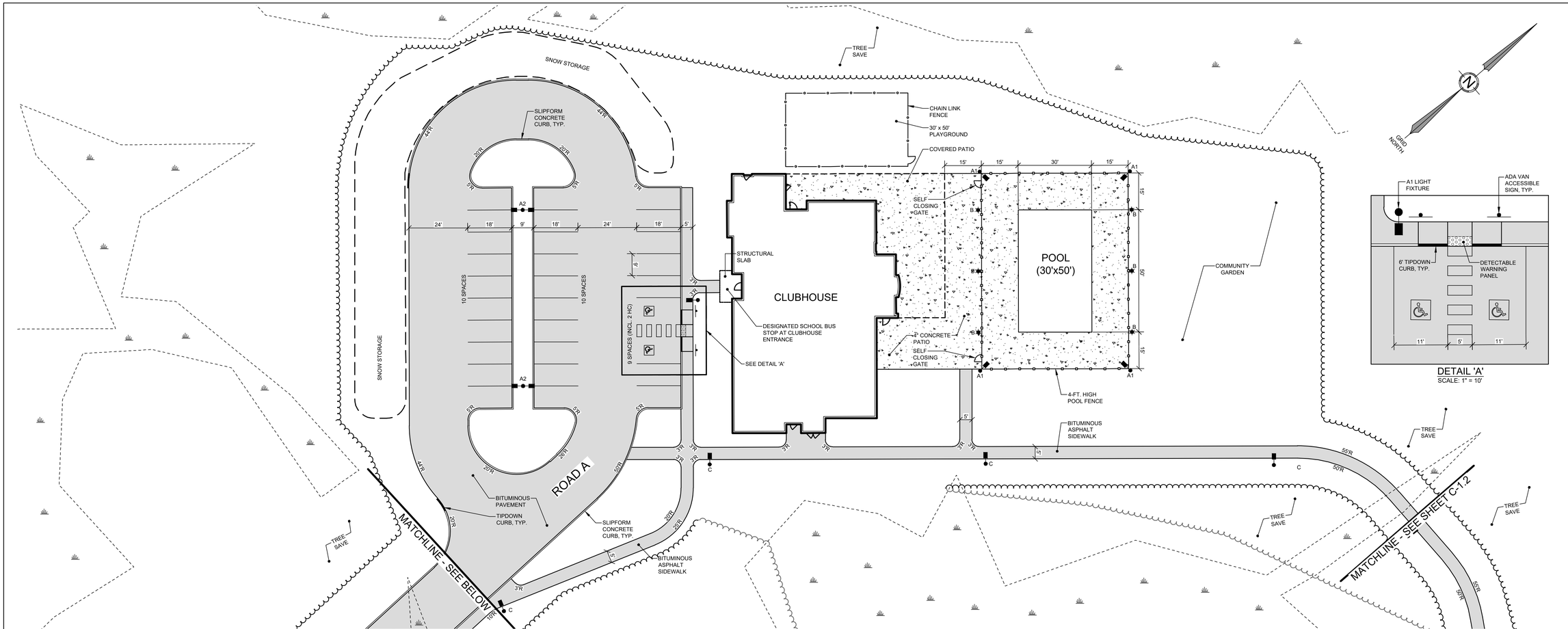
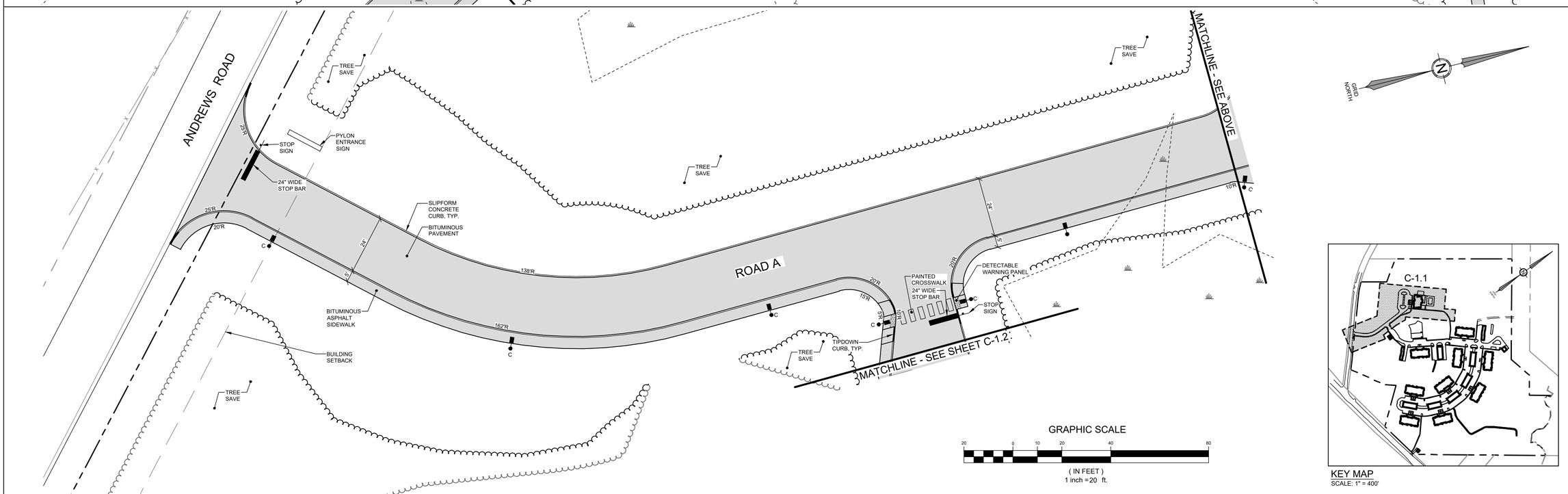
JOB NO:	2149
FILE:	2149.S
SHEET	C-1.0



DETAIL 'A'
SCALE: 1" = 10'



GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

KEY MAP
SCALE: 1" = 400'

STATE OF MAINE
RICHARD L. MEEK
No. 10668
PROFESSIONAL ENGINEER

DATE: 09-13-2022
P.E.: RICHARD L. MEEK, P.E. 10668

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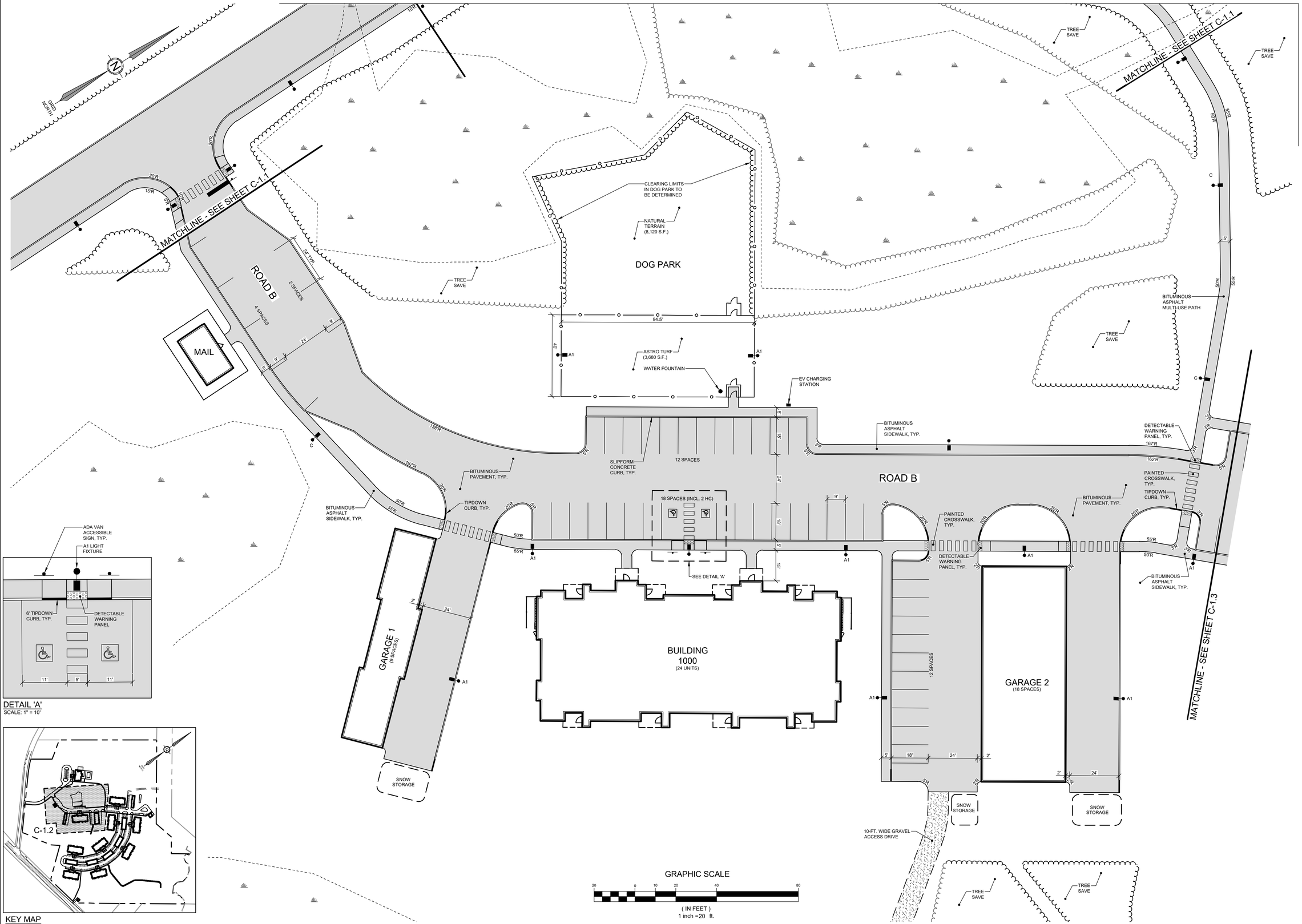
PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT: BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET: SITE PLAN - 1

CLIENT: DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09-13-2022
SCALE:	1" = 20'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2149.S
SHEET	C-1.1



DETAIL 'A'
SCALE: 1" = 10'

KEY MAP
SCALE: 1" = 400'

STATE OF MAINE
RICHARD L. MEEK
No. 10668
PROFESSIONAL ENGINEER

DATE: 09-13-2022
P.E.: RICHARD L. MEEK, P.E. 10668

NO.	DATE	REVISIONS	APP'D BY
I	09-13-2022	SUBMIT SITE/SUBDIVISION APPLICATION TO CITY	RLM
H	08-17-2022	SUBMIT STORMWATER APPLICATION TO D.E.P.	

TERRADYN CONSULTANTS, LLC
41 CAMPUS DRIVE SUITE 201 NEW GLOUCESTER, ME 04260
505 CONGRESS STREET SUITE 201 PORTLAND, ME 04102
OFFICE: (207) 926-5111 FAX: (207) 221-1317
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Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting

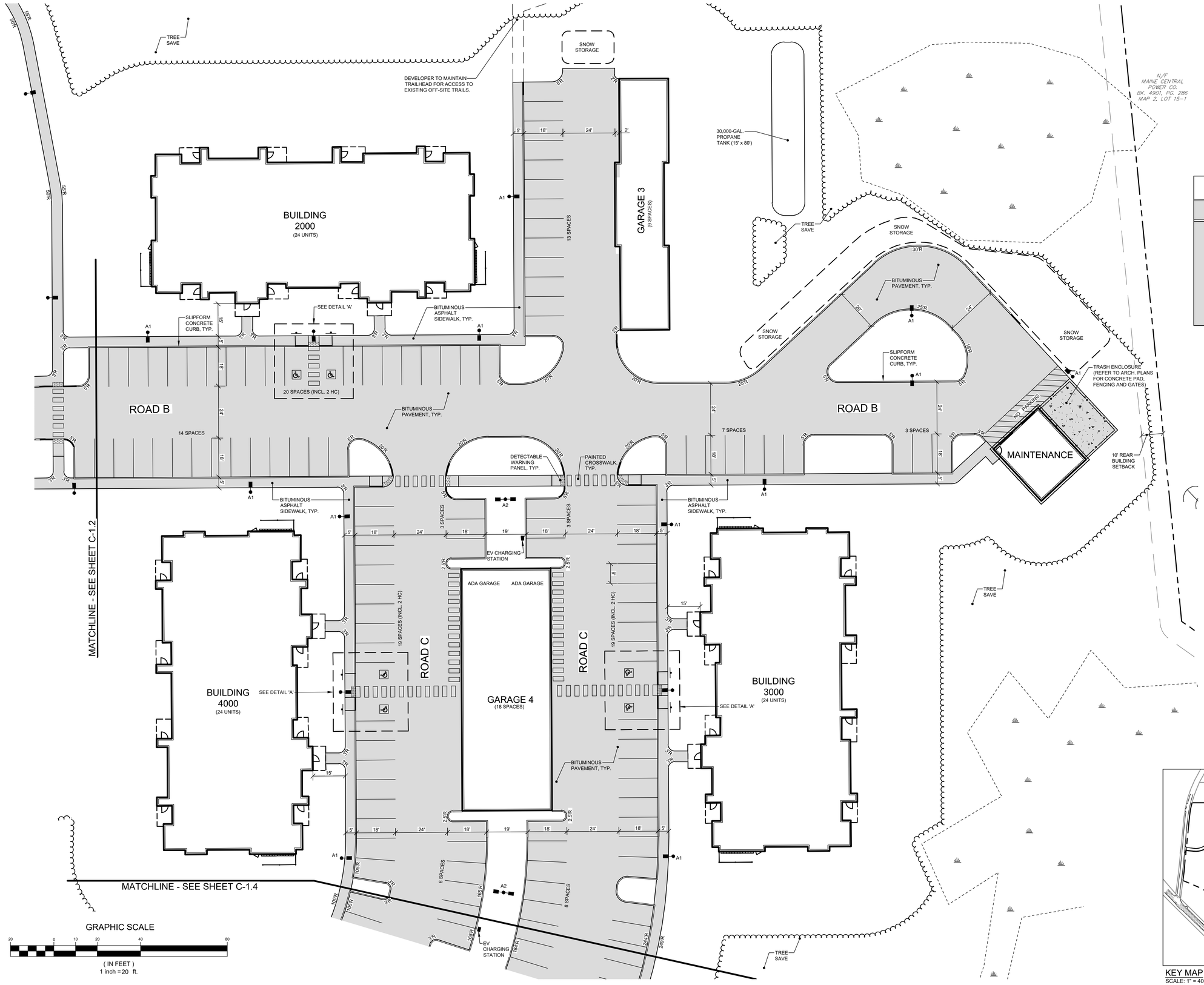
PERMIT DRAWING
NOT FOR CONSTRUCTION

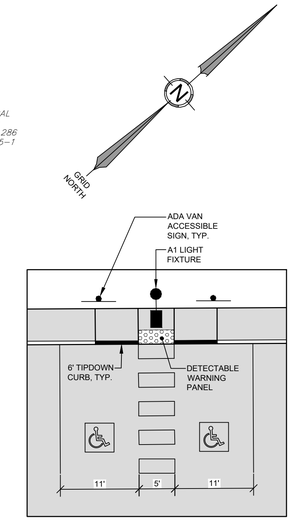
PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET:
SITE PLAN - 2

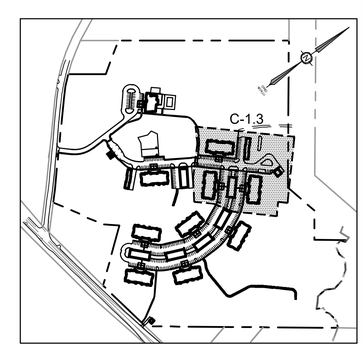
CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09-13-2022
SCALE:	1" = 20'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2149.S
SHEET	C-1.2





DETAIL 'A'
SCALE: 1" = 10'



KEY MAP
SCALE: 1" = 400'

STATE OF MAINE
RICHARD L. MEEK
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PROFESSIONAL ENGINEER

DATE: 09-13-2022
P.E.: RICHARD L. MEEK, P.E. 10668

NO.	DATE	REVISIONS	APP'D BY
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555 CONGRESS STREET SUITE 201 PORTLAND, ME 04102
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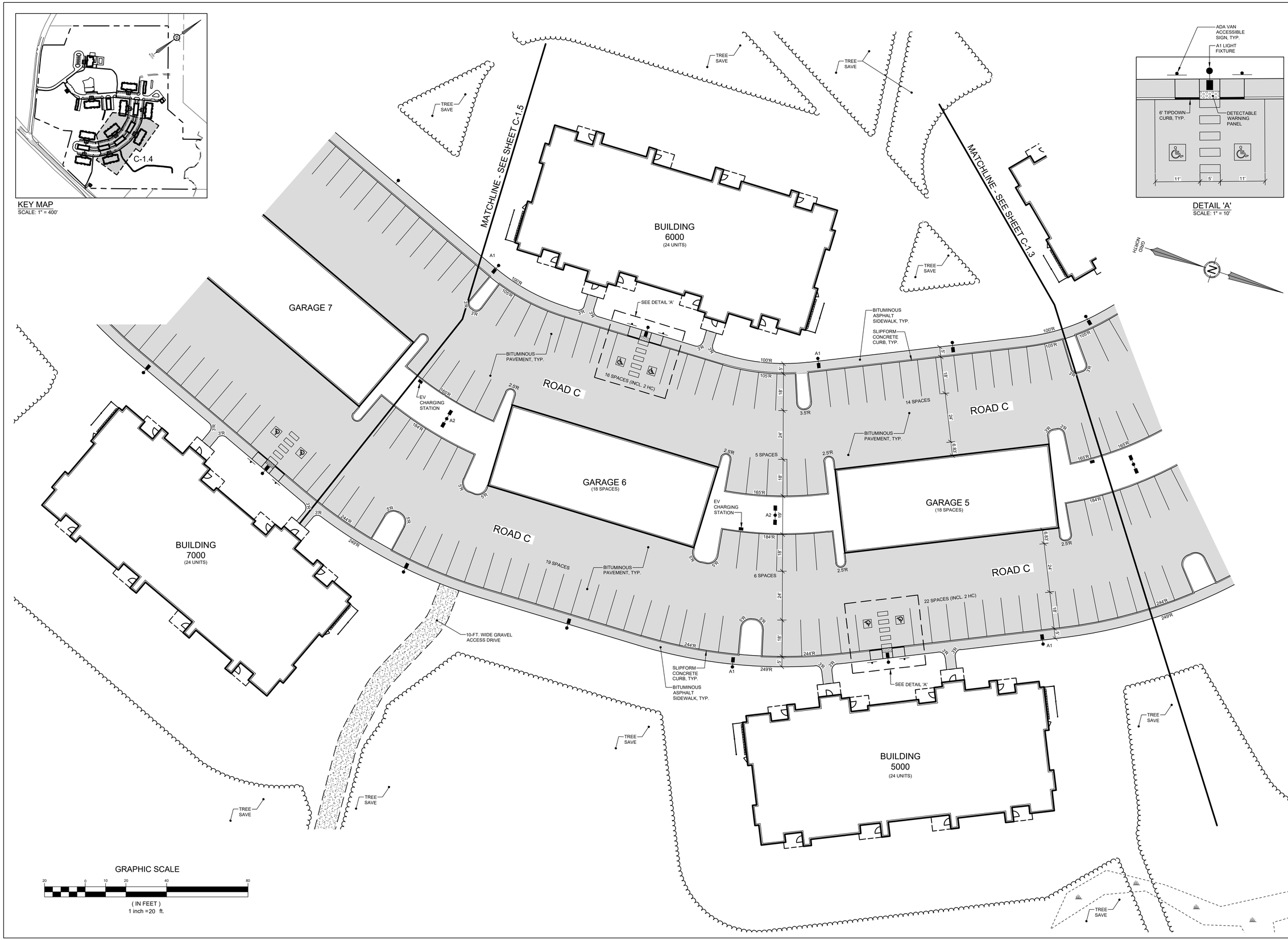
PROJECT: BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET: SITE PLAN - 3

CLIENT: DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09-13-2022
SCALE:	1" = 20'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2149.S
SHEET	C-1.3

KEY MAP
SCALE: 1" = 400'



DETAIL 'A'
SCALE: 1" = 10'

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

STATE OF MAINE
RICHARD L. MEEK
No. 10668
LICENSED
PROFESSIONAL ENGINEER

DATE: 09-13-2022
P.E.: RICHARD L. MEEK, P.E. 10668

NO.	DATE	REVISIONS	APP'D BY
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H	08-17-2022	SUBMIT STORMWATER APPLICATION TO D.E.P.	

TERRADYN CONSULTANTS, LLC
41 CAMPUS DRIVE
SUITE 201
NEW GLOUCESTER, ME 04260
565 CONGRESS STREET
SUITE 301
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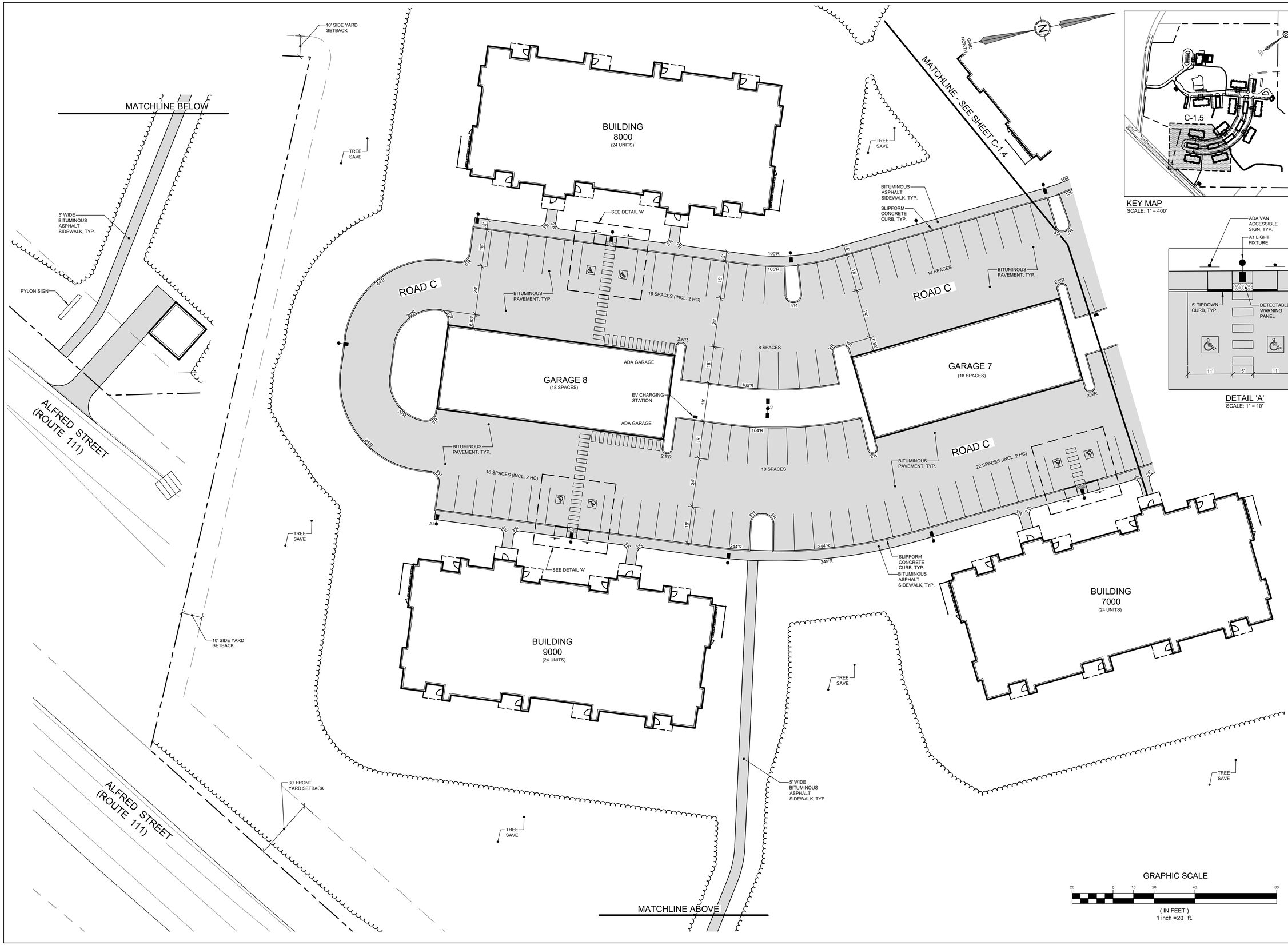
NOT FOR CONSTRUCTION

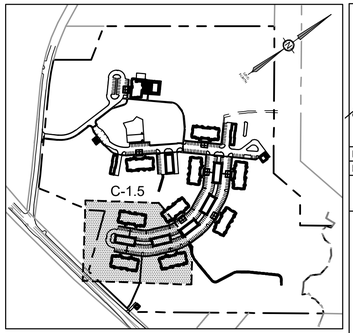
PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET:
SITE PLAN - 4

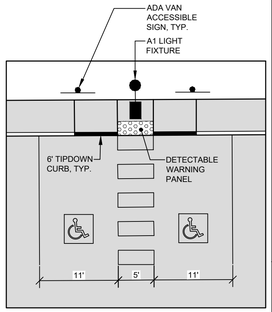
CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09-13-2022
SCALE:	1" = 20'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2149.S
SHEET	C-1.4





KEY MAP
SCALE: 1" = 400'



DETAIL 'A'
SCALE: 1" = 10'

STATE OF MAINE
RICHARD L. MEEK
No. 10668
LICENSED
PROFESSIONAL ENGINEER

DATE: 09-13-2022
P.E.: RICHARD L. MEEK, P.E. 10668

NO.	DATE	REVISIONS	APP'D BY
I	09-13-2022	SUBMIT SITE/SUBDIVISION APPLICATION TO CITY	RLM
H	08-17-2022	SUBMIT STORMWATER APPLICATION TO D.E.P.	

TERRADYN CONSULTANTS, LLC
41 CAMPUS DRIVE
SUITE 101
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PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET:
SITE PLAN - 5

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09-13-2022
SCALE:	1" = 20'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2149.S
SHEET	C-1.5

STATE OF MAINE
RICHARD L. MEEK
No. 10668
PROFESSIONAL ENGINEER

DATE:	09-13-2022
P.E.: RICHARD L. MEEK, P.E. 10668	

NO.	DATE	REVISIONS	APP'D BY
I	09-13-2022	SUBMIT SITE/SUBDIVISION APPLICATION TO CITY	RLM
H	08-17-2022	SUBMIT STORMWATER APPLICATION TO D.E.P.	

TERRADYN CONSULTANTS, LLC
41 CAMPUS DRIVE
SUITE 203
NEW GLOUCESTER, ME 04260
565 CONGRESS STREET
SUITE 301
PORTLAND, ME 04102
OFFICE: (207) 926-5111 FAX: (207) 221-1317
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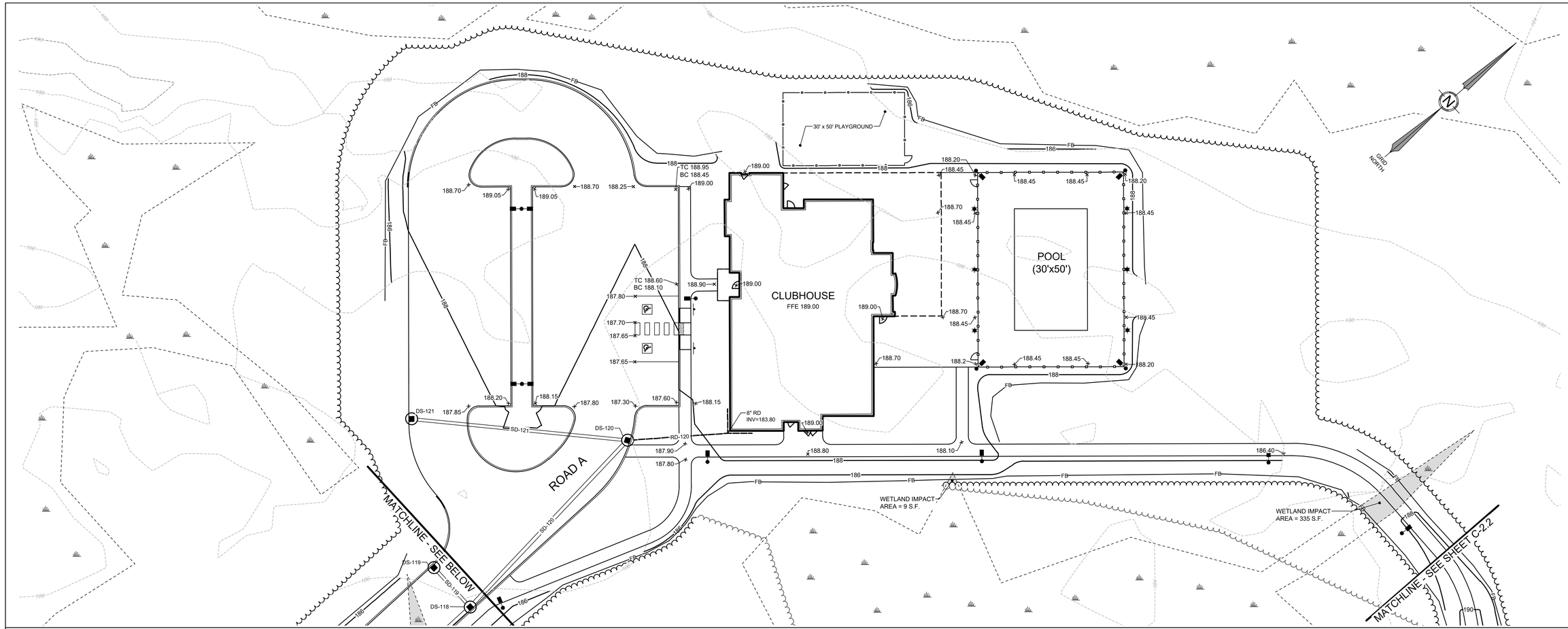
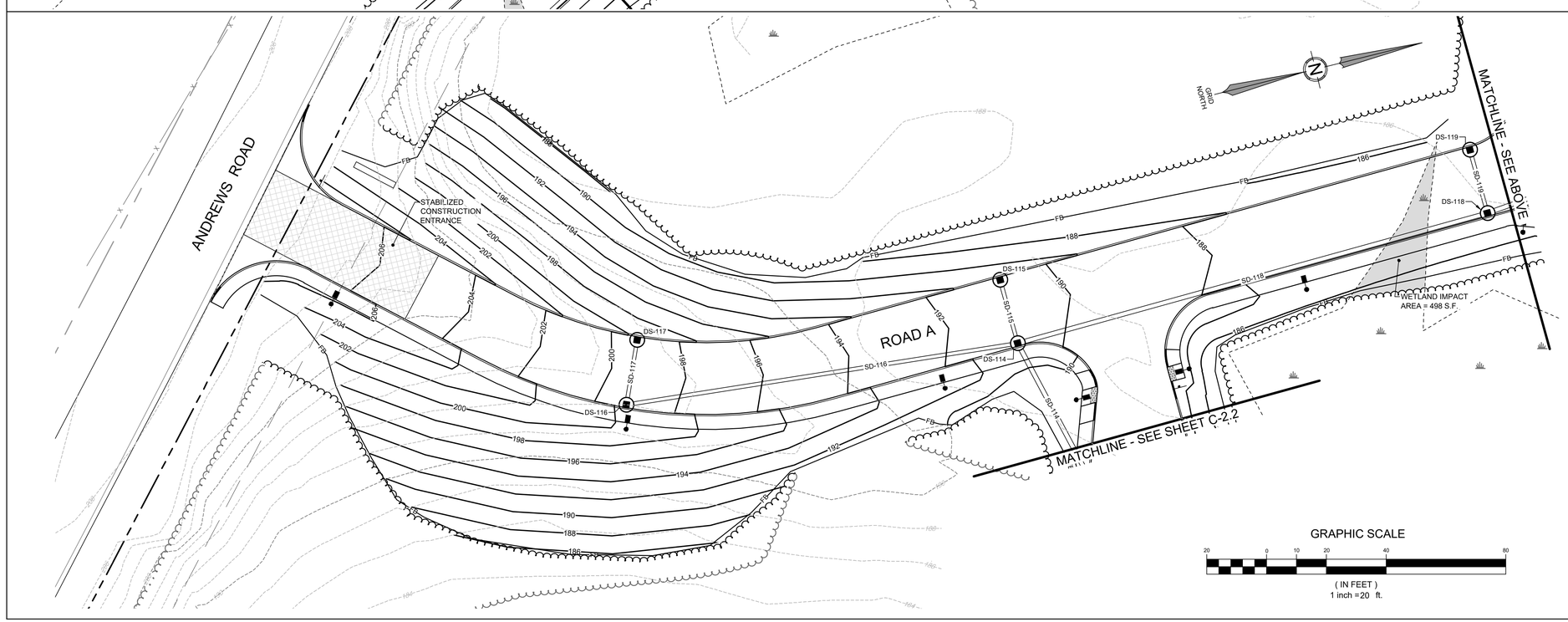
PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET:
OVERALL GRADING AND DRAINAGE PLAN

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09-13-2022
SCALE:	1" = 80'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2148.GD
SHEET	C-2.0





STORM DRAIN STRUCTURE DATA

STRUCTURE	RIM	INV. IN	INV. OUT	DIAM.	TYPE
DS-114	190.75	186.00 (SD-116) 186.50 (SD-115) 181.00 (SD-118)	180.90 (SD-114)	48"	CATCH BASIN
DS-115	190.75		186.90 (SD-115)	48"	CATCH BASIN
DS-116	199.20	194.50 (SD-117)	193.00 (SD-116)	48"	CATCH BASIN
DS-117	199.20		194.70 (SD-117)	48"	CATCH BASIN
DS-118	185.90	182.10 (SD-119) 181.95 (SD-120)	181.85 (SD-118)	48"	CATCH BASIN
DS-119	185.90		182.30 (SD-119)	48"	CATCH BASIN
DS-120	187.15	183.25 (SD-121) 183.60 (RD-120)	183.00 (SD-120)	48"	CATCH BASIN
DS-121	187.25		183.65 (SD-121)	48"	CATCH BASIN

STORM DRAIN PIPE DATA

NAME	SIZE	LENGTH	SLOPE
SD-114	15"	192'	0.52%
SD-115	12"	18'	2.22%
SD-116	12"	129'	5.45%
SD-117	12"	18'	1.11%
SD-118	15"	159'	0.53%
SD-119	12"	18'	1.11%
SD-120	15"	90'	1.16%
SD-121	12"	85'	0.47%

FNDN/ROOF DRAIN DATA

NAME	SIZE	LENGTH	SLOPE
RD-120	8"	39'	0.50%

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

STATE OF MAINE
RICHARD L. MEEK
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PROFESSIONAL ENGINEER

DATE: 09-13-2022
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TERRADYN CONSULTANTS, LLC
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SUITE 301
NEW GLOUCESTER, ME 04260
565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04102
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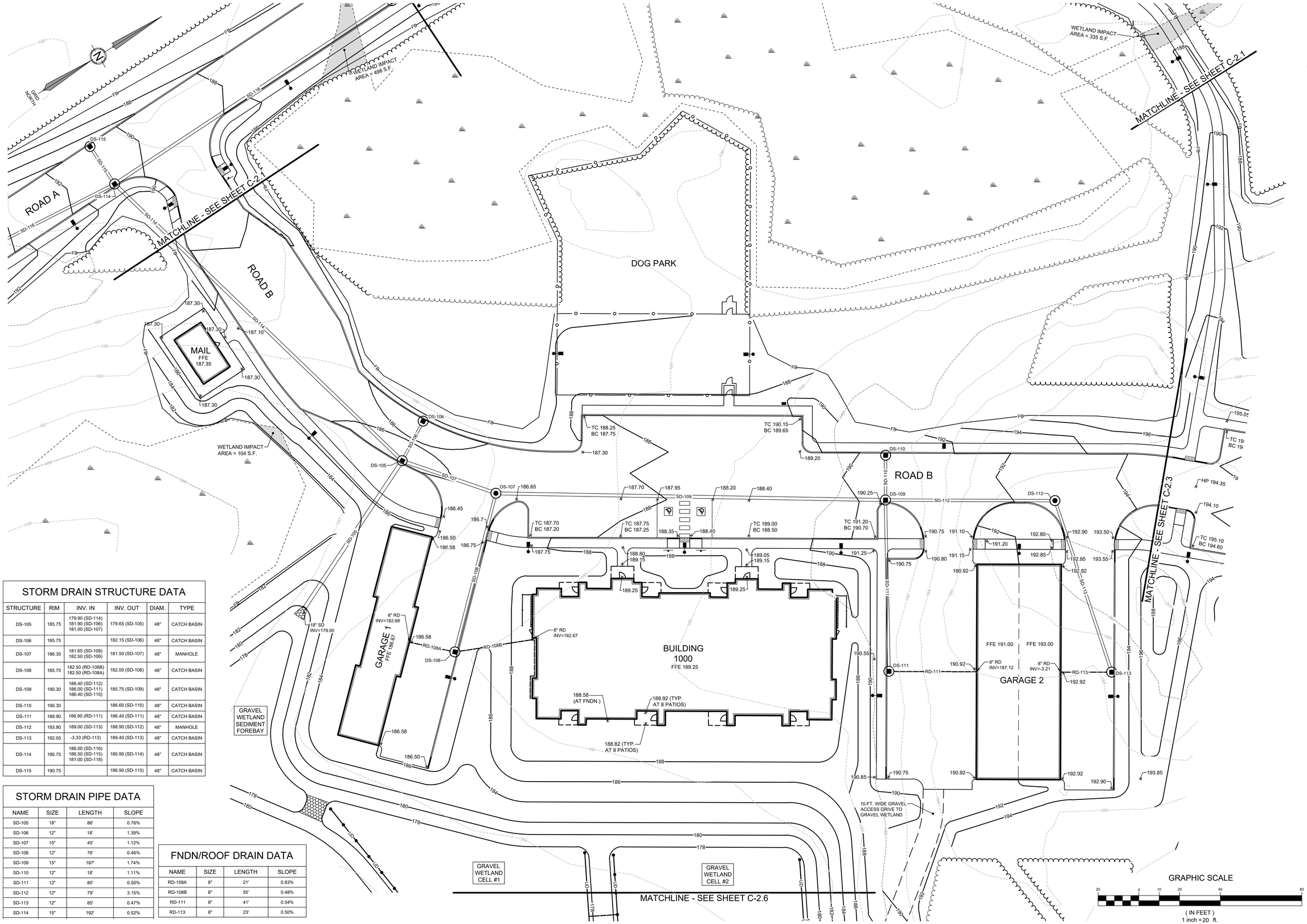
PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET:
GRADING AND DRAINAGE PLAN - 1

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09-13-2022
SCALE:	1" = 20'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2148.GD
SHEET	C-2.1



STORM DRAIN STRUCTURE DATA

STRUCTURE	RIM	INV. IN	INV. OUT	DIAM.	TYPE
DS-105	185.75	179.90 (SD-114) 181.90 (SD-106) 181.00 (SD-107)	179.65 (SD-105)	48"	CATCH BASIN
DS-106	185.75		182.15 (SD-106)	48"	CATCH BASIN
DS-107	186.30	181.65 (SD-108) 182.50 (SD-109)	181.50 (SD-107)	48"	MANHOLE
DS-108	185.70	182.50 (RD-108B) 182.50 (RD-108A)	182.00 (SD-108)	48"	CATCH BASIN
DS-109	190.30	186.40 (SD-112) 186.00 (SD-111) 186.40 (SD-110)	185.75 (SD-109)	48"	CATCH BASIN
DS-110	190.30		186.60 (SD-110)	48"	CATCH BASIN
DS-111	189.90	186.90 (RD-111)	186.40 (SD-111)	48"	CATCH BASIN
DS-112	193.90	189.00 (SD-113)	188.90 (SD-112)	48"	MANHOLE
DS-113	192.05	-3.33 (RD-113)	189.40 (SD-113)	48"	CATCH BASIN
DS-114	190.75	186.00 (SD-116) 186.50 (SD-115) 181.00 (SD-118)	180.90 (SD-114)	48"	CATCH BASIN
DS-115	190.75		186.90 (SD-115)	48"	CATCH BASIN

STORM DRAIN PIPE DATA

NAME	SIZE	LENGTH	SLOPE
SD-105	18"	86'	0.76%
SD-106	12"	18'	1.39%
SD-107	15"	45'	1.12%
SD-108	12"	76'	0.46%
SD-109	15"	187'	1.74%
SD-110	12"	18'	1.11%
SD-111	12"	80'	0.50%
SD-112	12"	79'	3.15%
SD-113	12"	85'	0.47%
SD-114	15"	192'	0.52%

FNDN/ROOF DRAIN DATA

NAME	SIZE	LENGTH	SLOPE
RD-108A	8"	21'	0.83%
RD-108B	8"	35'	0.48%
RD-111	8"	41'	0.54%
RD-113	8"	23'	0.50%

STATE OF MAINE
RICHARD L. MEEK
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OFFICE: (207) 926-5111 FAX: (207) 221-1317
www.terradynconsultants.com

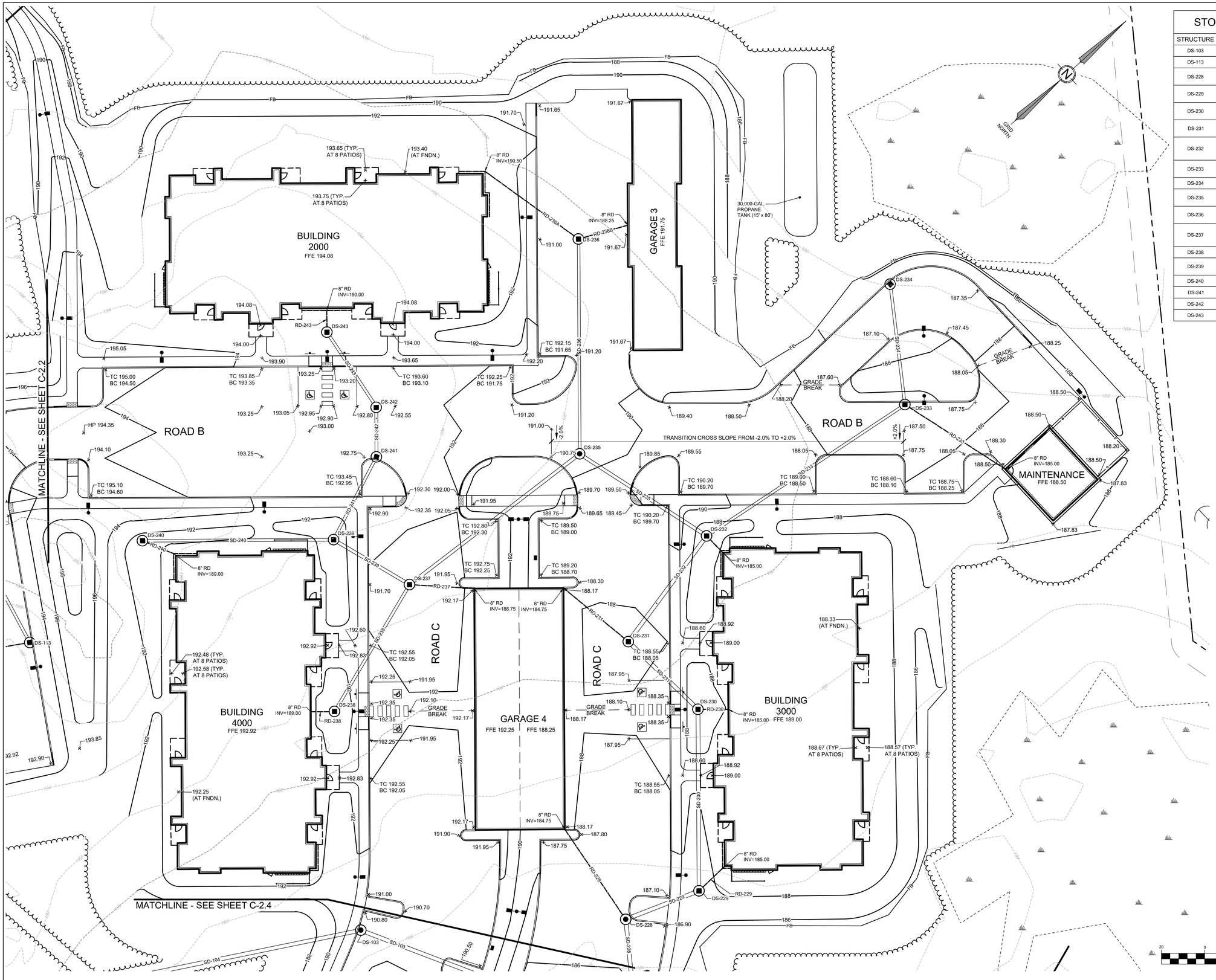
PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT: BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET: GRADING AND DRAINAGE PLAN - 2

CLIENT: DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09-13-2022
SCALE:	1" = 20'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2148.GD
SHEET	C-2.2



STORM DRAIN STRUCTURE DATA

STRUCTURE	RIM	INV. IN	INV. OUT	DIAM.	TYPE
DS-103	190.70	175.43 (SD-104)	175.33 (SD-103)	48"	MANHOLE
DS-113	192.05	-3.33 (RD-113)	189.40 (SD-113)	48"	CATCH BASIN
DS-228	186.85	181.05 (SD-229) 183.30 (RD-228)	180.95 (SD-228)	48"	MANHOLE
DS-229	187.00	181.35 (SD-230) 183.70 (RD-229)	181.25 (SD-229)	48"	CATCH BASIN
DS-230	187.50	181.85 (SD-231) 183.70 (RD-230)	181.75 (SD-230)	48"	CATCH BASIN
DS-231	187.50	182.20 (SD-232) 184.20 (RD-231)	182.10 (SD-231)	48"	CATCH BASIN
DS-232	187.50	184.20 (RD-232) 183.50 (SD-235) 182.95 (SD-233)	182.50 (SD-232)	48"	CATCH BASIN
DS-233	187.25	183.60 (SD-234) 183.95 (RD-233)	183.50 (SD-233)	48"	CATCH BASIN
DS-234	186.35		183.95 (SD-234)	48"	F-BASIN
DS-235	190.50	186.45 (SD-236) 186.30 (SD-237)	186.20 (SD-235)	48"	MANHOLE
DS-236	190.65	187.35 (RD-236A) 187.35 (RD-236B)	187.00 (SD-236)	48"	CATCH BASIN
DS-237	191.25	186.90 (SD-239) 187.55 (SD-238) 187.95 (RD-237)	186.80 (SD-237)	48"	CATCH BASIN
DS-238	191.50	188.20 (RD-238)	187.90 (SD-238)	48"	CATCH BASIN
DS-239	191.50	187.20 (SD-240) 187.20 (SD-241)	187.10 (SD-239)	48"	CATCH BASIN
DS-240	191.00	188.00 (RD-240)	187.90 (SD-240)	48"	F-BASIN
DS-241	192.40	188.50 (SD-242)	187.40 (SD-241)	48"	CATCH BASIN
DS-242	192.40	188.80 (SD-243)	188.70 (SD-242)	48"	CATCH BASIN
DS-243	196.65	189.30 (RD-243)	189.00 (SD-243)	48"	CATCH BASIN

STORM DRAIN PIPE DATA

NAME	SIZE	LENGTH	SLOPE
SD-103	18"	240'	0.46%
SD-104	18"	265'	0.88%
SD-228	18"	80'	0.56%
SD-229	18"	32'	0.62%
SD-230	18"	80'	0.50%
SD-231	18"	41'	0.61%
SD-232	18"	57'	0.53%
SD-233	12"	106'	0.52%
SD-234	12"	52'	0.67%
SD-235	15"	66'	4.09%
SD-236	12"	95'	0.58%
SD-237	15"	95'	0.53%
SD-238	12"	64'	0.54%
SD-239	15"	37'	0.54%
SD-240	12"	84'	0.83%
SD-241	12"	39'	0.51%
SD-242	15"	19'	1.06%
SD-243	12"	38'	0.53%

FNDN/ROOF DRAIN DATA

NAME	SIZE	LENGTH	SLOPE
RD-228	8"	48'	3.00%
RD-229	8"	13'	9.88%
RD-230	8"	12'	10.80%
RD-231	8"	37'	1.49%
RD-232	8"	7'	10.77%
RD-233	8"	53'	1.97%
RD-236A	8"	51'	6.13%
RD-236B	8"	22'	4.15%
RD-237	8"	28'	2.87%
RD-238	8"	9'	8.86%
RD-240	8"	14'	7.37%
RD-243	8"	8'	8.69%

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

STATE OF MAINE
RICHARD L. MEEK
No. 10668
LICENSED PROFESSIONAL ENGINEER

DATE: 09-13-2022
P.E.: RICHARD L. MEEK, P.E. 10668

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H	08-17-2022	SUBMIT STORMWATER APPLICATION TO D.E.P.	

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PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET:
GRADING AND DRAINAGE PLAN - 3

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09-13-2022
SCALE:	1" = 20'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2148.GD
SHEET	C-2.3

STORM DRAIN STRUCTURE DATA

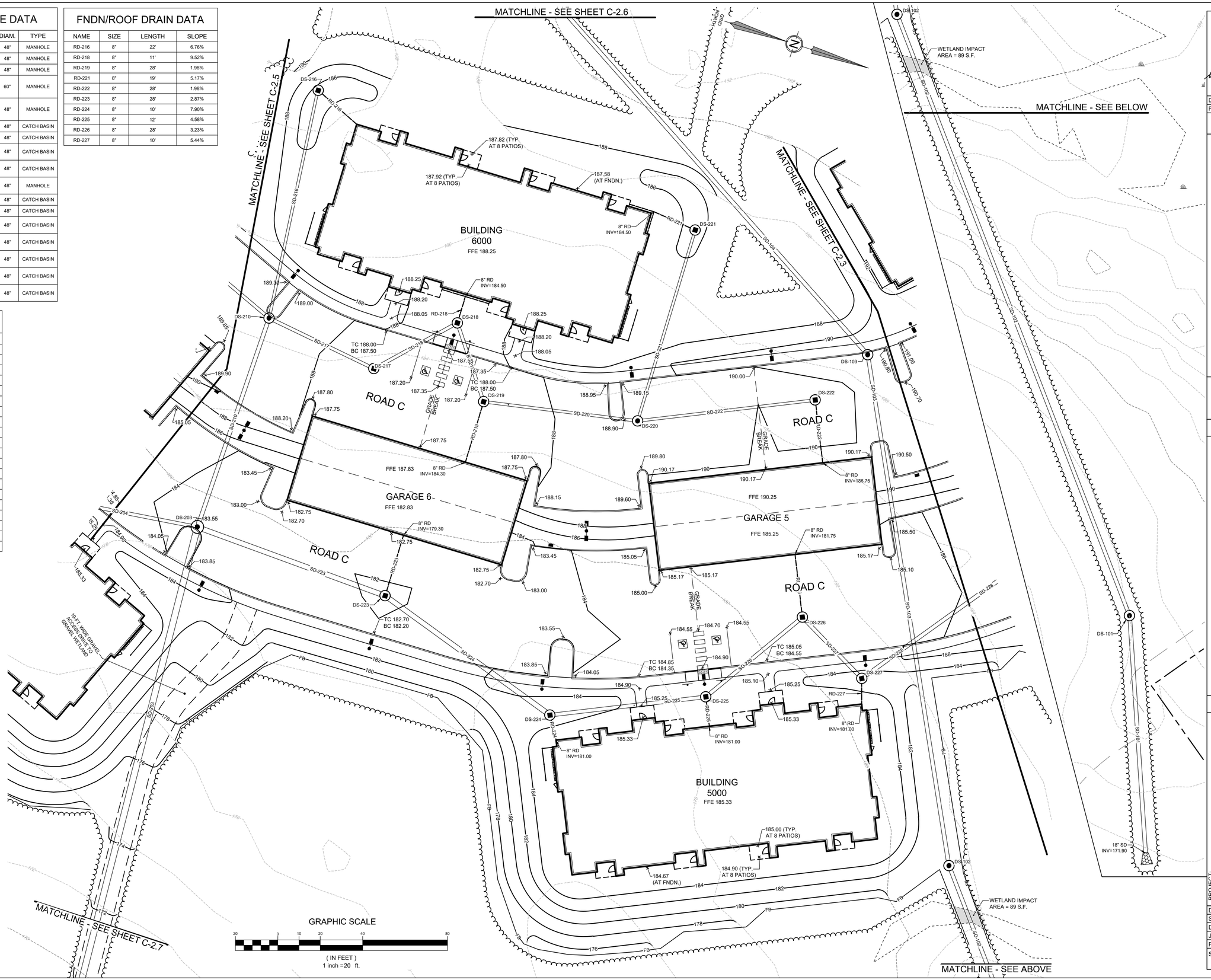
STRUCTURE	RIM	INV. IN	INV. OUT	DIAM.	TYPE
DS-101	176.00	172.56 (SD-102)	172.46 (SD-101)	48"	MANHOLE
DS-102	181.50	174.22 (SD-103)	174.12 (SD-102)	48"	MANHOLE
DS-103	190.70	175.43 (SD-104)	175.33 (SD-103)	48"	MANHOLE
DS-203	183.55	176.35 (SD-223) 179.00 (SD-210) 179.40 (SD-204)	175.85 (SD-203)	60"	MANHOLE
DS-210	189.00	181.95 (SD-216) 181.35 (SD-217) 185.00 (SD-211)	181.10 (SD-210)	48"	MANHOLE
DS-216	185.50	182.50 (RD-216)	182.50 (SD-216)	48"	CATCH BASIN
DS-217	187.00	181.75 (SD-218)	181.65 (SD-217)	48"	CATCH BASIN
DS-218	186.75	183.45 (RD-218) 182.10 (SD-219)	182.00 (SD-218)	48"	CATCH BASIN
DS-219	187.05	182.55 (SD-220) 183.75 (RD-219)	182.30 (SD-219)	48"	CATCH BASIN
DS-220	189.05	185.50 (SD-222) 183.00 (SD-221)	182.90 (SD-220)	48"	MANHOLE
DS-221	185.50	183.50 (RD-221)	183.50 (SD-221)	48"	CATCH BASIN
DS-222	189.50	186.20 (RD-222)	185.90 (SD-222)	48"	CATCH BASIN
DS-223	181.80	176.95 (SD-224) 178.50 (RD-223)	176.85 (SD-223)	48"	CATCH BASIN
DS-224	183.50	179.00 (SD-225) 180.20 (RD-224)	178.50 (SD-224)	48"	CATCH BASIN
DS-225	183.75	179.80 (SD-226) 180.45 (RD-225)	179.70 (SD-225)	48"	CATCH BASIN
DS-226	184.15	180.20 (SD-227) 180.85 (RD-226)	180.10 (SD-226)	48"	CATCH BASIN
DS-227	183.75	180.50 (SD-228) 180.45 (RD-227)	180.40 (SD-227)	48"	CATCH BASIN

FNDN/ROOF DRAIN DATA

NAME	SIZE	LENGTH	SLOPE
RD-216	8"	22'	6.76%
RD-218	8"	11'	9.52%
RD-219	8"	28'	1.98%
RD-221	8"	19'	5.17%
RD-222	8"	28'	1.98%
RD-223	8"	28'	2.87%
RD-224	8"	10'	7.90%
RD-225	8"	12'	4.58%
RD-226	8"	28'	3.23%
RD-227	8"	10'	5.44%

STORM DRAIN PIPE DATA

NAME	SIZE	LENGTH	SLOPE
SD-101	18"	110'	0.51%
SD-102	18"	300'	0.52%
SD-103	18"	240'	0.46%
SD-104	18"	265'	0.88%
SD-203	30"	280'	6.20%
SD-204	15"	69'	0.50%
SD-210	18"	100'	2.11%
SD-216	12"	106'	0.52%
SD-217	15"	51'	0.59%
SD-218	15"	41'	0.61%
SD-219	15"	35'	0.57%
SD-220	12"	69'	0.51%
SD-221	12"	90'	0.56%
SD-222	12"	80'	0.50%
SD-223	24"	90'	0.56%
SD-224	24"	92'	1.68%
SD-225	18"	70'	1.00%
SD-226	18"	55'	0.55%
SD-227	18"	36'	0.55%
SD-228	18"	80'	0.56%



STATE OF MAINE
RICHARD L. MEEK
No. 10668
LICENSED PROFESSIONAL ENGINEER

DATE: 09-13-2022
P.E.: RICHARD L. MEEK, P.E. 10668

NO.	DATE	REVISIONS	APP'D BY
I	09-13-2022	SUBMIT SITE/SUBDIVISION APPLICATION TO CITY	RLM
H	08-17-2022	SUBMIT STORMWATER APPLICATION TO D.E.P.	

TERRADYN CONSULTANTS, LLC
41 CAMPUS DRIVE SUITE 201 NEW GLOUCESTER, ME 04260
565 CONGRESS STREET SUITE 201 PORTLAND, ME 04102
OFFICE: (207) 926-5111 FAX: (207) 221-1317
www.terradynconsultants.com
Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting

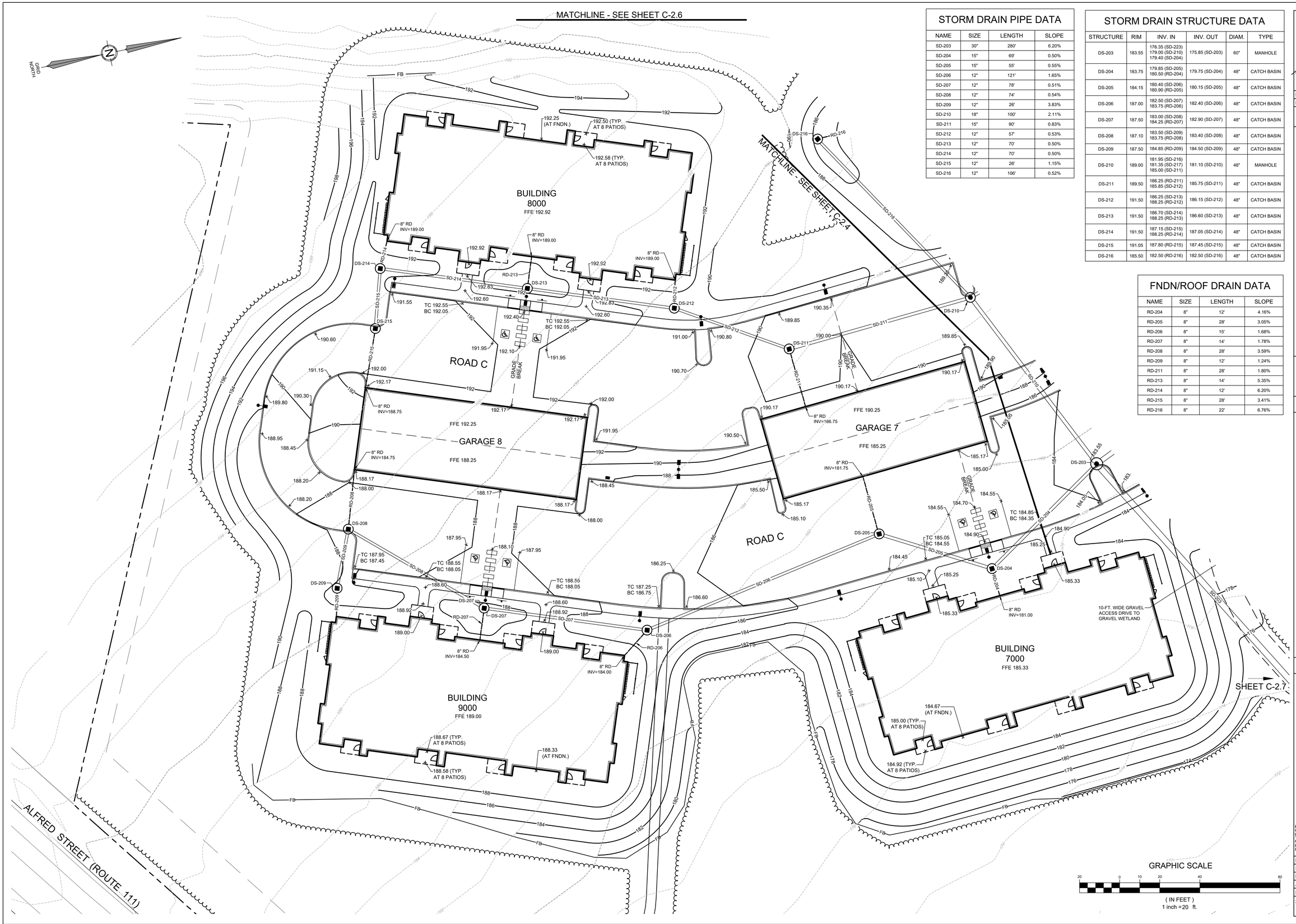
PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT: BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET: GRADING AND DRAINAGE PLAN - 4

CLIENT: DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09-13-2022
SCALE:	1" = 20'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2148.GD
SHEET	C-2.4



STORM DRAIN PIPE DATA

NAME	SIZE	LENGTH	SLOPE
SD-203	30"	280'	6.20%
SD-204	15"	69'	0.50%
SD-205	15"	55'	0.55%
SD-206	12"	121'	1.65%
SD-207	12"	78'	0.51%
SD-208	12"	74'	0.54%
SD-209	12"	26'	3.83%
SD-210	18"	100'	2.11%
SD-211	15"	90'	0.83%
SD-212	12"	57'	0.53%
SD-213	12"	70'	0.50%
SD-214	12"	70'	0.50%
SD-215	12"	26'	1.15%
SD-216	12"	106'	0.52%

STORM DRAIN STRUCTURE DATA

STRUCTURE	RIM	INV. IN	INV. OUT	DIAM.	TYPE
DS-203	183.55	176.35 (SD-223) 179.00 (SD-210) 179.40 (SD-204)	175.85 (SD-203)	60"	MANHOLE
DS-204	183.75	179.85 (SD-205) 180.50 (RD-204)	179.75 (SD-204)	48"	CATCH BASIN
DS-205	184.15	180.40 (SD-206) 180.90 (RD-205)	180.15 (SD-205)	48"	CATCH BASIN
DS-206	187.00	182.50 (SD-207) 183.75 (RD-206)	182.40 (SD-206)	48"	CATCH BASIN
DS-207	187.50	183.00 (SD-208) 184.25 (RD-207)	182.90 (SD-207)	48"	CATCH BASIN
DS-208	187.10	183.50 (SD-209) 183.75 (RD-208)	183.40 (SD-208)	48"	CATCH BASIN
DS-209	187.50	184.85 (RD-209)	184.50 (SD-209)	48"	CATCH BASIN
DS-210	189.00	181.95 (SD-216) 181.35 (SD-217) 185.00 (SD-211)	181.10 (SD-210)	48"	MANHOLE
DS-211	189.50	186.25 (RD-211) 185.85 (SD-212)	185.75 (SD-211)	48"	CATCH BASIN
DS-212	191.50	186.25 (SD-213) 188.25 (RD-212)	186.15 (SD-212)	48"	CATCH BASIN
DS-213	191.50	186.70 (SD-214) 188.25 (RD-213)	186.60 (SD-213)	48"	CATCH BASIN
DS-214	191.50	187.15 (SD-215) 188.25 (RD-214)	187.05 (SD-214)	48"	CATCH BASIN
DS-215	191.05	187.80 (RD-215)	187.45 (SD-215)	48"	CATCH BASIN
DS-216	185.50	182.50 (RD-216)	182.50 (SD-216)	48"	CATCH BASIN

FNDN/ROOF DRAIN DATA

NAME	SIZE	LENGTH	SLOPE
RD-204	8"	12'	4.16%
RD-205	8"	28'	3.05%
RD-206	8"	15'	1.68%
RD-207	8"	14'	1.78%
RD-208	8"	28'	3.59%
RD-209	8"	12'	1.24%
RD-211	8"	28'	1.80%
RD-213	8"	14'	5.35%
RD-214	8"	12'	6.20%
RD-215	8"	28'	3.41%
RD-216	8"	22'	6.76%

STATE OF MAINE
RICHARD L. MEEK
No. 10668
LICENSED
PROFESSIONAL ENGINEER

DATE: 09-13-2022
P.E.: RICHARD L. MEEK, P.E. 10668

NO.	DATE	REVISIONS	APP'D BY
I	09-13-2022	SUBMIT SITE/SUBDIVISION APPLICATION TO CITY	RLM
H	08-17-2022	SUBMIT STORMWATER APPLICATION TO D.E.P.	

Permitting

TERRADYN CONSULTANTS, LLC
Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting
41 CAMPUS DRIVE
SUITE 201
NEW GLOUCESTER, ME 04260
565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04102
OFFICE: (207) 926-5111 FAX: (207) 221-1317
www.terradynconsultants.com

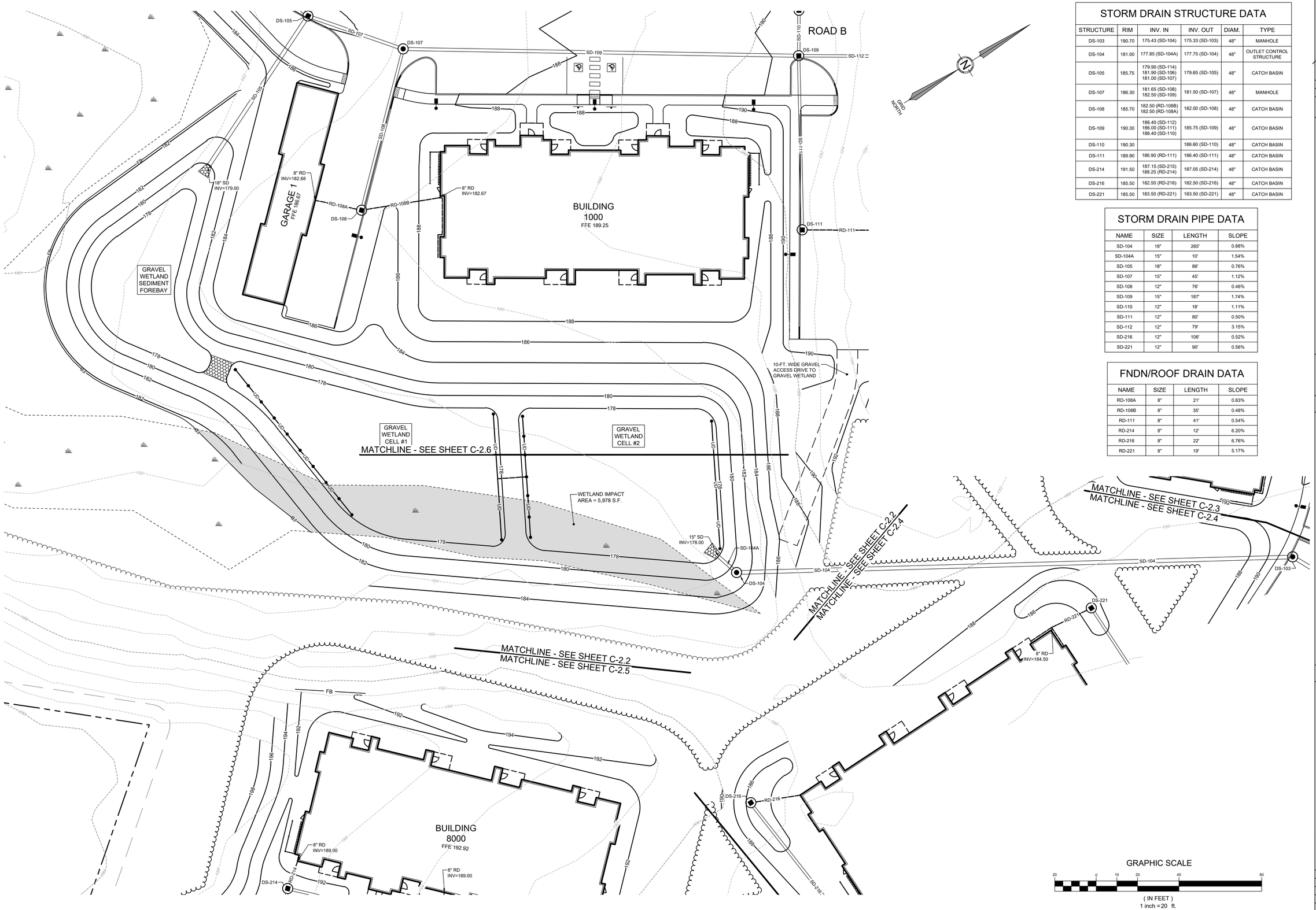
PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET:
GRADING AND DRAINAGE PLAN - 5

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09-13-2022
SCALE:	1" = 20'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2148.GD
SHEET	C-2.5



STORM DRAIN STRUCTURE DATA

STRUCTURE	RIM	INV. IN	INV. OUT	DIAM.	TYPE
DS-103	190.70	175.43 (SD-104)	175.33 (SD-103)	48"	MANHOLE
DS-104	181.00	177.85 (SD-104A)	177.75 (SD-104)	48"	OUTLET CONTROL STRUCTURE
DS-105	185.75	179.90 (SD-114) 181.90 (SD-106) 181.00 (SD-107)	179.65 (SD-105)	48"	CATCH BASIN
DS-107	186.30	181.65 (SD-108) 182.50 (SD-109)	181.50 (SD-107)	48"	MANHOLE
DS-108	185.70	182.50 (RD-108B) 182.50 (RD-108A)	182.00 (SD-108)	48"	CATCH BASIN
DS-109	190.30	186.40 (SD-112) 186.00 (SD-111) 186.40 (SD-110)	185.75 (SD-109)	48"	CATCH BASIN
DS-110	190.30		186.60 (SD-110)	48"	CATCH BASIN
DS-111	189.90	186.90 (RD-111)	186.40 (SD-111)	48"	CATCH BASIN
DS-214	191.50	187.15 (SD-215) 188.25 (RD-214)	187.05 (SD-214)	48"	CATCH BASIN
DS-216	185.50	182.50 (RD-216)	182.50 (SD-216)	48"	CATCH BASIN
DS-221	185.50	183.50 (RD-221)	183.50 (SD-221)	48"	CATCH BASIN

STORM DRAIN PIPE DATA

NAME	SIZE	LENGTH	SLOPE
SD-104	18"	265'	0.88%
SD-104A	15"	10'	1.54%
SD-105	18"	86'	0.76%
SD-107	15"	45'	1.12%
SD-108	12"	76'	0.46%
SD-109	15"	187'	1.74%
SD-110	12"	18'	1.11%
SD-111	12"	80'	0.50%
SD-112	12"	79'	3.15%
SD-216	12"	106'	0.52%
SD-221	12"	90'	0.56%

FNDN/ROOF DRAIN DATA

NAME	SIZE	LENGTH	SLOPE
RD-108A	8"	21'	0.83%
RD-108B	8"	35'	0.48%
RD-111	8"	41'	0.54%
RD-214	8"	12'	6.20%
RD-216	8"	22'	6.76%
RD-221	8"	19'	5.17%

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

STATE OF MAINE
RICHARD L. MEEK
No. 10668
LICENSED
PROFESSIONAL ENGINEER

DATE: 09-13-2022
P.E.: RICHARD L. MEEK, P.E. 10668

NO.	DATE	REVISIONS	APP'D BY
I	09-13-2022	SUBMIT SITE/SUBDIVISION APPLICATION TO CITY	RLM
H	08-17-2022	SUBMIT STORMWATER APPLICATION TO D.E.P.	

41 CAMPUS DRIVE
SUITE 201
NEW GLOUCESTER, ME 04260

565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04102

OFFICE: (207) 926-5111 FAX: (207) 221-1317
www.terradynconsultants.com

TERRADYN CONSULTANTS, LLC
Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting

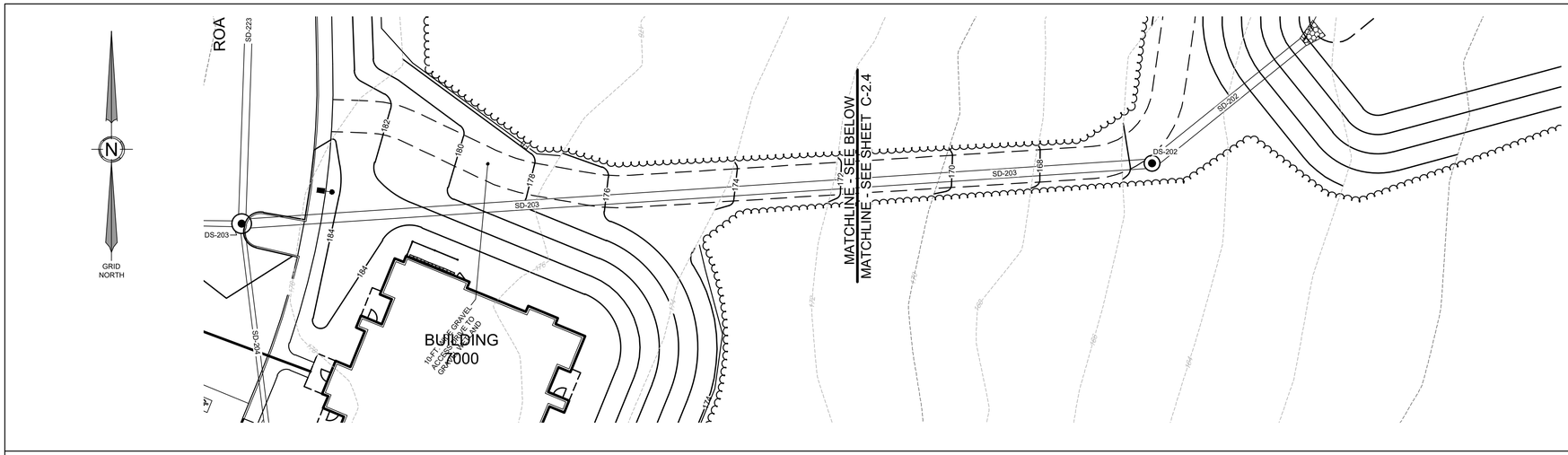
PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET:
GRADING AND DRAINAGE PLAN - 6

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09-13-2022
SCALE:	1" = 20'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2148.GD
SHEET	C-2.6

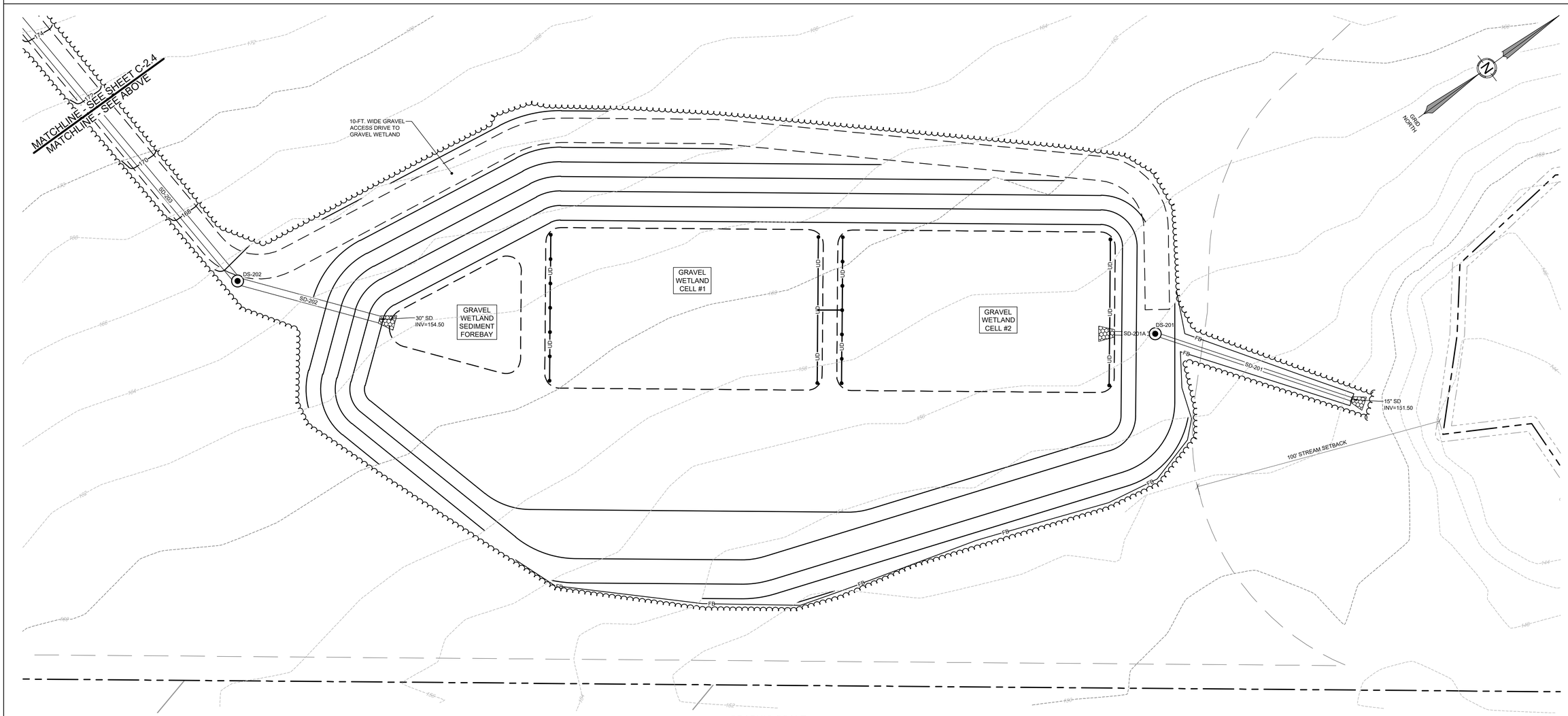


STORM DRAIN STRUCTURE DATA

STRUCTURE	RIM	INV. IN	INV. OUT	DIAM.	TYPE
DS-201	157.00	152.50 (SD-201A)	152.40 (SD-201)	48"	OUTLET CONTROL STRUCTURE
DS-202	165.50	158.50 (SD-203)	156.00 (SD-202)	48"	MANHOLE
DS-203	183.55	176.35 (SD-223) 179.00 (SD-210) 179.40 (SD-204)	175.85 (SD-203)	60"	MANHOLE

STORM DRAIN PIPE DATA

NAME	SIZE	LENGTH	SLOPE
SD-201	15"	83'	1.08%
SD-201A	15"	15'	3.38%
SD-202	30"	58'	2.57%
SD-203	30"	280'	6.20%
SD-204	15"	69'	0.50%
SD-223	24"	90'	0.56%



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

STATE OF MAINE
RICHARD L. MEEK
No. 10668
LICENSED
PROFESSIONAL ENGINEER

DATE: 09-13-2022
P.E.: RICHARD L. MEEK, P.E. 10668

NO.	DATE	REVISIONS	APP'D BY
I	09-13-2022	SUBMIT SITE/SUBDIVISION APPLICATION TO CITY	RLM
H	08-17-2022	SUBMIT STORMWATER APPLICATION TO D.E.P.	

TERRADYN CONSULTANTS, LLC
41 CAMPUS DRIVE
SUITE 201
NEW GLOUCESTER, ME 04260
565 CONGRESS STREET
SUITE 200
PORTLAND, ME 04102
OFFICE: (207) 926-5111 FAX: (207) 221-1317
www.terradynconsultants.com
Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting

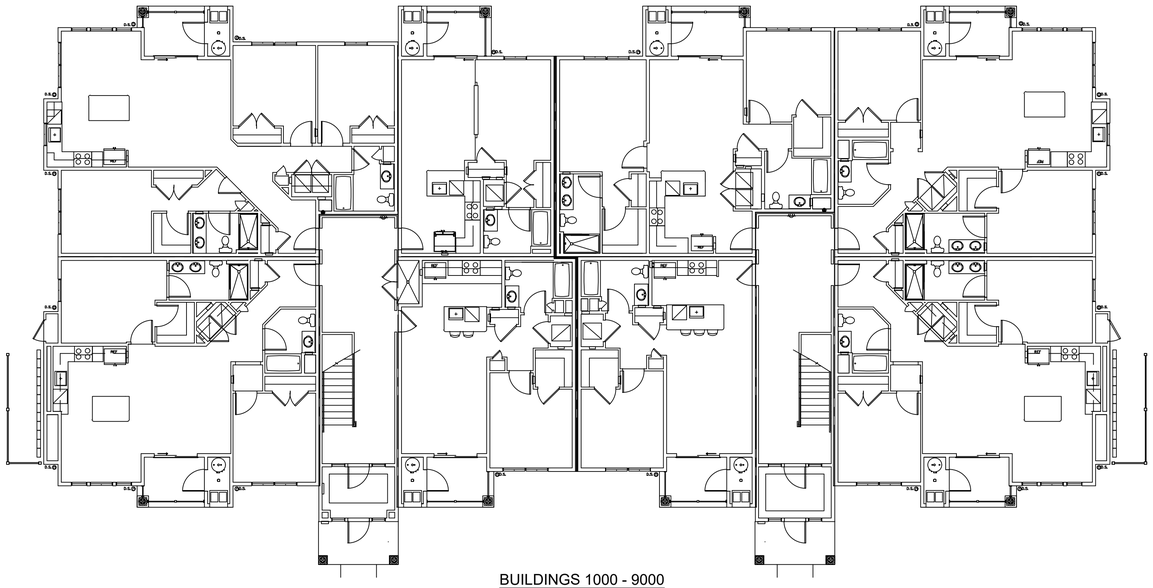
PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

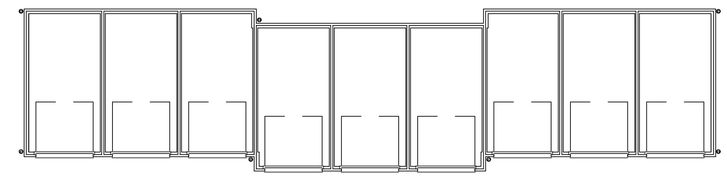
SHEET:
GRADING AND DRAINAGE PLAN - 7

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

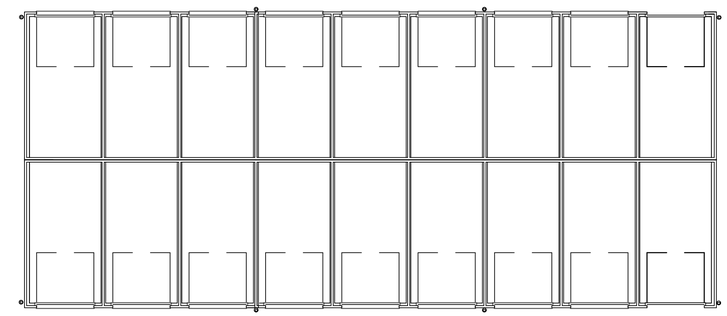
DATE:	09-13-2022
SCALE:	1" = 20'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2148.GD
SHEET	C-2.7



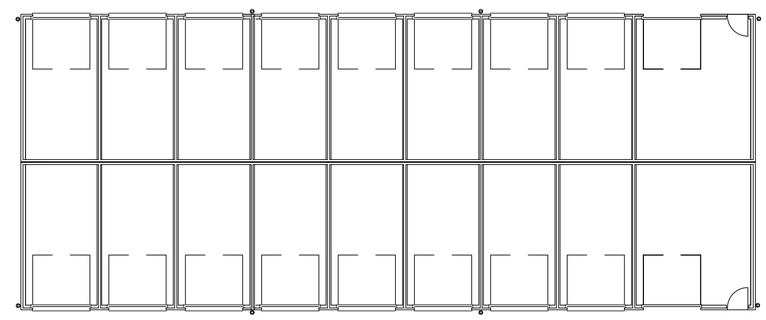
BUILDINGS 1000 - 9000
SCALE: 1" = 10'



GARAGES 1 & 3
SCALE: 1" = 10'

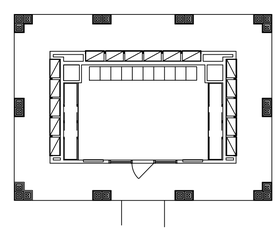


GARAGES 2 & 5 - 7
SCALE: 1" = 10'

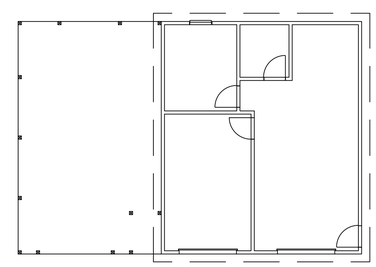


GARAGES 4 & 8
SCALE: 1" = 10'

CLUBHOUSE
SCALE: 1" = 10'



MAIL BUILDING
SCALE: 1" = 10'



MAINTENANCE BUILDING
SCALE: 1" = 10'

STATE OF MAINE
RICHARD L. MEEK
No. 10668
PROFESSIONAL ENGINEER

DATE:	09-13-2022
P.E.: RICHARD L. MEEK, P.E. 10668	

NO.	DATE	REVISIONS	APP'D BY
I	09-13-2022	SUBMIT SITE/SUBDIVISION APPLICATION TO CITY	RLM
H	08-17-2022	SUBMIT STORMWATER APPLICATION TO D.E.P.	

TERRADYN CONSULTANTS, LLC
41 CAMPUS DRIVE
SUITE 101
NEW GLOUCESTER, ME 04260
565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04102
OFFICE: (207) 926-5111 FAX: (207) 221-1317
www.terradynconsultants.com
Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET:
ROOF DRAIN LAYOUT PLAN

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09-13-2022
SCALE:	1" = 10'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2149.RD
SHEET	C-2.8

STATE OF MAINE
RICHARD L. MEEK
No. 10668
LICENSED
PROFESSIONAL ENGINEER

DATE:	09-13-2022
P.E.: RICHARD L. MEEK, P.E. 10668	

NO.	DATE	REVISIONS	APP'D BY
I	09-13-2022	SUBMIT SITE/SUBDIVISION APPLICATION TO CITY	RLM
H	08-17-2022	SUBMIT STORMWATER APPLICATION TO D.E.P.	

TERRADYN CONSULTANTS, LLC
41 CAMPUS DRIVE
SUITE 201
NEW GLOUCESTER, ME 04260
505 CONGRESS STREET
SUITE 301
PORTLAND, ME 04102
OFFICE: (207) 926-5111 FAX: (207) 221-1317
www.terradynconsultants.com
Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET:
OVERALL UTILITY PLAN

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

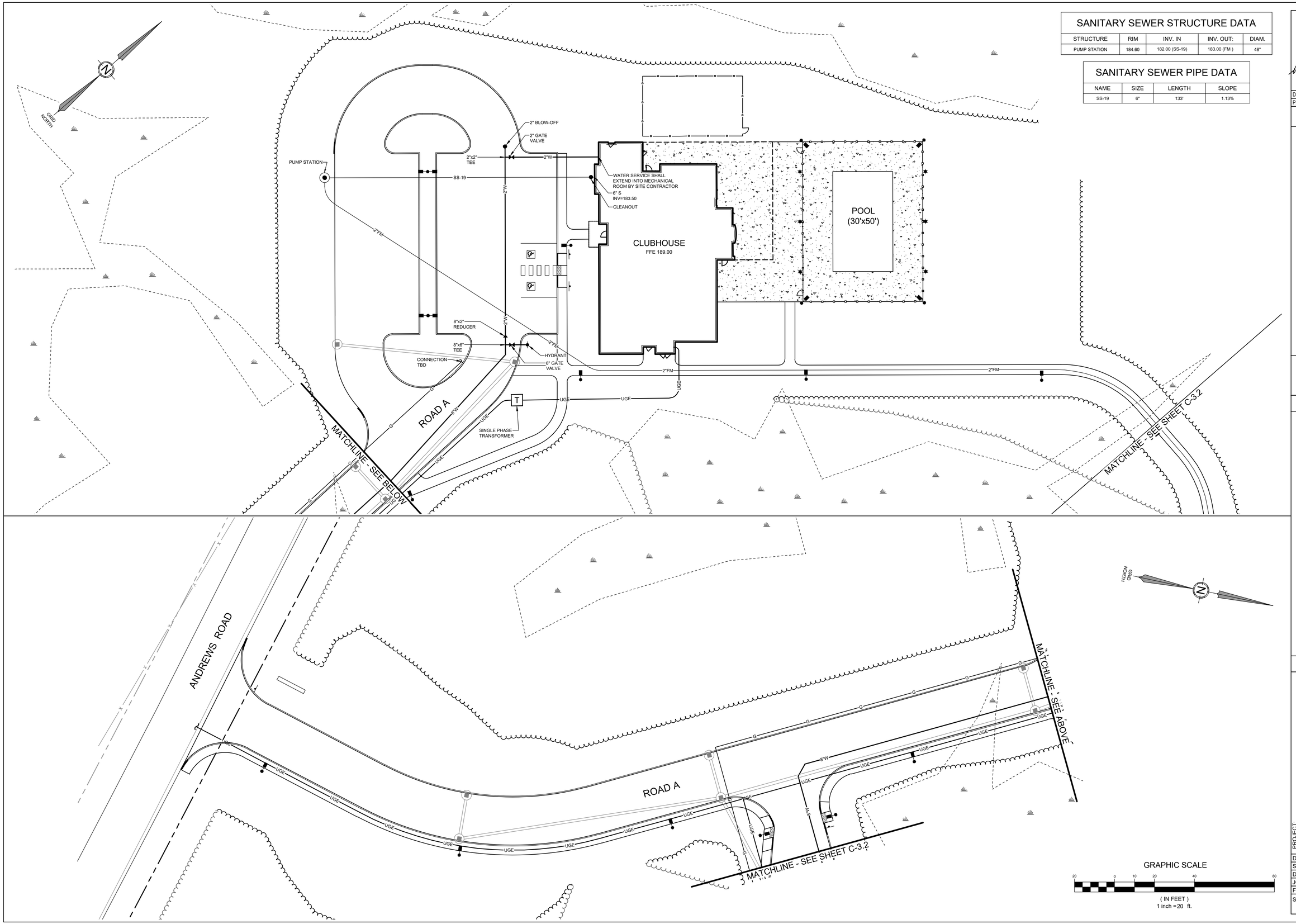
DATE:	09-13-2022
SCALE:	1" = 80'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2149.U
SHEET	C-3.0

SANITARY SEWER STRUCTURE DATA

STRUCTURE	RIM	INV. IN	INV. OUT:	DIAM.
PUMP STATION	184.60	182.00 (SS-19)	183.00 (FM)	48"

SANITARY SEWER PIPE DATA

NAME	SIZE	LENGTH	SLOPE
SS-19	6"	133'	1.13%



STATE OF MAINE
RICHARD L. MEEK
No. 10668
PROFESSIONAL ENGINEER

DATE: 09-13-2022
P.E.: RICHARD L. MEEK, P.E. 10668

NO.	DATE	REVISIONS	APP'D BY
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H	08-17-2022	SUBMIT STORMWATER APPLICATION TO D.E.P.	

TERRADYN CONSULTANTS, LLC
41 CAMPUS DRIVE SUITE 201 NEW GLOUCESTER, ME 04260
565 CONGRESS STREET SUITE 201 PORTLAND, ME 04102
OFFICE: (207) 926-5111 FAX: (207) 221-1317
www.terradynconsultants.com
Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting

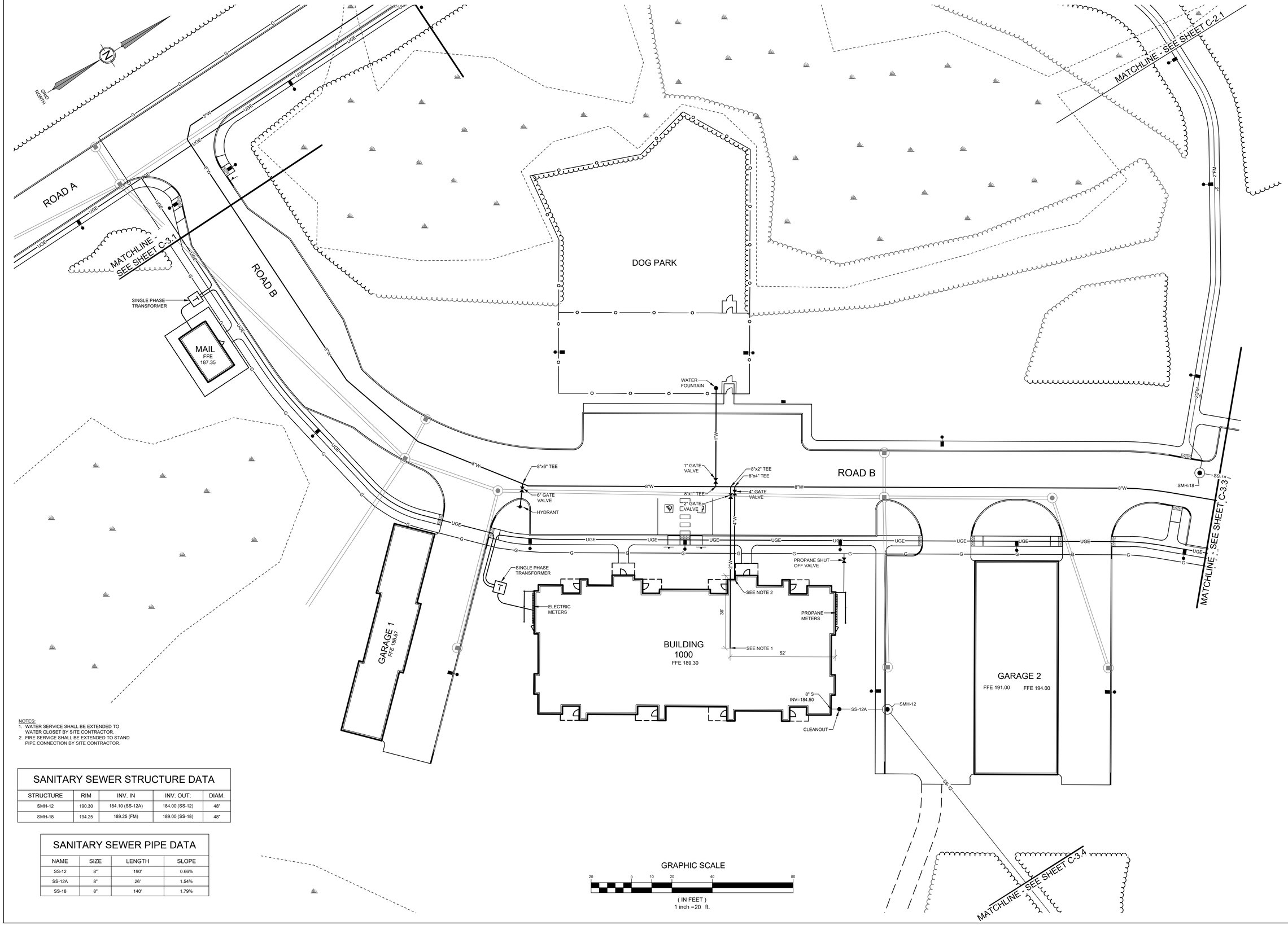
PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET:
UTILITY PLAN - 1

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09-13-2022
SCALE:	1" = 20'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2149.U
SHEET	C-3.1



NOTES:
1. WATER SERVICE SHALL BE EXTENDED TO WATER CLOSET BY SITE CONTRACTOR.
2. FIRE SERVICE SHALL BE EXTENDED TO STAND PIPE CONNECTION BY SITE CONTRACTOR.

SANITARY SEWER STRUCTURE DATA

STRUCTURE	RIM	INV. IN	INV. OUT:	DIAM.
SMH-12	190.30	184.10 (SS-12A)	184.00 (SS-12)	48"
SMH-18	194.25	189.25 (FM)	189.00 (SS-18)	48"

SANITARY SEWER PIPE DATA

NAME	SIZE	LENGTH	SLOPE
SS-12	8"	190'	0.66%
SS-12A	8"	26'	1.54%
SS-18	8"	140'	1.79%

STATE OF MAINE
RICHARD L. MEEK
No. 10668
PROFESSIONAL ENGINEER

DATE: 09-13-2022
P.E.: RICHARD L. MEEK, P.E. 10668

NO.	DATE	REVISIONS	APP'D BY
I	09-13-2022	SUBMIT SITE/SUBDIVISION APPLICATION TO CITY	RLM
H	08-17-2022	SUBMIT STORMWATER APPLICATION TO D.E.P.	

TERRADYN CONSULTANTS, LLC
41 CAMPUS DRIVE SUITE 101 NEW GLOUCESTER, ME 04260
565 CONGRESS STREET SUITE 205 PORTLAND, ME 04102
OFFICE: (207) 926-5111 FAX: (207) 221-1317
www.terradynconsultants.com
Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting

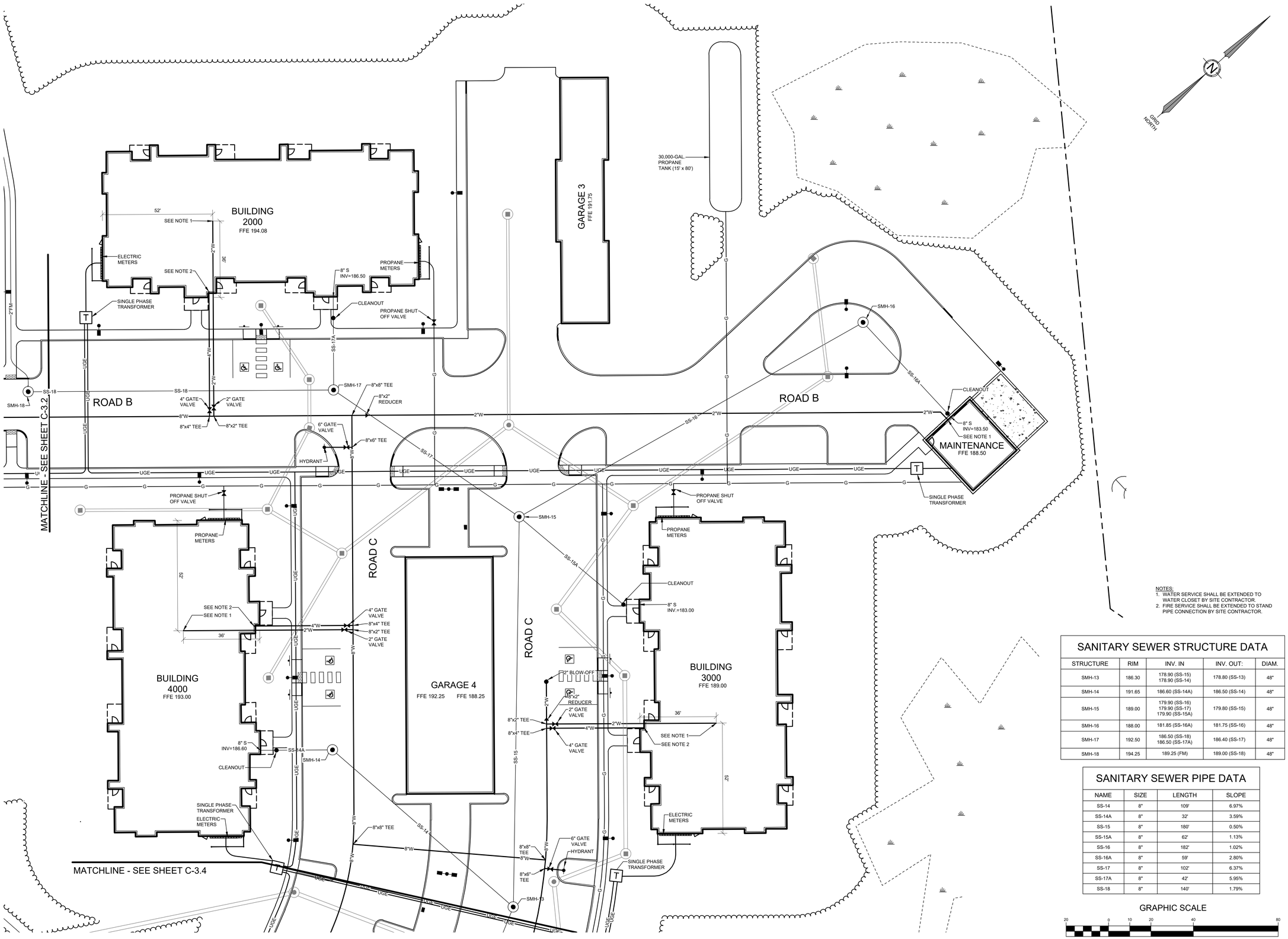
PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT: BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET: UTILITY PLAN - 2

CLIENT: DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09-13-2022
SCALE:	1" = 20'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2149.U
SHEET	C-3.2



NOTES:
1. WATER SERVICE SHALL BE EXTENDED TO WATER CLOSET BY SITE CONTRACTOR.
2. FIRE SERVICE SHALL BE EXTENDED TO STAND PIPE CONNECTION BY SITE CONTRACTOR.

SANITARY SEWER STRUCTURE DATA

STRUCTURE	RIM	INV. IN	INV. OUT:	DIAM.
SMH-13	186.30	178.90 (SS-15) 178.90 (SS-14)	178.80 (SS-13)	48"
SMH-14	191.65	186.60 (SS-14A)	186.50 (SS-14)	48"
SMH-15	189.00	179.90 (SS-16) 179.90 (SS-17) 179.90 (SS-15A)	179.80 (SS-15)	48"
SMH-16	188.00	181.85 (SS-16A)	181.75 (SS-16)	48"
SMH-17	192.50	186.50 (SS-18) 186.50 (SS-17A)	186.40 (SS-17)	48"
SMH-18	194.25	189.25 (FM)	189.00 (SS-18)	48"

SANITARY SEWER PIPE DATA

NAME	SIZE	LENGTH	SLOPE
SS-14	8"	109'	6.97%
SS-14A	8"	32'	3.59%
SS-15	8"	180'	0.50%
SS-15A	8"	62'	1.13%
SS-16	8"	182'	1.02%
SS-16A	8"	59'	2.80%
SS-17	8"	102'	6.37%
SS-17A	8"	42'	5.95%
SS-18	8"	140'	1.79%

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

STATE OF MAINE
RICHARD L. MEEK
No. 10668
LICENSED
PROFESSIONAL ENGINEER

DATE: 09-13-2022
P.E.: RICHARD L. MEEK, P.E. 10668

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PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET:
UTILITY PLAN - 3

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09-13-2022
SCALE:	1" = 20'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2149.U
SHEET	C-3.3

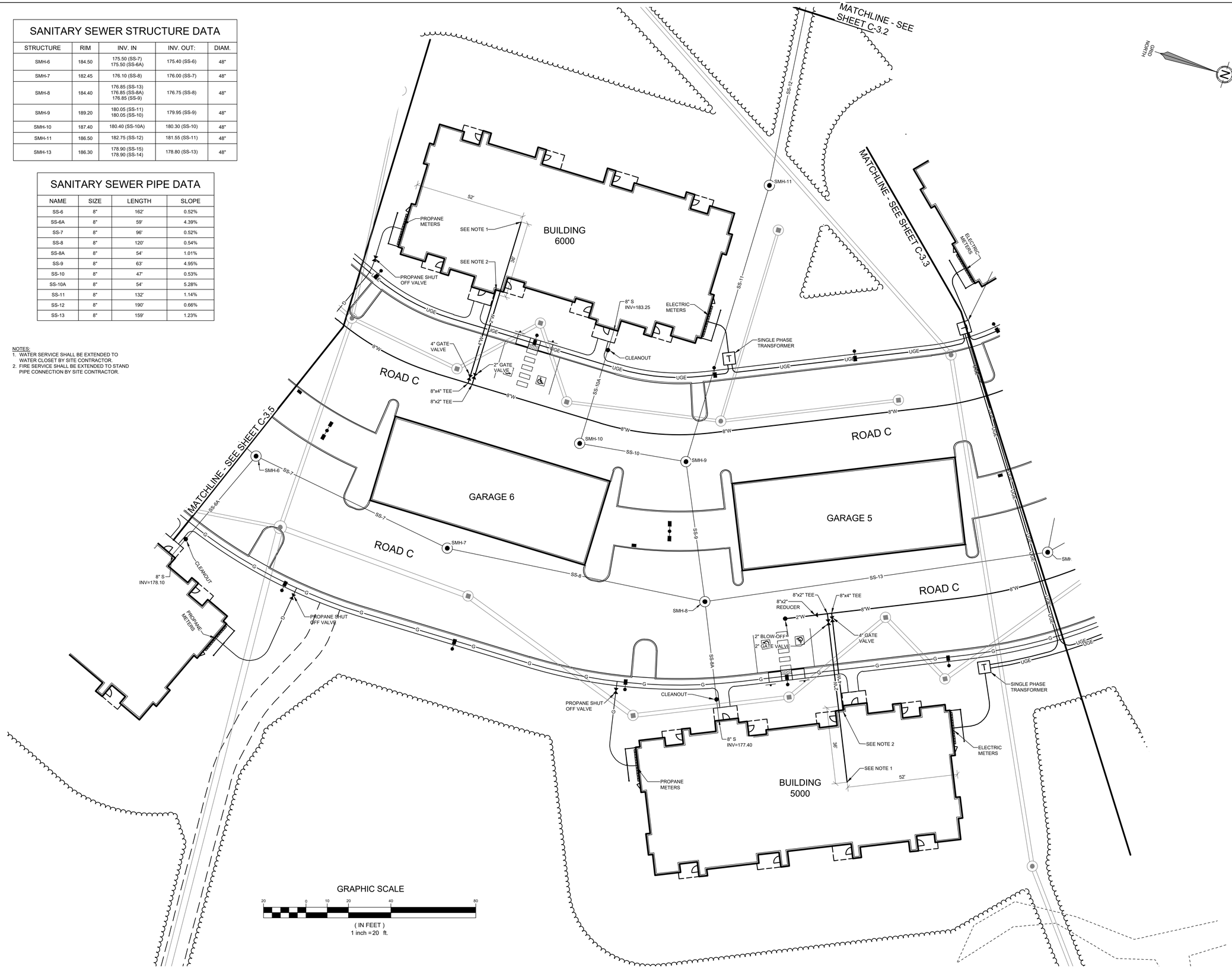
SANITARY SEWER STRUCTURE DATA

STRUCTURE	RIM	INV. IN	INV. OUT:	DIAM.
SMH-6	184.50	175.50 (SS-7) 175.50 (SS-6A)	175.40 (SS-6)	48"
SMH-7	182.45	176.10 (SS-8)	176.00 (SS-7)	48"
SMH-8	184.40	176.85 (SS-13) 176.85 (SS-8A) 176.85 (SS-9)	176.75 (SS-8)	48"
SMH-9	189.20	180.05 (SS-11) 180.05 (SS-10)	179.95 (SS-9)	48"
SMH-10	187.40	180.40 (SS-10A)	180.30 (SS-10)	48"
SMH-11	186.50	182.75 (SS-12)	181.55 (SS-11)	48"
SMH-13	186.30	178.90 (SS-15) 178.90 (SS-14)	178.80 (SS-13)	48"

SANITARY SEWER PIPE DATA

NAME	SIZE	LENGTH	SLOPE
SS-6	8"	162'	0.52%
SS-6A	8"	59'	4.39%
SS-7	8"	96'	0.52%
SS-8	8"	120'	0.54%
SS-8A	8"	54'	1.01%
SS-9	8"	63'	4.95%
SS-10	8"	47'	0.53%
SS-10A	8"	54'	5.28%
SS-11	8"	132'	1.14%
SS-12	8"	190'	0.66%
SS-13	8"	159'	1.23%

NOTES:
1. WATER SERVICE SHALL BE EXTENDED TO WATER CLOSET BY SITE CONTRACTOR.
2. FIRE SERVICE SHALL BE EXTENDED TO STAND PIPE CONNECTION BY SITE CONTRACTOR.



STATE OF MAINE
RICHARD L. MEEK
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PROFESSIONAL ENGINEER

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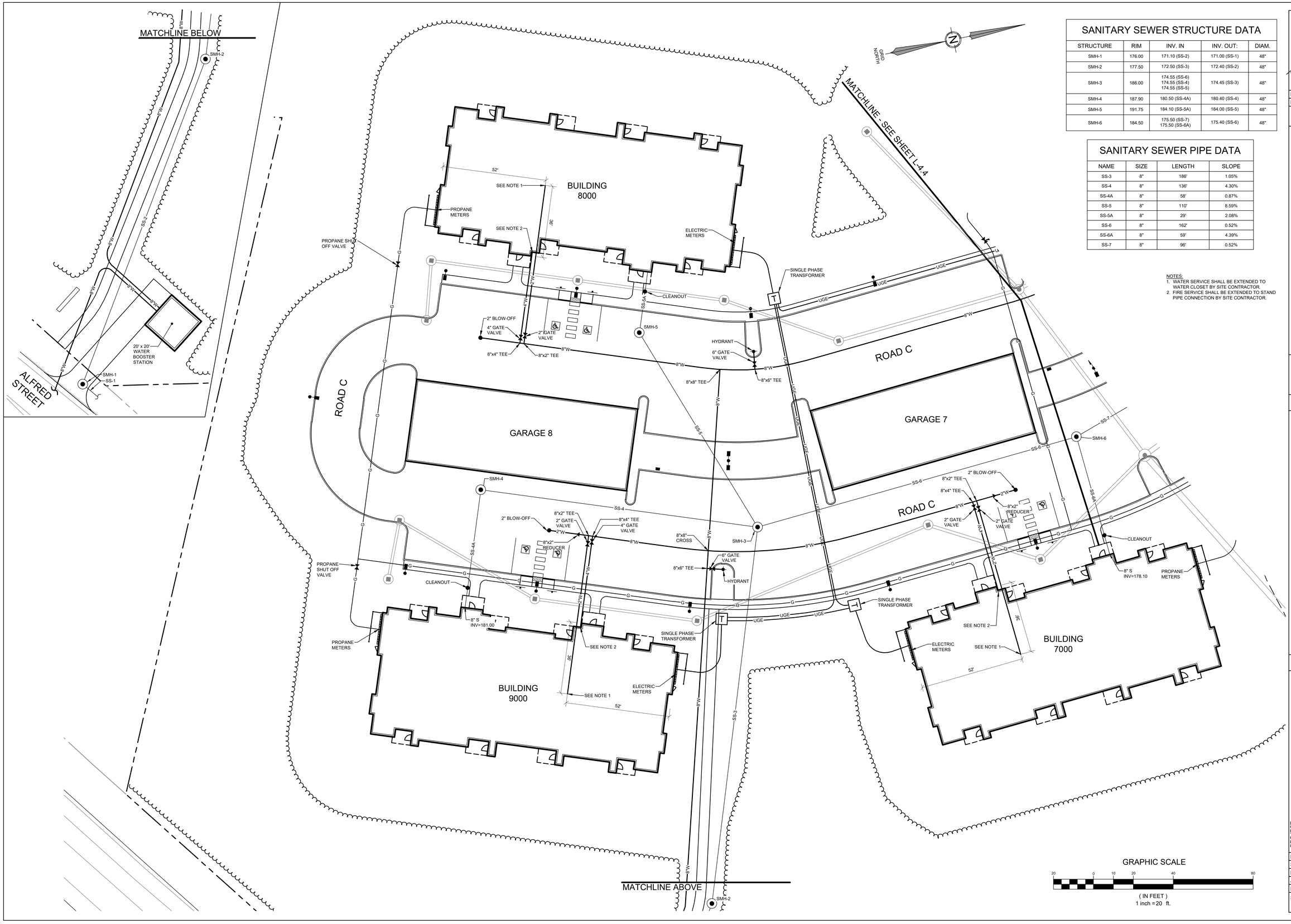
PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET:
UTILITY PLAN - 4

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09-13-2022
SCALE:	1" = 20'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2149.U
SHEET	C-3.4



SANITARY SEWER STRUCTURE DATA

STRUCTURE	RIM	INV. IN	INV. OUT:	DIAM.
SMH-1	176.00	171.10 (SS-2)	171.00 (SS-1)	48"
SMH-2	177.50	172.50 (SS-3)	172.40 (SS-2)	48"
SMH-3	186.00	174.55 (SS-6) 174.55 (SS-4) 174.55 (SS-5)	174.45 (SS-3)	48"
SMH-4	187.90	180.50 (SS-4A)	180.40 (SS-4)	48"
SMH-5	191.75	184.10 (SS-5A)	184.00 (SS-5)	48"
SMH-6	184.50	175.50 (SS-7) 175.50 (SS-6A)	175.40 (SS-6)	48"

SANITARY SEWER PIPE DATA

NAME	SIZE	LENGTH	SLOPE
SS-3	8"	186'	1.05%
SS-4	8"	136'	4.30%
SS-4A	8"	58'	0.87%
SS-5	8"	110'	8.59%
SS-5A	8"	29'	2.08%
SS-6	8"	162'	0.52%
SS-6A	8"	59'	4.39%
SS-7	8"	96'	0.52%

NOTES:
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GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

STATE OF MAINE
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No. 10668
LICENSED
PROFESSIONAL ENGINEER

DATE: 09-13-2022
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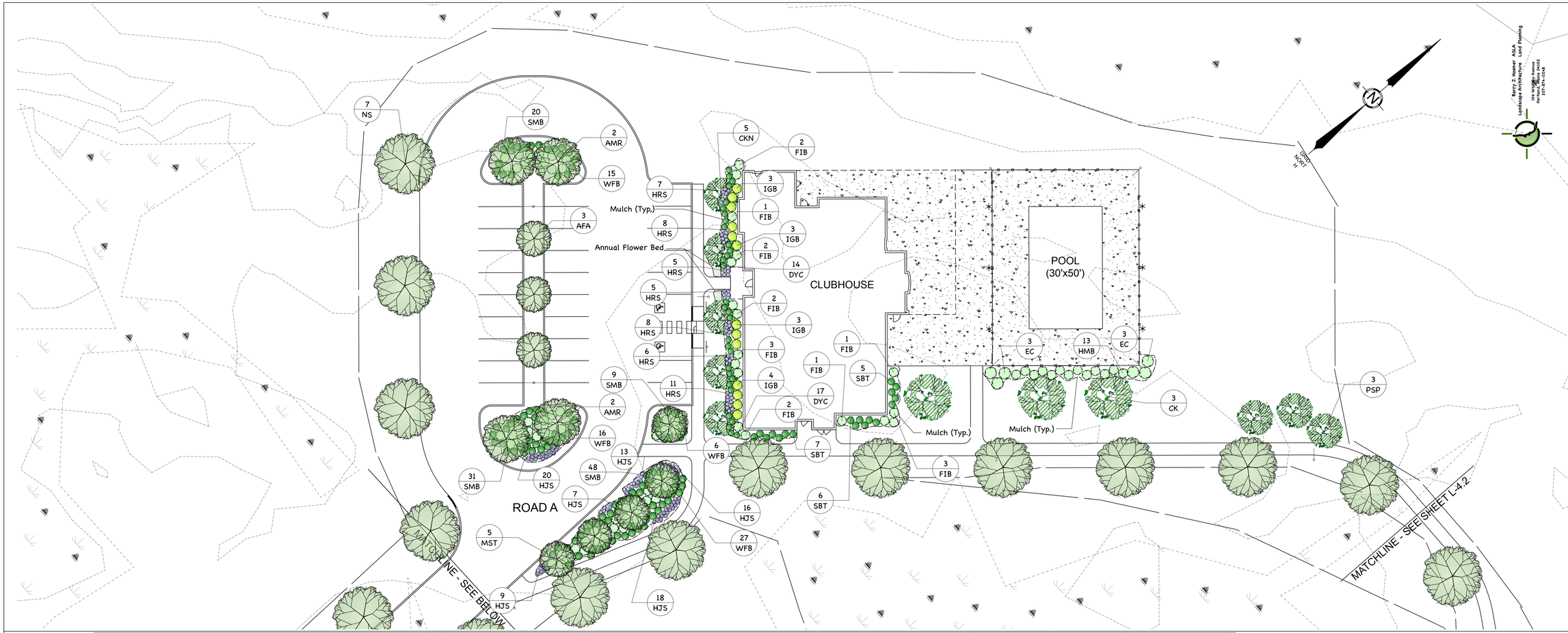
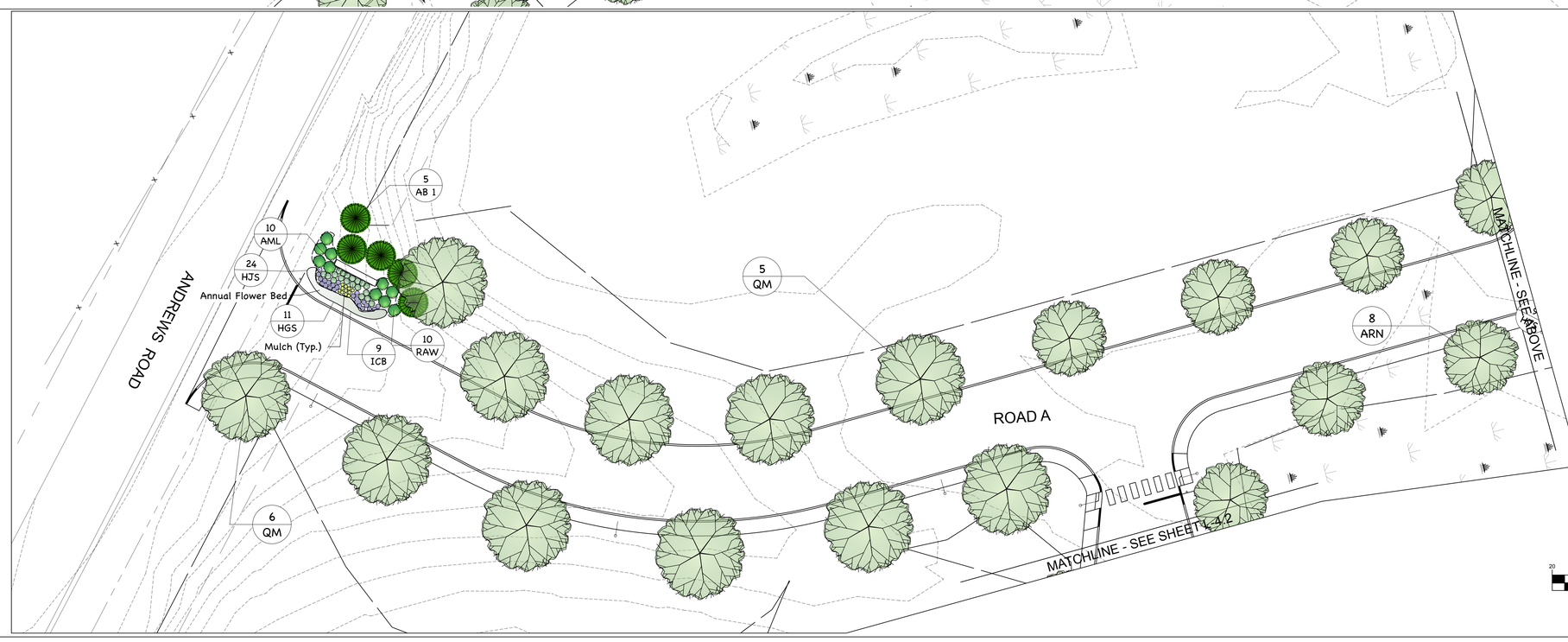
PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET:
UTILITY PLAN - 5

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09-13-2022
SCALE:	1" = 20'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2149.U
SHEET	C-3.5





Note:

1. See Drawing L-4.5 for the Plant Species List
2. All areas outside of planting beds shall be seeded with Allen Sterling and Lothrup Park Mix.

This drawing is for Planning Board purposes only and not for construction

This plan shall not be modified without written permission from Barry J. Hosmer - Landscape Architect. Any alterations, authorized or otherwise, shall be at the user's sole risk and without liability to Barry J. Hosmer - Landscape Architect.
File Name: Biddeford Residential Landscape 12/17/21.vwx

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch =20 ft.

Barry J. Hosmer ASLA
Landscape Architecture Land Planning
316 Middle Avenue
Portland, Maine 04101
207-874-0348

DATE: 09-13-2022
P.E.: RICHARD L. MEEK, P.E. 10668

NO.	DATE	REVISIONS	APP'D BY
-	09-13-2022	SUBMIT SITE/SUBDIVISION APPLICATION TO CITY	RLM
H	08-17-2022	SUBMIT STORMWATER APPLICATION TO D.E.P.	RLM

TERRADYN CONSULTANTS, LLC
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NEW GLOUCESTER, ME 04260
565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04102
OFFICE: (207) 926-5111 FAX: (207) 221-1317
www.terradynconsultants.com

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET:
LANDSCAPE PLAN - 1

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09/13/2022
SCALE:	1" = 20'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2149.S
SHEET	L-4.1

Note:

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File Name: Biddeford Residential Landscape 12/17/21.vwx

Barry J. Hosmer ASLA
Landscape Architecture Land Planning
316 Whitney Avenue
Portland, Maine 04103
207-774-0348

DATE: 09-13-2022
P.E.: RICHARD L. MEEK, P.E. 10668

NO.	DATE	REVISIONS	APP'D BY
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TERRADYN CONSULTANTS, LLC
41 CAMPUS DRIVE SUITE 301 NEW GLOUCESTER, ME 04260
565 CONGRESS STREET SUITE 201 PORTLAND, ME 04102
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www.terradynconsultants.com

PERMIT DRAWING
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PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET:
LANDSCAPE PLAN - 2

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09/13/2022
SCALE:	1" = 20'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2149.S
SHEET	L-4.2

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GRAPHIC SCALE

20 0 10 20 40 80

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Barry J. Hosmer ASLA
Landscape Architecture Land Planning
316 Whitney Avenue
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PERMIT DRAWING
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PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET:
LANDSCAPE PLAN - 3

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09/13/2022
SCALE:	1" = 20'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2149.S
SHEET	L-4.3

Note:

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File Name: Biddeford Residential Landscape 12/17/21.vwx

GRAPHIC SCALE

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Landscape Architecture Land Planning
216 Whitney Avenue
Portland, Maine 04103
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PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET:
LANDSCAPE PLAN - 4

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09/13/2022
SCALE:	1" = 20'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2149.S
SHEET	L-4.4

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File Name: Biddeford Residential Landscape 12/17/21.vwx

Plant List - Simple

ID	Qty	Botanical Name	Common Name	Scheduled Size	Remarks
AB 1	36	Abies balsamea	Balsam Fir	5' - 6'	B&B, 10' o.c.
AMR	9	Acer miyabei 'Rugged Ridge'	Rugged Ridge Miyabe Maple	2.5" - 3"	B&B
ARN	11	Acer rubrum 'Northwood'	Northwood Red Maple	2.5" - 3" cal.	B&B
ARR	2	Acer rubrum 'Redpointe'	Redpointe Red Maple	2" - 2.5" cal.	B&B
AFA	22	Acer x freemanii 'Armstrong'	Armstrong Maple	2.5" - 3" cal.	B&B
ALS	12	Amelanchier x laevis 'Spring Flurry'	Spring Flurry Serviceberry	2.5" - 3" cal.	B&B
AMU	99	Aronia melanocarpa 'UCONNAM012'	Ground Hug Chokeberry	15" - 18"	cont, 30" o.c.
AML	10	Aruncus x 'Misty Lace'	Misty Lace Goatsbeard	1 gal.	24" o.c.
AJD	234	Astilbe japonica 'Deutschland'	Deutschland False Spirea	1 gal.	18" o.c.
AAR	360	Astilbe x arendsii 'Red Sentinel'	Red Sentinel Astilbe	1 gal.	18" o.c.
CCR	16	Carpinus caroliniana 'Rising Fire'	Rising Fire American Hornbeam	2" - 2.5" cal.	B&B
CK	3	Cladrastis kentukea	American Yellowwood	2" - 2'5" ca;.	B&B
CAS	144	Clethra alnifolia 'Sixteen Candles'	Sixteen Candles Summersweet	24" - 30"	cont., 3' o.c.
CKN	13	Cornus kousa 'National'	National Japanese Dogwood	2" - 2.5" cal.	B&B
CVW	3	Crataegus viridis 'Winter King'	Winter King Hawthorn	2" - 2.5" cal.	B&B
DYC	31	Deutzia x 'Yuki Cherry Blossom'	Yuki Cherry Blossom Deutzia	15" - 18"	cont., 30" o.c.
EC	6	Enkianthus campanulatus	Red Veined Enkianthus	30" - 36"	cont.
FIB	75	Fothergilla x intermedia 'Blue Shadow'	Blue Shadow Fothergilla	24" - 30"	cont.
GSS	221	Geranium sanguineum var. striatum	Stratum Cranesbill	1 gal.	18" o.c.
GCB	306	Geranium x cantabrigiense 'Biokovo'	Biokovo Cranesbill	1 gal.	15" o.c.
HJS	107	Hemerocallis x 'Joan Senior'	Joan Senior Daylily	1 gal.	18" o.c.
HRS	50	Hemerocallis x 'Ruby Stella'	Ruby Stella Daylily	1 gal.	18" o.c.
HGS	11	Heuchera americana 'Green Spice'	Green Spice Coral Bells	1 qt	15" o.c.
HMB	13	Hydrangea macrophylla 'Bloomstruck'	Bloomstruck Lacecap Hydrangea	24" - 30"	cont. 4' o.c.
IGB	184	Ilex glabra 'Gem Box'	Gem Box Holly	18" - 24"	4' o.c., 3 gal.
ICB	9	Iris sibirica 'Caesar's Brother'	Caesar's Brother Siberian Iris	1 gal.	24" o.c.
LL	4	Larix laricina	American Larch	7' - 8'	B&B
MST	5	Malus x 'Sutyzam'	Sugar Tyme Crabapple	2.5" - 3" cal.	B&B
NS	19	Nyssa sylvatica	Black Gum	2.5" - 3" cal.	B&B, 6' off of pavement
PAN	90	Picea abies 'Nidiformis'	Bird's Nest Spruce	18" - 24"	cont, 4' o.c.
PG 1	25	Picea glauca	White Spruce	5' - 6'	B&B
PA	18	Platanus x acerifolia 'Morton Circle'	Exclamation London Plane Tree	2.5" - 3" cal.	B&B
PSP	17	Prunus sargentii 'Pink Flair'	Pink Flair Cherry	2" - 2.5" cal.	B&B
PCJ	20	Pyrus calleryana 'Jaczam'	Jack Flowering Pear	2" - 2.5" cal.	B&B
QI	5	Quercus imbricaria	Shingle Oak	2" - 2.5" cal.	B&B
QM	11	Quercus macrocarpa	Burr Oak	2" - 2.5" cal.	B&B, 6' off pavement, unless shown otherwise
QR	1	Quercus rubra	Red Oak	2" - 2.5" cal.	B&B
RAW	10	Rhododendron 'April White'	April White Rhododendron	2' - 2.5'	cont. , 4' o.c.
SBT	216	Spiraea betulifolia 'Tor'	Tor Birchleaf Spirea	18" - 24"	30" o.c.
SMB	108	Spiraea x media 'Blue Kazoo'	Blue Kazoo Spirea	18" - 24"	30" o.c.
TOH	9	Thuja occidentalis 'Holmstrup'	Holmstrup Eastern Arborvitae	5' - 6'	B&B, 4' o.c.
TAA	15	Tilia americana 'American Sentry'	American Sentry American Linden	2.5" - 3" cal.	B&B
WFB	64	Weigela florida 'Bramwell'	Fine Wine Weigela	18" - 24"	cont. 4' o.c.

DATE: 09-13-2022
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NO.	DATE	REVISIONS	APP'D BY
H	08-17-2022	SUBMIT SITE/SUBDIVISION APPLICATION TO DEP	RLM
I	09-13-2022	SUBMIT STORMWATER APPLICATION TO CITY	RLM

Barry J. Hosmer ASLA
Landscape Architecture Land Planning
196 Hillcrest Avenue
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PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET:
LANDSCAPE PLAN - 5

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09/13/2022
SCALE:	1" = 20'
DESIGNED:	RLM
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FILE:	2149.S
SHEET	L-4.5

EROSION AND SEDIMENT CONTROL PLAN

PRE-CONSTRUCTION PHASE
A PERSON WHO CONDUCTS, OR CAUSES TO BE CONDUCTED, AN ACTIVITY THAT INVOLVES FILLING, DISPLACING OR EXPOSING SOIL OR OTHER EARTHEN MATERIALS SHALL TAKE MEASURES TO PREVENT UNREASONABLE EROSION OF SOIL OR SEDIMENT BEYOND THE PROJECT SITE OR INTO A PROTECTED NATURAL RESOURCE AS DEFINED IN 38 MRSA § 480-B. EROSION CONTROL MEASURES MUST BE IN PLACE BEFORE THE ACTIVITY BEGINS. MEASURES MUST REMAIN IN PLACE AND FUNCTIONAL UNTIL THE SITE IS PERMANENTLY STABILIZED. ADEQUATE AND TIMELY TEMPORARY AND PERMANENT STABILIZATION MEASURES MUST BE TAKEN. THE SITE MUST BE MAINTAINED TO PREVENT UNREASONABLE EROSION AND SEDIMENTATION. MINIMIZE DISTURBED AREAS AND PROTECT NATURAL DOWNGRADIENT BUFFER AREAS TO THE EXTENT PRACTICABLE.

ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH "MAINE EROSION AND SEDIMENTATION CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES" PUBLISHED BY THE CUMBERLAND COUNTY SOIL AND WATER CONSERVATION DISTRICT AND MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, MARCH 2016 OR LATEST EDITION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO POSSESS A COPY OF THE EROSION CONTROL PLAN AT ALL TIMES.

BMP CONSTRUCTION PHASE
A. SEDIMENT BARRIERS. PRIOR TO THE BEGINNING OF ANY CONSTRUCTION, PROPERLY INSTALL SEDIMENT BARRIERS AT THE EDGE OF ANY DOWNGRADIENT DISTURBED AREA AND ADJACENT TO ANY DRAINAGE CHANNELS WITHIN THE PROPOSED DISTURBED AREA. MAINTAIN THE SEDIMENT BARRIERS UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED.

B. CONSTRUCTION ENTRANCE: PRIOR TO ANY CLEARING OR GRUBBING, A CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED AT THE INTERSECTION WITH THE PROPOSED ACCESS DRIVE AND THE EXISTING ROADWAY TO AVOID TRACKING OF MUD, DUST AND DEBRIS FROM THE SITE. TRACKED MUD OR SEDIMENT SHALL BE REMOVED PRIOR TO A STORM EVENT BY VACUUM SWEEPING.

C. RIPRAP: SINCE RIPRAP IS USED WHERE EROSION POTENTIAL IS HIGH, CONSTRUCTION MUST BE SEQUENCED SO THAT THE RIPRAP IS PUT IN PLACE WITH THE MINIMUM DELAY. DISTURBANCE OF AREAS WHERE RIPRAP IS TO BE PLACED SHOULD BE UNDERTAKEN ONLY WHEN FINAL PREPARATION AND PLACEMENT OF THE RIPRAP CAN FOLLOW IMMEDIATELY BEHIND THE INITIAL DISTURBANCE. WHERE RIPRAP IS USED FOR OUTLET PROTECTION, THE RIPRAP SHOULD BE PLACED BEFORE OR IN CONJUNCTION WITH THE CONSTRUCTION OF THE PIPE OR CHANNEL SO THAT IT IS IN PLACE WHEN THE PIPE OR CHANNEL BEGINS TO OPERATE. MAINTAIN TEMPORARY RIPRAP, SUCH AS TEMPORARY CHECK DAMS UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED.

D. TEMPORARY STABILIZATION. STABILIZE WITH TEMPORARY SEEDING, MULCH, OR OTHER NON-ERODABLE COVER ANY EXPOSED SOILS THAT WILL REMAIN UNWORKED FOR MORE THAN 14 DAYS EXCEPT, STABILIZE AREAS WITHIN 100 FEET OF A WETLAND OR WATERBODY WITHIN 7 DAYS OR PRIOR TO A PREDICTED STORM EVENT, WHICHEVER COMES FIRST. IF HAY OR STRAW MULCH IS USED, THE APPLICATION RATE MUST BE 2 BALES (70-90 POUNDS) PER 1000 SF OR 1.5 TO 2 TONS (90-100 BALES) PER ACRE TO COVER 75 TO 90% OF THE GROUND SURFACE. HAY MULCH MUST BE KEPT MOIST OR ANCHORED TO PREVENT WIND BLOWING. AN EROSION CONTROL BLANKET OR MAT SHALL BE USED AT THE BASE OF GRASSED WATERWAYS, STEEP SLOPES (15% OR GREATER) AND ON ANY DISTURBED SOIL WITHIN 100 FEET OF LAKES, STREAMS AND WETLANDS. GRADING SHALL BE PLANNED SO AS TO MINIMIZE THE LENGTH OF TIME BETWEEN INITIAL SOIL EXPOSURE AND FINAL GRADING. ON LARGE PROJECTS THIS SHOULD BE ACCOMPLISHED BY PHASING THE OPERATION AND COMPLETING THE FIRST PHASE UP TO FINAL GRADING AND SEEDING BEFORE STARTING THE SECOND PHASE, AND SO ON.

E. EROSION CONTROL MIX SHALL CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES AND MAY CONTAIN ROCKS LESS THAN 4" IN DIAMETER. EROSION CONTROL MIX SHOULD BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH SUCH AS FLY ASH OR YARD SCRAPING. LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX. THE MIX COMPOSITION SHOULD MEET THE FOLLOWING STANDARDS:
- THE ORGANIC MATTER CONTENT SHOULD BE BETWEEN 80% AND 100%, DRY WEIGHT BASIS.
- PARTICLE SIZE BY WEIGHT SHOULD BE 100% PASSING A 6" SCREEN AND 70% TO 85% PASSING A 0.75" SCREEN
- THE ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED
- SOLUBLE SALTS CONTENT SHALL BE <4.0 MMHOS/CM
- THE pH SHALL BE BETWEEN 5.0 AND 8.0

F. VEGETATED WATERWAY. UPON FINAL GRADING, THE DISTURBED AREAS SHALL BE IMMEDIATELY SEEDED TO PERMANENT VEGETATION AND MULCHED AND WILL NOT BE USED AS OUTLETS UNTIL A DENSE, VIGOROUS VEGETATIVE COVER HAS BEEN OBTAINED. ONCE SOIL IS EXPOSED FOR WATERWAY CONSTRUCTION, IT SHOULD BE IMMEDIATELY SHAPED, GRADED AND STABILIZED. VEGETATED WATERWAYS NEED TO BE STABILIZED EARLY DURING THE GROWING SEASON (PRIOR TO SEPTEMBER 15). IF FINAL SEEDING OF WATERWAYS IS DELAYED PAST SEPTEMBER 15, EMERGENCY PROVISIONS SUCH AS SOD OR RIPRAP MAY BE REQUIRED TO STABILIZE THE CHANNEL. WATERWAYS SHOULD BE FULLY STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.

PERMANENT STABILIZATION DEFINED
A. SEEDED AREAS. FOR SEEDED AREAS, PERMANENT STABILIZATION MEANS AN 90% COVER OF THE DISTURBED AREA WITH MATURE, HEALTHY PLANTS WITH NO EVIDENCE OF WASHING OR RILLING OF THE TOPSOIL.

B. SODDED AREAS. FOR SODDED AREAS, PERMANENT STABILIZATION MEANS THE COMPLETE BINDING OF THE SOD ROOTS INTO THE UNDERLYING SOIL WITH NO SLUMPING OF THE SOD OR DIE-OFF.

C. PERMANENT MULCH. FOR MULCHED AREAS, PERMANENT MULCHING MEANS TOTAL COVERAGE OF THE EXPOSED AREA WITH AN APPROVED MULCH MATERIAL. EROSION CONTROL MIX MAY BE USED AS MULCH FOR PERMANENT STABILIZATION ACCORDING TO THE APPROVED APPLICATION RATES AND LIMITATIONS.

D. RIPRAP. FOR AREAS STABILIZED WITH RIPRAP, PERMANENT STABILIZATION MEANS THAT SLOPES STABILIZED WITH RIPRAP HAVE AN APPROPRIATE BACKING OF A WELL-GRADED GRAVEL OR APPROVED GEOTEXTILE TO PREVENT SOIL MOVEMENT FROM BEHIND THE RIPRAP. STONE MUST BE SIZED APPROPRIATELY. IT IS RECOMMENDED THAT ANGULAR STONE BE USED.

E. AGRICULTURAL USE. FOR CONSTRUCTION PROJECTS ON LAND USED FOR AGRICULTURAL PURPOSES (E.G., PIPELINES ACROSS CROP LAND), PERMANENT STABILIZATION MAY BE ACCOMPLISHED BY RETURNING THE DISTURBED LAND TO AGRICULTURAL USE.

F. PAVED AREAS. FOR PAVED AREAS, PERMANENT STABILIZATION MEANS THE PLACEMENT OF THE COMPACTED GRAVEL SUBBASE IS COMPLETED.

G. DITCHES, CHANNELS, AND SWALES. FOR OPEN CHANNELS, PERMANENT STABILIZATION MEANS THE CHANNEL IS STABILIZED WITH MATURE VEGETATION AT LEAST THREE INCHES IN HEIGHT, WITH WELL-GRADED RIPRAP, OR WITH ANOTHER NON-EROSIVE LINING CAPABLE OF WITHSTANDING THE ANTICIPATED FLOW VELOCITIES AND FLOW DEPTHS WITHOUT RELIANCE ON CHECK DAMS TO SLOW FLOW. THERE MUST BE NO EVIDENCE OF SLUMPING OF THE LINING, UNDERCUTTING OF THE BANKS, OR DOWN-CUTTING OF THE CHANNEL.

GENERAL CONSTRUCTION PHASE
THE FOLLOWING EROSION CONTROL MEASURES SHALL BE FOLLOWED BY THE CONTRACTOR THROUGHOUT CONSTRUCTION OF THIS PROJECT:

A. ALL TOPSOIL SHALL BE COLLECTED, STOCKPILED, SEEDED WITH RYE AT 3 POUNDS/1,000 SF AND MULCHED, AND REUSED AS REQUIRED. SILT FENCING SHALL BE PLACED DOWN GRADIENT FROM THE STOCKPILED LOAM. STOCKPILE TO BE LOCATED BY DESIGNATION OF THE OWNER AND INSPECTING ENGINEER.

B. THE INSPECTING ENGINEER AT HIS/HER DISCRETION, MAY REQUIRE ADDITIONAL EROSION CONTROL MEASURES AND/OR SUPPLEMENTAL VEGETATIVE PROVISIONS TO MAINTAIN STABILITY OF EARTHWORKS AND FINISH GRADED AREAS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ANY SUPPLEMENTAL MEASURES AS DIRECTED BY THE INSPECTING ENGINEER. FAILURE TO COMPLY WITH THE ENGINEER'S DIRECTIONS WILL RESULT IN DISCONTINUATION OF CONSTRUCTION ACTIVITIES.

C. EROSION CONTROL MESH SHALL BE APPLIED IN ACCORDANCE WITH THE PLANS OVER ALL FINISH SEEDED AREAS AS SPECIFIED ON THE DESIGN PLANS.

D. ALL GRADED OR DISTURBED AREAS INCLUDING SLOPES SHALL BE PROTECTED DURING CLEARING AND CONSTRUCTION IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN UNTIL THEY ARE ADEQUATELY STABILIZED.

E. ALL EROSION, AND SEDIMENT CONTROL PRACTICES AND MEASURES SHALL BE CONSTRUCTED, APPLIED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.

F. AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIALS.

G. AREAS SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 INCHES PRIOR TO PLACEMENT OF TOPSOIL.

H. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC., SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.

I. ALL FILLS SHALL BE PLACED AND COMPACTED IN LAYERS NOT TO EXCEED 8 INCHES IN THICKNESS.

J. EXCEPT FOR APPROVED LANDFILLS OR NON-STRUCTURAL FILLS, FILL MATERIAL SHALL BE FREE OF BRUSH, RUBBISH, ROCKS, LOGS, STUMPS, BUILDING DEBRIS AND OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY LIFTS.

K. FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILL SLOPES OR STRUCTURAL FILLS.

L. FILL SHALL NOT BE PLACED ON A FROZEN FOUNDATION.

M. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED APPROPRIATELY.

N. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.

O. REMOVE ANY TEMPORARY CONTROL MEASURES, SUCH AS SILT FENCE, WITHIN 30 DAYS AFTER PERMANENT STABILIZATION IS ATTAINED. REMOVE ANY ACCUMULATED SEDIMENTS AND STABILIZE.

PERMANENT VEGETATION
PERMANENT VEGETATIVE COVER SHOULD BE ESTABLISHED ON DISTURBED AREAS WHERE PERMANENT, LONG LIVED VEGETATIVE COVER IS NEEDED TO STABILIZE THE SOIL, TO REDUCE DAMAGES FROM SEDIMENT AND RUNOFF, AND TO ENHANCE THE ENVIRONMENT.

SEEDBED PREPARATION
A. GRADE AS FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION AND ANCHORING, AND MAINTENANCE.

B. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TESTS SUCH AS THOSE OFFERED BY THE UNIVERSITY OF MAINE SOIL TESTING LABORATORY. SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL COOPERATIVE EXTENSION SERVICE OFFICE. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 800 POUNDS PER ACRE OR 18.4 POUNDS PER 1,000 SQUARE FEET USING 10-20-20 (N-P2O5-K2O) OR EQUIVALENT. APPLY GROUND LIMESTONE (EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE) AT
A RATE OF 3 TONS PER ACRE (138 LB. PER 1,000 SQ. FT).

C. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRING TOOTH HARROW OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM, FINE SEEDBED IS PREPARED. ALL BUT CLAY OR SILTY SOILS AND COARSE SANDS SHOULD BE ROLLED TO FIRM THE SEEDBED WHEREVER FEASIBLE.D. REMOVE FROM THE SURFACE ALL STONES 2 INCHES OR LARGER IN ANY DIMENSION. REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, CONCRETE, CLODS, LUMPS OR OTHER UNSUITABLE MATERIAL.

E. INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED; THE AREA MUST BE TILLED AND FIRMED AS ABOVE.

F. PERMANENT SEEDING SHOULD BE MADE 45 DAYS PRIOR TO THE FIRST KILLING FROST OR AS A DORMANT SEEDING WITH MULCH AFTER THE FIRST KILLING FROST AND BEFORE SNOWFALL. WHEN CROWN VETCH IS SEEDED IN LATER SUMMER, AT LEAST 35% OF THE SEED SHOULD BE HARD SEED (UNSCARIFIED). IF SEEDING CANNOT BE DONE WITHIN THE SEEDING DATES, MULCH ACCORDING TO THE TEMPORARY MULCHING BMP AND OVERWINTER STABILIZATION AND CONSTRUCTION TO PROTECT THE SITE AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.

G. FOLLOWING SEED BED PREPARTATION, SWALE AREAS, FILL AREAS AND BACK SLOPES SHALL BE SEEDED AT A RATE OF 3 LBS./1,000 S.F. WITH A MIXTURE OF 35% CREEPING RED FESCUE, 6% RED TOP, 24% KENTUCKY BLUEGRASS, 10% PERENNIAL RYEGRASS, 20% ANNUAL RYEGRASS AND 5% WHITE DUTCH CLOVER.

I. AREAS WHICH HAVE BEEN TEMPORARILY OR PERMANENTLY SEEDED SHALL BE MULCHED IMMEDIATELY FOLLOWING SEEDING.

J. AREAS WHICH CANNOT BE SEEDED WITHIN THE GROWING SEASON SHALL BE MULCHED FOR OVER-WINTER PROTECTION AND THE AREA SHOULD BE SEEDED AT THE BEGINNING OF THE GROWING SEASON.

WINTER CONSTRUCTION PHASE
IF AN AREA IS NOT STABILIZED WITH TEMPORARY OR PERMANENT MEASURES BY NOVEMBER 15, THEN THE SITE MUST BE PROTECTED WITH ADDITIONAL STABILIZATION MEASURES.

A. PERMANENT STABILIZATION CONSISTS OF AT LEAST 90% VEGETATION, PAVEMENT/GRAVEL BASE OR RIPRAP.

B. DO NOT EXPOSE SLOPES OR LEAVE SLOPES EXPOSED OVER THE WINTER OR FOR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS FULLY PROTECTED WITH MULCH.

C. APPLY HAY MULCH AT TWICE THE STANDARD RATE (150 LBS. PER 1,000 SF). THE MULCH MUST BE THICK ENOUGH SUCH THAT THE GROUND SURFACE WILL NOT BE VISIBLE AND MUST BE ANCHORED.

D. USE MULCH AND MULCH NETTING OR AN EROSION CONTROL MULCH BLANKET OR ALL SLOPES GREATER THAN 8 % OR OTHER AREAS EXPOSED TO DIRECT WIND.

E. INSTALL AN EROSION CONTROL BLANKET IN ALL DRAINAGEWAYS (BOTTOM AND SIDES) WITH A SLOPE GREATER THAN 3 %.

F. SEE THE VEGETATION MEASURES FOR MORE INFORMATION ON SEEDING DATES AND TYPES.

G. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED SO THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.

H. AN AREA WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE MUST BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIER.

I. TEMPORARY MULCH MUST BE APPLIED WITHIN 7 DAYS OF SOIL EXPOSURE OR PRIOR TO ANY STORM EVENT, BUT AFTER EVERY WORKDAY IN AREAS WITHIN 100 FEET FROM A PROTECTED NATURAL RESOURCE.

J. AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE MUST BE PERMANENTLY MULCHED THAT SAME DAY.

K. IF SNOWFALL IS GREATER THAN 1 INCH (FRESH OR CUMULATIVE), THE SNOW SHALL BE REMOVED FROM THE AREAS DUE TO BE SEEDED AND MULCHED.

L. LOAM SHALL BE FREE OF FROZEN CLUMPS BEFORE IT IS APPLIED.

M. ALL VEGETATED DITCH LINES THAT HAVE NOT BEEN STABILIZED BY NOVEMBER 1, OR WILL BE WORKED DURING THE WINTER CONSTRUCTION PERIOD, MUST BE STABILIZED WITH AN APPROPRIATE STONE LINING BACKED BY AN APPROPRIATE GRAVEL BED OR GEOTEXTILE UNLESS SPECIFICALLY RELEASED FROM THIS STANDARD BY THE DEPARTMENT.

N. EROSION CONTROL MUST BE INSPECTED AFTER EACH RAINFALL, SNOW STORM, OR THAWING EVENT AND AT LEAST ONCE A WEEK BETWEEN NOVEMBER 15 AND APRIL 15.

MAINTENANCE AND INSPECTION PHASE
A. MINIMUM EROSION CONTROL MEASURES WILL NEED TO BE IMPLEMENTED AND THE APPLICANT WILL BE RESPONSIBLE TO MAINTAIN ALL COMPONENTS OF THE EROSION CONTROL PLAN UNTIL THE SITE IS FULLY STABILIZED. HOWEVER, BASED ON SITE AND WEATHER CONDITIONS DURING CONSTRUCTION, ADDITIONAL EROSION CONTROL MEASURES MAY NEED TO BE IMPLEMENTED. ALL AREAS OF INSTABILITY AND EROSION MUST BE REPAIRED IMMEDIATELY DURING CONSTRUCTION AND NEED TO BE MAINTAINED UNTIL THE SITE IS FULLY STABILIZED OR VEGETATION IS ESTABLISHED. A CONSTRUCTION LOG MUST BE MAINTAINED FOR THE EROSION AND SEDIMENTATION CONTROL INSPECTIONS AND MAINTENANCE

B. A LOG (REPORT) MUST BE KEPT SUMMARIZING THE SCOPE OF THE INSPECTION, NAME(S) AND QUALIFICATIONS OF THE PERSONNEL MAKING THE INSPECTION, THE DATE(S) OF THE INSPECTION, AND MAJOR OBSERVATIONS RELATING TO OPERATION OF EROSION AND SEDIMENTATION CONTROLS AND POLLUTION PREVENTION MEASURES. MAJOR OBSERVATIONS MUST INCLUDE: BMPS THAT NEED TO BE MAINTAINED; LOCATION(S) OF BMPS THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION; AND LOCATION(S) WHERE ADDITIONAL BMPS ARE NEEDED THAT DID NOT EXIST AT THE TIME OF INSPECTION. FOLLOW-UP TO CORRECT DEFICIENCIES OR ENHANCE CONTROLS MUST ALSO BE INDICATED IN THE LOG AND DATED, INCLUDING WHAT ACTION WAS TAKEN AND WHEN.

DEWATERING
A DEWATERING PLAN IS NEEDED TO ADDRESS EXCAVATION DE-WATERING FOLLOWING HEAVY RAINFALL EVENTS OR WHERE THE EXCAVATION MAY INTERCEPT THE GROUNDWATER TABLE DURING CONSTRUCTION. THE COLLECTED WATER NEEDS TREATMENT AND A DISCHARGE POINT THAT WILL NOT CAUSE DOWNGRADIENT EROSION AND OFFSITE SEDIMENTATION OR WITHIN A RESOURCE.

GOOD HOUSEKEEPING NOTES:

1. **SPILL PREVENTION.** CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM CONSTRUCTION AND WASTE MATERIALS STORED ON SITE TO ENTER STORMWATER, WHICH INCLUDES STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER. THE SITE CONTRACTOR OR OPERATOR MUST DEVELOP, AND IMPLEMENT AS NECESSARY, APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESPONSE PLANNING MEASURES.

   NOTE: ANY SPILL OR RELEASE OF TOXIC OR HAZARDOUS SUBSTANCES MUST BE REPORTED TO THE DEPARTMENT. FOR OIL SPILLS, CALL 1-800-482-0777 WHICH IS AVAILABLE 24 HOURS A DAY. FOR SPILLS OF TOXIC OR HAZARDOUS MATERIAL, CALL 1-800-452-4664 WHICH IS AVAILABLE 24 HOURS A DAY. FOR MORE INFORMATION, VISIT THE DEPARTMENT'S WEBSITE AT : HTTP://WWW.MAINE.GOV/DEP/SPILLS/EMERGSPILLRESP/

2. **GROUNDWATER PROTECTION.** DURING CONSTRUCTION, LIQUID PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUNDWATER MAY NOT BE STORED OR HANDLED IN AREAS OF THE SITE DRAINING TO AN INFILTRATION AREA. AN "INFILTRATION AREA" IS ANY AREA OF THE SITE THAT BY DESIGN OR AS A RESULT OF SOILS, TOPOGRAPHY AND OTHER RELEVANT FACTORS ACCUMULATES RUNOFF THAT INFILTRATES INTO THE SOIL. DIKES, BERMS, SUMPS, AND OTHER FORMS OF SECONDARY CONTAINMENT THAT PREVENT DISCHARGE TO GROUNDWATER MAY BE USED TO ISOLATE PORTIONS OF THE SITE FOR THE PURPOSES OF STORAGE AND HANDLING OF THESE MATERIALS. ANY PROJECT PROPOSING INFILTRATION OF STORMWATER MUST PROVIDE ADEQUATE PRE-TREATMENT OF STORMWATER PRIOR TO DISCHARGE OF STORMWATER TO THE INFILTRATION AREA, OR PROVIDE FOR TREATMENT WITHIN THE INFILTRATION AREA, IN ORDER TO PREVENT THE ACCUMULATION OF FINES, REDUCTION IN INFILTRATION RATE, AND CONSEQUENT FLOODING AND DESTABILIZATION.

   SEE MAINE DEP CHAPTER 500 APPENDIX D FOR LICENSE BY RULE STANDARDS FOR INFILTRATION OF STORMWATER.

   NOTE: LACK OF APPROPRIATE POLLUTANT REMOVAL BEST MANAGEMENT PRACTICES (BMPS) MAY RESULT IN VIOLATIONS OF THE GROUNDWATER QUALITY STANDARD ESTABLISHED BY 38 M.R.S.A. §465-C(1).

3. **FUGITIVE SEDIMENT AND DUST.** ACTIONS MUST BE TAKEN TO ENSURE THAT ACTIVITIES DO NOT RESULT IN NOTICEABLE EROSION OF SOILS OR FUGITIVE DUST EMISSIONS DURING OR AFTER CONSTRUCTION. OIL MAY NOT BE USED FOR DUST CONTROL, BUT OTHER WATER ADDITIVES MAY BE CONSIDERED AS NEEDED. A STABILIZED CONSTRUCTION ENTRANCE (SCE) SHOULD BE INCLUDED TO MINIMIZE TRACKING OF MUD AND SEDIMENT. IF OFF-SITE TRACKING OCCURS, PUBLIC ROADS SHOULD BE SWEPT IMMEDIATELY AND NO LESS THAN ONCE A WEEK AND PRIOR TO SIGNIFICANT STORM EVENTS. OPERATIONS DURING DRY MONTHS, THAT EXPERIENCE FUGITIVE DUST PROBLEMS, SHOULD WET DOWN UNPAVED ACCESS ROADS ONCE A WEEK OR MORE FREQUENTLY AS NEEDED WITH A WATER ADDITIVE TO SUPPRESS FUGITIVE SEDIMENT AND DUST.

   NOTE: DEWATERING A STREAM WITHOUT A PERMIT FROM THE DEPARTMENT MAY VIOLATE STATE WATER QUALITY STANDARDS AND THE *NATURAL RESOURCES PROTECTION ACT*.

4. **DEBRIS AND OTHER MATERIALS.** MINIMIZE THE EXPOSURE OF CONSTRUCTION DEBRIS, BUILDING AND LANDSCAPING MATERIALS, TRASH, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE AND OTHER MATERIALS TO PRECIPITATION AND STORMWATER RUNOFF. THESE MATERIALS MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.

   NOTE: TO PREVENT THESE MATERIALS FROM BECOMING A SOURCE OF POLLUTANTS, CONSTRUCTION AND POST-CONSTRUCTION ACTIVITIES RELATED TO A PROJECT MAY BE REQUIRED TO COMPLY WITH APPLICABLE PROVISION OF RULES RELATED TO SOLID, UNIVERSAL, AND HAZARDOUS WASTE, INCLUDING, BUT NOT LIMITED TO, THE MAINE SOLID WASTE AND HAZARDOUS WASTE MANAGEMENT RULES; MAINE HAZARDOUS WASTE MANAGEMENT RULES; MAINE OIL CONVEYANCE AND STORAGE RULES; AND MAINE PESTICIDE REQUIREMENTS.

5. **EXCAVATION DE-WATERING.** EXCAVATION DE-WATERING IS THE REMOVAL OF WATER FROM TRENCHES, FOUNDATIONS, COFFER DAMS, PONDS, AND OTHER AREAS WITHIN THE CONSTRUCTION AREA THAT RETAIN WATER AFTER EXCAVATION. IN MOST CASES THE COLLECTED WATER IS HEAVILY SILTED AND HINDERS CORRECT AND SAFE CONSTRUCTION PRACTICES. THE COLLECTED WATER REMOVED FROM THE PONDED AREA, EITHER THROUGH GRAVITY OR PUMPING, MUST BE SPREAD THROUGH NATURAL WOODED BUFFERS OR REMOVED TO AREAS THAT ARE SPECIFICALLY DESIGNED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE, LIKE A COFFERDAM SEDIMENTATION BASIN. AVOID ALLOWING THE WATER TO FLOW OVER DISTURBED AREAS OF THE SITE. EQUIVALENT MEASURES MAY BE TAKEN IF APPROVED BY THE DEPARTMENT.

   NOTE: DEWATERING CONTROLS ARE DISCUSSED IN THE “MAINE EROSION AND SEDIMENT CONTROL BMPS, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION.”

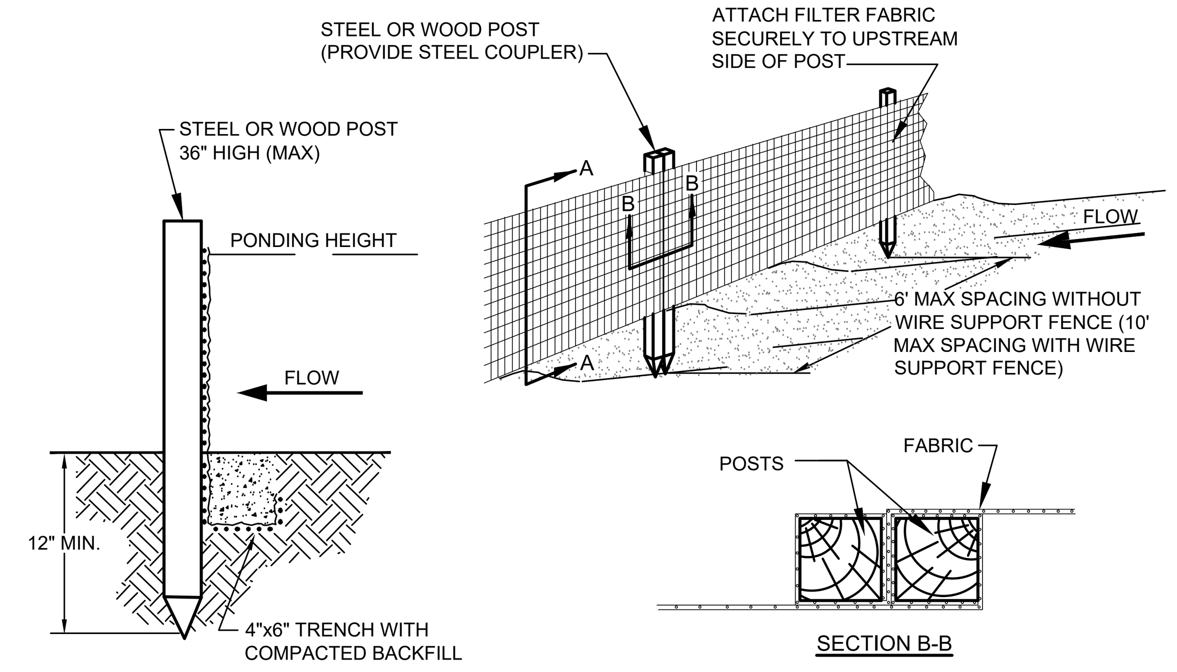
6. **AUTHORIZED NON-STORMWATER DISCHARGES.** IDENTIFY AND PREVENT CONTAMINATION BY NON-STORMWATER DISCHARGES. WHERE ALLOWED NON-STORMWATER DISCHARGES EXIST, THEY MUST BE IDENTIFIED AND STEPS SHOULD BE TAKEN TO ENSURE THE IMPLEMENTATION OF APPROPRIATE POLLUTION PREVENTION MEASURES FOR THE NON-STORMWATER COMPONENT(S) OF THE DISCHARGE. AUTHORIZED NON-STORMWATER DISCHARGES ARE:

   (a) DISCHARGES FROM FIREFIGHTING ACTIVITY;
   (b) FIRE HYDRANT FLUSHINGS;
   (c) VEHICLE WASHWATER IF DETERGENTS ARE NOT USED AND WASHING IS LIMITED TO THE EXTERIOR OF VEHICLES (ENGINE, UNDERCARRIAGE AND TRANSMISSION WASHING IS PROHIBITED);
   (d) DUST CONTROL RUNOFF IN ACCORDANCE WITH PERMIT CONDITIONS AND APPENDIX (C)(3);
   (e) ROUTINE EXTERNAL BUILDING WASHDOWN, NOT INCLUDING SURFACE PAINT REMOVAL, THAT DOES NOT INVOLVE DETERGENTS;
   (f) PAVEMENT WASHWATER (WHERE SPILLS/LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE NOT OCCURRED, UNLESS ALL SPILLED MATERIAL HAD BEEN REMOVED) IF DETERGENTS ARE NOT USED;
   (g) UNCONTAMINATED AIR CONDITIONING OR COMPRESSOR CONDENSATE;
   (h) UNCONTAMINATED GROUNDWATER OR SPRING WATER;
   (i) FOUNDATION OR FOOTER DRAIN-WATER WHERE FLOWS ARE NOT CONTAMINATED;
   (j) UNCONTAMINATED EXCAVATION DEWATERING (SEE REQUIREMENTS IN APPENDIX C(5));
   (k) POTABLE WATER SOURCES INCLUDING WATERLINE FLUSHINGS; AND
   (l) LANDSCAPE IRRIGATION.

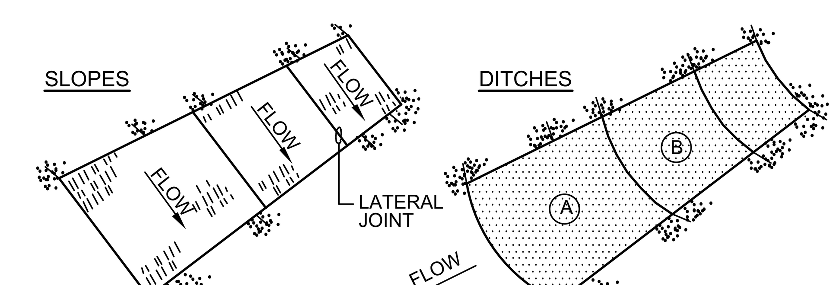
7. **UNAUTHORIZED NON-STORMWATER DISCHARGES.** THE DEPARTMENT'S APPROVAL UNDER THIS CHAPTER DOES NOT AUTHORIZE A DISCHARGE THAT IS MIXED WITH A SOURCE OF NON-STORMWATER, OTHER THAN THOSE DISCHARGES IN COMPLIANCE WITH APPENDIX C (6). SPECIFICALLY, THE DEPARTMENT'S APPROVAL DOES NOT AUTHORIZE DISCHARGES OF THE FOLLOWING:

   (a) WASTEWATER FROM THE WASHOUT OR CLEANOUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS OR OTHER CONSTRUCTION MATERIALS;
   (b) FUELS, OILS OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE;
   (c) SOAPS, SOLVENTS, OR DETERGENTS USED IN VEHICLE AND EQUIPMENT WASHING; AND
   (d) TOXIC OR HAZARDOUS SUBSTANCES FROM A SPILL OR OTHER RELEASE.

8. **ADDITIONAL REQUIREMENTS.** ADDITIONAL REQUIREMENTS MAY BE APPLIED ON A SITE-SPECIFIC BASIS.



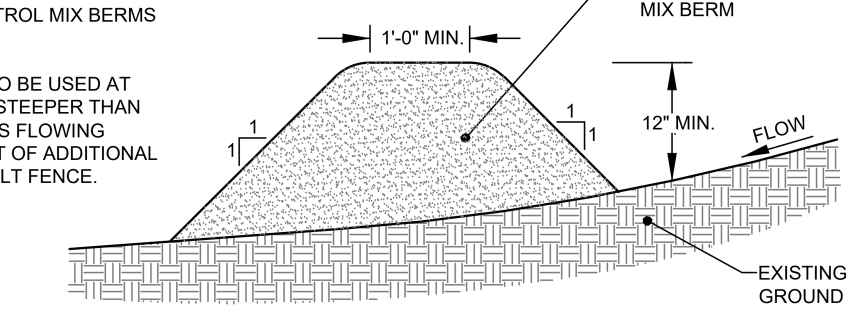
SILT FENCE
NOT TO SCALE



NOTES:
1. BURY THE TOP END OF THE MESH MATERIAL IN A 6" TRENCH AND BACKFILL AND TAMP TRENCHING SECURE END WITH STAPLES AT 6" SPACING, 4" DOWN FROM EXPOSED END.
2. FLOW DIRECTION JOINTS TO HAVE UPPER END OF LOWER STRIP BURIED WITH UPPER LAYERS OVERLAPPED 4" AND STAPLED. OVERLAP B OVER A.
3. LATERAL JOINTS TO HAVE 4" OVERLAP OF STRIPS. STAPLE 18" ON CENTER.
4. STAPLE OUTSIDE LATERAL EDGE 2' ON CENTER.
5. WIRE STAPLES TO BE MIN. OF #11 WIRE, 6" LONG & 1-1/2" WIDE.
6. USE NORTH AMERICAN GREEN DS 150 (OR APPROVED EQUAL) ON SLOPES BETWEEN 4:1-2:1. USE NORTH AMERICAN GREEN VMAX SC250 PERMANENT TURF REINFORCEMENT MAT (OR APPROVED EQUAL) ON SLOPES 2:1 AND STEEPER..

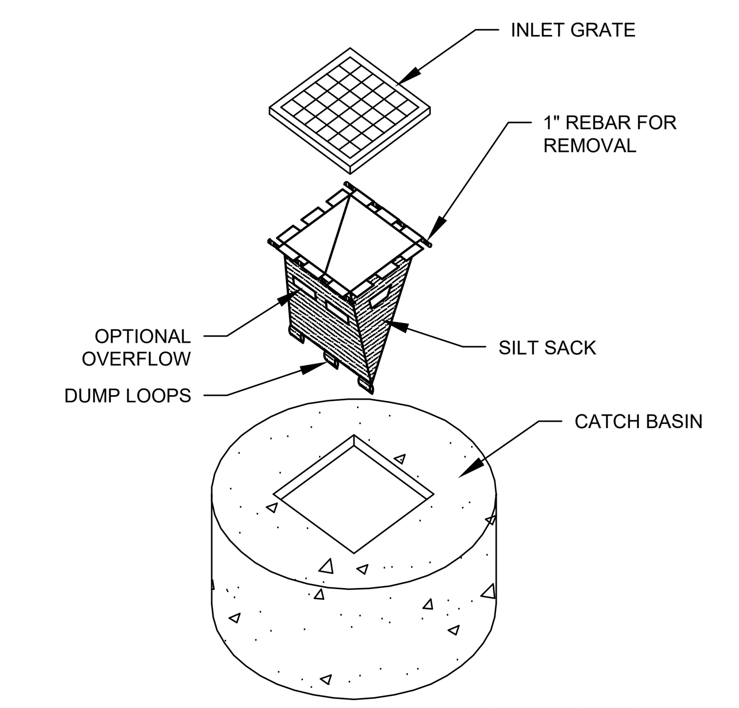
EROSION CONTROL BLANKET
NOT TO SCALE

NOTES:
1. DURING PERIODS OF WINTER CONSTRUCTION (NOV. 15 THROUGH APRIL 15), THE CONTRACTOR SHALL INSTALL EROSION CONTROL MIX BERMS IN LIEU OF SILT FENCE.
2. ECM BERMS ARE NOT TO BE USED AT THE BASE OF A SLOPE STEEPER THAN 8% OR WHERE WATER IS FLOWING WITHOUT THE SUPPORT OF ADDITIONAL MEASURES, SUCH AS SILT FENCE.



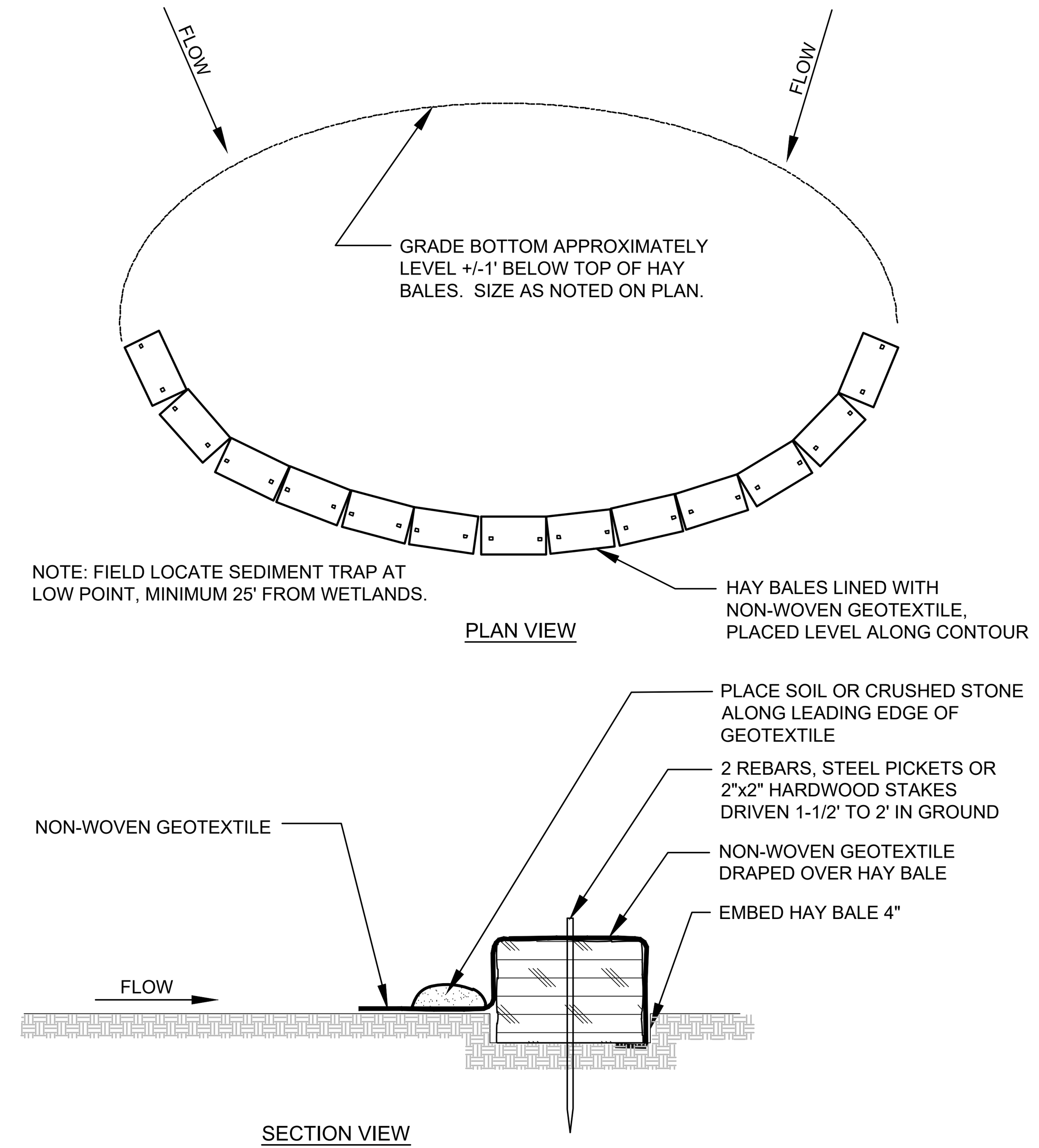
EROSION CONTROL MIX:
EROSION CONTROL MIX SHALL CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES & MAY CONTAIN ROCKS LESS THAN 4" IN DIAMETER. EROSION CONTROL MIX MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH. THE MIX COMPOSITION SHALL MEET THE FOLLOWING STANDARDS:
- THE ORGANIC MATTER CONTENT SHALL BE BETWEEN 80% - 100% DRY WEIGHT BASIS
- PARTICLE SIZE BY WEIGHT SHALL BE 100% PASSING A 6" SCREEN AND A MINIMUM OF 70%, MAXIMUM OF 85% PASSING A 0.75" SCREEN
- THE ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED
- LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX.
- SOLUBLE SALTS CONTENT SHALL BE < 4.0 mmhos/cm.
- ph SHALL FALL BETWEEN 5.0 - 8.0.

EROSION CONTROL MIX BERM
NOT TO SCALE



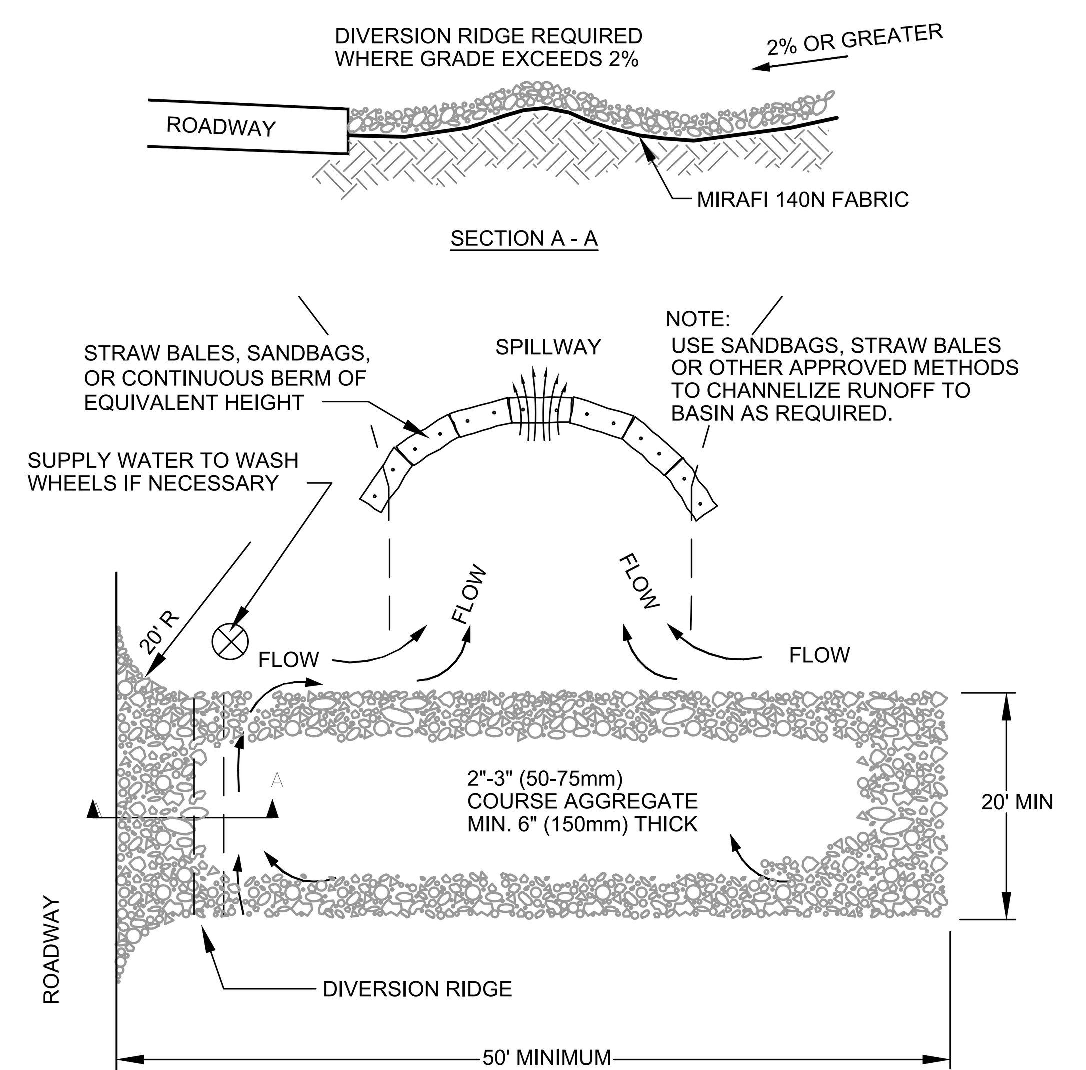
NOTES:
1. SILT SACKS TO BE INSTALLED IN ALL CATCH BASINS RECEIVING RUNOFF FROM DISTURBED AREA
2. SILT SACK TO BE MAINTAINED UNTIL TRIBUTARY ARE IS FULLY STABILIZED

SILT SACK DETAIL
NOT TO SCALE



NOTES:
1. BALES SHALL BE PLACED WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALE.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4".
3. BALES AND GEOTEXTILE SHALL BE SECURELY ANCHORED IN PLACE BY STAKES OR REBARS DRIVEN THROUGH THE BALES AND GEOTEXTILE.
4. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. BALES AND GEOTEXTILE SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS.

SEDIMENT TRAP
NOT TO SCALE



NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.

2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.

3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

STATE OF MAINE
RICHARD L. MEEK
No. 10668
LICENSED
PROFESSIONAL ENGINEER

DATE: 09-13-2022
P.E.: RICHARD L. MEEK, P.E. 10668

NO.	DATE	REVISIONS	APP'D BY
I	09-13-2022	SUBMIT SITE/SUBDIVISION APPLICATION TO CITY	
H	08-17-2022	SUBMIT STORMWATER APPLICATION TO D.E.P.	RLM

TERRADYN CONSULTANTS, LLC
41 CAMPUS DRIVE
SUITE 301
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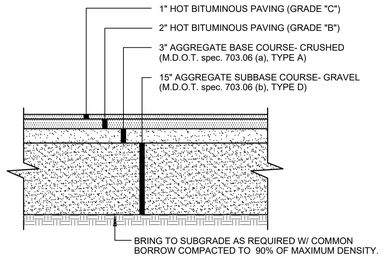
PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE
SHEET:
SITE DETAILS
CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09-13-2022
SCALE:	N.T.S.
DESIGNED:	RLM
JOB NO:	2149
FILE:	2149.D
SHEET	C5.1

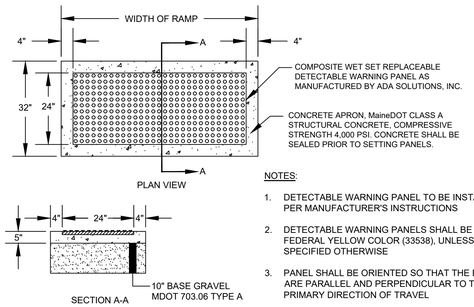


NOTES:

1. COMPACT GRAVEL SUBBASE COURSE TO 92% OF MAXIMUM DENSITY USING HEAVY ROLLER COMPACTION.
2. CONTRACTOR SHALL SET GRADE STAKES MARKING SUBBASE AND FINISH GRADE ELEVATIONS FOR CONSTRUCTION REFERENCE.

PAVED PARKING LOT SECTION

NOT TO SCALE

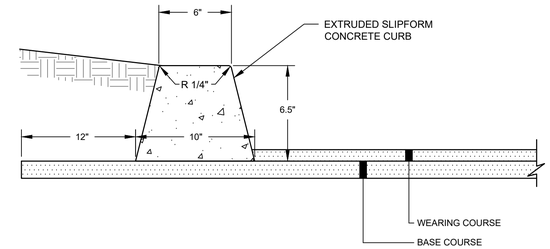


NOTES:

1. DETECTABLE WARNING PANEL TO BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS
2. DETECTABLE WARNING PANELS SHALL BE FEDERAL YELLOW COLOR (33538), UNLESS SPECIFIED OTHERWISE
3. PANEL SHALL BE ORIENTED SO THAT THE DOMES ARE PARALLEL AND PERPENDICULAR TO THE PRIMARY DIRECTION OF TRAVEL

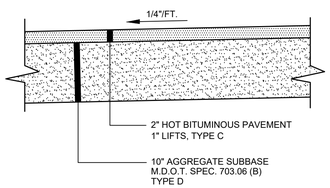
COMPOSITE DETECTABLE WARNING PANEL DETAIL

NOT TO SCALE



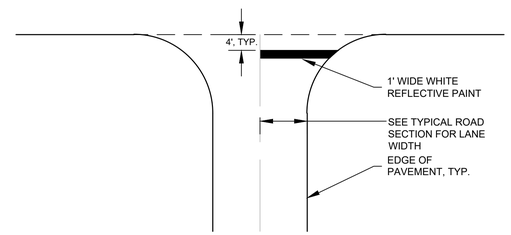
VERTICAL SLIPFORM CONCRETE CURB DETAIL

NOT TO SCALE



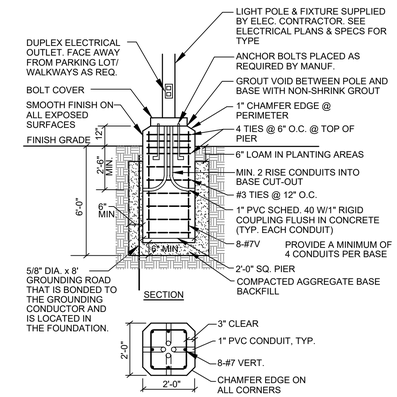
BITUMINOUS SIDEWALK

NOT TO SCALE



STOP BAR DETAIL

NOT TO SCALE

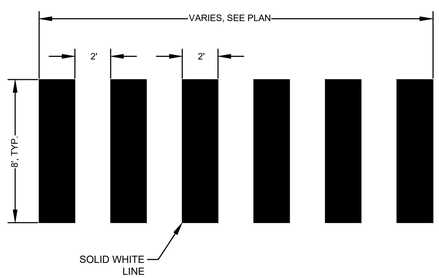


NOTES:

1. CONCRETE f'c=4000 psi.
2. REINF. STEEL GRADE 60 NEW BARS.
3. CONCRETE 3/4" AGG., 6 +/- 1% ENTRAINED AIR.
4. PROVIDE 2 COATS BITUMINOUS DAMPROOFING FOR ALL CONCRETE BELOW GRADE.
5. INSTALL BASE 3'-0" ABOVE FINISH GRADE IN LOCATIONS WHERE POLES ARE IN PARKING LOT PAVEMENT.
6. BID ALT.- CONTRACTOR MAY SUBSTITUTE PRECAST CONCRETE LIGHT POLE BASE EQUAL TO ABOVE SPEC.

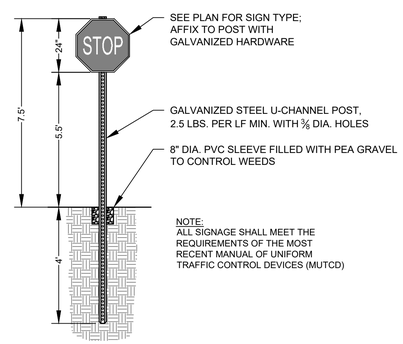
LIGHT POLE BASE

NOT TO SCALE



CROSSWALK STRIPING DETAIL

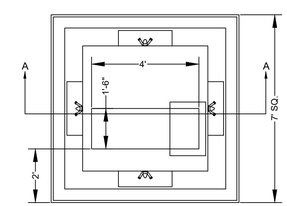
NOT TO SCALE



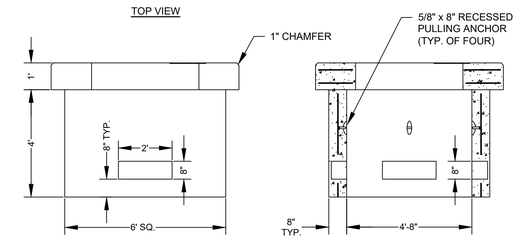
NOTE:
ALL SIGNAGE SHALL MEET THE REQUIREMENTS OF THE MOST RECENT MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)

STREET SIGN

NOT TO SCALE



TOP VIEW



FRONT VIEW

SECTION A-A

NOTES:

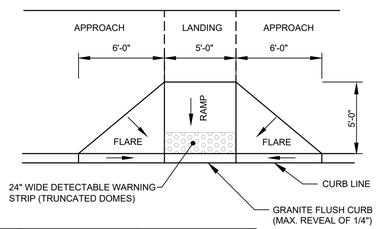
1. CONCRETE f'c=4000 psi. AT 28 DAYS.
2. REINF. PER CMP SPECIFICATIONS.
3. DUCT OPENINGS SHOWN ARE TYPICAL AND CAN BE MODIFIED PER REQUEST.
4. CENTRAL MAINE POWER CO. SPECIFICATION

7'X7' TRANSFORMER PAD (75-500 KVA)

NOT TO SCALE

NOTES:

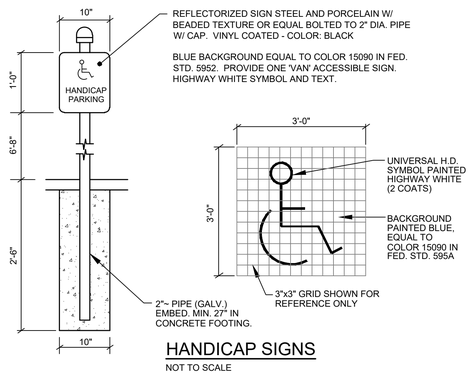
1. RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA).
2. ALL RAMPS SHALL HAVE DETECTABLE WARNINGS THE FULL DEPTH AND WIDTH OF THE RAMP PER SECTION 4.29 OF THE ADA.
3. A TACTILE WARNING STRIP IS REQUIRED WHERE RAMP ABUTS AN AREA USED BY VEHICLES.



DESIGN ELEMENT	SLOPE IN DIRECTION OF TRAVEL	CROSS SLOPE
APPROACH	8.33% MAXIMUM	2%
LANDING	2%	2%
RAMP	8.33% MAXIMUM	MATCH STREET GRADE
FLARE	10% MAXIMUM AT CURB	-
SIDEWALK	MATCH STREET GRADE	2%

HANDICAP RAMP

NOT TO SCALE



HANDICAP SIGNS

NOT TO SCALE

STATE OF MAINE
RICHARD L. MEEK
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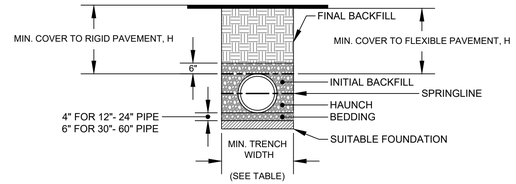
PROJECT: BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET: SITE DETAILS

CLIENT: DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09-13-2022
SCALE:	N.T.S.
DESIGNED:	RLM
JOB NO:	2149
FILE:	2149.D
SHEET	C5.2



NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION

2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.

3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.

4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-900mm).

5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
4"	21"
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
42"	72"
48"	80"
54"	88"
60"	96"

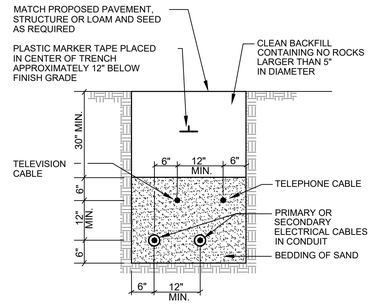
MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS

PIPE DIAM.	SURFACE LIVE LOADING CONDITION	
	H-25	HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48"	12"	48"
54" - 60"	24"	60"

* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

TYPICAL TRENCH DETAIL

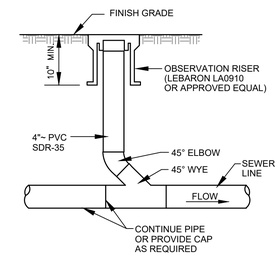
NOT TO SCALE



CABLES TO BE ENCASED IN SCHEDULE 40 PVC CONDUIT WHEN RUN BENEATH PAVED AREAS.

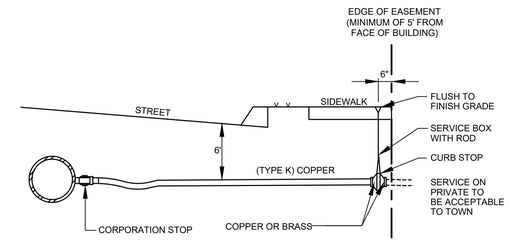
TYPICAL UNDERGROUND CABLE INSTALLATION

NOT TO SCALE



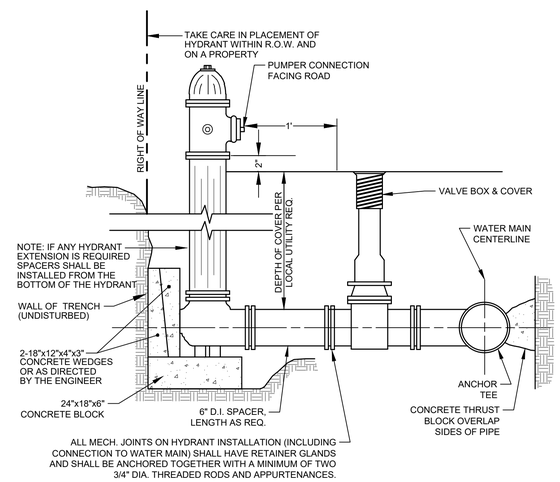
SEWER CLEANOUT

NOT TO SCALE



TYPICAL WATER SERVICE CONNECTION

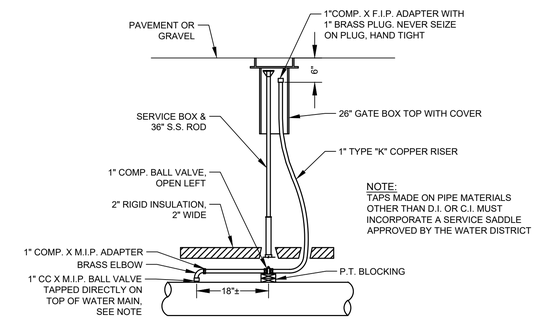
NOT TO SCALE



NOTES:
1. ALL MATERIALS SHALL CONFORM TO THE KENNEBUNK, KENNEBUNKPORT & WELLS WATER DISTRICT REQUIREMENTS
2. HYDRANT SHALL BE OPEN RIGHT
3. ALL FITTINGS SHALL BE WRAPPED IN POLYETHYLENE

TYP. HYDRANT INSTALLATION

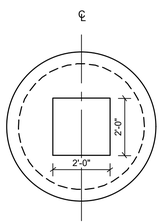
NOT TO SCALE



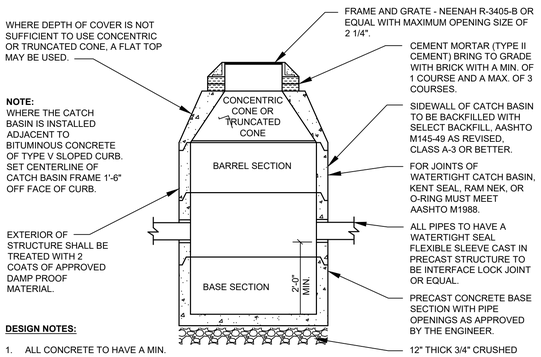
NOTE:
TAPS MADE ON PIPE MATERIALS OTHER THAN D.I. OR C.I. MUST INCORPORATE A SERVICE SADDLE APPROVED BY THE WATER DISTRICT

AIR RELEASE DETAIL

NOT TO SCALE



PLAN VIEW



NOTE:
WHERE THE CATCH BASIN IS INSTALLED ADJACENT TO BITUMINOUS CONCRETE OF TYPE V SLOPED CURB. SET CENTERLINE OF CATCH BASIN FRAME 1'-6" OFF FACE OF CURB.

SECTION VIEW

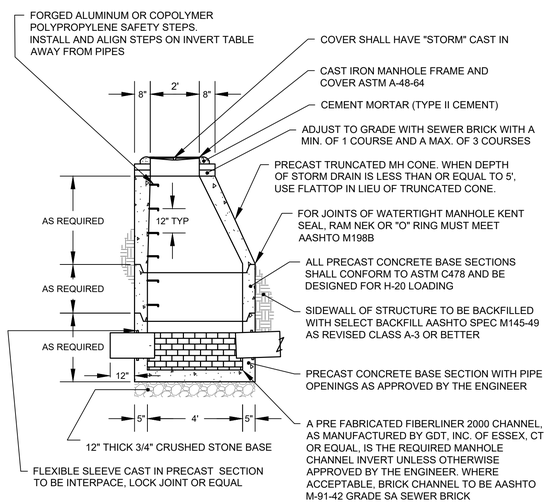
DESIGN NOTES:

1. ALL CONCRETE TO HAVE A MIN. OF 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
2. DESIGN LOAD FOR H-20 WHEEL LOAD.
3. CATCH BASIN TO CONFORM TO ASTM-C478 SPECIFICATIONS.
4. REINFORCE TO 0.12 IN SQ./LF..

NOTE:
CASCADE GRATES SHALL BE INSTALLED ON GRADIENT OF GUTTER IF PROFILE GRADE EXCEEDS 5% GRATES SHALL BE DEPRESSED 2" BELOW NORMAL GUTTER GRADE UNLESS THIS DEPRESSION INTERFERES WITH TRAFFIC. PARALLEL BAR GRATES SHALL BE INSTALLED ON A LEVEL GRADIENT.

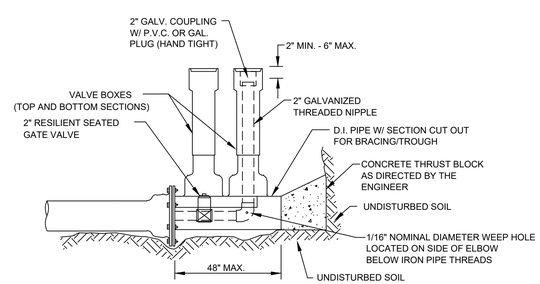
TYPICAL CATCH BASIN

NOT TO SCALE



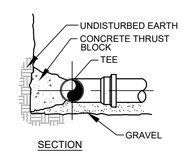
4' DIAMETER PRECAST STORM DRAIN MANHOLE

NOT TO SCALE



STANDARD 2" BLOW OFF

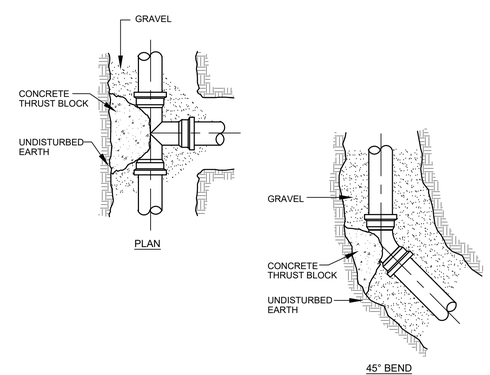
NOT TO SCALE



SECTION

CONCRETE THRUST BLOCK SIZE REQUIREMENTS

FITTINGS		SQ. FT. OF BEARING ON UNDISTURBED SOIL		
		90° BENDS	45° BENDS	TEES AND PLUGS
PIPE SIZE	6"	4.0	2.0	3.0
	8"	8.0	4.0	6.0
	12"	15	10	10



TEE & BEND DETAIL

NOT TO SCALE

STATE OF MAINE
RICHARD L. MEEK
No. 10668
LICENSED
PROFESSIONAL ENGINEER

DATE: 09-13-2022
P.E.: RICHARD L. MEEK, P.E. 10668

NO.	DATE	REVISIONS	APP'D BY
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H	08-17-2022	SUBMIT STORMWATER APPLICATION TO D.E.P.	

41 CAMPUS DRIVE
SUITE 201
NEW GLOUCESTER, ME 04260

565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04102

OFFICE: (207) 926-5111 FAX: (207) 221-1317
www.terradynconsultants.com

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Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting

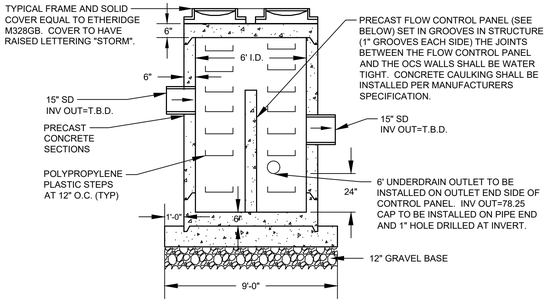
PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

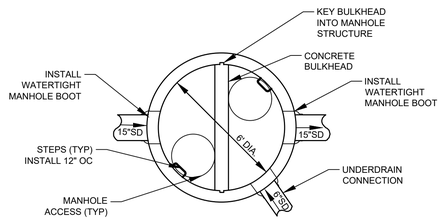
SHEET:
SITE DETAILS

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

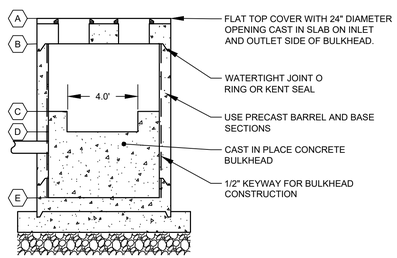
DATE:	09-13-2022
SCALE:	N.T.S.
DESIGNED:	RLM
JOB NO:	2149
FILE:	2149.D
SHEET	C-5.3



SIDE VIEW OF STRUCTURE



TOP VIEW OF STRUCTURE



SIDE VIEW & WEIR WALL

NOTES:
1. SUBMIT SHOP DRAWINGS FOR OWNER/ ENGINEER APPROVAL.
2. STRUCTURE SHALL BE DESIGNED FOR H-20 LOADING.
3. CASTINGS SHALL PROVIDE FOR A 24" CLEAR OPENING.

SCHEDULE A
OUTLET CONTROL STRUCTURE

ITEM DESCRIPTION	DIMENSION / ELEVATION
A. TOP OF STRUCTURE	T.B.D.
B. UNDERSIDE OF SLAB	T.B.D.
C. TOP OF CONCRETE BULKHEAD	T.B.D.
D. BOTTOM OF WEIR SLOT	T.B.D.
E. BOTTOM OF STRUCTURE	T.B.D.

OUTLET CONTROL STRUCTURE (OCS)

NOT TO SCALE

CONSTRUCTION INSPECTION NOTES:

1. THE DESIGN ENGINEER SHALL INSPECT THE CONSTRUCTION AND STABILIZATION OF THE GRAVEL WETLAND. INSPECTIONS SHALL CONSIST OF WEEKLY VISITS TO THE SITE TO INSPECT THE CONSTRUCTION (FROM INITIAL GROUND DISTURBANCE TO FINAL STABILIZATION OF THE POND) OF THE POND'S EMBANKMENT, STORMWATER INLET, GRAVEL AND FILTER MATERIAL MAKEUP AND PLACEMENT, OUTLET CONTROL STRUCTURE, LINER INSTALLATION, AND EMERGENCY SPILLWAY. IF NECESSARY, THE INSPECTING ENGINEER SHALL INTERPRET THE POND'S CONSTRUCTION PLAN FOR THE CONTRACTOR. ONCE THE POND IS CONSTRUCTED AND STABILIZED, THE INSPECTING ENGINEER WILL NOTIFY THE CITY WITHIN 14 DAYS TO STATE THE POND HAS BEEN COMPLETED. ACCOMPANYING THE ENGINEER'S NOTIFICATION SHALL BE A LOG OF THE ENGINEER'S INSPECTIONS GIVING THE DATE OF EACH INSPECTION, THE TIME OF EACH INSPECTION, AND THE ITEMS INSPECTED ON EACH VISIT, AND INCLUDE ANY TESTING DATA OR SIEVE ANALYSIS DATA OF THE MATERIALS USED. AN INSPECTION OF THE UNDERDRAINED GRAVEL OUTLET SHALL ALSO BE PERFORMED BY A PROFESSIONAL ENGINEER ONE YEAR AFTER THE FINAL STABILIZATION OF THE POND. THE ENGINEER SHALL NOTIFY THE CITY AS TO THE OUTLET'S EFFECTIVENESS AND DETERMINE ANY MAINTENANCE ITEMS THAT ARE NEEDED.

2. UNTIL SUCH TIME THAT THE STORMWATER FACILITIES ARE OFFERED AND ACCEPTED BY THE CITY, THE APPLICANT SHALL BE REQUIRED TO PERFORM ROUTINE INSPECTION AND MAINTENANCE OF THE STORMWATER FACILITIES AS OUTLINED IN THE OPERATIONS AND MAINTENANCE MANUAL DEVELOPMENT SPECIFICALLY FOR THE SITE. A COPY OF THE ANNUAL INSPECTION AND MAINTENANCE REPORT INCLUDING INSPECTION LOG(S) SHALL BE SUBMITTED ANNUALLY (BY JULY 15TH OF EACH YEAR) TO THE CITY PUBLIC WORKS DEPARTMENT.

GRAVEL WETLAND INSTALLATION NOTES:

1. THE MINIMUM SPACING BETWEEN THE SUBSURFACE PERFORATED DISTRIBUTION LINE AND THE SUBSURFACE PERFORATED COLLECTION DRAIN AT EITHER END OF THE GRAVEL IN EACH TREATMENT CELL IS 15 FT.

2. THERE SHOULD BE A MINIMUM HORIZONTAL TRAVEL DISTANCE OF 15 FT WITHIN THE GRAVEL LAYER IN EACH CELL.

3. VERTICAL PERFORATED OR SLOTTED RISER PIPES DELIVER WATER FROM THE SURFACE DOWN TO THE SUBSURFACE, PERFORATED OR SLOTTED DISTRIBUTION LINES. THESE RISERS SHALL HAVE A MAXIMUM SPACING OF 10 FEET.

4. SLOTTED VERTICAL RISERS SHALL HAVE A MINIMUM DIAMETER OF 12" FOR THE CENTRAL RISER AND 6" FOR END RISERS. THE VERTICAL RISERS SHALL NOT BE CAPPED, BUT RATHER COVERED WITH AN INLET GRATE.

5. VERTICAL CLEANOUTS CONNECTED TO THE DISTRIBUTION AND COLLECTION SUBDRAINS, AT EACH END, SHALL BE PERFORATED OR SLOTTED ONLY WITHIN THE GRAVEL LAYER, AND SOLID WITHIN THE WETLAND SOIL AND STORAGE AREA ABOVE.

6. TREATMENT CELL FLOOR TO BE GRADED FLAT.

7. BERMS AND WEIRS SEPARATING THE FOREBAY AND TREATMENT CELLS SHOULD BE CONSTRUCTED WITH CLAY, OR NON-CONDUCTIVE SOILS, AND/OR A FINE GEOTEXTILE, OR SOME COMBINATION THEREOF, TO AVOID WATER SEEPAGE AND SOIL PIPING THROUGH THESE EARTHEN DIVIDERS.

8. THE SYSTEM SHOULD BE PLANTED TO ACHIEVE A RIGOROUS ROOT MAT WITH GRASSES, FORBS, AND SHRUBS WITH OBLIGATE AND FACULTATIVE WETLAND SPECIES.

9. THE SUBAREA DRAINING TO A CREATED WETLAND MUST BE COMPLETELY STABLE BEFORE RUNOFF IS DIRECTED TO THE BASIN TO PREVENT SEDIMENTATION OF THE DRAINAGE LAYER; OR ALL RUNOFF SHOULD BE RE-DIRECTED UNTIL CONSTRUCTION IS FINALIZED. THE VEGETATION WITHIN THE STRUCTURE IS EQUALLY IMPORTANT AND MUST BE WELL ESTABLISHED BEFORE IT CAN ACCEPT ANY RUNOFF.

10. GRAVEL WETLAND STORMWATER AREA TO BE SEEDED WITH "NEW ENGLAND WETMIX" AS DISTRIBUTED BY NEW ENGLAND WETLAND PLANTS, INC., 820 WEST STREET, AMHERST, MA 01002, PHONE 413-548-8000, EMAIL INFO@NEWP.COM, OR APPROVED EQUIVALENT. APPLY AT A RATE OF 1 LB/2,500 SF.

11. THE SEEDS WILL NOT GERMINATE UNDER INUNDATED CONDITIONS. IF PLANTED DURING THE FALL MONTHS THE SEED MIX WILL GERMINATE THE FOLLOWING SPRING. DURING THE FIRST SEASON OF GROWTH SEVERAL SPECIES WILL PRODUCE SEEDS WHILE OTHER SPECIES WILL PRODUCE SEEDS AFTER THE SECOND GROWING SEASON. NOT ALL SPECIES WILL GROW IN ALL WETLAND SITUATIONS. THIS MIX IS COMPRISED OF THE WETLAND SPECIES MOST LIKELY TO GROW IN CREATED/RESTORED WETLANDS AND SHOULD PRODUCE MORE THAN 75% GROUND COVER IN TWO FULL GROWING SEASONS.

12. THE WETLAND SEEDS IN THIS MIX CAN BE SOWN BY HAND, WITH A HAND-HELD SPREADER, OR HYDRO-SEEDED ON LARGE OR HARD TO REACH SITES. LIGHTLY RAKE TO ENSURE GOOD SEED-TO-SOIL CONTACT. SEEDING CAN TAKE PLACE ON FROZEN SOIL, AS THE FREEZING AND THAWING WEATHER OF LATE FALL AND LATE WINTER WILL WORK THE SEED INTO THE SOIL. IF SPRING CONDITIONS ARE DRIER THAN USUAL, WATERING MAY BE REQUIRED. IF SOWING DURING THE SUMMER MONTHS, SUPPLEMENTAL WATERING WILL LIKELY BE REQUIRED UNTIL GERMINATION. A LIGHT MULCH OF CLEAN, WEED FREE STRAW IS RECOMMENDED.

13. THE POND CONSTRUCTION SHOULD BE ONLY CONSTRUCTED UNDER THE SUPERVISION OF THE DESIGN ENGINEER.

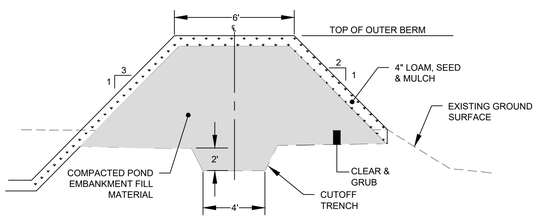
ORGANIC WETLAND SOIL MIXTURE:

1. THE WETLAND SOIL SHOULD HAVE A LOW HYDRAULIC CONDUCTIVITY (0.1-0.01 FT/DAY). THIS SOIL CAN BE MANUFACTURED USING COMPOST, SAND AND FINE SOILS, INTO A BLEND WITH MORE THAN 15% ORGANIC MATTER. IT SHOULD CONTAIN MORE THAN 15% SILT (PASSING THE #200 SIEVE); BUT WITH A CLAY SIZE PORTION THAT IS LESS THAN 2%. DO NOT USE GEOTEXTILES BETWEEN THE HORIZONTAL LAYERS OF THIS SYSTEM AS THEY WILL CLOG DUE TO FINES AND MAY RESTRICT ROOT GROWTH.

POND DEWATERING NOTES:

1. DEWATERING OF THE FOREBAY AND TREATMENT CELLS OF THE POND SHALL BE CONDUCTED SUCH THAT THE POND WILL NOT FILL WITH WATER UNTIL THE FOREBAY & TREATMENT CELL FLOORS ARE COMPLETED.

2. DEWATERING PROCEDURES SHALL BE CONDUCTED USING MDEP APPROVED TECHNIQUES AND SHALL INCLUDE THE USE OF A DIRT BAG SYSTEM. THE DIRT BAG SHALL BE USED ACCORDING TO MANUFACTURER INSTRUCTIONS.

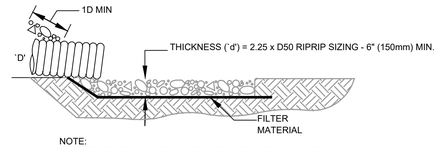


EMBANKMENT FILL MATERIAL:
FILL MUST BE FREE OF FROZEN SOIL, ROCKS OVER SIX INCHES, AND SOD, BRUSH, STUMPS, TREE ROOTS, WOOD, OR OTHER PERISHABLE MATERIALS. EMBANKMENT FILLS LESS THAN 10 FEET IN FILL HEIGHT MUST BE COMPACTED USING COMPACTION METHODS THAT WOULD GUARANTEE A FILL DENSITY OF 90% OF THE MAXIMUM DENSITY AS DETERMINED BY STANDARD PROCTOR (ASTM-698). ALL EMBANKMENT FILLS MORE THAN 10 FEET IN FILL HEIGHT MUST BE COMPACTED TO 90% OF THE MAXIMUM DENSITY AND MUST HAVE THEIR DENSITY VERIFIED BY FIELD DENSITY TESTING.

EMBANKMENT CONSTRUCTION NOTES:
1. CONTRACTOR SHALL REMOVE ALL TOPSOIL AND ORGANIC MATERIAL FROM EMBANKMENT AND POND CONSTRUCTION AREA.
2. SCARIFY SUBGRADE TO ESTABLISH INTERFACE FOR ALL FILLS.
3. COMPACT IN 12" LIFTS TO 92% OF MAXIMUM DRY DENSITY.
4. INSTALL RIPRAP AND EROSION CONTROL MESH WHERE SPECIFIED.
5. LOAM, SEED & STABILIZE IN ACCORDANCE WITH SEDIMENTATION AND EROSION CONTROL PLAN & NOTES.

POND EMBANKMENT DETAIL

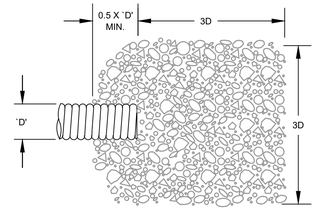
NOT TO SCALE



NOTE:
1. GEOTEXTILE FILTER FABRIC BENEATH STONE BASED ON UNDISTURBED SOILS, OR 6" OF 4" MINUS BAN RUN GRAVEL FREE OF FINES, CLAYS, SILTS.

2. GEOTEXTILE TO BE MIRAFI 600X OR APPROVED EQUAL.

SECTION



PLAN

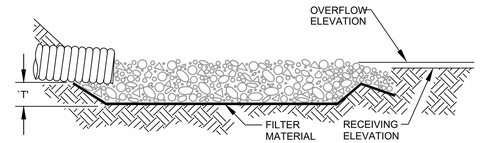
PIPE INLET PROTECTION SIZING TABLE

PIPE SIZE (IN)	RIRAP SIZING (D50)	LENGTH (FT)	WIDTH (FT)
6	3	2.0	1.5
12	5	3.5	3.0
15	6	4.5	3.75
18	8	5.25	4.5
24	10	7.0	6.0
30	12	8.75	7.5
36	14	10.5	9.0

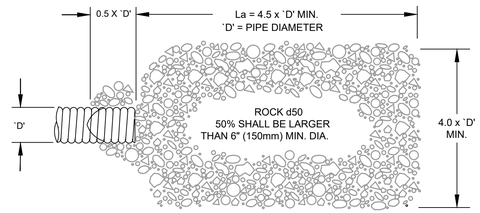
NOTES:
1. IN DEFINED CHANNELS, APRON SHALL EXTEND FULL WIDTH OF BOTTOM AND ONE FOOT ABOVE MAX. HEADWATER OR UP TO BANK FULL, WHICHEVER IS LESS.

PIPE INLET PROTECTION

NOT TO SCALE



SECTION



PLAN

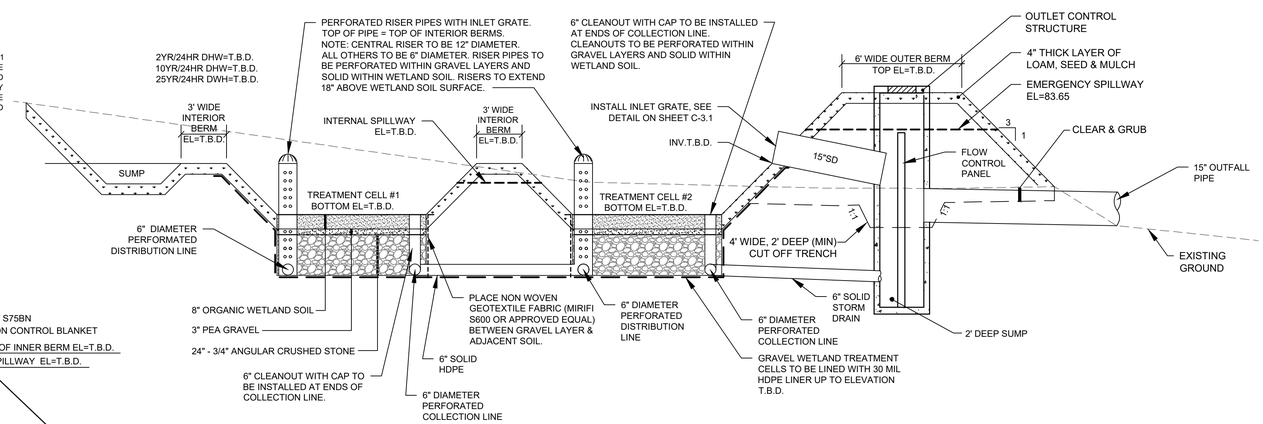
PIPE OUTLET PROTECTION SIZING TABLE

PIPE SIZE (IN)	RIP RAP SIZING (D50)	LENGTH (FT)	WIDTH (FT)
6	3	2.5	2.0
12	5	5.0	4.0
15	6	6.25	5.0
18	8	7.5	6.0
24	10	10.0	8.0
30	12	13.0	10.0
36	14	15.0	12.0

NOTES:
1. 'La' = LENGTH OF APRON. DISTANCE 'La' SHALL BE OF SUFFICIENT LENGTH TO DISSIPATE ENERGY.
2. APRON SHALL BE SET AT A ZERO GRADE AND ALIGNED STRAIGHT.
3. FILTER MATERIAL SHALL BE FILTER FABRIC (MIRAFI 600X OR APPROVED EQUAL) OR 6" (150mm) THICK MINIMUM GRADED GRAVEL LAYER.

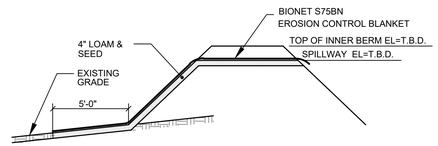
PIPE OUTLET PROTECTION

NOT TO SCALE



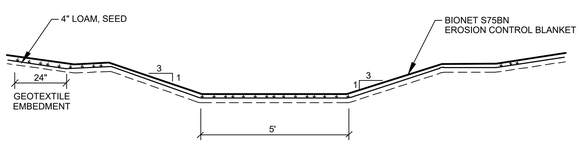
CROSS SECTION VIEW - GRAVEL WETLAND

NOT TO SCALE



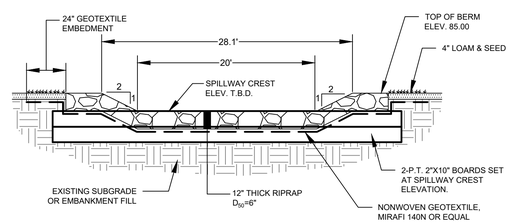
SPILLWAY EMBANKMENT SECTION

NOT TO SCALE



INTERNAL BERM SPILLWAY CROSS-SECTIONS

NOT TO SCALE



SPILLWAY CROSS SECTION

NOT TO SCALE

GRAVEL WETLAND DETAILS

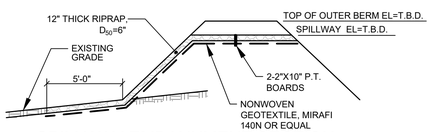
NOT TO SCALE

CONSTRUCTION SEQUENCE:
1. THE GRAVEL WETLAND SHALL BE EXCAVATED TO FINISHED GRADE ELEVATIONS AND USED AS A TEMPORARY SEDIMENT SUMP DURING CONSTRUCTION OF THE ROAD.

2. THE RIPRAP SWALE, RIPRAP FOREBAY, INTERNAL BERM AND SPILLWAY, AND OUTER BERM AND EMERGENCY SPILLWAY SHALL BE CONSTRUCTED PRIOR TO GRUBBING FOR ROAD CONSTRUCTION.

3. RUNOFF FROM DISTURBED AREAS SHALL BE DIRECTED TO THE SEDIMENT BASIN DURING ROAD CONSTRUCTION.

4. THE CRUSHED STONE, PEA GRAVEL, WETLAND SOIL, AND PIPES SHALL NOT BE INSTALLED UNTIL THE ROAD IS STABILIZED AND SWALES ARE VEGETATED WITH GRASS (AT LEAST 90% CATCH).



SPILLWAY EMBANKMENT SECTION

NOT TO SCALE

STATE OF MAINE
RICHARD L. MEEK
No. 10668
LICENSED PROFESSIONAL ENGINEER

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PROJECT:
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SHEET:
SITE DETAILS

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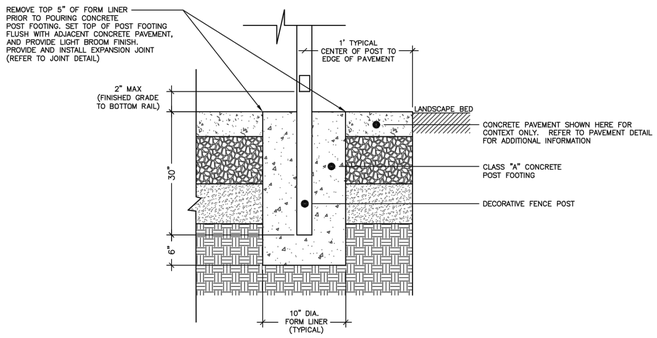
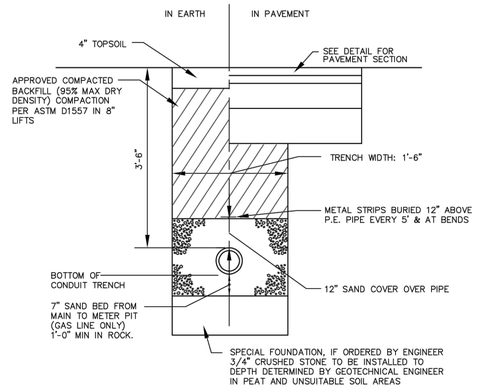
SCALE:	N.T.S.
DESIGNED:	RLM
JOB NO:	2149
FILE:	2149.D
SHEET	C-5.4



DECORATIVE FENCE POST FOOTING
NOT TO SCALE



GAS LINE TRENCH DETAIL
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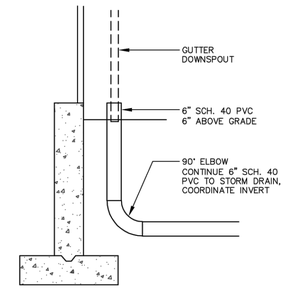
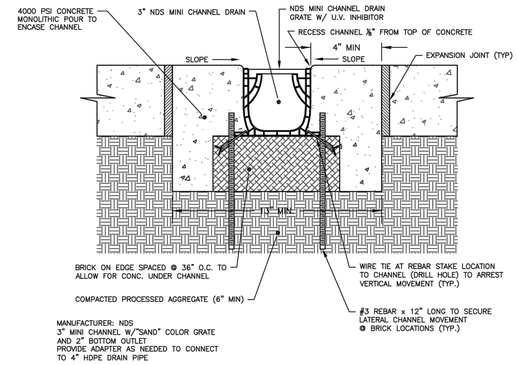


GUTTER DOWNSPOUT TRANSITION
NOT TO SCALE



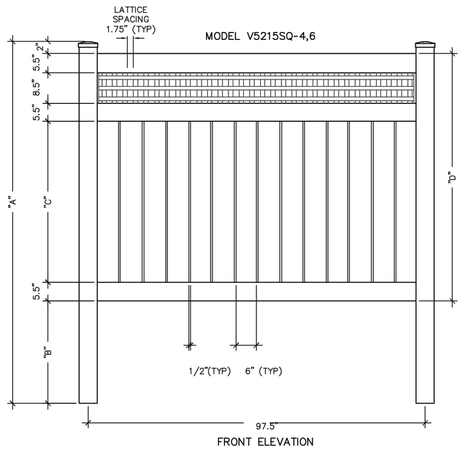
TRENCH DRAIN DETAIL
NOT TO SCALE

☑ SELECT DESIRED POST CAP MODEL

- ☐ FRENCH GOTHIC - V55FG
- ☐ TEARDROP - V55TD
- ☐ COACHMAN - V55CM
- ☐ BALL - V55BC
- ☐ SOLAR - V55P
- ☐ SOLAR V55O
- ☐ NEW ENGLAND - V55NE
- ☑ FLAT - V55FO

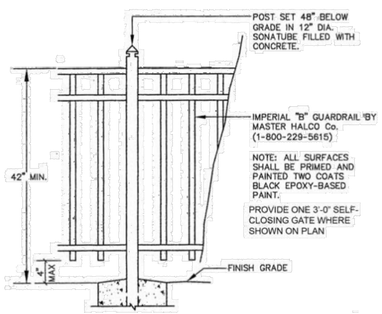
☑ SELECT DESIRED POST OPTIONS

- ☐ 5"X5" - .140 WALL
- ☑ 5"X5" H.D. - .250 WALL
- ☐ MAJESTIC - 8"X8" - .250 WALL



	A		B		C		D	
	H(FT)	INCHES	H(FT)	INCHES	H(FT)	INCHES	H(FT)	INCHES
	3	60	3	22	3	11	3	36
→	4	84	4	34	4	23	4	48
	5	96	5	34	5	35	5	60
→	6	108	6	34	6	47	6	72
	8	144	8	46	8	71	8	96
	10	168	10	46	10	95	10	120

POOL DECORATIVE FENCE - SEMI-PRIVACY
NOT TO SCALE



FENCING AT DOG PARK
NOT TO SCALE

WAY FINDING SIGNS (T.B.D.)
NOT TO SCALE

PYLON ENTRANCE SIGN (T.B.D.)
NOT TO SCALE

STATE OF MAINE
RICHARD L. MEEK
No. 10668
LICENSED PROFESSIONAL ENGINEER

DATE: 09-13-2022
P.E.: RICHARD L. MEEK, P.E. 10668

NO.	DATE	REVISIONS	APP'D BY
I	09-13-2022	SUBMIT SITE/SUBDIVISION APPLICATION TO CITY	RLM
H	08-17-2022	SUBMIT STORMWATER APPLICATION TO D.E.P.	

TERRADYN CONSULTANTS, LLC
41 CAMPUS DRIVE SUITE 201 NEW GLOUCESTER, ME 04260
565 CONGRESS STREET SUITE 201 PORTLAND, ME 04102
OFFICE: (207) 926-5111 FAX: (207) 221-1317
www.terradynconsultants.com
Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting

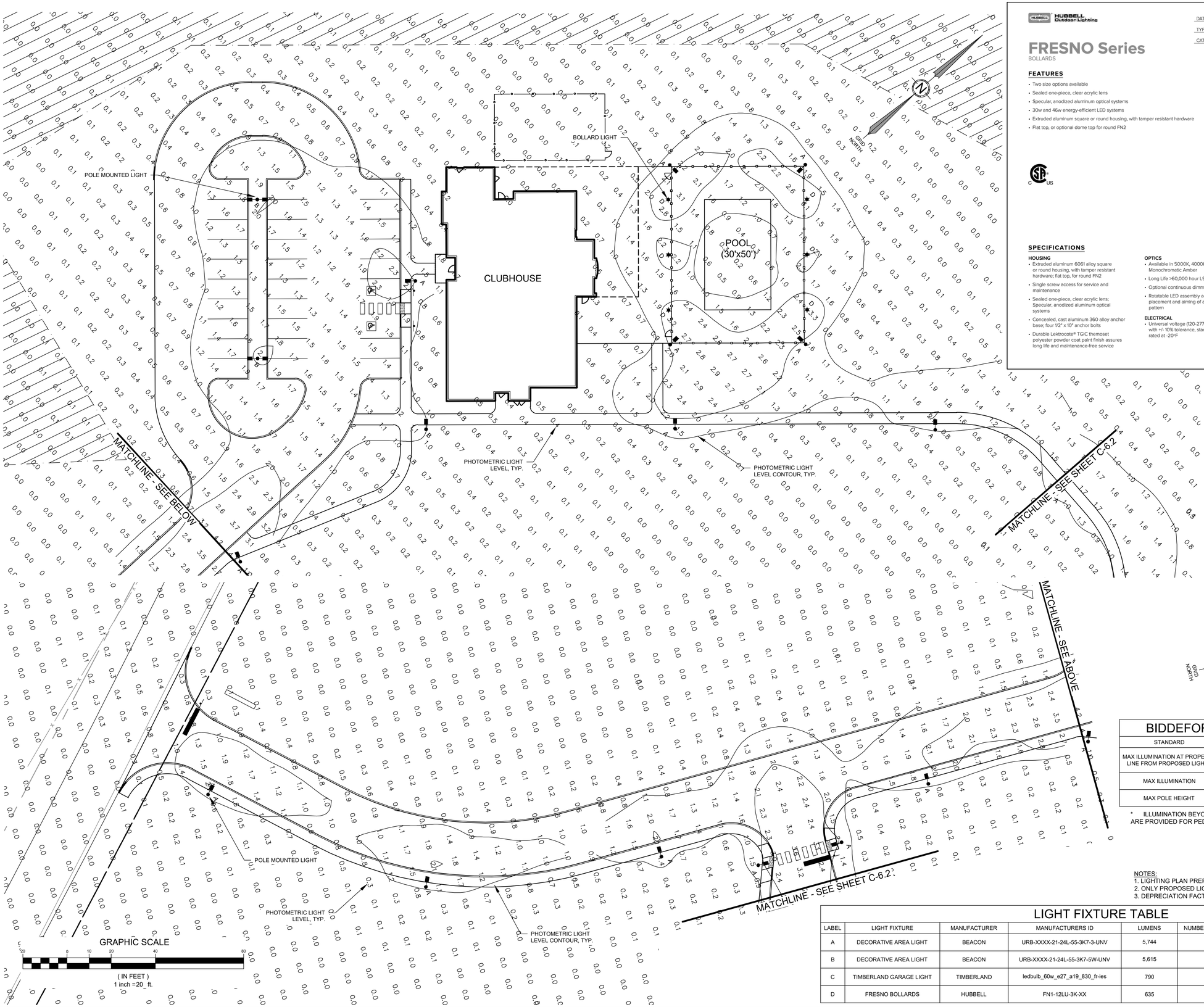
PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT: BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET: SITE DETAILS

CLIENT: DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09-13-2022
SCALE:	N.T.S.
DESIGNED:	RLM
JOB NO:	2149
FILE:	2149.D
SHEET	C-5.5



HUBBELL Outdoor Lighting

DATE: LOCATION:
TYPE: PROJECT:
CATALOG #:

FRESNO Series

BOLLARDS

FEATURES

- Two size options available
- Sealed one-piece, clear acrylic lens
- Specular, anodized aluminum optical systems
- 30w and 46w energy-efficient LED systems
- Extruded aluminum square or round housing, with tamper resistant hardware
- Flat top, or optional dome top for round FN2

RELATED PRODUCTS

Bristol Park Pavilion Family

SPECIFICATIONS

HOUSING

- Extruded aluminum 6061 alloy square or round housing, with tamper resistant hardware; flat top, for round FN2
- Single screw access for service and maintenance
- Sealed one-piece, clear acrylic lens; Specular, anodized aluminum optical systems
- Concealed, cast aluminum 360 alloy anchor base; four 1/2" x 10" anchor bolts
- Durable Lektrocote® TGIC themoset polyester powder coat paint finish assures long life and maintenance-free service

OPTICS

- Available in 5000K, 4000K, 3000K CCT and Monochromatic Amber
- Long Life >60,000 hour L90 rated at 25°C
- Optional continuous dimming to 10%
- Rotatable LED assembly adjustment for ideal placement and aiming of asymmetric light pattern

ELECTRICAL

- Universal voltage (120-277, 50/60Hz) drivers with +/- 10% tolerance, starting temperature rated at -20°F

CERTIFICATIONS

- Listed to UL1598 for use in wet locations

WARRANTY

- 5 year limited warranty
- See HLI Standard Warranty for additional information

LIGHTING LEGEND

A	NEW LED LAMP (MATCH EXISTING), TYPE 3 20-FT. MOUNTING HEIGHT, COLOR BLACK
B	NEW LED LAMP (MATCH EXISTING), TYPE 5 20-FT. MOUNTING HEIGHT, COLOR BLACK
C	BUILDING MOUNTED LIGHT FIXTURE. REFER TO ARCHITECTURAL PLANS. SEE ELECTRICAL PLANS FOR FIXTURE SPECS.
D	BOLLARD LIGHT, SPAULDING FRESNO BOLLARD, LED LAMP, COLOR BLACK

BIDDEFORD LIGHTING STANDARDS

STANDARD	REQURIED VALUE	PROVIDED VALUE
MAX ILLUMINATION AT PROPERTY LINE FROM PROPOSED LIGHTS	0.5 FC	0.0 FC
MAX ILLUMINATION	N/A	4.4 FC
MAX POLE HEIGHT	N/A	20'

* ILLUMINATION BEYOND PROPERTY LINES AT SITE ENTRANCE ARE PROVIDED FOR PEDESTRIAN AND VEHICLE SAFETY.

NOTES:
1. LIGHTING PLAN PREPARED USING DESIGN MASTER PHOTOMETRICS SOFTWARE
2. ONLY PROPOSED LIGHTING FIXTURES ARE MODELED
3. DEPRECIATION FACTOR FOR LED IS 0.90

LIGHT FIXTURE TABLE

LABEL	LIGHT FIXTURE	MANUFACTURER	MANUFACTURERS ID	LUMENS	NUMBER OF LIGHTS	MOUNTING HEIGHT	MOUNTING LOCATION
A	DECORATIVE AREA LIGHT	BEACON	URB-XXXX-21-24L-55-3K7-3-UNV	5,744	61	20'	POLE
B	DECORATIVE AREA LIGHT	BEACON	URB-XXXX-21-24L-55-3K7-5W-UNV	5,615	17	20'	POLE
C	TIMBERLAND GARAGE LIGHT	TIMBERLAND	ledbulb_60w_e27_a19_830_fr-ies	790	126	3.5'	WALL
D	FRESNO BOLLARDS	HUBBELL	FN1-12LU-3K-XX	635	6	10'	BOLLARD

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RICHARD L. MEEK
No. 10668
LICENSED PROFESSIONAL ENGINEER

DATE: 09-13-2022
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Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting
565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04102

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET:
PHOTOMETRIC PLAN - 1

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09-13-2022
SCALE:	1" = 20'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2149-P
SHEET	C-6.1

LIGHT FIXTURE TABLE

LABEL	LIGHT FIXTURE	MANUFACTURER	MANUFACTURERS ID	LUMENS	NUMBER OF LIGHTS	MOUNTING HEIGHT	MOUNTING LOCATION
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NOTES:
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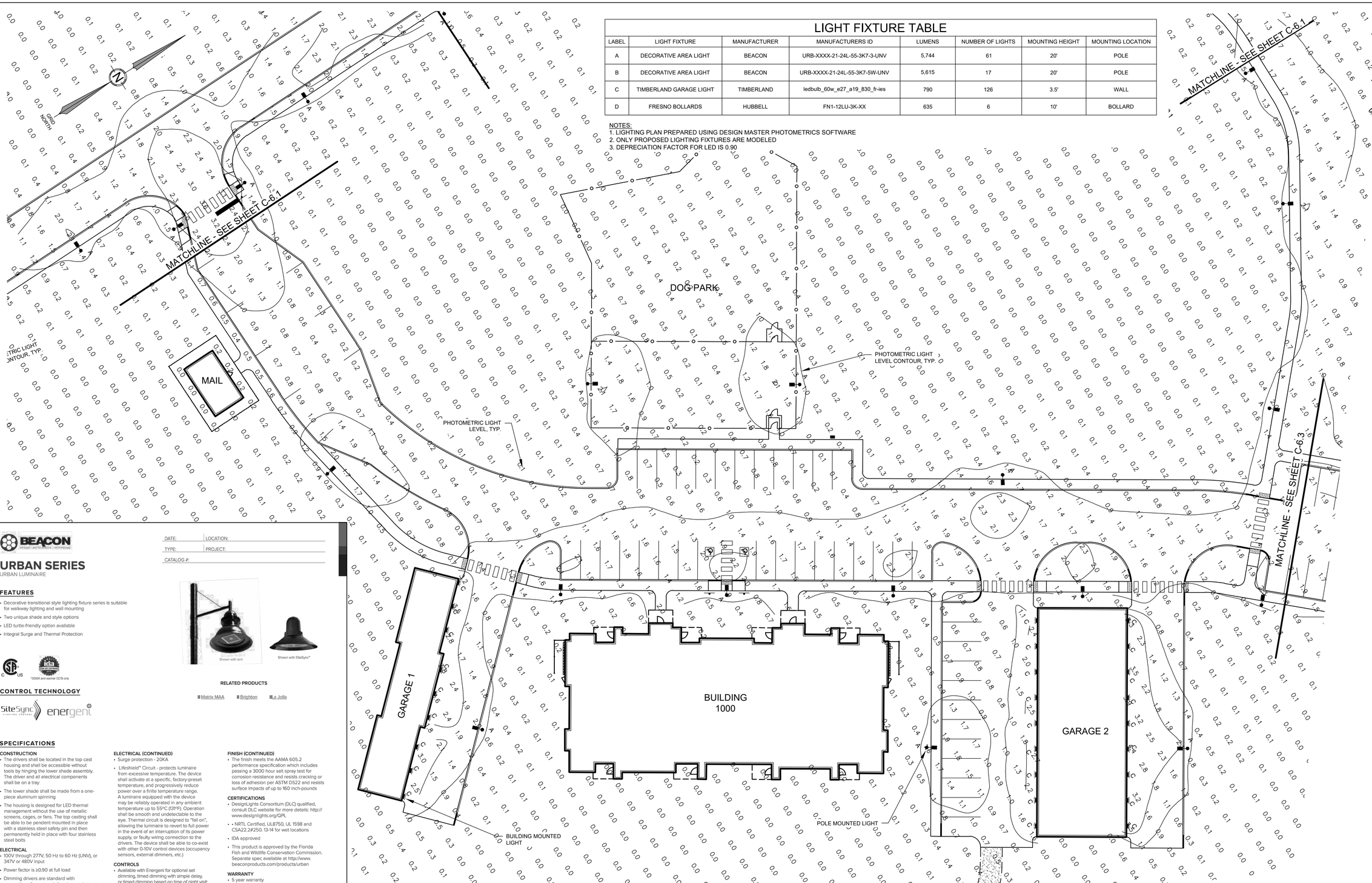

LIGHTING LEGEND

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- C — BUILDING MOUNTED LIGHT FIXTURE. REFER TO ARCHITECTURAL PLANS. SEE ELECTRICAL PLANS FOR FOR FIXTURE SPECS.
- D — BOLLARD LIGHT, SPAULDING FRESNO BOLLARD, LED LAMP, COLOR BLACK

BIDDEFORD LIGHTING STANDARDS

STANDARD	REQURIED VALUE	PROVIDED VALUE
MAX ILLUMINATION AT PROPERTY LINE FROM PROPOSED LIGHTS	0.5 FC	0.0 FC
MAX ILLUMINATION	N/A	4.4 FC
MAX POLE HEIGHT	N/A	20'

* ILLUMINATION BEYOND PROPERTY LINES AT SITE ENTRANCE ARE PROVIDED FOR PEDESTRIAN AND VEHICLE SAFETY.

BEACON design | performance | technology

URBAN SERIES

URBAN LUMINAIRE

DATE: LOCATION:
TYPE: PROJECT:
CATALOG #:

FEATURES

- Decorative transitional style lighting fixture series is suitable for walkway lighting and wall mounting
- Two unique shade and style options
- LED turtle-friendly option available
- Integral Surge and Thermal Protection

*3000K and warmer CCTs only

CONTROL TECHNOLOGY

SiteSync LIGHTING CONTROL energeni

RELATED PRODUCTS

Matrix MAA Brighton La Jolla

SPECIFICATIONS

CONSTRUCTION
- The drivers shall be located in the top cast housing and shall be accessible without tools by hinging the lower shade assembly. The driver and all electrical components shall be on a tray
- The lower shade shall be made from a one-piece aluminum spinning
- The housing is designed for LED thermal management without the use of metallic screens, cages, or fans. The top casting shall be able to be pendent mounted in place with a stainless steel safety pin and then permanently held in place with four stainless steel bolts

ELECTRICAL
- 100V through 277V, 50 Hz to 60 Hz (UNV), or 347V or 480V input
- Power factor is ≥0.90 at full load
- Dimming drivers are standard with connections for external dimming equipment available upon request
- Component-to-component wiring within the luminaire may carry no more than 80% of rated load and is listed by UL for use at 600VAC at 50°C or higher
- Plug disconnects are listed by UL for use at 600 VAC, 13A or higher. 13A rating applies to primary (AC) side only
- Fixture electrical compartment shall contain all LED driver components
- Button photocell available
- Ambient operating temperature -40°C to 40°C

ELECTRICAL (CONTINUED)
- Surge protection - 20KA
- Lifeshield™ Circuit - protects luminaire from excessive temperature. The device shall activate at a specific, factory-preset temperature, and progressively reduce power over a finite temperature range. A luminaire equipped with the device may be reliably operated in any ambient temperature up to 55°C (131°F). Operation shall be smooth and undetectable to the eye. Thermal circuit is designed to "fail on", allowing the luminaire to revert to full power in the event of an interruption of its power supply, or faulty wiring connection to the drivers. The device shall be able to co-exist with other 0-10V control devices (occupancy sensors, external dimmers, etc.)

CONTROLS
- Available with Energeni for optional set dimming, timed dimming with simple delay, or timed dimming based on time of night visit: www.beaconproducts.com/products/energeni
- Urban can be specified with SiteSync™ wireless control system for reduction in energy and maintenance cost while optimizing light quality 24/7. For more details, see ordering information or visit: www.hubbelllighting.com/products/sitesync/

FINISH
- IFS polyester powder-coat electrostatically applied and thermocured
- IFS finish consists of a five stage pretreatment regimen with a polymer primer sealer and top coated with a thermoset super TGIC polyester powder coat finish

FINISH (CONTINUED)
- The finish meets the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pounds

CERTIFICATIONS
- DesignLights Consortium (DLC) qualified, consult DLC website for more details: http://www.designlights.org/QPL
- • NRTL Certified, UL8750, UL 1598 and CSA22.2#250, 13-14 for wet locations
- IDA approved
- This product is approved by the Florida Fish and Wildlife Conservation Commission. Separate spec available at http://www.beaconproducts.com/products/urban

WARRANTY
- 5 year warranty
- See HLI Standard Warranty for additional information

KEY DATA	
Lumen Range	3,300–11,600
Wattage Range	55–136
Efficacy Range (LPW)	61–87

© 2020 Beacon Products a division of Hubbell Lighting, Inc. Specifications subject to change without notice.
701 Millennium Blvd • Greenville, SC 29607 / Tel 864.678.1000 / Website www.beaconproducts.com

HUBBELL Lighting

STATE OF MAINE
RICHARD L. MEEK
No. 10668
LICENSED PROFESSIONAL ENGINEER

DATE: 09-13-2022
P.E.: RICHARD L. MEEK, P.E. 10668

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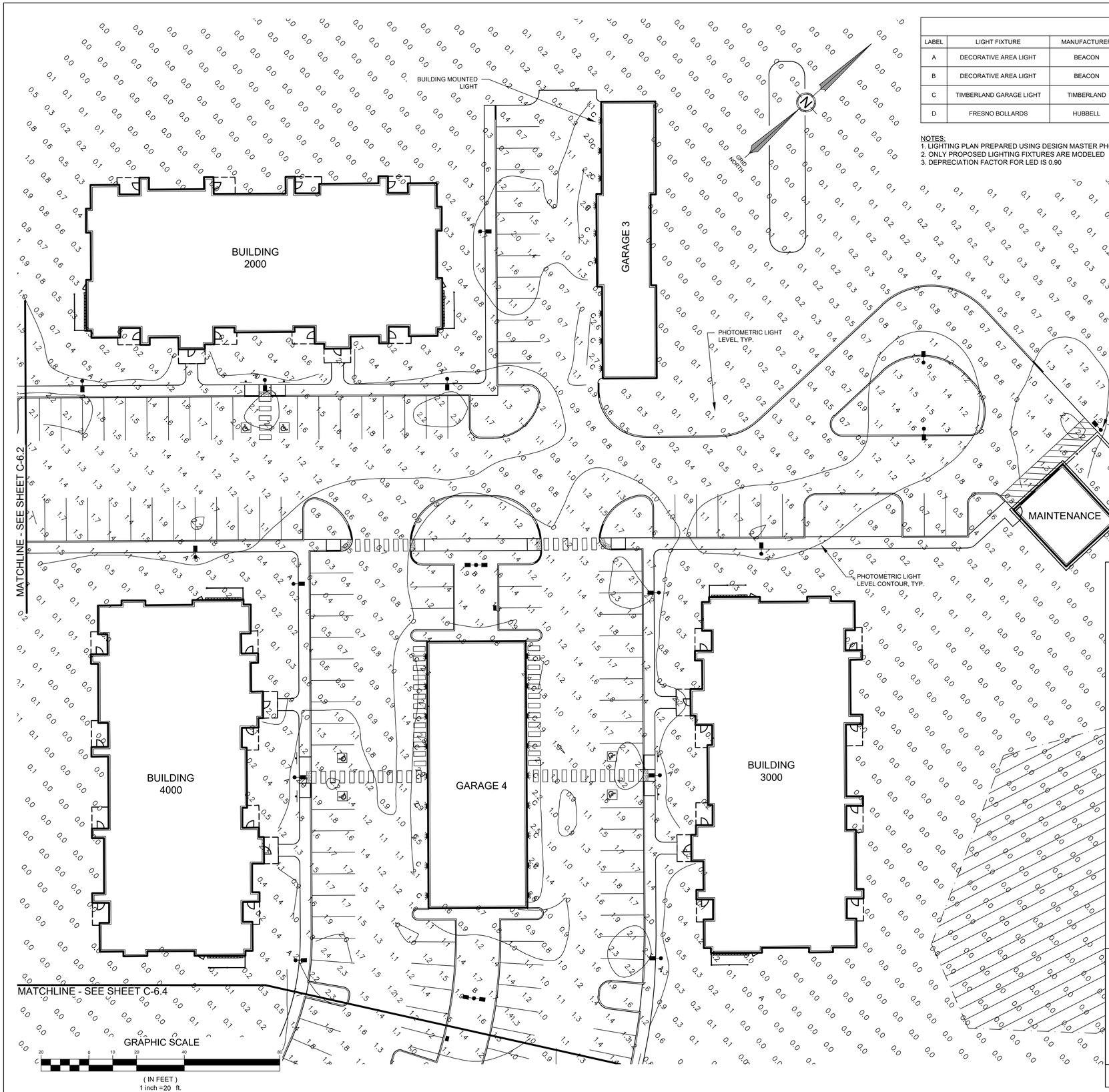
OFFICE: (207) 926-5111 FAX: (207) 221-1317
www.terradynconsultants.com
Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT: BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE
SHEET: PHOTOMETRIC PLAN - 2
CLIENT: DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09-13-2022
SCALE:	1" = 20'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2149-P
SHEET	C-6.2



LIGHT FIXTURE TABLE

LABEL	LIGHT FIXTURE	MANUFACTURER	MANUFACTURERS ID	LUMENS	NUMBER OF LIGHTS	MOUNTING HEIGHT	MOUNTING LOCATION
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C	TIMBERLAND GARAGE LIGHT	TIMBERLAND	ledbulb_60w_e27_a19_830_fr-ies	790	126	3.5'	WALL
D	FRESNO BOLLARDS	HUBBELL	FN1-12LU-3K-XX	635	6	10'	BOLLARD

NOTES:
1. LIGHTING PLAN PREPARED USING DESIGN MASTER PHOTOMETRICS SOFTWARE
2. ONLY PROPOSED LIGHTING FIXTURES ARE MODELED
3. DEPRECIATION FACTOR FOR LED IS 0.90

BIDDEFORD LIGHTING STANDARDS

STANDARD	REQURIED VALUE	PROVIDED VALUE
MAX ILLUMINATION AT PROPERTY LINE FROM PROPOSED LIGHTS	0.5 FC	0.0 FC
MAX ILLUMINATION	N/A	4.4 FC
MAX POLE HEIGHT	N/A	20'

* ILLUMINATION BEYOND PROPERTY LINES AT SITE ENTRANCE ARE PROVIDED FOR PEDESTRIAN AND VEHICLE SAFETY.

THE BEACON DECK LIGHT

Danbury 7 1/2" High Black Dark Sky LED Outdoor Wall Light - Style # 3X119

This energy-efficient LED outdoor wall light is a Dark Sky friendly design that shines light downward.

Inspired by modern industrial and barn light designs, this outdoor wall light comes in a durable steel frame, painted black for a classic look. It features a wide shade that directs light downward, making this a Dark Sky-friendly design. The built-in LED light source within offers long-saving, energy-saving technology for a modern world.

John Timberland LIGHTING · Dark Sky Friendly · LED

- 6 3/4" wide x 7 1/2" high. Extends 10 1/2" from the wall. Backplate is 6 3/4" high x 4 3/4" wide. Weighs 1.91 lbs.
- Built-in 10 watt non-dimmable LED. 790 lumens, comparable to a 60 watt incandescent. 3000K color temperature. 80 CRI.
- Outdoor wall light from the Danbury collection by John Timberland®. Dark Sky friendly. Wet location outdoor rated.
- Black finish steel construction. Non-glass design. Wide shade that opens at the bottom.
- LED averages 30,000 hours at 3 hours per day.

LIGHTING LEGEND

A	NEW LED LAMP (MATCH EXISTING), TYPE 3 20-FT. MOUNTING HEIGHT, COLOR BLACK
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Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET:
PHOTOMETRIC PLAN - 3

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09-13-2022
SCALE:	1" = 20'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2149-P
SHEET	C-6.3

LIGHT FIXTURE TABLE

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BIDDEFORD LIGHTING STANDARDS

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MAX ILLUMINATION	N/A	4.4 FC
MAX POLE HEIGHT	N/A	20'

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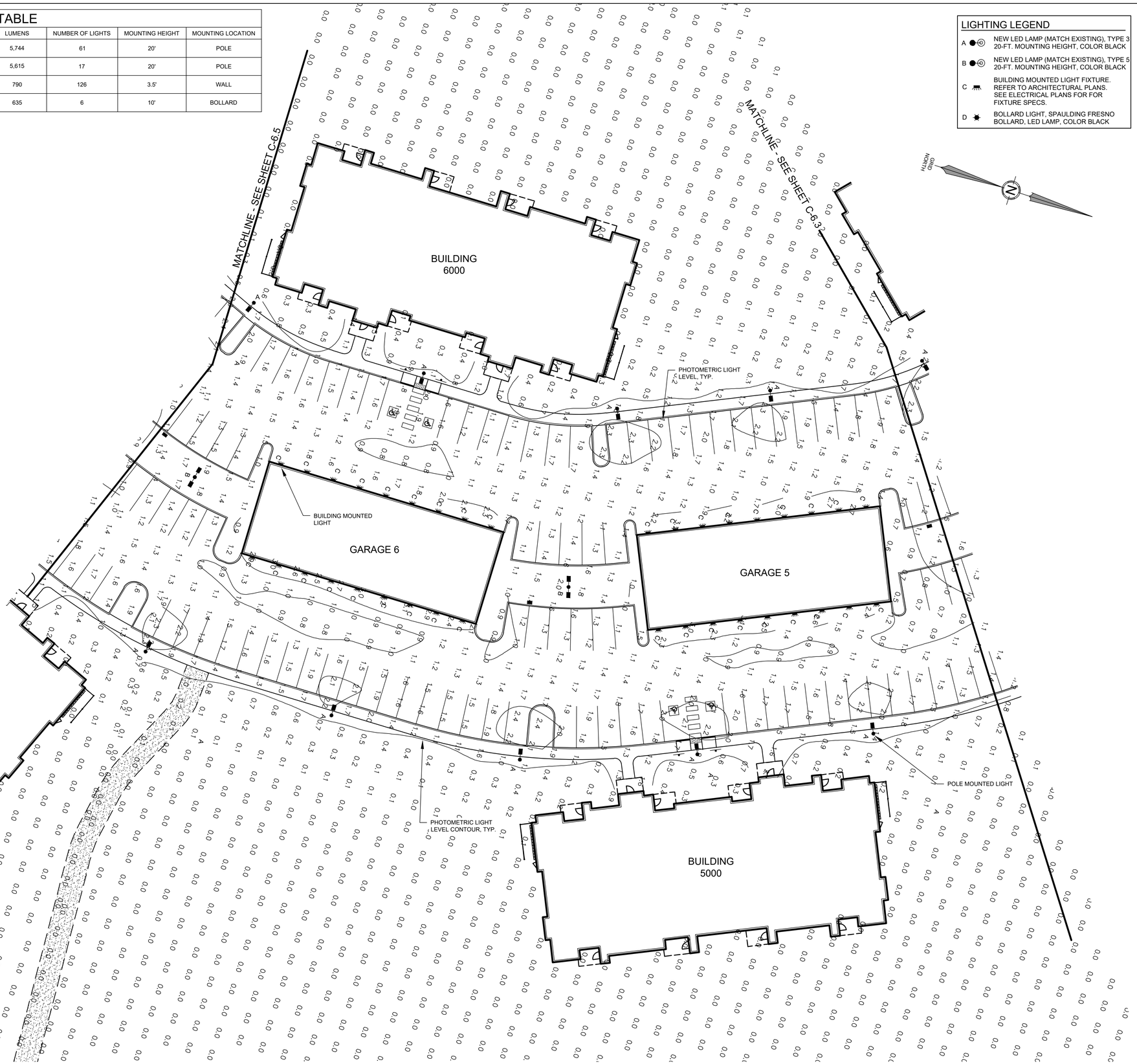

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PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET:
PHOTOMETRIC PLAN - 4

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09-13-2022
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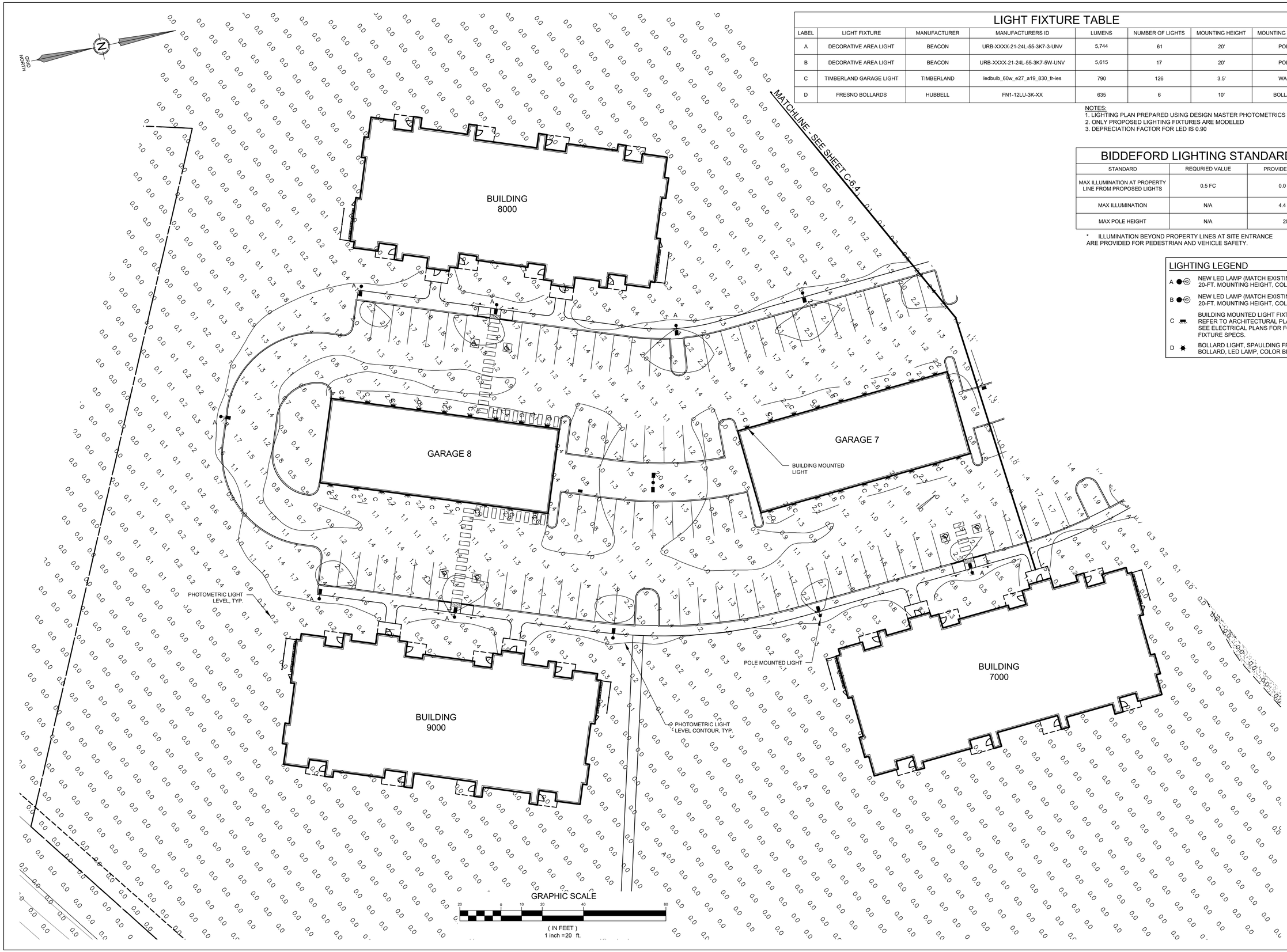
FILE: 2149-P	
SHEET	C-6.4



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PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT: BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

SHEET: PHOTOMETRIC PLAN - 5

CLIENT: DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	09-13-2022
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DESIGNED:	RLM
JOB NO:	2149
FILE: 2149-P	
SHEET	C-6.5

Pineland
Cumberland Hall
41 Campus Drive, Suite 301
New Gloucester, ME 04260

Portland
565 Congress Street, Suite 201
Portland, ME 04101

September 13, 2022 21-49

Mr. Matthew Grooms, City Planner
P.O. Box 586
Biddeford, ME 04005

Planning Board Application, Major Subdivision - Devine Capital, LLC
216 Unit Multi-Family Apartment Complex (Biddeford Residential)
588 & 590 Alfred Street (Tax Map 2, Lots 6 & 12)

Dear Matthew,

On behalf of Devine Capital, LLC, we are pleased to submit the required copies of the Planning Board Application and related attachments for consideration and placement on the October 5, 2022 Planning Board meeting agenda. As you will recall, the applicant attended the August 17, 2022 Planing Board meeting and presented the proposed project as a Sketch Plan Application. The Board provided great feedback regarding the project and ultimately voted to review the project as a Major Subdivision.

In summary, the applicant intends to construct a multi-family residential development on a combined 44.5 acre parcel (Tax Map 2, Lots 6 & 12) located off of Andrews Road and Alfred St. (Rt.111). The development will consist of nine 24-unit apartment buildings (216-units), a clubhouse, mail kiosk, maintenance building, eight detached garages, surface parking, dog park, community garden and interconnected sidewalks. When completed, the site will include 497 parking spaces (371 surface spaces and 126 garage spaces). Appropriate landscaping and site lighting have been incorporated into the development.

The development will connect to existing utilities within Andrews Road including electrical power, telephone, internet and cable television. Connection to public water and sanitary sewer will occur at Alfred St. These connections will require coordination with Maine Water Company and Public Works, respectively, to extend the exisitng infrastructure to the site. Additionally, the site will require installation of a private water booster station to provide adequate domestic water pressure and fire service flows to the development. On-site propane tanks or natural gas lines (extended to the site) will supplement the cooking and heating demands of the development. Stormwater management will be accomplished by constructing a network of catch basins and storm drainage pipe to route stormwater runoff to two proposed on-site gravel wetlands.

Based upon the scope of the development, a Site Location of Development Act (SLODA) permit application is required. The City of Biddeford maintains “Capacity” to review SLODA applications in lieu of the Maine Department of Environmental Protection (MDEP). A Chapter 500 - Stormwater Management Law permit application and Natural Resources Protection Act Permit (NRPA) applications (Tier-1 and Permit by Rule) have been filed with MDEP, however, as these permits cannot be delegated to the municipality. Due to

proposed impacts to freshwater forested wetlands, the Tier-1 NRPA permit will also be filed with the U.S. Army Corps of Engineers. The anticipated trip generation for the project will exceed 100 trips. As such, a Traffic Movement Permit has been filed with the Maine Department of Transportation (MDOT). No other state or federal permits are anticipated.

The following information addresses Part III, Article VI, Section 47 – Performance Standards for Multifamily developments:

A. Applications. The written material and design plans include the information as listed in A.1.
B. Design Requirements.
   a. Connection to public water is proposed. Maine Water Company has been contacted to confirm that an adequate water supply can be provided to the development. Maine Water Company's response will be provided once received.
   b. Fire hydrants are located less than 500 feet from all buildings. The Fire Department has been contacted to verify/approve of the layout.
   c. Buildings will be constructed in accordance with the applicable State and City building standards.
   d. Buildings will be equipped with an approved fire alarm system in accordance with the applicable State and City building standards.
   e. Connection to public sewer system is proposed. Public Works has been contacted to confirm that service is available and adequate treatment capacity is available. Public Works' response will be provided once received.
   f. A common collection dumpster and recycling bins will be provided for the residents. The developer will contract with a private solid waste disposal company to manage solid waste.
   g. The development will include an on-site mail kiosk to accommodate mail delivery and pick-up. The local postmaster will be contacted to verify the kiosk is acceptable to the postal service.
C. Stormwater and Drainage. A stormwater management report is provided in Attachment 5.
D. Access, circulation and parking.
   1. The proposed access is designed to meet the City's intersection standards.
   2. Based upon the estimated trip generation for the project, a Traffic Movement Permit has been submitted to MDOT. A copy of the submission is provided in Attachment 6.
   3. Access to the site is provided directly from Andrews Road.

The following information addresses Part III, Article XI, Part II, Section 5 Site Design and Development Criteria:

A. Site Development plan.
   1-6. These items are included on the design plans.
   7a.-7u. These items are included on the design plans.
   7v. The following studies/reports are provided for reference: Traffic Study, Drainage study/calculations, and High-intensity soils study.

B. Site Design Criteria
   1. Drainage. A stormwater management report has been prepared to address the majority of these requirements. Additional coordination with Public Works and City Engineer are necessary to understand the bonding requirements of 7.g.
   2. Utilities. The design plans address the utility requirements of this section.
   3. Parking. The design plans address the parking requirements of this section.
   4. Structural layout and design.
      a. Copies of the architectural elevations and floor plans are provided for reference.
      b. All proposed buildings have been sited to adhere to setback requirements.
      c. The site has been designed to address fire protection requirements.
      d. The design plans include adequate landscaping to address landscape requirements.
      e. Trash dumpster and recycling location is identified on the design plans. No outdoor storage is proposed.
      f. Pavement is not proposed within specified setbacks.
      g. Walkways and designated parking has been designed to meet ADA standards.
      h. No loading facilities are proposed.
      i. The site has been designed to adhere to the parking, loading and protective buffer requirements.
      j. Adequate green space is incorporated within the development to meet the open space requirement.
      k. External lighting with photometric analysis is provided as part of the design plan set.
      l. Monument signs for the development will be designed to meet the requirements of Article VI.
      m. A copy of the Maine Historic Preservation Commissions response letter is provided in Attachment 4.

Additionally, the project has been designed to comply with the City of Biddeford's Code of Ordinances Subdivision Review criteria. A narrative describing how these requirements are met is provided as Attachment 3.

Lastly, the following information is provided in response to the questions asked by the Board at last month's sketch plan review:

Proposed Apartment Mix: At last month's meeting a Board member asked what apartment mix the applicant originally proposed for the project. For reference, at the February 2022 City Council workshop, the applicant originally proposed an equal number of units, i.e., 54 studio units, 54 one-bedroom units, 54 two-bedroom units, and 54 three-bedroom units (totaling 216 units). In response to the City Council's desire to have a less studio apartments, the applicant agreed to the following unit mix under the terms of the Joint Development Agreement with the City:

- studio apartments 27
- 1-bedroom apartments 54
- 2-bedroom apartments 108
- 3-bedroom apartments 27

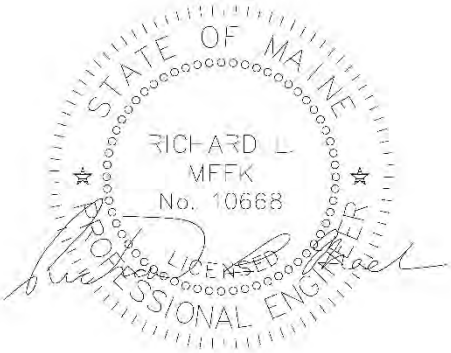
Total 216

Scarborough Rental Rates: At last month's meeting a Board member asked the applicant to provide the current rental rates at applicant's project in Scarborough (known as The Beacon at Gateway). The following are the average in-place rental rates for the Scarborough project:

- Studio $1,679
- One-bedroom $1,870
- Two-bedroom $2,304
- Three-bedroom $2,715

Please let me know if you have any questions or require additional information regarding the proposed Planning Board application. Thank you for your consideration.

Sincerely,
TERRADYN CONSULTANTS, LLC



Richard Meek, P.E.
Sr. Project Engineer

Enc.
cc: Devine Capital, LLC

Attachment 1	Application Form and Review Check Lists
Attachment 2	Right, Title, or Interest
Attachment 3	Compliance with Code of Ordinances
Attachment 4	Site Location of Development Act Permit Application
Attachment 5	Stormwater Management Report
Attachment 6	Traffic Study

Attachment 1

Application Forms and Review Check Lists

City of Biddeford – Planning Department
Planning Board Application
P.O. Box 586, 205 Main Street Biddeford, Maine 04005
207-284-9115

Type of Application:

__ Shoreland Zoning Permit _X Site Plan Review __ Extraction
__ Conditional Use Permit _X Subdivision __ Private Way
__ Other: _____

Applicant Information:

Name: Devine Capital, LLC
Mailing Address: 30 Milk Street, 3rd Floor
Telephone: 207-536-4664
Email: bmd300@gmail.com
What is your legal interest in the property?
__ Owner _X_ Potential Buyer with Contract __ Lease/Rental Agreement

Owner's Information:

Name: New Life Christian Fellowship
Mailing Address: 551 Alfred Road, Biddeford, Maine 04005-944
Telephone: 207-284-4840
Email: justin.sweeney@newlifemaine.org

Agent's Information:

Name: Roz Anton
Mailing Address: 40 Main Street, Suite #13-404, Biddedord, Maine 04005
Telephone: 207-450-3230
Email: roz@rozanton.com

Engineer/Surveyor's Information:

Name: Richard Meek, P.E., Terradyn Consultants, LLC
Mailing Address: 41 Campus Drive, Suite 301, New Gloucester, Maine 04260
Telephone: 207-459-9036
Email: rick@terradynconsultants.com

Project Location and Lot Information:

Street Address: 588 & 590 Alfred Street Drainage Watershed: Thatcher Brook
Tax Map: Tax Map 2 Lot: Lots 6 & 12
Current Zoning: B-2 Shoreland Zoning: _____
Size of Lot: 44.53 (X)acres ( )s.f. Lot Frontage: 327 ft. (Alfred St.), 721 ft. (Andrews Rd)
Existing Use of Property: Vacant land

Property currently serviced by:

_X City Road __ Public Sewer __ Public Water __ Public Trash
__ Private Road __ Septic System __ Private Well __ Private Hauler

Slope Conditions in Area of Construction (if applicable):
_X_ Flat (0-3% slope) _X_ Rolling (3-8% slope) _X_ Hilly (8-15% slope) __Steep (15%+ Slope)

Are there any wetlands or waterbodies on the site? _X_ (Yes)__(No) if yes attach information
Is the project within the 100-year floodplain? __ (Yes) X (No) if yes attach information
Do you plan to bring fill onto the lot? __(Yes) X (No) If yes attach information [Not Anticipated]

Description of proposed use of property:

Project/Proposed Use:

216 unit multi-family apartment development

Property to be Serviced by:

_X City Road _X Public Sewer _X Public Water __ Public Trash

__ Private Road __ Septic System __ Private Well __ Private Hauler

Limits of Disturbance: 18.133 (X)acres ( )s.f.

Net change in impervious cover: +8.063 (X)acres ( )s.f.

Is this project part of a larger project? __(Yes) _X(No)

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

Is this project within the Urbanized Area/MS4 (*see City Drainage Map*) __(Yes) X (No)

Is the project proposing any Stormwater facilities/BMPs? X (Yes) __(No)

Will a Traffic Movement Permit (TMP) be required?: X (Yes) __(No)

__ **If in a Shoreland Zone:**

Percent of residential lot coverage (Max 20%): N/A

Percent of structure expansion (Max 30%): N/A

__ **If Subdivision Review, number of lots proposed:** 216 apartment units

__ **If a Private Way is proposed, number of lots served:** 216 apartment units

If Site Plan Review, you must provide the following information:

Total new square feet footprint of structure: 127,290 sq. ft.

Total new square feet paving/parking: 223,950 sq. ft. (includes all non-structure impervious)

Waiver Requests (attach details):

1. _____
2. _____
3. _____
4. _____
5. _____

Required Submittal Attachments:

A. Letters of Approval
   - __ Fire Department – Contact Chief or Deputy Chief – 282-9986
   - __ Ability to Serve for Water Service – Maine Water – 282-1543
   - __ Ability to Serve for Sewer Service – Engineering Department – Tom Milligan 284-9118
   - __ Police Department – e-911 Road Name Designation – Contact Joanne Fisk 282-5127

B. Letter to Planning Board describing project, Waiver requests, proposed improvements, addressing permit requirements, etc.

C. Photographs of Site.

D. Architectural renderings/drawings of proposed buildings, as required.

E. Engineering Plans, as required.

F. Stormwater Management Report, as required.

Fees (Due at time of Submission):

- $75 Nonrefundable Administration Fee is required for every application.
- Refer to "Attachment A Fees and Charges" of the Land Development Regulations for more information. Consult with Planning Staff if you have questions.

Required Signatures:

By signing this application, as the foresaid applicant or authorized agent:

- I certify that I have read and completely understand the application;
- I certify that the information contained in this application and its attachments are true and correct;
- I understand that all information provided on this form and all other documents submitted as part of my proposal is a matter of public record;
- I understand that copies of this information may be supplied upon request to an interested party.
- I understand that additional funds may be required through the course of the review for special studies, legal review costs, and/or engineering review.
- I understand that by submitting an application I am not guaranteed a place on any particular agenda. I further understand that the City Planner will place me on an agenda for review when the application is deemed substantially complete.

Will the proposed project cause 1 acre or more of site disturbance?: X (Yes) __(No)

- **If Yes, applicant is responsible for any required Maine Construction General Permits and shall comply with the requirements of DEP Chapter 500 Stormwater Regulations, as they apply.**

Signature of Applicant: DocuSigned by: Justin Sweeney 2507456A9BB5421... **Date** 9/7/22

Signature of Property Owner: **Date** 9/7/2022

DIGITAL SUBMITTAL REQUIREMENTS FOR ALL SUBMITTALS:

A) PDF OF SIGNED APPLICATION

B) PDFs OF ALL DRAWING SETS AND OTHER REQUIRED SUBMITTAL ATTACHMENTS NOTED ABOVE

HARD-COPY SUBMITTAL REQUIREMENTS FOR PLANNING BOARD APPLICATIONS:

A) SEVEN (7) FULL-SIZE PAPER COPIES OF DRAWING SETS

DIGITAL SUBMITTAL REQUIREMENTS FOR FINAL APPROVAL:

A) INDIVIDUALLY NAMED PDFs OF EACH DRAWING (NOT A COMBINED PDF SET)

- Individual Drawing PDF Naming Format: 'PROJECT/SHEETSET NAME_INDIVDUAL DRAWING NAME.pdf'

B) PDF COPIES OF ALL PERMIT APPROVALS, APPLICATIONS, REPORTS, NARRATIVES, LETTERS, ETC.

C) FINAL CAD REFERENCE FILES IN DWG FORMAT (SURVEY & PROPOSED DESIGN LINEWORK)

- All drawings & CAD reference files must be to-scale and within the following coordinate systems:

- MAINE STATE PLANE WEST NAD83 (Horizontal Datum) & NAVD88 (Vertical Datum)

HARD-COPY SUBMITTAL REQUIREMENTS FOR FINAL APPROVAL:

A) THREE (3) FULL-SIZE PAPER COPIES OF INDIVIUDAL DRAWINGS REQUIRING BOARD SIGNATURE

B) ONE (1) FULL-SIZE PAPER COPY OF ENTIRE DRAWING SET FOR ENGINEERING RECORDS

PLEASE CONFIRM WITH PLANNING STAFF FOR CLARIFICATION

SITE PLAN REVIEW

XI Attachment 1

City of Biddeford

Site Review Checklist

PROJECT NAME: Biddeford Residential

LOCATION: Andrews Rd. and Alfred St. (Rt. 111) ZONE: B-2

DATE REVIEWED: _____

WAIVERS REQUESTED: GRANTED BY BOARD:

Section 5 – Site Design and Development Criteria

	Complete	Incomplete	N/A
A. SITE DEVELOPMENT PLAN.			
Sheet size of 24 by 36 inches.	X		
Scale not less than one inch equals 50 feet.	X		
Bar or graphic scale.	X		
Original plan or Mylar.	X		
Submitted ten paper prints.	X		
Plan shall bear the drawing/revision date.	X		
Title.	X		
North point.	X		

	Complete	Incomplete	N/A
Name and address of developer and applicant.	X		
Location/vicinity sketch (one inch equals 80 feet).	X		
A sketch showing existing natural features including:	X		
Watercourses and water bodies, seasonal wet areas.	X		
Soil type/location and test borings.	X		
Topographic contours (every five feet for 0% to 3% slope; or every two feet for steeper areas).	X		
The preservation/supplementation of existing dominant vegetation.	X		
Plan view of all buildings.	X		
First floor elevation.	X		
Outline of buildings within 200 feet.	X		
Existing use of abutting property.	X		
The location, width, curbing, and paving of accessways, egress ways and streets within the site for both pedestrian and vehicular use.	X		
Location of off-street parking and loading.	X		
Size and proposed location of water mains and sanitary sewerage facilities with all necessary engineering data.	X		
Size and location of all other existing and proposed public service connections including, without limitations, gas lines, power lines, telephone lines, and fire alarm connections and locations, indicating whether above or below ground.	X		
Type, nature, and composition of all solid, liquid, and gaseous waste, industrial or otherwise, and the location, type, and design criteria of the storage and disposal facilities dealing with such waste.	X		
Location, elevation, and layout of existing and proposed catchbasins and other surface drainage features.	X		
Existing and proposed contours and finished grade elevations as well as the type, extent, and location of existing and proposed landscaping and open space areas which will be retained.	X		

SITE PLAN REVIEW

	Complete	Incomplete	N/A
Location, size, and design of proposed signs and other advertising or instructional devices.	X		
Location and type of lighting for outdoor facilities.	X		
Lines of existing and proposed abutting streets showing width.	X		
Surveyed property lines showing their bearing and distances and monument locations	X		
Lines and names of all proposed streets, lanes, ways, or easements intended to be dedicated for public or private use.			X
Copy of any covenants or restrictions that are intended to cover all or a part of the land areas to be developed.			X
Limits of wetland areas on the property.	X		
Delineate existing zoning boundaries within 1,000 feet of the site on location map.	X		
Stamp and signature of licensed land surveyor.	X		
Stamp and signature of professional engineer.	X		
Stamp and signature of architect.	X		
Other exhibits or data that the Planning Board may require in order to adequately evaluate proposed development or project; this would include:			
Traffic study.	X		
Community fiscal impact study.			X
Drainage study/calculations.	X		
High-intensity soils study.	X		
Photographs.			X

66 Attachment 2

City of Biddeford

Appendix B
Required Information Checklist
[Ord. of 6-20-1995]

In order for any application to be considered complete the following information must be provided at least two weeks prior to the Planning Board meeting. All plans for subdivisions shall contain the following information:

	Yes	No	N/A	Remarks
(1) Name of subdivision, owner and engineer or surveyor	X			
(2) Graphic scale, date, drawn, North point and its date, and whether it is true or magnetic	X			
(3) Boundaries of the tract	X			
(4) Existing zoning	X			
(5) Ownership and location of abutting properties	X			
(6) Name, location, width, profile, cross-section, radius of curves, angles of change in direction and center line length of all angles of change in direction and center line length of all proposed streets; other public ways, building lines and easements in the subdivision; intersection of existing streets	X			
(7) Type, location, profile and cross-section of all existing and/or proposed surface water drainage	X			
(8) Location of all existing and/or proposed utilities	X			
(9) Location of all existing and/or proposed sanitary sewers showing size, profile, and cross-section, or description, plan, location of other means of sewage disposal with evidence of successful soil evaluation	X			
(10) Topography at two-foot contour intervals, unless otherwise prescribed by the Board. In addition the location of existing natural or man-made features influencing the layout of the proposed subdivision shall be shown.	X			

	Yes	No	N/A	Remarks
(11) Lot lines and approximate dimensions	X			
(12) Proposed uses of property	X			
(13) Proposed public areas, if any			X	
(14) Copy of deed, or option for purchase, for land being subdivided	X			
(15) Reserved fire lane areas			X	
(16) Location of soil evaluation test pits for each lot on plan			X	
(17) Location of well or water supply for each lot			X	
(18) Aesthetics; trees, berms, shrubs, green strips, parks, etc.	X			
(19) Location and details for sedimentation and erosion control measures	X			
The preliminary of a subdivision shall be drawn at a scale no smaller than 100 feet (1 cm = 12 m) to the inch	X			
A preliminary plan shall include a location map insert, showing the relationship of the proposed subdivision to adjacent properties and public access, and drawn at no smaller scale than 2,000 feet (1 cm = 240 m) to the inch. It is suggested that reduced sections of City maps be used for this purpose.	X			

In addition to the above plat information, the Subdivider shall provide the following documents:

	Yes	No	N/A	Remarks
Valid deed or option indicating an interest held by the subdivider in the parcel of land	X			
Completed application form	X			
Narrative of the proposed project briefly describing the general nature of the project i.e., type of project; residential or commercial; number of lots intended to create	X			
Draft covenants and deeds for each lot proposed			X	
Easement documents for proposed rights-of-way for utilities, drainage ways, roadways and other			X	

	Yes	No	N/A	Remarks
travelways or public amenities				
Statement of financial capability of subdivider to undertake the proposed project	X			
Statement identifying principals involved in the project	X			
Statement demonstrating that the subdividers have the technical capability to complete the proposed project as presented	X			
Copies of such covenants or deed restrictions as are intended to all or part of the tracts			X	
Review by water company, power company and City Engineering, Police and Fire Departments	X			Coordination is in progress

66 Attachment 3

City of Biddeford

Appendix C
Subdivision Review Criteria
[Ord. of 6-20-1995]

The Board shall base its decision on the plans meeting the conditions and requirements outlined in this chapter; and that the plan meets in a positive fashion, the following:

	Yes	No	N/A	Remarks
1. The project will not result in undue water or air pollution. In making this determination the Board shall consider:	X			
(a) The elevation land, and its relation to the floodplains;	X			
(b) The nature of the soils and the subsoils;	X			
(c) The ability to adequately support waste disposal;	X			
(d) The slope of the land and its affects on effluents;	X			
(e) The availability of streams for the disposal of effluents; and	X			
(f) The applicable state and local health and water resources regulations	X			
2. The project has sufficient water available for the reasonably foreseeable needs of the subdivision	X			
3. The project will not cause an unreasonable burden on an existing water supply, if one is utilized	X			
4. The project will not cause unreasonable soil erosion or reduction in the capacity of the land to hold water so that a dangerous or unhealthy condition may result	X			
5. The project will not cause unreasonable highway or public road congestion or unsafe conditions with respect to use of the highways or public roads existing or proposed	X			
6. The project will provide for adequate sewage/waste disposal	X			

	Yes	No	N/A	Remarks
7. The project will not cause unreasonable burden on the ability of the municipality to dispose of solid waste and sewage if municipal services are to be utilized	X			
8. The project will not have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites, or rare and irreplaceable natural areas or public rights for physical or visual access to the shoreline	X			
9. The project is in conformance with a duly adopted subdivision regulation or ordinance, Comprehensive Plan, development plan, or land use plan. In making this determination the Board is authorized to interpret these ordinances and plans.	X			
10. The subdivider has adequate financial and technical capacity to meet the above-stated standards	X			
11. Whenever situated, in whole or in part, within 250 feet of any lake, pond, river, or tidal waters, the project will not adversely affect the quality of that body of water, or unreasonably affect the shoreline of that body of water; as indicated on the City of Biddeford's Official Zoning Map and referenced in the City's Comprehensive Plan	X			
12. The project will not, alone or in conjunction with existing activities, adversely affect the quality or quantity of groundwater	X			
13. The subdivider will provide information, based on FEMA flood boundary, floodway, and flood insurance maps, whether or not the project is in a flood-prone area	X			
14. The project will not unreasonably obstruct abutting properties or structures access to direct sunlight	X			

Attachment 2

Right, Title, or Interest

BK11111PG070

WARRANTY DEED **062428**

KNOW ALL MEN BY THESE PRESENTS

THAT I, JAMES A. MININNI, SR., of Biddeford, York County, Maine, for consideration paid, grant to NEW LIFE CHRISTIAN FELLOWSHIP, a Maine religious corporation with a mailing address of 551 Alfred Road, Biddeford, Maine 04005, with **warranty covenants**, a certain parcel of land situated on the Northerly side of the Alfred Road, near the top of Chick's Hill, so-called, in Biddeford, York County, Maine, bounded and described as follows:

Beginning on said road at the corner of land formerly of one Daniel Cyr at an iron hub set in the ground; thence northeasterly by said Cyr's land and land of others to a spotted tree at a brook; thence northwesterly by the brook to land of Ben Lunt, marked by a spotted tree; thence southwesterly by said Lunt land and land of others to an oak tree and land of one Coffey; thence by said Coffey's land southerly to the road at an iron hub set in the ground; thence southeasterly by said road to said Cyr land and point of beginning.

Being the same premises conveyed to the Grantor herein by warranty deed of Lucia Mininni dated October 3, 1996, and recorded October 10, 1996, in the York County Registry of Deeds in Book 8027, Page 103.

IN WITNESS WHEREOF, I, JAMES A. MININNI, SR. have hereunto set my hand and seal this 13th day of November, 2001.

Signed, sealed and delivered
in the presence of

James A. Mininni SR.
JAMES A. MININNI, SR.

STATE OF MAINE
YORK, ss.

November 13, 2001

Personally appeared the above named James A. Mininni, Sr. and acknowledged the foregoing instrument to be his free act and deed.

Attorney at Law/~~Notary Public~~

David R Ordway
(print name)

Return to:

RECEIVED YORK S.S
2001 NOV 13 PM 4: 15
ATTEST: Lois M. Muse
REGISTER OF DEEDS

MAINE R.E. TRANSFER TAX PAID

1709 A MAIN NERSON ESQ
37 BERRY ST. SACO ME 04072

014748

WARRANTY DEED
Maine Statutory Short Form

KNOW ALL MEN BY THESE PRESENTS,

THAT **ENERGY HOMES, INC.**, a Maine corporation, with a place of business in Limerick, County of York, State of Maine,

for consideration paid,

grant to **NEW LIFE CHRISTIAN FELLOWSHIP, f/k/a NEW LIFE ADVENT CHRISTIAN CHURCH OF BIDDEFORD, MAINE**, a religious non-profit corporation, without corporate stock, organized under the laws of the State of Maine, with its principal place of business in Biddeford, County of York, State of Maine, whose mailing address is 547 Alfred Road, Biddeford, ME 04005, with **warranty covenants**, the land in the City of Biddeford, County of York, State of Maine, described as follows:

MAINE R.E. TRANSFER TAX PAID

A certain lot or parcel of land, with the buildings and improvements thereon, situated in the City of Biddeford, County of York and State of Maine, on the northerly side of the Alfred Road, so-called, bounded and described as follows:

BEGINNING on said Alfred Road at the intersection of the same with the Andrews Road, also known as Andrew Road, so-called; thence running northwesterly by said Andrews Road, to land formerly of Daniel S. Hooper; thence northeasterly by said Hooper land and land formerly of Daniel Smith and one Stimpson to land now or formerly of K. S. Gilpatrick; thence southerly by said Gilpatrick land to said Alfred Road; thence westerly by said Alfred Road to said Andrews Road and point of beginning.

EXCEPTING that portion of the above described premises which was previously conveyed to Central Maine Power Company by undated instrument recorded in the York Registry of Deeds on November 14, 1988 in Book 4901, Page 286 (erroneously referred to being recorded in Book 4901, Page 287 in deed to Energy Homes, Inc. referenced below).

ALSO EXCEPTING that portion which was conveyed to the State of Maine by deed dated January 30, 1950 and recorded in said Registry of Deeds in Book 1150, Page 211.

Being the same premises conveyed to Energy Homes, Inc. by deed of Normand R. Verville, Personal Representative of the Estate of Lillian M. Verville, dated August 4, 1999 and recorded in the York Registry of Deeds in Book 9618, Page 290.

FURTHER EXCEPTING AND RESERVING from the above described premises that portion thereof which was conveyed by Energy Homes, Inc. to David R. Pelletier and Joyce A. Pelletier by deed duly recorded in the York Registry of Deeds in Book 10872, Page 44, reference to which is hereby made for a more particular description.

BK 11449 PG 148

IN WITNESS WHEREOF, It, the said **ENERGY HOMES, INC.**, has caused this instrument to be signed in its corporate name and behalf by **ANDRE N. COTE**, its President thereunto duly authorized, this 5th day of March, 2002.

SIGNED, SEALED AND DELIVERED
IN PRESENCE OF

ENERGY HOMES, INC.

BY: _____
Andre N. Cote, President

STATE OF MAINE
YORK, ss.

March 5th, 2002

Then personally appeared the above named **ANDRE N. COTE,** President of **ENERGY HOMES, INC.** and acknowledged the foregoing instrument to be his free act and deed, in his said capacity and the free act and deed of said **ENERGY HOMES, INC.**

Before me,

_____
Bryce W. Ingraham
Attorney at Law

chi-newlife-chi-T4830-deed-del2002.wpd

RETURN RECORDED DOCUMENT TO:
New Life Christian Fellowship
547 Alfred Road
Biddeford, ME 04005

RECEIVED YORK S.S
2002 MAR 11 AM 11:31
ATTEST: Lois M. Muse
REGISTER OF DEEDS

Pleasant Lemone
Post Office Box 1190
Sanford Maine 04073

Digitized

OPTION TO PURCHASE AND PURCHASE AND SALE AGREEMENT

OPTION TO PURCHASE AND PURCHASE AND SALE AGREEMENT ("**Agreement**") made as of the date ("**Effective Date**") of last execution appearing below, by and between **New Life Christian Fellowship**, a Maine religious nonprofit corporation ("**Seller**"), with a mailing address of 551 Alfred Road, Biddeford, Maine 04005-9474 and **Devine Capital LLC**, a Massachusetts limited liability company, or its nominee ("**Buyer**"), with a mailing address of P.O. Box 17795, Portland, Maine 04112.

WHEREAS, Seller owns fee simple interest in that certain real property consisting of approximately 44.7 acres more or less located generally at 588 and 590 Alfred Street, in the City of Biddeford, County of York, Maine, also known as Tax Map 2, Lots 6 and 12, and more particularly described in the source deeds referenced in **Exhibit A** attached hereto (the "**Property**"); Excepting and reserving a 2.1 acre parcel conveyed to Old Dogs of Biddeford, LLC as referenced as Tax Map 2, Lot 6-3 and in the York County Registry of Deeds Book 17933 Page 197 also referenced here in Exhibit B.

WHEREAS, Seller has agreed to grant to Buyer an option to purchase the Property in the future for a set price reflected below, and does thus commit and obligate itself to sell and convey the Property to Buyer on the terms and conditions as set forth below;

NOW, THEREFORE, for good and valuable consideration, the sufficiency and receipt whereof is hereby acknowledged, the parties hereto, intending to be legally bound, hereby agree as follows, incorporating the foregoing recitals by reference as if fully restated hereinbelow:

Article I – Grant, Timing, Diligence, Permitting

1.1 *Option, Purchase Price.* For the consideration recited above, and in consideration for Buyer investing substantial time and money to review, evaluate, inspect, and explore development opportunities with respect to the Property, subject to the terms and conditions hereof, Seller hereby irrevocably grants to Buyer the exclusive right and option (the "**Option**") to purchase the Property for the sum of [redacted] (the "**Purchase Price**").

1.2 *Preliminary Diligence Deadline.* The initial term of the Option shall commence on the Effective Date and, unless otherwise extended in accordance with the terms hereof, shall expire at **6:00 p.m.** (Eastern Time), [redacted] days thereafter, during which period Buyer shall conduct its due diligence inspections (addressed in Article II below), the results of which shall be acceptable to Buyer in its sole and absolute discretion (the "**Preliminary Diligence Deadline**").

1.3 *Rezone/Permitting Deadline; Rezone/Permitting Approval Date.*

A. Upon the Preliminary Diligence Deadline, unless Buyer has terminated this Option due to the results of its due diligence being unsatisfactory to Buyer in its sole and absolute discretion, Buyer shall pay and deliver to Seller monthly payments in the amount of [redacted] in order to extend the Option term for up to [redacted] consecutive periods of [redacted] days each (all such monthly payments hereinafter referred to as the "**Option Payments**"). The Option Payments shall be nonrefundable but shall be applied to the Purchase Price at closing. Seller hereby grants to Buyer full authority to seek from any federal, state, or local governmental authority any zoning change(s) and/or permits and/or approvals whatsoever that Buyer, in its sole and absolute discretion, deems advisable for Buyer's intended development of the Property for a multi-family residential development (the "**Project**") during such extended period ("**Rezone/Permitting Deadline**"). Seller hereby agrees to fully support and cooperate with Buyer's efforts to rezone and permit the Project, and specifically agrees to appear and testify in favor of, and promptly execute any document reasonably requested by Buyer in connection with, any such efforts of Buyer, all at no cost or charge to Buyer.

B. In the event Buyer does not obtain final unappealable zoning change(s)/approvals, including conditional use and/or permits for the Project acceptable to Buyer in its sole and absolute discretion, or otherwise affirmatively elect by written notice to Seller to close notwithstanding the lack of such permits and/or approvals, by the Rezone/Permitting Deadline, then unless Buyer

elects to extend the Rezone/Permitting Deadline as provided in Section 1.4, below, this Agreement shall automatically terminate as of the Rezone/Permitting Deadline, and, promptly upon Buyer's delivery to Seller of (1) an instrument (the "**Release**") signed by Buyer and suitable to release and discharge the Record Notice, and (2) digital copies of and an assignment of all right in the all materials developed by Buyer and its contractors as part of Buyer's efforts to rezone and permit the Project (the "**Rezone Permitting Materials**"), this Agreement shall be null, void, of no further force and effect, and each party hereto shall have no further obligation one to the other.

C. If Buyer obtains zoning change(s) and permits for the Project acceptable to Buyer in its sole and absolute discretion, then promptly upon the date ("**Rezone/Permitting Approval Date**") that the last of such zoning change(s) and/or permit(s) become final and non-appealable, Buyer shall serve notice upon Seller confirming same, and Buyer shall close on the purchase by the date ("**Closing Deadline**") that is [redacted] days after the Rezone/Permitting Approval Date, and the notice described in the first sentence of this subsection shall also constitute the Exercise Notice referenced in Section 3.1, below, and shall contain the additional information specified in Section 3.2, below.

1.4 *Additional Option Extension Payments*. Notwithstanding any contrary provision herein, if Buyer has not obtained all necessary unappealable permits and/or approvals for the Project, Buyer may elect to further extend the Option and Rezone/Permitting Deadline for up to [redacted] additional, successive periods of [redacted] days each, provided Buyer shall pay and deliver to Seller monthly payments, in the amount of [redacted] (all such monthly payments hereinafter referred to as the "**Extension Payments**"). The Extension Payments shall be nonrefundable but shall be applied to the Purchase Price at closing.

1.5 *Termination*. Notwithstanding any contrary provision herein, at any time before the Rezone/Permitting Approval Date, Buyer may elect to terminate this Agreement by delivering to Seller notice thereof ("**Termination Notice**"). If a Termination Notice is given, Buyer shall promptly deliver to Seller the Release signed by Buyer and the Rezone/Permitting Materials, as described in Section 1.3 above, and upon such delivery, this Agreement shall be null and void, of no further force and effect, and each party hereto shall have no further obligation one to the other, except that Buyer's indemnification obligations under Section 2.2 shall survive any termination.

Article II – Due Diligence

2.1 To facilitate Buyer's inspections and evaluation of the Property, Seller agrees to deliver to Buyer as soon as possible, but in any event within [redacted] days from the date hereof, copies of the materials specified on the list attached hereto as **Exhibit B** (the "**Due Diligence Materials**"). In addition, Seller agrees to permit Buyer to inspect and make copies of any books and records in Seller's possession or control concerning the Property.

2.2 So long as this Agreement remains in effect, Buyer may conduct such investigations, inspections, interviews, tests, assessments and audits pertaining to the Property as Buyer elects, in Buyer's sole discretion and at Buyer's sole cost, *including but not limited to*: (i) title search; (ii) survey; (iii) environmental site assessment; (iv) review of zoning and building code requirements; and/or (v) physical/geotechnical inspection of the Property (collectively, the "**Inspections**"). Buyer shall promptly repair any physical damage to the Property caused by any such Inspections, and Buyer further agrees to indemnify and hold Seller harmless from and against any and all loss, cost, damage, or expense incurred by Seller as a result of said physical damage.

2.3 Seller agrees, in general, to cooperate in good faith with Buyer and Buyer's representatives, and, in particular:

2.3.1 so as to secure the rights granted to Buyer hereunder and to ensure that the Property shall be in substantially the same condition at the time of conveyance as exists as of the date of this Agreement, Seller agrees that for so long as this Agreement remains in

effect, then unless and until Buyer in writing consents otherwise, Seller shall maintain the Property substantially in condition as currently exists, timely paying all taxes and other impositions related to ownership thereof, and shall not: (a) transfer, encumber, mortgage, lease, alienate, impose any restriction or condition upon, or otherwise grant to any other person, firm or entity any permission, license, right or rights whatsoever in, pertaining to, or affecting any part or all of the Property; nor (b) make any change to or alter in any way whatsoever the physical or other characteristics of any part or all of the Property, including cutting of trees/timber, or contamination of any kind; and,

2.3.2 so as to ensure that there is no change in the status of the title to the Property prior to termination of this Agreement, Seller agrees to contemporaneously with its execution hereof execute and deliver to Buyer for recording in the appropriate Land Evidence Records an instrument (the "**Record Notice**") suitable under applicable law to evidence the grant of the Option and the aforesaid restrictions on the grant of any rights inconsistent with this Agreement, in form and substance as attached hereto as **Exhibit C**, or, if no such exhibit is attached, in form and substance as Buyer may reasonably request.

2.4 During the effective term of this Agreement, Buyer contemplates expending substantial sums and incurring substantial expenses to inspect, test, and analyze the Property, to conduct title research, undertake survey and site plans, and to otherwise conduct a due diligence review of the Property and all related matters, and to pursue obtaining permits for Buyer's contemplated development of the Property. To induce Buyer to make such efforts and expend such sums, Seller hereby agrees that during the effective term of this Agreement Seller shall not solicit, encourage, negotiate or entertain any offer with any other party concerning or with respect to the Property whatsoever, including offers to purchase or lease the Property, regarding any sale, financing, partnership, or other disposition of all or any part of, or interest in, the Property; Seller agrees to immediately communicate to Buyer for response any written inquiries received by Seller during the effective term of this Agreement. Seller further agrees to keep the monetary terms of this Agreement confidential, except only as may be approved by Buyer in writing, in advance.

2.5 Notwithstanding anything contained herein to the contrary, however, in the event Buyer delivers to Seller prior to expiration of the Preliminary Diligence Deadline written notice specifying with reasonable particularity matters related to the title to the Property to which Buyer objects ("**Title Objection Notice**"), then and in such event the Preliminary Diligence Deadline shall be deemed extended for an additional period beyond its then-scheduled expiration to allow Seller to, and Seller does hereby agree that Seller shall during such period, use good faith efforts to promptly and reasonably resolve such title objections. In the event Seller fails to use reasonable good faith efforts to so resolve Buyer's objections, then and in such event Seller shall be in default hereunder, and Buyer shall be entitled to its remedies for same as provided below. In addition, Buyer shall have the right to extend the Preliminary Diligence Deadline for a reasonable period of time to permit Buyer itself, at its own expense, to resolve such title objections.

Article III – Exercise, Purchase Price

3.1 In the event that Buyer elects to exercise the Option and purchase the Property, Buyer shall deliver notice ("**Exercise Notice**") to Seller pursuant to Section 1.3.C stating that Buyer elects to exercise the Option to purchase the Property.

3.2 Buyer shall specify in the Exercise Notice (but failure to so specify shall not invalidate the effectiveness of the Exercise Notice) the name of the entity, if different from Buyer, that is to take title to the Property, Seller hereby acknowledging and agreeing that Buyer may take title in the name of any entity Buyer chooses as nominee, and that for this purpose references in this Agreement to "Buyer" shall mean "Buyer or its nominee."

3.3 The Purchase Price shall be adjusted to reflect the Option Payments and Extension Payments paid to Seller by Buyer pursuant to Section 1.3, as well as the equitable apportionment as of date

of closing of unpaid real estate taxes, assessments, liens, utility bills, if any, recording charges, transfer tax, and similar items as is customary in standard conveyancing practice in the State of Maine (the Purchase Price as so adjusted may hereinafter be referred to as the "**Adjusted Purchase Price**").

Article IV – Closing Procedure

4.1 On the Closing Deadline, Seller shall sell and convey the Property to Buyer and Buyer shall purchase the Property from Seller (the "**Closing**"). At Closing, Seller shall deliver to Buyer:

4.1.1 an original deed (the "**Deed**") properly executed by or on behalf of Seller, in form and substance as attached hereto as **Exhibit D**, conveying all of Seller's interest in the Property to Buyer by good, marketable, insurable title, free and clear of all liens, encumbrances, and deficiencies, except utility easements of record, and, except easements and encumbrances of record prior to the date of this Agreement and,

4.1.2 such other documents as may be reasonably requested by Buyer, including without limitation customary title insurance affidavits, such instruments of assignment as Buyer reasonably requests, such as an Assignment of Permits, documents to evidence the existence, good standing, and authority of Seller, a settlement statement, or any other customary or reasonable documentation as may be requested (such other documents, together with the Deed, may hereinafter be referred to collectively as the "**Conveyance Documents**").

4.1.3 At Closing Buyer shall deliver to Seller the Adjusted Purchase Price in immediately available funds.

Article V - Representations

5.1 Seller hereby represents and warrants to Buyer, which representations and warranties shall be deemed restated as of closing, that:

5.1.1 Seller has good, insurable, and marketable title in fee simple to the Property, subject only to the encumbrances of record.

5.1.2 Seller is a Maine nonprofit corporation, is not a foreign person or foreign entity as defined in the Foreign Investment in Real Property Tax Act ("**FIRPTA**"), has full right, power and authority to enter into and consummate this transaction, the person executing this Agreement on behalf of Seller is an officer of Seller and is duly authorized to execute this Agreement on behalf of Seller, Seller has the power and authority without necessity of further act or consent to execute this Agreement and all other instruments and documents contemplated hereby and to perform any and all acts necessary or desirable to consummate the transactions contemplated (including a conveyance of the Property).

5.1.3 To Seller's knowledge without additional investigation, the Property is free of violations of law, is in full compliance with Federal, State, City and County ordinances and environmental laws, and there are not any current or contemplated special tax assessments known to Seller.

5.1.4 Other than to the extent granted in this Agreement, previously disclosed to Buyer in writing, or reflected as exceptions to coverage on a title commitment acceptable to Buyer, no person, firm, or entity has any rights in, pertaining to, or affecting the Property, and Seller has not granted any rights in, pertaining to, or affecting the Property to any person, firm, or entity in any unrecorded instrument or writing, nor does any person, firm, or entity have an option to purchase or right of first refusal to purchase the Property.

5.1.5 Seller is not involved as a debtor in any bankruptcy, reorganization or insolvency proceeding, and Seller has not received any notice of and has no knowledge of any

pending or threatened lawsuits, including condemnation suits, that could affect the Property or Seller's ownership of the Property.

5.1.6 To Seller's knowledge without additional investigation there have not been and there are not now any underground storage tanks located on or under the Property or if there have been or are any such tanks located on the Property, their location has been identified to Buyer in writing, they have been properly registered with all appropriate authorities, they are in full compliance with all applicable statutes, ordinances and regulations, and they have not resulted in the release of any hazardous or toxic substance, material, or waste into the environment.

5.1.7 To Seller's knowledge without additional investigation there are no past or present uses of the Property that did not comply in all material respects with all Environmental Protection Agency, Occupational Safety and Health Administration, and all other federal, state and local laws, administrative rules and regulations governing the soil, water, air and environment in and around the Property.

Article VI - Default

6.1 If Buyer fails to fulfill the Buyer's agreement herein, Seller shall retain the Option Payment(s) as liquidated damages, being Seller's sole remedy. If Seller shall fail to fulfill its obligations herein, Buyer shall have all available remedies at law and in equity, including specific performance. Notwithstanding the foregoing, the non-defaulting party agrees to provide the defaulting party with written notice providing a description of a default and provide such defaulting party with a [redacted] day cure period.

Article VII – Notice

7.1 All notices or other communications required or permitted hereunder shall be in writing, and shall be effective upon receipt or refusal when sent to the intended recipient by one of the methods set forth below:

7.1.1 regular and certified U.S. mail, postage prepaid, return receipt requested;

7.1.2 reputable national delivery service (i.e. FedEx, DHL); or,

7.1.3 otherwise hand delivered with an acknowledgment of receipt

7.1.4 electronic transmission

7.2 Each party, by written notice given to the other party in accordance herewith, may change the address to which notices or other communications hereunder shall be deemed to have been duly given; provided, however, no party may designate more than **three** notice addresses, and notice of a change of address shall be effective only upon actual delivery. Until changed as aforesaid, a notice shall be addressed to the intended recipient at their address set forth in the first paragraph on page 1 of this Agreement.

Article VIII – Miscellaneous

8.1 *Broker.* Seller and Buyer each hereby represent and warrant to the other that neither Seller nor Buyer has dealt with or employed any real estate agent, broker, or any person entitled to a commission in connection with the transaction contemplated other than [redacted] in Maine. Seller and Buyer hereby agree to indemnify, defend, and hold harmless the other from any claim or claims, action or actions, losses, payments, judgments, commission or commissions, paid or payable to any real estate agent, broker, person or entity in connection with this transaction that was not called to the attention of the other as a result of any services or facilities of any such real estate agent, broker, person or entity provided to the other. The provisions of this paragraph shall survive conveyance of the Property to Buyer.

8.2 *Governing Law, Venue, Jury Waiver.* This Agreement shall be construed in accordance with the laws of the State of Maine. Both Buyer and Seller hereby consent to the jurisdiction of the courts of said state and of the federal government, as well as to the jurisdiction of all courts from which an appeal may be taken from the aforesaid courts, for the purpose of any suit, action or other proceeding arising out of, under or with respect to this agreement, and expressly waive any and all objection each may now or hereafter have as to the venue in any of such courts, and EACH OF BUYER AND SELLER DO HEREBY EXPRESSLY WAIVE ANY RIGHT EACH MAY HAVE TO ELECT A TRIAL BY JURY AS TO ANY DISPUTE ARISING HEREUNDER. Any disputes between Buyer and Seller (which are not otherwise resolved by the parties) shall be submitted to binding arbitration in Portland, Maine administered by JAMS in accordance with its Streamlined Arbitration rules. The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction. This clause shall survive the closing of this transaction.

8.3 *Headings; Entire Agreement; Amendments.* The headings contained in this Agreement are for reference purposes only and shall not affect in any way the meaning or interpretation of this Agreement. This Agreement (including all exhibits annexed hereto) contains the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior understandings, written or oral, if any, with respect thereto. This Agreement may not be modified, changed, supplemented, or terminated, nor may any obligations hereunder be waived, except by written instrument signed by the party to be charged or by its agent duly authorized in writing or as otherwise expressly permitted herein. The Agreement shall not be binding on any party until signed by every party.

8.4 *Waiver.* No waiver of any breach of any agreement or provision herein contained shall be deemed a waiver of any preceding or succeeding breach thereof or of any other agreement or provision herein contained. No extension of time for performance of any obligations or acts shall be deemed an extension of the time for performance of any other obligations or acts.

8.5 *Binding Effect; Assigns; Benefits.* This Agreement shall inure to the benefit of and shall be binding upon the parties hereto and their respective heirs, legal representatives, successors and assigns; provided, however, Seller may not assign its rights or obligations under this Agreement absent Buyer's consent in Buyer's sole discretion.

8.6 *Exhibits, Counterparts.* All exhibits attached hereto are by this reference incorporated fully herein. This Agreement may be executed by the parties hereto in one or more counterparts, each of which shall be deemed to be an original, but all of which together shall constitute one and the same instrument.

8.7 *Severability.* The invalidity or unenforceability of any provision of this Agreement shall not affect the validity or enforceability of any other provision of this Agreement, which shall remain in full force and effect.

8.8 *Days, Interpretation.* References in this Agreement to a specified number of "days," shall mean and refer to calendar days; provided, however if any specified period would otherwise end on a day that is a Saturday, Sunday or day which is recognized by the State of Maine ("Jurisdiction") as a legal holiday, then and only in such event, the specified period shall be deemed to extend to the next following day that is not a Saturday, Sunday or legal holiday. "Business Day" means any day other than Saturday, Sunday and/or any weekday or weekend day that is a legal holiday observed by the federal government of the United States of America or the Jurisdiction. The terms of this Agreement were fully negotiated by the parties and shall not be construed for or against any party hereto.

8.9 *Prevailing Party.* In the event the parties litigate in any court or arbitration forum any dispute hereunder, then and in such event, the prevailing party shall be entitled to an award from the other of the reasonable attorney's fees and costs incurred therein by said prevailing party.

8.10 *Time of the Essence*. The parties hereto hereby agree that TIME IS OF THE ESSENCE as to each and every provision of this Agreement.

[*Signature Page Follows; Remainder Intentionally Blank*]

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed under seal by their proper officers hereunto duly authorized as of the date of last execution hereof as set forth below.

Seller:
NEW LIFE CHRISTIAN FELLOWSHIP

By:_____
Justin Sweeney
Its Duly Authorized: Lead Pastor

Date: January 25, 2021

Buyer:
DEVINE CAPITAL LLC

By:_____
Bernard M. Devine
Its Duly Authorized: President

Date: January 25, 2021

Exhibit A

Two parcels of land, excepting the third parcel conveyed to Old Dogs of Biddeford, LLC with any improvements thereon, in the City of Biddeford, York County, Maine described in the following deeds:

588 Alfred Street, Biddeford, Maine

- Warranty Deed dated November 13, 2001 from James A. Mininni, Sr. to New Life Christian Fellowship, recorded at Book 11111, Page 70 in the York County Registry of Deeds

590 Alfred Street, Biddeford, Maine

- Warranty Deed dated March 5, 2002 from Energy Homes, Inc. to New Life Christian Fellowship, recorded at Book 11449, Page 147 in the York County Registry of Deeds

Excepting the property located at Alfred Street, Biddeford, Maine, conveyed to Old Dogs of Biddeford LLC

- Warranty Deed dated April 19, 2019 from New Life Christian Fellowship to Old Dogs of Biddeford, LLC recorded at Book 17933, Page 197 in the York County Registry of Deeds

Exhibit B

Survey - Titcomb Associates 2002
588 Alfred St Deed 11111 070
590 Alfred St Deed 11449 147
588 Alfred St Disclosure
590 Alfred St Disclosure
Old Dogs 2018 Conveyance Survey
Old Dogs Deed 17933 197
Alfred St Sewer Map
Andrews Geometrics Plan Profile 2004
ARC New Building sketch
Packard Development sketch
BI3074-Va Table A Zoning Uses
Parcel 1 and 2 Tax Map copy
2003 Biddeford & Saco Water Co Letter
2003 Gorrill-Palmer Consulting Engineers re: Ability to Serve
2005 Post development AM Peak Hour
Andrews Geometrics Plan Profile 2004
Attachment B TR-20 Calculations
Attachment C Water Quality Computations
Calculations Based Upon Maine Subsurface Wastewater Rules
Capacity and Queuing Analysis Results
City of Biddeford Wastewater Dept 2003 Ability to Serve Letter
Erosion Sedimentation North C-8B
Erosion Sedimentation South C-8A
First American Gap Indemnity Agreement 5.25.2017
First American Alta 3 parcels-3.5-2002
Gorrill-Palmer Consulting Engineers 2.9.2004 Maine DOT Letter
Gorrill-Palmer Consulting Engineers 4.8.2004 Maine DOT Letter
Gorrill-Palmer Consulting Engineers 2004 Plans
Gorrill-Palmer Consulting Engineers Row Volumes, Peak Adjusted Volumes
Grading & Drainage C-3
Grading Drainage South C-4A
Grading Draining North C-4B
Lighting plan WLS Lighting Systems
Offsite Utility Profile C-17B
Offsite Utility Profile C-17A
Overall Site Layout C-1A
PreDevelopment Watershed Maps
Proposed Off-Site Improvements - Gorrill Palmer
Route 111 & Exit 4- traffic study
Route 111 & Home Depot
Route 111 at Andrews Rd
Route 111 at Exit 4 Precourt St
Route 111 at Route 35
Route 111 at Shaws Irving
Route 111 at Walmart Park n ride
RW Gillespie June 2004 geotechnical evaluation
Section 7 Wildlife and Fisheries
Section 14 Erosion and Sedimentation Control Plan
Site Layout C-1B
Site Layout North C-2C

Exhibit B (continued)

Site Layout Phase2. C-2A
Site Layout Plans C2A C1B
Site Layout South C-2B
Stormwater Management
Traffic Impact Study 2003
Trip Generation Calculations
Turning Movement Diagrams
Utility Plan C- 6
Utility Plan Phase 1 C5
Vernal Pool Application and Determination NLC
Vernal Pool Location Plan LongView Partners - 588-590 Alfred St
Wetland Reconnaissance 4-21-18- 588-590 Alfred St
Wetland Reconnaisance 6-3-20- 590 Alfred St.6-3-20
Zoning Map

Exhibit C

NOTICE OF OPTION

Notice is hereby given of the following Option to Purchase and Purchase and Sale Agreement (the "Option") vesting in Buyer an option to purchase certain real property owned by Seller:

SELLER:	New Life Christian Fellowship
BUYER:	Devine Capital LLC
DATE OF AGREEMENT:	January 25, 2021
PREMISES:	See Exhibit A attached hereto
TERM OF OPTION:	Beginning January 25, 2021 and continuing for up to [redacted] days, subject at all times to the terms and conditions of the Option Agreement.

The undersigned further expressly acknowledges that this Notice of Option is being executed pursuant to the provisions of the Option and is not intended to vary the terms or conditions of the Option.

IN WITNESS WHEREOF, the undersigned has caused this Notice of Option to be signed by its duly authorized representative.

NEW LIFE CHRISTIAN FELLOWSHIP

By:_____
Print Name: Justin Sweeney
Its Duly Authorized: President and Lead Pastor
Dated: January 25, 2021

STATE OF MAINE
COUNTY OF YORK, SS

January 25, 2021

Then personally appeared the above-named Justin Sweeney, President and Lead Pastor of NEW LIFE CHRISTIAN FELLOWSHIP and acknowledged the foregoing instrument to be his/~~her~~ free act and deed in his/~~her~~ said capacity, and the free act and deed of NEW LIFE CHRISTIAN FELLOWSHIP.

Lillian B. Camire
Notary Public / Attorney at Law
Print name:
My commission expires:

LILLIAN B. CAMIRE
Notary Public - Maine
My Commission Expires
December 17, 2023

Exhibit D

QUITCLAIM DEED
WITH COVENANT
STATUTORY SHORT FORM
TITLE 33, §775

New Life Christian Fellowship, a Maine religious nonprofit corporation, with a mailing address of 551 Alfred Street, Biddeford, Maine 04005-9474, for consideration paid, grants to _____, a _____, with a mailing address of _____, **with Quitclaim Covenant,** a certain lot or parcel of land situated in the City of Biddeford, County of York, and State of Maine, as described in **Exhibit A** attached hereto and made a part hereof.

DATED: _____, 202_ New Life Christian Fellowship

By:_____
Print Name: Justin Sweeney
Its Duly Authorized: President and Lead Pastor

STATE OF MAINE
COUNTY OF YORK, SS

_____, ___, 202_

Then personally appeared the above-named Justin Sweeney, President and Lead Pastor of NEW LIFE CHRISTIAN FELLOWSHIP and acknowledged the foregoing instrument to be his/her free act and deed in his/her said capacity, and the free act and deed of NEW LIFE CHRISTIAN FELLOWSHIP.

_____
Notary Public / Attorney at Law
Print name:
My commission expires:

Exhibit A

Two parcels of land, excepting the third parcel conveyed to Old Dogs of Biddeford, LLC with any improvements thereon, in the City of Biddeford, York County, Maine described in the following deeds:

588 Alfred Street, Biddeford, Maine

- Warranty Deed dated November 13, 2001 from James A. Mininni, Sr. to New Life Christian Fellowship, recorded at Book 11111, Page 70 in the York County Registry of Deeds

590 Alfred Street, Biddeford, Maine

- Warranty Deed dated March 5, 2002 from Energy Homes, Inc. to New Life Christian Fellowship, recorded at Book 11449, Page 147 in the York County Registry of Deeds

Excepting the property located at Alfred Street, Biddeford, Maine, conveyed to Old Dogs of Biddeford, LLC

- Warranty Deed dated April 19, 2019, from New Life Christian Fellowship to Old Dogs of Biddeford, LLC recorded at Book 17933, Page 197 in the York County Registry of Deeds

SECOND AMENDMENT TO OPTION TO PURCHASE AND PURCHASE AND SALE AGREEMENT

THIS SECOND AMENDMENT TO OPTION TO PURCHASE AND PURCHASE AND SALE AGREEMENT (this Amendment") is made and entered into as of the 14 day of January, 2022, by and between **New Life Christian Fellowship** ("Seller") and **Devine Capital LLC** ("Buyer") with respect to that certain Option To Purchase and Purchase and Sale Agreement between Seller and Buyer, with an effective date of January 25, 2021, as amended by that certain Amendment to Option to Purchase and Purchase and Sale Agreement dated May "__", 2021 (together, the "Agreement"), relating to property of the Seller located generally at 588 and 590 Alfred Street in Biddeford, Maine.

WHEREAS, Seller and Buyer wish to amend the Agreement as set forth below.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Seller and Buyer hereby agree that the Agreement shall be amended as hereinafter set forth.

A. Section 1.4 of the Agreement is hereby amended to change the monthly amount of the Extension Payments from [redacted] to [redacted] for the firs [redacted] monthly Extension Payments (i.e., the monthly Extension Payments in January 2022 through June 2022 shall be [redacted] but thereafter shall revert to [redacted]).

B. Seller and Buyer hereby ratify and confirm all terms and provisions of the Agreement and agree that, except as amended by this Amendment, all terms and provisions of the Agreement shall remain in full force and effect including.

C. This Second Amendment may be simultaneously executed in any number of counterparts, each of which when so executed and delivered shall be an original, but such counterparts shall constitute one and the same instrument. This Second Amendment may be transmitted between the parties by facsimile machine or by email attachment and signatures appearing on faxed or emailed instruments shall be treated as original signatures. Both a faxed or emailed version containing either original, faxed or emailed signatures of all parties, and multiple counterparts of the same version each containing separate original, faxed or emailed signatures of the parties, shall be binding on them.

[Signature Page Follows]

IN WITNESS WHEREOF, Seller and Buyer have executed this Second Amendment as of the date first above written.

SELLER

NEW LIFE CHRISTIAN FELLOWSHIP

DocuSigned by:
By: Justin Sweeney
2507456A9BB5421...

Name: Justin Sweeney

Its Duly Authorized: Lead Pastor

BUYER

DEVINE CAPITAL LLC

By: _____
Bernard M. Devine, Jr., Manager

Attachment 3

Compliance with Code of Ordinances

Pineland
Cumberland Hall
41 Campus Drive, Suite 301
New Gloucester, ME 04260

Portland
565 Congress Street, Suite 201
Portland, ME 04101

September 2022 Project# 21-49

COMPLIANCE WITH THE CITY OF BIDDEFORD CODE OF ORDINANCES

Biddeford Residential, Biddeford, Maine

The following information describes how the proposed project, located at 588 & 590 Alfred Street in Biddeford, Maine, complies with the Subdivision Review Criteria of the City of Biddeford Code of Ordinances.

Subdivision Review Criteria

1. *The project will not result in undue water or air pollution. In making this determination, the board shall consider:*
    a. *The elevation of land, and its relation to floodplains;*
    b. *The nature of the soils and subsoils;*
    c. *The ability to adequately support waste disposal;*
    d. *The slope of the land and its affects on effluents;*
    e. *The ability of streams for the disposal of effluents;*
    f. *The applicable state and local health and water resources regulations*

    As a residential development, with proposed connection to the City's sanitary sewer infrastructure, the project will not result in any undue water or air pollution.

    The existing soils on site have been evaluated through a Class B High-Intensity Soil Survey prepared by Mark Hampton Associates, Inc. A copy of soils report is located in Attachment 4.

2. *The project has sufficient water available for the reasonably foreseeable needs of the subdivision.*

    Maine Water Company has been contacted to confirm that an adequate water supply can be provided to the development. Maine Water Company's response will be provided once received.

3. *Will not cause an unreasonable burden on the existing water supply, if one is to be utilized;*

Maine Water Company has been contacted to confirm that an adequate water supply can be provided to the development. Maine Water Company's response will be provided once received.

4. *Will not cause unreasonable soil erosion or reduction in capacity of the land to hold water so that a dangerous or unhealthy condition may result;*

   The proposed project will not cause unreasonable soil erosion or a reduction in the capacity of the land to hold water. Erosion and sediment controls are shown on the attached plans and a stormwater management report has been prepared demonstrating that post-development runoff will not exceed predevelopment conditions.

5. *Will not cause unreasonable highway or public road congestion or unsafe conditions with respect to the use of the highways or public roads existing or proposed;*

   The project will not cause unreasonable highway or public congestion or unsafe conditions; Based upon the estimated trip generation for the project, a Traffic Movement Permit has been submitted to MDOT. A copy of the submission is provided in Attachment 6.

6. *Will provide for adequate sewage waste disposal;*

   Connection to public sewer system is proposed. Public Works has been contacted to confirm that service is available and adequate treatment capacity is available. Public Works' response will be provided once received.

7. *Will not cause an unreasonable burden on the ability of a municipality to dispose of solid waste and sewage if municipal services are to be utilized*

   A common collection dumpster and recycling bins will be provided for the residents. The developer will contract with a private solid waste disposal company to manage solid waste.

8. *Will not have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites or rare and irreplaceable natural areas, or public rights for physical or visual access to the shoreline;*

   The proposed development will not have an adverse effect on the scenic or natural beauty of the area. The proposed development is located within a designated growth area. There

are no historic sites or irreplaceable natural areas in the location of the proposed development. A landscape plan has additionally been prepared for the proposed project.

9. *In conformance with a duly adopted subdivision regulation or ordinance, comprehensive plan, development plan, or land use plan, In making this determination the board is authorized to interpret these ordinances and plans;*

   The proposed development has been designed in conformance with all applicable regulations.

10. *The subdivider has adequate financial and technical capacity to meet the above state standards;*

    A letter from the applicant's financial partner, Rockland Trust, demonstrating a commitment to provide financing for the project is provided, herein.

    The Applicant has assembled the following team of professionals to plan, permit and develop construction documents for the project:

Architect	Tim Wentz, AIA, CGP, CAPS Gate 17 Architecture, LLC 2045 Route 35 Wall, NJ 07719 (856) 429-2001
Civil Engineer	Richard Meek, P.E. Terradyn Consultants, LLC 41 Campus Drive, Suite 301 New Gloucester, ME 04260 (207) 926-5111
Surveyor	Tara Mullen, P.L.S. Colliers Engineering 41 Church Road Brunswick, ME 04011 (207) 481-7080
Landscape Architect	Barry J. Hosmer P.L.A., A.S.L.A. 196 Whitney Avenue Portland, ME 04102 (207) 874-0248

Wetland Scientist	Mark Cenci Mark Cenci Geologic, Inc. 93 Mill Road North Yarmouth, ME 04097
Soil Scientist	Mark Hampton C.S.S., L.S.E. Mark Hampton Associates, Inc P.O. Box 1931 Portland, ME 04104
Traffic Engineer	William Bray, P.E. Barton & Loguidice, LLC 383 US Route 1, Suite 2A Scarborough, ME 04074

The team of consultants retained by the Developer has expertise and experience in the design of similar projects. Resumes of key personnel for the development team can be provided upon request.

11. *Whenever situated, in whole or in part, within 250 feet of any lake, pond, river, or tidal waters, the project will not adversely affect the quality of that body of water, or unreasonably affect the shoreline of that body of water; as indicated on the City of Biddeford's Official Zoning Map and referenced in the City's Comprehensive Plan;*

    The proposed development is not located within 250 feet of a lake, pond, river or tidal waters.

12. *The project will not, alone or in conjunction with existing activities, adversely affect the quality or quantity of groundwater;*

    The proposed project will not adversely affect the quality or quantity of groundwater. The proposed lots will be serviced by public water and public sanitary sewer infrastructure. Erosion and sediment controls are shown on the attached plans, and a stormwater management report has been prepared to demonstrate that post-development runoff will not exceed predevelopment conditions

13. *The subdivider will provide information, based on FEMA flood boundary, floodway, and flood insurance maps, whether or not the project is in a flood-prone area :*

    The proposed development is not located within a FEMA flood area.

14. *The project will not unreasonably obstruct abutting properties or structures access to direct sunlight;*

    The proposed project will not unreasonably obstruct abutting properties or structures access to direct sunlight. The proposed development is surrounded by a vegetated buffer which helps to separate the project from abutting properties.

ROCKLAND TRUST Where Each Relationship Matters

July 29, 2022

Bureau of Land and Water Quality
312 Canco Road
Portland, ME 04103

Re: A 216 Unit Multifamily Project to be constructed in Biddeford, ME

To whom it may concern,

Rockland Trust Company will be providing the construction financing for the referenced multifamily project. Provided below is a summary of the proposed budget for this project:

Building Construction	$	29,865,000
Site Improvement Work	$	7,625,000
Soft Costs	$	2,425,000
	$	39,915,000

Our relationship with KGI Properties, LLC and their investment partners, Devine Capital, LLC and The Simon Konover Company back many years and we have most recently provided financing for The Beacon Expansion, a 48 unit expansion to The Beacon in Scarborough, ME, Mast Landing, a 144 unit multifamily project in Freeport, ME; The Cove, a 120 unit multifamily project in East Lyme, CT; The Beacon, a 288 unit multifamily project in Scarborough, ME; The Shoppes at Hanfield Village, a grocery anchored center in Indian Trail, NC; and The Sound, a 280 unit multifamily project in East Lyme, CT.

Should you have any questions concerning the proposed financing for this multifamily project, please do not hesitate to contact me directly.

Sincerely,

James J. O'Connor, Jr.
Senior Vice President

Attachment 4

Site Location of Development Act Permit Application

Pineland
Cumberland Hall
41 Campus Drive, Suite 301
New Gloucester, ME 04260

BIDDEFORD RESIDENTIAL

ALFRED ST. AND ANDREWS RD., BIDDEFORD, MAINE

SITE LOCATION OF DEVELOPMENT ACT PEMIT APPLICATION

PREPARED FOR:

DEVINE CAPITAL, LLC
30 MILK ST., THIRD FLOOR
PORTLAND, ME 04101

PREPARED BY:

TERRADYN CONSULTANTS LLC
41 CAMPUS DRIVE, SUITE 301
NEW GLOUCESTER, MAINE 04260

September 2022

Section 0 – Application Form and Checklist

The application form and checklist are attached, herein.

Department of Environmental Protection
Bureau of Land & Water Quality
17 State House Station
Augusta, Maine 04333
Telephone: 207-287-3901

FOR DEP USE
ATS # _____
L-_____
Total Fees: _____
Date: Received _____

FORM A PAGE 1

****

SITE LOCATION OF DEVELOPMENT PERMIT APPLICATION 38 M.R.S.A. §§481-490

PLEASE TYPE OR PRINT IN *INK ONLY*

This application is for: (CHECK THE ONE THAT APPLIES)	☐ 20 acre development ☐ Planning Permit ☐ Metallic Mining	☐ Marine Oil Terminal ☑ Structure ☐ Subdivision	☐ Major Amendment ☐ Minor Amendment
1. Name of Applicant:	Devine Capital, LLC	**6. Name of Agent (if applicable):**	Richard Meek c/o Terradyn Consultants, LLC
2. Applicant's Mailing Address:	30 Milk St., Third Floor Portland, ME 04101	**7. Agent's Mailing Address:**	41 Campus Drive, Suite 301 New Gloucester, ME 04260
3. Applicant's Daytime Phone #:	207-536-4664	**8. Agent's Daytime Phone # :**	207-926-5111
4. Applicant's Fax # (if available):		**9. Agent's Fax # (if available):**	
5. Applicant's *e-mail address* (REQUIRED -license will be sent via: e-mail):	bmd300@gmail.com	**10. Agent's *e-mail address* (REQUIRED - license will be sent via e-mail):**	rick@terradynconsultants.com

PROJECT INFORMATION

11. Name of Development:	Biddeford Residential						
12. Map and Lot #'s:	**Map #:** 2	**Lot #:** 6 & 12	**13. Deed Reference #'s:**	**Book #:** 11111 & 11449	**Page #:** 70 & 147		
14. Location of Project City/Town:	Biddeford	**15. County:**	York	**16. UTM Northing**		**17. UTM Easting**	
18. Brief Description of Project including total parcel size:	Construct a multi-family residential development consisting of nine 24-unit apartment buildings, a clubhouse, mail kiosk, maintenance building, eight detached garage structures, surface parking, dog park, community garden and interconnected sidewalks on a 44.5 acre parcel.						
19. Type of Direct Watershed: (Check all that apply)	☐ Lake not most at risk ☐ Lake most at risk ☐ Lake most at risk, severely blooming	☑ River, stream or brook ☑ Urban impaired stream ☑ Freshwater wetland	☐ Coastal wetland ☐ Wellhead or public water				
20. Name of Waterbody Project Site drains to:	Unnamed tributary to Thatcher Brook						
21. Amount of Developed Area:	Total acres: 18.133	Existing Developed area: 0.00 acres	New Developed area: 18.133 acres				
22. Amount of Impervious Area:	Total acres: 8.06	Existing Impervious areas 0.00 acres	New Impervious area: 8.06 acres				
23. Development started prior to obtaining a license?:	☐ Yes ☑ No						
24. .Development or any portion of the site subject to enforcement action?	☐ Yes ☑ No	**If yes**, name of enforcement staff involved?					
25. Common scheme of development?:	☐ Yes ☑ No	**26. Title, Right or Interest:**	☐ own ☐ lease	☑ purchase option ☐ written agreement			
27. Natural Resources Protection Act permit required?:	☑ Yes ☐ No	**If yes:**	☑ PBR	☑ Tier 1 ☐ Tier 2	☐ Full Permit		
28. Existing DEP Permit number (if applicable):							
29. Names of DEP staff person(s) present at the pre-application meeting:	Jennifer McGill						
30. Does agent have an interest in project? If yes, what is the interest?	☐ Yes ☑ No						

CERTIFICATIONS AND SIGNATURES LOCATED ON PAGE 2

IMPORTANT: IF THE SIGNATURE BELOW IS NOT THE APPLICANT'S SIGNATURE, ATTACH LETTER OF AGENT AUTHORIZATION SIGNED BY THE APPLICANT.

By signing below the applicant (or authorized agent), certifies that he or she has read and understood the following :

CERTIFICATIONS / SIGNATURES

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein.

Further, I hereby authorize the DEP to send me an electronically signed decision on the license I am applying for with this application by emailing the decision to the electronic address located on the front page of this application (see #5 for the applicant and #10 for the agent)"..

Signed: _____ **Title** Vice President **Date:** 9/7/22

Notice of Intent to Comply with Maine Construction General Permit	**With this Site Law application form and my signature, I am filing notice of my intent to carry out work which meets the requirements of the Maine Construction General Permit (MCGP). I have read and will comply with all of the MCGP standards.** **If this form is not being signed by the landowner or lessee of the property, attach documentation showing authorization to sign.** **Signed** _____ **Date:** 9/7/22

NOTE: You must file a MCGP Notice of Termination (Form K) within 20 days of completing permanent stabilization of the project site.

CERTIFICATION

The person responsible for preparing this application and/or attaching pertinent site and design information hereto, by signing below, certifies that the application for development approval is complete and accurate to the best of his/her knowledge.

Signature: _____

Name (print): Richard Meek

Date: 9/7/22

Re/Cert/Lic No.: _____
Engineer P.E. 10668 ME
Geologist _____
Soil Scientist _____
Land Surveyor _____
Site Evaluator _____
Active Member of the Maine Bar _____
Professional Landscape Architect _____
Other _____

FORM D

SUBMISSIONS CHECKLIST

If a provision is not applicable, put "NA"

Section 1. Development description

A. Narrative

X 1. Objectives and details

N/A 2. Existing facilities (with dates of construction)

B. Topographic map

X 1. Location of development boundaries

X 2. Quadrangle name

C. Construction plan

X 1. Outline of construction sequence (major aspects)

2. Dates

D. Drawings

X 1. Development facilities

X a. Location, function and ground area

N/A b. Length/cross-sections for roads

X 2. Site work (nature and extent)

N/A 3. Existing facilities (location, function ground area and floor area)

4. Topography

X a. Pre- and post-development (contours 2 ft or less)

N/A b. Previous construction, facilities and lot lines

X **Section 2. Title, right or interest** (copy of document)

Section 3. Financial capacity

X A. Estimated costs

B. Financing

X 1. Letter of commitment to fund

2. Self-financing

N/A a. Annual report

N/A b. Bank statement

3. Other

N/A a. Cash equity commitment

N/A b. Financial plan

N/A c. Letter

N/A 4. Affordable housing information

Section 4. Technical ability (description)

X A. Prior experience (statement)

X B. Personnel (documents)

Section 5. Noise

X A. Developments producing a minor noise impact (statement)

X 1. Residential developments

N/A 2. Certain non-residential subdivisions

N/A 3. Schools and hospitals

N/A 4. Other developments

N/A a. Type, source and location of noise

N/A b. Uses, zoning and plans

N/A c. Protected locations

N/A d. Minor nature of impact

N/A e. Demonstration
N/A B. Developments producing a major noise impact (full noise study)
N/A 1. Baseline
N/A a. Uses, zoning and plans
N/A b. Protected locations
N/A c. Quiet area
N/A 2. Noise generated by the development
N/A a. Type, source and location of noise
N/A b. Sound levels
N/A c. Control measures
N/A d. Comparison with regulatory limits
N/A e. Comparison with local limits

X **Section 6. Visual quality and scenic character**(narrative, description, visual impact analysis)

X **Section 7. Wildlife and fisheries** (narrative)

X **Section 8. Historic sites** (narrative)

X **Section 9. Unusual natural areas** (narrative)

Section 10. Buffers
X A. Site plan and narrative

Section 11. Soils
X A. Soil survey map and report
X 1. Soil investigation narrative
X 2. Soil survey map
X B. Soil survey intensity level by development type
1. Class A (High Intensity) Soil Survey
2. Class B (High Intensity) Soil Survey
3. Class C (Medium High-Intensity) Soil Survey
4. Class D (Medium Intensity) Soil Survey
C. Geotechnical Investigation
N/A D. Hydric soils mapping

Section 12. Stormwater management
A. Narrative
X 1. Development location
X 2. Surface water on or abutting the site
X 3. Downstream ponds and lakes
X 4. General topography
X 5. Flooding
X 6. Alterations to natural drainage ways
X 7. Alterations to land cover
X 8. Modeling assumptions
X 9. Basic standard
X 10. Flooding standard
X 11. General standard
X 12. Parcel size
X 13. Developed area
X 14. Disturbed area
X 15. Impervious area
X B. Maps
X 1. U.S.G.S. map with site boundaries
X 2. S.C.S. soils map with site boundaries
X C. Drainage Plans (a pre-development plan and a post-development plan)

X	1. Contours
X	2. Plan elements
X	3. Land cover types and boundaries
X	4. Soil group boundaries
X	5. Stormwater quantity subwatershed boundaries
X	6. Stormwater quality subwatershed boundaries
X	7. Watershed analysis points
X	8. Hydrologic flow lines (w/flow types and flow lengths labeled)
X	9. Runoff storage areas
X	10. Roads and drives
X	11. Buildings, parking lots, and other facilities
X	12. Drainage system layout for storm drains, catch basins, and culverts
X	13. Natural and man-made open drainage channels
X	14. Wetlands
X	15. Flooded areas
X	16. Benchmark
X	17. Stormwater detention, retention, and infiltration facilities
X	18. Stormwater treatment facilities
N/A	19. Drainage easements
X	20. Identify reaches, ponds, and subwatersheds matching stormwater model
N/A	21. Buffers
X	D. Runoff analysis (pre-development and post development)
X	1. Curve number computations
X	2. Time of concentration calculations
X	3. Travel time calculations
X	4. Peak discharge calculations
X	5. Reservoir routing calculations
X	E. Flooding Standard
N/A	1. Variance submissions (if applicable)
N/A	a. Submissions for discharge to the ocean, great pond, or major river
N/A	i. Map
N/A	ii. Drainage plan
N/A	iii. Drainage system design
N/A	iv. Outfall design
N/A	v. Easements
N/A	b. Insignificant increase
N/A	i. Downstream impacts
N/A	c. Submissions for discharge to a public stormwater system
N/A	i. Letter of permission
N/A	ii. Proof of capacity
N/A	ii. Outfall analysis and design (pictures)
X	2. Sizing of storm drains and culverts
X	3. Stormwater ponds and basins
X	a. Impoundment sizing calculations
X	b. Inlet calculations
X	c. Outlet calculations
X	d. Emergency spillway calculations
X	e. Subsurface investigation report
X	f. Embankment specifications
X	g. Embankment seepage controls
X	h. Outlet seepage controls
X	i. Detail sheet
X	j. Basin cross sections
X	k. Basin plan sheet
N/A	4. Infiltration systems
N/A	a. Well locations map
N/A	b. Sand and gravel aquifer map
N/A	c. Subsurface investigation report with test pit or boring logs

N/A	d. Permeability analysis
N/A	e. Infiltration structure design
N/A	f. Pollutant generation and transport analysis
N/A	g. Monitoring and operations plan
N/A	i. Locations of storage points of potential contaminants
N/A	ii. Locations of observation wells and infiltration monitoring plan
N/A	iii. Groundwater quality monitoring plan
N/A	5. Drainage easement declarations.
X	F. Stormwater quality treatment plan peak discharge calculations
X	1. Basic stabilization plan
X	a. Ditches, swales, and other open channel stabilization
X	b. Culvert and storm-drain outfall stabilization
X	c. Earthen slope and embankment stabilization
X	d. Disturbed area stabilization
N/A	e. Gravel roads and drives stabilization
X	2. General Standard
X	a. Calculations for sizing BMP
X	b. Impervious area calculation
X	c. Developed area calculation
X	d. Summary spreadsheet of calculations
N/A	3. Phosphorus control plan
N/A	a. Calculations for the site's allowable phosphorus export
N/A	b. Calculations for determining the developed site's phosphorus export
N/A	c. Calculations for determining any phosphorus compensation fees
X	4. Offset Credits
X	a. Urban impaired stream
N/A	Offset credit calculation
N/A	b. Phosphorus credit determination
N/A	i. Location map
N/A	ii. Scaled plan
N/A	iii. Title and right
N/A	iv. Demolition plan
N/A	v. Vegetation plan
N/A	vi. Offset credit calculation
N/A	vii. Calculation for the new allowable export
X	5. Runoff treatment measures
X	a. structural measures
X	i. Design drawings and specifications
X	ii. Design calculations
X	iii. Maintenance plan
N/A	iv. TSS removal or phosphorus treatment factor determinations
X	v. Stabilization plan
N/A	b. Vegetated buffers
N/A	i. Soil survey
N/A	ii. Buffer plan
N/A	iii. Turnout and level spreader designs
N/A	iv. Deed restrictions
X	6. Control plan for thermal impacts to coldwater fisheries
N/A	7. Control plan for other pollutants
X	8. Engineering inspection of stormwater management facilities
X	G. Maintenance of common facilities or property
X	1. Components of the maintenance plan
X	A. Maintenance of facilities by owner or operator
X	1. Site owner or operator (name legally responsible party)
TBD	2. Contact person responsible for maintenance
TBD	3. Transfer mechanism

X	4. List of facilities to be maintained
X	5. List of inspection and maintenance tasks for each facility
N/A	6. Identifications of any deed covenants, easements, or restrictions
X	7. Sample maintenance log
TBD	8. Copies of any third-party maintenance contracts
N/A	B. Maintenance of facilities by homeowner's association
N/A	1. Incorporation documents for the association
N/A	2. Membership criteria
N/A	3. Association officer responsible for maintenance
N/A	4. Establishment of fee assessment for maintenance work
N/A	5. Establishment of lien system
N/A	6. Reference to department order(s) in association charter
N/A	7. Transfer mechanism from developer to association
N/A	8. List of facilities to be maintained
N/A	9. Identification of any deed covenants, easements, or restrictions
N/A	10. Renewal of covenants and leases
N/A	11. List of inspection and maintenance tasks for each facility
N/A	12. Sample maintenance log
N/A	13. Copies of any third-party maintenance contracts
N/A	C. Maintenance of facilities by municipality or municipal district
N/A	1. Identification of the municipal department or utility district
N/A	2. Contact person responsible for maintenance
N/A	3. Evidence of acceptance of maintenance responsibility
N/A	4. Transfer mechanism from developer
N/A	5. List of facilities to be maintained
N/A	6. List of inspection and maintenance tasks for each facility
N/A	7. Identifications of any deed covenants, easements, or restrictions
N/A	8. Sample maintenance log
X	2. General inspection and maintenance requirements
N/A	a. Drainage easements
X	b. Ditches, culverts, and catch-basin systems
X	c. Roadways and parking surfaces
X	d. Stormwater detention and retention facilities
X	1. Embankment inspection and maintenance
X	2. Outlet inspection and clean-out
X	3. Spillway maintenance
X	4. Sediment removal and disposal
N/A	e. Stormwater infiltration facilities
N/A	1. Sediment protection plan
N/A	2. Infiltration rehabilitation plan
N/A	3. Sediment removal and disposal
N/A	4. Groundwater monitoring plan
N/A	f. Proprietary treatment devices
N/A	g. Buffers
X	h. Other practices and measures

Section 13. Urban Impaired Stream Submissions

N/A	1. Off-site credits
X	2. Compensation fees (Urban Impaired Stream/Phosphorus)
X	3. Development impacts

Section 14. Basic Standards

X	A. Narrative
X	1. Soil types
X	2. Existing erosion problems
X	3. Critical areas
X	4. Protected natural resources
X	5. Erosion control measures

X	6. Site stabilization
X	B. Implementation schedule
X	C. Erosion and sediment control plan
X	1. Pre-development and post-development contours
X	2. Plan scale and elements
X	3. Land cover types and boundaries
X	4. Existing erosion problems
X	5. Critical areas
X	6. Protected natural resources
X	7. Locations (general)
X	8. Locations of controls
X	9. Disturbed areas
	10. Stabilized construction entrance
X	D. Details and specifications (for both temporary and permanent measures)
X	E. Design calculations
X	F. Stabilization plan
X	1. Temporary seeding
X	2. Permanent seeding
X	3. Sodding
X	4. Temporary mulching
X	5. Permanent mulching
X	G. Winter construction plan
X	1. Dormant seeding
X	2. Winter mulching
TBD	H. Third-party inspections
TBD	1. Inspector's name, address, and telephone number
TBD	2. Inspector's qualifications
TBD	3. Inspection schedule
TBD	4. Contractor contact
TBD	5. Reporting protocol

Section 15. Groundwater

X	A. Narrative
X	1. Location and maps
N/A	2. Quantity
N/A	3. Sources
N/A	4. Measures to prevent degradation
N/A	B. Groundwater protection plan
N/A	C. Monitoring plan
N/A	1. Monitoring points
N/A	2. Monitoring frequency
N/A	3. Background conditions
N/A	4. Monitoring parameters
N/A	5. Personnel qualifications
N/A	6. Proof of training
N/A	7. Equipment and methods
N/A	8. Quality assurance/quality control
N/A	9. Reporting requirements
N/A	10. Remedial action plan
N/A	D. Monitoring well installation report
N/A	1. Well location map
N/A	2. Elevation data
N/A	3. Well installation data
N/A	4. Well construction details
N/A	5. Borehole logs
N/A	6. Summary of depth measurements
N/A	7. Characteristics of subsurface strata
N/A	8. Well installation contract

N/A 9. Schematic cross-sections
N/A 10. Monitoring point summary table
N/A 11. Protective casing
N/A 12. On-site well identification

Section 16. Water supply

X A. Water supply method
N/A 1. Individual wells (evidence of sufficient/healthful supply)
N/A a. Support of findings by well drillers
N/A b. Support of findings by geologist
N/A 2. Common well(s) (reports)
N/A a. Hydrogeology report
N/A b. Engineering report
N/A c. Well installation report
N/A d. Long-term safe yield and zone of influence determination
N/A e. Public water supply
N/A i. Proposed well or wells
N/A ii. Existing well or wells
N/A iii. Water quality analysis
N/A 3. Well construction in shallow-to-bedrock areas
N/A 4. Additional information
X 5. Off-site utility company or public agency
N/A 6. Other sources
N/A B. Subsurface wastewater disposal systems (locations of systems and wells)
X C. Total usage (statement re: total anticipated water usage)

Section 17. Wastewater disposal

N/A A. On-site subsurface wastewater disposal systems (investigation results)
N/A 1. Site plan
2. Soil conditions summary table
N/A 3. Logs of subsurface explorations
4. Additional test pits, borings or probes
N/A a. Soil conditions A
N/A b. Soils with Profiles 8 and 9 parent material
N/A c. Soil conditions D
N/A d. Disposal field length 60 feet or greater
N/A 5. 3-bedroom design
N/A 6. Larger disposal systems
a. System design details
N/A b. Plan view
N/A c. Cross sections
N/A d. Test pit data
N/A e. Mounding analysis
N/A B. Nitrate-nitrogen impact assessment
N/A 1. When required
N/A a. Exempted____
i. Conventional systems meeting certain setbacks
N/A ii. Denitrification systems
N/A b. Special conditions and other exemptions
N/A 2. Assumptions
N/A a. Initial concentration
N/A b. Background concentration
N/A c. Contribution from development
N/A d. Mixing and dilution
N/A e. Severe-drought scenario
N/A f. Wastewater flow to subsurface wastewater disposal fields

N/A 3. Assessment report minimum requirements
N/A a. Narrative and calculations
N/A b. Site plan
N/A i. Well locations
N/A ii. 10 mg/l and 8 mg/l isocons
N/A iii. Groundwater contours and groundwater flow divides
N/A c. References
N/A 4. Denitrification systems
N/A a. Design plans and specifications
N/A b. Installation information
N/A c. Monitoring plan
N/A d. Maintenance
N/A e. Backup system
X D. Municipal facility or utility company letter
N/A E. Storage or treatment lagoons

X **Section 18. Solid waste** (list: type, quantity, method of collection and location)
X A. Commercial solid waste facility (final disposal location)
X B. Off-site disposal of construction/demolition debris (final disposal location)
C. On-site disposal of woodwaste/land clearing debris
N/A 1. Applicability of rules (evidence re: applicability of rules)
2. Burning of wood wastes
N/A a. Delineation on site plan
N/A b. Plans for handling unburned woodwaste and woodash
N/A c. Evidence of capacity to accept waste (approved facility)
N/A d. Usage of materials
N/A e. Data on mixing ratios and application rates
N/A D. Special or Hazardous Waste

Section 19. Flooding
N/A A. Explanation of flooding impact
N/A B. Site plan showing 100-year flood elevation
N/A C. Hydrology analysis
X D. FEMA flood zone map with site boundaries

Section 20. Blasting
N/A A. Site Plan or map
N/A B. Report
1. Assessment
2. Blasting plan

Section 21. Air emissions (narrative and summary)
N/A A. Point and non-point sources identified
N/A B. Emission components (point sources)

Section 22. Odors
N/A A. Identification of nature/source
N/A B. Estimate of areas affected
N/A C. Methods of control)

N/A **Section 23. Water vapor** (narrative)

N/A **Section 24. Sunlight** (statement and drawing, if required)

Section 25. Notices
X A. Evidence that notice sent
X B. List of abutters for purposes of notice

Supplemental requirements for Wind Energy Developments only:

Section 26. Shadow flicker

N/A A. A copy of the Windpro Analysis and associated narrative

Section 27. Public Safety

N/A A. Design safety certifications or other documents attesting to the safety of the wind turbine equipment.
N/A B. Evidence pertaining to overspeed controls
N/A C. Site plan documenting safety setbacks zones for each wind turbine
N/A D. Other documents as necessary to demonstrate safety considerations

Section 28. Tangible Benefits

N/A A. Narrative demonstration of tangible benefits

Section 29. Decommissioning

N/A A. Description of implementation trigger for decommissioning
N/A B. Description of extent of decommissioning
N/A C. Itemization of total cost to complete decommissioning
N/A D. Demonstration of financial assurance for completeness of decommissioning plan

Section 30. Generating Facility-visual Quality and Scenic Character

N/A A. (narrative, description, visual impact analysis)

Section 1 – Development Description

A. Narrative

The applicant intends to construct a multi-family residential development consisting of nine 24-unit apartment buildings, a clubhouse, mail kiosk, maintenance building, eight detached garages, surface parking, dog park, community garden and interconnected sidewalks. The development parcel includes approximately 44.5 acres and is located off Andrews Road and Alfred Street (Route 111) in Biddeford, Maine.

When completed the project will include approximately eighteen (18) acres of developed area, including approximately eight (8) acres of impervious surfaces.

The parcel is currently undeveloped. However, there is evidence of gravel extraction activities on the site. Historical aerial photographs, attached for reference, suggest that the gravel extraction started sometime in the late 1940's or early 1950's.

B. Topographic Map

A portion of the U.S. Geological Survey's Kennebunk Quadrangle, 7.5-Minute Series with the project site depicted is attached.

C. Construction Plan

The project is anticipated to begin construction in the Autumn of 2022. Site work is anticipated to take approximately 18 months to complete and will generally correspond to the following table:

	Start	Finish
1. Estimated construction time: 18 months	November 1, 2022	April 30, 2024
2 Erosion control measures placed	November 1, 2022	November 7, 2022
3. Site clearing, grubbing, excavation, and filling	November 7, 2022	December 7, 2022
4. Excavation & construction of drives, parking lots and underground utilities.	November 7, 2022	May 31, 2023
5. Mulch spread for winter erosion control	November 15, of construction year	May 1 the following year
6. Start progressive final seeding on prepared areas.	Within 24 hours of loam placement	September 15 of construction year
7. Bi-weekly monitoring of vegetative growth.	April 15, 2023	April 30, 2024

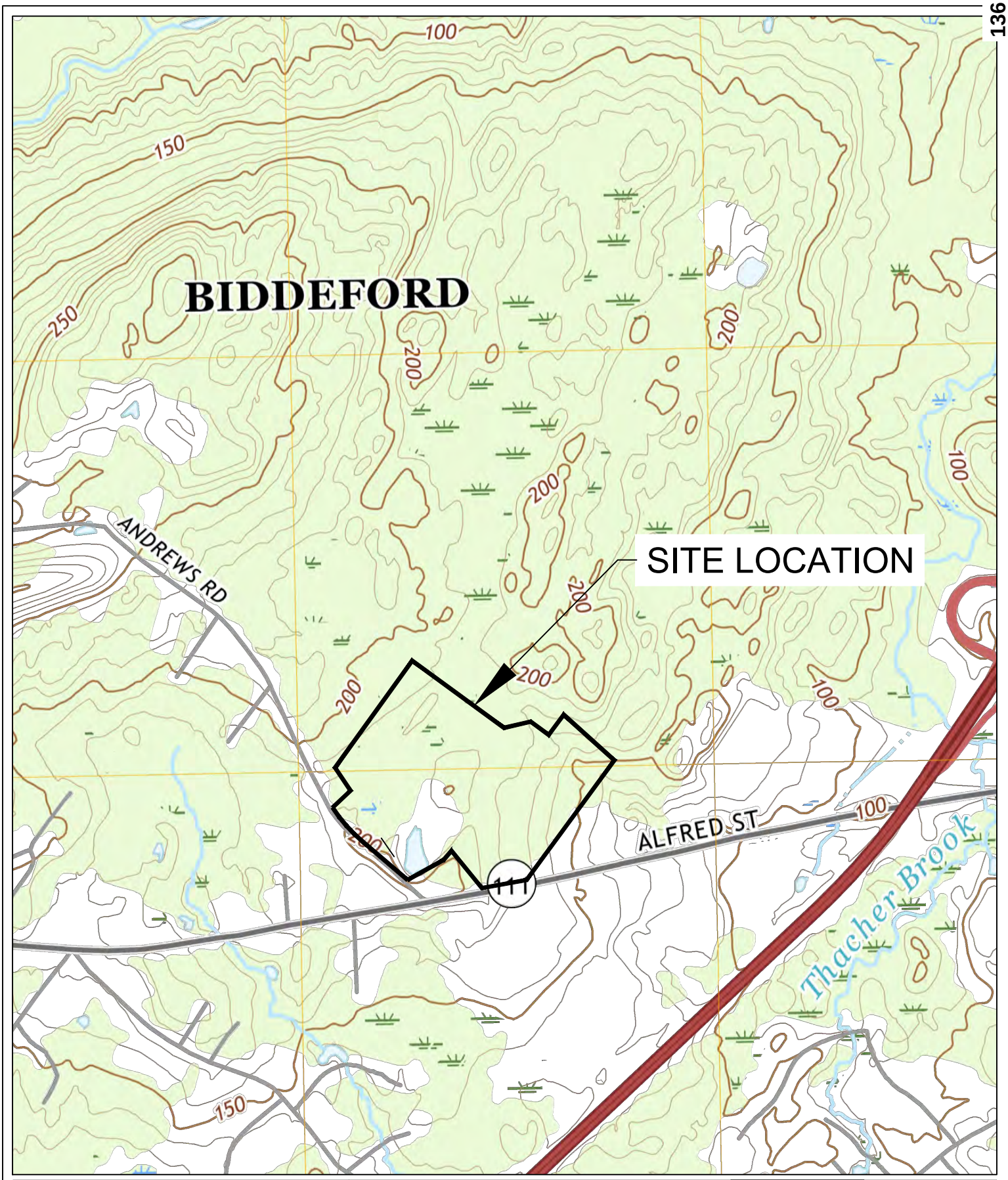
8. Re-seed, if necessary, and continue monitoring of growth until established.	May 15, 2023	April 30, 2024
9. Progressive removal of erosion control devices, based on field inspection.	June 15, 2023	April 30, 2024

Dates are subject to change at the discretion of the engineer and depending on construction progress.

D. Drawings

A complete set of the design plans is attached and includes the following:

- Cover Sheet and Location Map
- Boundary & Existing Conditions Survey
- Class 'B' High Intensity Soil Survey
- Site Plans
- Grading & Drainage Plans
- Utility Plans
- Landscape Plans
- Site Details



USGS KENNEBUNK QUADRANGLE MAP

PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

PREPARED FOR:
KGI PROPERTIES, LLC
10 Memorial Boulevard, Suite 901
Providence RI 02903

TERRADYN CONSULTANTS, LLC

PINELAND
41 CAMPUS DRIVE, SUITE 301
NEW GLOUCESTER, ME 04260

PORTLAND
565 CONGRESS STREET, SUITE 201
PORTLAND, ME 04101

207.926.5111 • info@terradynconsultants.com • www.terradynconsultants.com

PROJECT NO.	SHEET
21-49	1
DATE	OF
03/21/2022	1
SCALE	
1"=1,000'	

Section 2 – Title, Right or Interest

A copy of the property deeds, as recorded at the York County Registry of Deeds are attached.

- Book 11111, page 70
- Book 11449, pages 147-148

A copy of the purchase and sale agreement between the applicant and property owner is attached.

BK11111PG070

WARRANTY DEED **062428**

KNOW ALL MEN BY THESE PRESENTS

THAT I, JAMES A. MININNI, SR., of Biddeford, York County, Maine, for consideration paid, grant to NEW LIFE CHRISTIAN FELLOWSHIP, a Maine religious corporation with a mailing address of 551 Alfred Road, Biddeford, Maine 04005, with **warranty covenants**, a certain parcel of land situated on the Northerly side of the Alfred Road, near the top of Chick's Hill, so-called, in Biddeford, York County, Maine, bounded and described as follows:

Beginning on said road at the corner of land formerly of one Daniel Cyr at an iron hub set in the ground; thence northeasterly by said Cyr's land and land of others to a spotted tree at a brook; thence northwesterly by the brook to land of Ben Lunt, marked by a spotted tree; thence southwesterly by said Lunt land and land of others to an oak tree and land of one Coffey; thence by said Coffey's land southerly to the road at an iron hub set in the ground; thence southeasterly by said road to said Cyr land and point of beginning.

Being the same premises conveyed to the Grantor herein by warranty deed of Lucia Mininni dated October 3, 1996, and recorded October 10, 1996, in the York County Registry of Deeds in Book 8027, Page 103.

IN WITNESS WHEREOF, I, JAMES A. MININNI, SR. have hereunto set my hand and seal this 13th day of November, 2001.

Signed, sealed and delivered
in the presence of

James A. Mininni SR.
JAMES A. MININNI, SR.

STATE OF MAINE
YORK, ss.

November 13, 2001

Personally appeared the above named James A. Mininni, Sr. and acknowledged the foregoing instrument to be his free act and deed.

Attorney at Law/~~Notary Public~~

David R Ordway
(print name)

Return to:

RECEIVED YORK S.S
2001 NOV 13 PM 4: 15
ATTEST: Lois M. Muse
REGISTER OF DEEDS

MAINE R.E. TRANSFER TAX PAID

1709 A MAIN NERSON ESQ
37 BERRY ST. SACO ME 04072

014748

WARRANTY DEED
Maine Statutory Short Form

KNOW ALL MEN BY THESE PRESENTS,

THAT **ENERGY HOMES, INC.**, a Maine corporation, with a place of business in Limerick, County of York, State of Maine,

for consideration paid,

grant to **NEW LIFE CHRISTIAN FELLOWSHIP, f/k/a NEW LIFE ADVENT CHRISTIAN CHURCH OF BIDDEFORD, MAINE**, a religious non-profit corporation, without corporate stock, organized under the laws of the State of Maine, with its principal place of business in Biddeford, County of York, State of Maine, whose mailing address is 547 Alfred Road, Biddeford, ME 04005, with **warranty covenants**, the land in the City of Biddeford, County of York, State of Maine, described as follows:

MAINE R.E. TRANSFER TAX PAID

A certain lot or parcel of land, with the buildings and improvements thereon, situated in the City of Biddeford, County of York and State of Maine, on the northerly side of the Alfred Road, so-called, bounded and described as follows:

BEGINNING on said Alfred Road at the intersection of the same with the Andrews Road, also known as Andrew Road, so-called; thence running northwesterly by said Andrews Road, to land formerly of Daniel S. Hooper; thence northeasterly by said Hooper land and land formerly of Daniel Smith and one Stimpson to land now or formerly of K. S. Gilpatrick; thence southerly by said Gilpatrick land to said Alfred Road; thence westerly by said Alfred Road to said Andrews Road and point of beginning.

EXCEPTING that portion of the above described premises which was previously conveyed to Central Maine Power Company by undated instrument recorded in the York Registry of Deeds on November 14, 1988 in Book 4901, Page 286 (erroneously referred to being recorded in Book 4901, Page 287 in deed to Energy Homes, Inc. referenced below).

ALSO EXCEPTING that portion which was conveyed to the State of Maine by deed dated January 30, 1950 and recorded in said Registry of Deeds in Book 1150, Page 211.

Being the same premises conveyed to Energy Homes, Inc. by deed of Normand R. Verville, Personal Representative of the Estate of Lillian M. Verville, dated August 4, 1999 and recorded in the York Registry of Deeds in Book 9618, Page 290.

FURTHER EXCEPTING AND RESERVING from the above described premises that portion thereof which was conveyed by Energy Homes, Inc. to David R. Pelletier and Joyce A. Pelletier by deed duly recorded in the York Registry of Deeds in Book 10872, Page 44, reference to which is hereby made for a more particular description.

BK 11449 PG 148

IN WITNESS WHEREOF, It, the said **ENERGY HOMES, INC.**, has caused this instrument to be signed in its corporate name and behalf by **ANDRE N. COTE**, its President thereunto duly authorized, this 5th day of March, 2002.

SIGNED, SEALED AND DELIVERED
IN PRESENCE OF

ENERGY HOMES, INC.

BY:
Andre N. Cote, President

STATE OF MAINE
YORK, ss.

March 5th, 2002

Then personally appeared the above named **ANDRE N. COTE,** President of **ENERGY HOMES, INC.** and acknowledged the foregoing instrument to be his free act and deed, in his said capacity and the free act and deed of said **ENERGY HOMES, INC.**

Before me,

Bryce W. Ingraham
Attorney at Law

chi-newlife-chi-T4830-deed-del2002.wpd

RETURN RECORDED DOCUMENT TO:
New Life Christian Fellowship
547 Alfred Road
Biddeford, ME 04005

RECEIVED YORK S.S
2002 MAR 11 AM 11:31
ATTEST: Lois M. Muse
REGISTER OF DEEDS

Pleasotte Homes
PO Box 1190
Sanford ME 04073

OPTION TO PURCHASE AND PURCHASE AND SALE AGREEMENT

OPTION TO PURCHASE AND PURCHASE AND SALE AGREEMENT ("**Agreement**") made as of the date ("**Effective Date**") of last execution appearing below, by and between **New Life Christian Fellowship**, a Maine religious nonprofit corporation ("**Seller**"), with a mailing address of 551 Alfred Road, Biddeford, Maine 04005-9474 and **Devine Capital LLC**, a Massachusetts limited liability company, or its nominee ("**Buyer**"), with a mailing address of P.O. Box 17795, Portland, Maine 04112.

WHEREAS, Seller owns fee simple interest in that certain real property consisting of approximately 44.7 acres more or less located generally at 588 and 590 Alfred Street, in the City of Biddeford, County of York, Maine, also known as Tax Map 2, Lots 6 and 12, and more particularly described in the source deeds referenced in **Exhibit A** attached hereto (the "**Property**"); Excepting and reserving a 2.1 acre parcel conveyed to Old Dogs of Biddeford, LLC as referenced as Tax Map 2, Lot 6-3 and in the York County Registry of Deeds Book 17933 Page 197 also referenced here in Exhibit B.

WHEREAS, Seller has agreed to grant to Buyer an option to purchase the Property in the future for a set price reflected below, and does thus commit and obligate itself to sell and convey the Property to Buyer on the terms and conditions as set forth below;

NOW, THEREFORE, for good and valuable consideration, the sufficiency and receipt whereof is hereby acknowledged, the parties hereto, intending to be legally bound, hereby agree as follows, incorporating the foregoing recitals by reference as if fully restated hereinbelow:

Article I – Grant, Timing, Diligence, Permitting

1.1 *Option, Purchase Price.* For the consideration recited above, and in consideration for Buyer investing substantial time and money to review, evaluate, inspect, and explore development opportunities with respect to the Property, subject to the terms and conditions hereof, Seller hereby irrevocably grants to Buyer the exclusive right and option (the "**Option**") to purchase the Property for the sum of [redacted] (the "**Purchase Price**").

1.2 *Preliminary Diligence Deadline.* The initial term of the Option shall commence on the Effective Date and, unless otherwise extended in accordance with the terms hereof, shall expire at **6:00 p.m.** (Eastern Time), [redacted] days thereafter, during which period Buyer shall conduct its due diligence inspections (addressed in Article II below), the results of which shall be acceptable to Buyer in its sole and absolute discretion (the "**Preliminary Diligence Deadline**").

1.3 *Rezone/Permitting Deadline; Rezone/Permitting Approval Date.*

A. Upon the Preliminary Diligence Deadline, unless Buyer has terminated this Option due to the results of its due diligence being unsatisfactory to Buyer in its sole and absolute discretion, Buyer shall pay and deliver to Seller monthly payments in the amount of [redacted] in order to extend the Option term for up to [redacted] consecutive periods of [redacted] days each (all such monthly payments hereinafter referred to as the "**Option Payments**"). The Option Payments shall be nonrefundable but shall be applied to the Purchase Price at closing. Seller hereby grants to Buyer full authority to seek from any federal, state, or local governmental authority any zoning change(s) and/or permits and/or approvals whatsoever that Buyer, in its sole and absolute discretion, deems advisable for Buyer's intended development of the Property for a multi-family residential development (the "**Project**") during such extended period ("**Rezone/Permitting Deadline**"). Seller hereby agrees to fully support and cooperate with Buyer's efforts to rezone and permit the Project, and specifically agrees to appear and testify in favor of, and promptly execute any document reasonably requested by Buyer in connection with, any such efforts of Buyer, all at no cost or charge to Buyer.

B. In the event Buyer does not obtain final unappealable zoning change(s)/approvals, including conditional use and/or permits for the Project acceptable to Buyer in its sole and absolute discretion, or otherwise affirmatively elect by written notice to Seller to close notwithstanding the lack of such permits and/or approvals, by the Rezone/Permitting Deadline, then unless Buyer

elects to extend the Rezone/Permitting Deadline as provided in Section 1.4, below, this Agreement shall automatically terminate as of the Rezone/Permitting Deadline, and, promptly upon Buyer's delivery to Seller of (1) an instrument (the "**Release**") signed by Buyer and suitable to release and discharge the Record Notice, and (2) digital copies of and an assignment of all right in the all materials developed by Buyer and its contractors as part of Buyer's efforts to rezone and permit the Project (the "**Rezone Permitting Materials**"), this Agreement shall be null, void, of no further force and effect, and each party hereto shall have no further obligation one to the other.

C. If Buyer obtains zoning change(s) and permits for the Project acceptable to Buyer in its sole and absolute discretion, then promptly upon the date ("**Rezone/Permitting Approval Date**") that the last of such zoning change(s) and/or permit(s) become final and non-appealable, Buyer shall serve notice upon Seller confirming same, and Buyer shall close on the purchase by the date ("**Closing Deadline**") that is [redacted] days after the Rezone/Permitting Approval Date, and the notice described in the first sentence of this subsection shall also constitute the Exercise Notice referenced in Section 3.1, below, and shall contain the additional information specified in Section 3.2, below.

1.4 *Additional Option Extension Payments*. Notwithstanding any contrary provision herein, if Buyer has not obtained all necessary unappealable permits and/or approvals for the Project, Buyer may elect to further extend the Option and Rezone/Permitting Deadline for up to [redacted] additional, successive periods of [redacted] days each, provided Buyer shall pay and deliver to Seller monthly payments, in the amount of [redacted] (all such monthly payments hereinafter referred to as the "**Extension Payments**"). The Extension Payments shall be nonrefundable but shall be applied to the Purchase Price at closing.

1.5 *Termination*. Notwithstanding any contrary provision herein, at any time before the Rezone/Permitting Approval Date, Buyer may elect to terminate this Agreement by delivering to Seller notice thereof ("**Termination Notice**"). If a Termination Notice is given, Buyer shall promptly deliver to Seller the Release signed by Buyer and the Rezone/Permitting Materials, as described in Section 1.3 above, and upon such delivery, this Agreement shall be null and void, of no further force and effect, and each party hereto shall have no further obligation one to the other, except that Buyer's indemnification obligations under Section 2.2 shall survive any termination.

Article II – Due Diligence

2.1 To facilitate Buyer's inspections and evaluation of the Property, Seller agrees to deliver to Buyer as soon as possible, but in any event within [redacted] days from the date hereof, copies of the materials specified on the list attached hereto as **Exhibit B** (the "**Due Diligence Materials**"). In addition, Seller agrees to permit Buyer to inspect and make copies of any books and records in Seller's possession or control concerning the Property.

2.2 So long as this Agreement remains in effect, Buyer may conduct such investigations, inspections, interviews, tests, assessments and audits pertaining to the Property as Buyer elects, in Buyer's sole discretion and at Buyer's sole cost, *including but not limited to*: (i) title search; (ii) survey; (iii) environmental site assessment; (iv) review of zoning and building code requirements; and/or (v) physical/geotechnical inspection of the Property (collectively, the "**Inspections**"). Buyer shall promptly repair any physical damage to the Property caused by any such Inspections, and Buyer further agrees to indemnify and hold Seller harmless from and against any and all loss, cost, damage, or expense incurred by Seller as a result of said physical damage.

2.3 Seller agrees, in general, to cooperate in good faith with Buyer and Buyer's representatives, and, in particular:

2.3.1 so as to secure the rights granted to Buyer hereunder and to ensure that the Property shall be in substantially the same condition at the time of conveyance as exists as of the date of this Agreement, Seller agrees that for so long as this Agreement remains in

effect, then unless and until Buyer in writing consents otherwise, Seller shall maintain the Property substantially in condition as currently exists, timely paying all taxes and other impositions related to ownership thereof, and shall not: (a) transfer, encumber, mortgage, lease, alienate, impose any restriction or condition upon, or otherwise grant to any other person, firm or entity any permission, license, right or rights whatsoever in, pertaining to, or affecting any part or all of the Property; nor (b) make any change to or alter in any way whatsoever the physical or other characteristics of any part or all of the Property, including cutting of trees/timber, or contamination of any kind; and,

2.3.2 so as to ensure that there is no change in the status of the title to the Property prior to termination of this Agreement, Seller agrees to contemporaneously with its execution hereof execute and deliver to Buyer for recording in the appropriate Land Evidence Records an instrument (the "**Record Notice**") suitable under applicable law to evidence the grant of the Option and the aforesaid restrictions on the grant of any rights inconsistent with this Agreement, in form and substance as attached hereto as **Exhibit C**, or, if no such exhibit is attached, in form and substance as Buyer may reasonably request.

2.4 During the effective term of this Agreement, Buyer contemplates expending substantial sums and incurring substantial expenses to inspect, test, and analyze the Property, to conduct title research, undertake survey and site plans, and to otherwise conduct a due diligence review of the Property and all related matters, and to pursue obtaining permits for Buyer's contemplated development of the Property. To induce Buyer to make such efforts and expend such sums, Seller hereby agrees that during the effective term of this Agreement Seller shall not solicit, encourage, negotiate or entertain any offer with any other party concerning or with respect to the Property whatsoever, including offers to purchase or lease the Property, regarding any sale, financing, partnership, or other disposition of all or any part of, or interest in, the Property; Seller agrees to immediately communicate to Buyer for response any written inquiries received by Seller during the effective term of this Agreement. Seller further agrees to keep the monetary terms of this Agreement confidential, except only as may be approved by Buyer in writing, in advance.

2.5 Notwithstanding anything contained herein to the contrary, however, in the event Buyer delivers to Seller prior to expiration of the Preliminary Diligence Deadline written notice specifying with reasonable particularity matters related to the title to the Property to which Buyer objects ("**Title Objection Notice**"), then and in such event the Preliminary Diligence Deadline shall be deemed extended for an additional period beyond its then-scheduled expiration to allow Seller to, and Seller does hereby agree that Seller shall during such period, use good faith efforts to promptly and reasonably resolve such title objections. In the event Seller fails to use reasonable good faith efforts to so resolve Buyer's objections, then and in such event Seller shall be in default hereunder, and Buyer shall be entitled to its remedies for same as provided below. In addition, Buyer shall have the right to extend the Preliminary Diligence Deadline for a reasonable period of time to permit Buyer itself, at its own expense, to resolve such title objections.

Article III – Exercise, Purchase Price

3.1 In the event that Buyer elects to exercise the Option and purchase the Property, Buyer shall deliver notice ("**Exercise Notice**") to Seller pursuant to Section 1.3.C stating that Buyer elects to exercise the Option to purchase the Property.

3.2 Buyer shall specify in the Exercise Notice (but failure to so specify shall not invalidate the effectiveness of the Exercise Notice) the name of the entity, if different from Buyer, that is to take title to the Property, Seller hereby acknowledging and agreeing that Buyer may take title in the name of any entity Buyer chooses as nominee, and that for this purpose references in this Agreement to "Buyer" shall mean "Buyer or its nominee."

3.3 The Purchase Price shall be adjusted to reflect the Option Payments and Extension Payments paid to Seller by Buyer pursuant to Section 1.3, as well as the equitable apportionment as of date

of closing of unpaid real estate taxes, assessments, liens, utility bills, if any, recording charges, transfer tax, and similar items as is customary in standard conveyancing practice in the State of Maine (the Purchase Price as so adjusted may hereinafter be referred to as the "**Adjusted Purchase Price**").

Article IV – Closing Procedure

4.1 On the Closing Deadline, Seller shall sell and convey the Property to Buyer and Buyer shall purchase the Property from Seller (the "**Closing**"). At Closing, Seller shall deliver to Buyer:

4.1.1 an original deed (the "**Deed**") properly executed by or on behalf of Seller, in form and substance as attached hereto as **Exhibit D**, conveying all of Seller's interest in the Property to Buyer by good, marketable, insurable title, free and clear of all liens, encumbrances, and deficiencies, except utility easements of record, and, except easements and encumbrances of record prior to the date of this Agreement and,

4.1.2 such other documents as may be reasonably requested by Buyer, including without limitation customary title insurance affidavits, such instruments of assignment as Buyer reasonably requests, such as an Assignment of Permits, documents to evidence the existence, good standing, and authority of Seller, a settlement statement, or any other customary or reasonable documentation as may be requested (such other documents, together with the Deed, may hereinafter be referred to collectively as the "**Conveyance Documents**").

4.1.3 At Closing Buyer shall deliver to Seller the Adjusted Purchase Price in immediately available funds.

Article V - Representations

5.1 Seller hereby represents and warrants to Buyer, which representations and warranties shall be deemed restated as of closing, that:

5.1.1 Seller has good, insurable, and marketable title in fee simple to the Property, subject only to the encumbrances of record.

5.1.2 Seller is a Maine nonprofit corporation, is not a foreign person or foreign entity as defined in the Foreign Investment in Real Property Tax Act ("**FIRPTA**"), has full right, power and authority to enter into and consummate this transaction, the person executing this Agreement on behalf of Seller is an officer of Seller and is duly authorized to execute this Agreement on behalf of Seller, Seller has the power and authority without necessity of further act or consent to execute this Agreement and all other instruments and documents contemplated hereby and to perform any and all acts necessary or desirable to consummate the transactions contemplated (including a conveyance of the Property).

5.1.3 To Seller's knowledge without additional investigation, the Property is free of violations of law, is in full compliance with Federal, State, City and County ordinances and environmental laws, and there are not any current or contemplated special tax assessments known to Seller.

5.1.4 Other than to the extent granted in this Agreement, previously disclosed to Buyer in writing, or reflected as exceptions to coverage on a title commitment acceptable to Buyer, no person, firm, or entity has any rights in, pertaining to, or affecting the Property, and Seller has not granted any rights in, pertaining to, or affecting the Property to any person, firm, or entity in any unrecorded instrument or writing, nor does any person, firm, or entity have an option to purchase or right of first refusal to purchase the Property.

5.1.5 Seller is not involved as a debtor in any bankruptcy, reorganization or insolvency proceeding, and Seller has not received any notice of and has no knowledge of any

pending or threatened lawsuits, including condemnation suits, that could affect the Property or Seller's ownership of the Property.

5.1.6 To Seller's knowledge without additional investigation there have not been and there are not now any underground storage tanks located on or under the Property or if there have been or are any such tanks located on the Property, their location has been identified to Buyer in writing, they have been properly registered with all appropriate authorities, they are in full compliance with all applicable statutes, ordinances and regulations, and they have not resulted in the release of any hazardous or toxic substance, material, or waste into the environment.

5.1.7 To Seller's knowledge without additional investigation there are no past or present uses of the Property that did not comply in all material respects with all Environmental Protection Agency, Occupational Safety and Health Administration, and all other federal, state and local laws, administrative rules and regulations governing the soil, water, air and environment in and around the Property.

Article VI - Default

6.1 If Buyer fails to fulfill the Buyer's agreement herein, Seller shall retain the Option Payment(s) as liquidated damages, being Seller's sole remedy. If Seller shall fail to fulfill its obligations herein, Buyer shall have all available remedies at law and in equity, including specific performance. Notwithstanding the foregoing, the non-defaulting party agrees to provide the defaulting party with written notice providing a description of a default and provide such defaulting party with a [redacted] day cure period.

Article VII – Notice

7.1 All notices or other communications required or permitted hereunder shall be in writing, and shall be effective upon receipt or refusal when sent to the intended recipient by one of the methods set forth below:

7.1.1 regular and certified U.S. mail, postage prepaid, return receipt requested;

7.1.2 reputable national delivery service (i.e. FedEx, DHL); or,

7.1.3 otherwise hand delivered with an acknowledgment of receipt

7.1.4 electronic transmission

7.2 Each party, by written notice given to the other party in accordance herewith, may change the address to which notices or other communications hereunder shall be deemed to have been duly given; provided, however, no party may designate more than **three** notice addresses, and notice of a change of address shall be effective only upon actual delivery. Until changed as aforesaid, a notice shall be addressed to the intended recipient at their address set forth in the first paragraph on page 1 of this Agreement.

Article VIII – Miscellaneous

8.1 *Broker.* Seller and Buyer each hereby represent and warrant to the other that neither Seller nor Buyer has dealt with or employed any real estate agent, broker, or any person entitled to a commission in connection with the transaction contemplated other than [redacted] in Maine. Seller and Buyer hereby agree to indemnify, defend, and hold harmless the other from any claim or claims, action or actions, losses, payments, judgments, commission or commissions, paid or payable to any real estate agent, broker, person or entity in connection with this transaction that was not called to the attention of the other as a result of any services or facilities of any such real estate agent, broker, person or entity provided to the other. The provisions of this paragraph shall survive conveyance of the Property to Buyer.

8.2 *Governing Law, Venue, Jury Waiver.* This Agreement shall be construed in accordance with the laws of the State of Maine. Both Buyer and Seller hereby consent to the jurisdiction of the courts of said state and of the federal government, as well as to the jurisdiction of all courts from which an appeal may be taken from the aforesaid courts, for the purpose of any suit, action or other proceeding arising out of, under or with respect to this agreement, and expressly waive any and all objection each may now or hereafter have as to the venue in any of such courts, and EACH OF BUYER AND SELLER DO HEREBY EXPRESSLY WAIVE ANY RIGHT EACH MAY HAVE TO ELECT A TRIAL BY JURY AS TO ANY DISPUTE ARISING HEREUNDER. Any disputes between Buyer and Seller (which are not otherwise resolved by the parties) shall be submitted to binding arbitration in Portland, Maine administered by JAMS in accordance with its Streamlined Arbitration rules. The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction. This clause shall survive the closing of this transaction.

8.3 *Headings; Entire Agreement; Amendments.* The headings contained in this Agreement are for reference purposes only and shall not affect in any way the meaning or interpretation of this Agreement. This Agreement (including all exhibits annexed hereto) contains the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior understandings, written or oral, if any, with respect thereto. This Agreement may not be modified, changed, supplemented, or terminated, nor may any obligations hereunder be waived, except by written instrument signed by the party to be charged or by its agent duly authorized in writing or as otherwise expressly permitted herein. The Agreement shall not be binding on any party until signed by every party.

8.4 *Waiver.* No waiver of any breach of any agreement or provision herein contained shall be deemed a waiver of any preceding or succeeding breach thereof or of any other agreement or provision herein contained. No extension of time for performance of any obligations or acts shall be deemed an extension of the time for performance of any other obligations or acts.

8.5 *Binding Effect; Assigns; Benefits.* This Agreement shall inure to the benefit of and shall be binding upon the parties hereto and their respective heirs, legal representatives, successors and assigns; provided, however, Seller may not assign its rights or obligations under this Agreement absent Buyer's consent in Buyer's sole discretion.

8.6 *Exhibits, Counterparts.* All exhibits attached hereto are by this reference incorporated fully herein. This Agreement may be executed by the parties hereto in one or more counterparts, each of which shall be deemed to be an original, but all of which together shall constitute one and the same instrument.

8.7 *Severability.* The invalidity or unenforceability of any provision of this Agreement shall not affect the validity or enforceability of any other provision of this Agreement, which shall remain in full force and effect.

8.8 *Days, Interpretation.* References in this Agreement to a specified number of "days," shall mean and refer to calendar days; provided, however if any specified period would otherwise end on a day that is a Saturday, Sunday or day which is recognized by the State of Maine ("Jurisdiction") as a legal holiday, then and only in such event, the specified period shall be deemed to extend to the next following day that is not a Saturday, Sunday or legal holiday. "Business Day" means any day other than Saturday, Sunday and/or any weekday or weekend day that is a legal holiday observed by the federal government of the United States of America or the Jurisdiction. The terms of this Agreement were fully negotiated by the parties and shall not be construed for or against any party hereto.

8.9 *Prevailing Party.* In the event the parties litigate in any court or arbitration forum any dispute hereunder, then and in such event, the prevailing party shall be entitled to an award from the other of the reasonable attorney's fees and costs incurred therein by said prevailing party.

8.10 *Time of the Essence*. The parties hereto hereby agree that TIME IS OF THE ESSENCE as to each and every provision of this Agreement.

[*Signature Page Follows; Remainder Intentionally Blank*]

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed under seal by their proper officers hereunto duly authorized as of the date of last execution hereof as set forth below.

Seller:
NEW LIFE CHRISTIAN FELLOWSHIP

By:_____
Justin Sweeney
Its Duly Authorized: Lead Pastor

Date: January 25, 2021

Buyer:
DEVINE CAPITAL LLC

By:_____
Bernard M. Devine
Its Duly Authorized: President

Date: January 25, 2021

Exhibit A

Two parcels of land, excepting the third parcel conveyed to Old Dogs of Biddeford, LLC with any improvements thereon, in the City of Biddeford, York County, Maine described in the following deeds:

588 Alfred Street, Biddeford, Maine

- Warranty Deed dated November 13, 2001 from James A. Mininni, Sr. to New Life Christian Fellowship, recorded at Book 11111, Page 70 in the York County Registry of Deeds

590 Alfred Street, Biddeford, Maine

- Warranty Deed dated March 5, 2002 from Energy Homes, Inc. to New Life Christian Fellowship, recorded at Book 11449, Page 147 in the York County Registry of Deeds

Excepting the property located at Alfred Street, Biddeford, Maine, conveyed to Old Dogs of Biddeford LLC

- Warranty Deed dated April 19, 2019 from New Life Christian Fellowship to Old Dogs of Biddeford, LLC recorded at Book 17933, Page 197 in the York County Registry of Deeds

Exhibit B

Survey - Titcomb Associates 2002
588 Alfred St Deed 11111 070
590 Alfred St Deed 11449 147
588 Alfred St Disclosure
590 Alfred St Disclosure
Old Dogs 2018 Conveyance Survey
Old Dogs Deed 17933 197
Alfred St Sewer Map
Andrews Geometrics Plan Profile 2004
ARC New Building sketch
Packard Development sketch
BI3074-Va Table A Zoning Uses
Parcel 1 and 2 Tax Map copy
2003 Biddeford & Saco Water Co Letter
2003 Gorrill-Palmer Consulting Engineers re: Ability to Serve
2005 Post development AM Peak Hour
Andrews Geometrics Plan Profile 2004
Attachment B TR-20 Calculations
Attachment C Water Quality Computations
Calculations Based Upon Maine Subsurface Wastewater Rules
Capacity and Queuing Analysis Results
City of Biddeford Wastewater Dept 2003 Ability to Serve Letter
Erosion Sedimentation North C-8B
Erosion Sedimentation South C-8A
First American Gap Indemnity Agreement 5.25.2017
First American Alta 3 parcels-3.5-2002
Gorrill-Palmer Consulting Engineers 2.9.2004 Maine DOT Letter
Gorrill-Palmer Consulting Engineers 4.8.2004 Maine DOT Letter
Gorrill-Palmer Consulting Engineers 2004 Plans
Gorrill-Palmer Consulting Engineers Row Volumes, Peak Adjusted Volumes
Grading & Drainage C-3
Grading Drainage South C-4A
Grading Draining North C-4B
Lighting plan WLS Lighting Systems
Offsite Utility Profile C-17B
Offsite Utility Profile C-17A
Overall Site Layout C-1A
PreDevelopment Watershed Maps
Proposed Off-Site Improvements - Gorrill Palmer
Route 111 & Exit 4- traffic study
Route 111 & Home Depot
Route 111 at Andrews Rd
Route 111 at Exit 4 Precourt St
Route 111 at Route 35
Route 111 at Shaws Irving
Route 111 at Walmart Park n ride
RW Gillespie June 2004 geotechnical evaluation
Section 7 Wildlife and Fisheries
Section 14 Erosion and Sedimentation Control Plan
Site Layout C-1B
Site Layout North C-2C

Exhibit B (continued)

Site Layout Phase2. C-2A
Site Layout Plans C2A C1B
Site Layout South C-2B
Stormwater Management
Traffic Impact Study 2003
Trip Generation Calculations
Turning Movement Diagrams
Utility Plan C- 6
Utility Plan Phase 1 C5
Vernal Pool Application and Determination NLC
Vernal Pool Location Plan LongView Partners - 588-590 Alfred St
Wetland Reconnaissance 4-21-18- 588-590 Alfred St
Wetland Reconnaisance 6-3-20- 590 Alfred St.6-3-20
Zoning Map

Exhibit C

NOTICE OF OPTION

Notice is hereby given of the following Option to Purchase and Purchase and Sale Agreement (the "Option") vesting in Buyer an option to purchase certain real property owned by Seller:

SELLER:	New Life Christian Fellowship
BUYER:	Devine Capital LLC
DATE OF AGREEMENT:	January 25, 2021
PREMISES:	See Exhibit A attached hereto
TERM OF OPTION:	Beginning January 25, 2021 and continuing for up to [redacted] days, subject at all times to the terms and conditions of the Option Agreement.

The undersigned further expressly acknowledges that this Notice of Option is being executed pursuant to the provisions of the Option and is not intended to vary the terms or conditions of the Option.

IN WITNESS WHEREOF, the undersigned has caused this Notice of Option to be signed by its duly authorized representative.

NEW LIFE CHRISTIAN FELLOWSHIP

By:_____
Print Name: Justin Sweeney
Its Duly Authorized: President and Lead Pastor
Dated: January 25, 2021

STATE OF MAINE
COUNTY OF YORK, SS

January 25, 2021

Then personally appeared the above-named Justin Sweeney, President and Lead Pastor of NEW LIFE CHRISTIAN FELLOWSHIP and acknowledged the foregoing instrument to be his/~~her~~ free act and deed in his/~~her~~ said capacity, and the free act and deed of NEW LIFE CHRISTIAN FELLOWSHIP.

Lillian B. Camire
Notary Public / Attorney at Law
Print name:
My commission expires:

LILLIAN B. CAMIRE
Notary Public - Maine
My Commission Expires
December 17, 2023

Exhibit D

QUITCLAIM DEED
WITH COVENANT
STATUTORY SHORT FORM
TITLE 33, §775

New Life Christian Fellowship, a Maine religious nonprofit corporation, with a mailing address of 551 Alfred Street, Biddeford, Maine 04005-9474, for consideration paid, grants to _____, a _____, with a mailing address of _____, **with Quitclaim Covenant,** a certain lot or parcel of land situated in the City of Biddeford, County of York, and State of Maine, as described in **Exhibit A** attached hereto and made a part hereof.

DATED: _____, 202_ New Life Christian Fellowship

By:_____
Print Name: Justin Sweeney
Its Duly Authorized: President and Lead Pastor

STATE OF MAINE
COUNTY OF YORK, SS

_____, ___, 202_

Then personally appeared the above-named Justin Sweeney, President and Lead Pastor of NEW LIFE CHRISTIAN FELLOWSHIP and acknowledged the foregoing instrument to be his/her free act and deed in his/her said capacity, and the free act and deed of NEW LIFE CHRISTIAN FELLOWSHIP.

_____
Notary Public / Attorney at Law
Print name:
My commission expires:

Exhibit A

Two parcels of land, excepting the third parcel conveyed to Old Dogs of Biddeford, LLC with any improvements thereon, in the City of Biddeford, York County, Maine described in the following deeds:

588 Alfred Street, Biddeford, Maine

- Warranty Deed dated November 13, 2001 from James A. Mininni, Sr. to New Life Christian Fellowship, recorded at Book 11111, Page 70 in the York County Registry of Deeds

590 Alfred Street, Biddeford, Maine

- Warranty Deed dated March 5, 2002 from Energy Homes, Inc. to New Life Christian Fellowship, recorded at Book 11449, Page 147 in the York County Registry of Deeds

Excepting the property located at Alfred Street, Biddeford, Maine, conveyed to Old Dogs of Biddeford, LLC

- Warranty Deed dated April 19, 2019, from New Life Christian Fellowship to Old Dogs of Biddeford, LLC recorded at Book 17933, Page 197 in the York County Registry of Deeds

SECOND AMENDMENT TO OPTION TO PURCHASE AND PURCHASE AND SALE AGREEMENT

THIS SECOND AMENDMENT TO OPTION TO PURCHASE AND PURCHASE AND SALE AGREEMENT (this Amendment") is made and entered into as of the 14 day of January, 2022, by and between **New Life Christian Fellowship** ("Seller") and **Devine Capital LLC** ("Buyer") with respect to that certain Option To Purchase and Purchase and Sale Agreement between Seller and Buyer, with an effective date of January 25, 2021, as amended by that certain Amendment to Option to Purchase and Purchase and Sale Agreement dated May "__", 2021 (together, the "Agreement"), relating to property of the Seller located generally at 588 and 590 Alfred Street in Biddeford, Maine.

WHEREAS, Seller and Buyer wish to amend the Agreement as set forth below.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Seller and Buyer hereby agree that the Agreement shall be amended as hereinafter set forth.

A. Section 1.4 of the Agreement is hereby amended to change the monthly amount of the Extension Payments from [redacted] to [redacted] for the firs [redacted] monthly Extension Payments (i.e., the monthly Extension Payments in January 2022 through June 2022 shall be [redacted] but thereafter shall revert to [redacted]).

B. Seller and Buyer hereby ratify and confirm all terms and provisions of the Agreement and agree that, except as amended by this Amendment, all terms and provisions of the Agreement shall remain in full force and effect including.

C. This Second Amendment may be simultaneously executed in any number of counterparts, each of which when so executed and delivered shall be an original, but such counterparts shall constitute one and the same instrument. This Second Amendment may be transmitted between the parties by facsimile machine or by email attachment and signatures appearing on faxed or emailed instruments shall be treated as original signatures. Both a faxed or emailed version containing either original, faxed or emailed signatures of all parties, and multiple counterparts of the same version each containing separate original, faxed or emailed signatures of the parties, shall be binding on them.

[Signature Page Follows]

IN WITNESS WHEREOF, Seller and Buyer have executed this Second Amendment as of the date first above written.

SELLER

NEW LIFE CHRISTIAN FELLOWSHIP

DocuSigned by:
By: Justin Sweeney
2507456A9BB5421...

Name: Justin Sweeney

Its Duly Authorized: Lead Pastor

BUYER

DEVINE CAPITAL LLC

By: _____
Bernard M. Devine, Jr., Manager

Section 3 – Financial Capacity

A. **Estimated Costs**

The anticipated project costs include the following:

Property purchase price:	$1,500,000
Soft Costs (Design, Permitting, etc.):	$2,425,000
Site Construction Costs:	$7,625,000

B. **Financing**

A letter from the applicant's financial partner, Rockland Trust, demonstrating a commitment to provide financing for the project is attached.

The applicant does not intend to provide affordable housing units within the development.

C. Certificate of Good Standing

A copy of the applicant's status with the Secretary of State is attached.

ROCKLAND TRUST Where Each Relationship Matters

July 29, 2022

Bureau of Land and Water Quality
312 Canco Road
Portland, ME 04103

Re: A 216 Unit Multifamily Project to be constructed in Biddeford, ME

To whom it may concern,

Rockland Trust Company will be providing the construction financing for the referenced multifamily project. Provided below is a summary of the proposed budget for this project:

Building Construction	$	29,865,000
Site Improvement Work	$	7,625,000
Soft Costs	$	2,425,000
	$	39,915,000

Our relationship with KGI Properties, LLC and their investment partners, Devine Capital, LLC and The Simon Konover Company back many years and we have most recently provided financing for The Beacon Expansion, a 48 unit expansion to The Beacon in Scarborough, ME, Mast Landing, a 144 unit multifamily project in Freeport, ME; The Cove, a 120 unit multifamily project in East Lyme, CT; The Beacon, a 288 unit multifamily project in Scarborough, ME; The Shoppes at Hanfield Village, a grocery anchored center in Indian Trail, NC; and The Sound, a 280 unit multifamily project in East Lyme, CT.

Should you have any questions concerning the proposed financing for this multifamily project, please do not hesitate to contact me directly.

Sincerely,

James J. O'Connor, Jr.
Senior Vice President

MAINE
Department of the Secretary of State
Bureau of Corporations, Elections and Commissions

Corporate Name Search

Information Summary

Subscriber activity report

This record contains information from the CEC database and is accurate as of: Mon Aug 01 2022 08:34:59. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
DEVINE CAPITAL LLC	20170837FC	LIMITED LIABILITY COMPANY (FOREIGN)	GOOD STANDING

Filing Date	Expiration Date	Jurisdiction
04/11/2017	N/A	MASSACHUSETTS

Other Names **(A=Assumed ; F=Former)**

NONE

Clerk/Registered Agent

JOHN D. DEVINE, ESQ.
P.O. BOX 17795
PORTLAND, ME 04112

Back to previous screen New Search

Click on a link to obtain additional information.

List of Filings View list of filings

Obtain additional information:

Additional Addresses	Plain Copy	Certified copy
Certificate of Existence (more info)	Short Form without amendments ($30.00)	

You will need Adobe Acrobat version 3.0 or higher in order to view PDF files.
If you encounter problems, visit the troubleshooting page.

Get Acrobat Reader

If you encounter technical difficulties while using these services, please contact the Webmaster. If you are unable to find the information you need through the resources provided on this web site, please contact the Bureau's Reporting and Information Section at 207-624-7752 or e-mail or visit our Feedback page.

© Department of the Secretary of State

Section 4 - Technical Ability

The applicant, KDK Biddeford, LLC, has extensive development and permitting experience within the State of Maine, including two similar projects successfully permitted within the past five years. The Beacon, a 288-unit project in Scarborough, was permitted in 2017 with construction completed in 2020. 259 Mast Landing, a 144-unit project in Freeport, was permitted in 2020 and is nearing the completion of construction.

The design phase of the project includes the preparation of detailed site plans, site grading, stormwater management, site utility layout, erosion & sediment control plans and site detail plans. The permitting phase of this project consists of the preparation of all required state and local permit applications, including the MDEP Site Location of Development Act Permit, a Tier 1 Natural Resources Protection Act Permit, and Site & Subdivision applications with the City of Biddeford.

The applicant has retained Fairbanks Engineering Corp. to evaluate the geotechnical characteristics of the project site. The principal, Robert Fairbanks, P.E., has over 35 years of geotechnical experience and has been involved with numerous successful construction projects in Maine.

The applicant has retained Terradyn Consultants, LLC (Terradyn) to lead the design and permitting effort for this project. Terradyn was established in 2005 and currently has six professional engineers on staff. Terradyn provides land planning, stormwater management design, environmental permitting, and technical assistance to developers, contractors, and municipalities for commercial, residential and industrial developments. Project manager, Richard Meek, P.E. has been involved in the successful design and permitting of numerous projects of similar size and scope. Terradyn has subcontracted with the following professionals to supplement the design:

Colliers Engineering & Design, formerly Northern Survey Engineering, has prepared the boundary and partial topographic survey for the property. The professional Land Surveyors of Northern Survey Engineering have provided high-quality, client-oriented services since 2017.

Mark Hampton Associates, Inc. prepared the Class B High Intensity Soil Survey. Mark Hampton, CSS #216, LSE #263 is a recognized expert in his field.

Mark Cenci Geologic, Inc prepared report of delineation of the onsite wetlands. Mark Cenci is a Maine certified Geologist and Licensed Site Evaluator with over 25 years' experience solving problems in innovative and cost-effective ways for hundreds of satisfied clients.

Section 5 - Noise

Sine the development is solely residential, the anticipated noise generated by the project will be minor in nature. Short-term noise impacts may occur during construction with the use of typical site construction equipment. Construction activities will be limited to the daylight hours as specified in the City of Biddeford ordinances.

Section 6 - Visual Quality and Scenic Character

Impacts to the visual quality and scenic character of the surrounding area will be minimized in the following manner:

- To the extent practical, the existing forested areas along Alfred St. (Rte. 111) and Andrews Rd. will be maintained.
- Except for two proposed stormwater outfall pipes, a minimum 100-foot buffer will be maintained for an unnamed stream, which forms a portion the development's northeast property boundary.
- The development anticipates that approximately 7,000 square feet (0.16 acre) of the property's approximate 323,000 square feet (7.41 acres) of wetland will pe permitted for impacts. This represents proposed impacts to approximately 2.1% of the property's wetlands.
- Pursuant to the terms of the Joint Development Agreement dated May 19, 2022 between the City and the developer, at the time of the initial building permit issuance, the developer will grant to the City, or its designated nonprofit conservation organization, a conservation easement over certain wetland areas as then agreed upon by the parties and upon terms and conditions satisfactory to the City, in good faith in order to preserve such wetland areas in their natural and undeveloped state.

Section 7 - Wildlife and Fisheries

The Maine Department of Inland Fisheries and Wildlife (MEIF&W) was contacted as part of the applicant's due diligence investigation of the property. A copy of MEIF&W's response letter regarding fisheries and wildlife resources is attached for reference.

JANET T. MILLS
GOVERNOR

STATE OF MAINE
DEPARTMENT OF
INLAND FISHERIES & WILDLIFE
284 STATE STREET
41 STATE HOUSE STATION
AUGUSTA ME 04333-0041

JUDITH CAMUSO
COMMISSIONER

April 21, 2021

Samantha Hartery
Flycatcher LLC
463 Blackstrap Road
Falmouth, ME 04105

RE: Information Request – KGI Properties Project, Biddeford

Dear Samantha:

Per your request received on March 31, 2021, we have reviewed current Maine Department of Inland Fisheries and Wildlife (MDIFW) information for known locations of Endangered, Threatened, and Special Concern species; designated Essential and Significant Wildlife Habitats; and inland fisheries habitat concerns within the vicinity of the *KGI Properties* project in Biddeford. Note that as project details are lacking, our comments are non-specific and should be considered preliminary.

Our Department has not mapped any Essential Habitats that would be directly affected by your project.

Endangered, Threatened, and Special Concern Species

Bats - Of the eight species of bats that occur in Maine, the three Myotis species are afforded special protection under Maine's Endangered Species Act (MESA, 12 M.R.S §12801 et. seq.): little brown bat (State Endangered), northern long-eared bat (State Endangered), and eastern small-footed bat (State Threatened). The five remaining bat species are designated as Species of Special Concern: big brown bat, red bat, hoary bat, silver-haired bat, and tri-colored bat. While a comprehensive statewide inventory for bats has not been completed, based on historical evidence it is likely that several of these species occur within the project area during migration and/or the breeding season. However, our Agency does not anticipate significant impacts to any of the bat species as a result of this project.

Significant Wildlife Habitat

Significant Vernal Pools - At this time MDIFW Significant Wildlife Habitat (SWH) maps indicate no known presence of SWHs subject to protection under the Natural Resources Protection Act (NRPA) within the project area, which include Waterfowl and Wading Bird Habitats, Seabird Nesting Islands, Shorebird Areas, and Significant Vernal Pools. However, a comprehensive statewide inventory for Significant Vernal Pools has not been completed. Therefore, we recommend that surveys for vernal pools be conducted within the project boundary by qualified wetland scientists prior to final project design to determine whether there are Significant Vernal Pools present in the area. These surveys should extend up to 250 feet beyond the anticipated project footprint because of potential performance standard requirements for off-site Significant Vernal Pools, assuming such pools are located on land owned or controlled by the applicant. Once surveys are completed, survey forms should be submitted to our Agency for review well before the submission of any necessary permits. Our Department will need to review and verify any vernal pool data prior to final determination of significance.

Fisheries Habitat

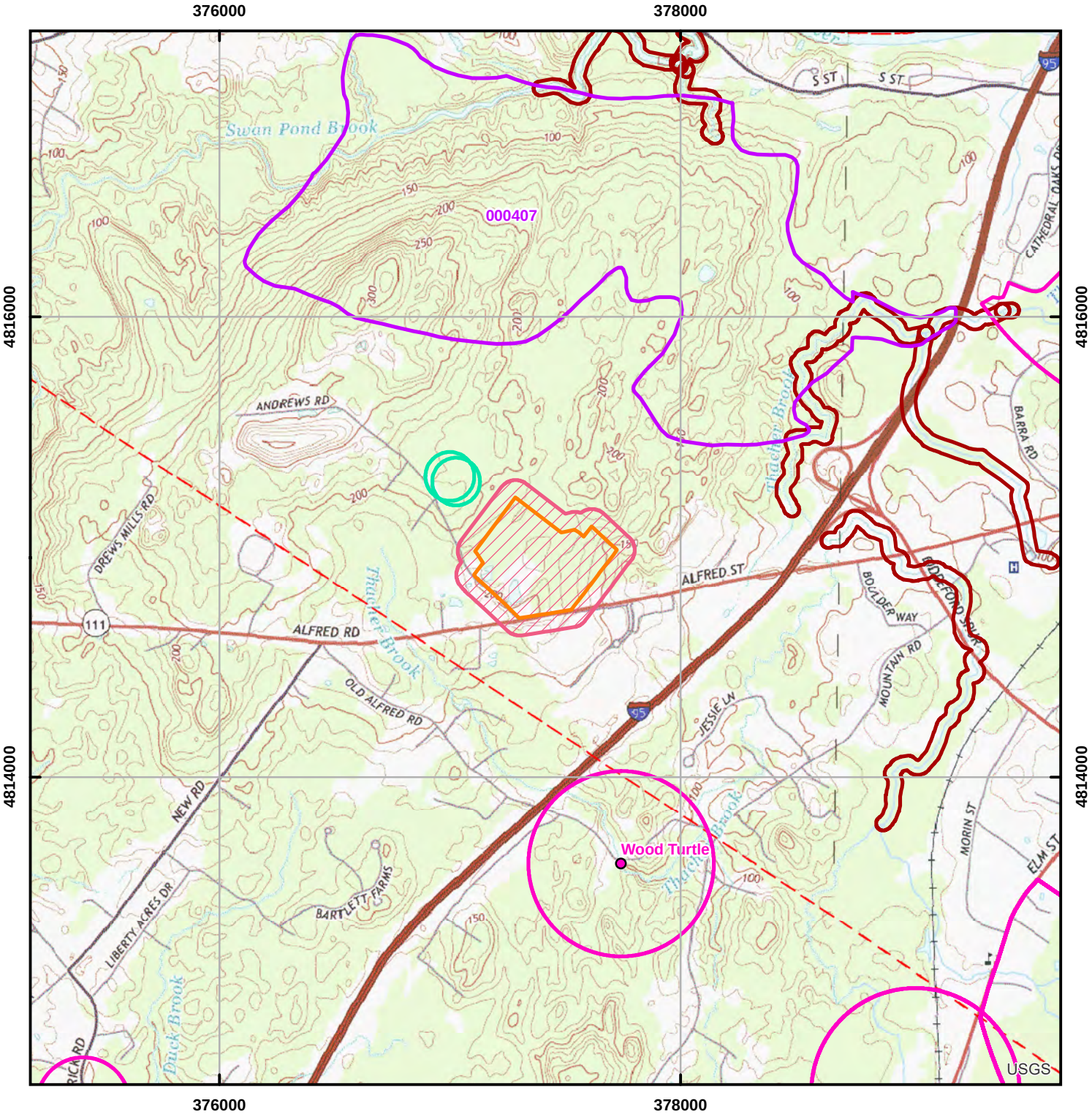
We recommend that 100-foot undisturbed vegetated buffers be maintained along streams and waterbodies. Buffers should be measured from the edge of stream or associated fringe and floodplain wetlands. Maintaining and enhancing buffers along streams that support coldwater fisheries is critical to the protection of water temperatures, water quality, natural inputs of coarse woody debris, and various forms of aquatic life necessary to support conditions required by many fish species. Stream crossings should be avoided, but if a stream crossing is necessary, or an existing crossing needs to be modified, it should be designed to provide full fish passage. Small streams, including intermittent streams, can provide crucial rearing habitat, cold water for thermal refugia, and abundant food for juvenile salmonids on a seasonal basis and undersized crossings may inhibit these functions. Generally, MDIFW recommends that all new, modified, and replacement stream crossings be sized to span at least 1.2 times the bankfull width of the stream. In addition, we generally recommend that stream crossings be open bottomed (i.e. natural bottom), although embedded structures which are backfilled with representative streambed material have been shown to be effective in not only providing habitat connectivity for fish but also for other aquatic organisms. Construction Best Management Practices should be closely followed to avoid erosion, sedimentation, alteration of stream flow, and other impacts as eroding soils from construction activities can travel significant distances as well as transport other pollutants resulting in direct impacts to fish and fisheries habitat. In addition, we recommend that any necessary instream work occur between July 15 and October 1.

This consultation review has been conducted specifically for known MDIFW jurisdictional features and should not be interpreted as a comprehensive review for the presence of other regulated features that may occur in this area. Prior to the start of any future site disturbance we recommend additional consultation with the municipality, and other state resource agencies including the Maine Natural Areas Program, Maine Department of Marine Resources, and Maine Department of Environmental Protection in order to avoid unintended protected resource disturbance.

Please feel free to contact my office if you have any questions regarding this information, or if I can be of any further assistance.

Best regards,

Becca Settele
Wildlife Biologist



Environmental Review of Fish and Wildlife Observations and Priority Habitats

Project Name: KGI Properties, Biddeford (Version 1)

Miles: 0 0.125 0.25 0.5 0.75 1

Projection: UTM, NAD83, Zone 19N

Date: 3/31/2021

Maine Department of Inland Fisheries and Wildlife

- ProjectPoints
- ProjectLines
- ProjectPolys
- ProjectSearchAreas - All Versions
- Maine Cliff and Talus Areas
- Deer Winter Area
- LUPC p-fw
- Cooperative DWAs
- Seabird Nesting Islands
- Shorebird Areas
- Inland Waterfowl and Wading Bird
- 2008 Iwwh - Shoreland Zoning
- Tidal Waterfowl and Wading Bird
- Significant Vernal Pools
- Environmental Review Polygons
- Roseate Tern
- Piping Plover and Least Tern
- Aquatic ETSc - 2.5 mi review
- Rare Mussels - 5 mi review
- Maine Heritage Fish Waters
- Arctic Charr Habitat
- Redfin Pickerel and Swamp Darter Habitats - buffer100ft
- Special Concern occupied habitats - 100ft buffer
- Wild Lake Trout Habitats

Section 8 - Historic Sites

The Maine Historic Preservation Commission (MHPC) was contacted as part of the applicant's due diligence investigation of the property. A copy of MHPC's response letter regarding the presence of historically significant structures is attached for reference.

The applicant has contracted with Nearview, LLC to perform the recommended Phase 1 Archaeological Survey of the site. The results of the survey will be provided when available.

MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

JANET T. MILLS
GOVERNOR

KIRK F. MOHNEY
DIRECTOR

April 14, 2021

Ms. Samantha Hartery
Flycatcher
Lower Falls Landing
106 Lafayette St.
Suite 1C
Yarmouth, ME 04096

Project: MHPC #0592-21 KGI Properties; Alfred Street
Potential Residential Development

Town: Biddeford, ME

Dear Ms. Hartery:

In response to your recent request, I have reviewed the information received March 31, 2021 to initiate consultation on the above referenced project in accordance with the requirements of the Maine Department of Environmental Protection.

This project is located in part on landscape that meets our predictive model for likely presence of prehistoric archaeological sites because sandy/gravelly soil and nearness to water (marsh, former lake). (The project land has not previously been surveyed for archaeological sites, but there is a prehistoric site on the similar terrain 2 km away, the nearest surveyed area. A Phase I prehistoric archaeological survey is necessary for the proposed project except for the deeper portions of previously developed gravel pits.

A list of qualified prehistoric archaeologists has been enclosed and can be found on our website: https://www.maine.gov/mhpc/programs/survey/approved-consultants/prehistoric

No architectural or historic archaeological resources will be affected by this undertaking.

If you have any questions regarding archaeology, please contact Dr. Arthur Spiess of this office at Arthur.Spiess@maine.gov

If you have any questions regarding above ground properties, please contact Megan Rideout of this office at megan.m.rideout@maine.gov.

Sincerely,

Kirk F. Mohney

Kirk F. Mohney
State Historic Preservation Officer

MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

JANET T. MILLS
GOVERNOR

KIRK F. MOHNEY
DIRECTOR

Archaeological Survey Guidelines

Updated: June 10, 2002

This document is provided as background information to agencies, corporations, professional consultants or individuals needing contract archaeological services (also known as Cultural Resources Management archaeology) in Maine. These guidelines are based on state rules (94-089 Chapter 812).

Project Types

The vast majority of contract archaeology survey work falls into one of three categories.

Phase I surveys are designed to determine whether or not archaeological sites exist on a particular piece of land. Such work involves checking records of previous archaeology in the area, walking over the landscape to inspect land forms and look for surface exposures of soil and possible archaeological material, and the excavation of shovel test pits in areas of high probability.

Phase II surveys are designed to focus on one or more sites that are already known to exist, find site limits by digging test pits, and determine site content and preservation. Information from Phase II survey work is used by the Maine Historic Preservation Commission (MHPC) to determine site significance (eligibility for listing in the National Register of Historic Places). Phase III archaeological work, often called data recovery, is careful excavation of a significant archaeological site to recover the artifacts and information it contains in advance of construction or other disturbance.

Archaeological sites are further divided into two broad categories of culture, prehistoric (or Native American), and historic (or European-American). Different archaeological specialists are usually needed for prehistoric or historic sites because the nature of content and preservation and site locations are quite different.

Scope of Work

In responding to a project submission, the MHPC may issue a letter specifying which type of archaeological survey is needed (prehistoric, historic or both) and at what level (Phase I, II, or III). Often the response letter contains further information, such as the suspected presence of an historic site of a certain age, or a statement that only a portion of the project parcel in question is sensitive for prehistoric sites and only that portion needs archaeological survey.

Once the project applicant has one or more scopes of work (proposals) from appropriate archaeologists (see below), the applicant should submit their preferred proposal (without attached financial information or bid total) to the MHPC for approval. MHPC will not comment upon cost, but will comment on the appropriateness of the scale and scope of the work. An approval from MHPC of the scope of work is the applicant's guarantee that, if the field and laboratory work are done according to the scope, and appropriately described in writing, the results will be accepted by MHPC.

The final written report on the project must also be submitted to MHPC for review and comment.

PHONE: (207) 287-2132 FAX: (207) 287-2335

Finding an Archaeologist

At the time that MHPC issues a letter requiring archaeological survey work, MHPC will also supply one (or more) lists of archaeologists (Levels 1 and/or 2, historic or prehistoric) appropriate to the type of work (Phase I, II, III, historic or prehistoric). Archaeologists on the Level 2 Approved Lists can do projects of any level, including Phase I archaeological survey projects. Level 1 archaeologists are restricted to doing Phase I surveys, and certain planning projects for municipal governments.

MHPC maintains lists of archaeologists interested in working in different geographic areas of Maine, and those who are qualified in different types of work. The archaeologists themselves indicate their availability (except for short-term absence) to MHPC on a periodic basis, so archaeologists on the list can be expected to respond to inquiries. The applicant should solicit proposals or bids for work from archaeologists whose names appear on the list supplied by MHPC.

These archaeologists' names are taken from lists of archaeologists approved for work in Maine by MHPC under a set of rules establishing minimal qualifications, such as previous supervisory experience in northern New England, and an appropriate graduate degree. However, the inclusion of an archaeologist on one of these lists should not be interpreted as an endorsement by the MHPC beyond these limited qualification criteria. Moreover, the MHPC cannot recommend the services of an individual archaeologist.

Project Final Report

Whatever the archaeological survey result, a final report on the project should be submitted by the applicant to the MHPC. The MHPC will review the report, and issue further guidance or issue a "clearance" letter for the project.

MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

JANET T. MILLS
GOVERNOR

KIRK F. MOHNEY
DIRECTOR

Prehistoric Archaeologists Approved List: Review and Compliance Consulting/Contracting (Active) LEVEL 2 (Phase I, II, III, date recovery, all phases of survey) LEVEL 2

Stefan Claesson, Ph.D.*
Nearview, LLC
36 Maplewood Ave
Portsmouth, NH 03801
207-200-7879
stefan@nearview.net

Mr. Jacob A. Freedman
SEARCH, INC.
247 Sullivan Street, Suite C
Claremont, NH 03743
P-207-266-7709
Jacob@searchinc.com

Dr. Nathan Hamilton
Dept. of Geography & Anthropology
University of Southern Maine
Gorham, ME 04038
P-207-780-5324
casco@usm.maine.edu

Dr. Dianna Doucette
Public Archaeology Laboratory
26 Main Street
Pawtucket, RI 02860
ddoucette@palinc.com

Dr. Gemma-Jayne Hudgell
Northeast Archaeology Research Center
382 Fairbanks Road
Farmington, ME 04938
P-207-860-4032
hudgell@nearchaeology.com

Mr. Jacob Tumelaire
Independent Archaeological Consulting
34 Dover Point Road, Suite 300
Dover, NH 03820
jtumelair@iac-llc.net

Dr. Christopher Donta
SWCA Environmental Consultants
15 Research Drive
Amherst, MA 01002
P-413-256-0202
Christopher.donta@swca.com

Karen Mack
TRC/Northeast Cultural Resources
1356 Washington St, Suite A
Bath, ME 04530
P-207-215-2872
kemack@trccompanies.com

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382 Fairbanks Road
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putnamd@umpi.edu

Dr. William R. Belcher
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Dr. Stuart Eldridge
Power Engineers, Inc.
303 US Rte 1
Freeport, ME 04032
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Stuart.Eldridge@powereng.com

Dr. Victoria Bunker
P.O. Box 16
New Durham, NH 03809-0016
P-603-776-4306
vbi@worldpath.net

Dr. Robert Goodby
Monadnock Archaeological Consulting
144 Greenwood Road
Dublin, NH 04333
P-603-563-81
rgoodby@monardarch.com

Dr. Daniel F. Cassedy, AECOM
791 Corporate Center Drive
Raleigh, NC 27607
P-919-854-6207
Daniel.cassedy@aecom.com

Dr. Chris Clement
SEARCH, Inc.
2 Dayton Drive
Hanover, NH 03755
P-803-360-0035
Chris.clement@searchinc.com

Dr. Arthur Spiess, Ex officio
Maine Historic Preservation Commission
55 Capitol Street
65 State House Station
Augusta, ME 04333
P-20-287-2789
Arthur.spiess@maine.gov
(Not available for contract work)

LEVEL 1 (Phase I and reconnaissance survey only)

LEVEL 1

Ms. Sarah Haugh
Tetra Tech
451 Presumpscot Street
Portland, ME 04103
P-207-358-2395
sarah.haugh@tetratech.com

James A. Clark
P.O. Box 815
Belfast, ME 04915
P-207-930-0543
clarkja@gmail.com

Ora Elquist
Public Archaeology Laboratory
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Pawtucket, RI 02860
P-401-728-8780
oelquist@palinc.com

Mark Penney
The Louis Berger Group Inc.
20 Corporate Woods Blvd.
Albany, NY 12211-2370
P-518-432-9545
mpenney@louisberger.com

Mary Lynne Rainey
RGA Cultural Resource Consultants
1376 Kingstown Road
Wakefield, RI 02789
Marylynne.rainey@verizon.net

Bertrand Pelletier
Backwoods Archaeological Resource Consulting
40 Field Ave.
Auburn, ME 04210
Bertpelletier47@gmail.com

Inactive, Retired, No longer doing fieldwork, no longer at address given

Mr. Brian Valimont
New England Archaeology Co. LLC
128R Main Street
Plaistow, NH 03865
Newarch1@comcast.net

Ms. Edna Feighner
5 Thomas Street, Apt. 3
Concord, NH 03301
P. 603-228-8091
Edna.Feighner@dcr.nh.gov

Dr. Bruce J. Bourque
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bbourque@abacus.bates.edu

Edward Moore
TRC/Northeast Cultural Resources
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Ellsworth, ME 04605
F-207-667-0485

Geraldine Baldwin
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Dr. Richard Will
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71 Oak Street
Ellsworth, ME 04605
P-207-667-4055
rwill@trcsolutions.com

Section 9 - Unusual Natural Areas

The Maine Department of Agriculture, Conservation & Forestry (MEACF) was contacted as part of the applicant's due diligence investigation of the property. A copy of MEACF's response letter regarding their review of the Maine Natural Areas Program's data system files is attached for reference.

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
177 STATE HOUSE STATION
AUGUSTA, MAINE 04333

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

April 7, 2021

Samantha Hartery
Flycatcher, LLC
Lower Falls Landing
106 Lafayette Street, Suite 1C
Yarmouth, ME 04096

Via email: sammy@flycatcherllc.com

Re: Rare and exemplary botanical features in proximity to: #21Q, Residential Subdivision, Biddeford, Maine

Dear Ms. Hartery:

I have searched the Maine Natural Areas Program's Biological and Conservation Data System files in response to your request received March 31, 2021 for information on the presence of rare or unique botanical features documented from the vicinity of the project in Biddeford, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. This lack of data may indicate minimal survey efforts rather than confirm the absence of rare botanical features. You may want to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed.

If a field survey of the project area is conducted, please refer to the enclosed supplemental information regarding rare and exemplary botanical features documented to occur in the vicinity of the project site. The list may include information on features that have been known to occur historically in the area as well as recently field-verified information. While historic records have not been documented in several years, they may persist in the area if suitable habitat exists. The enclosed list identifies features with potential to occur in the area, and it should be considered if you choose to conduct field surveys.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

MOLLY DOCHERTY, DIRECTOR
MAINE NATURAL AREAS PROGRAM
BLOSSOM LANE, DEERING BUILDING

PHONE: (207) 287-804490
WWW.MAINE.GOV/DACF/MNAP

The Maine Natural Areas Program (MNAP) is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. MNAP welcomes coordination with individuals or organizations proposing environmental alteration or conducting environmental assessments. If, however, data provided by MNAP are to be published in any form, the Program should be informed at the outset and credited as the source.

The Maine Natural Areas Program has instituted a fee structure of $75.00 an hour to recover the actual cost of processing your request for information. You will receive an invoice for $150.00 for two hours of our services.

Thank you for using MNAP in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Program or about rare or unique botanical features on this site.

Sincerely,

Lisa St. Hilaire

Lisa St. Hilaire | Information Manager | Maine Natural Areas Program
207-287-8044 | lisa.st.hilaire@maine.gov

Rare and Exemplary Botanical Features within 4 miles of
Project: #21Q, Residential Subdivision, Biddeford, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Beach Plum						
	E	S1	G4	1933-06-21	9	Rocky coastal (non-forested, upland)
Button Sedge						
	SC	S2	G5	1880-09-06	2	<null>
	SC	S2	G5	2000-08-15	3	<null>
Creeping Spike-moss						
	E	S2	G5	1920-07-30	6	Open wetland, not coastal nor rivershore (non-forested, wetland),Old field/roadside (non-forested, wetland or upland)
Estuary Bur-marigold						
	SC	S3	G4	2009-07-30	35	Tidal wetland (non-forested, wetland)
Freshwater Tidal Marsh						
	<null>	S2	G4?	2009-07-30	1	Tidal wetland (non-forested, wetland)
Georgia bulrush						
	SC	SU	G5	2007-08-22	4	<null>
Horned Pondweed						
	SC	S2	G5	1907-08-18	10	Tidal wetland (non-forested, wetland)
Lilaeopsis						
	SC	S2	G5	2012-10-21	10	Tidal wetland (non-forested, wetland)
Mountain-laurel						
	SC	S2	G5	1991-09-28	11	Conifer forest (forest, upland),Hardwood to mixed forest (forest, upland)
Northern Blazing Star						
	T	S1	G5?T3	1916-08-10	3	Dry barrens (partly forested, upland)
Pale Green Orchis						
	SC	S2	G4?T4Q	2008-06-27	52	Non-tidal rivershore (non-forested, seasonally wet),Open wetland, not

Rare and Exemplary Botanical Features within 4 miles of
Project: #21Q, Residential Subdivision, Biddeford, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
						coastal nor rivershore (non-forested, wetland)
Parker's Pipewort						
	SC	S3	G3	2017-08-31	33	Tidal wetland (non-forested, wetland)
Pendulous Bulrush						
	SC	S2	G5	2008-06-28	8	Open wetland, not coastal nor rivershore (non-forested, wetland),Old field/roadside (non-forested, wetland or upland)
Pitch Pine Bog						
	<null>	S2	G3G5	2015-09-29	20	Forested wetland,Coastal non-tidal wetland (non-forested, wetland)
Pitch Pine Woodland						
	<null>	S3	G2	2016-08-09	30	Rocky summits and outcrops (non-forested, upland)
Pocket Swamp						
	<null>	S2	G5	2004	18	Forested wetland,Hardwood to mixed forest (forest, upland)
Pygmyweed						
	SC	S2S3	G5	2009-07-29	25	Open water (non-forested, wetland)
Red Maple Swamp						
	<null>	S5	G3G5	2007-06-05	17	Forested wetland
Saltmarsh False-foxglove						
	SC	S3	G5	1982	8	Tidal wetland (non-forested, wetland)
	SC	S3	G5	1982	9	Tidal wetland (non-forested, wetland)
Scarlet Oak						
	E	S1	G5	1916-08	4	Hardwood to mixed forest (forest, upland)
Schreber's Wood-aster						
	PE	SX	G4	1894-09	1	Rocky coastal (non-forested, upland)
Slender Blue Flag						

Rare and Exemplary Botanical Features within 4 miles of
Project: #21Q, Residential Subdivision, Biddeford, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
	T	S2	G4G5	1879-08	4	Tidal wetland (non-forested, wetland)
Small Reed Grass						
	SC	S3	G5	1998-01-01	9	Old field/roadside (non-forested, wetland or upland)
	SC	S3	G5	2000-08-15	12	Old field/roadside (non-forested, wetland or upland)
Smooth Winterberry Holly						
	SC	S3	G5	1916-08-10	10	Forested wetland
	SC	S3	G5	2004	36	Forested wetland
Southern Slender Ladies'-tresses						
	PE	SH	G5T4T5	1918-08-27	1	Dry barrens (partly forested, upland)
Spongy-leaved Arrowhead						
	SC	S3	G5T4	2012-10-21	42	Tidal wetland (non-forested, wetland)
Sweet Pepper-bush						
	SC	S2	G5	1917-09	9	Hardwood to mixed forest (forest, upland),Forested wetland
Water Pimpernel						
	SC	S3	G5T5	2012-10-21	26	Tidal wetland (non-forested, wetland)
White-topped Aster						
	E	S1	G5	1916-08-10	4	Dry barrens (partly forested, upland)
Yellow Wild Indigo						
	PE	SH	G5	1960-06-21	2	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)

STATE RARITY RANKS

S1 Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.
S2 Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
S3 Rare in Maine (20-100 occurrences).
S4 Apparently secure in Maine.
S5 Demonstrably secure in Maine.
SU Under consideration for assigning rarity status; more information needed on threats or distribution.
SNR Not yet ranked.
SNA Rank not applicable.
S#? Current occurrence data suggests assigned rank, but lack of survey effort along with amount of potential habitat create uncertainty (e.g. S3?).

Note: **State Rarity Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines State Rarity Ranks for animals.

GLOBAL RARITY RANKS

G1 Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extinction.
G2 Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
G3 Globally rare (20-100 occurrences).
G4 Apparently secure globally.
G5 Demonstrably secure globally.
GNR Not yet ranked.

Note: **Global Ranks** are determined by NatureServe.

STATE LEGAL STATUS

Note: State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine's **Endangered** and **Threatened** plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program's database to recommend status changes to the Department of Conservation.

E ENDANGERED; Rare and in danger of being lost from the state in the foreseeable future; or federally listed as Endangered.
T THREATENED; Rare and, with further decline, could become endangered; or federally listed as Threatened.

NON-LEGAL STATUS

SC SPECIAL CONCERN; Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.
PE Potentially Extirpated; Species has not been documented in Maine in past 20 years or loss of last known occurrence has been documented.

Visit our website for more information on rare, threatened, and endangered species!
http://www.maine.gov/dacf/mnap

ELEMENT OCCURRENCE RANKS - EO RANKS

Element Occurrence ranks are used to describe the quality of a rare plant population or natural community based on three factors:

- **Size**: Size of community or population relative to other known examples in Maine. Community or population's viability, capability to maintain itself.
- **Condition**: For communities, condition includes presence of representative species, maturity of species, and evidence of human-caused disturbance. For plants, factors include species vigor and evidence of human-caused disturbance.
- **Landscape context**: Land uses and/or condition of natural communities surrounding the observed area. Ability of the observed community or population to be protected from effects of adjacent land uses.

These three factors are combined into an overall ranking of the feature of **A**, **B**, **C**, or **D**, where **A** indicates an **excellent** example of the community or population and **D** indicates a **poor** example of the community or population. A rank of **E** indicates that the community or population is **extant** but there is not enough data to assign a quality rank. The Maine Natural Areas Program tracks all occurrences of rare (S1-S3) plants and natural communities as well as A and B ranked common (S4-S5) natural communities.

Note: **Element Occurrence Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines Element Occurrence ranks for animals.

Visit our website for more information on rare, threatened, and endangered species!
http://www.maine.gov/dacf/mnap

Section 10 - Buffers

The development proposes to utilize a forested buffer as a component of the project's stormwater management plan. In addition, a minimum 100-foot natural buffer (except for two proposed stormwater outfall pipes) will be maintained upgradient of an unnamed stream, which forms a portion the development's northeast property boundary.

Section 11 - Soils

Mark Hampton, CSS of Mark Hampton Associates, Inc completed a Class “B” High Intensity Soils Survey for the project site. A copy of the report is attached, herein. The related soil map is included within the design plan set.

MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

6835

Andrews Road
Biddeford
New Life Christian Fellowship

Soil Narrative Report

DATE:	Soil Profiles observed on September 24, 2021
BASE MAP:	Base plan provided by Terradyne Consultants LLC scale 1 inch equals 100 feet and two foot contours.
GROUND CONTROL:	Soil survey boundaries located by Mark Hampton Associates, Inc. for Class B Soil Survey

Class B-High Intensity Soil Survey (Minimum Standards)

Mapping units of 1 acre or less.
Scale of 1"= 200 feet or larger.
Up to 25% inclusions in mapping units of which no more than 15% may be dissimilar soils.
Ground Control – test pits located by means of compass by chaining, pacing or taping from known control points
Base Map –2 foot contour intervals

Provided:

Mapping units of 1 acre or less
Base map scale of 1"= 100 feet.
Up to 25 percent inclusions in mapping units of which no more than 15 percent is dissimilar soils.
Baseline information and test pits located by gps equipment with accuracy to less than 3 feet.
Ground topographic survey with one foot contours and ground control provided.

P.O. BOX 1931 • PORTLAND, ME 04104-1931 • 207-756-2900 • mhampto1@maine.rr.com

Quality services that meet your deadline

The accompanying soil profile descriptions, soil map, and this soil narrative report were done in accordance with the standards adopted by the Maine Association of Professional Soil Scientists, and the Maine Board of Certification of Geologists and Soil Scientists.

_____ C.S.S. #216, L.S.E. #263 9/24/21

Mark J. Hampton Date

STATE OF MAINE
MARK J.
HAMPTON
#216
CERTIFIED
SOIL SCIENTIST

MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

6835

Andrews Road
Biddeford ME
New Life Christian Fellowship

Adams
(Typic Haplorthods)

SETTING

PARENT MATERIAL:	Derived from glacial-fluvial, glacio-lacustrine sand.
LANDFORM:	Outwash plains, deltas, and terraces
POSITION IN LANDSCAPE:	Sidehill, shoulders and plains
SLOPE GRADIENT RANGES:	(A) 0-3%, (B) 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Well drained. Depth to seasonal high watertable greater than 4 feet throughout the year.

TYPICAL PROFILE:

Surface Layer:	Dark Brown loamy sand, 0-8"
Subsurface Layer:	Red Brown loamy sand, 8-20"
Subsoil Layer:	Yellow-brown loamy sand, 20-30"
Substratum:	Gray-brown sand, 30-72"

HYDROLOGIC GROUP:	Group A
SURFACE RUNOFF:	Very slow to medium
PERMEABILITY:	Rapid or very rapid
DEPTH TO BEDROCK:	Greater than 65 inches
HAZARD TO FLOODING:	None

STATE OF MAINE
MARK J. HAMPTON
#216
CERTIFIED SOIL SCIENTIST

INCLUSIONS

(Within Mapping Unit)

CONTRASTING: Croghan, Made Land, Skerry, Naumburg

USE AND MANAGEMENT

DEVELOPEMENT: There are no limiting factors for building site development.

P.O. BOX 1931 • PORTLAND, ME 04104-1931 • 207-756-2900 • mhampto1@maine.rr.com

Quality services that meet your deadline

MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

6835

Andrews Road
Biddeford ME
New Life Christian Fellowship

Hermon
(Typic Haplorthods)

SETTING

PARENT MATERIAL:	Derived from loose loamy glacial till.
LANDFORM:	Till plains, hills and ridges.
POSITION IN LANDSCAPE:	Plains and middle levels.
SLOPE GRADIENT RANGES:	(A) 0-3%, (B) 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Well drained

TYPICAL PROFILE:

Surface Layer:	Brown, fine sandy loam, 0-9"
Subsurface Layer:	Dark reddish brown, stony, fine sandy loam, 9-16"
Subsoil Layer:	Yellow brown, gravelly loamy sand 16-32"
Substratum:	Olive brown, Gravelly fine sand, 32-65"

HYDROLOGIC GROUP:	Group A
SURFACE RUNOFF:	Moderately Rapid
PERMEABILITY:	Moderate in solum, slow in substratum
DEPTH TO BEDROCK:	Greater than 65 inches
HAZARD TO FLOODING:	None

STATE OF MAINE
MARK J. HAMPTON
#216
CERTIFIED SOIL SCIENTIST

INCLUSIONS
(Within Mapping Unit)

CONTRASTING: Brayton, Adams, MadeLand

USE AND MANAGEMENT

Development: There are few limiting factors for building site development

P.O. BOX 1931 • PORTLAND, ME 04104-1931 • 207-756-2900 • mhampto1@maine.rr.com

Quality services that meet your deadline

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SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

6835

Andrews Road
Biddeford
New Life Christian Fellowship

Man Made Land

SETTING

PARENT MATERIAL:	Derived from various materials found onsite and offsite.
LANDFORM:	N/A
POSITION IN LANDSCAPE:	N/A
SLOPE GRADIENT RANGES:	(A) 0-3%, (D) 15-25%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS:	Generally poorly to moderately well drained but varies.
TYPICAL PROFILE:	Varies in profile and onsite from fine loamy sand to gravelly loamy sand
HYDROLOGIC GROUP:	Group C
SURFACE RUNOFF:	Usually very slow due to compaction
PERMEABILITY:	Slow to very slow
DEPTH TO BEDROCK:	Greater than 65 inches
HAZARD TO FLOODING:	None

INCLUSIONS
(Within Mapping Unit)

CONTRASTING:

STATE OF MAINE
MARK J.
HAMP ON
#216
CERTIFIED
SOIL SCIENTIST

USE AND MANAGEMENT

Development: There may be limiting factors for building site development.

P.O. BOX 1931 • PORTLAND, ME 04104-1931 • 207-756-2900 • mhampto1@maine.rr.com

Quality services that meet your deadline

MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

6835

Andrews Road
Biddeford ME
New Life Christian Fellowship

Skerry
(Aquic Haplorthods)

SETTING

PARENT MATERIAL:	Derived from compact loamy glacial till.
LANDFORM:	Till plains, hills and ridges.
POSITION IN LANDSCAPE:	Plains and middle levels.
SLOPE GRADIENT RANGES:	(B) 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Moderately well drained

TYPICAL PROFILE:

Surface Layer: Gray (10YR 6/1), fine sandy loam, 0-7
Subsurface Layer: Dark reddish brown (5YR 3/3), fine sandy loam, 7-20"
Subsoil Layer: Yellow brown (10YR 5/4), stony fine sandy loam 20-28"
Substratum: Olive brown (2.5Y5/4), stony fine sandy loam, 28-65"

HYDROLOGIC GROUP:	Group C
SURFACE RUNOFF:	Moderately Rapid
PERMEABILITY:	Moderate in solum, slow in substratum
DEPTH TO BEDROCK:	Greater than 65 inches
HAZARD TO FLOODING:	None

STATE OF MAINE
MARK J.
HAMP ON
#216
CERTIFIED
SOIL SCIENTIST

INCLUSIONS
(Within Mapping Unit)

CONTRASTING: Lyman-Tunbridge, Adams, Madeland

USE AND MANAGEMENT

Development: The limiting factor for building development is wetness due to the presence of a seasonally high watertable on top of dense glacial basal till for a portion of the year. Proper foundation drainage or site modifications are recommended.

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Quality services that meet your deadline

MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

6835

Andrews Road
Biddeford
New Life Christian Fellowship

Brayton
(Aeric Epiaquepts)

SETTING

PARENT MATERIAL:	Derived from dense glacial till
LANDFORM:	Toeslopes and depressions in glaciated uplands
POSITION IN LANDSCAPE:	Lower positions on landform
SLOPE GRADIENT RANGES:	(A) 0-3%,

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Poorly drained with a perched watertable from 0.0 to 1.0 feet below the surface at some time from October to May or during periods of heavy precipitation.

TYPICAL PROFILE:
Surface Layer: Dk gray, fine sandy loam 0-5",
Subsurface Layer: Gray fine sandy loam, 5-15",
Subsoil Layer: Grayish brown fine sandy loam, 15-24"
Substratum: Olive fine sandy loam, 24-65",

HYDROLOGIC GROUP:	Group C
SURFACE RUNOFF:	Moderate to moderately slow
PERMEABILITY:	Moderate and moderately slow
DEPTH TO BEDROCK:	Greater than 65 inches
HAZARD TO FLOODING:	None

STATE OF MAINE
MARK J. HAMPTON
#216
CERTIFIED SOIL SCIENTIST

INCLUSIONS
(Within Mapping Unit)

CONTRASTING: Colonel, Dixfield, Lyman-Tunbridge

USE AND MANAGEMENT

Development: The limiting factor for building site development is wetness due to the presence of an extremely high watertable for a portion of the year. This soil is not suitable for development without alteration, which may require additional permitting.

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SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
Andrews Road	New Life Christian Fellowship	Biddeford

Exploration Symbol # SS-1

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Texture	Consistency	Color	Redox Features
Sandy Loam	Friable	Black	
Sandy Loam	Firm	Gray	Common and Distinct

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
3 (Profile)	E (Condition)	2 (Percent)	6 " (Depth)	☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Brayton PD

☒ Hydric ☐ Non-hydric

Hydrologic Soil Group: _____

Exploration Symbol # SS-2

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Texture	Consistency	Color	Redox Features
Sandy Loam	Friable	Black	
Sandy Loam	Firm	Gray	Common and Distinct

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
3 (Profile)	E (Condition)	2 (Percent)	6 " (Depth)	☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Brayton PD

☒ Hydric ☐ Non-hydric

Hydrologic Soil Group: _____

Exploration Symbol # SS-3

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Texture	Consistency	Color	Redox Features
Sandy Loam	Friable	Dark Brown	
Coarse Sandy Loam	Friable	Red Brown	None Noted
Stony Sandy Loam	Friable	Tan	

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
4 (Profile)	B (Condition)	2 (Percent)	>48 " (Depth)	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Hermon WD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: _____

Exploration Symbol # SS-4

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Texture	Consistency	Color	Redox Features
Sandy Loam	Friable	Dark Brown	
Coarse Sandy Loam	Friable	Red Brown	None Noted
Stony Sandy Loam	Friable	Tan	

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
4 (Profile)	B (Condition)	6 (Percent)	>48 " (Depth)	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: HermonWD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: _____

INVESTIGATOR INFORMATION AND SIGNATURE

Signature	Date: 9/24/2021
Name Printed: Mark J. Hampton	Cert/Lic/Reg. #: 263/216

Title: ☒ Licensed Site Evaluator ☒ Certified Soil Scientist ☐ Certified Geologist ☐ Professional Engineer

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FORM F Rev. 07/11

SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
Andrews Road	New Life Christian Fellowship	Biddeford

Exploration Symbol # SS-5 ☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface *(inches)*

Depth	Texture	Consistency	Color	Redox Features
0	Sandy Loam	Friable	Black	
10	Sandy Loam	Firm	Gray	
20				Common and Distinct
30				
40				
50				
60				

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
3 (Profile)	E (Condition)	2 (Percent)	6 " (Depth)	☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Brayton PD ☒ Hydric ☐ Non-hydric Hydrologic Soil Group: _____

Exploration Symbol # SS-6 ☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface *(inches)*

Depth	Texture	Consistency	Color	Redox Features
0	Varies	Friable	Varies	
10	Varies	Friable	Varies	
20				
30	Varies	Varies	Varies	Common and Distinct
40				
50				
60				

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
_____ (Profile)	_____ (Condition)	2 (Percent)	_____ " (Depth)	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Made Land ☐ Hydric ☐ Non-hydric Hydrologic Soil Group: _____

Exploration Symbol # SS-7 ☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface *(inches)*

Depth	Texture	Consistency	Color	Redox Features
0	Varies	Varies	Mixed	
10	Varies	Varies	Mixed	
20				Common and Distinct
30	Varies	Varies	Varies	
40				
50				
60				

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
_____ (Profile)	_____ (Condition)	2 (Percent)	_____ " (Depth)	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Made Land ☐ Hydric ☒ Non-hydric Hydrologic Soil Group: _____

Exploration Symbol # SS-8 ☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface *(inches)*

Depth	Texture	Consistency	Color	Redox Features
0	Varies	Varies	Mixed	
10	Varies	Varies	Mixed	
20				Common and Distinct
30	Varies	Varies	Varies	
40				
50				
60				

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
_____ (Profile)	_____ (Condition)	30 (Percent)	_____ " (Depth)	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Made Land ☐ Hydric ☒ Non-hydric Hydrologic Soil Group: _____

INVESTIGATOR INFORMATION AND SIGNATURE

Signature		Date	9/24/2021
Name Printed	Mark J. Hampton	Cert/Lic/Reg. #	263/216

Title: ☒ Licensed Site Evaluator ☒ Certified Soil Scientist ☐ Certified Geologist ☐ Professional Engineer

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SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
Andrews Road	New Life Christian Fellowship	Biddeford

Exploration Symbol # SS-9

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Texture	Consistency	Color	Redox Features
Sandy Loam	Friable	Black	
Sandy Loam	Firm	Gray	Common and Distinct

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
3 (Profile)	E (Condition)	2 (Percent)	6 " (Depth)	☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Brayton PD

☒ Hydric ☐ Non-hydric

Hydrologic Soil Group: _____

Exploration Symbol # SS-10

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Texture	Consistency	Color	Redox Features
Varies	Friable	Varies	
Varies	Friable	Varies	
Varies	Varies	Varies	Common and Distinct

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
_____ (Profile)	_____ (Condition)	2 (Percent)	_____ " (Depth)	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Made Land

☐ Hydric ☐ Non-hydric

Hydrologic Soil Group: _____

Exploration Symbol # SS-11

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Texture	Consistency	Color	Redox Features
Loamy Sand	Friable	Dark Brown	
Loamy Sand	Friable	Brown	None Noted
Sand	Friable	Tan	

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
5 (Profile)	B (Condition)	6 (Percent)	>48 " (Depth)	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Adams WD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: _____

Exploration Symbol # SS-12

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Texture	Consistency	Color	Redox Features
Loamy Sand	Friable	Dark Brown	
Loamy Sand	Friable	Brown	None Noted
Sand	Friable	Tan	

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
5 (Profile)	B (Condition)	3 (Percent)	>48 " (Depth)	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Adams WD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: _____

INVESTIGATOR INFORMATION AND SIGNATURE

Signature: Mark Hampton	Date: 9/24/2021
Name Printed: Mark J. Hampton	Cert/Lic/Reg. #: 263/216

Title: ☒ Licensed Site Evaluator ☒ Certified Soil Scientist ☐ Certified Geologist ☐ Professional Engineer

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SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
Andrews Road	New Life Christian Fellowship	Biddeford

Exploration Symbol # SS-13

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0	Sandy Loam	Friable	Black	
10	Sandy Loam	Firm	Gray	
20				Common and Distinct
30				
40				
50				
60				

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
3 (Profile)	E (Condition)	2 (Percent)	6 " (Depth)	☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Brayton PD

☒ Hydric ☐ Non-hydric

Hydrologic Soil Group: _____

Exploration Symbol # SS-14

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0	Sandy Loam	Friable	Dark Brown	
10	Coarse Sandy Loam	Friable	Brown	
20				
30			Tan	
40	Stony Sandy Loam	Friable		None Noted
50				
60				

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
4 (Profile)	B (Condition)	10 (Percent)	>48 " (Depth)	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Hermon WD

☐ Hydric ☐ Non-hydric

Hydrologic Soil Group: _____

Exploration Symbol # SS-15

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0	Sandy Loam	Friable	Dark Brown	
10	Sandy Loam	Friable	Brown	
20		Firm	Olive	
30	Sandy Loam			Common and Distinct
40				
50				
60				

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
3 (Profile)	C (Condition)	6 (Percent)	18 " (Depth)	☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Skerry MWD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: _____

Exploration Symbol # SS-16

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0	Sandy Loam	Friable	Black	
10	Sandy Loam	Firm	Gray	
20				Common and Distinct
30				
40				
50				
60				

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
3 (Profile)	E (Condition)	3 (Percent)	6 " (Depth)	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Brayton PD

☒ Hydric ☐ Non-hydric

Hydrologic Soil Group: _____

INVESTIGATOR INFORMATION AND SIGNATURE

Signature	Date: 9/24/2021
Name Printed: Mark J. Hampton	Cert/Lic/Reg. #: 263/216

Title: ☒ Licensed Site Evaluator ☒ Certified Soil Scientist ☐ Certified Geologist ☐ Professional Engineer

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Mark Cenci
Geologic, Inc.

CERTIFIED GEOLOGIST/LICENSED SITE EVALUATOR

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Cell: 207.329.3524 • mark@markcenci.com
www.markcenci.com

Wetland Identification and Mapping Report
Andrews Road and Alfred Street, Biddeford

Date: October 26, 2021

To: Richard Meek, P.E.
Terradyn Consultants, LLC
41 Campus Drive, Suite 101
New Gloucester, ME 04260

Summary:

Wetlands were found. flagged, delineated and located. The wetlands are formed in excavated and disturbed soils and undisturbed forested areas. The only Wetlands of Special Significance are associated with a perennial stream drainage in the northeast corner of the property. All other wetlands have no buffers of no-disturbance, but are regulated with regard to further filling and/or disturbance, regardless of origin. There are no Significant Vernal Pool Habitats on the property.

Date(s) of the Investigation: August 11, 17 and 18, 2021

Location of the Investigation:

The area investigated is located on the northeasterly corner of the intersection of Alfred Street and Andrews Road, Biddeford. The parcel is identified as Lot 6 on Biddeford Tax Map 2, and is approximately 50 acres in size.

Purposes of Investigation:

The purposes of the wetland investigation are to identify and describe wetlands according to definitions in the *Natural Resources Protection Act* (the *NRPA*); to determine if specific alteration and filling permits are required and if there are any setbacks required

under the *NRPA*; to determine the Maine DEP jurisdictional status of any streams, and to identify any potential significant vernal pools.

Method of Investigation:

A literature search and on-site investigations were made. The *Land Use Permitting Feasibility & Planning Report for Biddeford Apartments, Biddeford, Maine* by Flycatcher, LLC, dated May 2021 was reviewed. Erik Lema, botanist, of Basswood Environmental LLC, assisted in the field determination of wetland/upland boundaries.

The investigations were performed following the guidelines described in the 1987 Corps of Engineers Delineation Manual and the 2009 Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region. This procedure uses a multiple parameter approach that requires the presence of three primary components for an area to be identified as a wetland: 1) hydric soils; 2) predominance of hydrophytic vegetation; and 3) wetland hydrology.

A reconnaissance-level site map with LIDAR topography and approximate wetland locations was used in the field during the investigation.

Boundary positions were flagged on the site and locations were made with a Trimble Geo-XH 6000 GPS device, capable of sub-meter accuracy. The results were post-processed for accuracy and an AutoCAD drawing file of the results was sent to Terradyn Consultants.

Results of the Investigation:

The property is located on a dissected terrace southerly and southeasterly of low ridges (See Figure 1). Drainage is generally southerly to Thatcher Brook. Portions of the property were mined for sand and gravel in the past and there are significant site disturbances, including removal of top soils and subsoils, man-made hydric soil conditions, excavation below the water table resulting in ponding of water, piles of soil and the trenching of drainage ways. Large portions of the property have seen no such disturbance and remain forested.

The area is depicted as an association of Lyman Rock Outcrop, Chocorua peat, Hermon sandy loam and Brayton/Westbury very stony fine sandy loam on the *National Cooperative Soil Survey* (see Figure 2). These are soils formed in glacial till. The Hermon deposit would have been the mined material. The Chocorua is a hydric soil and the Brayton/Westbury can be hydric in low lying areas.

There is a drainage flowing across the northeasterly corner of the property that is regulated as a DEP jurisdictional stream. It is an incised drainage feature with minor forested wetlands along the stream channel. According to the NRPA, these wetlands are

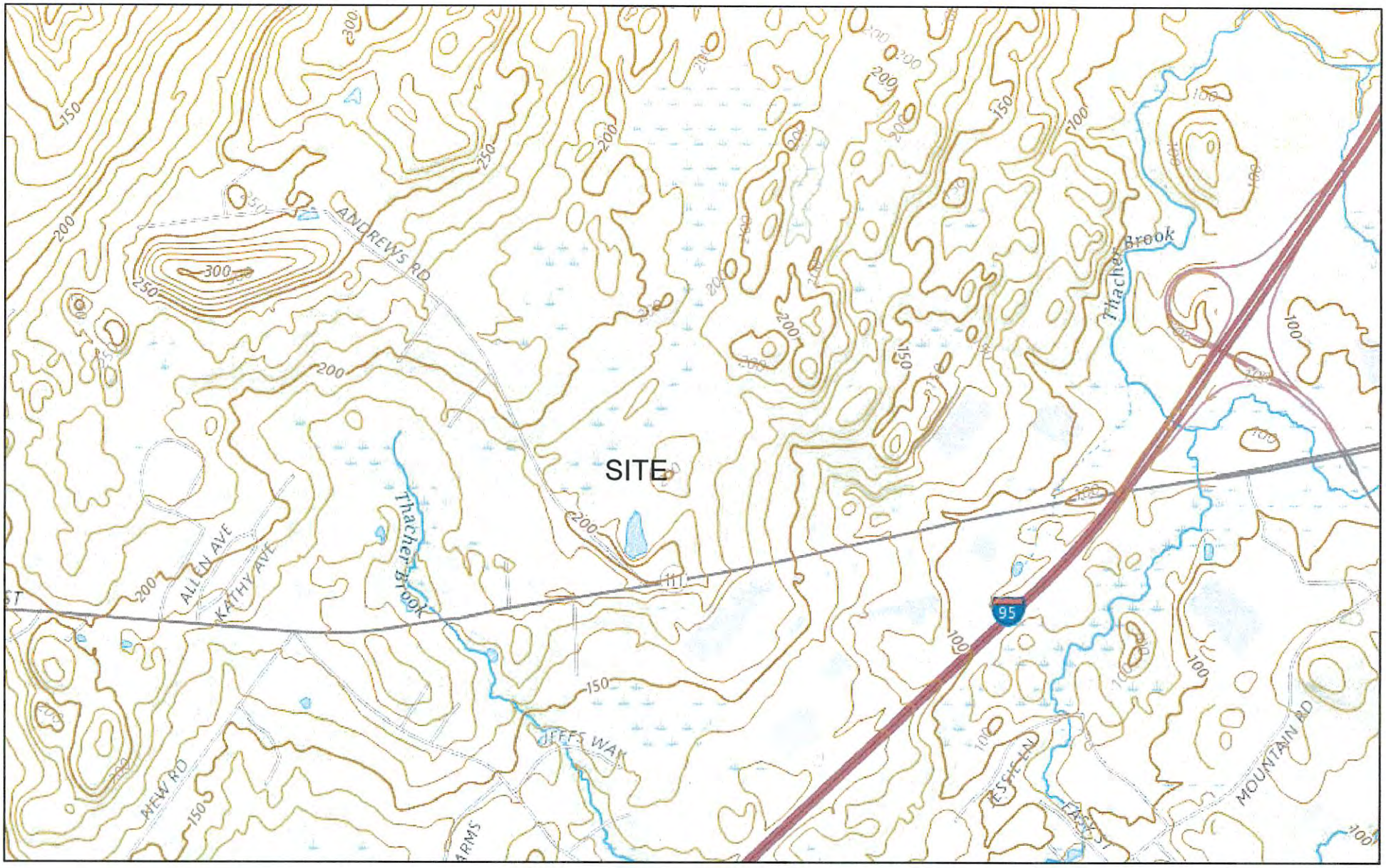
Wetlands of Special Significance (WOSS). A buffer of no-disturbance needs to be maintained from the stream channel. Unless a reduction is allowed by Permit, the buffer must be 75 feet wide.

No other wetlands on the site are WOSS, according to the NRPA. Wetlands in the forest are palustrine, forested wetlands. The wetlands around the perimeter of the excavated pond and in the areas of low gradient that were stripped of soils are palustrine, wet meadow, forested and scrub-shrub wetlands. These host a variety of hydrophytic and disturbed area vegetation, and in no location are emergent species in excess of 20,000 square feet. There are no buffers of no-disturbance associated with these wetlands. Filling and/or disturbance of any wetlands on the property is regulated by the NRPA.

As detailed in the *Report* by Flycatcher, LLC, there are no Significant Vernal Pool Habitats on the property.

Mark Cenci
Maine Certified Geologist #467

Figure 1.



10/26/2021 4:08:56 PM

Normal Intermediate Contours

Normal Index Contours

1:18,056

0 0.1 0.2 0.4 mi

0 0.17 0.35 0.7 km

USGS The National Map: National Boundaries Dataset, 3DEP Elevation

USGS
2021 USGS

Soil Map—York County, Maine
(Figure 2.)

Map Scale: 1:8,190 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 350 700 1400 2100

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 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: York County, Maine
Survey Area Data: Version 20, Aug 31, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Sep 9, 2017

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
AdB	Adams loamy sand, 0 to 8 percent slopes	4.7	1.5%
BsB	Brayton and Westbury very stony fine sandy loams, 0 to 8 percent slopes	37.4	12.0%
BuB	Buxton silt loam, 3 to 8 percent slopes	8.2	2.6%
BuC	Buxton silt loam, 8 to 15 percent slopes	7.9	2.5%
Ch	Chocorua peat	11.0	3.5%
CrB	Croghan loamy fine sand, 0 to 8 percent slopes, wooded	9.3	3.0%
HmB	Hermon sandy loam, 0 to 8 percent slopes, very stony	73.8	23.6%
HmC	Hermon sandy loam, 8 to 15 percent slopes, very stony	7.4	2.4%
LnB	Lyman loam, 3 to 8 percent slopes, rocky	4.4	1.4%
LyB	Lyman-Rock outcrop complex, 3 to 8 percent slopes	6.6	2.1%
LyC	Lyman-Rock outcrop complex, 8 to 15 percent slopes	60.5	19.4%
LyE	Lyman-Rock outcrop complex, 15 to 80 percent slopes	4.4	1.4%
Pg	Pits, gravel	27.9	8.9%
Ra	Raynham silt loam	2.2	0.7%
Sc	Scantic silt loam, 0 to 3 percent slopes	9.6	3.1%
SkB	Skerry fine sandy loam, 0 to 8 percent slopes	2.7	0.9%
SrB	Skerry fine sandy loam, 0 to 8 percent slopes, very stony	34.6	11.1%
Totals for Area of Interest		**312.3**	**100.0%**

Section 12 – Stormwater Management

The stormwater management report and calculations are provided under separate cover.

Pineland
Cumberland Hall
41 Campus Drive, Suite 301
New Gloucester, ME 04260

Portland
565 Congress Street, Suite 201
Portland, ME 04101

BIDDEFORD RESIDENTIAL

ANDREWS RD, BIDDEFORD, MAINE

STORMWATER MANAGEMENT REPORT

PREPARED FOR:

DEVINE CAPITAL, LLC
30 MILK ST., THIRD FLOOR
PORTLAND, ME 04101

PREPARED BY:

TERRADYN CONSULTANTS LLC
41 CAMPUS DRIVE, SUITE 301
NEW GLOUCESTER, MAINE 04260

AUGUST 2022

Introduction

The following Stormwater Management Report has been prepared for Devine Capital, LLC to address the potential impacts associated with this project due to the proposed modification in stormwater runoff characteristics. The stormwater management controls that are outlined in this plan were designed to suit the proposed development and comply with applicable regulatory requirements.

Existing Conditions

The project site consists of approximately 44.53 acres of undeveloped land located in Biddeford near the intersection of Andrews Road and Alfred Street (Route 111). The parcel is bounded by residential uses, commercial uses, a utility corridor and other undeveloped land. Portions of the site were utilized for gravel extraction.

Slopes on the site generally range between 0 and 15% with portions of the site draining to internal depressions created as part of the gravel extraction. The remainder of the site generally drains from west (Andrews Rd.) to east towards an unnamed stream which forms the northeastern property boundary.

The unnamed stream is tributary of Thacher Brook. Thacher Brook is listed in Chapter 502 as an Urban Impaired Stream. The proposed development area is not located in an identified flood zone per the FEMA Flood Insurance Rate Map for the City of Biddeford, Community Panel 2301450008B.

Soils

Soil characteristics were obtained from the Class B High Intensity Soil Survey completed by Mark Hampton Associates, Inc. The Hydrologic Soil Groups (HSG), as classified by USDA – Natural Resources Conservation Service, are as follows:

Soil Name	Slope (%)	HSG
Adams (A)	0-3	A
Adams (B)	3-8	A
Brayton (A)	0-3	D
Hermon (C)	8-15	A
Skerry (B)	3-8	C/D

Proposed Site Improvements

The applicant intends to construct a multi-family residential development consisting of nine 24-unit apartment buildings, a clubhouse, mail kiosk, maintenance building, eight detached garages, surface parking, dog park, community garden and interconnected sidewalks.

When completed the proposed development will consist of approximately 18.13 acres of disturbance area including approximately 8.06 acres of new impervious area.

Pre-Development Conditions

The pre-development watershed plan consists of seven (7) subcatchments, labeled 1A, 1B, 2, 3, 4A, 4B and 4C. Runoff from the seven subcatchments is routed via overland flow to four (4) Study Points identified for comparing peak runoff rates from the site.

Subcatchment 1A consists of approximately 11.8 acres of mostly forested land which will not drain to the proposed BMP in the post-development condition. Subcatchment 1B consists of approximately 10.2 acres of mostly forested land which will drain to the proposed BMP in the post-development condition. Subcatchments 1A and 1B drain to Study Point 1. Study Point 1 is in the southeast portion of the property and eventually discharges to an unnamed stream.

Subcatchment 2 consists of approximately 7.6 acres of the property which drains to Study Point 2, an internally drained depression created as part of the gravel extraction process.

Subcatchment 3 consists of approximately 6.0 acres of the property which drains to Study Point 3, an internally drained depression, which consists of wetlands and upland areas.

Subcatchment 4A consists of approximately 7.8 acres of mostly forested wetland which will not include disturbance as part of this project. Subcatchment 4B consists of approximately 0.2 acre of forested wetland which will not include disturbance as part of this project. Subcatchment 4C consists of approximately 3.7 acres of mostly forested land which will include disturbance as part of this project. Subcatchments 4A, 4B and 4C drain to Study Point 4. Study Point 4 is located on the northwestern property boundary.

Post-Development Conditions

The overall-post-development watershed area is consistent with the pre-development watershed area. However, the pre-development subcatchments have been divided into smaller subcatchment areas to reflect the changes in stormwater runoff due to the proposed development.

Study Point 1: Post-development subcatchment 11 represents the mostly undeveloped portion of land matching pre-development subcatchment 1A. Subcatchment 12 depicts the land area contributing overland stormwater runoff to proposed gravel wetland 12P. Subcatchment 13 includes the portion of development contributing stormwater runoff to proposed gravel wetland 12P via storm drainage pipe. Subcatchment 14 includes the portion of development contributing stormwater runoff to proposed gravel wetland 14P.

Study Point 2: Post-development subcatchment 21 represents the remainder of land within pre-development subcatchment 2.

Study Point 3: Post-development subcatchments 31 and 32 represent the remainder of land within pre-development subcatchment 3.

Study Point 4: Subcatchments 4A and 4B are unchanged from the pre-development condition. Post-development subcatchment 41 represents the developed condition of pre-development subcatchment 4C.

Regulatory Requirements

Basic Standard - Chapter 500, Section 4(B)

Since the project will disturb more than one (1) acre of land area, MDEP Basic Standards apply. The Basic Standard requires that the MDEP erosion & sedimentation control, inspection & maintenance, and housekeeping standards are met. Additionally, the site grading or other construction activity shall not

impede or otherwise alter drainageways so as to have an unreasonable adverse impact on a wetland or waterbody, or an adjacent downslope parcel.

A site-specific Erosion & Sedimentation Control Plan has been developed for the project. Means and methods to control erosion and sedimentation during and after construction are detailed in the erosion control plan narrative and construction details, which are included directly on the project drawings for ease of reference during construction.

General Standard - Chapter 500, Section 4(C)

Since the project will create more than one (1) acre of impervious surface, MDEP General Standards apply. The General Standard requires that a project's stormwater management system include treatment measures that will mitigate for the increased frequency and duration of channel erosive flows due to runoff from smaller storms, provide for effective treatment of pollutants in stormwater and mitigate potential temperature impacts. Treatment of no less than 95% of the impervious area and no less than 80% of the developed area is required to meet the standard.

Two proposed gravel wetlands and a forested buffer will be utilized to meet the treatment requirements of the general standard. The sizing and treatment calculations for the gravel wetlands are located in Appendix 4.

- The project includes 8.060 acres of impervious area. To meet the general standard, 7.657 acres (95%) is required to be treated. The site's proposed BMPs provide treatment for 7.956 acres (98.71%) of impervious area.
- The project includes 18.133 acres of developed area. To meet the general standard, 14.506 acres (80%) is required to be treated. The site's proposed BMPs provide treatment for 14.558 acres (80.28%) of developed area.

Flooding Standard - Chapter 500, Section 4(F)

Since the project will create more than three (3) acres of impervious surface, MDEP Flooding Standards apply. The Flooding Standard requires that a project's stormwater management system detain, retain or result in the infiltration of stormwater from 24-hour storms of the 2-year, 10-year and 25-year frequencies such that the peak flows of stormwater from the project site do not exceed the peak flows of stormwater prior to undertaking the project.

As such, a runoff evaluation was performed using the methodology outlined in the USDA Soil Conservation Service's "Urban Hydrology for Small Watersheds - Technical Release #55 (TR-55)". HydroCAD computer software (Version 10.0) was utilized to perform the calculations.

Runoff curve numbers were determined for each subcatchment by measuring the area of each hydrologic soil group within each type of land cover. Weighted curve numbers were then calculated using curve numbers for various cover types and hydrologic soil groups, assuming "good" conditions as defined in U.S Soil Conservation Service (SCS) publications. Times of concentration and travel times were determined from site topographic maps in accordance with SCS procedures. A maximum length of 150 feet was used for sheet flow. A minimum time of concentration of six minutes (0.1 hr.) was used for each subcatchment.

The 24-hour rainfall values utilized in the hydrologic model were obtained from Appendix H of MDEP's Chapter 500 rules. The rainfall values for York County are as follows:

Storm Frequency Precipitation (in./24 hr)	
2-year	3.3
10-year	4.9
25-year	6.2

The following table summarizes the results of stormwater calculations for the design storm events for the project areas:

Stormwater Runoff Summary Pre-Development vs. Post-Development						
Study Point #	2-Year/24Hr (cfs)		10-Year/24Hr (cfs)		25-Year/24Hr (cfs)	
	Pre	Post	Pre	Post	Pre	Post
SP-1	0.3	0.3	3.0	3.0	7.7	7.1
SP-2	0.0	0.0	0.0	0.0	0.0	0.0
SP-3	0.0	0.0	0.0	0.0	0.0	0.0
SP-4	4.0	4.0	8.1	8.1	11.7	11.7

Urban Impaired Stream Standard – Chapter 500, Section 4(E)

As the proposed development is tributary to Thacher Brook which is listed by the Maine Department of Environmental Protection as an Urban Impaired Stream within Chapter 502, the project will be required to meet or exceed the requirements of the Urban Impaired Stream Standard as listed in Section 4(E) of Chapter 500. The Urban Impaired Stream Standard requires a project to either pay a compensation fee or mitigate project impacts by reducing or eliminating an off-site or on-site pre-development impervious stormwater source.

The applicant will meet the Urban Impaired Stream standard by paying the compensation fee pursuant to Chapter 501.3.A.1.

Preliminary Urban Impaired Stream Compensation Fee			
	Compensation Fee per Acre	Acr18es	Compensation Fee Total
Non-roof Impervious	$12,500	5.25	$65,625
Roof Impervious	$5,000	2.81	$14,050
Landscaped	$2,500	10.073	$25,182.50
		TOTAL	$104,875.50

Summary

Erosion and sedimentation control, inspection and maintenance procedures and general housekeeping requirements have been outlined to prevent unreasonable impacts on the project site or the surrounding environment.

By utilizing Best Management practices (two proposed gravel wetlands and a forested buffer) stormwater quality treatment has been provided for a minimum of 95% of the site's impervious area and a minimum of 80% of the site's total developed area. Based upon the modeling data, the post-development peak rates of runoff for the project site will be less than or equal to the pre-development runoff rates during the design storm events (2-year, 10-year and 25-year).

With the incorporation of the referenced erosion control, treatment, and detention measures, the project is in conformance with the Maine Department of Environmental Protection Chapter 500 Stormwater Law. Accordingly, it is anticipated that stormwater runoff from the proposed development will not result in significant adverse effects to off-site receiving channels or downstream properties.

Prepared by:

Terradyn Consultants, LLC

Richard Meek, P.E.
Sr. Project Engineer

Appendices

1 – Stormwater Infrastructure Inspection & Maintenance Manual
2 – Erosion and Sediment Control Inspection & Maintenance Plan
3 – Watershed Maps
4 – BMP and HydroCAD Calculations

APPENDIX 1

STORMWATER INFRASTRUCTURE INSPECTION & MAINTENANCE MANUAL

BIDDEFORD RESIDENTIAL
BIDDEFORD, MAINE
STORMWATER MANAGEMENT SYSTEM
INSPECTION, MAINTENANCE & HOUSEKEEPING PLAN

Project Owner/Developer: Devine Capital, LLC
30 Milk St., 3rd Floor
Portland, Maine 04101
(401) 413-1590

Responsible Party: To be Determined

Prepared By: Richard Meek, P.E.
Terradyn Consultants, LLC
41 Campus Drive, Suite 301
New Glocester, ME 04260
(207) 926-5111

INTRODUCTION:

Regular inspection and maintenance of the entire stormwater management system is crucial to the long-term effectiveness of the system. The responsible party must provide regular inspection and maintenance of all permanent erosion control measures and stormwater management structures, establish any contract services required to implement the program, and keep records and a maintenance log book of inspection and maintenance activities. At a minimum, the inspection and maintenance activities outlined herein should be performed at the recommended intervals. All inspection and maintenance documentation shall be maintained for at least 5 years. This project is subject to the Maine Department of Environmental Protection's 5-year Recertification Process.

All measures must be maintained in effective operating condition. A person with knowledge of erosion and sedimentation practices, stormwater management, and the standards and conditions of all local, state and federal permits for the project shall conduct the inspections. The following areas, facilities, and measures must be inspected and identified deficiencies must be corrected.

INSPECTION TASKS

The following plan outlines the anticipated inspection, maintenance, and housekeeping procedures for the erosion and sedimentation controls as well as stormwater management devices for the project site. Also, this plan outlines several housekeeping requirements that shall be followed during and after construction. These procedures should be followed in order to ensure the intended function of the designed measures and to prevent unreasonable adverse impacts to the surrounding environment.

The procedures outlined in the Inspection, Maintenance, and Housekeeping Plan are provided as an overview of the anticipated practices to be used on this site. In some instances, additional measures may be required due to unexpected conditions. For additional details on any of the erosion and sedimentation control measures or stormwater management devices to be utilized on this project, refer to the most recently revised edition of the "Maine Erosion and Sedimentation Control BMP" manual and/or the "Stormwater Management for Maine: Best Management Practices" manual as published by the MDEP.

During Construction

1. **Inspection:** For the duration of construction activity, it is the Site Contractor's responsibility to comply with the inspection and maintenance procedures outlined in this section. These responsibilities include inspecting disturbed and impervious areas, erosion control measures, materials storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. These areas shall be inspected at least once a week as well as before and after a storm event, and prior to completing permanent stabilization measures. A person with knowledge of erosion and stormwater control, including the standards and conditions in any applicable permits, shall conduct the inspections.

2. **Maintenance:** All measures shall be maintained in an effective operating condition until areas are permanently stabilized. If Best Management Practices (BMPs) need to be maintained or modified, additional BMPs are necessary, or other corrective action is needed, implementation must be completed within seven (7) calendar days and prior to any storm event (rainfall).

3. **Documentation:** A log summarizing the inspections and any corrective action taken must be maintained on-site. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, material storage areas, and vehicle access points to the site. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken.

   The log must be made accessible to the appropriate regulatory agency upon request. The permittee shall retain a copy of the log for a period of at least three (3) years from the completion of permanent stabilization.

4. **Specific Inspection and Maintenance Tasks:** The following is a list of erosion control and stormwater management measures and the specific inspection and maintenance tasks to be performed during construction.

   A. Sediment Barriers:

   - Hay bale barriers, silt fences, and filter berms shall be inspected immediately after each rainfall and at least daily during prolonged rainfall.
   - If the fabric on a silt fence or filter barrier should decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, it shall be replaced.
   - Sediment deposits should be removed after each storm event. They must be removed before deposits reach approximately one-half the height of the barrier.
   - Filter berms shall be reshaped as needed.
   - Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required should be dressed to conform to the existing grade, prepared, and seeded.

   B. Riprap Materials:

   - Once a riprap installation has been completed, it should require very little maintenance. It shall, however, be inspected periodically to determine if high flows have caused scour beneath the riprap or dislodged any of the stone.
   - Annully inspect riprap and remove woody vegetation when discovered.

C. Erosion Control Blankets:

- Inspect these reinforced areas semi-annually and after significant rainfall events for slumping, sliding, seepage, and scour. Pay close attention to unreinforced areas adjacent to the erosion control blankets, which may experience accelerated erosion.
- Review all applicable inspection and maintenance procedures recommended by the specific blanket manufacturer. These tasks shall be included in addition to this plan.

D. Temporary Storm Drain Inlet Protection:

- The inlet protection structure shall be inspected before each rain event and repaired as necessary.
- Sediment shall be removed and the storm drain sediment barrier restored to its original dimensions when the sediment has accumulated to half of the design depth of the trap.
- Structures shall be removed upon permanent stabilization of the tributary area.
- Upon removal of the structure, all accumulated sediments downstream of the structure shallbe cleaned from the storm drain system.
- The permanent storm drainage system shall be flushed and cleaned once the site is stabilized and prior to demobilization from the site.

E. Stabilized Construction Entrances/Exits:

- The exit shall be maintained in a condition that will prevent tracking of sediment onto public rights-of-way.
- When the control pad becomes ineffective, the stone shall be removed along with the collected soil material. The entrance should then be reconstructed.
- Areas that have received mud-tracking or sediment deposits shall be swept or washed. Washing shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device (not into storm drains, ditches, or waterways).

F. Temporary Seed and Mulch:

- Mulched areas should be inspected after rain events to check for rill erosion.
- If less than 90% of the soil surface is covered by mulch, additional mulch shall be applied in bare areas.
- In applications where seeding and mulch have been applied in conjunction with erosion control blankets, the blankets must be inspected after rain events for dislocation or undercutting.
- Mulch shall continue to be reapplied until 95% of the soil surface has established temporary vegetative cover.

G. Stabilized Drainage Swales:

- Sediment accumulation in the swale shall be removed once the cross section of the swale is reduced by 25%.
- The swales shall be inspected after rainfall events. Any evidence of sloughing of the side slopes or channel erosion shall be repaired and corrective action should be taken to prevent reoccurrence of the problem.

- In addition to the stabilized lining of the channel (i.e. erosion control blankets), stone check dams may be needed to further reduce channel velocity.

H. Concrete Washout Area

- The site contractor shall establish a concrete washout area on-site which shall include sediment barrier to mitigate the transport of the washout material to the environment.
- The washout area shall be located a minimum of 25 feet from any storm drain structure or culvert and a minimum of 25 feet from any slope greater than 4:1.
- The washout area shall be inspected daily when concrete work is active and prior to any storm event.
- Accumulated concrete sediments shall be removed weekly, when concrete work is active, or when visibly encroaching on sediment barrier.

I. Dewatering

- The site contractor shall establish an on-site containment area which shall include sediment barrier to mitigate the transport of the sediment to the environment from dewatering activity.
- The containment area shall be located a minimum of 25 feet from any storm drain structure or culvert and a minimum of 25 feet from any slope greater than 4:1.
- The containment area shall include a dirt bag or similar sediment trap for treatment of the collected water.
- The containment area shall be inspected after each use to ensure that no downgradient erosion or sedimentation offsite is occurring.

5. **Housekeeping:** The following general performance standards apply to the proposed project.

A. Spill Prevention: Controls must be used to prevent pollutants from being discharged from materials on-site, including storage practices to minimize exposure of the materials to stormwater, and appropriate spill prevention, containment, and response planning and implementation.

B. Groundwater Protection: During construction, liquid petroleum products and other hazardous materials with the potential to contaminate groundwater may not be stored or handled in areasof the site draining to an infiltration area. An "infiltration area" is any area of the site that by design or as a result of soils, topography and other relevant factors, accumulates runoff that infiltrates into the soil. Dikes, berms, sumps, and other forms of secondary containment that prevent discharge to groundwater may be used to isolate portions of the site for the purposes ofstorage and handling of these materials.

C. Fugitive Sediment and Dust: Actions must be taken to insure that activities do not result in noticeable erosion of soils or fugitive dust emissions during or after construction. Oil may not be used for dust control.

D. Debris and Other Materials: Litter, construction debris, and chemicals exposed to stormwater must be prevented from becoming a pollutant source.

E. Trench or Foundation Dewatering: Trench dewatering is the removal of water from trenches, foundations, cofferdams, ponds, and other areas within the construction area that retain water after excavation. In most cases, the collected water is heavily silted and hinders correct and safe construction practices. The collected water must be removed from the ponded area, either through gravity or pumping, and must be spread through natural wooded buffers or removed to areas that are specifically designed to collect the maximum amount of sediment possible, like a

cofferdam sedimentation basin. Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved.

After Construction

1. **Inspection:** After construction, the agent shall hire a qualified post-construction stormwater inspector to, at least annually, inspect the BMPs in accordance with all municipal and state inspection, cleaning and maintenance requirements of the approved post-construction stormwater management plan.

2. **Maintenance, and repair:** If a BMP requires maintenance, repair or replacement to function as intended by the approved post-construction stormwater management plan, the owner or operator shall take corrective actions to address the deficiency or deficiencies as soon as possible after the deficiency is discovered and shall provide a record of the deficiency and corrective actions to the Town Engineer. The following is a list of permanent erosioncontrol and stormwater management measures and the inspection, maintenance, and housekeeping tasks to be performed after construction.

A. Vegetated Areas:

- Inspect vegetated areas, particularly slopes and embankments, early in the growing season or after heavy rains to identify active or potential erosion problems.
- Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows.

B. Winter Sanding:

- Clear accumulations of winter sand in parking lots and along roadways at least once a year, preferably in the spring.
- Accumulations on pavement may be removed by pavement sweeping.
- Accumulations of sand along road shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader or other acceptable method.

C. Catch Basins:

- Inspect and, if required, clean-out catch basins at least once a year, preferably in early spring.
- Clean out must include the removal and legal disposal of accumulated sediments and debris at the bottom of the basin, at any inlet grates, at any inflow channels to the basin, and at any pipes between basins.

D. Culverts:

- Inspect culverts in the spring, in the late fall, and after heavy rains to remove any obstructions to flow.
- Remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit.
- Inspect and repair any erosion damage at the culvert's inlet and outlet.
- Inspect embankment for erosion, settling, and structural failure.

E. Gravel Wetlands

1ST YEAR POST-CONSTRUCTION: Inspection frequency should be after every major storm in the first year following construction.

1. Inspect to be certain system drains within 24-48 hours.
2. Watering plants as necessary during the first growing season
3. Re-vegetating poorly established areas as necessary
4. Quarterly inspection of soil and repairing eroded areas, especially on slopes & make timely repairs.
5. Checking inlets, outlets, and overflow spillway for blockage, structural integrity, and evidence of erosion. Risers may need to be cleaned.

POST-CONSTRUCTION: Inspection frequency should be at least every 6 months and after every major storm. Activities are expected to include:

1. Check the basin for a dense root mat establishment of wetland vegetation.
2. Check and clean the risers if there is evidence of standing water, discolored water or accumulated sediments in the cells.
3. Check and clean the forebay for sediments, trash and debris. When sediments have accumulated to a depth of 12 inches, standing water is persistent or wetland vegetation become established, the forebay will need to be excavated and reformed.
4. Verify that the cells drain within 24-48 hours. Sediment will need to be removed when an accumulation of 4 inches is evident over the wetland surface.
5. Check and clean all outlets and overflow spillway if blocked or there is evidence of structural damage or erosion.
6. Remove decaying vegetation, litter and debris.
7. Check for foreign species. Particular care must be used to avoid the unintended introduction of invasive species such as purple loosestrife (Lythrum salicaria) and common reed (Phragmites australis). It is recommended that a qualified wetland biologist be consulted when these are found in the area of the gravel wetland.

F. Forested Buffer

- Buffers should be inspected annually for evidence of erosion or concentrated flows through or around the buffer. All eroded areas should be repaired, seeded and mulched.
- Access and Use: Buffers should not be traversed by all-terrain vehicles or other vehicles. Activities within buffers should be conducted so as not to damage vegetation, disturb any organic duff layer, or expose soil.
- Inspections: Conduct periodic "buffer walks" to inspect the condition of the buffer network.

- **Restrictions on Vegetated Stormwater Buffer Areas.**

  Unless the owner of the Restricted Buffer Area, or any successors or assigns, obtains the prior written approval of the MDEP, the Restricted Buffer Area must remain undeveloped in perpetuity. To maintain the ability of the Restricted Buffer Area to filter and absorb stormwater, and to maintain compliance with the Stormwater Management Law and the permit issued thereunder to the Declarant, the use of the Restricted Buffer Area is hereinafter limited as follows:

  a. No soil, loam, peat, sand, gravel, concrete, rock or other mineral substance, refuse, trash, vehicle bodies or parts, rubbish, debris, junk waste, pollutants or other fill material may be placed, stored or

dumped on the Restricted Buffer Area, nor may the topography of the area be altered or manipulated in any way.

b. Any removal of trees or other vegetation within the Restricted Buffer Area must be limited to the following:

(i) No purposefully cleared openings may be created and an evenly distributed stand of trees and other vegetation must be maintained. An "evenly distributed stand of trees" is defined as maintaining a minimum rating score of 24 points in any 25 foot by 50 foot square (2500 square feet) area, as determined by the following rating scheme:

Diameter of tree at 4 ½ feet above ground level	Points
2-4 inches	1
4-8 inches	2
8-12 inches	4
>12 inches	8

Where existing trees and other vegetation result in a rating score less than 24 points, no trees may be cut or sprayed with biocides except for the normal maintenance of dead, windblown or damaged trees and for pruning of tree branches below a height of 12 feet provided two thirds of the tree's canopy is maintained.

(ii) No undergrowth, ground cover vegetation, leaf litter, organic duff layer or mineral soil may be disturbed except that one winding path, that is no wider than six feet and that does not provide a downhill channel for runoff, is allowed through the area;
c. No building or other temporary or permanent structure may be constructed, placed or permitted to remain on the Restricted Buffer Area, except for a sign, utility pole (whether constructed of wood, steel or other materials) and appurtenant equipment such as guys and guy anchors, or fence;

d. No trucks, cars, dirt bikes, ATVs, bulldozers, backhoes, or other motorized vehicles or mechanical equipment may be permitted on the Restricted Buffer Area;

Attachments

Attachment 1 – Sample Stormwater Inspection and Maintenance Log

ATTACHMENT 1

Stormwater Management Facilities Inspection & Maintenance Log **Residences at Gateway Commons**		
General Information:		
Inspected by:	Date:	Weather:
Reason for Inspection: (Regular Inspection) (Major Rain Event)		

BMP	Conditions Observed	Repairs Needed?
1. Vegetated Areas		
2. Ditches, Swales, Open Channels		
3. Culverts		
4. Catch Basins		
5. Gravel Wetlands		
6. Forested Buffer		

Detailed Repair Notes:

BMP Type	Date	Description of Repairs & Sediment Disposal

Notes:
If a maintenance task requires the clean-out of any sediments or debris, indicate where the sediment and debris was disposed after removal. A copy of this log shall be retained for a period of at least five years from the completion of permanent stabilization. The log must be made accessible to Department of Environmental Protection staff and a copy provided to the Department upon request.

APPENDIX 2

EROSION AND SEDIMENT CONTROL INSPECTION & MAINTENANCE PLAN

BIDDEFORD RESIDENTIAL
BIDDEFORD, MAINE
EROSION & SEDIMENTATION CONTROL
INSPECTION & MAINTENANCE PLAN
CONSTRUCTION PHASE

Project Owner/Developer: Devine Capital, LLC
30 Milk St., 3rd Floor
Portland, Maine 04009
(401) 413-1590

Responsible Party: Site Contractor
TBD

Prepared By: Richard Meek, P.E.
Terradyn Consultants, LLC
41 campus Drive, Suite 301
New Gloucester, ME 04260
(207) 926-5111

INTRODUCTION:

Anyone who conducts or directs an activity that involves exposing, filling or displacing soil or other earthen materials must take appropriate measures to prevent erosion and the loss of sediment beyond the project site or into a sensitive resource.

Erosion and sediment control measures should be in place before the activity begins and should remain functional until the site is permanently stabilized. All measures should remain effective until all areas are permanently stabilized. Any disturbed area should be regularly inspected until the site is fully stabilized with either 90% grass cover or a permanent impervious surface such as pavement.

The following information describes the Inspection, Maintenance and Documentation necessary during construction to comply with the State of Maine Stormwater Management Law.

INSPECTION

Inspect disturbed and impervious areas, erosion control measures, materials storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. Inspect these areas at least once a week as well as before and within 24 hours after a storm event (rainfall), and prior to completing permanent stabilization measures. For the purposes of this plan, a storm event is rainfall greater than 0.5 inches in a 24 hour period.

The person conducting inspections shall have knowledge of erosion and sedimentation practices, stormwater management, and the standards and conditions of all local, state and federal permits for the project.

MAINTENANCE AND CORRECTIVE ACTION

If best management practices (BMPs) need to be repaired, the repair work should be initiated upon discovery of the problem but no later than the end of the next workday. If additional BMPs or significant repair of BMPs are necessary, implementation must be completed within 7 calendar days and prior to any storm event (rainfall). All measures must be maintained in effective operating condition until areas are permanently stabilized.

DOCUMENTATION

Keep a log (report) summarizing the inspections and any corrective actions taken. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, materials storage areas, and vehicles access points to the parcel. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and location(s) where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken.

The log attached at the end of this plan is from the *Maine Erosion and Sediment Control Best Management Practices (BMPs) Manual for Designers and Engineers (May 2016)*. The log may be used or adapted for this project.

Documentation must be retained for a minimum of three years after permanent stabilization has been achieved on the site and must be made accessible to the Maine Department of Environmental Protection upon request.

INSPECTION DURING CONSTRUCTION

1. **Inspection:** For the duration of construction activity, it is the Site Contractor's responsibility to comply with theinspection and maintenance procedures outlined in this section. These responsibilities include inspecting disturbed and impervious areas, erosion control measures, materials storage areas thatare exposed to precipitation, and locations where vehicles enter or exit the site. These areas shall be inspected at least once a week as well as before and after a storm event, and prior to completing permanent stabilization measures. A person with knowledge of erosion and stormwater control, including the standards and conditions in any applicable permits, shall conduct the inspections.

2. **Maintenance:** All measures shall be maintained in an effective operating condition until areas are permanently stabilized. If Best Management Practices (BMPs) need to be maintained or modified, additional BMPs are necessary, or other corrective action is needed, implementation must be completed within seven (7) calendar days and prior to any storm event (rainfall).

3. **Documentation:** A log summarizing the inspections and any corrective action taken must be maintained on-site. The log must include the name(s) and qualifications of the person making theinspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, material storage areas, and vehicle access points to the site. Major observations must include BMPs that need maintenance, BMPs that failedto operate as designed or proved inadequate for a particular

location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken.

The log must be made accessible to the appropriate regulatory agency upon request. The permittee shall retain a copy of the log for a period of at least three (3) years from the completion of permanent stabilization.

4. **Specific Inspection and Maintenance Tasks:** The following is a list of erosion control and stormwater management measures and the specific inspection and maintenance tasks to be performed during construction.

A. Sediment Barriers:

- Hay bale barriers, silt fences, and filter berms shall be inspected immediately after each rainfall and at least daily during prolonged rainfall.
- If the fabric on a silt fence or filter barrier should decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, it shall be replaced.
- Sediment deposits should be removed after each storm event. They must be removed before deposits reach approximately one-half the height of the barrier.
- Filter berms shall be reshaped as needed.
- Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required should be dressed to conform to the existing grade, prepared, and seeded.

B. Riprap Materials:

- Once a riprap installation has been completed, it should require very little maintenance. It shall, however, be inspected periodically to determine if high flows have caused scour beneath the riprap or dislodged any of the stone.
- Annully inspect riprap and remove woody vegetation when discovered.

C. Erosion Control Blankets:

- Inspect these reinforced areas semi-annually and after significant rainfall events for slumping, sliding, seepage, and scour. Pay close attention to unreinforced areas adjacent to the erosion control blankets, which may experience accelerated erosion.
- Review all applicable inspection and maintenance procedures recommended by the specific blanket manufacturer. These tasks shall be included in addition to this plan.

D. Temporary Storm Drain Inlet Protection:

- The inlet protection structure shall be inspected before each rain event and repaired as necessary.
- Sediment shall be removed and the storm drain sediment barrier restored to its original dimensions when the sediment has accumulated to half of the design depth of the trap.

- Structures shall be removed upon permanent stabilization of the tributary area.
- Upon removal of the structure, all accumulated sediments downstream of the structure shallbe cleaned from the storm drain system.
- The permanent storm drainage system shall be flushed and cleaned once the site is stabilized and prior to demobilization from the site.

E. Stabilized Construction Entrances/Exits:

- The exit shall be maintained in a condition that will prevent tracking of sediment onto publicrights-of-way.
- When the control pad becomes ineffective, the stone shall be removed along with the collected soil material. The entrance should then be reconstructed.
- Areas that have received mud-tracking or sediment deposits shall be swept or washed. Washing shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device (not into storm drains, ditches, or waterways).

F. Temporary Seed and Mulch:

- Mulched areas should be inspected after rain events to check for rill erosion.
- If less than 90% of the soil surface is covered by mulch, additional mulch shall be applied inbare areas.
- In applications where seeding and mulch have been applied in conjunction with erosion control blankets, the blankets must be inspected after rain events for dislocation or undercutting.
- Mulch shall continue to be reapplied until 95% of the soil surface has established temporaryvegetative cover.

G. Stabilized Drainage Swales:

- Sediment accumulation in the swale shall be removed once the cross section of the swale isreduced by 25%.
- The swales shall be inspected after rainfall events. Any evidence of sloughing of the side slopes or channel erosion shall be repaired and corrective action should be taken to preventreoccurrence of the problem.
- In addition to the stabilized lining of the channel (i.e. erosion control blankets), stone checkdams may be needed to further reduce channel velocity.

H. Concrete Washout Area

- The site contractor shall establish a concrete washout area on-site which shall include sediment barrier to mitigate the transport of the washout material to the environment.
- The washout area shall be located a minimum of 25 feet from any storm drain structure or culvert and a minimum of 25 feet from any slope greater than 4:1.
- The washout area shall be inspected daily when concrete work is active and prior to any storm event.
- Accumulated concrete sediments shall be removed weekly, when concrete work is

active, or when visibly encroaching on sediment barrier.

I. Dewatering

- The site contractor shall establish an on-site containment area which shall include sediment barrier to mitigate the transport of the sediment to the environment from dewatering activity.
- The containment area shall be located a minimum of 25 feet from any storm drain structure or culvert and a minimum of 25 feet from any slope greater than 4:1.
- The containment area shall include a dirt bag or similar sediment trap for treatment of the collected water.
- The containment area shall be inspected after each use to ensure that no downgradient erosion or sedimentation offsite is occurring.

REFERENCES

Design Drawings:
C-2.0 thru C-2.7 Grading and Drainage Plans
C-5.1 Site Details (Erosion Control Notes and Details)

Maine Erosion and Sediment Control Best Management Practices (BMPs) Manual for Designers and Engineers (May 2016), Maine Department of Environmental Protection

Maine Erosion and Sediment Control Practices Field Guide for Contractors, Maine Department of Environmental Protection

CONSTRUCTION INSPECTION FORM FOR EROSION AND SEDIMENT CONTROL					
General Information:					
Site Name:	Date:		Inspected by:		
Owner:					
Retained 3PI:	Last Rain Date:			Amount:	
Reason for Inspection:	Weekly	Winter	Final	Rain Event	Complaint
Description of disturbed area:					
Photos:					

	YES/NO/NA	COMMENTS
1. Is an Erosion and Sediment Control Plan available?		
ESC plan on-site and followed		
Other:		
2. Are all erosion control practices installed properly, maintained and functioning?		
Disturbed areas stable		
Concentrated flow inlet/outlet protection		
All areas at final grade		
Disturbed dormant areas stabilized		
Access roads and parking		
Hillsides and stockpiles		
Other:		
3. Are all sedimentation control practices installed properly, maintained and functioning?		
Construction entrance		
Sedimentation basins/traps/diversions		
Perimeter controls		
Check dams		
Other:		
4. Is maintenance of ESC measures, construction activities and housekeeping kept-up?		
Sedimentation/erosion in ditches		
Tracked Sediment or dust at exits		
Hazardous material storage and spill control practices		
Waste management (concrete, hazardous material, etc.)		
Other:		
5. Violation, Corrective Actions, Recommendations		
Sediment discharged from site?		
Corrective action required?		
Site compliant with all permits?		
Notice of violation or stop work order issued?		
Comments/Corrective Actions (complete corrective actions before the next rain event and within 7 day)		

APPENDIX 3

WATERSHED MAPS

STATE OF MAINE
RICHARD L. MEEK
No. 10668
PROFESSIONAL ENGINEER

DATE:	08-17-2022
P.E.: RICHARD L. MEEK, P.E. 10668	

NO.	DATE	REVISIONS	APP'D BY
H	08-17-2022	SUBMIT STORMWATER APPLICATION TO D.E.P.	RLM

TERRADYN CONSULTANTS, LLC
41 CAMPUS DRIVE
SUITE 301
NEW GLOUCESTER, ME 04260
565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04102
OFFICE: (207) 926-5111 FAX: (207) 221-1317
www.terradynconsultants.com
Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting

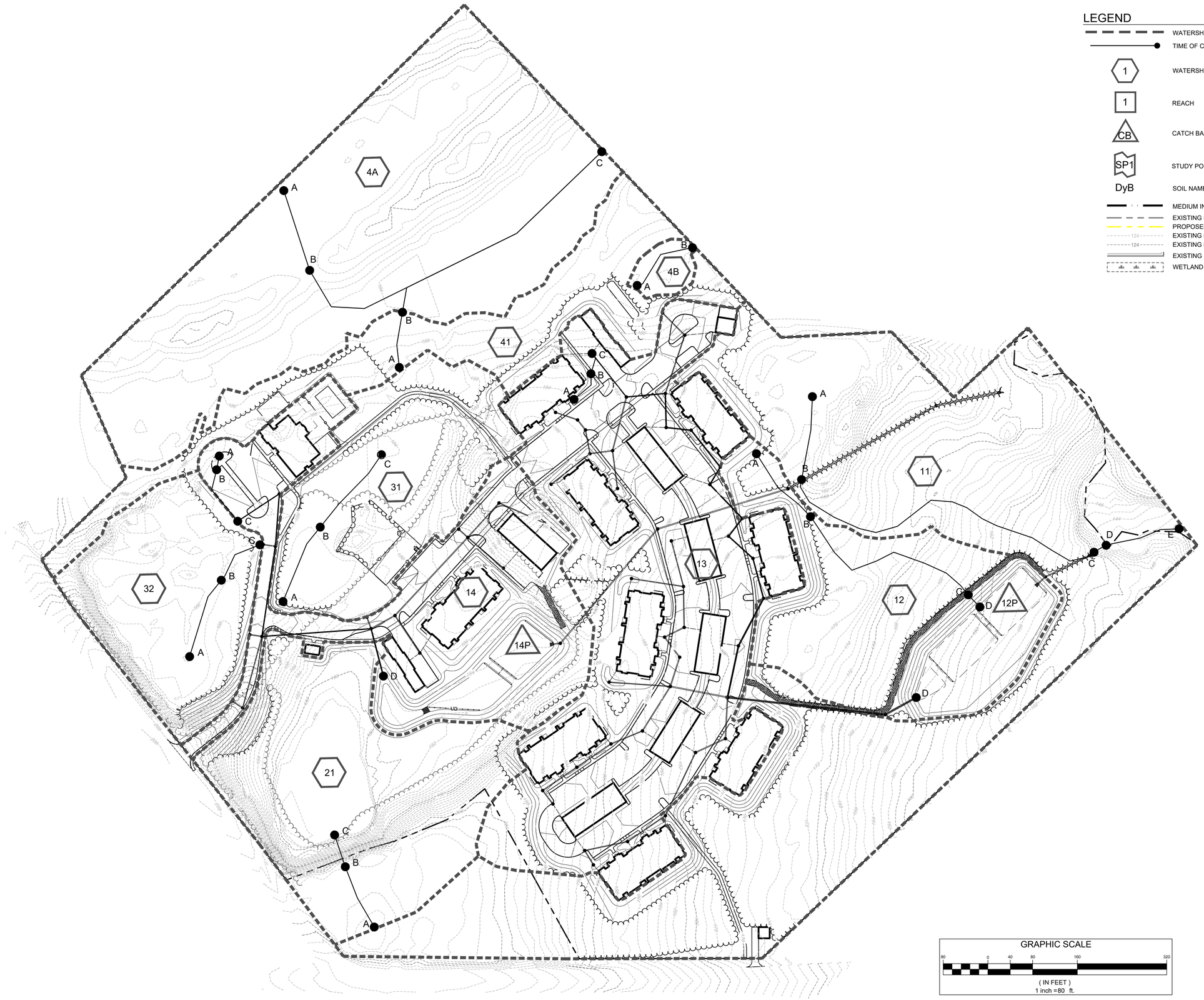
PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

PRE-DEVELOPMENT WATERSHED MAP

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	07-29-2022
SCALE:	
DESIGNED:	RLM
JOB NO:	2149
FILE:	
SHEET	SWP-1



LEGEND

- WATERSHED BOUNDARY
- TIME OF CONCENTRATION
- 1 — WATERSHED LABEL
- 1 — REACH
- CB — CATCH BASIN
- SP1 — STUDY POINT
- DyB — SOIL NAME
- MEDIUM INTENSITY SOIL BOUNDARY
- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- 124 — EXISTING MINOR CONTOUR
- 124 — EXISTING MAJOR CONTOUR
- EXISTING BUILDING
- WETLAND AREA

GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)
1 inch = 80 ft.

STATE OF MAINE
RICHARD L. MEEK
No. 10668
LICENSED
PROFESSIONAL ENGINEER

DATE: 08-17-2022
P.E.: RICHARD L. MEEK, P.E. 10668

NO.	DATE	REVISIONS	APP'D BY
H	08-17-2022	SUBMIT STORMWATER APPLICATION TO D.E.P.	RLM

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Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

POST-DEVELOPMENT WATERSHED MAP

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	07-29-2022
SCALE:	
DESIGNED:	RLM
JOB NO:	2149
FILE:	
SHEET	SWP-2

APPENDIX 4

BMP & HYDROCAD CALCULATIONS

GENERAL STANDARD CALCULATIONS

Project # 21-49 Biddeford Residential

			Areas Requiring Treatment							
SUBCATCHMENT ID	DESCRIPTION	SUBCATCHMENT AREA	IMPERVIOUS AREA (acre)	LANDSCAPED AREA (acre)	TOTAL DEVELOPED AREAS (acre)	RECEIVES TREATMENT (YES/NO)	IMPERVIOUS AREA TREATED (acre)	LANDSCAPED AREA TREATED (acre)	DEVELOPED AREA TREATED (acre)	TREATMENT BMP
11	Undeveloped area tributary to SP1	11.462	0.056	1.312	1.368	YES	0.025	0.873	0.898	Buffer
12	Undeveloped area tributary to Gravel wetland #2	3.575	0.092	1.836	1.928	YES	0.092	1.836	1.928	GW_2
13	Developed area tributary to Gravel wetland #2	8.057	5.503	2.115	7.618	YES	5.503	2.115	7.618	GW_2
14	Developed area tributary to Gravel wetland #1	4.348	2.336	1.778	4.114	YES	2.336	1.778	4.114	GW_1
21	Undeveloped area tributary to SP2	4.170	0.000	0.841	0.841	NO	0.000	0.000	0.000	
31	Undeveloped area tributary to SP3 (west of access rd.)	2.885	0.073	1.065	1.138	NO	0.000	0.000	0.000	
32	Undeveloped area tributary to SP3 (east of access rd.)	2.498	0.000	0.373	0.373	NO	0.000	0.000	0.000	
4A	Undeveloped area tributary to SP4 (large wetlands HSG D)	7.826	0.000	0.000	0.000	NO	0.000	0.000	0.000	
4B	Undeveloped area tributary to SP4 (small wetlands HSG D)	0.210	0.000	0.000	0.000	NO	0.000	0.000	0.000	
41	Developed area tributary to SP4 (HSG A)	2.381	0.000	0.753	0.753	NO	0.000	0.000	0.000	
TOTAL (ACRE)		47.412	8.060	10.073	18.133		7.956	6.602	14.558	

TOTAL IMPERVIOUS AREA (ACRE) (requiring treatment)	8.060	TOTAL DEVELOPED AREA (ACRE) (requiring treatment)	18.133
TOTAL IMPERVIOUS AREA RECEIVING TREATMENT (ACRE)	7.956	TOTAL DEVELOPED AREA RECEIVING TREATMENT (ACRE)	14.558
% OF IMPERVIOUS AREA RECEIVING TREATMENT	98.71%	% OF DEVELOPED AREA RECEIVING TREATMENT	80.28%

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New Gloucester, ME 04260
(207) 926-5111

JOB	Biddeford Residential		
SHEET NO.	1	OF	1
CALCULATED BY	RLM	DATE	8/17/2022
FILE NAME		PRNT DATE	8/17/2022

GRAVEL WETLAND

Task: Calculate water quality volume per MDEP chapter 500 regulations

References
1. Maine DEP Chapter 500, Section 4.C.(3)(b)
   "must detain a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area"
2. Maine DEP Best Management Practices Stormwater Manual, Section 7.4
   a. "two wetland cells must be capable of holding 45% of the water quality volume each."
   b. "forebay and any swale or discharge pipe to the system....holding 10% of the water quality volume"
   c. "surface should represent 5% of impervious area and 2% of landscaped area"

Tributary to Gravel Wetland: GW_1

Landscaped Area	2.336	Acre			
Impervious Area	1.778	Acre			
Minimum Surface Area					
Required	(2% X Landscaped + 5%" X Impervious)				
Total Landscaped Area	2.336	Acre	2,035	SF	
Total Impervious Area	1.778	Acre	3,872	SF	
Required Minimum Surface Area			5,908	SF	
Provided Surface Area			12,200	Acre	
Treatment Volume					
Required	(0.4" X Landscaped + 1.0" X Impervious)				
Landscaped Area	2.336	AC.	Volume	3,392	
Impervious Area	1.778	AC.	Volume	6,454	
Treatment Volume Required			9,846	CF	0.226 AF
Minimum Treatment Cell Volume (45%)			4,431	CF	0.102 AF
Provided Treatment Volume (Bay 1)			7,325	CF	
Provided Treatment Volume (Bay 2)			7,325	CF	
Minimum "Forebay" Cell Volume (10%)			985	CF	
Provided Treatment Volume (Forebay)			1,630	CF	

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New Gloucester, ME 04260
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JOB	Biddeford Residential		
SHEET NO.	1	OF	1
CALCULATED BY	RLM	DATE	8/17/2022
FILE NAME		PRNT DATE	8/17/2022

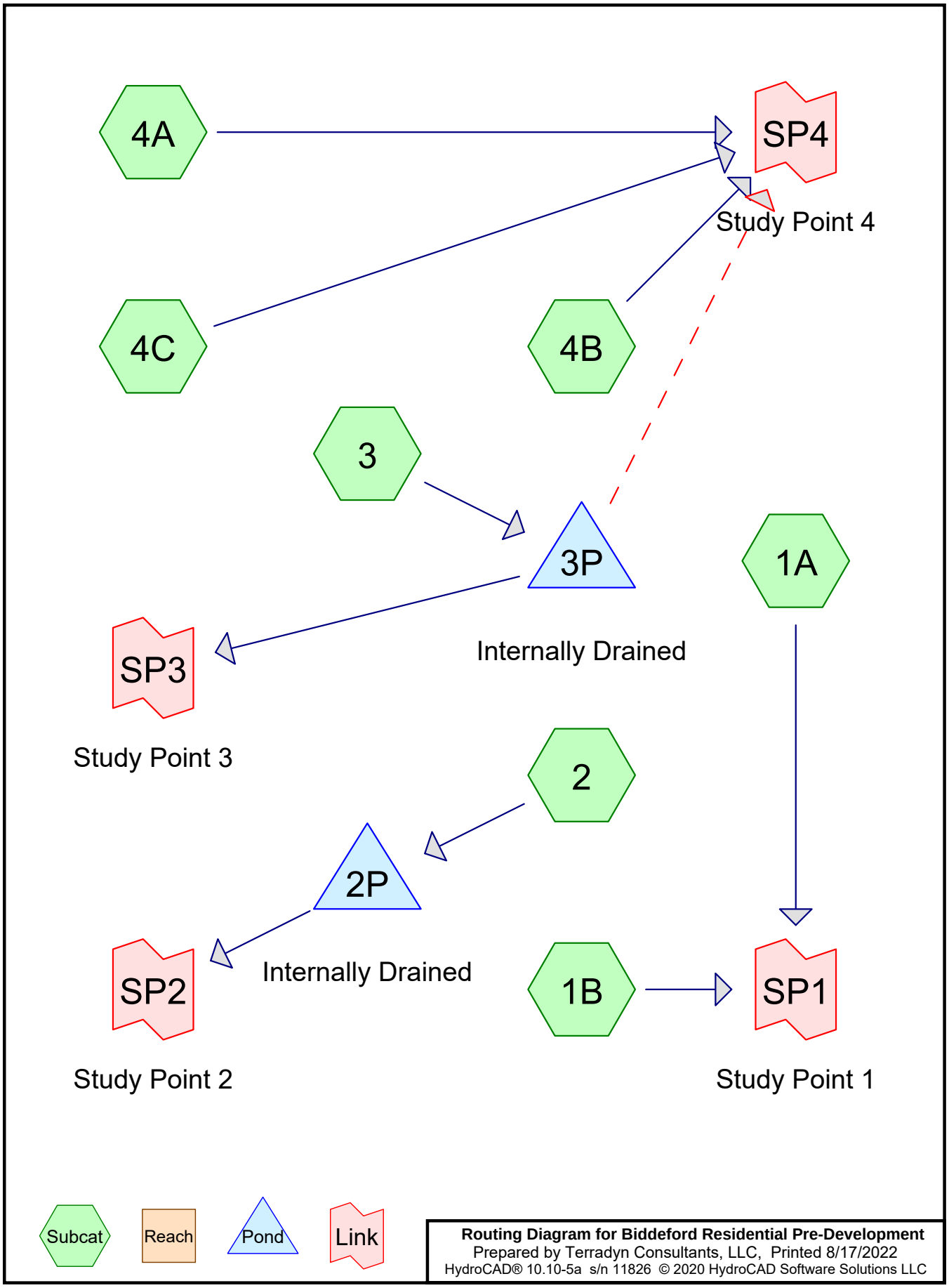
GRAVEL WETLAND

Task: Calculate water quality volume per MDEP chapter 500 regulations

References
1. Maine DEP Chapter 500, Section 4.C.(3)(b)
   "must detain a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area"
2. Maine DEP Best Management Practices Stormwater Manual, Section 7.4
   a. "two wetland cells must be capable of holding 45% of the water quality volume each."
   b. "forebay and any swale or discharge pipe to the system....holding 10% of the water quality volume"
   c. "surface should represent 5% of impervious area and 2% of landscaped area"

Tributary to Gravel Wetland: GW_2

Landscaped Area	5.595	Acre				
Impervious Area	3.951	Acre				
Minimum Surface Area						
Required	(2% X Landscaped + 5%" X Impervious)					
Total Landscaped Area	5.595	Acre		4,874	SF	
Total Impervious Area	3.951	Acre		8,605	SF	
Required Minimum Surface Area				13,480	SF	
Provided Surface Area				15,030	Acre	
Treatment Volume						
Required	(0.4" X Landscaped + 1.0" X Impervious)					
Landscaped Area	5.595	AC.	Volume	8,124		
Impervious Area	3.951	AC.	Volume	14,342		
Treatment Volume Required				22,466	CF	0.516 AF
Minimum Treatment Cell Volume (45%)				10,110	CF	0.232 AF
Provided Treatment Volume (Bay 1)				12,150	CF	
Provided Treatment Volume (Bay 2)				12,150	CF	
Minimum "Forebay" Cell Volume (10%)				2,247	CF	
Provided Treatment Volume (Forebay)				2,700	CF	


4A
SP4
Study Point 4
4C
4B
3
3P
1A
SP3
Internally Drained
Study Point 3
2
2P
SP2
Internally Drained
1B
SP1
Study Point 2
Study Point 1
Subcat
Reach
Pond
Link
Routing Diagram for Biddeford Residential Pre-Development
Prepared by Terradyn Consultants, LLC, Printed 8/17/2022
HydroCAD® 10.10-5a s/n 11826 © 2020 HydroCAD Software Solutions LLC

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Runoff Area=11.787 ac 0.51% Impervious Runoff Depth=0.15"
Flow Length=925' Tc=40.4 min CN=50 Runoff=0.3 cfs 0.147 af

Subcatchment 1B: Runoff Area=10.221 ac 0.19% Impervious Runoff Depth=0.00"
Flow Length=1,115' Tc=36.9 min CN=37 Runoff=0.0 cfs 0.000 af

Subcatchment 2: Runoff Area=7.633 ac 16.72% Impervious Runoff Depth=0.15"
Flow Length=430' Tc=13.0 min CN=50 Runoff=0.2 cfs 0.095 af

Subcatchment 3: Runoff Area=6.052 ac 4.28% Impervious Runoff Depth=0.02"
Flow Length=470' Tc=41.5 min CN=42 Runoff=0.0 cfs 0.010 af

Subcatchment 4A: Runoff Area=7.826 ac 0.00% Impervious Runoff Depth=1.28"
Flow Length=800' Tc=75.1 min CN=77 Runoff=3.9 cfs 0.837 af

Subcatchment 4B: Runoff Area=0.210 ac 0.00% Impervious Runoff Depth=1.28"
Flow Length=130' Slope=0.0080 '/' Tc=37.6 min CN=77 Runoff=0.2 cfs 0.022 af

Subcatchment 4C: Runoff Area=3.683 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=575' Tc=36.0 min CN=30 Runoff=0.0 cfs 0.000 af

Pond 2P: Internally Drained Peak Elev=178.13' Storage=4,138 cf Inflow=0.2 cfs 0.095 af
Outflow=0.0 cfs 0.000 af

Pond 3P: Internally Drained Peak Elev=184.10' Storage=430 cf Inflow=0.0 cfs 0.010 af
Primary=0.0 cfs 0.000 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Link SP1: Study Point 1 Inflow=0.3 cfs 0.147 af
Primary=0.3 cfs 0.147 af

Link SP2: Study Point 2 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP3: Study Point 3 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP4: Study Point 4 Inflow=4.0 cfs 0.860 af
Primary=4.0 cfs 0.860 af

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Runoff Area=11.787 ac 0.51% Impervious Runoff Depth=0.65"
Flow Length=925' Tc=40.4 min CN=50 Runoff=2.9 cfs 0.640 af

Subcatchment 1B: Runoff Area=10.221 ac 0.19% Impervious Runoff Depth=0.12"
Flow Length=1,115' Tc=36.9 min CN=37 Runoff=0.2 cfs 0.103 af

Subcatchment 2: Runoff Area=7.633 ac 16.72% Impervious Runoff Depth=0.65"
Flow Length=430' Tc=13.0 min CN=50 Runoff=2.8 cfs 0.415 af

Subcatchment 3: Runoff Area=6.052 ac 4.28% Impervious Runoff Depth=0.29"
Flow Length=470' Tc=41.5 min CN=42 Runoff=0.3 cfs 0.145 af

Subcatchment 4A: Runoff Area=7.826 ac 0.00% Impervious Runoff Depth=2.54"
Flow Length=800' Tc=75.1 min CN=77 Runoff=7.9 cfs 1.656 af

Subcatchment 4B: Runoff Area=0.210 ac 0.00% Impervious Runoff Depth=2.54"
Flow Length=130' Slope=0.0080 '/' Tc=37.6 min CN=77 Runoff=0.3 cfs 0.044 af

Subcatchment 4C: Runoff Area=3.683 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=575' Tc=36.0 min CN=30 Runoff=0.0 cfs 0.001 af

Pond 2P: Internally Drained Peak Elev=178.55' Storage=18,057 cf Inflow=2.8 cfs 0.415 af
Outflow=0.0 cfs 0.000 af

Pond 3P: Internally Drained Peak Elev=184.41' Storage=6,288 cf Inflow=0.3 cfs 0.145 af
Primary=0.0 cfs 0.000 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Link SP1: Study Point 1 Inflow=3.0 cfs 0.743 af
Primary=3.0 cfs 0.743 af

Link SP2: Study Point 2 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP3: Study Point 3 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP4: Study Point 4 Inflow=8.1 cfs 1.701 af
Primary=8.1 cfs 1.701 af

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Runoff Area=11.787 ac 0.51% Impervious Runoff Depth=1.24"
Flow Length=925' Tc=40.4 min CN=50 Runoff=6.9 cfs 1.220 af

Subcatchment 1B: Runoff Area=10.221 ac 0.19% Impervious Runoff Depth=0.39"
Flow Length=1,115' Tc=36.9 min CN=37 Runoff=0.9 cfs 0.336 af

Subcatchment 2: Runoff Area=7.633 ac 16.72% Impervious Runoff Depth=1.24"
Flow Length=430' Tc=13.0 min CN=50 Runoff=7.1 cfs 0.790 af

Subcatchment 3: Runoff Area=6.052 ac 4.28% Impervious Runoff Depth=0.69"
Flow Length=470' Tc=41.5 min CN=42 Runoff=1.4 cfs 0.346 af

Subcatchment 4A: Runoff Area=7.826 ac 0.00% Impervious Runoff Depth=3.65"
Flow Length=800' Tc=75.1 min CN=77 Runoff=11.4 cfs 2.383 af

Subcatchment 4B: Runoff Area=0.210 ac 0.00% Impervious Runoff Depth=3.65"
Flow Length=130' Slope=0.0080 '/' Tc=37.6 min CN=77 Runoff=0.5 cfs 0.064 af

Subcatchment 4C: Runoff Area=3.683 ac 0.00% Impervious Runoff Depth=0.09"
Flow Length=575' Tc=36.0 min CN=30 Runoff=0.0 cfs 0.029 af

Pond 2P: Internally Drained Peak Elev=179.00' Storage=34,420 cf Inflow=7.1 cfs 0.790 af
Outflow=0.0 cfs 0.000 af

Pond 3P: Internally Drained Peak Elev=184.64' Storage=15,055 cf Inflow=1.4 cfs 0.346 af
Primary=0.0 cfs 0.000 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Link SP1: Study Point 1 Inflow=7.7 cfs 1.556 af
Primary=7.7 cfs 1.556 af

Link SP2: Study Point 2 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP3: Study Point 3 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP4: Study Point 4 Inflow=11.7 cfs 2.476 af
Primary=11.7 cfs 2.476 af

Summary for Subcatchment 1A:

Runoff = 6.9 cfs @ 12.66 hrs, Volume= 1.220 af, Depth= 1.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	6.056	30	Woods, Good, HSG A
	4.392	70	Woods, Good, HSG C
	1.156	77	Woods, Good, HSG D
	0.123	39	>75% Grass cover, Good, HSG A
*	0.060	98	Existing impervious
	11.787	50	Weighted Average
	11.727		99.49% Pervious Area
	0.060		0.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.2	150	0.0220	0.09		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
9.2	615	0.0500	1.12		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
0.2	25	0.2400	2.45		**Shallow Concentrated Flow, C to D** Woodland Kv= 5.0 fps
2.8	135	0.0260	0.81		**Shallow Concentrated Flow, D to E** Woodland Kv= 5.0 fps
40.4	925	Total			

Summary for Subcatchment 1B:

Runoff = 0.9 cfs @ 12.86 hrs, Volume= 0.336 af, Depth= 0.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	8.339	30	Woods, Good, HSG A
	1.683	70	Woods, Good, HSG C
	0.180	30	Meadow, non-grazed, HSG A
*	0.019	98	Existing impervious
	10.221	37	Weighted Average
	10.202		99.81% Pervious Area
	0.019		0.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.0	150	0.0460	0.12		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
4.2	260	0.0420	1.02		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
5.8	300	0.0300	0.87		**Shallow Concentrated Flow, C to D** Woodland Kv= 5.0 fps
5.9	405	0.0520	1.14		**Shallow Concentrated Flow, D to E** Woodland Kv= 5.0 fps
36.9	1,115	Total			

Summary for Subcatchment 2:

Runoff = 7.1 cfs @ 12.22 hrs, Volume= 0.790 af, Depth= 1.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	2.057	30	Woods, Good, HSG A
	1.344	77	Woods, Good, HSG D
	2.365	30	Meadow, non-grazed, HSG A
	0.591	39	>75% Grass cover, Good, HSG A
*	0.553	98	Existing impervious
*	0.723	98	Water
	7.633	50	Weighted Average
	6.357		83.28% Pervious Area
	1.276		16.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	150	0.0400	0.28		**Sheet Flow, A to B** Range n= 0.130 P2= 3.30"
4.0	280	0.0280	1.17		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
13.0	430	Total			

Summary for Subcatchment 3:

Runoff = 1.4 cfs @ 12.78 hrs, Volume= 0.346 af, Depth= 0.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	4.349	30	Woods, Good, HSG A
	0.773	77	Woods, Good, HSG D
	0.221	30	Meadow, non-grazed, HSG A
	0.450	78	Meadow, non-grazed, HSG D
*	0.259	98	Existing impervious
	6.052	42	Weighted Average
	5.793		95.72% Pervious Area
	0.259		4.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.2	150	0.0200	0.09		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
8.6	200	0.0060	0.39		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
3.7	120	0.0060	0.54		**Shallow Concentrated Flow, C to D** Short Grass Pasture Kv= 7.0 fps
41.5	470	Total			

Summary for Subcatchment 4A:

Runoff = 11.4 cfs @ 13.00 hrs, Volume= 2.383 af, Depth= 3.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
7.826	77	Woods, Good, HSG D
7.826		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
44.5	150	0.0070	0.06		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
30.6	650	0.0050	0.35		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
75.1	800	Total			

Summary for Subcatchment 4B:

Runoff = 0.5 cfs @ 12.52 hrs, Volume= 0.064 af, Depth= 3.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
0.210	77	Woods, Good, HSG D
0.210		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.6	130	0.0080	0.06		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"

Summary for Subcatchment 4C:

Runoff = 0.0 cfs @ 15.70 hrs, Volume= 0.029 af, Depth= 0.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
3.683	30	Woods, Good, HSG A
3.683		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0600	0.12		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
22.4	475	0.0050	0.35		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
36.0	575	Total			

Summary for Pond 2P: Internally Drained

Inflow Area = 7.633 ac, 16.72% Impervious, Inflow Depth = 1.24" for 25-YR event
Inflow = 7.1 cfs @ 12.22 hrs, Volume= 0.790 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 179.00' @ 24.80 hrs Surf.Area= 37,257 sf Storage= 34,420 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	178.00'	1,036,250 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
178.00	31,500	0	0
180.00	43,000	74,500	74,500
182.00	72,000	115,000	189,500
184.00	116,500	188,500	378,000
185.50	174,000	217,875	595,875
186.00	162,500	84,125	680,000
187.00	178,000	170,250	850,250
188.00	194,000	186,000	1,036,250

Device	Routing	Invert	Outlet Devices
#1	Primary	185.50'	**100.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=178.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond 3P: Internally Drained

Inflow Area = 6.052 ac, 4.28% Impervious, Inflow Depth = 0.69" for 25-YR event
Inflow = 1.4 cfs @ 12.78 hrs, Volume= 0.346 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 184.64' @ 26.45 hrs Surf.Area= 45,900 sf Storage= 15,055 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	184.00'	476,033 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
184.00	1,110	0	0
185.50	106,000	80,333	80,333
186.00	118,600	56,150	136,483
187.00	170,000	144,300	280,783
188.00	220,500	195,250	476,033

Device	Routing	Invert	Outlet Devices
#1	Primary	185.50'	**100.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Secondary	187.00'	**50.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=184.00' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=184.00' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link SP1: Study Point 1

Inflow Area = 22.008 ac, 0.36% Impervious, Inflow Depth = 0.85" for 25-YR event
Inflow = 7.7 cfs @ 12.69 hrs, Volume= 1.556 af
Primary = 7.7 cfs @ 12.69 hrs, Volume= 1.556 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Summary for Link SP2: Study Point 2

Inflow Area = 7.633 ac, 16.72% Impervious, Inflow Depth = 0.00" for 25-YR event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Summary for Link SP3: Study Point 3

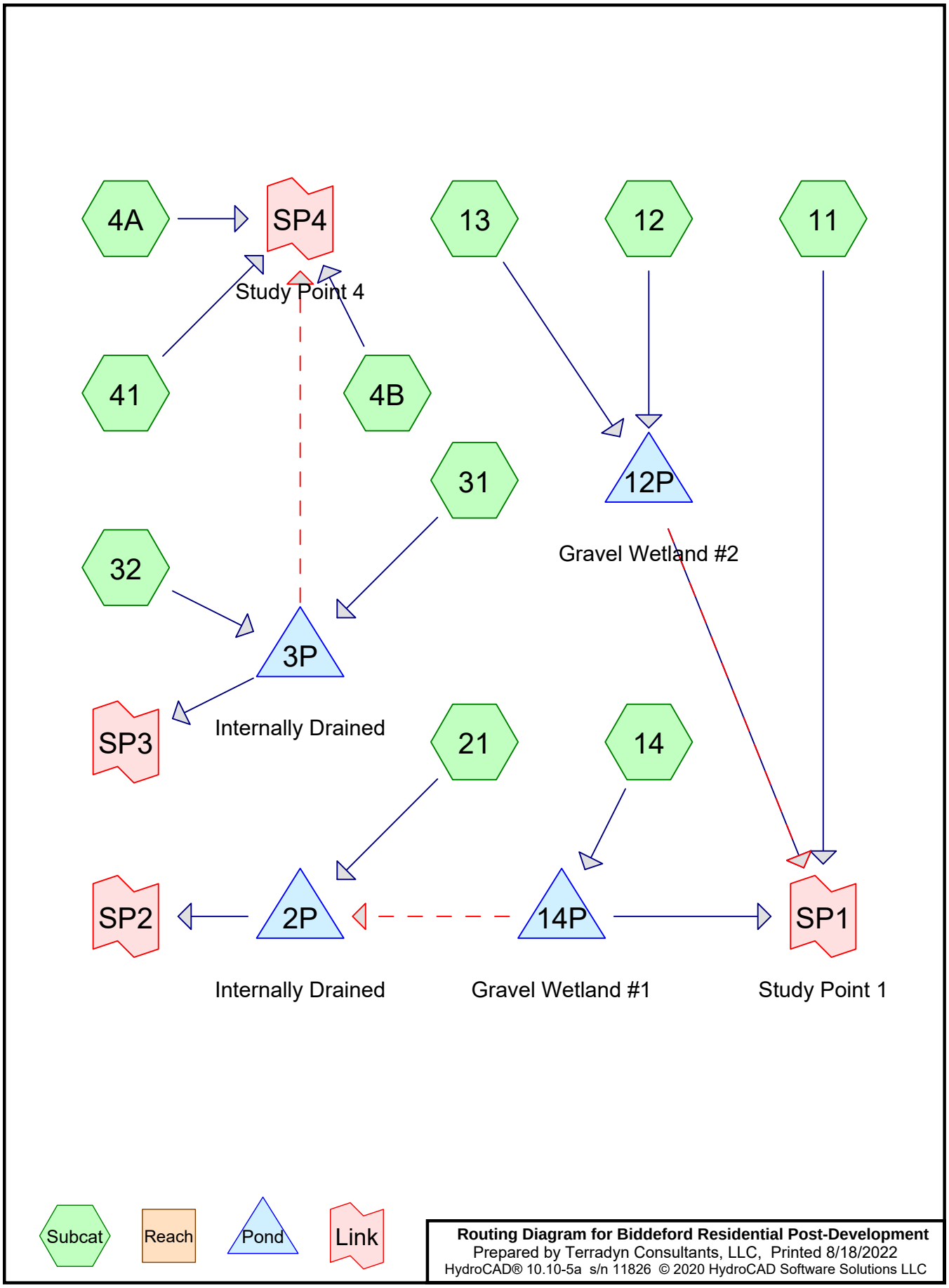
Inflow Area = 6.052 ac, 4.28% Impervious, Inflow Depth = 0.00" for 25-YR event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Summary for Link SP4: Study Point 4

Inflow Area = 11.719 ac, 0.00% Impervious, Inflow Depth = 2.54" for 25-YR event
Inflow = 11.7 cfs @ 12.98 hrs, Volume= 2.476 af
Primary = 11.7 cfs @ 12.98 hrs, Volume= 2.476 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs


4A
SP4
13
12
11
Study Point 4
41
4B
31
12P
32
Gravel Wetland #2
3P
SP3
Internally Drained
21
14
SP2
2P
14P
SP1
Internally Drained
Gravel Wetland #1
Study Point 1
Subcat
Reach
Pond
Link
Routing Diagram for Biddeford Residential Post-Development
Prepared by Terradyn Consultants, LLC, Printed 8/18/2022
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Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 4A: Runoff Area=7.826 ac 0.00% Impervious Runoff Depth=1.28"
Flow Length=800' Tc=75.1 min CN=77 Runoff=3.9 cfs 0.837 af

Subcatchment 4B: Runoff Area=0.210 ac 0.00% Impervious Runoff Depth=1.28"
Flow Length=130' Slope=0.0080 '/' Tc=37.6 min CN=77 Runoff=0.2 cfs 0.022 af

Subcatchment 11: Runoff Area=11.462 ac 1.01% Impervious Runoff Depth=0.15"
Flow Length=925' Tc=40.4 min CN=50 Runoff=0.3 cfs 0.143 af

Subcatchment 12: Runoff Area=3.575 ac 2.57% Impervious Runoff Depth=0.28"
Flow Length=540' Tc=27.8 min CN=55 Runoff=0.3 cfs 0.084 af

Subcatchment 13: Runoff Area=8.057 ac 68.30% Impervious Runoff Depth=1.41"
Flow Length=1,290' Tc=12.8 min CN=79 Runoff=10.4 cfs 0.948 af

Subcatchment 14: Runoff Area=4.348 ac 53.73% Impervious Runoff Depth=0.79"
Flow Length=765' Tc=9.7 min CN=68 Runoff=3.0 cfs 0.285 af

Subcatchment 21: Runoff Area=4.170 ac 19.66% Impervious Runoff Depth=0.07"
Flow Length=210' Tc=9.2 min CN=46 Runoff=0.0 cfs 0.025 af

Subcatchment 31: Runoff Area=2.885 ac 2.53% Impervious Runoff Depth=0.25"
Flow Length=320' Tc=36.5 min CN=54 Runoff=0.2 cfs 0.061 af

Subcatchment 32: Runoff Area=2.498 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=250' Tc=28.4 min CN=39 Runoff=0.0 cfs 0.000 af

Subcatchment 41: Runoff Area=2.381 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=575' Tc=36.0 min CN=33 Runoff=0.0 cfs 0.000 af

Pond 2P: Internally Drained Peak Elev=178.03' Storage=1,075 cf Inflow=0.0 cfs 0.025 af
Outflow=0.0 cfs 0.000 af

Pond 3P: Internally Drained Peak Elev=184.26' Storage=2,641 cf Inflow=0.2 cfs 0.061 af
Primary=0.0 cfs 0.000 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond 12P: Gravel Wetland #2 Peak Elev=154.57' Storage=43,279 cf Inflow=10.5 cfs 1.032 af
Primary=0.0 cfs 0.079 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.079 af

Pond 14P: Gravel Wetland #1 Peak Elev=178.73' Storage=11,318 cf Inflow=3.0 cfs 0.285 af
Primary=0.0 cfs 0.051 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.051 af

Link SP1: Study Point 1 Inflow=0.3 cfs 0.273 af
Primary=0.3 cfs 0.273 af

Link SP2: Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP3: Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP4: Study Point 4 Inflow=4.0 cfs 0.860 af
Primary=4.0 cfs 0.860 af

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 4A: Runoff Area=7.826 ac 0.00% Impervious Runoff Depth=2.54"
Flow Length=800' Tc=75.1 min CN=77 Runoff=7.9 cfs 1.656 af

Subcatchment 4B: Runoff Area=0.210 ac 0.00% Impervious Runoff Depth=2.54"
Flow Length=130' Slope=0.0080 '/' Tc=37.6 min CN=77 Runoff=0.3 cfs 0.044 af

Subcatchment 11: Runoff Area=11.462 ac 1.01% Impervious Runoff Depth=0.65"
Flow Length=925' Tc=40.4 min CN=50 Runoff=2.9 cfs 0.623 af

Subcatchment 12: Runoff Area=3.575 ac 2.57% Impervious Runoff Depth=0.93"
Flow Length=540' Tc=27.8 min CN=55 Runoff=1.8 cfs 0.277 af

Subcatchment 13: Runoff Area=8.057 ac 68.30% Impervious Runoff Depth=2.72"
Flow Length=1,290' Tc=12.8 min CN=79 Runoff=20.4 cfs 1.823 af

Subcatchment 14: Runoff Area=4.348 ac 53.73% Impervious Runoff Depth=1.81"
Flow Length=765' Tc=9.7 min CN=68 Runoff=7.8 cfs 0.655 af

Subcatchment 21: Runoff Area=4.170 ac 19.66% Impervious Runoff Depth=0.46"
Flow Length=210' Tc=9.2 min CN=46 Runoff=0.9 cfs 0.158 af

Subcatchment 31: Runoff Area=2.885 ac 2.53% Impervious Runoff Depth=0.87"
Flow Length=320' Tc=36.5 min CN=54 Runoff=1.2 cfs 0.210 af

Subcatchment 32: Runoff Area=2.498 ac 0.00% Impervious Runoff Depth=0.18"
Flow Length=250' Tc=28.4 min CN=39 Runoff=0.1 cfs 0.038 af

Subcatchment 41: Runoff Area=2.381 ac 0.00% Impervious Runoff Depth=0.03"
Flow Length=575' Tc=36.0 min CN=33 Runoff=0.0 cfs 0.007 af

Pond 2P: Internally Drained Peak Elev=178.21' Storage=6,895 cf Inflow=0.9 cfs 0.158 af
Outflow=0.0 cfs 0.000 af

Pond 3P: Internally Drained Peak Elev=184.54' Storage=10,754 cf Inflow=1.2 cfs 0.247 af
Primary=0.0 cfs 0.000 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond 12P: Gravel Wetland #2 Peak Elev=155.48' Storage=75,414 cf Inflow=21.0 cfs 2.101 af
Primary=0.4 cfs 0.725 af Secondary=0.0 cfs 0.000 af Outflow=0.4 cfs 0.725 af

Pond 14P: Gravel Wetland #1 Peak Elev=179.52' Storage=26,837 cf Inflow=7.8 cfs 0.655 af
Primary=0.1 cfs 0.078 af Secondary=0.0 cfs 0.000 af Outflow=0.1 cfs 0.078 af

Link SP1: Study Point 1 Inflow=3.0 cfs 1.426 af
Primary=3.0 cfs 1.426 af

Link SP2: Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP3: Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP4: Study Point 4 Inflow=8.1 cfs 1.707 af
Primary=8.1 cfs 1.707 af

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 4A: Runoff Area=7.826 ac 0.00% Impervious Runoff Depth=3.65"
Flow Length=800' Tc=75.1 min CN=77 Runoff=11.4 cfs 2.383 af

Subcatchment 4B: Runoff Area=0.210 ac 0.00% Impervious Runoff Depth=3.65"
Flow Length=130' Slope=0.0080 '/' Tc=37.6 min CN=77 Runoff=0.5 cfs 0.064 af

Subcatchment 11: Runoff Area=11.462 ac 1.01% Impervious Runoff Depth=1.24"
Flow Length=925' Tc=40.4 min CN=50 Runoff=6.7 cfs 1.187 af

Subcatchment 12: Runoff Area=3.575 ac 2.57% Impervious Runoff Depth=1.63"
Flow Length=540' Tc=27.8 min CN=55 Runoff=3.6 cfs 0.487 af

Subcatchment 13: Runoff Area=8.057 ac 68.30% Impervious Runoff Depth=3.86"
Flow Length=1,290' Tc=12.8 min CN=79 Runoff=28.9 cfs 2.591 af

Subcatchment 14: Runoff Area=4.348 ac 53.73% Impervious Runoff Depth=2.78"
Flow Length=765' Tc=9.7 min CN=68 Runoff=12.2 cfs 1.006 af

Subcatchment 21: Runoff Area=4.170 ac 19.66% Impervious Runoff Depth=0.95"
Flow Length=210' Tc=9.2 min CN=46 Runoff=2.8 cfs 0.331 af

Subcatchment 31: Runoff Area=2.885 ac 2.53% Impervious Runoff Depth=1.55"
Flow Length=320' Tc=36.5 min CN=54 Runoff=2.4 cfs 0.373 af

Subcatchment 32: Runoff Area=2.498 ac 0.00% Impervious Runoff Depth=0.50"
Flow Length=250' Tc=28.4 min CN=39 Runoff=0.4 cfs 0.105 af

Subcatchment 41: Runoff Area=2.381 ac 0.00% Impervious Runoff Depth=0.20"
Flow Length=575' Tc=36.0 min CN=33 Runoff=0.1 cfs 0.040 af

Pond 2P: Internally Drained Peak Elev=178.44' Storage=14,400 cf Inflow=2.8 cfs 0.331 af
Outflow=0.0 cfs 0.000 af

Pond 3P: Internally Drained Peak Elev=184.76' Storage=20,835 cf Inflow=2.8 cfs 0.478 af
Primary=0.0 cfs 0.000 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond 12P: Gravel Wetland #2 Peak Elev=155.73' Storage=84,790 cf Inflow=30.7 cfs 3.078 af
Primary=2.7 cfs 1.668 af Secondary=0.0 cfs 0.000 af Outflow=2.7 cfs 1.668 af

Pond 14P: Gravel Wetland #1 Peak Elev=179.62' Storage=28,989 cf Inflow=12.2 cfs 1.006 af
Primary=0.8 cfs 0.425 af Secondary=0.0 cfs 0.000 af Outflow=0.8 cfs 0.425 af

Link SP1: Study Point 1 Inflow=7.1 cfs 3.280 af
Primary=7.1 cfs 3.280 af

Link SP2: Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP3: Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP4: Study Point 4 Inflow=11.7 cfs 2.488 af
Primary=11.7 cfs 2.488 af

Summary for Subcatchment 4A:

Runoff = 11.4 cfs @ 13.00 hrs, Volume= 2.383 af, Depth= 3.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
7.826	77	Woods, Good, HSG D
7.826		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
44.5	150	0.0070	0.06		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
30.6	650	0.0050	0.35		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
75.1	800	Total			

Summary for Subcatchment 4B:

Runoff = 0.5 cfs @ 12.52 hrs, Volume= 0.064 af, Depth= 3.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
0.210	77	Woods, Good, HSG D
0.210		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.6	130	0.0080	0.06		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"

Summary for Subcatchment 11:

Runoff = 6.7 cfs @ 12.66 hrs, Volume= 1.187 af, Depth= 1.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	5.661	30	Woods, Good, HSG A
	3.720	70	Woods, Good, HSG C
	1.153	77	Woods, Good, HSG D
	0.113	30	Meadow, non-grazed, HSG A
	0.260	71	Meadow, non-grazed, HSG C
	0.003	78	Meadow, non-grazed, HSG D
	0.349	39	>75% Grass cover, Good, HSG A
	0.087	74	>75% Grass cover, Good, HSG C
*	0.060	98	Existing impervious
*	0.056	98	Proposed Impervious
	11.462	50	Weighted Average
	11.346		98.99% Pervious Area
	0.116		1.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.2	150	0.0220	0.09		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
9.2	615	0.0500	1.12		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
0.2	25	0.2400	2.45		**Shallow Concentrated Flow, C to D** Woodland Kv= 5.0 fps
2.8	135	0.0260	0.81		**Shallow Concentrated Flow, D to E** Woodland Kv= 5.0 fps
40.4	925	Total			

Summary for Subcatchment 12:

Runoff = 3.6 cfs @ 12.44 hrs, Volume= 0.487 af, Depth= 1.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	0.971	30	Woods, Good, HSG A
	0.676	70	Woods, Good, HSG C
	1.233	71	Meadow, non-grazed, HSG C
	0.603	39	>75% Grass cover, Good, HSG A
*	0.092	98	Proposed Impervious
	3.575	55	Weighted Average
	3.483		97.43% Pervious Area
	0.092		2.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.2	150	0.0400	0.11		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
5.5	360	0.0470	1.08		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
0.1	30	0.3000	3.83		**Shallow Concentrated Flow, C to D** Short Grass Pasture Kv= 7.0 fps
27.8	540	Total			

Summary for Subcatchment 13:

Runoff = 28.9 cfs @ 12.18 hrs, Volume= 2.591 af, Depth= 3.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	2.115	39	>75% Grass cover, Good, HSG A
*	5.503	98	Proposed Impervious
	0.439	30	Woods, Good, HSG A
	8.057	79	Weighted Average
	2.554		31.70% Pervious Area
	5.503		68.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	60	0.0170	0.10		**Sheet Flow, A to B** Grass: Dense n= 0.240 P2= 3.30"
0.6	40	0.0200	1.16		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 3.30"
2.2	1,190	0.0200	9.11	16.09	**Pipe Channel, C to D** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
12.8	1,290	Total			

Summary for Subcatchment 14:

Runoff = 12.2 cfs @ 12.14 hrs, Volume= 1.006 af, Depth= 2.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	0.946	30	Meadow, non-grazed, HSG A
	0.832	39	>75% Grass cover, Good, HSG A
*	2.336	98	Proposed Impervious
	0.234	30	Woods, Good, HSG A
	4.348	68	Weighted Average
	2.012		46.27% Pervious Area
	2.336		53.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	25	0.0100	0.07		**Sheet Flow, A to B** Grass: Dense n= 0.240 P2= 3.30"
1.4	110	0.0150	1.27		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 3.30"
2.2	630	0.0070	4.77	5.86	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
9.7	765	Total			

Summary for Subcatchment 21:

Runoff = 2.8 cfs @ 12.17 hrs, Volume= 0.331 af, Depth= 0.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	1.328	30	Woods, Good, HSG A
	0.976	30	Meadow, non-grazed, HSG A
	1.046	39	>75% Grass cover, Good, HSG A
*	0.097	98	Existing impervious
*	0.723	98	Water
	4.170	46	Weighted Average
	3.350		80.34% Pervious Area
	0.820		19.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	150	0.0400	0.28		**Sheet Flow, A to B** Range n= 0.130 P2= 3.30"
0.2	60	0.4000	4.43		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
9.2	210	Total			

Summary for Subcatchment 31:

Runoff = 2.4 cfs @ 12.57 hrs, Volume= 0.373 af, Depth= 1.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	0.340	30	Woods, Good, HSG A
	0.637	77	Woods, Good, HSG D
	0.125	30	Meadow, non-grazed, HSG A
	0.450	78	Meadow, non-grazed, HSG D
	1.260	39	>75% Grass cover, Good, HSG A
*	0.073	98	Proposed impervious
	2.885	54	Weighted Average
	2.812		97.47% Pervious Area
	0.073		2.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.2	150	0.0200	0.09		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
7.3	170	0.0060	0.39		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
36.5	320	Total			

Summary for Subcatchment 32:

Runoff = 0.4 cfs @ 12.66 hrs, Volume= 0.105 af, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
1.728	30	Woods, Good, HSG A
0.397	77	Woods, Good, HSG D
0.373	39	>75% Grass cover, Good, HSG A
2.498	39	Weighted Average
2.498		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.8	150	0.0250	0.09		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	100	0.0420	1.02		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
28.4	250	Total			

Summary for Subcatchment 41:

Runoff = 0.1 cfs @ 14.18 hrs, Volume= 0.040 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
1.528	30	Woods, Good, HSG A
0.853	39	>75% Grass cover, Good, HSG A
2.381	33	Weighted Average
2.381		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0600	0.12		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
22.4	475	0.0050	0.35		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
36.0	575	Total			

Summary for Pond 2P: Internally Drained

Inflow Area = 4.170 ac, 19.66% Impervious, Inflow Depth = 0.95" for 25-YR event
Inflow = 2.8 cfs @ 12.17 hrs, Volume= 0.331 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 178.44' @ 24.55 hrs Surf.Area= 34,027 sf Storage= 14,400 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	178.00'	1,036,250 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
178.00	31,500	0	0
180.00	43,000	74,500	74,500
182.00	72,000	115,000	189,500
184.00	116,500	188,500	378,000
185.50	174,000	217,875	595,875
186.00	162,500	84,125	680,000
187.00	178,000	170,250	850,250
188.00	194,000	186,000	1,036,250

Device	Routing	Invert	Outlet Devices
#1	Primary	185.50'	**100.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=178.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond 3P: Internally Drained

Inflow Area = 5.383 ac, 1.36% Impervious, Inflow Depth = 1.07" for 25-YR event
Inflow = 2.8 cfs @ 12.59 hrs, Volume= 0.478 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 184.76' @ 26.10 hrs Surf.Area= 53,992 sf Storage= 20,835 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	184.00'	476,033 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
184.00	1,110	0	0
185.50	106,000	80,333	80,333
186.00	118,600	56,150	136,483
187.00	170,000	144,300	280,783
188.00	220,500	195,250	476,033

Device	Routing	Invert	Outlet Devices
#1	Primary	185.50'	**100.0' long x 20.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Secondary	187.00'	**50.0' long x 20.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=184.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=184.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond 12P: Gravel Wetland #2

Inflow Area = 11.632 ac, 48.10% Impervious, Inflow Depth = 3.18" for 25-YR event
Inflow = 30.7 cfs @ 12.18 hrs, Volume= 3.078 af
Outflow = 2.7 cfs @ 14.24 hrs, Volume= 1.668 af, Atten= 91%, Lag= 123.6 min
Primary = 2.7 cfs @ 14.24 hrs, Volume= 1.668 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 155.73' @ 14.24 hrs Surf.Area= 37,550 sf Storage= 84,790 cf

Plug-Flow detention time= 475.3 min calculated for 1.668 af (54% of inflow)
Center-of-Mass det. time= 359.2 min (1,192.4 - 833.2)

Volume	Invert	Avail.Storage	Storage Description
#1	153.00'	134,485 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
153.00	16,700	0	0
154.00	32,070	24,385	24,385
154.50	33,700	16,443	40,828
156.00	38,380	54,060	94,888
157.00	40,815	39,598	134,485

Device	Routing	Invert	Outlet Devices
#1	Primary	152.67'	**18.0" Round Culvert** L= 83.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 152.67' / 151.50' S= 0.0141 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	154.50'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	155.50'	**6.0' long x 0.70' rise Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)
#4	Device 1	150.00'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 4	150.00'	**6.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 150.00' / 150.00' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#6	Device 5	153.00'	**2.410 in/hr Exfiltration over Surface area above 153.00'** Conductivity to Groundwater Elevation = 152.67' Excluded Surface area = 16,700 sf
#7	Secondary	156.00'	**12.0' long x 9.0' 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 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69

Primary OutFlow Max=2.7 cfs @ 14.24 hrs HW=155.73' (Free Discharge)
└─**1=Culvert** (Passes 2.7 cfs of 12.9 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.4 cfs @ 4.97 fps)
  ├─**3=Sharp-Crested Vee/Trap Weir** (Weir Controls 2.2 cfs @ 1.58 fps)
  └─**4=Orifice/Grate** (Orifice Controls 0.0 cfs @ 8.43 fps)
    └─**5=Culvert** (Passes 0.0 cfs of 1.6 cfs potential flow)
      └─**6=Exfiltration** (Passes 0.0 cfs of 4.0 cfs potential flow)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=153.00' (Free Discharge)
└─**7=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond 14P: Gravel Wetland #1

Inflow Area =	4.348 ac, 53.73% Impervious, Inflow Depth = 2.78" for 25-YR event			
Inflow =	12.2 cfs @	12.14 hrs, Volume=	1.006 af	
Outflow =	0.8 cfs @	14.99 hrs, Volume=	0.425 af, Atten= 94%, Lag= 170.8 min	
Primary =	0.8 cfs @	14.99 hrs, Volume=	0.425 af	
Secondary =	0.0 cfs @	0.00 hrs, Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 179.62' @ 14.99 hrs Surf.Area= 21,962 sf Storage= 28,989 cf

Plug-Flow detention time= 406.4 min calculated for 0.425 af (42% of inflow)
Center-of-Mass det. time= 280.5 min (1,125.2 - 844.7)

Volume	Invert	Avail.Storage	Storage Description
#1	178.00'	89,610 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
178.00	13,570	0	0
179.50	21,650	26,415	26,415
180.00	22,970	11,155	37,570
181.00	26,130	24,550	62,120
182.00	28,850	27,490	89,610

Device	Routing	Invert	Outlet Devices
#1	Primary	177.67'	**18.0" Round Culvert** L= 265.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 177.67' / 175.43' S= 0.0085 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	179.50'	**6.0' long x 2.00' rise Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)
#3	Device 2	179.00'	**15.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 179.00' / 179.00' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#4	Device 1	175.00'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 4	175.00'	**6.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 175.00' / 175.00' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#6	Device 5	178.00'	**2.410 in/hr Exfiltration over Surface area above 178.00'** Conductivity to Groundwater Elevation = 177.67' Excluded Surface area = 13,570 sf
#7	Secondary	181.00'	**12.0' long x 9.0' 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 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69

Primary OutFlow Max=0.8 cfs @ 14.99 hrs HW=179.62' (Free Discharge)
└─**1=Culvert** (Passes 0.8 cfs of 9.3 cfs potential flow)
  ├─**2=Sharp-Crested Vee/Trap Weir** (Passes 0.8 cfs of 0.8 cfs potential flow)
  │ └─**3=Culvert** (Outlet Controls 0.8 cfs @ 1.87 fps)
  └─**4=Orifice/Grate** (Orifice Controls 0.0 cfs @ 6.72 fps)
    └─**5=Culvert** (Passes 0.0 cfs of 1.3 cfs potential flow)
      └─**6=Exfiltration** (Passes 0.0 cfs of 1.0 cfs potential flow)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=178.00' (Free Discharge)
└─**7=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link SP1: Study Point 1

Inflow Area = 27.442 ac, 29.32% Impervious, Inflow Depth > 1.43" for 25-YR event
Inflow = 7.1 cfs @ 12.67 hrs, Volume= 3.280 af
Primary = 7.1 cfs @ 12.67 hrs, Volume= 3.280 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Summary for Link SP2:

Inflow Area = 4.170 ac, 19.66% Impervious, Inflow Depth = 0.00" for 25-YR event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Summary for Link SP3:

Inflow Area = 5.383 ac, 1.36% Impervious, Inflow Depth = 0.00" for 25-YR event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Summary for Link SP4: Study Point 4

Inflow Area = 10.417 ac, 0.00% Impervious, Inflow Depth = 2.87" for 25-YR event
Inflow = 11.7 cfs @ 12.98 hrs, Volume= 2.488 af
Primary = 11.7 cfs @ 12.98 hrs, Volume= 2.488 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Section 13 - Urban Impaired Stream

The development will result in more than three acres of impervious area and is located within the Thacher Brook watershed, which is an Urban Impaired Stream as identified in Appendix B of Chapter 502: Direct Watersheds of Lakes Most at Risk from New Development, and Urban Impaired Streams.

Thacher Brook is eligible for mitigation, of the projects Urban Impaired Stream impacts, via payment of a compensation fee as outlined in Chapter 501: Stormwater Management Compensation Fees and Mitigation Credit. A copy of the Compensation Fee Utilization Plan for Thacher Brook is attached for reference. The compensation fee is calculated as follows:

Table 1: Compensation Fee Calculation			
Type of surface	Compensation fee (per acre)	Development area (acres)	Calculated fee
Non-roof impervious area	$12,500	5.25	$65,625
Roof	$5,000	2.81	$14,050
Landscape Area	$2,500	10.073	$25,182.50
Total Fee:			$104,875.50

Section 14 - Basic Standards

A. INTRODUCTION:

Anyone who conducts or directs an activity that involves exposing, filling or displacing soil or other earthen materials must take appropriate measures to prevent erosion and the loss of sediment beyond the project site or into a sensitive resource.

Erosion and sediment control measures should be in place before the activity begins and should remain functional until the site is permanently stabilized. All measures should remain effective until all areas are permanently stabilized. Any disturbed area should be regularly inspected until the site is fully stabilized with either 90% grass cover or a permanent impervious surface such as pavement.

The following information describes the Inspection, Maintenance and Documentation necessary during construction to comply with the State of Maine Stormwater Management Law.

B. INSPECTION

Inspect disturbed and impervious areas, erosion control measures, materials storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. Inspect these areas at least once a week as well as before and within 24 hours after a storm event (rainfall), and prior to completing permanent stabilization measures. For the purposes of this plan, a storm event is rainfall greater than 0.5 inches in a 24-hour period.

The person conducting inspections shall have knowledge of erosion and sedimentation practices, stormwater management, and the standards and conditions of all local, state and federal permits for the project.

C. MAINTENANCE AND CORRECTIVE ACTION

If best management practices (BMPs) need to be repaired, the repair work should be initiated upon discovery of the problem but no later than the end of the next workday. If additional BMPs or significant repair of BMPs are necessary, implementation must be completed within 7 calendar days and prior to any storm event (rainfall). All measures must be maintained in effective operating condition until areas are permanently stabilized.

D. DOCUMENTATION

Keep a log (report) summarizing the inspections and any corrective actions taken. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, materials storage areas, and vehicles access points to the parcel. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and location(s) where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken.

The log attached at the end of this plan is from the Maine Erosion and Sediment Control Best Management Practices (BMPs) Manual for Designers and Engineers (May 2016). The log may be used or adapted for this project.

Documentation must be retained for a minimum of three years after permanent stabilization has been achieved on the site and must be made accessible to the Maine Department of Environmental Protection upon request

E. <u>INSPECTION DURING CONSTRUCTION:</u>

1. **Inspection:** For the duration of construction activity, it is the Site Contractor's responsibility to comply with theinspection and maintenance procedures outlined in this section. These responsibilities include inspecting disturbed and impervious areas, erosion control measures, materials storage areas thatare exposed to precipitation, and locations where vehicles enter or exit the site. These areas shall be inspected at least once a week as well as before and after a storm event, and prior to completing permanent stabilization measures. A person with knowledge of erosion and stormwater control, including the standards and conditions in any applicable permits, shall conduct the inspections.

2. **Maintenance:** All measures shall be maintained in an effective operating condition until areas are permanently stabilized. If Best Management Practices (BMPs) need to be maintained or modified, additional BMPs are necessary, or other corrective action is needed, implementation must be completed within seven (7) calendar days and prior to any storm event (rainfall).

3. **Documentation:** A log summarizing the inspections and any corrective action taken must be maintained on-site. The log must include the name(s) and qualifications of the person making theinspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, material storage areas, and vehicle access points to the site. Major observations must include BMPs that need maintenance, BMPs that failedto operate as designed or proved inadequate for a particular location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and locationneeding additional BMPs, note in the log the corrective action taken and when it was taken.

   The log must be made accessible to the appropriate regulatory agency upon request. The permittee shall retain a copy of the log for a period of at least three (3) years from the completion of permanent stabilization.

4. **Specific Inspection and Maintenance Tasks:** The following is a list of erosion control and stormwatermanagement measures and the specific inspection and maintenance tasks to be performed duringconstruction.

   A. <u>Sediment Barriers:</u>

   - Hay bale barriers, silt fences, and filter berms shall be inspected immediately

after eachrainfall and at least daily during prolonged rainfall.

- If the fabric on a silt fence or filter barrier should decompose or become ineffective prior tothe end of the expected usable life and the barrier is still necessary, it shall be replaced.
- Sediment deposits should be removed after each storm event. They must be removedbefore deposits reach approximately one-half the height of the barrier.
- Filter berms shall be reshaped as needed.
- Any sediment deposits remaining in place after the silt fence or filter barrier is no longerrequired should be dressed to conform to the existing grade, prepared, and seeded.

B. Riprap Materials:

- Once a riprap installation has been completed, it should require very little maintenance. It shall, however, be inspected periodically to determine if high flows have caused scour beneath the riprap or dislodged any of the stone.
- Annully inspect riprap and remove woody vegetation when discovered.

C. Erosion Control Blankets:

- Inspect these reinforced areas semi-annually and after significant rainfall events for slumping, sliding, seepage, and scour. Pay close attention to unreinforced areas adjacent to the erosion control blankets, which may experience accelerated erosion.
- Review all applicable inspection and maintenance procedures recommended by the specific blanket manufacturer. These tasks shall be included in addition to this plan.

D. Temporary Storm Drain Inlet Protection:

- The inlet protection structure shall be inspected before each rain event and repaired asnecessary.
- Sediment shall be removed and the storm drain sediment barrier restored to its originaldimensions when the sediment has accumulated to half of the design depth of the trap.
- Structures shall be removed upon permanent stabilization of the tributary area.
- Upon removal of the structure, all accumulated sediments downstream of the structure shallbe cleaned from the storm drain system.
- The permanent storm drainage system shall be flushed and cleaned once the site is stabilized and prior to demobilization from the site.

E. Stabilized Construction Entrances/Exits:

- The exit shall be maintained in a condition that will prevent tracking of sediment onto publicrights-of-way.

- When the control pad becomes ineffective, the stone shall be removed along with the collected soil material. The entrance should then be reconstructed.
- Areas that have received mud-tracking or sediment deposits shall be swept or washed. Washing shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device (not into storm drains, ditches, or waterways).

F. Temporary Seed and Mulch:

- Mulched areas should be inspected after rain events to check for rill erosion.
- If less than 90% of the soil surface is covered by mulch, additional mulch shall be applied inbare areas.
- In applications where seeding and mulch have been applied in conjunction with erosion control blankets, the blankets must be inspected after rain events for dislocation or undercutting.
- Mulch shall continue to be reapplied until 95% of the soil surface has established temporary vegetative cover.

G. Stabilized Drainage Swales:

- Sediment accumulation in the swale shall be removed once the cross section of the swale isreduced by 25%.
- The swales shall be inspected after rainfall events. Any evidence of sloughing of the side slopes or channel erosion shall be repaired and corrective action should be taken to preventreoccurrence of the problem.
- In addition to the stabilized lining of the channel (i.e. erosion control blankets), stone check dams may be needed to further reduce channel velocity.

H. Concrete Washout Area

- The site contractor shall establish a concrete washout area on-site which shall include sediment barrier to mitigate the transport of the washout material to the environment.
- The washout area shall be located a minimum of 25 feet from any storm drain structure or culvert and a minimum of 25 feet from any slope greater than 4:1.
- The washout area shall be inspected daily when concrete work is active and prior to any storm event.
- Accumulated concrete sediments shall be removed weekly, when concrete work is active, or when visibly encroaching on sediment barrier.

I. Dewatering

- The site contractor shall establish an on-site containment area which shall include sediment barrier to mitigate the transport of the sediment to the environment from

dewatering activity.

- The containment area shall be located a minimum of 25 feet from any storm drain structure or culvert and a minimum of 25 feet from any slope greater than 4:1.
- The containment area shall include a dirt bag or similar sediment trap for treatment of the collected water.
- The containment area shall be inspected after each use to ensure that no downgradient erosion or sedimentation offsite is occurring.

REFERENCES

Design Drawings:
C-2.1 Grading & Drainage Plan-1
C-2.2 Grading & Drainage Plan-2
C-2.3 Grading & Drainage Plan-3
C-2.4 Grading & Drainage Plan-4
C-2.5 Grading & Drainage Plan-5
C-2.6 Grading & Drainage Plan-6
C-2.7 Grading & Drainage Plan-7
C-5.1 Site Details

Maine Erosion and Sediment Control Best Management Practices (BMPs) Manual for Designers and Engineers (May 2016), Maine Department of Environmental Protection

Maine Erosion and Sediment Control Practices Field Guide for Contractors, Maine Department of Environmental Protection

CONSTRUCTION INSPECTION FORM FOR EROSION AND SEDIMENT CONTROL					
General Information:					
Site Name:	Date:		Inspected by:		
Owner:					
Retained 3PI:	Last Rain Date:			Amount:	
Reason for Inspection:	Weekly	Winter	Final	Rain Event	Complaint
Description of disturbed area:					
Photos:					
	YES/NO/NA	**COMMENTS**			
1. Is an Erosion and Sediment Control Plan available?					
ESC plan on-site and followed					
Other:					
2. Are all erosion control practices installed properly, maintained and functioning?					
Disturbed areas stable					
Concentrated flow inlet/outlet protection					
All areas at final grade					
Disturbed dormant areas stabilized					
Access roads and parking					
Hillsides and stockpiles					
Other:					
3. Are all sedimentation control practices installed properly, maintained and functioning?					
Construction entrance					
Sedimentation basins/traps/diversions					
Perimeter controls					
Check dams					
Other:					
4. Is maintenance of ESC measures, construction activities and housekeeping kept-up?					
Sedimentation/erosion in ditches					
Tracked Sediment or dust at exits					
Hazardous material storage and spillcontrol practices					
Waste management (concrete, hazardousmaterial, etc.)					
Other:					
5. Violation, Corrective Actions, Recommendations					
Sediment discharged from site?					
Corrective action required?					
Site compliant with all permits?					
Notice of violation or stop work orderissued?					
Comments/Corrective Actions (complete corrective actions before the next rain event and within 7 day)					

Section 15 - Groundwater

A. Narrative and Report

Not applicable. The development intends to connect to public water infrastructure for domestic water demands and connect to public sanitary sewer infrastructure for wastewater collection and treatment.

B. Groundwater Protection Plan

Not applicable. No storage of petroleum products, pesticides, herbicides, fertilizer, road salt, solvents, acids or other materials with the potential to contaminate groundwater is proposed for this development.

C. Monitoring Plan

Not applicable. No known requirement to monitor surface water or groundwater applies to this property.

D. Monitoring Well Installation Report

Not applicable. No monitoring wells are proposed for this project.

Section 16 - Water Supply

E. Water Supply Method

Maine Water Company has been contacted to confirm that there is sufficient healthful water supply to serve the project. A copy of the Maine Water Company's response will be forwarded upon receipt.

F. Subsurface Wastewater Disposal

Not applicable. This project intends to connect to the City's existing wastewater infrastructure.

G. Total Usage

As indicated in the letter to Maine Water Company, the anticipated domestic water demand will be approximately 43,121 gallons per day (GPD).

TERRADYN
CONSULTANTS, LLC

Pineland
Cumberland Hall
41 Campus Drive, Suite 301
New Gloucester, ME 04260

August 9, 2022 2149

Marcus Knipp
Maine Water Company
93 Industrial Park Road
Saco, ME 04072

CONFIRMATION OF ABILITY TO SERVE; DEVINE CAPITAL, LLC
BIDDEFORD RESIDENTIAL PROJECT; BIDDEFORD MAINE

Dear Marcus:

On behalf of the applicant, Devine Capital, LLC, we request confirmation that Maine Water Company has sufficient healthful water supply to serve their proposed development. The proposed apartment complex, to be located on a vacant parcel with frontage on Alfred Street (Rt. 111) and Andrews Road in Biddeford, will include 216 apartment units in nine buildings, a clubhouse and maintenance building.

The Maine Subsurface Wastewater Disposal Rules (MSWDR) were utilized to estimate anticipated wastewater discharges from the development, which will approximate the anticipated domestic water demand for the site. Based upon the MSWDR, dwelling units with two or less bedrooms are expected to generate 180 gallons per day (GPD) and 3-bedroom dwelling units are expected to generate 270 GPD. Since the clubhouse will provide many functions to the residents, the anticipated flow was estimated utilizing the "public restroom" design flows, which includes 325 GPD per toilet and 162 GPD per urinal. The maintenance building was estimated as "a place of employment with no showers", which includes 12 GPD per employee.

The proposed mix of apartment sizes will include: (27) studio units, (54) 1-bedroom units, (108) 2-bedroom units, and (27) 3-bedroom units. The clubhouse will include five (5) toilets and one (1) urinal. Two employees will have access to the maintenance building. Based upon these assumptions, the anticipated water demand for the project site will be approximately 43,121 GPD.

Based upon the available water pressure in the project's vicinity, the developer anticipates the need for a private water booster station to serve the site. As the design progresses, the estimated demand will be refined by calculating usage by the total number proposed fixtures for each meter required. In the interim, let me know if you have any questions or require additional information to determine that there is sufficient supply to serve this development.

Sincerely,
TERRADYN CONSULTANTS LLC

Richard Meek, P.E.
Sr. Project Engineer

Cc: Devine Capital, LLC

Section 17 - Wastewater Disposal

A. On-Site Subsurface Wastewater Disposal Systems

Not applicable. This project intends to connect to the City's existing wastewater infrastructure.

B. Nitrate-Nitrogen Impact Analysis

Not applicable. This project intends to connect to the City's existing wastewater infrastructure.

C. Municipal Facility or Utility Company Letter

The City of Biddeford's Public Works Department – Wastewater Division has been contacted to confirm that there is sufficient collection and treatment capacity to serve the project. A copy of the Wastewater Division's response will be forwarded upon receipt.

D. Municipal Facility or Utility Company Letter

Not applicable. No discharge of wastewater into any stream, river, pond, lake or other water bodies is anticipated.

E. Storage or Treatment Lagoons

Not applicable. No storage of wastewater in lagoons, impoundments or similar storage structures is proposed.

Section 18 - Solid Waste

The development will generate solid waste during land clearing, construction of the infrastructure & buildings and after occupation. The specific types, quantities, haulers and disposal sites are described below.

Woodwaste, Stumps & Grubbings

The majority of the waste will be generated by the harvesting of trees and the removal of stumps. Marketable timber will be removed from the project site and sold. Smaller woody debris will be mulched and used as a soil amendment or as an erosion control measure. Stump grindings will be used to make erosion control mix berm whenever possible, which will be used to augment or substitute for silt fence. An estimate of the amount of stumps/grinding waste can be calculated by assuming that 400 CY of material produced per acre of disturbance of mature forest. This approximation yields 5,720 CY for the estimated 14.3 acres of clearing required.

Construction & Demolition Debris

The construction waste generation rate for both residential & commercial construction is approximately 4.4 lb/ft^2. This value is from Estimating 2003 Building-Related Construction and Demolition Materials Amounts, published by the US EPA. The project site includes the following:

(1) Clubhouse @ 7,750 SF	7,750 SF
(1) Mail Kiosk @ 410 SF	410 SF
(1) Maintenance building @ 910 SF	910 SF
(9) 3-story apartment buildings @ 9,155 SF per floor	247,185 SF
(2) garage buildings @ 2,630 SF ea	5,260 SF
(6) garage buildings @ 4,370 SF ea	26,220 SF
Total	287,735 SF

This equates to approximately 633 tons of expected construction debris.

General construction waste material from roadway, utility, and infrastructure construction as well as building construction will be disposed of at appropriately licensed disposal facilities. It is anticipated that construction and demolition debris will be transported by Casella Waste and disposed of at the Juniper Ridge Landfill in West Old Town, ME or by Waste Management of Maine, Inc and disposed of at the Crossroads Landfill in Norridgewock, Maine or the Turnkey Landfill in Rochester, NH.

Once the construction phase is completed, any general construction debris will be disposed of at appropriately licensed disposal facilities.

No site demolition is anticipated as part of this project.

Household Solid Waste
It is estimated by the US EPA (https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/national-overview-facts-and-figures-materials) that as of 2017, the average person generates 4.51 lbs per day.

Each of the nine proposed apartment buildings will include three (3) studio apartments, six (6) one-bedroom apartments, twelve (12) two-bedroom apartments, and three (3) three-bedroom apartments. The studio & one-bedroom units would likely average no more than two people per unit. The two and three-bedroom units would likely be closer to the average household. According to the Pew Research Center (https://www.pewresearch.org/fact-tank/2019/10/01/the-number-of-people-in-the-average-u-s-household-is-going-up-for-the-first-time-in-over-160-years), the average person lives in a household consisting of 3.4 people. Based upon this data, the development average is (2 x 81 + 3.4 x 135)/216 = 2.88 people per apartment. Therefore, the assumed amount of household waste is approximately (4.51 lbs/person/day x 2.88 people per apartment x 216 apartments) 2,806 lbs/day (512 tons/year).

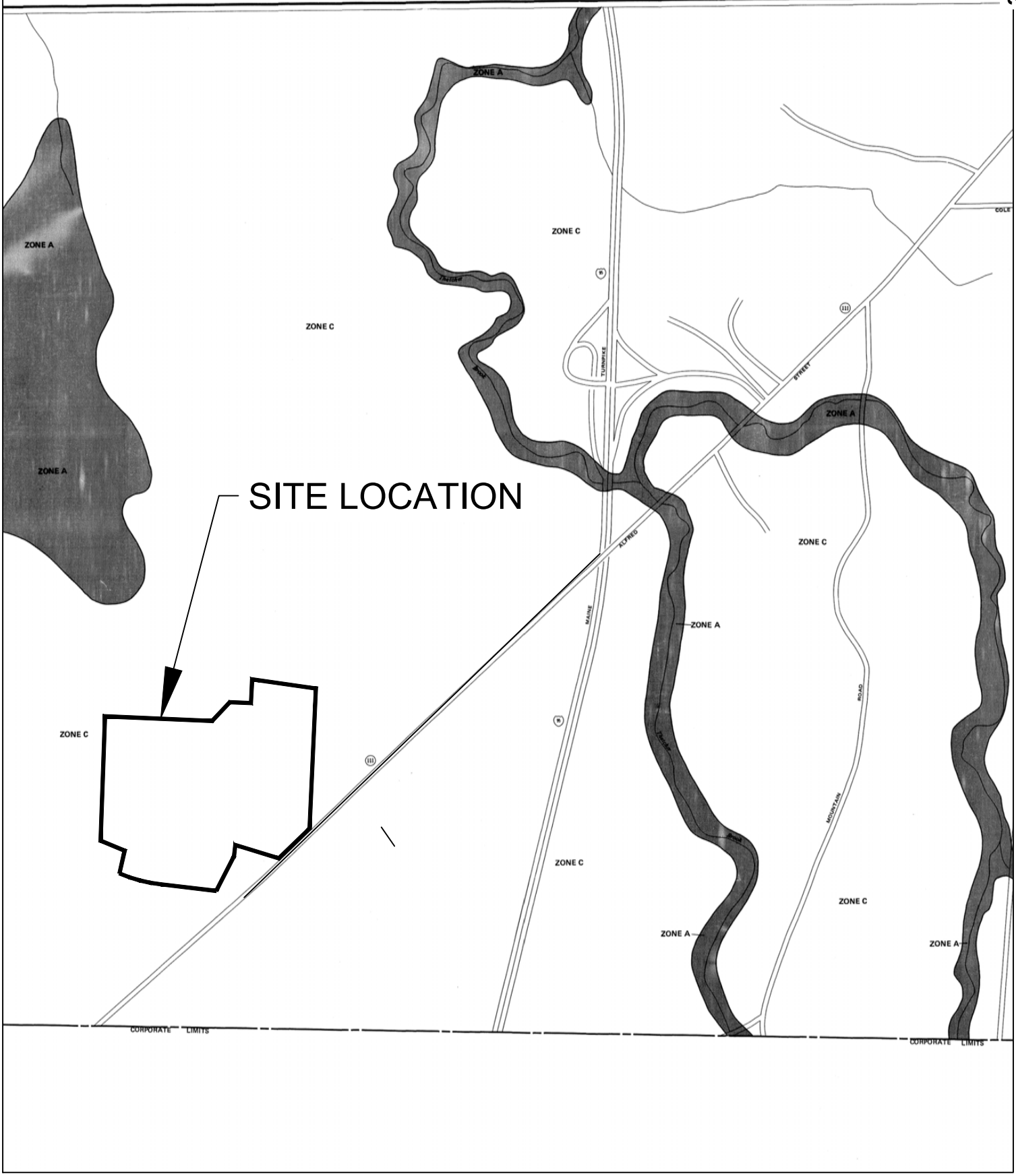
All waste from the apartments will be stored on-site in proposed dumpsters and recycling receptacles that will be located adjacent to the proposed maintenance building. It is anticipated that the waste will be collected by Troiano Waste Services and transported to one of ecomaine's incineration facilities.

Industrial Solid Wastes – Not applicable

Special & Hazardous Wastes – Not applicable

Section 19 - Flooding

A portion of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (Community Panel: 2301450008B), with the project site location identified, is attached.



FEMA MAP (COMMUNITY PANEL: 2301450008B)	TERRADYN CONSULTANTS, LLC	PINELAND 41 CAMPUS DRIVE, SUITE 301 NEW GLOUCESTER, ME 04260	PROJECT NO. 21-49	SHEET 1
PROJECT: BIDDEFORD RESIDENTIAL ANDREWS ROAD, BIDDEFORD, MAINE		PORTLAND 565 CONGRESS STREET, SUITE 201 PORTLAND, ME 04101	DATE 03/21/2021	OF 1
PREPARED FOR: KGI PROPERTIES, LLC 10 Memorial Boulevard, Suite 901 Providence RI 02903	207.926.5111 • info@terradynconsultants.com • www.terradynconsultants.com		SCALE 1"=1,000'	

Section 20 - Blasting

Based upon subsurface investigations, no blasting is anticipated for road construction, foundations, utility trenching or stormwater management construction.

Section 21 - Air Emissions

Not applicable. Since the project is solely residential, no significant adverse air emissions are anticipated.

Section 22 - Odors

Not applicable. Since the project is solely residential no significant sources of odor are anticipated.

Section 23 - Water Vapor

Not applicable. Since the project is solely residential, no large-scale water vapor emissions are anticipated.

Section 24 - Sunlight

Not applicable. Based upon the required building setbacks, proposed structure heights and proposed structure locations within the site, access to direct sunlight will not blocked for any abutting structures utilizing solar energy through active or passive systems.

Section 25 – Notices

A copy of the notice of intent to file (Form B), which was sent to the abutting property owners and published in the Portland Press Herald, is attached. Additionally, the completed Public Notice Filing and Certification (Form C) is attached.

A list of names and addresses of the abutting property owners is attached.

Public Notice: Notice of Intent to File

Please take notice that Devine Capital, LLC, 3 Milk St., Third Floor, Portland, ME 04101, (207) 536-4664 is intending to file a Site Location of Development Act permit application with the City of Biddeford in accordance with their Capacity status and pursuant to the provisions of 38 M.R.S.A. §§ 481 thru 490 on or about August 9, 2022. In addition, a public informational meeting will be held on August 8, 2022 at 6:00 p.m. and will be located at Biddeford City Hall, 205 Main Street, Biddeford, Maine.

This application is for construction of nine 24-unit apartment buildings, a clubhouse, mail kiosk, maintenance building, eight detached garages and surface parking. The project is to be located on Andrews Road in Biddeford, ME.

A request for a public hearing or a request that the Board of Environmental Protection assume jurisdiction over this application must be received by the Department of Environmental Protection in writing, no later than 20 days after the application is found by the City of Biddeford to be complete and is accepted for processing. A public hearing may or may not be held at the discretion of the Commissioner or Board of Environmental Protection. Public comment on the application will be accepted throughout the processing of the application.

Written public comments may be sent to Biddeford City Hall, 205 Main Street, Biddeford, Maine 04005, where the application is filed for public inspection.

FORM C

PUBLIC NOTICE FILING AND CERTIFICATION

The DEP Rules, Chapter 2, require an applicant to provide public notice for all Site Location projects with the exception of minor revisions and condition compliance applications. In the notice, the applicant must describe the proposed activity and where it is located. **"Abutter"** for the purposes of the notice provision means any person who owns property that is BOTH (1) adjoining and (2) within one mile of the delineated project boundary, including owners of property directly across a public or private right of way.

1. **Newspaper:** You must publish the Notice of Intent to File in a newspaper circulated in the area where the activity is located. The notice must appear in the newspaper within 30 days prior to the filing of the application with the Department. You may use the attached Notice of Intent to File form, or one containing identical information, for newspaper publication and certified mailing.

2. **Abutting Property Owners:** You must send a copy of the Notice of Intent to File by certified mail to the owners of the property abutting the activity. Their names and addresses can be obtained from the town tax maps or local officials. They must receive notice within 30 days prior to the filing of the application with the Department.

3. **Municipal Office:** You must send a copy of the Notice of Intent to File and a **duplicate of the entire application** to the Municipal Office.

ATTACH a list of the names and addresses of the owners of abutting property.

CERTIFICATION

By signing below, the applicant or authorized agent certifies that:

1. A Notice of Intent to File was published in a newspaper circulated in the area where the project site is located within 30 days prior to filing the application;
2. A certified mailing of the Notice of Intent to File was sent to all abutters within 30 days of the filing of the application;
3. A certified mailing of the Notice of Intent to File, and a duplicate copy of the application was sent to the town office of the municipality in which the project is located; and
4. Provided notice of, if required, and held a public informational meeting in accordance with Chapter 2, Rules Concerning the Processing of Applications, Section 14, prior to filing the application. Notice of the meeting was sent by certified mail to abutters and to the town office of the municipality in which the project is located at least ten days prior to the meeting. Notice of the meeting was also published once in a newspaper circulated in the area where the project site is located at least seven days prior to the meeting.

The Public Informational Meeting was held on AUGUST 8, 2022.
Date

Approximately Ø members of the public attended the Public Informational Meeting.

Signature of Applicant or Authorized Agent

8/9/2022
Date

Abutter's List

Map/Lot	Name	Address
2/5-2	Gary & Jeanine Thebarge	9 Andrews Rd. Biddeford, ME 04005
2/5-5	Gary & Chad Thebarge	9 Andrews Rd. Biddeford, ME 04005
2/6-2	David R. & Joyce Pelletier	23 School St., Unit 6 Old Orchard Beach, ME 04064
2/6-3	Old Dogs of Biddeford, LLC	47 Waites Landing Rd. Falmouth, ME 04105
2/10 2/10-1	Michael & Linda Beaulieu	594 Alfred St. Biddeford, ME 04005
2/11	Robert R. Letellier	5 Letellier Ln. Biddeford, ME 04005
2/15-1	Central Maine Power Co. C/o Avangrid Management Co.	One City Center, 5th Floor Portland, ME 04101
2/23	Michael J. Thibault	477 Mouse Ln. Alfred, ME 04002
2/23-1	Winchendon, LLC	355 Main St., Suite 25 Woburn, MA 01801
2/23-3	Gartland Assets, LLC	4 Dusty Acres Biddeford, ME 04005
2/26	DSM MB II, LLC C/O Demoulas Super Markets, Inc.	875 East St. Tewksbury, MA 01876
2/37	HD Development of Maryland, Inc. C/O Home Depot USA Prop Tax Dept 2405	P.O. Box 105842 Atlanta, GA 30348

Attachment 5

Stormwater Management Report

Pineland
Cumberland Hall
41 Campus Drive, Suite 301
New Gloucester, ME 04260

Portland
565 Congress Street, Suite 201
Portland, ME 04101

BIDDEFORD RESIDENTIAL

ANDREWS RD, BIDDEFORD, MAINE

STORMWATER MANAGEMENT REPORT

PREPARED FOR:

DEVINE CAPITAL, LLC
30 MILK ST., THIRD FLOOR
PORTLAND, ME 04101

PREPARED BY:

TERRADYN CONSULTANTS LLC
41 CAMPUS DRIVE, SUITE 301
NEW GLOUCESTER, MAINE 04260

AUGUST 2022

Introduction

The following Stormwater Management Report has been prepared for Devine Capital, LLC to address the potential impacts associated with this project due to the proposed modification in stormwater runoff characteristics. The stormwater management controls that are outlined in this plan were designed to suit the proposed development and comply with applicable regulatory requirements.

Existing Conditions

The project site consists of approximately 44.53 acres of undeveloped land located in Biddeford near the intersection of Andrews Road and Alfred Street (Route 111). The parcel is bounded by residential uses, commercial uses, a utility corridor and other undeveloped land. Portions of the site were utilized for gravel extraction.

Slopes on the site generally range between 0 and 15% with portions of the site draining to internal depressions created as part of the gravel extraction. The remainder of the site generally drains from west (Andrews Rd.) to east towards an unnamed stream which forms the northeastern property boundary.

The unnamed stream is tributary of Thacher Brook. Thacher Brook is listed in Chapter 502 as an Urban Impaired Stream. The proposed development area is not located in an identified flood zone per the FEMA Flood Insurance Rate Map for the City of Biddeford, Community Panel 2301450008B.

Soils

Soil characteristics were obtained from the Class B High Intensity Soil Survey completed by Mark Hampton Associates, Inc. The Hydrologic Soil Groups (HSG), as classified by USDA – Natural Resources Conservation Service, are as follows:

Soil Name	Slope (%)	HSG
Adams (A)	0-3	A
Adams (B)	3-8	A
Brayton (A)	0-3	D
Hermon (C)	8-15	A
Skerry (B)	3-8	C/D

Proposed Site Improvements

The applicant intends to construct a multi-family residential development consisting of nine 24-unit apartment buildings, a clubhouse, mail kiosk, maintenance building, eight detached garages, surface parking, dog park, community garden and interconnected sidewalks.

When completed the proposed development will consist of approximately 18.13 acres of disturbance area including approximately 8.06 acres of new impervious area.

Pre-Development Conditions

The pre-development watershed plan consists of seven (7) subcatchments, labeled 1A, 1B, 2, 3, 4A, 4B and 4C. Runoff from the seven subcatchments is routed via overland flow to four (4) Study Points identified for comparing peak runoff rates from the site.

Subcatchment 1A consists of approximately 11.8 acres of mostly forested land which will not drain to the proposed BMP in the post-development condition. Subcatchment 1B consists of approximately 10.2 acres of mostly forested land which will drain to the proposed BMP in the post-development condition. Subcatchments 1A and 1B drain to Study Point 1. Study Point 1 is in the southeast portion of the property and eventually discharges to an unnamed stream.

Subcatchment 2 consists of approximately 7.6 acres of the property which drains to Study Point 2, an internally drained depression created as part of the gravel extraction process.

Subcatchment 3 consists of approximately 6.0 acres of the property which drains to Study Point 3, an internally drained depression, which consists of wetlands and upland areas.

Subcatchment 4A consists of approximately 7.8 acres of mostly forested wetland which will not include disturbance as part of this project. Subcatchment 4B consists of approximately 0.2 acre of forested wetland which will not include disturbance as part of this project. Subcatchment 4C consists of approximately 3.7 acres of mostly forested land which will include disturbance as part of this project. Subcatchments 4A, 4B and 4C drain to Study Point 4. Study Point 4 is located on the northwestern property boundary.

Post-Development Conditions

The overall-post-development watershed area is consistent with the pre-development watershed area. However, the pre-development subcatchments have been divided into smaller subcatchment areas to reflect the changes in stormwater runoff due to the proposed development.

Study Point 1: Post-development subcatchment 11 represents the mostly undeveloped portion of land matching pre-development subcatchment 1A. Subcatchment 12 depicts the land area contributing overland stormwater runoff to proposed gravel wetland 12P. Subcatchment 13 includes the portion of development contributing stormwater runoff to proposed gravel wetland 12P via storm drainage pipe. Subcatchment 14 includes the portion of development contributing stormwater runoff to proposed gravel wetland 14P.

Study Point 2: Post-development subcatchment 21 represents the remainder of land within pre-development subcatchment 2.

Study Point 3: Post-development subcatchments 31 and 32 represent the remainder of land within pre-development subcatchment 3.

Study Point 4: Subcatchments 4A and 4B are unchanged from the pre-development condition. Post-development subcatchment 41 represents the developed condition of pre-development subcatchment 4C.

Regulatory Requirements

Basic Standard - Chapter 500, Section 4(B)

Since the project will disturb more than one (1) acre of land area, MDEP Basic Standards apply. The Basic Standard requires that the MDEP erosion & sedimentation control, inspection & maintenance, and housekeeping standards are met. Additionally, the site grading or other construction activity shall not

impede or otherwise alter drainageways so as to have an unreasonable adverse impact on a wetland or waterbody, or an adjacent downslope parcel.

A site-specific Erosion & Sedimentation Control Plan has been developed for the project. Means and methods to control erosion and sedimentation during and after construction are detailed in the erosion control plan narrative and construction details, which are included directly on the project drawings for ease of reference during construction.

General Standard - Chapter 500, Section 4(C)

Since the project will create more than one (1) acre of impervious surface, MDEP General Standards apply. The General Standard requires that a project's stormwater management system include treatment measures that will mitigate for the increased frequency and duration of channel erosive flows due to runoff from smaller storms, provide for effective treatment of pollutants in stormwater and mitigate potential temperature impacts. Treatment of no less than 95% of the impervious area and no less than 80% of the developed area is required to meet the standard.

Two proposed gravel wetlands and a forested buffer will be utilized to meet the treatment requirements of the general standard. The sizing and treatment calculations for the gravel wetlands are located in Appendix 4.

- The project includes 8.060 acres of impervious area. To meet the general standard, 7.657 acres (95%) is required to be treated. The site's proposed BMPs provide treatment for 7.956 acres (98.71%) of impervious area.
- The project includes 18.133 acres of developed area. To meet the general standard, 14.506 acres (80%) is required to be treated. The site's proposed BMPs provide treatment for 14.558 acres (80.28%) of developed area.

Flooding Standard - Chapter 500, Section 4(F)

Since the project will create more than three (3) acres of impervious surface, MDEP Flooding Standards apply. The Flooding Standard requires that a project's stormwater management system detain, retain or result in the infiltration of stormwater from 24-hour storms of the 2-year, 10-year and 25-year frequencies such that the peak flows of stormwater from the project site do not exceed the peak flows of stormwater prior to undertaking the project.

As such, a runoff evaluation was performed using the methodology outlined in the USDA Soil Conservation Service's "Urban Hydrology for Small Watersheds - Technical Release #55 (TR-55)". HydroCAD computer software (Version 10.0) was utilized to perform the calculations.

Runoff curve numbers were determined for each subcatchment by measuring the area of each hydrologic soil group within each type of land cover. Weighted curve numbers were then calculated using curve numbers for various cover types and hydrologic soil groups, assuming "good" conditions as defined in U.S Soil Conservation Service (SCS) publications. Times of concentration and travel times were determined from site topographic maps in accordance with SCS procedures. A maximum length of 150 feet was used for sheet flow. A minimum time of concentration of six minutes (0.1 hr.) was used for each subcatchment.

The 24-hour rainfall values utilized in the hydrologic model were obtained from Appendix H of MDEP's Chapter 500 rules. The rainfall values for York County are as follows:

Storm Frequency Precipitation (in./24 hr)	
2-year	3.3
10-year	4.9
25-year	6.2

The following table summarizes the results of stormwater calculations for the design storm events for the project areas:

Stormwater Runoff Summary Pre-Development vs. Post-Development						
Study Point #	2-Year/24Hr (cfs)		10-Year/24Hr (cfs)		25-Year/24Hr (cfs)	
	Pre	Post	Pre	Post	Pre	Post
SP-1	0.3	0.3	3.0	3.0	7.7	7.1
SP-2	0.0	0.0	0.0	0.0	0.0	0.0
SP-3	0.0	0.0	0.0	0.0	0.0	0.0
SP-4	4.0	4.0	8.1	8.1	11.7	11.7

Urban Impaired Stream Standard – Chapter 500, Section 4(E)

As the proposed development is tributary to Thacher Brook which is listed by the Maine Department of Environmental Protection as an Urban Impaired Stream within Chapter 502, the project will be required to meet or exceed the requirements of the Urban Impaired Stream Standard as listed in Section 4(E) of Chapter 500. The Urban Impaired Stream Standard requires a project to either pay a compensation fee or mitigate project impacts by reducing or eliminating an off-site or on-site pre-development impervious stormwater source.

The applicant will meet the Urban Impaired Stream standard by paying the compensation fee pursuant to Chapter 501.3.A.1.

Preliminary Urban Impaired Stream Compensation Fee			
	Compensation Fee per Acre	Acr18es	Compensation Fee Total
Non-roof Impervious	$12,500	5.25	$65,625
Roof Impervious	$5,000	2.81	$14,050
Landscaped	$2,500	10.073	$25,182.50
		TOTAL	$104,875.50

Summary

Erosion and sedimentation control, inspection and maintenance procedures and general housekeeping requirements have been outlined to prevent unreasonable impacts on the project site or the surrounding environment.

By utilizing Best Management practices (two proposed gravel wetlands and a forested buffer) stormwater quality treatment has been provided for a minimum of 95% of the site's impervious area and a minimum of 80% of the site's total developed area. Based upon the modeling data, the post-development peak rates of runoff for the project site will be less than or equal to the pre-development runoff rates during the design storm events (2-year, 10-year and 25-year).

With the incorporation of the referenced erosion control, treatment, and detention measures, the project is in conformance with the Maine Department of Environmental Protection Chapter 500 Stormwater Law. Accordingly, it is anticipated that stormwater runoff from the proposed development will not result in significant adverse effects to off-site receiving channels or downstream properties.

Prepared by:

Terradyn Consultants, LLC

Richard Meek, P.E.
Sr. Project Engineer

Appendices

1 – Stormwater Infrastructure Inspection & Maintenance Manual
2 – Erosion and Sediment Control Inspection & Maintenance Plan
3 – Watershed Maps
4 – BMP and HydroCAD Calculations

APPENDIX 1

STORMWATER INFRASTRUCTURE INSPECTION & MAINTENANCE MANUAL

BIDDEFORD RESIDENTIAL
BIDDEFORD, MAINE
STORMWATER MANAGEMENT SYSTEM
INSPECTION, MAINTENANCE & HOUSEKEEPING PLAN

Project Owner/Developer: Devine Capital, LLC
30 Milk St., 3rd Floor
Portland, Maine 04101
(401) 413-1590

Responsible Party: To be Determined

Prepared By: Richard Meek, P.E.
Terradyn Consultants, LLC
41 Campus Drive, Suite 301
New Glocester, ME 04260
(207) 926-5111

INTRODUCTION:

Regular inspection and maintenance of the entire stormwater management system is crucial to the long-term effectiveness of the system. The responsible party must provide regular inspection and maintenance of all permanent erosion control measures and stormwater management structures, establish any contract services required to implement the program, and keep records and a maintenance log book of inspection and maintenance activities. At a minimum, the inspection and maintenance activities outlined herein should be performed at the recommended intervals. All inspection and maintenance documentation shall be maintained for at least 5 years. This project is subject to the Maine Department of Environmental Protection's 5-year Recertification Process.

All measures must be maintained in effective operating condition. A person with knowledge of erosion and sedimentation practices, stormwater management, and the standards and conditions of all local, state and federal permits for the project shall conduct the inspections. The following areas, facilities, and measures must be inspected and identified deficiencies must be corrected.

INSPECTION TASKS

The following plan outlines the anticipated inspection, maintenance, and housekeeping procedures for the erosion and sedimentation controls as well as stormwater management devices for the project site. Also, this plan outlines several housekeeping requirements that shall be followed during and after construction. These procedures should be followed in order to ensure the intended function of the designed measures and to prevent unreasonable adverse impacts to the surrounding environment.

The procedures outlined in the Inspection, Maintenance, and Housekeeping Plan are provided as an overview of the anticipated practices to be used on this site. In some instances, additional measures may be required due to unexpected conditions. For additional details on any of the erosion and sedimentation control measures or stormwater management devices to be utilized on this project, refer to the most recently revised edition of the "Maine Erosion and Sedimentation Control BMP" manual and/or the "Stormwater Management for Maine: Best Management Practices" manual as published by the MDEP.

During Construction

1. **Inspection:** For the duration of construction activity, it is the Site Contractor's responsibility to comply with the inspection and maintenance procedures outlined in this section. These responsibilities include inspecting disturbed and impervious areas, erosion control measures, materials storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. These areas shall be inspected at least once a week as well as before and after a storm event, and prior to completing permanent stabilization measures. A person with knowledge of erosion and stormwater control, including the standards and conditions in any applicable permits, shall conduct the inspections.

2. **Maintenance:** All measures shall be maintained in an effective operating condition until areas are permanently stabilized. If Best Management Practices (BMPs) need to be maintained or modified, additional BMPs are necessary, or other corrective action is needed, implementation must be completed within seven (7) calendar days and prior to any storm event (rainfall).

3. **Documentation:** A log summarizing the inspections and any corrective action taken must be maintained on-site. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, material storage areas, and vehicle access points to the site. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken.

   The log must be made accessible to the appropriate regulatory agency upon request. The permittee shall retain a copy of the log for a period of at least three (3) years from the completion of permanent stabilization.

4. **Specific Inspection and Maintenance Tasks:** The following is a list of erosion control and stormwater management measures and the specific inspection and maintenance tasks to be performed during construction.

   A. Sediment Barriers:

   - Hay bale barriers, silt fences, and filter berms shall be inspected immediately after each rainfall and at least daily during prolonged rainfall.
   - If the fabric on a silt fence or filter barrier should decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, it shall be replaced.
   - Sediment deposits should be removed after each storm event. They must be removed before deposits reach approximately one-half the height of the barrier.
   - Filter berms shall be reshaped as needed.
   - Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required should be dressed to conform to the existing grade, prepared, and seeded.

   B. Riprap Materials:

   - Once a riprap installation has been completed, it should require very little maintenance. It shall, however, be inspected periodically to determine if high flows have caused scour beneath the riprap or dislodged any of the stone.
   - Annully inspect riprap and remove woody vegetation when discovered.

C. Erosion Control Blankets:

- Inspect these reinforced areas semi-annually and after significant rainfall events for slumping, sliding, seepage, and scour. Pay close attention to unreinforced areas adjacent to the erosion control blankets, which may experience accelerated erosion.
- Review all applicable inspection and maintenance procedures recommended by the specific blanket manufacturer. These tasks shall be included in addition to this plan.

D. Temporary Storm Drain Inlet Protection:

- The inlet protection structure shall be inspected before each rain event and repaired as necessary.
- Sediment shall be removed and the storm drain sediment barrier restored to its original dimensions when the sediment has accumulated to half of the design depth of the trap.
- Structures shall be removed upon permanent stabilization of the tributary area.
- Upon removal of the structure, all accumulated sediments downstream of the structure shallbe cleaned from the storm drain system.
- The permanent storm drainage system shall be flushed and cleaned once the site is stabilized and prior to demobilization from the site.

E. Stabilized Construction Entrances/Exits:

- The exit shall be maintained in a condition that will prevent tracking of sediment onto public rights-of-way.
- When the control pad becomes ineffective, the stone shall be removed along with the collected soil material. The entrance should then be reconstructed.
- Areas that have received mud-tracking or sediment deposits shall be swept or washed. Washing shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device (not into storm drains, ditches, or waterways).

F. Temporary Seed and Mulch:

- Mulched areas should be inspected after rain events to check for rill erosion.
- If less than 90% of the soil surface is covered by mulch, additional mulch shall be applied in bare areas.
- In applications where seeding and mulch have been applied in conjunction with erosion control blankets, the blankets must be inspected after rain events for dislocation or undercutting.
- Mulch shall continue to be reapplied until 95% of the soil surface has established temporary vegetative cover.

G. Stabilized Drainage Swales:

- Sediment accumulation in the swale shall be removed once the cross section of the swale is reduced by 25%.
- The swales shall be inspected after rainfall events. Any evidence of sloughing of the side slopes or channel erosion shall be repaired and corrective action should be taken to prevent reoccurrence of the problem.

- In addition to the stabilized lining of the channel (i.e. erosion control blankets), stone check dams may be needed to further reduce channel velocity.

H. Concrete Washout Area

- The site contractor shall establish a concrete washout area on-site which shall include sediment barrier to mitigate the transport of the washout material to the environment.
- The washout area shall be located a minimum of 25 feet from any storm drain structure or culvert and a minimum of 25 feet from any slope greater than 4:1.
- The washout area shall be inspected daily when concrete work is active and prior to any storm event.
- Accumulated concrete sediments shall be removed weekly, when concrete work is active, or when visibly encroaching on sediment barrier.

I. Dewatering

- The site contractor shall establish an on-site containment area which shall include sediment barrier to mitigate the transport of the sediment to the environment from dewatering activity.
- The containment area shall be located a minimum of 25 feet from any storm drain structure or culvert and a minimum of 25 feet from any slope greater than 4:1.
- The containment area shall include a dirt bag or similar sediment trap for treatment of the collected water.
- The containment area shall be inspected after each use to ensure that no downgradient erosion or sedimentation offsite is occurring.

5. **Housekeeping:** The following general performance standards apply to the proposed project.

A. Spill Prevention: Controls must be used to prevent pollutants from being discharged from materials on-site, including storage practices to minimize exposure of the materials to stormwater, and appropriate spill prevention, containment, and response planning and implementation.

B. Groundwater Protection: During construction, liquid petroleum products and other hazardous materials with the potential to contaminate groundwater may not be stored or handled in areasof the site draining to an infiltration area. An "infiltration area" is any area of the site that by design or as a result of soils, topography and other relevant factors, accumulates runoff that infiltrates into the soil. Dikes, berms, sumps, and other forms of secondary containment that prevent discharge to groundwater may be used to isolate portions of the site for the purposes ofstorage and handling of these materials.

C. Fugitive Sediment and Dust: Actions must be taken to insure that activities do not result in noticeable erosion of soils or fugitive dust emissions during or after construction. Oil may not be used for dust control.

D. Debris and Other Materials: Litter, construction debris, and chemicals exposed to stormwater must be prevented from becoming a pollutant source.

E. Trench or Foundation Dewatering: Trench dewatering is the removal of water from trenches, foundations, cofferdams, ponds, and other areas within the construction area that retain water after excavation. In most cases, the collected water is heavily silted and hinders correct and safe construction practices. The collected water must be removed from the ponded area, either through gravity or pumping, and must be spread through natural wooded buffers or removed to areas that are specifically designed to collect the maximum amount of sediment possible, like a

cofferdam sedimentation basin. Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved.

After Construction

1. **Inspection:** After construction, the agent shall hire a qualified post-construction stormwater inspector to, at least annually, inspect the BMPs in accordance with all municipal and state inspection, cleaning and maintenance requirements of the approved post-construction stormwater management plan.

2. **Maintenance, and repair:** If a BMP requires maintenance, repair or replacement to function as intended by the approved post-construction stormwater management plan, the owner or operator shall take corrective actions to address the deficiency or deficiencies as soon as possible after the deficiency is discovered and shall provide a record of the deficiency and corrective actions to the Town Engineer. The following is a list of permanent erosioncontrol and stormwater management measures and the inspection, maintenance, and housekeeping tasks to be performed after construction.

A. Vegetated Areas:

- Inspect vegetated areas, particularly slopes and embankments, early in the growing season or after heavy rains to identify active or potential erosion problems.
- Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows.

B. Winter Sanding:

- Clear accumulations of winter sand in parking lots and along roadways at least once a year, preferably in the spring.
- Accumulations on pavement may be removed by pavement sweeping.
- Accumulations of sand along road shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader or other acceptable method.

C. Catch Basins:

- Inspect and, if required, clean-out catch basins at least once a year, preferably in early spring.
- Clean out must include the removal and legal disposal of accumulated sediments and debris at the bottom of the basin, at any inlet grates, at any inflow channels to the basin, and at any pipes between basins.

D. Culverts:

- Inspect culverts in the spring, in the late fall, and after heavy rains to remove any obstructions to flow.
- Remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit.
- Inspect and repair any erosion damage at the culvert's inlet and outlet.
- Inspect embankment for erosion, settling, and structural failure.

E. Gravel Wetlands

1ST YEAR POST-CONSTRUCTION: Inspection frequency should be after every major storm in the first year following construction.

1. Inspect to be certain system drains within 24-48 hours.
2. Watering plants as necessary during the first growing season
3. Re-vegetating poorly established areas as necessary
4. Quarterly inspection of soil and repairing eroded areas, especially on slopes & make timely repairs.
5. Checking inlets, outlets, and overflow spillway for blockage, structural integrity, and evidence of erosion. Risers may need to be cleaned.

POST-CONSTRUCTION: Inspection frequency should be at least every 6 months and after every major storm. Activities are expected to include:

1. Check the basin for a dense root mat establishment of wetland vegetation.
2. Check and clean the risers if there is evidence of standing water, discolored water or accumulated sediments in the cells.
3. Check and clean the forebay for sediments, trash and debris. When sediments have accumulated to a depth of 12 inches, standing water is persistent or wetland vegetation become established, the forebay will need to be excavated and reformed.
4. Verify that the cells drain within 24-48 hours. Sediment will need to be removed when an accumulation of 4 inches is evident over the wetland surface.
5. Check and clean all outlets and overflow spillway if blocked or there is evidence of structural damage or erosion.
6. Remove decaying vegetation, litter and debris.
7. Check for foreign species. Particular care must be used to avoid the unintended introduction of invasive species such as purple loosestrife (Lythrum salicaria) and common reed (Phragmites australis). It is recommended that a qualified wetland biologist be consulted when these are found in the area of the gravel wetland.

F. Forested Buffer

- Buffers should be inspected annually for evidence of erosion or concentrated flows through or around the buffer. All eroded areas should be repaired, seeded and mulched.
- Access and Use: Buffers should not be traversed by all-terrain vehicles or other vehicles. Activities within buffers should be conducted so as not to damage vegetation, disturb any organic duff layer, or expose soil.
- Inspections: Conduct periodic "buffer walks" to inspect the condition of the buffer network.

- **Restrictions on Vegetated Stormwater Buffer Areas.**

  Unless the owner of the Restricted Buffer Area, or any successors or assigns, obtains the prior written approval of the MDEP, the Restricted Buffer Area must remain undeveloped in perpetuity. To maintain the ability of the Restricted Buffer Area to filter and absorb stormwater, and to maintain compliance with the Stormwater Management Law and the permit issued thereunder to the Declarant, the use of the Restricted Buffer Area is hereinafter limited as follows:

  a. No soil, loam, peat, sand, gravel, concrete, rock or other mineral substance, refuse, trash, vehicle bodies or parts, rubbish, debris, junk waste, pollutants or other fill material may be placed, stored or

dumped on the Restricted Buffer Area, nor may the topography of the area be altered or manipulated in any way.

b. Any removal of trees or other vegetation within the Restricted Buffer Area must be limited to the following:

(i) No purposefully cleared openings may be created and an evenly distributed stand of trees and other vegetation must be maintained. An "evenly distributed stand of trees" is defined as maintaining a minimum rating score of 24 points in any 25 foot by 50 foot square (2500 square feet) area, as determined by the following rating scheme:

Diameter of tree at 4 ½ feet above ground level	Points
2-4 inches	1
4-8 inches	2
8-12 inches	4
>12 inches	8

Where existing trees and other vegetation result in a rating score less than 24 points, no trees may be cut or sprayed with biocides except for the normal maintenance of dead, windblown or damaged trees and for pruning of tree branches below a height of 12 feet provided two thirds of the tree's canopy is maintained.

(ii) No undergrowth, ground cover vegetation, leaf litter, organic duff layer or mineral soil may be disturbed except that one winding path, that is no wider than six feet and that does not provide a downhill channel for runoff, is allowed through the area;
c. No building or other temporary or permanent structure may be constructed, placed or permitted to remain on the Restricted Buffer Area, except for a sign, utility pole (whether constructed of wood, steel or other materials) and appurtenant equipment such as guys and guy anchors, or fence;

d. No trucks, cars, dirt bikes, ATVs, bulldozers, backhoes, or other motorized vehicles or mechanical equipment may be permitted on the Restricted Buffer Area;

Attachments

Attachment 1 – Sample Stormwater Inspection and Maintenance Log

ATTACHMENT 1

Stormwater Management Facilities Inspection & Maintenance Log **Residences at Gateway Commons**		
General Information:		
Inspected by:	Date:	Weather:
Reason for Inspection: (Regular Inspection) (Major Rain Event)		

BMP	Conditions Observed	Repairs Needed?
1. Vegetated Areas		
2. Ditches, Swales, Open Channels		
3. Culverts		
4. Catch Basins		
5. Gravel Wetlands		
6. Forested Buffer		

Detailed Repair Notes:

BMP Type	Date	Description of Repairs & Sediment Disposal

Notes:
If a maintenance task requires the clean-out of any sediments or debris, indicate where the sediment and debris was disposed after removal. A copy of this log shall be retained for a period of at least five years from the completion of permanent stabilization. The log must be made accessible to Department of Environmental Protection staff and a copy provided to the Department upon request.

APPENDIX 2

EROSION AND SEDIMENT CONTROL INSPECTION & MAINTENANCE PLAN

BIDDEFORD RESIDENTIAL
BIDDEFORD, MAINE
EROSION & SEDIMENTATION CONTROL
INSPECTION & MAINTENANCE PLAN
CONSTRUCTION PHASE

Project Owner/Developer: Devine Capital, LLC
30 Milk St., 3rd Floor
Portland, Maine 04009
(401) 413-1590

Responsible Party: Site Contractor
TBD

Prepared By: Richard Meek, P.E.
Terradyn Consultants, LLC
41 campus Drive, Suite 301
New Gloucester, ME 04260
(207) 926-5111

INTRODUCTION:

Anyone who conducts or directs an activity that involves exposing, filling or displacing soil or other earthen materials must take appropriate measures to prevent erosion and the loss of sediment beyond the project site or into a sensitive resource.

Erosion and sediment control measures should be in place before the activity begins and should remain functional until the site is permanently stabilized. All measures should remain effective until all areas are permanently stabilized. Any disturbed area should be regularly inspected until the site is fully stabilized with either 90% grass cover or a permanent impervious surface such as pavement.

The following information describes the Inspection, Maintenance and Documentation necessary during construction to comply with the State of Maine Stormwater Management Law.

INSPECTION

Inspect disturbed and impervious areas, erosion control measures, materials storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. Inspect these areas at least once a week as well as before and within 24 hours after a storm event (rainfall), and prior to completing permanent stabilization measures. For the purposes of this plan, a storm event is rainfall greater than 0.5 inches in a 24 hour period.

The person conducting inspections shall have knowledge of erosion and sedimentation practices, stormwater management, and the standards and conditions of all local, state and federal permits for the project.

MAINTENANCE AND CORRECTIVE ACTION

If best management practices (BMPs) need to be repaired, the repair work should be initiated upon discovery of the problem but no later than the end of the next workday. If additional BMPs or significant repair of BMPs are necessary, implementation must be completed within 7 calendar days and prior to any storm event (rainfall). All measures must be maintained in effective operating condition until areas are permanently stabilized.

DOCUMENTATION

Keep a log (report) summarizing the inspections and any corrective actions taken. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, materials storage areas, and vehicles access points to the parcel. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and location(s) where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken.

The log attached at the end of this plan is from the *Maine Erosion and Sediment Control Best Management Practices (BMPs) Manual for Designers and Engineers (May 2016)*. The log may be used or adapted for this project.

Documentation must be retained for a minimum of three years after permanent stabilization has been achieved on the site and must be made accessible to the Maine Department of Environmental Protection upon request.

INSPECTION DURING CONSTRUCTION

1. **Inspection:** For the duration of construction activity, it is the Site Contractor's responsibility to comply with the inspection and maintenance procedures outlined in this section. These responsibilities include inspecting disturbed and impervious areas, erosion control measures, materials storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. These areas shall be inspected at least once a week as well as before and after a storm event, and prior to completing permanent stabilization measures. A person with knowledge of erosion and stormwater control, including the standards and conditions in any applicable permits, shall conduct the inspections.

2. **Maintenance:** All measures shall be maintained in an effective operating condition until areas are permanently stabilized. If Best Management Practices (BMPs) need to be maintained or modified, additional BMPs are necessary, or other corrective action is needed, implementation must be completed within seven (7) calendar days and prior to any storm event (rainfall).

3. **Documentation:** A log summarizing the inspections and any corrective action taken must be maintained on-site. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, material storage areas, and vehicle access points to the site. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular

location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken.

The log must be made accessible to the appropriate regulatory agency upon request. The permittee shall retain a copy of the log for a period of at least three (3) years from the completion of permanent stabilization.

4. **Specific Inspection and Maintenance Tasks:** The following is a list of erosion control and stormwater management measures and the specific inspection and maintenance tasks to be performed during construction.

A. Sediment Barriers:

- Hay bale barriers, silt fences, and filter berms shall be inspected immediately after each rainfall and at least daily during prolonged rainfall.
- If the fabric on a silt fence or filter barrier should decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, it shall be replaced.
- Sediment deposits should be removed after each storm event. They must be removed before deposits reach approximately one-half the height of the barrier.
- Filter berms shall be reshaped as needed.
- Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required should be dressed to conform to the existing grade, prepared, and seeded.

B. Riprap Materials:

- Once a riprap installation has been completed, it should require very little maintenance. It shall, however, be inspected periodically to determine if high flows have caused scour beneath the riprap or dislodged any of the stone.
- Annully inspect riprap and remove woody vegetation when discovered.

C. Erosion Control Blankets:

- Inspect these reinforced areas semi-annually and after significant rainfall events for slumping, sliding, seepage, and scour. Pay close attention to unreinforced areas adjacent to the erosion control blankets, which may experience accelerated erosion.
- Review all applicable inspection and maintenance procedures recommended by the specific blanket manufacturer. These tasks shall be included in addition to this plan.

D. Temporary Storm Drain Inlet Protection:

- The inlet protection structure shall be inspected before each rain event and repaired as necessary.
- Sediment shall be removed and the storm drain sediment barrier restored to its original dimensions when the sediment has accumulated to half of the design depth of the trap.

- Structures shall be removed upon permanent stabilization of the tributary area.
- Upon removal of the structure, all accumulated sediments downstream of the structure shallbe cleaned from the storm drain system.
- The permanent storm drainage system shall be flushed and cleaned once the site is stabilized and prior to demobilization from the site.

E. Stabilized Construction Entrances/Exits:

- The exit shall be maintained in a condition that will prevent tracking of sediment onto publicrights-of-way.
- When the control pad becomes ineffective, the stone shall be removed along with the collected soil material. The entrance should then be reconstructed.
- Areas that have received mud-tracking or sediment deposits shall be swept or washed. Washing shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device (not into storm drains, ditches, or waterways).

F. Temporary Seed and Mulch:

- Mulched areas should be inspected after rain events to check for rill erosion.
- If less than 90% of the soil surface is covered by mulch, additional mulch shall be applied inbare areas.
- In applications where seeding and mulch have been applied in conjunction with erosion control blankets, the blankets must be inspected after rain events for dislocation or undercutting.
- Mulch shall continue to be reapplied until 95% of the soil surface has established temporaryvegetative cover.

G. Stabilized Drainage Swales:

- Sediment accumulation in the swale shall be removed once the cross section of the swale isreduced by 25%.
- The swales shall be inspected after rainfall events. Any evidence of sloughing of the side slopes or channel erosion shall be repaired and corrective action should be taken to preventreoccurrence of the problem.
- In addition to the stabilized lining of the channel (i.e. erosion control blankets), stone checkdams may be needed to further reduce channel velocity.

H. Concrete Washout Area

- The site contractor shall establish a concrete washout area on-site which shall include sediment barrier to mitigate the transport of the washout material to the environment.
- The washout area shall be located a minimum of 25 feet from any storm drain structure or culvert and a minimum of 25 feet from any slope greater than 4:1.
- The washout area shall be inspected daily when concrete work is active and prior to any storm event.
- Accumulated concrete sediments shall be removed weekly, when concrete work is

active, or when visibly encroaching on sediment barrier.

I. Dewatering

- The site contractor shall establish an on-site containment area which shall include sediment barrier to mitigate the transport of the sediment to the environment from dewatering activity.
- The containment area shall be located a minimum of 25 feet from any storm drain structure or culvert and a minimum of 25 feet from any slope greater than 4:1.
- The containment area shall include a dirt bag or similar sediment trap for treatment of the collected water.
- The containment area shall be inspected after each use to ensure that no downgradient erosion or sedimentation offsite is occurring.

REFERENCES

Design Drawings:
C-2.0 thru C-2.7 Grading and Drainage Plans
C-5.1 Site Details (Erosion Control Notes and Details)

Maine Erosion and Sediment Control Best Management Practices (BMPs) Manual for Designers and Engineers (May 2016), Maine Department of Environmental Protection

Maine Erosion and Sediment Control Practices Field Guide for Contractors, Maine Department of Environmental Protection

CONSTRUCTION INSPECTION FORM FOR EROSION AND SEDIMENT CONTROL					
General Information:					
Site Name:	Date:		Inspected by:		
Owner:					
Retained 3PI:	Last Rain Date:			Amount:	
Reason for Inspection:	Weekly	Winter	Final	Rain Event	Complaint
Description of disturbed area:					
Photos:					

	YES/NO/NA	COMMENTS
1. Is an Erosion and Sediment Control Plan available?		
ESC plan on-site and followed		
Other:		
2. Are all erosion control practices installed properly, maintained and functioning?		
Disturbed areas stable		
Concentrated flow inlet/outlet protection		
All areas at final grade		
Disturbed dormant areas stabilized		
Access roads and parking		
Hillsides and stockpiles		
Other:		
3. Are all sedimentation control practices installed properly, maintained and functioning?		
Construction entrance		
Sedimentation basins/traps/diversions		
Perimeter controls		
Check dams		
Other:		
4. Is maintenance of ESC measures, construction activities and housekeeping kept-up?		
Sedimentation/erosion in ditches		
Tracked Sediment or dust at exits		
Hazardous material storage and spill control practices		
Waste management (concrete, hazardous material, etc.)		
Other:		
5. Violation, Corrective Actions, Recommendations		
Sediment discharged from site?		
Corrective action required?		
Site compliant with all permits?		
Notice of violation or stop work order issued?		
Comments/Corrective Actions (complete corrective actions before the next rain event and within 7 day)		

APPENDIX 3

WATERSHED MAPS

STATE OF MAINE
RICHARD L. MEEK
No. 10668
PROFESSIONAL ENGINEER

DATE:	08-17-2022
P.E.: RICHARD L. MEEK, P.E. 10668	

NO.	DATE	REVISIONS	APP'D BY
H	08-17-2022	SUBMIT STORMWATER APPLICATION TO D.E.P.	RLM

TERRADYN CONSULTANTS, LLC
41 CAMPUS DRIVE
SUITE 301
NEW GLOUCESTER, ME 04260
565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04102
OFFICE: (207) 926-5111 FAX: (207) 221-1317
www.terradynconsultants.com
Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting

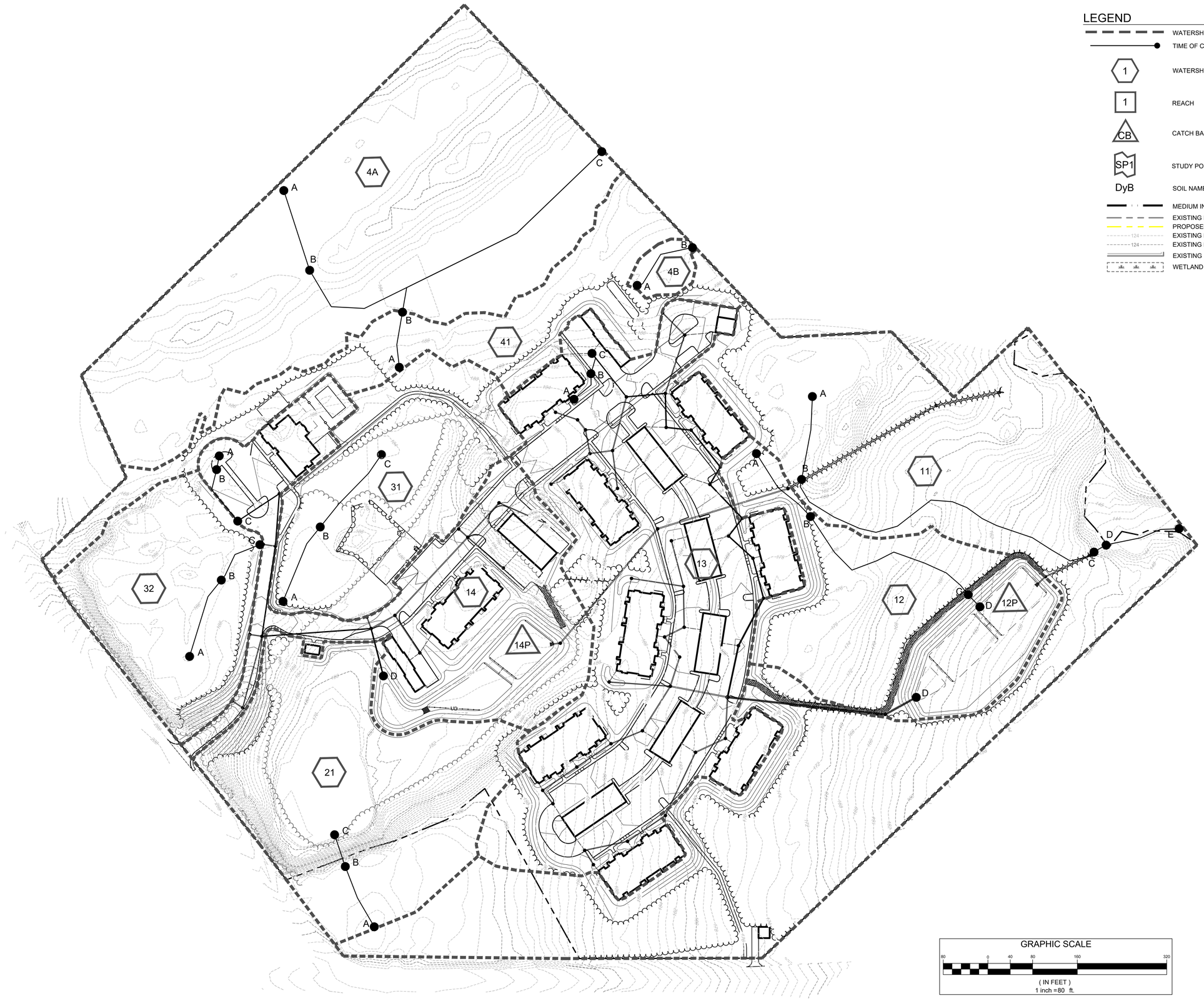
PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

PRE-DEVELOPMENT WATERSHED MAP

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	07-29-2022
SCALE:	
DESIGNED:	RLM
JOB NO:	2149
FILE:	
SHEET	SWP-1



LEGEND

- WATERSHED BOUNDARY
- TIME OF CONCENTRATION
- 1 — WATERSHED LABEL
- 1 — REACH
- CB — CATCH BASIN
- SP1 — STUDY POINT
- DyB — SOIL NAME
- MEDIUM INTENSITY SOIL BOUNDARY
- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- 124 — EXISTING MINOR CONTOUR
- 124 — EXISTING MAJOR CONTOUR
- EXISTING BUILDING
- WETLAND AREA

GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)
1 inch = 80 ft.

STATE OF MAINE
RICHARD L. MEEK
No. 10668
LICENSED
PROFESSIONAL ENGINEER

DATE: 08-17-2022
P.E.: RICHARD L. MEEK, P.E. 10668

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PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

POST-DEVELOPMENT WATERSHED MAP

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	07-29-2022
SCALE:	
DESIGNED:	RLM
JOB NO:	2149
FILE:	
SHEET	SWP-2

APPENDIX 4

BMP & HYDROCAD CALCULATIONS

GENERAL STANDARD CALCULATIONS

Project # 21-49 Biddeford Residential

SUBCATCHMENT ID	DESCRIPTION	SUBCATCHMENT AREA	Areas Requiring Treatment: IMPERVIOUS AREA (acre)	LANDSCAPED AREA (acre)	TOTAL DEVELOPED AREAS (acre)	RECEIVES TREATMENT (YES/NO)	IMPERVIOUS AREA TREATED (acre)	LANDSCAPED AREA TREATED (acre)	DEVELOPED AREA TREATED (acre)	TREATMENT BMP
11	Undeveloped area tributary to SP1	11.462	0.056	1.312	1.368	YES	0.025	0.873	0.898	Buffer
12	Undeveloped area tributary to Gravel wetland #2	3.575	0.092	1.836	1.928	YES	0.092	1.836	1.928	GW_2
13	Developed area tributary to Gravel wetland #2	8.057	5.503	2.115	7.618	YES	5.503	2.115	7.618	GW_2
14	Developed area tributary to Gravel wetland #1	4.348	2.336	1.778	4.114	YES	2.336	1.778	4.114	GW_1
21	Undeveloped area tributary to SP2	4.170	0.000	0.841	0.841	NO	0.000	0.000	0.000	
31	Undeveloped area tributary to SP3 (west of access rd.)	2.885	0.073	1.065	1.138	NO	0.000	0.000	0.000	
32	Undeveloped area tributary to SP3 (east of access rd.)	2.498	0.000	0.373	0.373	NO	0.000	0.000	0.000	
4A	Undeveloped area tributary to SP4 (large wetlands HSG D)	7.826	0.000	0.000	0.000	NO	0.000	0.000	0.000	
4B	Undeveloped area tributary to SP4 (small wetlands HSG D)	0.210	0.000	0.000	0.000	NO	0.000	0.000	0.000	
41	Developed area tributary to SP4 (HSG A)	2.381	0.000	0.753	0.753	NO	0.000	0.000	0.000	
TOTAL (ACRE)		47.412	8.060	10.073	18.133		7.956	6.602	14.558	

TOTAL IMPERVIOUS AREA (ACRE) (requiring treatment)	8.060	TOTAL DEVELOPED AREA (ACRE) (requiring treatment)	18.133
TOTAL IMPERVIOUS AREA RECEIVING TREATMENT (ACRE)	7.956	TOTAL DEVELOPED AREA RECEIVING TREATMENT (ACRE)	14.558
% OF IMPERVIOUS AREA RECEIVING TREATMENT	98.71%	% OF DEVELOPED AREA RECEIVING TREATMENT	80.28%

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New Gloucester, ME 04260
(207) 926-5111

JOB	Biddeford Residential		
SHEET NO.	1	OF	1
CALCULATED BY	RLM	DATE	8/17/2022
FILE NAME		PRNT DATE	8/17/2022

GRAVEL WETLAND

Task: Calculate water quality volume per MDEP chapter 500 regulations

References
1. Maine DEP Chapter 500, Section 4.C.(3)(b)
   "must detain a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area"
2. Maine DEP Best Management Practices Stormwater Manual, Section 7.4
   a. "two wetland cells must be capable of holding 45% of the water quality volume each."
   b. "forebay and any swale or discharge pipe to the system....holding 10% of the water quality volume"
   c. "surface should represent 5% of impervious area and 2% of landscaped area"

Tributary to Gravel Wetland: GW_1

Landscaped Area	2.336	Acre			
Impervious Area	1.778	Acre			
Minimum Surface Area					
Required	(2% X Landscaped + 5%" X Impervious)				
Total Landscaped Area	2.336	Acre		2,035	SF
Total Impervious Area	1.778	Acre		3,872	SF
Required Minimum Surface Area				5,908	SF
Provided Surface Area				12,200	Acre
Treatment Volume					
Required	(0.4" X Landscaped + 1.0" X Impervious)				
Landscaped Area	2.336	AC.	Volume	3,392	
Impervious Area	1.778	AC.	Volume	6,454	
Treatment Volume Required				9,846	CF 0.226 AF
Minimum Treatment Cell Volume (45%)				4,431	CF 0.102 AF
Provided Treatment Volume (Bay 1)				7,325	CF
Provided Treatment Volume (Bay 2)				7,325	CF
Minimum "Forebay" Cell Volume (10%)				985	CF
Provided Treatment Volume (Forebay)				1,630	CF

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SHEET NO.	1	OF	1
CALCULATED BY	RLM	DATE	8/17/2022
FILE NAME		PRNT DATE	8/17/2022

GRAVEL WETLAND

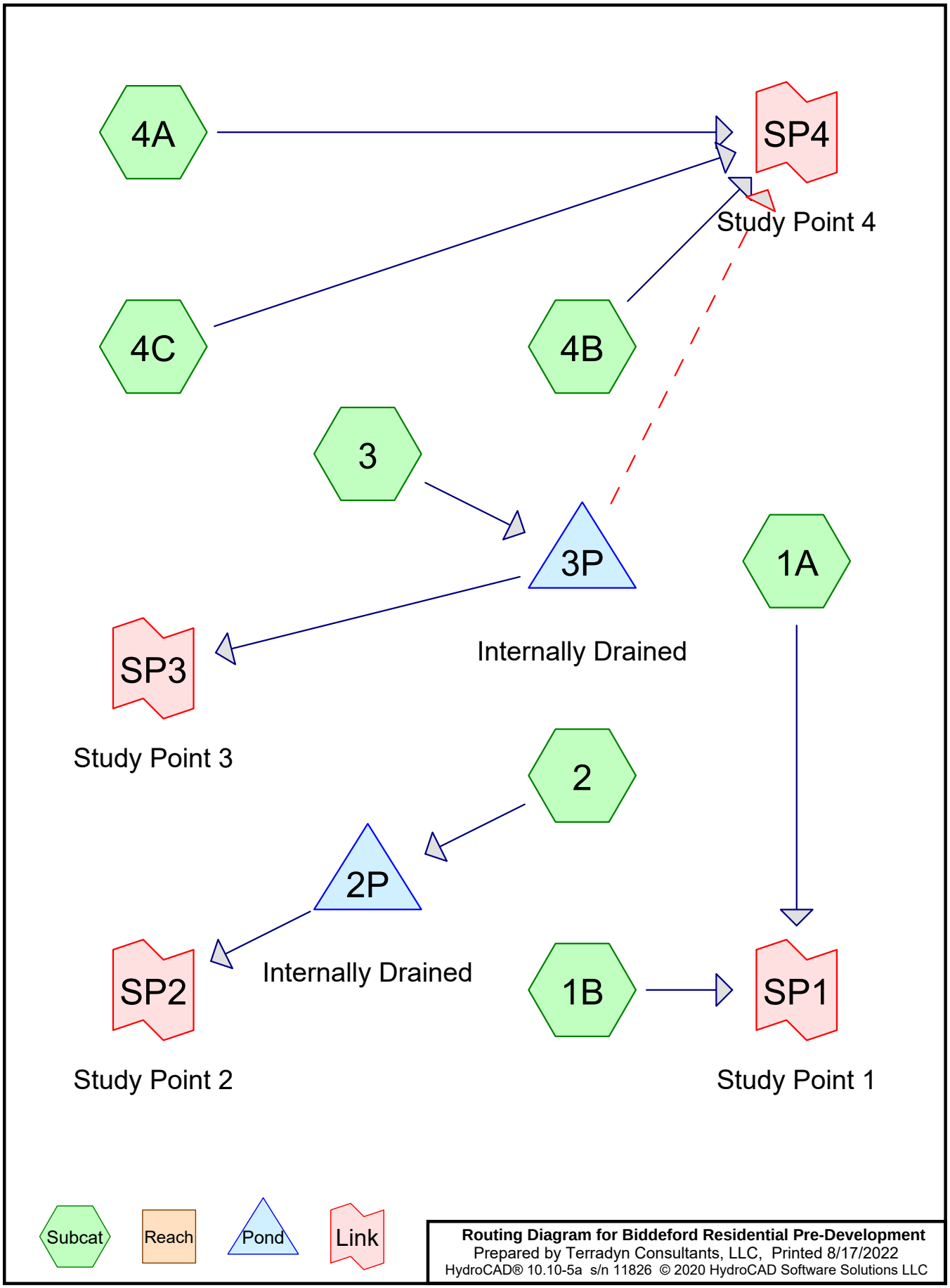
Task: Calculate water quality volume per MDEP chapter 500 regulations

References
1. Maine DEP Chapter 500, Section 4.C.(3)(b)
"must detain a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area"

2. Maine DEP Best Management Practices Stormwater Manual, Section 7.4
   a. "two wetland cells must be capable of holding 45% of the water quality volume each."
   b. "forebay and any swale or discharge pipe to the system....holding 10% of the water quality volume"
   c. "surface should represent 5% of impervious area and 2% of landscaped area"

Tributary to Gravel Wetland: GW_2

Landscaped Area	5.595	Acre				
Impervious Area	3.951	Acre				
Minimum Surface Area						
Required	(2% X Landscaped + 5%" X Impervious)					
Total Landscaped Area	5.595	Acre		4,874	SF	
Total Impervious Area	3.951	Acre		8,605	SF	
Required Minimum Surface Area				13,480	SF	
Provided Surface Area				15,030	Acre	
Treatment Volume						
Required	(0.4" X Landscaped + 1.0" X Impervious)					
Landscaped Area	5.595	AC.	Volume	8,124		
Impervious Area	3.951	AC.	Volume	14,342		
Treatment Volume Required				22,466	CF	0.516 AF
Minimum Treatment Cell Volume (45%)				10,110	CF	0.232 AF
Provided Treatment Volume (Bay 1)				12,150	CF	
Provided Treatment Volume (Bay 2)				12,150	CF	
Minimum "Forebay" Cell Volume (10%)				2,247	CF	
Provided Treatment Volume (Forebay)				2,700	CF	


4A
SP4
Study Point 4
4C
4B
3
3P
1A
SP3
Internally Drained
Study Point 3
2
2P
SP2
Internally Drained
1B
SP1
Study Point 2
Study Point 1
Subcat
Reach
Pond
Link
Routing Diagram for Biddeford Residential Pre-Development
Prepared by Terradyn Consultants, LLC, Printed 8/17/2022
HydroCAD® 10.10-5a s/n 11826 © 2020 HydroCAD Software Solutions LLC

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Runoff Area=11.787 ac 0.51% Impervious Runoff Depth=0.15"
Flow Length=925' Tc=40.4 min CN=50 Runoff=0.3 cfs 0.147 af

Subcatchment 1B: Runoff Area=10.221 ac 0.19% Impervious Runoff Depth=0.00"
Flow Length=1,115' Tc=36.9 min CN=37 Runoff=0.0 cfs 0.000 af

Subcatchment 2: Runoff Area=7.633 ac 16.72% Impervious Runoff Depth=0.15"
Flow Length=430' Tc=13.0 min CN=50 Runoff=0.2 cfs 0.095 af

Subcatchment 3: Runoff Area=6.052 ac 4.28% Impervious Runoff Depth=0.02"
Flow Length=470' Tc=41.5 min CN=42 Runoff=0.0 cfs 0.010 af

Subcatchment 4A: Runoff Area=7.826 ac 0.00% Impervious Runoff Depth=1.28"
Flow Length=800' Tc=75.1 min CN=77 Runoff=3.9 cfs 0.837 af

Subcatchment 4B: Runoff Area=0.210 ac 0.00% Impervious Runoff Depth=1.28"
Flow Length=130' Slope=0.0080 '/' Tc=37.6 min CN=77 Runoff=0.2 cfs 0.022 af

Subcatchment 4C: Runoff Area=3.683 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=575' Tc=36.0 min CN=30 Runoff=0.0 cfs 0.000 af

Pond 2P: Internally Drained Peak Elev=178.13' Storage=4,138 cf Inflow=0.2 cfs 0.095 af
Outflow=0.0 cfs 0.000 af

Pond 3P: Internally Drained Peak Elev=184.10' Storage=430 cf Inflow=0.0 cfs 0.010 af
Primary=0.0 cfs 0.000 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Link SP1: Study Point 1 Inflow=0.3 cfs 0.147 af
Primary=0.3 cfs 0.147 af

Link SP2: Study Point 2 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP3: Study Point 3 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP4: Study Point 4 Inflow=4.0 cfs 0.860 af
Primary=4.0 cfs 0.860 af

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Runoff Area=11.787 ac 0.51% Impervious Runoff Depth=0.65"
Flow Length=925' Tc=40.4 min CN=50 Runoff=2.9 cfs 0.640 af

Subcatchment 1B: Runoff Area=10.221 ac 0.19% Impervious Runoff Depth=0.12"
Flow Length=1,115' Tc=36.9 min CN=37 Runoff=0.2 cfs 0.103 af

Subcatchment 2: Runoff Area=7.633 ac 16.72% Impervious Runoff Depth=0.65"
Flow Length=430' Tc=13.0 min CN=50 Runoff=2.8 cfs 0.415 af

Subcatchment 3: Runoff Area=6.052 ac 4.28% Impervious Runoff Depth=0.29"
Flow Length=470' Tc=41.5 min CN=42 Runoff=0.3 cfs 0.145 af

Subcatchment 4A: Runoff Area=7.826 ac 0.00% Impervious Runoff Depth=2.54"
Flow Length=800' Tc=75.1 min CN=77 Runoff=7.9 cfs 1.656 af

Subcatchment 4B: Runoff Area=0.210 ac 0.00% Impervious Runoff Depth=2.54"
Flow Length=130' Slope=0.0080 '/' Tc=37.6 min CN=77 Runoff=0.3 cfs 0.044 af

Subcatchment 4C: Runoff Area=3.683 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=575' Tc=36.0 min CN=30 Runoff=0.0 cfs 0.001 af

Pond 2P: Internally Drained Peak Elev=178.55' Storage=18,057 cf Inflow=2.8 cfs 0.415 af
Outflow=0.0 cfs 0.000 af

Pond 3P: Internally Drained Peak Elev=184.41' Storage=6,288 cf Inflow=0.3 cfs 0.145 af
Primary=0.0 cfs 0.000 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Link SP1: Study Point 1 Inflow=3.0 cfs 0.743 af
Primary=3.0 cfs 0.743 af

Link SP2: Study Point 2 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP3: Study Point 3 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP4: Study Point 4 Inflow=8.1 cfs 1.701 af
Primary=8.1 cfs 1.701 af

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Runoff Area=11.787 ac 0.51% Impervious Runoff Depth=1.24"
Flow Length=925' Tc=40.4 min CN=50 Runoff=6.9 cfs 1.220 af

Subcatchment 1B: Runoff Area=10.221 ac 0.19% Impervious Runoff Depth=0.39"
Flow Length=1,115' Tc=36.9 min CN=37 Runoff=0.9 cfs 0.336 af

Subcatchment 2: Runoff Area=7.633 ac 16.72% Impervious Runoff Depth=1.24"
Flow Length=430' Tc=13.0 min CN=50 Runoff=7.1 cfs 0.790 af

Subcatchment 3: Runoff Area=6.052 ac 4.28% Impervious Runoff Depth=0.69"
Flow Length=470' Tc=41.5 min CN=42 Runoff=1.4 cfs 0.346 af

Subcatchment 4A: Runoff Area=7.826 ac 0.00% Impervious Runoff Depth=3.65"
Flow Length=800' Tc=75.1 min CN=77 Runoff=11.4 cfs 2.383 af

Subcatchment 4B: Runoff Area=0.210 ac 0.00% Impervious Runoff Depth=3.65"
Flow Length=130' Slope=0.0080 '/' Tc=37.6 min CN=77 Runoff=0.5 cfs 0.064 af

Subcatchment 4C: Runoff Area=3.683 ac 0.00% Impervious Runoff Depth=0.09"
Flow Length=575' Tc=36.0 min CN=30 Runoff=0.0 cfs 0.029 af

Pond 2P: Internally Drained Peak Elev=179.00' Storage=34,420 cf Inflow=7.1 cfs 0.790 af
Outflow=0.0 cfs 0.000 af

Pond 3P: Internally Drained Peak Elev=184.64' Storage=15,055 cf Inflow=1.4 cfs 0.346 af
Primary=0.0 cfs 0.000 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Link SP1: Study Point 1 Inflow=7.7 cfs 1.556 af
Primary=7.7 cfs 1.556 af

Link SP2: Study Point 2 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP3: Study Point 3 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP4: Study Point 4 Inflow=11.7 cfs 2.476 af
Primary=11.7 cfs 2.476 af

Summary for Subcatchment 1A:

Runoff = 6.9 cfs @ 12.66 hrs, Volume= 1.220 af, Depth= 1.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	6.056	30	Woods, Good, HSG A
	4.392	70	Woods, Good, HSG C
	1.156	77	Woods, Good, HSG D
	0.123	39	>75% Grass cover, Good, HSG A
*	0.060	98	Existing impervious
	11.787	50	Weighted Average
	11.727		99.49% Pervious Area
	0.060		0.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.2	150	0.0220	0.09		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
9.2	615	0.0500	1.12		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
0.2	25	0.2400	2.45		**Shallow Concentrated Flow, C to D** Woodland Kv= 5.0 fps
2.8	135	0.0260	0.81		**Shallow Concentrated Flow, D to E** Woodland Kv= 5.0 fps
40.4	925	Total			

Summary for Subcatchment 1B:

Runoff = 0.9 cfs @ 12.86 hrs, Volume= 0.336 af, Depth= 0.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	8.339	30	Woods, Good, HSG A
	1.683	70	Woods, Good, HSG C
	0.180	30	Meadow, non-grazed, HSG A
*	0.019	98	Existing impervious
	10.221	37	Weighted Average
	10.202		99.81% Pervious Area
	0.019		0.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.0	150	0.0460	0.12		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
4.2	260	0.0420	1.02		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
5.8	300	0.0300	0.87		**Shallow Concentrated Flow, C to D** Woodland Kv= 5.0 fps
5.9	405	0.0520	1.14		**Shallow Concentrated Flow, D to E** Woodland Kv= 5.0 fps
36.9	1,115	Total			

Summary for Subcatchment 2:

Runoff = 7.1 cfs @ 12.22 hrs, Volume= 0.790 af, Depth= 1.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	2.057	30	Woods, Good, HSG A
	1.344	77	Woods, Good, HSG D
	2.365	30	Meadow, non-grazed, HSG A
	0.591	39	>75% Grass cover, Good, HSG A
*	0.553	98	Existing impervious
*	0.723	98	Water
	7.633	50	Weighted Average
	6.357		83.28% Pervious Area
	1.276		16.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	150	0.0400	0.28		**Sheet Flow, A to B** Range n= 0.130 P2= 3.30"
4.0	280	0.0280	1.17		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
13.0	430	Total			

Summary for Subcatchment 3:

Runoff = 1.4 cfs @ 12.78 hrs, Volume= 0.346 af, Depth= 0.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	4.349	30	Woods, Good, HSG A
	0.773	77	Woods, Good, HSG D
	0.221	30	Meadow, non-grazed, HSG A
	0.450	78	Meadow, non-grazed, HSG D
*	0.259	98	Existing impervious
	6.052	42	Weighted Average
	5.793		95.72% Pervious Area
	0.259		4.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.2	150	0.0200	0.09		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
8.6	200	0.0060	0.39		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
3.7	120	0.0060	0.54		**Shallow Concentrated Flow, C to D** Short Grass Pasture Kv= 7.0 fps
41.5	470	Total			

Summary for Subcatchment 4A:

Runoff = 11.4 cfs @ 13.00 hrs, Volume= 2.383 af, Depth= 3.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
7.826	77	Woods, Good, HSG D
7.826		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
44.5	150	0.0070	0.06		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
30.6	650	0.0050	0.35		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
75.1	800	Total			

Summary for Subcatchment 4B:

Runoff = 0.5 cfs @ 12.52 hrs, Volume= 0.064 af, Depth= 3.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
0.210	77	Woods, Good, HSG D
0.210		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.6	130	0.0080	0.06		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"

Summary for Subcatchment 4C:

Runoff = 0.0 cfs @ 15.70 hrs, Volume= 0.029 af, Depth= 0.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
3.683	30	Woods, Good, HSG A
3.683		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0600	0.12		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
22.4	475	0.0050	0.35		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
36.0	575	Total			

Summary for Pond 2P: Internally Drained

Inflow Area = 7.633 ac, 16.72% Impervious, Inflow Depth = 1.24" for 25-YR event
Inflow = 7.1 cfs @ 12.22 hrs, Volume= 0.790 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 179.00' @ 24.80 hrs Surf.Area= 37,257 sf Storage= 34,420 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	178.00'	1,036,250 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
178.00	31,500	0	0
180.00	43,000	74,500	74,500
182.00	72,000	115,000	189,500
184.00	116,500	188,500	378,000
185.50	174,000	217,875	595,875
186.00	162,500	84,125	680,000
187.00	178,000	170,250	850,250
188.00	194,000	186,000	1,036,250

Device	Routing	Invert	Outlet Devices
#1	Primary	185.50'	**100.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=178.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond 3P: Internally Drained

Inflow Area = 6.052 ac, 4.28% Impervious, Inflow Depth = 0.69" for 25-YR event
Inflow = 1.4 cfs @ 12.78 hrs, Volume= 0.346 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 184.64' @ 26.45 hrs Surf.Area= 45,900 sf Storage= 15,055 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	184.00'	476,033 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
184.00	1,110	0	0
185.50	106,000	80,333	80,333
186.00	118,600	56,150	136,483
187.00	170,000	144,300	280,783
188.00	220,500	195,250	476,033

Device	Routing	Invert	Outlet Devices
#1	Primary	185.50'	**100.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Secondary	187.00'	**50.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=184.00' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=184.00' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link SP1: Study Point 1

Inflow Area = 22.008 ac, 0.36% Impervious, Inflow Depth = 0.85" for 25-YR event
Inflow = 7.7 cfs @ 12.69 hrs, Volume= 1.556 af
Primary = 7.7 cfs @ 12.69 hrs, Volume= 1.556 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Summary for Link SP2: Study Point 2

Inflow Area = 7.633 ac, 16.72% Impervious, Inflow Depth = 0.00" for 25-YR event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Summary for Link SP3: Study Point 3

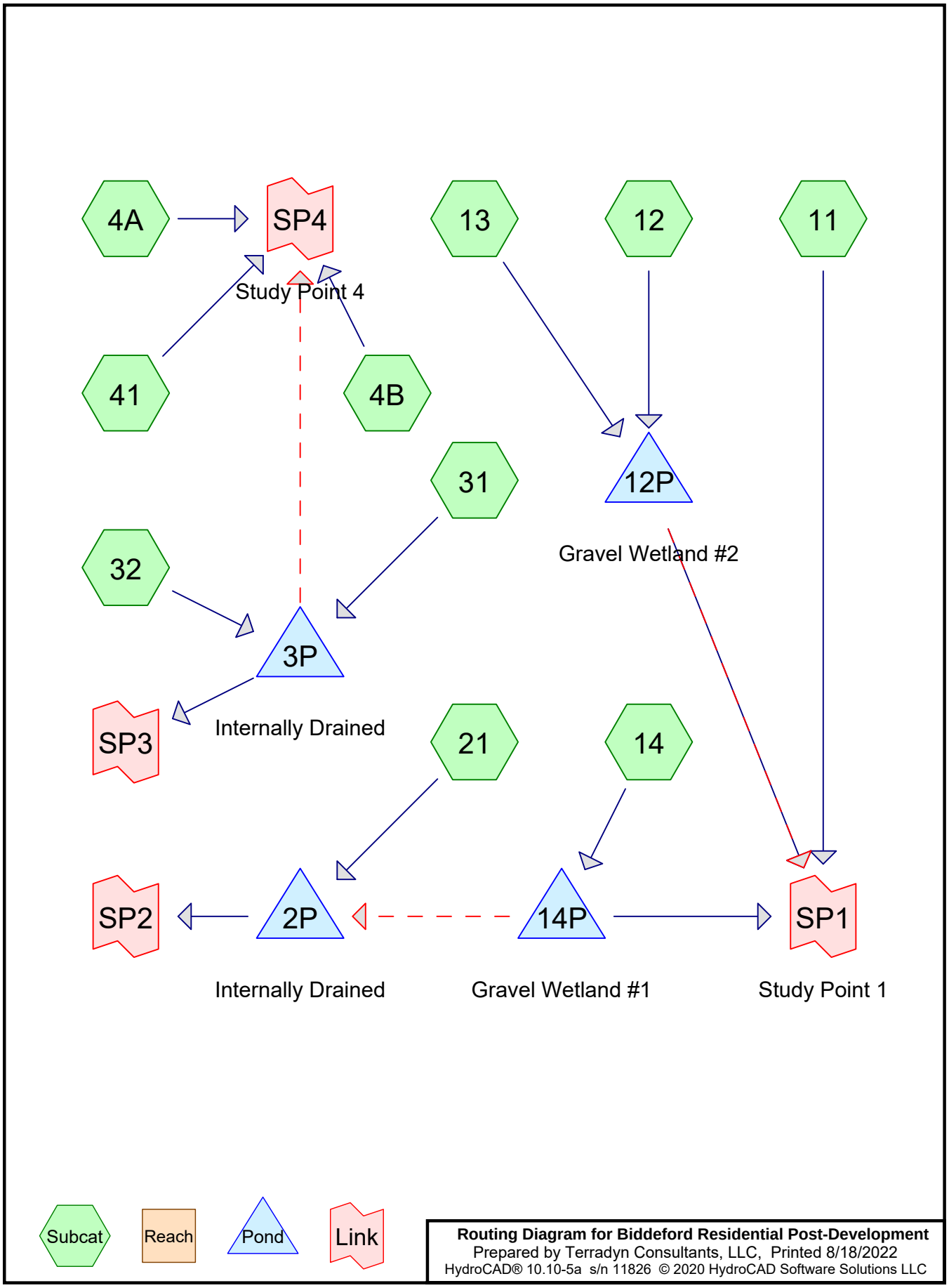
Inflow Area = 6.052 ac, 4.28% Impervious, Inflow Depth = 0.00" for 25-YR event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Summary for Link SP4: Study Point 4

Inflow Area = 11.719 ac, 0.00% Impervious, Inflow Depth = 2.54" for 25-YR event
Inflow = 11.7 cfs @ 12.98 hrs, Volume= 2.476 af
Primary = 11.7 cfs @ 12.98 hrs, Volume= 2.476 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs


4A
SP4
13
12
11
Study Point 4
41
4B
31
12P
32
Gravel Wetland #2
3P
SP3
Internally Drained
21
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SP2
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Gravel Wetland #1
Study Point 1
Subcat
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Link
Routing Diagram for Biddeford Residential Post-Development
Prepared by Terradyn Consultants, LLC, Printed 8/18/2022
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Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 4A: Runoff Area=7.826 ac 0.00% Impervious Runoff Depth=1.28"
Flow Length=800' Tc=75.1 min CN=77 Runoff=3.9 cfs 0.837 af

Subcatchment 4B: Runoff Area=0.210 ac 0.00% Impervious Runoff Depth=1.28"
Flow Length=130' Slope=0.0080 '/' Tc=37.6 min CN=77 Runoff=0.2 cfs 0.022 af

Subcatchment 11: Runoff Area=11.462 ac 1.01% Impervious Runoff Depth=0.15"
Flow Length=925' Tc=40.4 min CN=50 Runoff=0.3 cfs 0.143 af

Subcatchment 12: Runoff Area=3.575 ac 2.57% Impervious Runoff Depth=0.28"
Flow Length=540' Tc=27.8 min CN=55 Runoff=0.3 cfs 0.084 af

Subcatchment 13: Runoff Area=8.057 ac 68.30% Impervious Runoff Depth=1.41"
Flow Length=1,290' Tc=12.8 min CN=79 Runoff=10.4 cfs 0.948 af

Subcatchment 14: Runoff Area=4.348 ac 53.73% Impervious Runoff Depth=0.79"
Flow Length=765' Tc=9.7 min CN=68 Runoff=3.0 cfs 0.285 af

Subcatchment 21: Runoff Area=4.170 ac 19.66% Impervious Runoff Depth=0.07"
Flow Length=210' Tc=9.2 min CN=46 Runoff=0.0 cfs 0.025 af

Subcatchment 31: Runoff Area=2.885 ac 2.53% Impervious Runoff Depth=0.25"
Flow Length=320' Tc=36.5 min CN=54 Runoff=0.2 cfs 0.061 af

Subcatchment 32: Runoff Area=2.498 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=250' Tc=28.4 min CN=39 Runoff=0.0 cfs 0.000 af

Subcatchment 41: Runoff Area=2.381 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=575' Tc=36.0 min CN=33 Runoff=0.0 cfs 0.000 af

Pond 2P: Internally Drained Peak Elev=178.03' Storage=1,075 cf Inflow=0.0 cfs 0.025 af
Outflow=0.0 cfs 0.000 af

Pond 3P: Internally Drained Peak Elev=184.26' Storage=2,641 cf Inflow=0.2 cfs 0.061 af
Primary=0.0 cfs 0.000 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond 12P: Gravel Wetland #2 Peak Elev=154.57' Storage=43,279 cf Inflow=10.5 cfs 1.032 af
Primary=0.0 cfs 0.079 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.079 af

Pond 14P: Gravel Wetland #1 Peak Elev=178.73' Storage=11,318 cf Inflow=3.0 cfs 0.285 af
Primary=0.0 cfs 0.051 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.051 af

Link SP1: Study Point 1 Inflow=0.3 cfs 0.273 af
Primary=0.3 cfs 0.273 af

Link SP2: Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP3: Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP4: Study Point 4 Inflow=4.0 cfs 0.860 af
Primary=4.0 cfs 0.860 af

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 4A: Runoff Area=7.826 ac 0.00% Impervious Runoff Depth=2.54"
Flow Length=800' Tc=75.1 min CN=77 Runoff=7.9 cfs 1.656 af

Subcatchment 4B: Runoff Area=0.210 ac 0.00% Impervious Runoff Depth=2.54"
Flow Length=130' Slope=0.0080 '/' Tc=37.6 min CN=77 Runoff=0.3 cfs 0.044 af

Subcatchment 11: Runoff Area=11.462 ac 1.01% Impervious Runoff Depth=0.65"
Flow Length=925' Tc=40.4 min CN=50 Runoff=2.9 cfs 0.623 af

Subcatchment 12: Runoff Area=3.575 ac 2.57% Impervious Runoff Depth=0.93"
Flow Length=540' Tc=27.8 min CN=55 Runoff=1.8 cfs 0.277 af

Subcatchment 13: Runoff Area=8.057 ac 68.30% Impervious Runoff Depth=2.72"
Flow Length=1,290' Tc=12.8 min CN=79 Runoff=20.4 cfs 1.823 af

Subcatchment 14: Runoff Area=4.348 ac 53.73% Impervious Runoff Depth=1.81"
Flow Length=765' Tc=9.7 min CN=68 Runoff=7.8 cfs 0.655 af

Subcatchment 21: Runoff Area=4.170 ac 19.66% Impervious Runoff Depth=0.46"
Flow Length=210' Tc=9.2 min CN=46 Runoff=0.9 cfs 0.158 af

Subcatchment 31: Runoff Area=2.885 ac 2.53% Impervious Runoff Depth=0.87"
Flow Length=320' Tc=36.5 min CN=54 Runoff=1.2 cfs 0.210 af

Subcatchment 32: Runoff Area=2.498 ac 0.00% Impervious Runoff Depth=0.18"
Flow Length=250' Tc=28.4 min CN=39 Runoff=0.1 cfs 0.038 af

Subcatchment 41: Runoff Area=2.381 ac 0.00% Impervious Runoff Depth=0.03"
Flow Length=575' Tc=36.0 min CN=33 Runoff=0.0 cfs 0.007 af

Pond 2P: Internally Drained Peak Elev=178.21' Storage=6,895 cf Inflow=0.9 cfs 0.158 af
Outflow=0.0 cfs 0.000 af

Pond 3P: Internally Drained Peak Elev=184.54' Storage=10,754 cf Inflow=1.2 cfs 0.247 af
Primary=0.0 cfs 0.000 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond 12P: Gravel Wetland #2 Peak Elev=155.48' Storage=75,414 cf Inflow=21.0 cfs 2.101 af
Primary=0.4 cfs 0.725 af Secondary=0.0 cfs 0.000 af Outflow=0.4 cfs 0.725 af

Pond 14P: Gravel Wetland #1 Peak Elev=179.52' Storage=26,837 cf Inflow=7.8 cfs 0.655 af
Primary=0.1 cfs 0.078 af Secondary=0.0 cfs 0.000 af Outflow=0.1 cfs 0.078 af

Link SP1: Study Point 1 Inflow=3.0 cfs 1.426 af
Primary=3.0 cfs 1.426 af

Link SP2: Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP3: Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP4: Study Point 4 Inflow=8.1 cfs 1.707 af
Primary=8.1 cfs 1.707 af

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 4A: Runoff Area=7.826 ac 0.00% Impervious Runoff Depth=3.65"
Flow Length=800' Tc=75.1 min CN=77 Runoff=11.4 cfs 2.383 af

Subcatchment 4B: Runoff Area=0.210 ac 0.00% Impervious Runoff Depth=3.65"
Flow Length=130' Slope=0.0080 '/' Tc=37.6 min CN=77 Runoff=0.5 cfs 0.064 af

Subcatchment 11: Runoff Area=11.462 ac 1.01% Impervious Runoff Depth=1.24"
Flow Length=925' Tc=40.4 min CN=50 Runoff=6.7 cfs 1.187 af

Subcatchment 12: Runoff Area=3.575 ac 2.57% Impervious Runoff Depth=1.63"
Flow Length=540' Tc=27.8 min CN=55 Runoff=3.6 cfs 0.487 af

Subcatchment 13: Runoff Area=8.057 ac 68.30% Impervious Runoff Depth=3.86"
Flow Length=1,290' Tc=12.8 min CN=79 Runoff=28.9 cfs 2.591 af

Subcatchment 14: Runoff Area=4.348 ac 53.73% Impervious Runoff Depth=2.78"
Flow Length=765' Tc=9.7 min CN=68 Runoff=12.2 cfs 1.006 af

Subcatchment 21: Runoff Area=4.170 ac 19.66% Impervious Runoff Depth=0.95"
Flow Length=210' Tc=9.2 min CN=46 Runoff=2.8 cfs 0.331 af

Subcatchment 31: Runoff Area=2.885 ac 2.53% Impervious Runoff Depth=1.55"
Flow Length=320' Tc=36.5 min CN=54 Runoff=2.4 cfs 0.373 af

Subcatchment 32: Runoff Area=2.498 ac 0.00% Impervious Runoff Depth=0.50"
Flow Length=250' Tc=28.4 min CN=39 Runoff=0.4 cfs 0.105 af

Subcatchment 41: Runoff Area=2.381 ac 0.00% Impervious Runoff Depth=0.20"
Flow Length=575' Tc=36.0 min CN=33 Runoff=0.1 cfs 0.040 af

Pond 2P: Internally Drained Peak Elev=178.44' Storage=14,400 cf Inflow=2.8 cfs 0.331 af
Outflow=0.0 cfs 0.000 af

Pond 3P: Internally Drained Peak Elev=184.76' Storage=20,835 cf Inflow=2.8 cfs 0.478 af
Primary=0.0 cfs 0.000 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond 12P: Gravel Wetland #2 Peak Elev=155.73' Storage=84,790 cf Inflow=30.7 cfs 3.078 af
Primary=2.7 cfs 1.668 af Secondary=0.0 cfs 0.000 af Outflow=2.7 cfs 1.668 af

Pond 14P: Gravel Wetland #1 Peak Elev=179.62' Storage=28,989 cf Inflow=12.2 cfs 1.006 af
Primary=0.8 cfs 0.425 af Secondary=0.0 cfs 0.000 af Outflow=0.8 cfs 0.425 af

Link SP1: Study Point 1 Inflow=7.1 cfs 3.280 af
Primary=7.1 cfs 3.280 af

Link SP2: Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP3: Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP4: Study Point 4 Inflow=11.7 cfs 2.488 af
Primary=11.7 cfs 2.488 af

Summary for Subcatchment 4A:

Runoff = 11.4 cfs @ 13.00 hrs, Volume= 2.383 af, Depth= 3.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
7.826	77	Woods, Good, HSG D
7.826		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
44.5	150	0.0070	0.06		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
30.6	650	0.0050	0.35		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
75.1	800	Total			

Summary for Subcatchment 4B:

Runoff = 0.5 cfs @ 12.52 hrs, Volume= 0.064 af, Depth= 3.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
0.210	77	Woods, Good, HSG D
0.210		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.6	130	0.0080	0.06		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"

Summary for Subcatchment 11:

Runoff = 6.7 cfs @ 12.66 hrs, Volume= 1.187 af, Depth= 1.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	5.661	30	Woods, Good, HSG A
	3.720	70	Woods, Good, HSG C
	1.153	77	Woods, Good, HSG D
	0.113	30	Meadow, non-grazed, HSG A
	0.260	71	Meadow, non-grazed, HSG C
	0.003	78	Meadow, non-grazed, HSG D
	0.349	39	>75% Grass cover, Good, HSG A
	0.087	74	>75% Grass cover, Good, HSG C
*	0.060	98	Existing impervious
*	0.056	98	Proposed Impervious
	11.462	50	Weighted Average
	11.346		98.99% Pervious Area
	0.116		1.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.2	150	0.0220	0.09		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
9.2	615	0.0500	1.12		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
0.2	25	0.2400	2.45		**Shallow Concentrated Flow, C to D** Woodland Kv= 5.0 fps
2.8	135	0.0260	0.81		**Shallow Concentrated Flow, D to E** Woodland Kv= 5.0 fps
40.4	925	Total			

Summary for Subcatchment 12:

Runoff = 3.6 cfs @ 12.44 hrs, Volume= 0.487 af, Depth= 1.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	0.971	30	Woods, Good, HSG A
	0.676	70	Woods, Good, HSG C
	1.233	71	Meadow, non-grazed, HSG C
	0.603	39	>75% Grass cover, Good, HSG A
*	0.092	98	Proposed Impervious
	3.575	55	Weighted Average
	3.483		97.43% Pervious Area
	0.092		2.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.2	150	0.0400	0.11		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
5.5	360	0.0470	1.08		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
0.1	30	0.3000	3.83		**Shallow Concentrated Flow, C to D** Short Grass Pasture Kv= 7.0 fps
27.8	540	Total			

Summary for Subcatchment 13:

Runoff = 28.9 cfs @ 12.18 hrs, Volume= 2.591 af, Depth= 3.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	2.115	39	>75% Grass cover, Good, HSG A
*	5.503	98	Proposed Impervious
	0.439	30	Woods, Good, HSG A
	8.057	79	Weighted Average
	2.554		31.70% Pervious Area
	5.503		68.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	60	0.0170	0.10		**Sheet Flow, A to B** Grass: Dense n= 0.240 P2= 3.30"
0.6	40	0.0200	1.16		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 3.30"
2.2	1,190	0.0200	9.11	16.09	**Pipe Channel, C to D** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
12.8	1,290	Total			

Summary for Subcatchment 14:

Runoff = 12.2 cfs @ 12.14 hrs, Volume= 1.006 af, Depth= 2.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	0.946	30	Meadow, non-grazed, HSG A
	0.832	39	>75% Grass cover, Good, HSG A
*	2.336	98	Proposed Impervious
	0.234	30	Woods, Good, HSG A
	4.348	68	Weighted Average
	2.012		46.27% Pervious Area
	2.336		53.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	25	0.0100	0.07		**Sheet Flow, A to B** Grass: Dense n= 0.240 P2= 3.30"
1.4	110	0.0150	1.27		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 3.30"
2.2	630	0.0070	4.77	5.86	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
9.7	765	Total			

Summary for Subcatchment 21:

Runoff = 2.8 cfs @ 12.17 hrs, Volume= 0.331 af, Depth= 0.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	1.328	30	Woods, Good, HSG A
	0.976	30	Meadow, non-grazed, HSG A
	1.046	39	>75% Grass cover, Good, HSG A
*	0.097	98	Existing impervious
*	0.723	98	Water
	4.170	46	Weighted Average
	3.350		80.34% Pervious Area
	0.820		19.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	150	0.0400	0.28		**Sheet Flow, A to B** Range n= 0.130 P2= 3.30"
0.2	60	0.4000	4.43		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
9.2	210	Total			

Summary for Subcatchment 31:

Runoff = 2.4 cfs @ 12.57 hrs, Volume= 0.373 af, Depth= 1.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	0.340	30	Woods, Good, HSG A
	0.637	77	Woods, Good, HSG D
	0.125	30	Meadow, non-grazed, HSG A
	0.450	78	Meadow, non-grazed, HSG D
	1.260	39	>75% Grass cover, Good, HSG A
*	0.073	98	Proposed impervious
	2.885	54	Weighted Average
	2.812		97.47% Pervious Area
	0.073		2.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.2	150	0.0200	0.09		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
7.3	170	0.0060	0.39		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
36.5	320	Total			

Summary for Subcatchment 32:

Runoff = 0.4 cfs @ 12.66 hrs, Volume= 0.105 af, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
1.728	30	Woods, Good, HSG A
0.397	77	Woods, Good, HSG D
0.373	39	>75% Grass cover, Good, HSG A
2.498	39	Weighted Average
2.498		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.8	150	0.0250	0.09		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	100	0.0420	1.02		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
28.4	250	Total			

Summary for Subcatchment 41:

Runoff = 0.1 cfs @ 14.18 hrs, Volume= 0.040 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
1.528	30	Woods, Good, HSG A
0.853	39	>75% Grass cover, Good, HSG A
2.381	33	Weighted Average
2.381		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0600	0.12		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
22.4	475	0.0050	0.35		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
36.0	575	Total			

Summary for Pond 2P: Internally Drained

Inflow Area = 4.170 ac, 19.66% Impervious, Inflow Depth = 0.95" for 25-YR event
Inflow = 2.8 cfs @ 12.17 hrs, Volume= 0.331 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 178.44' @ 24.55 hrs Surf.Area= 34,027 sf Storage= 14,400 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	178.00'	1,036,250 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
178.00	31,500	0	0
180.00	43,000	74,500	74,500
182.00	72,000	115,000	189,500
184.00	116,500	188,500	378,000
185.50	174,000	217,875	595,875
186.00	162,500	84,125	680,000
187.00	178,000	170,250	850,250
188.00	194,000	186,000	1,036,250

Device	Routing	Invert	Outlet Devices
#1	Primary	185.50'	**100.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=178.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond 3P: Internally Drained

Inflow Area = 5.383 ac, 1.36% Impervious, Inflow Depth = 1.07" for 25-YR event
Inflow = 2.8 cfs @ 12.59 hrs, Volume= 0.478 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 184.76' @ 26.10 hrs Surf.Area= 53,992 sf Storage= 20,835 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	184.00'	476,033 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
184.00	1,110	0	0
185.50	106,000	80,333	80,333
186.00	118,600	56,150	136,483
187.00	170,000	144,300	280,783
188.00	220,500	195,250	476,033

Device	Routing	Invert	Outlet Devices
#1	Primary	185.50'	**100.0' long x 20.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Secondary	187.00'	**50.0' long x 20.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=184.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=184.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond 12P: Gravel Wetland #2

Inflow Area = 11.632 ac, 48.10% Impervious, Inflow Depth = 3.18" for 25-YR event
Inflow = 30.7 cfs @ 12.18 hrs, Volume= 3.078 af
Outflow = 2.7 cfs @ 14.24 hrs, Volume= 1.668 af, Atten= 91%, Lag= 123.6 min
Primary = 2.7 cfs @ 14.24 hrs, Volume= 1.668 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 155.73' @ 14.24 hrs Surf.Area= 37,550 sf Storage= 84,790 cf

Plug-Flow detention time= 475.3 min calculated for 1.668 af (54% of inflow)
Center-of-Mass det. time= 359.2 min (1,192.4 - 833.2)

Volume	Invert	Avail.Storage	Storage Description
#1	153.00'	134,485 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
153.00	16,700	0	0
154.00	32,070	24,385	24,385
154.50	33,700	16,443	40,828
156.00	38,380	54,060	94,888
157.00	40,815	39,598	134,485

Device	Routing	Invert	Outlet Devices
#1	Primary	152.67'	**18.0" Round Culvert** L= 83.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 152.67' / 151.50' S= 0.0141 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	154.50'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	155.50'	**6.0' long x 0.70' rise Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)
#4	Device 1	150.00'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 4	150.00'	**6.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 150.00' / 150.00' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#6	Device 5	153.00'	**2.410 in/hr Exfiltration over Surface area above 153.00'** Conductivity to Groundwater Elevation = 152.67' Excluded Surface area = 16,700 sf
#7	Secondary	156.00'	**12.0' long x 9.0' 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 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69

Primary OutFlow Max=2.7 cfs @ 14.24 hrs HW=155.73' (Free Discharge)
└─**1=Culvert** (Passes 2.7 cfs of 12.9 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.4 cfs @ 4.97 fps)
  ├─**3=Sharp-Crested Vee/Trap Weir** (Weir Controls 2.2 cfs @ 1.58 fps)
  └─**4=Orifice/Grate** (Orifice Controls 0.0 cfs @ 8.43 fps)
    └─**5=Culvert** (Passes 0.0 cfs of 1.6 cfs potential flow)
      └─**6=Exfiltration** (Passes 0.0 cfs of 4.0 cfs potential flow)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=153.00' (Free Discharge)
└─**7=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond 14P: Gravel Wetland #1

Inflow Area =	4.348 ac, 53.73% Impervious, Inflow Depth = 2.78" for 25-YR event			
Inflow =	12.2 cfs @	12.14 hrs, Volume=	1.006 af	
Outflow =	0.8 cfs @	14.99 hrs, Volume=	0.425 af, Atten= 94%, Lag= 170.8 min	
Primary =	0.8 cfs @	14.99 hrs, Volume=	0.425 af	
Secondary =	0.0 cfs @	0.00 hrs, Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 179.62' @ 14.99 hrs Surf.Area= 21,962 sf Storage= 28,989 cf

Plug-Flow detention time= 406.4 min calculated for 0.425 af (42% of inflow)
Center-of-Mass det. time= 280.5 min (1,125.2 - 844.7)

Volume	Invert	Avail.Storage	Storage Description
#1	178.00'	89,610 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
178.00	13,570	0	0
179.50	21,650	26,415	26,415
180.00	22,970	11,155	37,570
181.00	26,130	24,550	62,120
182.00	28,850	27,490	89,610

Device	Routing	Invert	Outlet Devices
#1	Primary	177.67'	**18.0" Round Culvert** L= 265.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 177.67' / 175.43' S= 0.0085 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	179.50'	**6.0' long x 2.00' rise Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)
#3	Device 2	179.00'	**15.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 179.00' / 179.00' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#4	Device 1	175.00'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 4	175.00'	**6.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 175.00' / 175.00' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#6	Device 5	178.00'	**2.410 in/hr Exfiltration over Surface area above 178.00'** Conductivity to Groundwater Elevation = 177.67' Excluded Surface area = 13,570 sf
#7	Secondary	181.00'	**12.0' long x 9.0' 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 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69

Primary OutFlow Max=0.8 cfs @ 14.99 hrs HW=179.62' (Free Discharge)
└─**1=Culvert** (Passes 0.8 cfs of 9.3 cfs potential flow)
  ├─**2=Sharp-Crested Vee/Trap Weir** (Passes 0.8 cfs of 0.8 cfs potential flow)
  │ └─**3=Culvert** (Outlet Controls 0.8 cfs @ 1.87 fps)
  └─**4=Orifice/Grate** (Orifice Controls 0.0 cfs @ 6.72 fps)
    └─**5=Culvert** (Passes 0.0 cfs of 1.3 cfs potential flow)
      └─**6=Exfiltration** (Passes 0.0 cfs of 1.0 cfs potential flow)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=178.00' (Free Discharge)
└─**7=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link SP1: Study Point 1

Inflow Area = 27.442 ac, 29.32% Impervious, Inflow Depth > 1.43" for 25-YR event
Inflow = 7.1 cfs @ 12.67 hrs, Volume= 3.280 af
Primary = 7.1 cfs @ 12.67 hrs, Volume= 3.280 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Summary for Link SP2:

Inflow Area = 4.170 ac, 19.66% Impervious, Inflow Depth = 0.00" for 25-YR event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Summary for Link SP3:

Inflow Area = 5.383 ac, 1.36% Impervious, Inflow Depth = 0.00" for 25-YR event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Summary for Link SP4: Study Point 4

Inflow Area = 10.417 ac, 0.00% Impervious, Inflow Depth = 2.87" for 25-YR event
Inflow = 11.7 cfs @ 12.98 hrs, Volume= 2.488 af
Primary = 11.7 cfs @ 12.98 hrs, Volume= 2.488 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Attachment 6

Traffic Study

TRAFFIC MOVEMENT PERMIT APPLICATION

FOR PROPOSED

"Biddeford Residential"

Andrews Road, Biddeford

PREPARED FOR: KDK Biddeford, LLC
PREPARED BY: William J. Bray, PE

April 11, 2022

Provisionally Adopted 1/10/00

Department of Transportation
Traffic Engineering Division
16 State House Station
Augusta, Maine 04333
Telephone: 207-287-3775

FOR MDOT USE 1/2000
ID #

Total Fees:
Date: Received

****

PERMIT APPLICATION – TRAFFIC
TRAFFIC MOVEMENT PERMIT, 23 M.R.S.A. § 704 – A

Please type or print:

This application is for: Traffic 100-200 PCE's **X**
Traffic 200 + PC-E's _____

Name of Applicant: **KDK Biddeford, LLC.**

Address: **10 Memorial Boulevard, Suite 901, Providence, Rhode Island, 02903** Telephone: **401-273-8600**

Name of local contact or agent: **John Q. Adams, P.E., PTOE, Barton & Loguidice, LLC.**

Address: **383 U.S. Route 1, Suite 2A, Box 4, Scarborough, Maine 04074**

Telephone: **(207) 331-6694**

Name and type of development: **Biddeford Residential Development**

Location of development including road, street, or nearest route number: **Andrews Road, Biddeford, ME 04005**

City/Town/Plantation: **Biddeford**, County: **York**, Tax Map **2** Lot **# 6 & 12**

Do you want a consolidated review with DEP pursuant to 23 M.R.S.A. § 704-A (7)? Yes ____ No **X**

Was this development started prior to obtaining a traffic permit? **No**

Is the project located in an area designated as a growth area (as defined in M.R.S.A. title 30 – A, chapter 187)?
Yes, _____ No **X**

Is this project located within a compact area of an urban compact municipality? Yes _____ No **X**

Is this development or any portion of the site currently subject to state or municipal enforcement action? **No**

Existing DEP or MDOT permit number (if applicable): **N/A**

Name(s) of DOT staff person(s) contacted concerning this application: **N/A**

Name(s) of DOT staff person(s) present at the scoping meeting for 200+ applications: _____

NOTICE OF INTENT TO FILE

Please take notice that:

KDK Biddeford, LLC
10 Memorial Boulevard, Suite 901
Providence, RI 02903

Is intending to file a Traffic Movement Permit application with the Maine Department of Transportation pursuant to the provisions of 23 M.R.S.A. § 704 – A on or about

April 11, 2022

This application is for:

A proposed 216-unit residential apartment complex located in the northeast quadrant of the Alfred Road (Route 111) and Andrews Road intersection.

The proposed project generates a total of 102 trips during the weekday AM peak hour of the site and 124 trips during the weekday PM peak hour of the site.

At the following location: **Northeast quadrant of the Alfred Road (Route 111) and Andrews Road intersection, Biddeford, Maine.**

A request for a public hearing must be received by the Department, in writing, no later than 20 days after the application is found by the Department to be complete and is accepted for processing. Public comment on the application will be accepted throughout the processing of the application.

The application will be filed for public inspection at the Department of Transportation Division office, during normal working hours. A copy of the application may also be seen at the municipal offices in:

City of Biddeford Planning Office

Written public comments may be sent to the Department of Transportation, Traffic Engineering Division, 16 State House Station, Augusta, Maine 04333.

1/2000

CERTIFICATION

The traffic engineer responsible for preparing this application and/or attaching pertinent site and traffic information hereto, by signing below, certifies that the application for traffic approval is complete and accurate to the best of his/her knowledge.

Signature: _____ Re/Cert/Lic No.: 4907

Name (print): William Bray

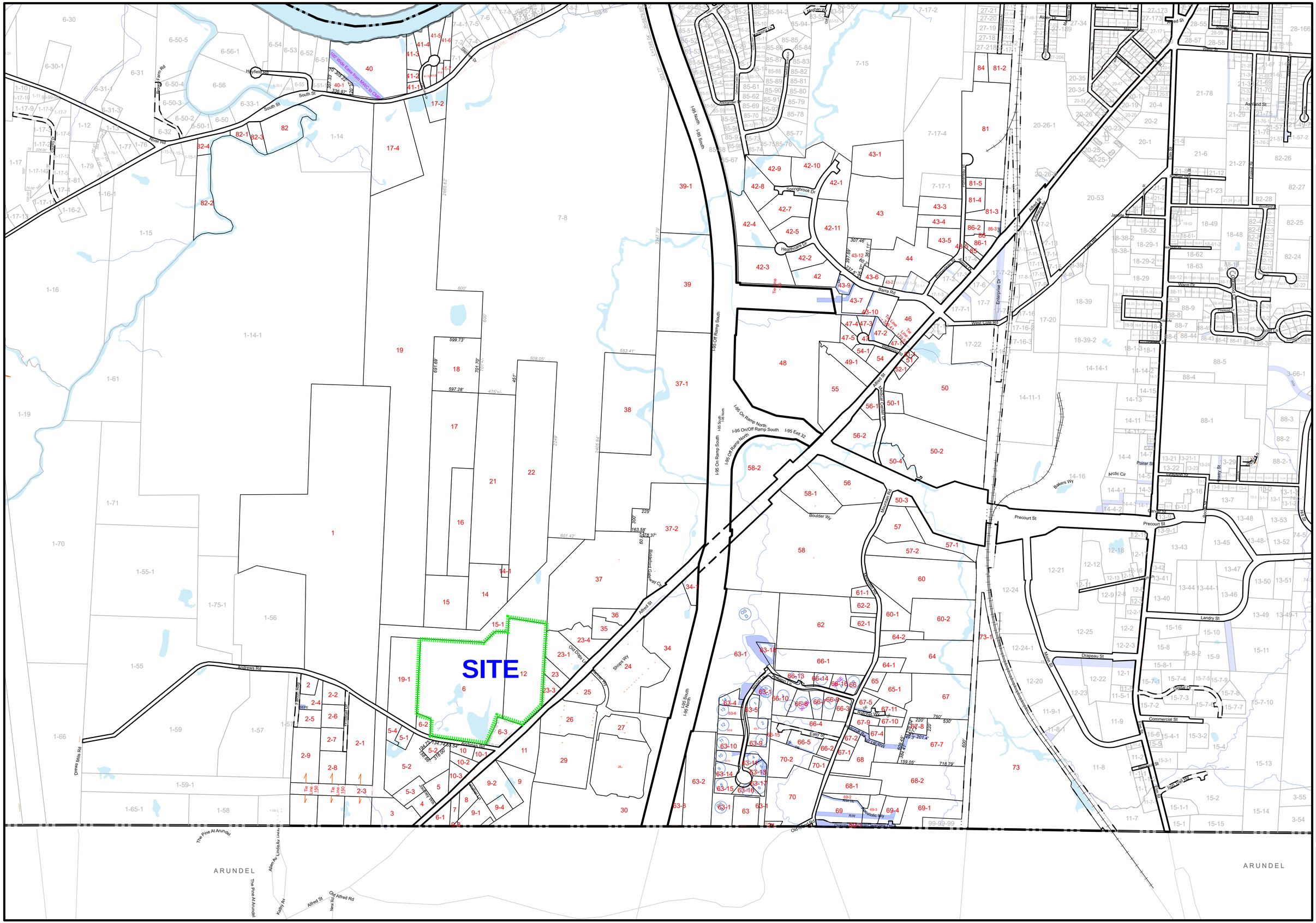
Date: 3-25-2022

If the signature below is not the applicant's signature, attach letter of agent authorization signed by applicant.

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Francis X Daugherty — 4/7/22

Signature of applicant — Date



North is based on the Maine State Coordinate System NAD 1983

North Rotation is -33°

100 0 100 200 300 Feet

UPDATED THROUGH APRIL 1, 2021

FOR ASSESSMENT PURPOSES ONLY
NOT TO BE USED FOR CONVEYANCES

The City of Biddeford, Maine

OFFICIAL TAX MAP

Office of The Tax Assessor
Nicholas D. Desjardins, CMA
Assessor

This Map is Prepared By
The City of Biddeford, Maine
Technology Department
GIS Division
205 Main Street · P.O. Box 586 · Biddeford, Maine 04005
207- 571-0660 · gis@biddefordmaine.org

2

Tax Map

ABUTTERS LIST

Map	Lot	Owner	Co-Owner	Mailing Address	City	State	Zip Code
2	15-1	CENTRAL MAINE POWER CO	AVANGRID MANAGEMENT CO – LOCAL TAX	ONE CITY CENTER, 5TH FLOOR	PORTLAND	ME	4101
2	37	HD DEVELOPMENT OF MARYLAND INC	HOME DEPOT USA PROP TAX DEPT 2405	PO BOX 105842	ATLANTA	GA	30348-5842
2	23-3	GARTLAND ASSETS, LLC		4 DUSTY ACRES	BIDDEFORD	ME	4005
2	23	MICHAEL J THIBAULT		477 MOUSE LN	ALFRED	ME	4002
2	23-1	WINCHENDON, LLC		355 MAIN ST, SUITE 25	WOBURN	MA	1801
2	26	DSM MB II LLC	DEMOULAS SUPER MARKETS, INC	875 EAST ST	TEWKSBURY	MA	1876
2	11	ROBERT R. LETELLIER		5 LETELLIER LN	BIDDEFORD	ME	4005
2	6-3	OLD DOGS OF BIDDEFORD, LLC		47 WAITES LANDING RD	FALMOUTH	ME	4105
2	10-1	MICHAEL & LINDA N. BEAULIEU		594 ALFRED ST	BIDDEFORD	ME	04005-9483
2	10	MICHAEL & LINDA N. BEAULIEU		594 ALFRED ST	BIDDEFORD	ME	04005-9483
2	5-2	GARY & JEANINE THEBARGE		9 ANDREWS RD	BIDDEFORD	ME	4005
2	5-5	GARY & CHAD THEBARGE		9 ANDREWS RD	BIDDEFORD	ME	4005
2	6-2	DAVID R. & JOYCE PELLEYIER		23 SCHOOL ST, UNIT 6	OLD ORCHARD BEACH	ME	4064
2	19-1	THE MAINE WATER COMPANY		93 INDUSTRIAL PARK RD	SACO	ME	4072

SECTION 1

A. SITE PLAN

KDK Biddeford, LLC, is proposing a residential development on Andrews Road in Biddeford. The site totals 44.53 acres and is located in the northeast quadrant of the intersection of Andrews Road and Route 111. The site has frontage on both Andrews Road and Route 111. The site will provide 216 low-rise multi-family residential units with 491 total parking spaces (365 surface, 126 garage). The site will be served by a single 24-foot wide entrance on the east side of Andrews Road, located approximately 450-feet north of Route 111. Access to the site will be provided by Route 111 via Andrews Road.

The site features nine (9) multi-unit buildings, numbered Building 1000 – Building 9000, with internal access roads, adjacent parking areas, garages, and sidewalks provided for each. The eight (8) parking garages provided on-site are identified as Garages 1 – 8. In addition there is a clubhouse provided with a pool and dog park for residents. The internal access roads are identified as Road A, Road B and Road C, and they are 24-feet wide and bi-directional throughout the site. A sidewalk is provided from the site to Andrews Road.

Traffic control at the site's intersection with Andrews Road is provided with a stop sign and stop bar on the site entrance while Andrew's Road is free-flowing without traffic control.

A copy of the site plan is enclosed, herein, at the end of this document.

SECTION 1

B. EXISTING AND PROPOSED SITE USES

Proposed

KDK Biddeford, LLC, is proposing a residential development on Andrews Road in Biddeford. The site totals 44.53 acres and is located in the northeast quadrant of the intersection of Andrews Road and Route 111. The site will provide 216 low-rise multi-family residential units with 491 total parking spaces (365 surface, 126 garage). The site will be served by a single 24-foot wide entrance on the east side of Andrews Road, located approximately 450- feet north of Route 111. Access to the site will be provided by Route 111 via Andrews Road.

The site features nine (9) multi-unit buildings, numbered Building 1000 – Building 9000, with internal access roads, adjacent parking areas, garages, and sidewalks provided for each. The eight (8) parking garages provided on-site are identified as Garages 1 – 8. In addition, there is a clubhouse provided with a pool and dog park for residents. The internal access roads are identified as Road A, Road B and Road C. A sidewalk is provided from the site to Andrews Road.

A copy of the site plan is enclosed, herein, at the end of this document.

Existing

The existing site is currently vacant and is provided with a single entrance on Andrews Road.

C. SITE AND VICINITY BOUNDARIES

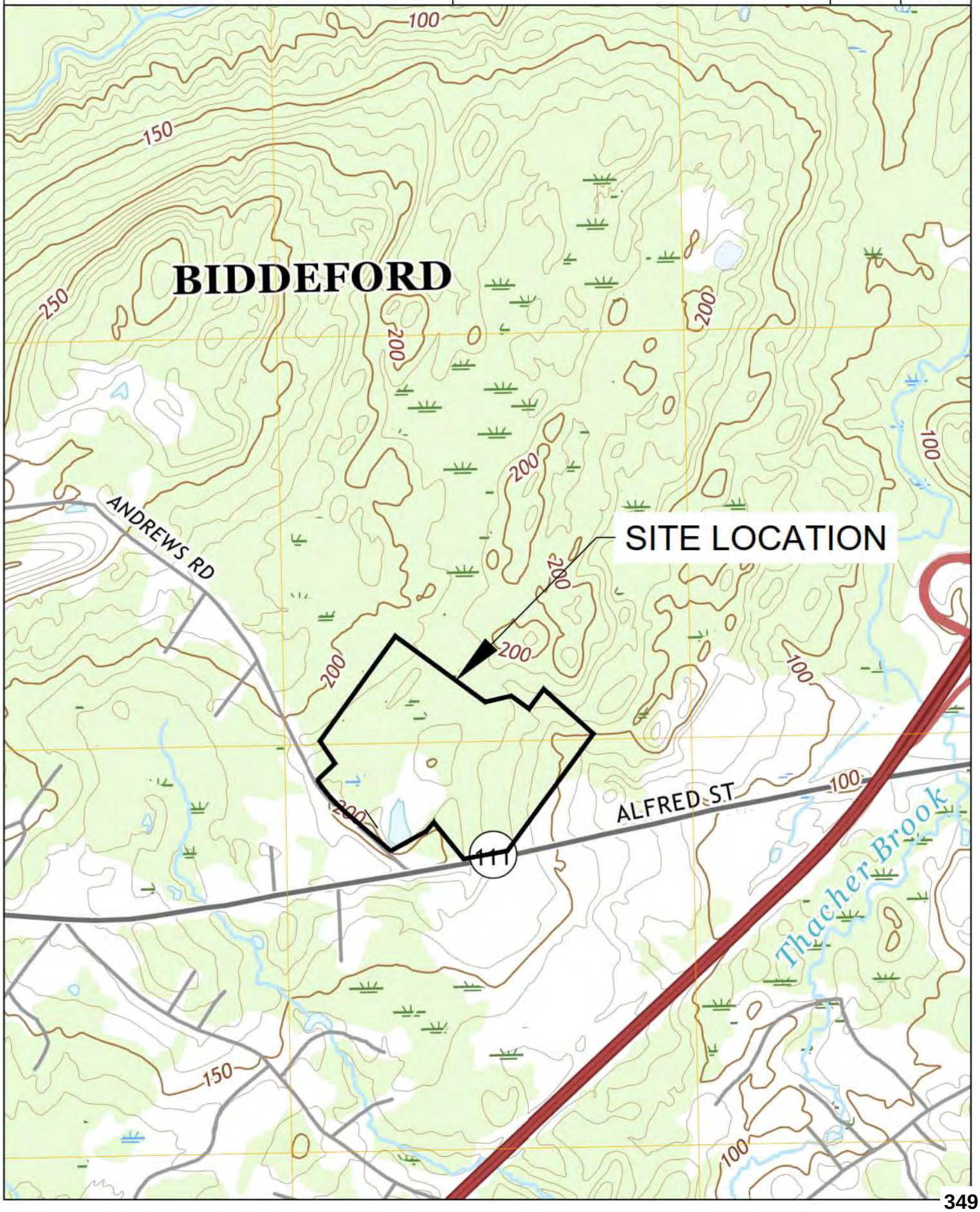
The attached map depicts the proposed Biddeford Apartments site. The site is located in the northeast quadrant of the Andrews Road/Alfred Road (Route 111) intersection.

Barton & Loguidice
383 US Route 1, Suite 2A
Scarborough, ME, 04074
1 (800) 724-1070
info@bartonandloguidice.com
Civil Engineering • Environmental Consulting • Land Surveying • Construction Management

BIDDEFORD RESIDENTIAL LOCATION MAP

ANDREWS ROAD, BIDDEFORD, ME

FIGURE	1
PROJECT 4502.002	DATE 4/4/22



D. PROPOSED USES IN THE GENERAL VICINITY OF THE PROPOSED DEVELOPMENT

Traffic generated by projects that have been approved by the planning board and/or the Maine Department of Transportation, yet are not opened, must be included in the estimate of pre-development traffic. The City of Biddeford was consulted to identify any and all development projects whose peak hour trips potentially impact the study area. Based on discussions with the City Planners office there are no other projects being reviewed or approved that will impact this intersection.

E. TRIP GENERATION

Site Trip Generation: Trip generation for the proposed Biddeford Apartment development was estimated based upon the latest edition (11th) of the Institute of Transportation Engineer's (ITE) Trip Generation Manual (TGM). The expected trip generation for the proposed development was estimated using the relevant land use code from the TGM, **LUC #220 – Multi-family Housing (Low-Rise) Not Close to Rail Transit.** Table 1.1 summarizes the calculations.

Table 1.1
ITE Trip Generation Calculations

Land Use	Multi-family Housing (Low-Rise) Not Close to Rail Transit - LUC #220					
Time Period	**Dwelling Units**	**Trip Generation Rate Trips/Dwelling Units**	**Trips Generated**	**Distribution Entering / Exiting**	**Enter**	**Exit**
AM Weekday Peak Hour (Street)	216	0.40	87	24% / 76%	21	66
PM Weekday Peak Hour (Street)	216	0.51	111	63% / 37%	70	41
AM Weekday Peak Hour (Generator)	216	0.47	102	24% / 76%	24	78
PM Weekday Peak Hour (Generator)	216	0.57	124	62% / 38%	77	47
Saturday Peak Hour*						
Sunday Peak Hour *						

*Trip generation is unavailable for the Saturday and Sunday Peak Hours

The proposed project is projected to generate 87 trips during the AM peak hour of the (street) and 111 trips in the evening peak hour of the street. Peak hour trip generation values forecast for the peak hour of the site (generator) are slightly higher at 102 trips in the AM peak hour and 124 trips in the PM peak hour.

F. SITE TRIP DISTRIBUTION

Vehicle trips generated during the noted weekday AM peak hour and PM peak hour were assigned to/from the proposed site based upon the following directional splits presented in the Institute of Transportation Engineer's Trip Generation Manual for **LUC #220 – Multi-family Housing (Low-Rise)**. The enter/exit percentages are shown below in Table 1.2.

Table 1.2 Trip Enter/Exit Distribution Percent Values

LUC 220 Multifamily Housing (Low-Rise)	
Time Period	**Enter/Exit**
AM Peak Hour Street	24% / 76%
PM Peak Hour Street	63% / 37%
AM Peak Hour - Generator	24% / 76%
PM Peak Hour - Generator	62% / 38%

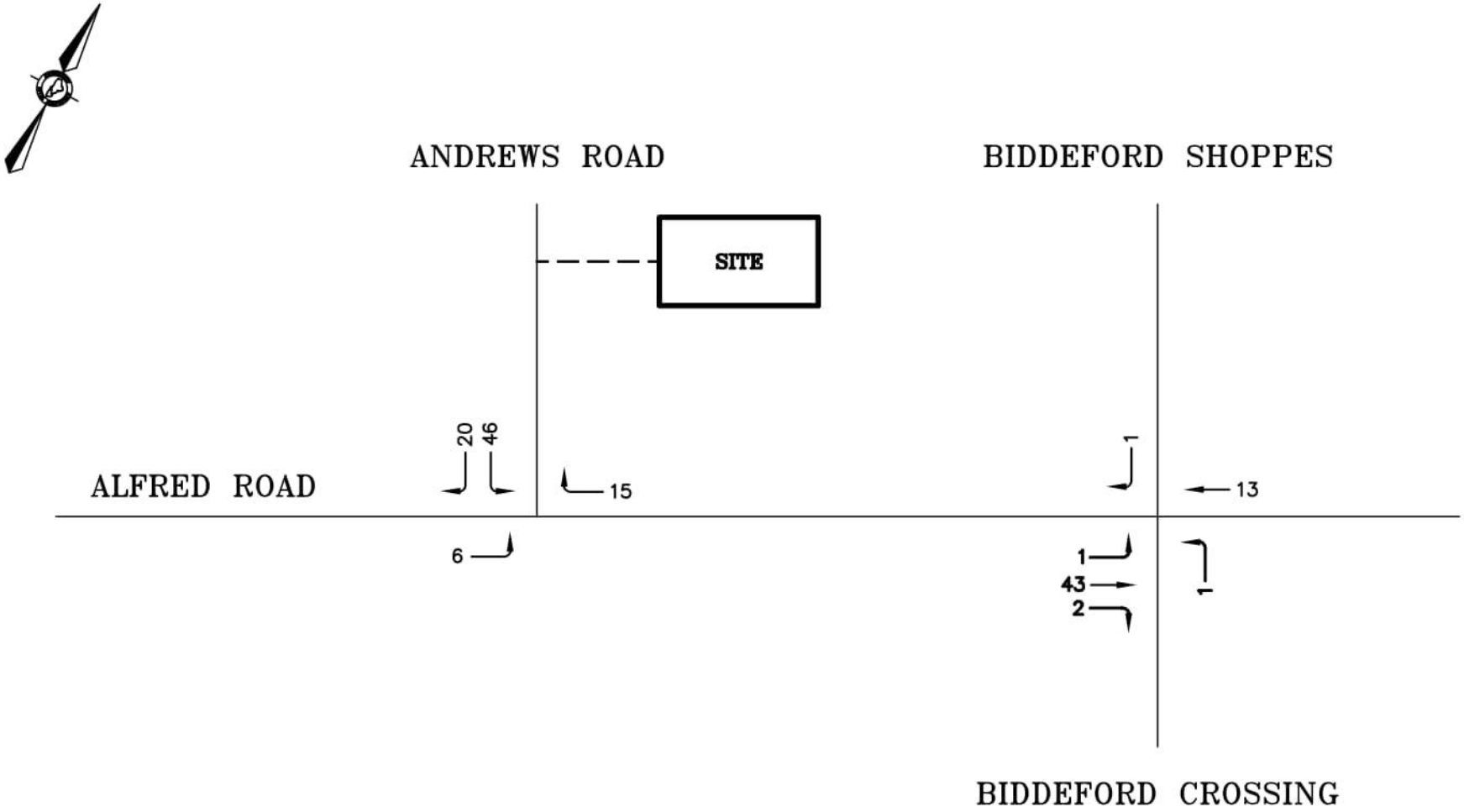
***Note that trip generation data is unavailable for the Saturday and Sunday peak**

SECTION 1

G. TRIP ASSIGNMENT

Peak hour site trips generated by the proposed Andrews Road residential apartment project during both the morning and evening peak hours were assigned to the study intersections at Andrews Road/Alfred Road and Alfred Road/Biddeford Crossing and Biddeford Shoppes based upon existing traffic data collected at both locations in September, 2021. Copies of the peak hour summary sheets are attached for reference.

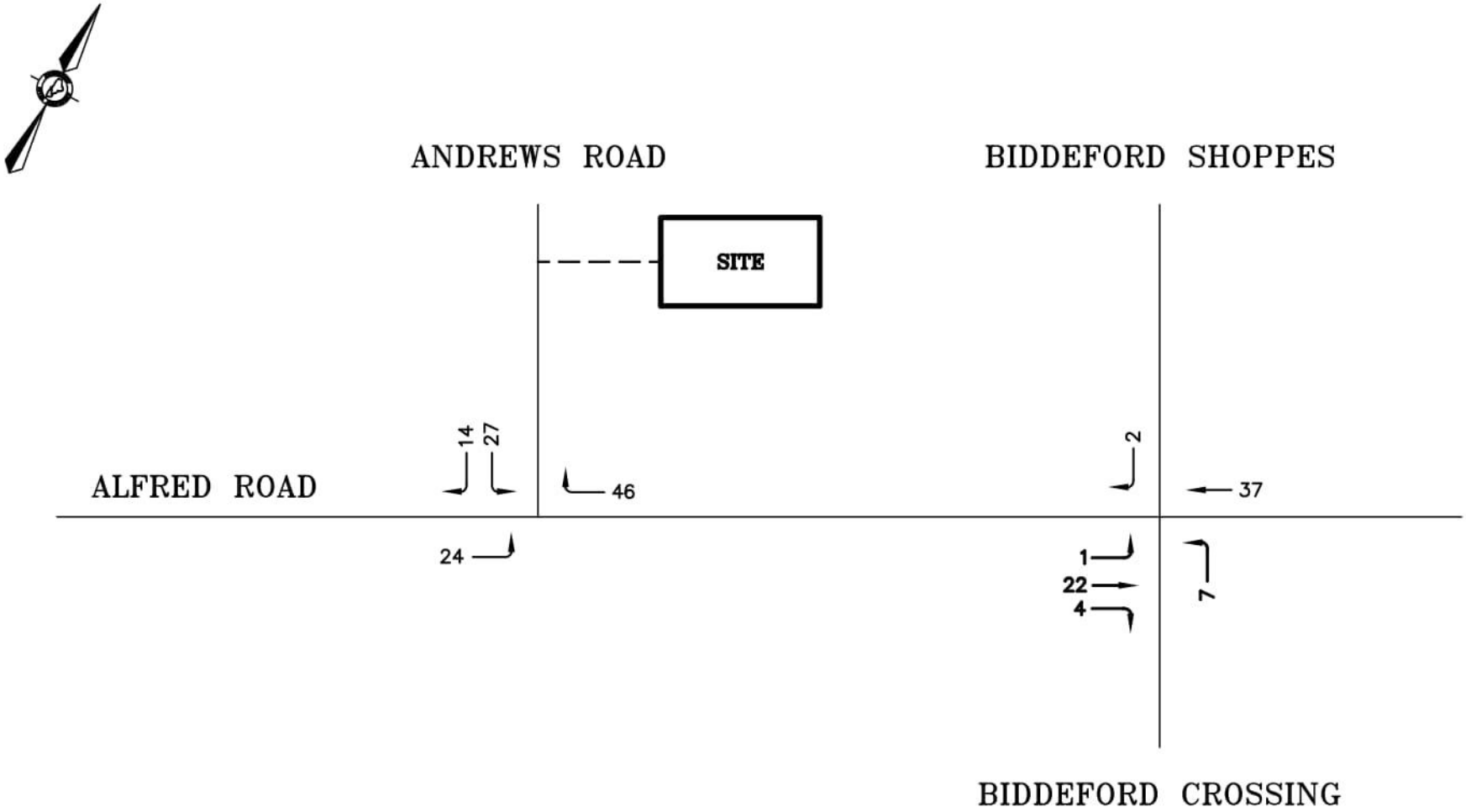
The following Figures, 1 and 2 illustratively present the trip assignment for the AM and PM peak hours at both study intersections.



SITE TRIP ASSIGNMENT
WEEKDAY AM PEAK HOUR
FIGURE 1

E:\LAND PROJECTS\34000\34399 TRAFFIC SOLUTIONSBIDDEFORD APARTMENT FIGURES\PLANSET\BIDDEFORD APRTMENT FIGS.DWG

Project Name and Location BIDDEFORD APARTMENTS ANDREWS ROAD, BIDDEFORD, ME	TRAFFIC SOLUTIONS/ BARTON & LOGUIDICE, LLC 383 US ROUTE ONE, SCARBOROUGH, MAINE 04074
DATE: MARCH, 2022 FIGURE: 1	



SITE TRIP ASSIGNMENT
WEEKDAY PM PEAK HOUR
FIGURE 2

E:\LAND PROJECTS\34000\34399 TRAFFIC SOLUTIONS\BIDDEFORD APARTMENT FIGURES\PLANSET\BIDDEFORD APRTMENT FIGS.DWG

Project Name and Location
BIDDEFORD APARTMENTS
ANDREWS ROAD, BIDDEFORD, ME

DATE: MARCH, 2022 | FIGURE: 2

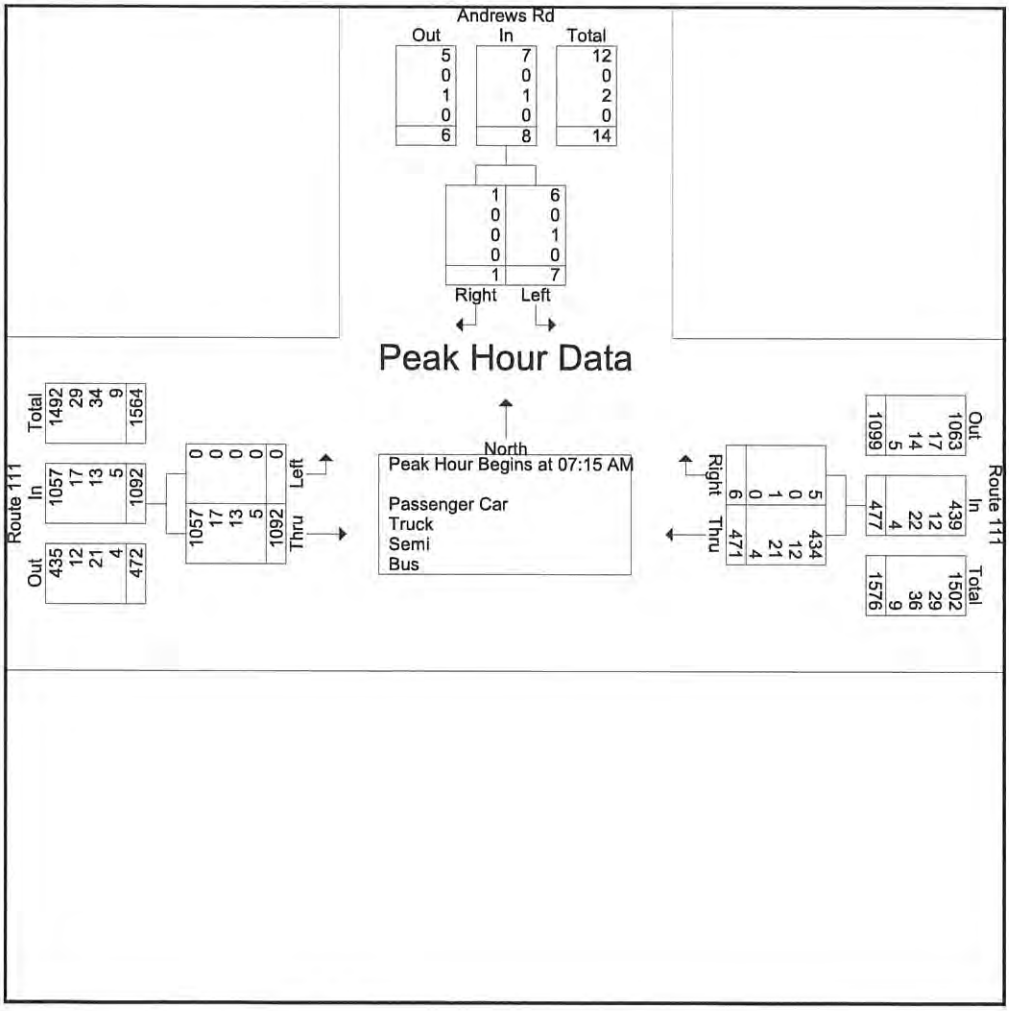
TRAFFIC SOLUTIONS/
BARTON & LOGUIDICE, LLC
383 US ROUTE ONE, SCARBOROUGH, MAINE 04074

Traffic Solutions

17 Mount View Dr
Gorham, ME 04038

File Name : Biddeford Route 111 & Andrews Rd 9-28-21 AM
Site Code : 00928211
Start Date : 9/28/2021
Page No : 4

	Andrews Rd From North			Route 111 From East			Route 111 From West			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	0	0	0	1	123	124	281	0	281	**405**
07:30 AM	0	**3**	3	**3**	**127**	**130**	269	0	269	402
07:45 AM	0	1	1	1	94	95	**297**	0	**297**	393
08:00 AM	**1**	3	**4**	1	127	128	245	0	245	377
Total Volume	1	7	8	6	471	477	1092	0	1092	1577
% App. Total	12.5	87.5		1.3	98.7		100	0		
PHF	.250	.583	.500	.500	.927	.917	.919	.000	.919	.973
Passenger Car	1	6	7	5	434	439	1057	0	1057	1503
% Passenger Car	100	85.7	87.5	83.3	92.1	92.0	96.8	0	96.8	95.3
Truck	0	0	0	0	12	12	17	0	17	29
% Truck	0	0	0	0	2.5	2.5	1.6	0	1.6	1.8
Semi	0	1	1	1	21	22	13	0	13	36
% Semi	0	14.3	12.5	16.7	4.5	4.6	1.2	0	1.2	2.3
Bus	0	0	0	0	4	4	5	0	5	9
% Bus	0	0	0	0	0.8	0.8	0.5	0	0.5	0.6

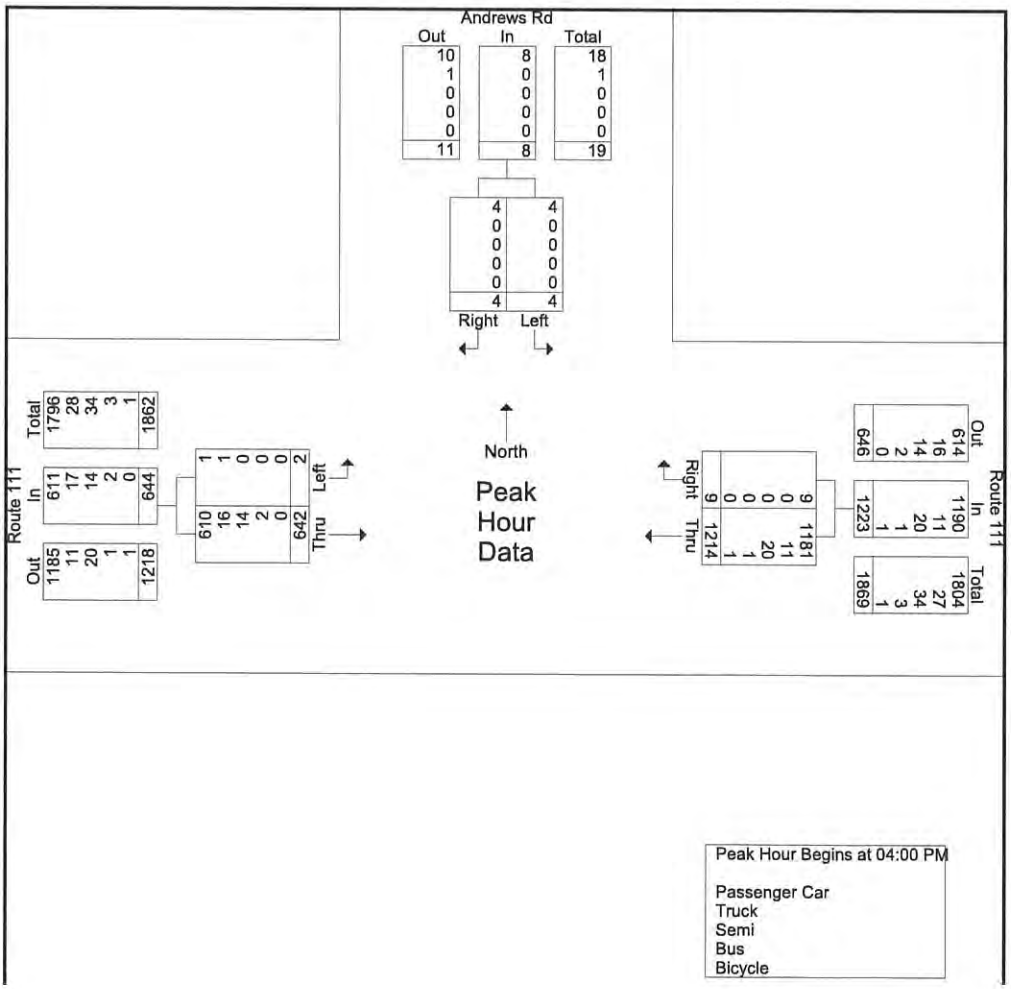


Traffic Solutions

17 Mount View Dr
Gorham, ME 04038

File Name : Biddeford Route 111 & Andrews Rd 9-28-21 PM
Site Code : 00928212
Start Date : 9/28/2021
Page No : 4

	Andrews Rd From North			Route 111 From East			Route 111 From West			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	**1**	1	**3**	299	302	156	**1**	157	460
04:15 PM	0	1	1	2	302	304	151	0	151	456
04:30 PM	0	1	1	2	**315**	**317**	**173**	0	**173**	**491**
04:45 PM	**4**	1	**5**	2	298	300	162	1	163	468
Total Volume	4	4	8	9	1214	1223	642	2	644	1875
% App. Total	50	50		0.7	99.3		99.7	0.3		
PHF	.250	1.00	.400	.750	.963	.965	.928	.500	.931	.955
Passenger Car	4	4	8	9	1181	1190	610	1	611	1809
% Passenger Car	100	100	100	100	97.3	97.3	95.0	50.0	94.9	96.5
Truck	0	0	0	0	11	11	16	1	17	28
% Truck	0	0	0	0	0.9	0.9	2.5	50.0	2.6	1.5
Semi	0	0	0	0	20	20	14	0	14	34
% Semi	0	0	0	0	1.6	1.6	2.2	0	2.2	1.8
Bus	0	0	0	0	1	1	2	0	2	3
% Bus	0	0	0	0	0.1	0.1	0.3	0	0.3	0.2
Bicycle	0	0	0	0	1	1	0	0	0	1
% Bicycle	0	0	0	0	0.1	0.1	0	0	0	0.1

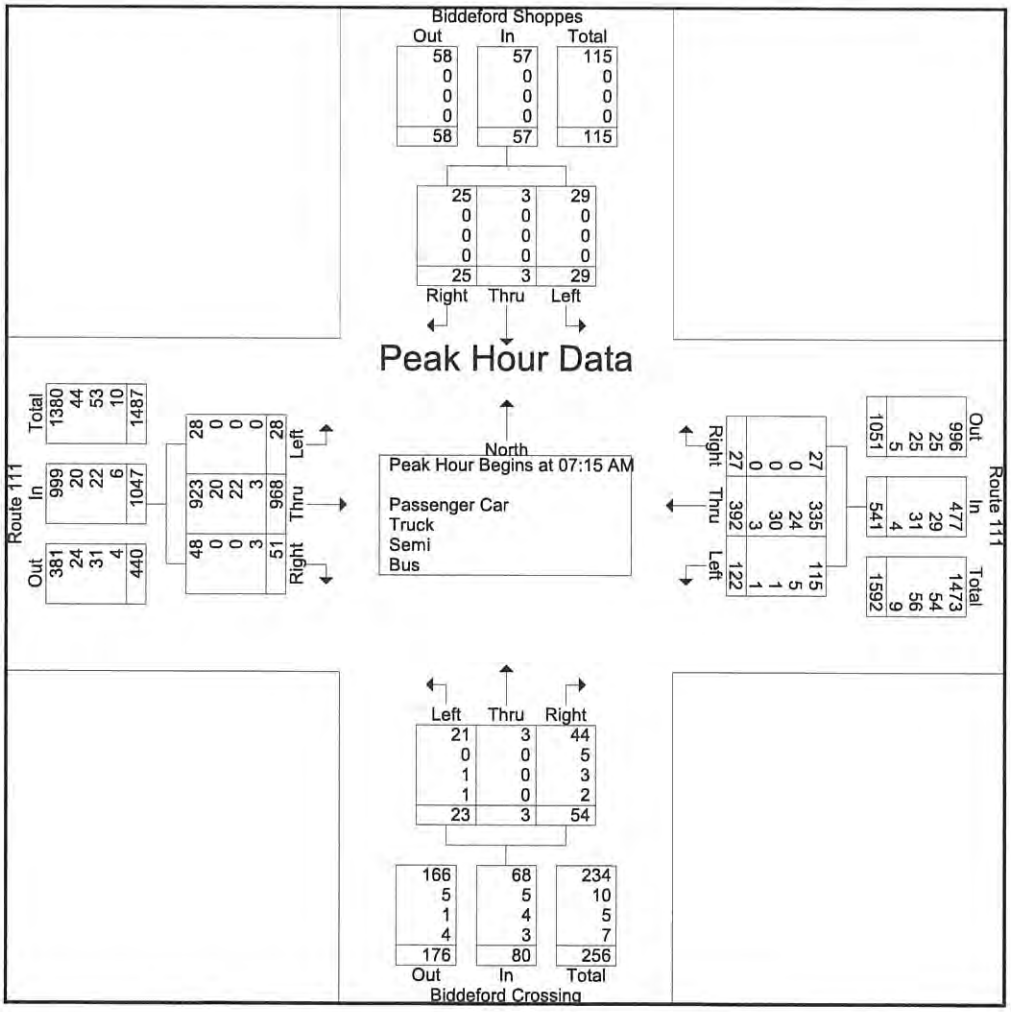


Traffic Solutions

17 Mount View Dr
Gorham, ME 04038

File Name : Biddeford Route 111 & Shopping Plazas 9-29-21 AM
Site Code : 00929211
Start Date : 9/29/2021
Page No : 4

	Biddeford Shoppes From North				Route 111 From East				Biddeford Crossing From South				Route 111 From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	5	0	6	11	7	86	21	114	9	1	5	15	12	236	5	253	393
07:30 AM	**9**	1	**8**	**18**	**8**	90	24	122	**18**	0	**7**	**25**	11	254	4	269	434
07:45 AM	4	0	8	12	5	**114**	36	**155**	10	0	5	15	11	**262**	**13**	**286**	**468**
08:00 AM	7	**2**	7	16	7	102	**41**	150	17	**2**	6	25	**17**	216	6	239	430
Total Volume	25	3	29	57	27	392	122	541	54	3	23	80	51	968	28	1047	1725
% App. Total	43.9	5.3	50.9		5	72.5	22.6		67.5	3.8	28.8		4.9	92.5	2.7		
PHF	.694	.375	.906	.792	.844	.860	.744	.873	.750	.375	.821	.800	.750	.924	.538	.915	.921
Passenger Car	25	3	29	57	27	335	115	477	44	3	21	68	48	923	28	999	1601
% Passenger Car	100	100	100	100	100	85.5	94.3	88.2	81.5	100	91.3	85.0	94.1	95.4	100	95.4	92.8
Truck	0	0	0	0	0	24	5	29	5	0	0	5	0	20	0	20	54
% Truck	0	0	0	0	0	6.1	4.1	5.4	9.3	0	0	6.3	0	2.1	0	1.9	3.1
Semi	0	0	0	0	0	30	1	31	3	0	1	4	0	22	0	22	57
% Semi	0	0	0	0	0	7.7	0.8	5.7	5.6	0	4.3	5.0	0	2.3	0	2.1	3.3
Bus	0	0	0	0	0	3	1	4	2	0	1	3	3	3	0	6	13
% Bus	0	0	0	0	0	0.8	0.8	0.7	3.7	0	4.3	3.8	5.9	0.3	0	0.6	0.8

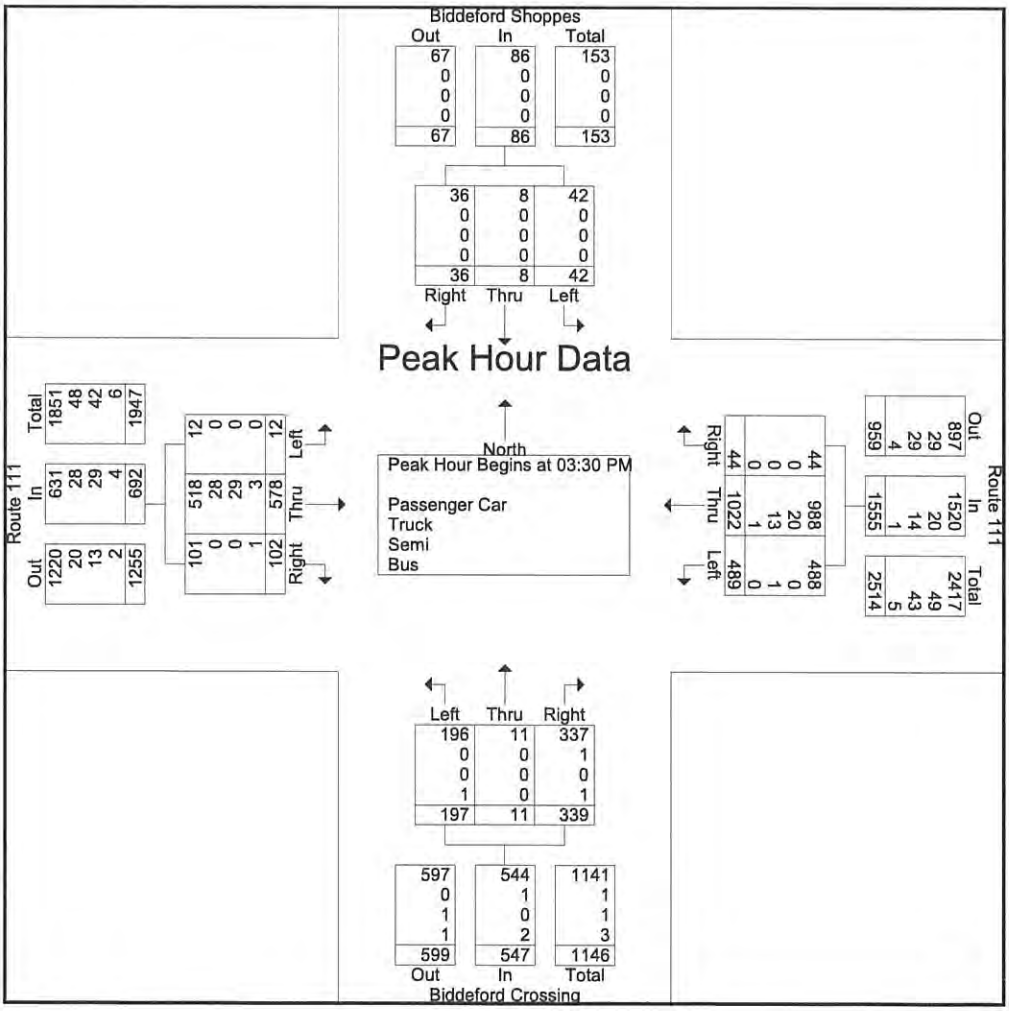


Traffic Solutions

17 Mount View Dr
Gorham, ME 04038

File Name : Biddeford Route 111 & Shopping Plazas 9-29-21 PM
Site Code : 00929212
Start Date : 9/29/2021
Page No : 4

	Biddeford Shoppes From North				Route 111 From East				Biddeford Crossing From South				Route 111 From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:30 PM																	
03:30 PM	8	**4**	9	21	8	269	**143**	420	93	**5**	40	138	**32**	**160**	2	**194**	**773**
03:45 PM	**12**	1	11	**24**	10	227	97	334	80	1	53	134	30	156	3	189	681
04:00 PM	7	2	**13**	22	**16**	**284**	123	**423**	**99**	3	42	**144**	25	109	**6**	140	729
04:15 PM	9	1	9	19	10	242	126	378	67	2	**62**	131	15	153	1	169	697
Total Volume	36	8	42	86	44	1022	489	1555	339	11	197	547	102	578	12	692	2880
% App. Total	41.9	9.3	48.8		2.8	65.7	31.4		62	2	36		14.7	83.5	1.7		
PHF	.750	.500	.808	.896	.688	.900	.855	.919	.856	.550	.794	.950	.797	.903	.500	.892	.931
Passenger Car	36	8	42	86	44	988	488	1520	337	11	196	544	101	518	12	631	2781
% Passenger Car	100	100	100	100	100	96.7	99.8	97.7	99.4	100	99.5	99.5	99.0	89.6	100	91.2	96.6
Truck	0	0	0	0	0	20	0	20	1	0	0	1	0	28	0	28	49
% Truck	0	0	0	0	0	2.0	0	1.3	0.3	0	0	0.2	0	4.8	0	4.0	1.7
Semi	0	0	0	0	0	13	1	14	0	0	0	0	0	29	0	29	43
% Semi	0	0	0	0	0	1.3	0.2	0.9	0	0	0	0	0	5.0	0	4.2	1.5
Bus	0	0	0	0	0	1	0	1	1	0	1	2	1	3	0	4	7
% Bus	0	0	0	0	0	0.1	0	0.1	0.3	0	0.5	0.4	1.0	0.5	0	0.6	0.2



SECTION 2

TRAFFIC ACCIDENTS

2018 - 2020 Accident Summary
Alfred Road (a.k.a. ME Route 111)

Location	Number of Accidents	Critical Rate Factor
1. Alfred Road/Biddeford Shoppes/Biddeford Crossing Intersection	24	0.78
2. Alfred Road & Andrews Road	2	0.31
3. Alfred Road & New Road/Old Alfred Road intersection (Town of Arundel) (**2019-2021**, after intersection improvements)	4	N/A
4. Alfred Road/Biddeford Shoppes/Biddeford Crossing intersection west to the end of raised traffic island	1	0.14
5. Alfred Road btw. Andrews Road and end of traffic island east of Andrews Road intersection	6	0.54
6. Alfred Road btw. Andrews Road and Arundel Town Line	5	0.43
7. Alfred Road btw. Arundel Town Line and New Road	5	0.68

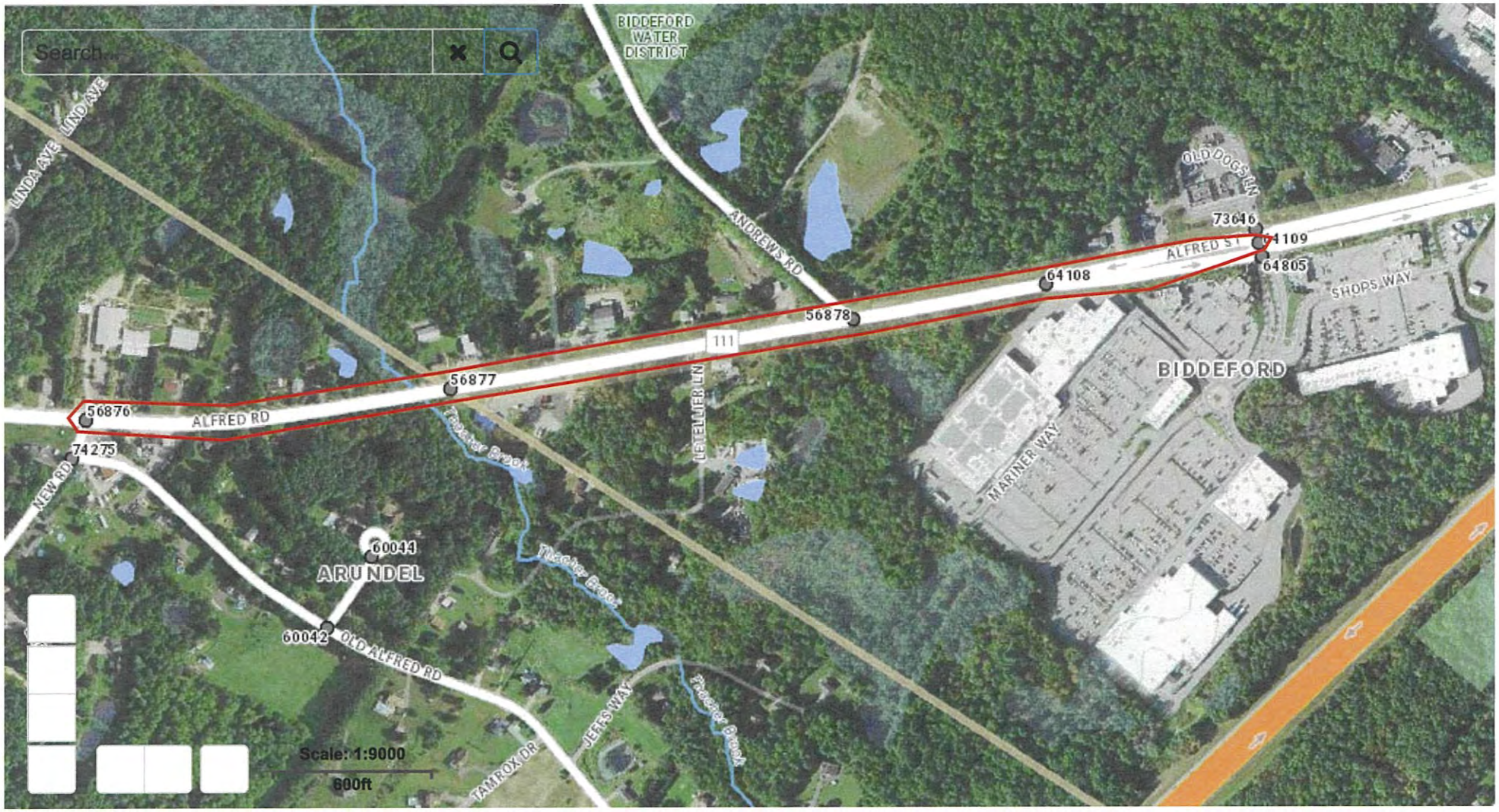
The MDOT considers any roadway intersection or segment a high crash location if both of the following criteria are met:

- ***8 or more accidents and,***
- ***A Critical Rate Factor greater than 1.00***

As the data presented in the chart shows, there are no identified high crash locations.

MaineDOT completed a safety improvement project at the Old Alfred Road/New Road intersection, a former high crash location, in the Town of Arundel in 2020 that tied the Old Alfred Road approach into New Road further back from Alfred Road creating a simple and basic "tee" intersection. A dedicated left-turn lane was added on the west bound approach of Alfred Road accommodating left-turn movements to the re-aligned New Road approach. MaineDOT's preliminary safety report for the years 2019 through 2021 (see attachment) shows that a total of four crashes were reported for the three-year study period with three of the crashes occurring in 2019, one crash in 2020 and zero crashes in 2021.

Item # 3


Search...
BIDDEFORD WATER DISTRICT
LINDA AVE
ANDREWS RD
OLD DOGS RN
73646
64109
64805
ALFRED ST
64108
SHOPS WAY
56878
111
BIDDEFORD
56877
56876
ALFRED RD
74275
NEW RD
LETELLIER LN
MARINER WAY
60044
ARUNDEL
60042
OLD ALFRED RD
JEFFS WAY
TAMROX DR
Scale: 1:9000
600ft

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

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ **Crash Summary I** ☐ **Section Detail** ☑ **Crash Summary II** ☐ **1320 Public** ☐ **1320 Private** ☐ **1320 Summary**

REPORT DESCRIPTION

Biddeford/Arundel
Rte. 111/Alfred Rd./St. from Shopping Mall Ent. to New Rd.

REPORT PARAMETERS

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

Route: **0111X**	Start Node: **64109**	Start Offset: **0**	☐ **Exclude First Node**
	End Node: **56876**	End Offset: **0**	☐ **Exclude Last Node**
Route: **0111E**	Start Node: **64108**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **64109**	End Offset: **0**	☑ **Exclude Last Node**

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
64109	0111X - 3.29	Int of ALFRED ST OLD DOGS LN RD INV 3201693	9	24	0	0	0	9	15	37.5	8.613	0.93	1.20	0.78
												Statewide Crash Rate:	0.77	
64108	0111X - 3.44	Non Int ALFRED ST	2	1	0	0	0	0	1	0.0	6.361	0.05	0.35	0.00
												Statewide Crash Rate:	0.15	
56878	0111X - 3.58	Int of ALFRED ST ANDREWS RD	2	2	0	0	1	0	1	50.0	6.116	0.11	0.36	0.00
												Statewide Crash Rate:	0.15	
56877	0111X - 3.87	TL Arundel Biddeford	2	0	0	0	0	0	0	0.0	2.975	0.00	0.43	0.00
												Statewide Crash Rate:	0.15	
56876	0111X - 4.13	Int of ALFRED RD NEW RD	1	9	0	0	0	2	7	22.2	5.971	0.50	0.32	1.56
												Statewide Crash Rate:	0.13	
Study Years:	3.00	**NODE TOTALS:**		36	0	0	1	11	24	33.3	30.036	0.40	0.47	0.85

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
64108	64109	3139654	0 - 0.15	0111X - 3.29	0.15	2	1	0	0	0	0	1	0.0	0.00488	68.30	489.10	0.00
Non Int ALFRED ST				ST RTE 111											Statewide Crash Rate: 212.74		
56878	64108	3123089	0 - 0.14	0111X - 3.44	0.14	2	6	0	0	1	0	5	16.7	0.00870	229.85	426.14	0.00
Int of ALFRED ST ANDREWS RD				ST RTE 111											Statewide Crash Rate: 212.74		
56877	56878	3114384	0 - 0.29	0111X - 3.58	0.29	2	8	0	0	2	4	2	75.0	0.01726	154.53	368.21	0.42
TL Arundel Biddeford				ST RTE 111											Statewide Crash Rate: 212.74		
56876	56877	5205276	0 - 0.26	0111X - 3.87	0.26	1	5	0	0	0	1	4	20.0	0.01547	107.72	253.21	0.00
Int of ALFRED RD NEW RD				ST RTE 111											Statewide Crash Rate: 128.46		
64108	64109	3119895	0 - 0.16	0111E - 0.29	0.16	2	5	0	0	0	1	4	20.0	0.00509	327.20	483.96	0.00
Non Int ALFRED ST				ST RTE 111E											Statewide Crash Rate: 212.74		
Study Years:	3.00			**Section Totals:**	1.00		25	0	0	3	6	16	36.0	0.05140	162.12	273.92	0.59
				Grand Totals:	1.00		61	0	0	4	17	40	34.4	0.05140	395.56	375.86	1.05

Item # 3

H. C. L.
CRASH COLLISION DIAGRAM DATA PACKAGE

COUNTY: **YORK** TOWN: **ARUNDEL**

LOW NODE: **56876** HIGH NODE: **0000** REGION: **1** U/R: **RURAL**

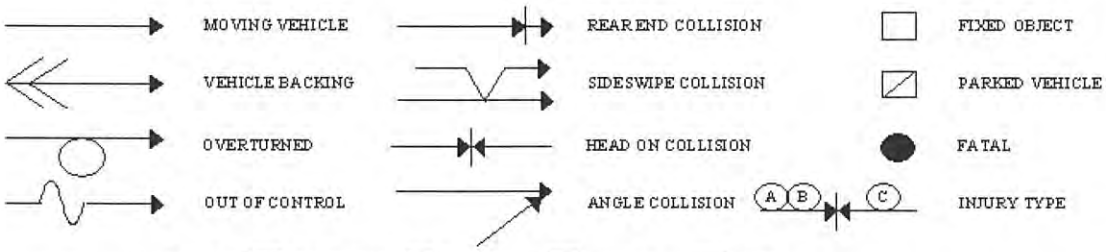
DESCRIPTION: **Jct of Alfred Rd & New Rd/Old Alfred Rd**

RTE # / RD #: **0111X** DATE DRAWN: **4/13/2021** DRAWN BY: **Michelle**

STUDY FROM: **1/1/2018** STUDY TO: **12/31/2020**

CRASH RATE: **0.49** CRF: **1.54** % INJURY: **22.2** TOTAL CRASHES: **9**

LEGEND



PATH OF: P PEDESTRIAN B BICYCLE A ANIMAL S SLED

PAVEMENT: D - DRY, I - ICY, W - WET, S - SNOW

WEATHER: C - CLEAR, F - FOG, R - RAIN, SL - SLEET, S - SNOW, CL - CLOUDY

TIME: A - AM, P - PM

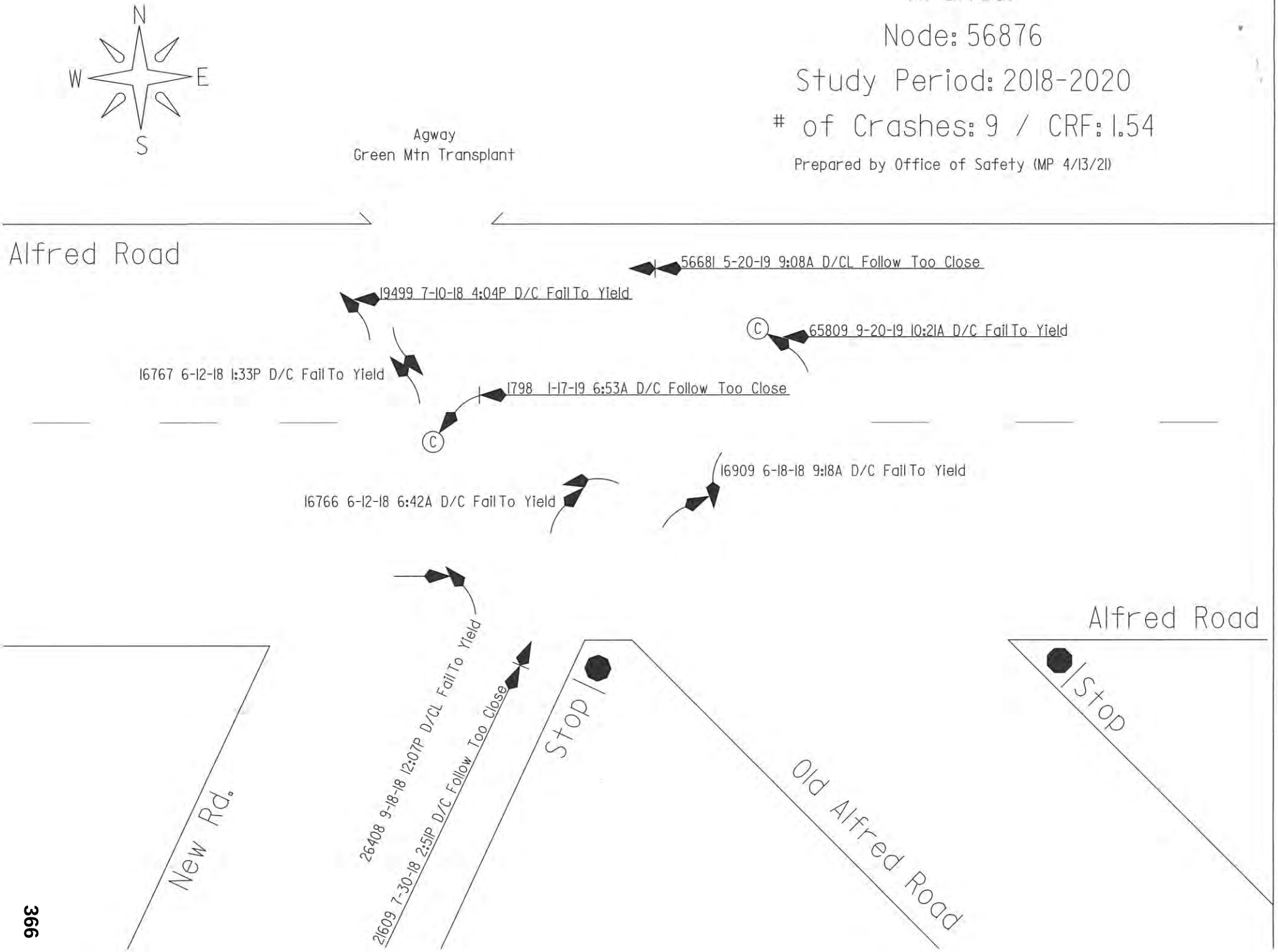
Arundel

Node: 56876

Study Period: 2018-2020

# of Crashes: 9 / CRF: 1.54

Prepared by Office of Safety (MP 4/13/21)



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

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

- [x] Crash Summary I - Single Node
- [ ] Section Detail
- [x] Crash Summary II
- [ ] 1320 Public
- [ ] 1320 Private
- [ ] 1320 Summary

REPORT DESCRIPTION

Arundel
Intersection of Rte. 111/Alfred Rd. & New Rd.

REPORT PARAMETERS

Year 2019, Start Month 1 through Year 2021 End Month: 12

Route: **0111X**	Start Node: **56876**	Start Offset: **0**	[ ] **Exclude First Node**
	End Node: **56876**	End Offset: **0**	[ ] **Exclude Last Node**

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

Crash Summary I

Nodes															
Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
56876	0111X - 4.13	Int of ALFRED RD NEW RD	1	4	0	0	0	2	2	50.0	5.971	0.22	0.32	0.00
												Statewide Crash Rate:	0.13	
Study Years: 3.00		NODE TOTALS:		4	0	0	0	2	2	50.0	5.971	0.22	0.32	0.69

****None of these Rates (Crash, Critical, CRF) are accurate as they are based off 2020 AADT's, not 2021 AADT's).

SECTION 3

A. ENTRANCE/EXIT LOCATON

The existing site, located in the northeast quadrant of the Andrews Road/Alfred Road (Route 111) intersection, is provided access with a gravel driveway located on the east side of Andrews Road. Access to the property will continue to be provided at the existing driveway location. As part of the development of the site, the existing driveway will be improved and widened to 24-feet.

SECTION 3

B. ENTRANCE AND EXIT PLAN VIEW

Vehicle sight distance measurements were field determined for the Andrews Road approach at the Alfred Road (Route 111), and the site driveway entrance located on Andrews Road. The measured distances are listed as follows:

Andrews Road @ Route 111
Left = 450'+
Right = 500'+

Site Entrance @ Andrews Road
Left = To Alfred Road
Right = 325'

The posted speed limit on Alfred Road at Andrews Road is 35mph; the posted speed limit increases to 40mph just west of the Andrews Road intersection.

SECTION 3

C. ENTRANCE/EXIT DESIGN

The proposed development, including any required off-site improvements, will be designed and constructed as directed by the City of Biddeford and/or the Maine DOT.

SECTION 4

OPTION AGREEMENT, RIGHT OR INTEREST

A OPTION TO PURCHASE AND PURCHASE AND SALE AGREEMENT signed and dated January 25, 2021 along with a SECOND AMENDMENT to the OPTION AGREEMENT provides documentation of Devine Capital, LLC's ownership in the property located in the northeast quadrant of the Andrews Road and Alfred Road intersection.

OPTION TO PURCHASE AND PURCHASE AND SALE AGREEMENT

OPTION TO PURCHASE AND PURCHASE AND SALE AGREEMENT ("**Agreement**") made as of the date ("**Effective Date**") of last execution appearing below, by and between **New Life Christian Fellowship**, a Maine religious nonprofit corporation ("**Seller**"), with a mailing address of 551 Alfred Road, Biddeford, Maine 04005-9474 and **Devine Capital LLC**, a Massachusetts limited liability company, or its nominee ("**Buyer**"), with a mailing address of P.O. Box 17795, Portland, Maine 04112.

WHEREAS, Seller owns fee simple interest in that certain real property consisting of approximately 44.7 acres more or less located generally at 588 and 590 Alfred Street, in the City of Biddeford, County of York, Maine, also known as Tax Map 2, Lots 6 and 12, and more particularly described in the source deeds referenced in **Exhibit A** attached hereto (the "**Property**"); Excepting and reserving a 2.1 acre parcel conveyed to Old Dogs of Biddeford, LLC as referenced as Tax Map 2, Lot 6-3 and in the York County Registry of Deeds Book 17933 Page 197 also referenced here in Exhibit B.

WHEREAS, Seller has agreed to grant to Buyer an option to purchase the Property in the future for a set price reflected below, and does thus commit and obligate itself to sell and convey the Property to Buyer on the terms and conditions as set forth below;

NOW, THEREFORE, for good and valuable consideration, the sufficiency and receipt whereof is hereby acknowledged, the parties hereto, intending to be legally bound, hereby agree as follows, incorporating the foregoing recitals by reference as if fully restated hereinbelow:

Article I – Grant, Timing, Diligence, Permitting

1.1 *Option, Purchase Price.* For the consideration recited above, and in consideration for Buyer investing substantial time and money to review, evaluate, inspect, and explore development opportunities with respect to the Property, subject to the terms and conditions hereof, Seller hereby irrevocably grants to Buyer the exclusive right and option (the "**Option**") to purchase the Property for the sum of [redacted] (the "**Purchase Price**").

1.2 *Preliminary Diligence Deadline.* The initial term of the Option shall commence on the Effective Date and, unless otherwise extended in accordance with the terms hereof, shall expire at **6:00 p.m.** (Eastern Time), [redacted] days thereafter, during which period Buyer shall conduct its due diligence inspections (addressed in Article II below), the results of which shall be acceptable to Buyer in its sole and absolute discretion (the "**Preliminary Diligence Deadline**").

1.3 *Rezone/Permitting Deadline; Rezone/Permitting Approval Date.*

A. Upon the Preliminary Diligence Deadline, unless Buyer has terminated this Option due to the results of its due diligence being unsatisfactory to Buyer in its sole and absolute discretion, Buyer shall pay and deliver to Seller monthly payments in the amount of [redacted] in order to extend the Option term for up to [redacted] consecutive periods of [redacted] days each (all such monthly payments hereinafter referred to as the "**Option Payments**"). The Option Payments shall be nonrefundable but shall be applied to the Purchase Price at closing. Seller hereby grants to Buyer full authority to seek from any federal, state, or local governmental authority any zoning change(s) and/or permits and/or approvals whatsoever that Buyer, in its sole and absolute discretion, deems advisable for Buyer's intended development of the Property for a multi-family residential development (the "**Project**") during such extended period ("**Rezone/Permitting Deadline**"). Seller hereby agrees to fully support and cooperate with Buyer's efforts to rezone and permit the Project, and specifically agrees to appear and testify in favor of, and promptly execute any document reasonably requested by Buyer in connection with, any such efforts of Buyer, all at no cost or charge to Buyer.

B. In the event Buyer does not obtain final unappealable zoning change(s)/approvals, including conditional use and/or permits for the Project acceptable to Buyer in its sole and absolute discretion, or otherwise affirmatively elect by written notice to Seller to close notwithstanding the lack of such permits and/or approvals, by the Rezone/Permitting Deadline, then unless Buyer

elects to extend the Rezone/Permitting Deadline as provided in Section 1.4, below, this Agreement shall automatically terminate as of the Rezone/Permitting Deadline, and, promptly upon Buyer's delivery to Seller of (1) an instrument (the "**Release**") signed by Buyer and suitable to release and discharge the Record Notice, and (2) digital copies of and an assignment of all right in the all materials developed by Buyer and its contractors as part of Buyer's efforts to rezone and permit the Project (the "**Rezone Permitting Materials**"), this Agreement shall be null, void, of no further force and effect, and each party hereto shall have no further obligation one to the other.

C. If Buyer obtains zoning change(s) and permits for the Project acceptable to Buyer in its sole and absolute discretion, then promptly upon the date ("**Rezone/Permitting Approval Date**") that the last of such zoning change(s) and/or permit(s) become final and non-appealable, Buyer shall serve notice upon Seller confirming same, and Buyer shall close on the purchase by the date ("**Closing Deadline**") that is [redacted] days after the Rezone/Permitting Approval Date, and the notice described in the first sentence of this subsection shall also constitute the Exercise Notice referenced in Section 3.1, below, and shall contain the additional information specified in Section 3.2, below.

1.4 *Additional Option Extension Payments*. Notwithstanding any contrary provision herein, if Buyer has not obtained all necessary unappealable permits and/or approvals for the Project, Buyer may elect to further extend the Option and Rezone/Permitting Deadline for up to [redacted] additional, successive periods of [redacted] days each, provided Buyer shall pay and deliver to Seller monthly payments, in the amount of [redacted] (all such monthly payments hereinafter referred to as the "**Extension Payments**"). The Extension Payments shall be nonrefundable but shall be applied to the Purchase Price at closing.

1.5 *Termination*. Notwithstanding any contrary provision herein, at any time before the Rezone/Permitting Approval Date, Buyer may elect to terminate this Agreement by delivering to Seller notice thereof ("**Termination Notice**"). If a Termination Notice is given, Buyer shall promptly deliver to Seller the Release signed by Buyer and the Rezone/Permitting Materials, as described in Section 1.3 above, and upon such delivery, this Agreement shall be null and void, of no further force and effect, and each party hereto shall have no further obligation one to the other, except that Buyer's indemnification obligations under Section 2.2 shall survive any termination.

Article II – Due Diligence

2.1 To facilitate Buyer's inspections and evaluation of the Property, Seller agrees to deliver to Buyer as soon as possible, but in any event within [redacted] days from the date hereof, copies of the materials specified on the list attached hereto as **Exhibit B** (the "**Due Diligence Materials**"). In addition, Seller agrees to permit Buyer to inspect and make copies of any books and records in Seller's possession or control concerning the Property.

2.2 So long as this Agreement remains in effect, Buyer may conduct such investigations, inspections, interviews, tests, assessments and audits pertaining to the Property as Buyer elects, in Buyer's sole discretion and at Buyer's sole cost, *including but not limited to*: (i) title search; (ii) survey; (iii) environmental site assessment; (iv) review of zoning and building code requirements; and/or (v) physical/geotechnical inspection of the Property (collectively, the "**Inspections**"). Buyer shall promptly repair any physical damage to the Property caused by any such Inspections, and Buyer further agrees to indemnify and hold Seller harmless from and against any and all loss, cost, damage, or expense incurred by Seller as a result of said physical damage.

2.3 Seller agrees, in general, to cooperate in good faith with Buyer and Buyer's representatives, and, in particular:

2.3.1 so as to secure the rights granted to Buyer hereunder and to ensure that the Property shall be in substantially the same condition at the time of conveyance as exists as of the date of this Agreement, Seller agrees that for so long as this Agreement remains in

effect, then unless and until Buyer in writing consents otherwise, Seller shall maintain the Property substantially in condition as currently exists, timely paying all taxes and other impositions related to ownership thereof, and shall not: (a) transfer, encumber, mortgage, lease, alienate, impose any restriction or condition upon, or otherwise grant to any other person, firm or entity any permission, license, right or rights whatsoever in, pertaining to, or affecting any part or all of the Property; nor (b) make any change to or alter in any way whatsoever the physical or other characteristics of any part or all of the Property, including cutting of trees/timber, or contamination of any kind; and,

2.3.2 so as to ensure that there is no change in the status of the title to the Property prior to termination of this Agreement, Seller agrees to contemporaneously with its execution hereof execute and deliver to Buyer for recording in the appropriate Land Evidence Records an instrument (the "**Record Notice**") suitable under applicable law to evidence the grant of the Option and the aforesaid restrictions on the grant of any rights inconsistent with this Agreement, in form and substance as attached hereto as **Exhibit C**, or, if no such exhibit is attached, in form and substance as Buyer may reasonably request.

2.4 During the effective term of this Agreement, Buyer contemplates expending substantial sums and incurring substantial expenses to inspect, test, and analyze the Property, to conduct title research, undertake survey and site plans, and to otherwise conduct a due diligence review of the Property and all related matters, and to pursue obtaining permits for Buyer's contemplated development of the Property. To induce Buyer to make such efforts and expend such sums, Seller hereby agrees that during the effective term of this Agreement Seller shall not solicit, encourage, negotiate or entertain any offer with any other party concerning or with respect to the Property whatsoever, including offers to purchase or lease the Property, regarding any sale, financing, partnership, or other disposition of all or any part of, or interest in, the Property; Seller agrees to immediately communicate to Buyer for response any written inquiries received by Seller during the effective term of this Agreement. Seller further agrees to keep the monetary terms of this Agreement confidential, except only as may be approved by Buyer in writing, in advance.

2.5 Notwithstanding anything contained herein to the contrary, however, in the event Buyer delivers to Seller prior to expiration of the Preliminary Diligence Deadline written notice specifying with reasonable particularity matters related to the title to the Property to which Buyer objects ("**Title Objection Notice**"), then and in such event the Preliminary Diligence Deadline shall be deemed extended for an additional period beyond its then-scheduled expiration to allow Seller to, and Seller does hereby agree that Seller shall during such period, use good faith efforts to promptly and reasonably resolve such title objections. In the event Seller fails to use reasonable good faith efforts to so resolve Buyer's objections, then and in such event Seller shall be in default hereunder, and Buyer shall be entitled to its remedies for same as provided below. In addition, Buyer shall have the right to extend the Preliminary Diligence Deadline for a reasonable period of time to permit Buyer itself, at its own expense, to resolve such title objections.

Article III – Exercise, Purchase Price

3.1 In the event that Buyer elects to exercise the Option and purchase the Property, Buyer shall deliver notice ("**Exercise Notice**") to Seller pursuant to Section 1.3.C stating that Buyer elects to exercise the Option to purchase the Property.

3.2 Buyer shall specify in the Exercise Notice (but failure to so specify shall not invalidate the effectiveness of the Exercise Notice) the name of the entity, if different from Buyer, that is to take title to the Property, Seller hereby acknowledging and agreeing that Buyer may take title in the name of any entity Buyer chooses as nominee, and that for this purpose references in this Agreement to "Buyer" shall mean "Buyer or its nominee."

3.3 The Purchase Price shall be adjusted to reflect the Option Payments and Extension Payments paid to Seller by Buyer pursuant to Section 1.3, as well as the equitable apportionment as of date

of closing of unpaid real estate taxes, assessments, liens, utility bills, if any, recording charges, transfer tax, and similar items as is customary in standard conveyancing practice in the State of Maine (the Purchase Price as so adjusted may hereinafter be referred to as the "**Adjusted Purchase Price**").

Article IV – Closing Procedure

4.1 On the Closing Deadline, Seller shall sell and convey the Property to Buyer and Buyer shall purchase the Property from Seller (the "**Closing**"). At Closing, Seller shall deliver to Buyer:

4.1.1 an original deed (the "**Deed**") properly executed by or on behalf of Seller, in form and substance as attached hereto as **Exhibit D**, conveying all of Seller's interest in the Property to Buyer by good, marketable, insurable title, free and clear of all liens, encumbrances, and deficiencies, except utility easements of record, and, except easements and encumbrances of record prior to the date of this Agreement and,

4.1.2 such other documents as may be reasonably requested by Buyer, including without limitation customary title insurance affidavits, such instruments of assignment as Buyer reasonably requests, such as an Assignment of Permits, documents to evidence the existence, good standing, and authority of Seller, a settlement statement, or any other customary or reasonable documentation as may be requested (such other documents, together with the Deed, may hereinafter be referred to collectively as the "**Conveyance Documents**").

4.1.3 At Closing Buyer shall deliver to Seller the Adjusted Purchase Price in immediately available funds.

Article V - Representations

5.1 Seller hereby represents and warrants to Buyer, which representations and warranties shall be deemed restated as of closing, that:

5.1.1 Seller has good, insurable, and marketable title in fee simple to the Property, subject only to the encumbrances of record.

5.1.2 Seller is a Maine nonprofit corporation, is not a foreign person or foreign entity as defined in the Foreign Investment in Real Property Tax Act ("**FIRPTA**"), has full right, power and authority to enter into and consummate this transaction, the person executing this Agreement on behalf of Seller is an officer of Seller and is duly authorized to execute this Agreement on behalf of Seller, Seller has the power and authority without necessity of further act or consent to execute this Agreement and all other instruments and documents contemplated hereby and to perform any and all acts necessary or desirable to consummate the transactions contemplated (including a conveyance of the Property).

5.1.3 To Seller's knowledge without additional investigation, the Property is free of violations of law, is in full compliance with Federal, State, City and County ordinances and environmental laws, and there are not any current or contemplated special tax assessments known to Seller.

5.1.4 Other than to the extent granted in this Agreement, previously disclosed to Buyer in writing, or reflected as exceptions to coverage on a title commitment acceptable to Buyer, no person, firm, or entity has any rights in, pertaining to, or affecting the Property, and Seller has not granted any rights in, pertaining to, or affecting the Property to any person, firm, or entity in any unrecorded instrument or writing, nor does any person, firm, or entity have an option to purchase or right of first refusal to purchase the Property.

5.1.5 Seller is not involved as a debtor in any bankruptcy, reorganization or insolvency proceeding, and Seller has not received any notice of and has no knowledge of any

pending or threatened lawsuits, including condemnation suits, that could affect the Property or Seller's ownership of the Property.

5.1.6 To Seller's knowledge without additional investigation there have not been and there are not now any underground storage tanks located on or under the Property or if there have been or are any such tanks located on the Property, their location has been identified to Buyer in writing, they have been properly registered with all appropriate authorities, they are in full compliance with all applicable statutes, ordinances and regulations, and they have not resulted in the release of any hazardous or toxic substance, material, or waste into the environment.

5.1.7 To Seller's knowledge without additional investigation there are no past or present uses of the Property that did not comply in all material respects with all Environmental Protection Agency, Occupational Safety and Health Administration, and all other federal, state and local laws, administrative rules and regulations governing the soil, water, air and environment in and around the Property.

Article VI - Default

6.1 If Buyer fails to fulfill the Buyer's agreement herein, Seller shall retain the Option Payment(s) as liquidated damages, being Seller's sole remedy. If Seller shall fail to fulfill its obligations herein, Buyer shall have all available remedies at law and in equity, including specific performance. Notwithstanding the foregoing, the non-defaulting party agrees to provide the defaulting party with written notice providing a description of a default and provide such defaulting party with a [redacted] day cure period.

Article VII – Notice

7.1 All notices or other communications required or permitted hereunder shall be in writing, and shall be effective upon receipt or refusal when sent to the intended recipient by one of the methods set forth below:

7.1.1 regular and certified U.S. mail, postage prepaid, return receipt requested;

7.1.2 reputable national delivery service (i.e. FedEx, DHL); or,

7.1.3 otherwise hand delivered with an acknowledgment of receipt

7.1.4 electronic transmission

7.2 Each party, by written notice given to the other party in accordance herewith, may change the address to which notices or other communications hereunder shall be deemed to have been duly given; provided, however, no party may designate more than **three** notice addresses, and notice of a change of address shall be effective only upon actual delivery. Until changed as aforesaid, a notice shall be addressed to the intended recipient at their address set forth in the first paragraph on page 1 of this Agreement.

Article VIII – Miscellaneous

8.1 *Broker.* Seller and Buyer each hereby represent and warrant to the other that neither Seller nor Buyer has dealt with or employed any real estate agent, broker, or any person entitled to a commission in connection with the transaction contemplated other than [redacted] in Maine. Seller and Buyer hereby agree to indemnify, defend, and hold harmless the other from any claim or claims, action or actions, losses, payments, judgments, commission or commissions, paid or payable to any real estate agent, broker, person or entity in connection with this transaction that was not called to the attention of the other as a result of any services or facilities of any such real estate agent, broker, person or entity provided to the other. The provisions of this paragraph shall survive conveyance of the Property to Buyer.

8.2 *Governing Law, Venue, Jury Waiver.* This Agreement shall be construed in accordance with the laws of the State of Maine. Both Buyer and Seller hereby consent to the jurisdiction of the courts of said state and of the federal government, as well as to the jurisdiction of all courts from which an appeal may be taken from the aforesaid courts, for the purpose of any suit, action or other proceeding arising out of, under or with respect to this agreement, and expressly waive any and all objection each may now or hereafter have as to the venue in any of such courts, and EACH OF BUYER AND SELLER DO HEREBY EXPRESSLY WAIVE ANY RIGHT EACH MAY HAVE TO ELECT A TRIAL BY JURY AS TO ANY DISPUTE ARISING HEREUNDER. Any disputes between Buyer and Seller (which are not otherwise resolved by the parties) shall be submitted to binding arbitration in Portland, Maine administered by JAMS in accordance with its Streamlined Arbitration rules. The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction. This clause shall survive the closing of this transaction.

8.3 *Headings; Entire Agreement; Amendments.* The headings contained in this Agreement are for reference purposes only and shall not affect in any way the meaning or interpretation of this Agreement. This Agreement (including all exhibits annexed hereto) contains the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior understandings, written or oral, if any, with respect thereto. This Agreement may not be modified, changed, supplemented, or terminated, nor may any obligations hereunder be waived, except by written instrument signed by the party to be charged or by its agent duly authorized in writing or as otherwise expressly permitted herein. The Agreement shall not be binding on any party until signed by every party.

8.4 *Waiver.* No waiver of any breach of any agreement or provision herein contained shall be deemed a waiver of any preceding or succeeding breach thereof or of any other agreement or provision herein contained. No extension of time for performance of any obligations or acts shall be deemed an extension of the time for performance of any other obligations or acts.

8.5 *Binding Effect; Assigns; Benefits.* This Agreement shall inure to the benefit of and shall be binding upon the parties hereto and their respective heirs, legal representatives, successors and assigns; provided, however, Seller may not assign its rights or obligations under this Agreement absent Buyer's consent in Buyer's sole discretion.

8.6 *Exhibits, Counterparts.* All exhibits attached hereto are by this reference incorporated fully herein. This Agreement may be executed by the parties hereto in one or more counterparts, each of which shall be deemed to be an original, but all of which together shall constitute one and the same instrument.

8.7 *Severability.* The invalidity or unenforceability of any provision of this Agreement shall not affect the validity or enforceability of any other provision of this Agreement, which shall remain in full force and effect.

8.8 *Days, Interpretation.* References in this Agreement to a specified number of "days," shall mean and refer to calendar days; provided, however if any specified period would otherwise end on a day that is a Saturday, Sunday or day which is recognized by the State of Maine ("Jurisdiction") as a legal holiday, then and only in such event, the specified period shall be deemed to extend to the next following day that is not a Saturday, Sunday or legal holiday. "Business Day" means any day other than Saturday, Sunday and/or any weekday or weekend day that is a legal holiday observed by the federal government of the United States of America or the Jurisdiction. The terms of this Agreement were fully negotiated by the parties and shall not be construed for or against any party hereto.

8.9 *Prevailing Party.* In the event the parties litigate in any court or arbitration forum any dispute hereunder, then and in such event, the prevailing party shall be entitled to an award from the other of the reasonable attorney's fees and costs incurred therein by said prevailing party.

8.10 *Time of the Essence*. The parties hereto hereby agree that TIME IS OF THE ESSENCE as to each and every provision of this Agreement.

[*Signature Page Follows; Remainder Intentionally Blank*]

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed under seal by their proper officers hereunto duly authorized as of the date of last execution hereof as set forth below.

Seller:
NEW LIFE CHRISTIAN FELLOWSHIP

By:_____
Justin Sweeney
Its Duly Authorized: Lead Pastor

Date: January 25, 2021

Buyer:
DEVINE CAPITAL LLC

By:_____
Bernard M. Devine
Its Duly Authorized: President

Date: January 25, 2021

Exhibit A

Two parcels of land, excepting the third parcel conveyed to Old Dogs of Biddeford, LLC with any improvements thereon, in the City of Biddeford, York County, Maine described in the following deeds:

588 Alfred Street, Biddeford, Maine

- Warranty Deed dated November 13, 2001 from James A. Mininni, Sr. to New Life Christian Fellowship, recorded at Book 11111, Page 70 in the York County Registry of Deeds

590 Alfred Street, Biddeford, Maine

- Warranty Deed dated March 5, 2002 from Energy Homes, Inc. to New Life Christian Fellowship, recorded at Book 11449, Page 147 in the York County Registry of Deeds

Excepting the property located at Alfred Street, Biddeford, Maine, conveyed to Old Dogs of Biddeford LLC

- Warranty Deed dated April 19, 2019 from New Life Christian Fellowship to Old Dogs of Biddeford, LLC recorded at Book 17933, Page 197 in the York County Registry of Deeds

Exhibit B

Survey - Titcomb Associates 2002
588 Alfred St Deed 11111 070
590 Alfred St Deed 11449 147
588 Alfred St Disclosure
590 Alfred St Disclosure
Old Dogs 2018 Conveyance Survey
Old Dogs Deed 17933 197
Alfred St Sewer Map
Andrews Geometrics Plan Profile 2004
ARC New Building sketch
Packard Development sketch
BI3074-Va Table A Zoning Uses
Parcel 1 and 2 Tax Map copy
2003 Biddeford & Saco Water Co Letter
2003 Gorrill-Palmer Consulting Engineers re: Ability to Serve
2005 Post development AM Peak Hour
Andrews Geometrics Plan Profile 2004
Attachment B TR-20 Calculations
Attachment C Water Quality Computations
Calculations Based Upon Maine Subsurface Wastewater Rules
Capacity and Queuing Analysis Results
City of Biddeford Wastewater Dept 2003 Ability to Serve Letter
Erosion Sedimentation North C-8B
Erosion Sedimentation South C-8A
First American Gap Indemnity Agreement 5.25.2017
First American Alta 3 parcels-3.5-2002
Gorrill-Palmer Consulting Engineers 2.9.2004 Maine DOT Letter
Gorrill-Palmer Consulting Engineers 4.8.2004 Maine DOT Letter
Gorrill-Palmer Consulting Engineers 2004 Plans
Gorrill-Palmer Consulting Engineers Row Volumes, Peak Adjusted Volumes
Grading & Drainage C-3
Grading Drainage South C-4A
Grading Draining North C-4B
Lighting plan WLS Lighting Systems
Offsite Utility Profile C-17B
Offsite Utility Profile C-17A
Overall Site Layout C-1A
PreDevelopment Watershed Maps
Proposed Off-Site Improvements - Gorrill Palmer
Route 111 & Exit 4- traffic study
Route 111 & Home Depot
Route 111 at Andrews Rd
Route 111 at Exit 4 Precourt St
Route 111 at Route 35
Route 111 at Shaws Irving
Route 111 at Walmart Park n ride
RW Gillespie June 2004 geotechnical evaluation
Section 7 Wildlife and Fisheries
Section 14 Erosion and Sedimentation Control Plan
Site Layout C-1B
Site Layout North C-2C

Exhibit B (continued)

Site Layout Phase2. C-2A
Site Layout Plans C2A C1B
Site Layout South C-2B
Stormwater Management
Traffic Impact Study 2003
Trip Generation Calculations
Turning Movement Diagrams
Utility Plan C- 6
Utility Plan Phase 1 C5
Vernal Pool Application and Determination NLC
Vernal Pool Location Plan LongView Partners - 588-590 Alfred St
Wetland Reconnaissance 4-21-18- 588-590 Alfred St
Wetland Reconnaisance 6-3-20- 590 Alfred St.6-3-20
Zoning Map

Exhibit C

NOTICE OF OPTION

Notice is hereby given of the following Option to Purchase and Purchase and Sale Agreement (the "Option") vesting in Buyer an option to purchase certain real property owned by Seller:

SELLER:	New Life Christian Fellowship
BUYER:	Devine Capital LLC
DATE OF AGREEMENT:	January 25, 2021
PREMISES:	See Exhibit A attached hereto
TERM OF OPTION:	Beginning January 25, 2021 and continuing for up to [redacted] days, subject at all times to the terms and conditions of the Option Agreement.

The undersigned further expressly acknowledges that this Notice of Option is being executed pursuant to the provisions of the Option and is not intended to vary the terms or conditions of the Option.

IN WITNESS WHEREOF, the undersigned has caused this Notice of Option to be signed by its duly authorized representative.

NEW LIFE CHRISTIAN FELLOWSHIP

By:_____
Print Name: Justin Sweeney
Its Duly Authorized: President and Lead Pastor
Dated: January 25, 2021

STATE OF MAINE
COUNTY OF YORK, SS

January 25, 2021

Then personally appeared the above-named Justin Sweeney, President and Lead Pastor of NEW LIFE CHRISTIAN FELLOWSHIP and acknowledged the foregoing instrument to be his/~~her~~ free act and deed in his/~~her~~ said capacity, and the free act and deed of NEW LIFE CHRISTIAN FELLOWSHIP.

Lillian B. Camire
Notary Public / Attorney at Law
Print name:
My commission expires:

LILLIAN B. CAMIRE
Notary Public - Maine
My Commission Expires
December 17, 2023

Exhibit D

QUITCLAIM DEED
WITH COVENANT
STATUTORY SHORT FORM
TITLE 33, §775

New Life Christian Fellowship, a Maine religious nonprofit corporation, with a mailing address of 551 Alfred Street, Biddeford, Maine 04005-9474, for consideration paid, grants to _____, a _____, with a mailing address of _____, **with Quitclaim Covenant,** a certain lot or parcel of land situated in the City of Biddeford, County of York, and State of Maine, as described in **Exhibit A** attached hereto and made a part hereof.

DATED: _____, 202_ New Life Christian Fellowship

By:_____
Print Name: Justin Sweeney
Its Duly Authorized: President and Lead Pastor

STATE OF MAINE
COUNTY OF YORK, SS

_____, ___, 202_

Then personally appeared the above-named Justin Sweeney, President and Lead Pastor of NEW LIFE CHRISTIAN FELLOWSHIP and acknowledged the foregoing instrument to be his/her free act and deed in his/her said capacity, and the free act and deed of NEW LIFE CHRISTIAN FELLOWSHIP.

_____
Notary Public / Attorney at Law
Print name:
My commission expires:

Exhibit A

Two parcels of land, excepting the third parcel conveyed to Old Dogs of Biddeford, LLC with any improvements thereon, in the City of Biddeford, York County, Maine described in the following deeds:

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Excepting the property located at Alfred Street, Biddeford, Maine, conveyed to Old Dogs of Biddeford, LLC

- Warranty Deed dated April 19, 2019, from New Life Christian Fellowship to Old Dogs of Biddeford, LLC recorded at Book 17933, Page 197 in the York County Registry of Deeds

SECOND AMENDMENT TO OPTION TO PURCHASE AND PURCHASE AND SALE AGREEMENT

THIS SECOND AMENDMENT TO OPTION TO PURCHASE AND PURCHASE AND SALE AGREEMENT (this Amendment") is made and entered into as of the 14 day of January, 2022, by and between **New Life Christian Fellowship** ("Seller") and **Devine Capital LLC** ("Buyer") with respect to that certain Option To Purchase and Purchase and Sale Agreement between Seller and Buyer, with an effective date of January 25, 2021, as amended by that certain Amendment to Option to Purchase and Purchase and Sale Agreement dated May "__", 2021 (together, the "Agreement"), relating to property of the Seller located generally at 588 and 590 Alfred Street in Biddeford, Maine.

WHEREAS, Seller and Buyer wish to amend the Agreement as set forth below.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Seller and Buyer hereby agree that the Agreement shall be amended as hereinafter set forth.

A. Section 1.4 of the Agreement is hereby amended to change the monthly amount of the Extension Payments from [redacted] to [redacted] for the firs [redacted] monthly Extension Payments (i.e., the monthly Extension Payments in January 2022 through June 2022 shall be [redacted] but thereafter shall revert to [redacted]).

B. Seller and Buyer hereby ratify and confirm all terms and provisions of the Agreement and agree that, except as amended by this Amendment, all terms and provisions of the Agreement shall remain in full force and effect including.

C. This Second Amendment may be simultaneously executed in any number of counterparts, each of which when so executed and delivered shall be an original, but such counterparts shall constitute one and the same instrument. This Second Amendment may be transmitted between the parties by facsimile machine or by email attachment and signatures appearing on faxed or emailed instruments shall be treated as original signatures. Both a faxed or emailed version containing either original, faxed or emailed signatures of all parties, and multiple counterparts of the same version each containing separate original, faxed or emailed signatures of the parties, shall be binding on them.

[Signature Page Follows]

IN WITNESS WHEREOF, Seller and Buyer have executed this Second Amendment as of the date first above written.

SELLER

NEW LIFE CHRISTIAN FELLOWSHIP

DocuSigned by:
By: Justin Sweeney
2507456A9BB5421...

Name: Justin Sweeney

Its Duly Authorized: Lead Pastor

BUYER

DEVINE CAPITAL LLC

By: _____
Bernard M. Devine, Jr., Manager

SECTION 5

PUBLIC OR PRIVATE RIGHTS-OF-WAY

On the south side of the proposed site, along Alfred Road (Route 111), exists a 10-foot right-of-way (R.O.W.) easement. The Boundary & Existing Conditions Survey plan describes said easement as follows:

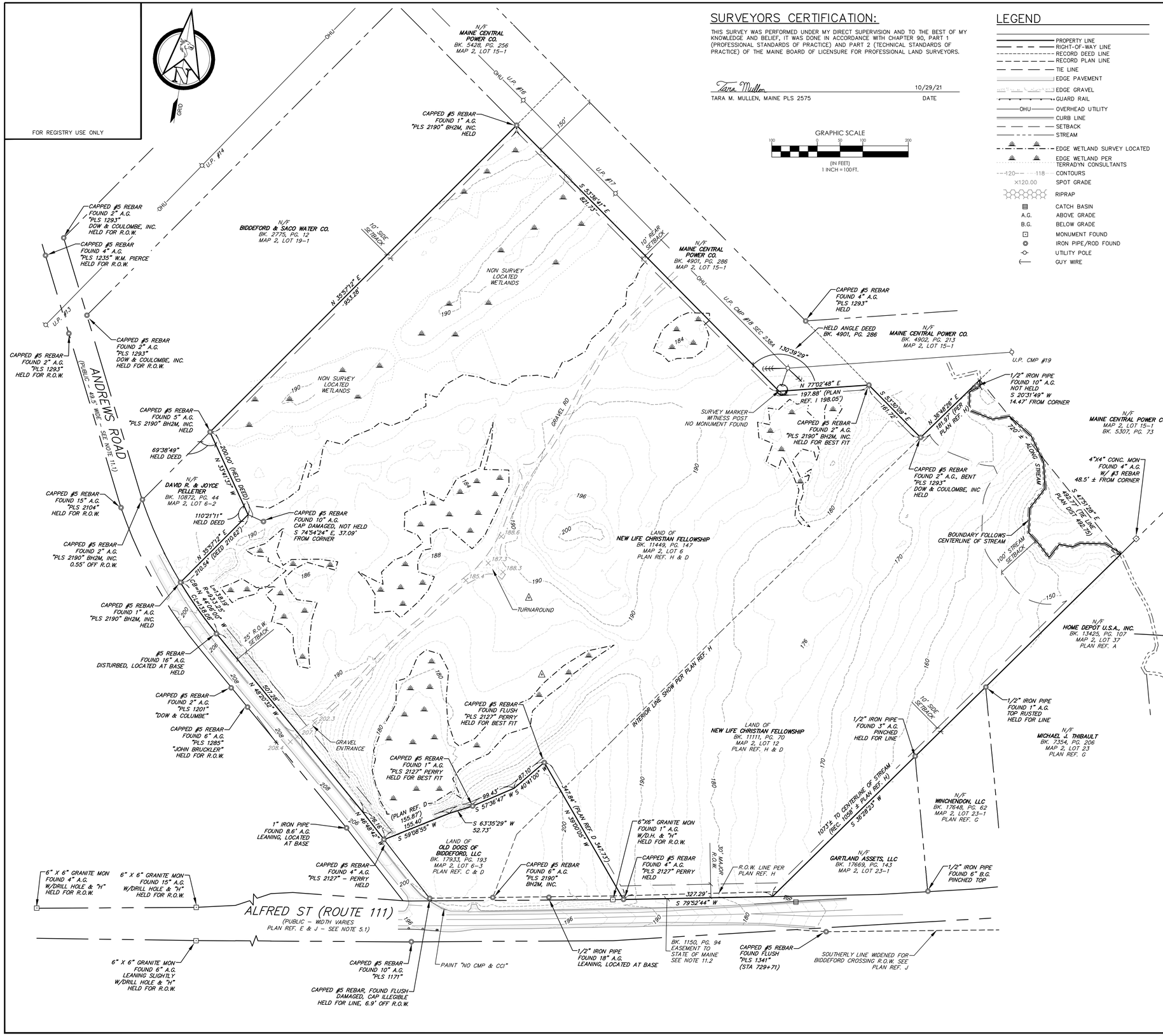
"*When the 1948 R.O.W. for Route 111 was established, an easement was granted by the former owner of Map 2, Lot 12, Vito Mininni, to the State of Maine, see Book 1150, page 94 dated January 12, 1950. The limits of the easement are shown on plan Ref. E as the edge of the R.O.W. of Route 111 and were held for the current R.O.W. of Route 111.*"

SECTION 6

SCHEDULE

KDK Biddeford, LLC, is anticipating start of construction during the fall of 2022 with a fall 2023 completion.

FOR REGISTRY USE ONLY



SURVEYORS CERTIFICATION:

THIS SURVEY WAS PERFORMED UNDER MY DIRECT SUPERVISION AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT WAS DONE IN ACCORDANCE WITH CHAPTER 90, PART 1 (PROFESSIONAL STANDARDS OF PRACTICE) AND PART 2 (TECHNICAL STANDARDS OF PRACTICE) OF THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS.

Tara Mullen — 10/29/21

TARA M. MULLEN, MAINE PLS 2575 — DATE

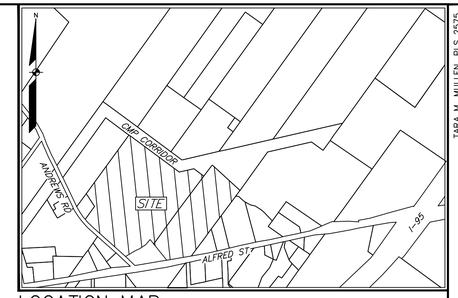
GRAPHIC SCALE

100 0 50 100 200

(IN FEET)
1 INCH = 100 FT.

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- RECORD DEED LINE
- RECORD PLAN LINE
- TIE LINE
- EDGE PAVEMENT
- EDGE GRAVEL
- GUARD RAIL
- OHU — OVERHEAD UTILITY
- CURB LINE
- SETBACK
- STREAM
- EDGE WETLAND SURVEY LOCATED
- EDGE WETLAND PER TERRADYN CONSULTANTS
- 120 118 — CONTOURS
- ×120.00 — SPOT GRADE
- RIPRAP
- CATCH BASIN
- A.G. — ABOVE GRADE
- B.G. — BELOW GRADE
- MONUMENT FOUND
- IRON PIPE/ROD FOUND
- UTILITY POLE
- GUY WIRE



LOCATION MAP

N.T.S.

GENERAL NOTES:

1. THE RECORD OWNER OF THE PARCEL IS NEW LIFE CHRISTIAN CHURCH BY DEEDS DATED NOVEMBER 13, 2001 AND MARCH 5, 2002 AND RECORDED AT THE YORK COUNTY REGISTRY OF DEEDS IN BOOK 11111, PAGE 70 AND BOOK 11449, PAGE 148, RESPECTIVELY AND IS SHOWN AS LOTS 6 & 12, RESPECTIVELY, ON THE CITY OF BIDDEFORD TAX MAP 2.
2. THE PROPERTY IS LOCATED IN THE HIGHWAY BUSINESS (B2) DISTRICT.

   LAND USE REGULATIONS ARE AS FOLLOWS:

MINIMUM LOT SIZE:	40,000 SF - NEITHER WATER NOR SEWER
MINIMUM STREET FRONTAGE:	150 FT
MINIMUM FRONT YARD:	30 FT MAJOR ROW. 25 FT OTHER ROW
MINIMUM SIDE & REAR YARD:	10 FT
STREAM SETBACK:	100 FT FROM STREAM**
MAXIMUM BUILDING HEIGHT:	35 FT (3 STORIES)

   * SEE ORDINANCE FOR MORE PARTICULAR INFORMATION.

   ** STREAM SETBACK PER BIDDEFORD SHORELAND ZONING ORDINANCE. LOCATION AND EXTENTS OF THE STREAM CHANNEL SHOWN IS BASED ON VISUAL INTERPRETATION DURING THE FIELD SURVEY.
3. TOTAL AREA OF PARCEL IS APPROXIMATELY 44.53 ACRES.

   MAP 2, LOT 12 600,700 ± S.F. (13.79 ± ACRES)
   MAP 2, LOT 6 1,351,500 ± S.F. (31.03 ± ACRES)
4. BOUNDARY INFORMATION SHOWN HEREON IS BASED UPON PLAN REF. D, E, H & I TIED TO FIELD MEASUREMENTS OBSERVED BY NORTHERN SURVEY ENGINEERING, LLC IN AUGUST & SEPTEMBER, 2021. VERIFIED BY RECORDS SEARCH COMPLETED AS PART OF THIS SURVEY..
5. TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED UPON PUBLICLY AVAILABLE LIDAR DATA SOURCED THROUGH NOAA DATA ACCESS VIEWER, DATED 2008-11-12 WITH A PUBLISHED VERTICAL ACCURACY OF 15 CM, GROUND TRUTHED TO FIELD MEASUREMENTS OBSERVED BY NORTHERN SURVEY ENGINEERING, LLC IN OCTOBER, 2021.

   5.1. ROAD CROWN ELEVATIONS ALONG ROUTE 111 ARE SHOWN PER THE 2008 LIDAR DATA AND HAVE NOT BEEN GROUND TRUTHED.
6. BOOK AND PAGE REFERENCES SHOWN HEREON ARE IN REFERENCE TO THE YORK COUNTY REGISTRY OF DEEDS (Y.C.R.D.).
7. PLAN REFERENCES:

   A. "ALTA/ACSM LAND TITLE SURVEY, ROUTE 111, ALFRED ROAD, BIDDEFORD, MAINE MADE FOR GORRILL-PALMER CONSULTING ENGINEERING, INC. PROPERTY OF BERNARD NADEAU & JABENA LTD" BY TITCOMB ASSOCIATES, DATED 2/22/00. RECORDED IN PLAN BOOK 255, PAGE 12.

   B. "PLAN SHOWING A BOUNDARY SURVEY FOR MAURICE GUAY" BY JOHN D. BUCKLER, DATED MAR. 2 1988. RECORDED IN PLAN BOOK 164, PAGE 46.

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   E. "RIGHT OF WAY MAP, STATE HIGHWAY "U" NORTH KENNEBUNKPORT-BIDDEFORD, FEDERAL AID PROJECT NO. F 360(1)" BY MAINE STATE HIGHWAY COMMISSION, DATED JUNE 1948. S.H.C. FILE NO. 16-69.

   F. "PHASE 2, OVERALL SITE LAYOUT PLAN PROPOSED CHURCH/SCHOOL FACILITY, NEW LIFE CHRISTIAN FELLOWSHIP" BY GORRILL-PALMER CONSULTING ENGINEERS, INC., DATED JAN 2003. PROVIDED BY BIDDEFORD CITY ENGINEERS OFFICE (TD-1656).

   G. "BOUNDARY SURVEY AT 580 ALFRED ROAD - ROUTE 111, BIDDEFORD, MAINE MADE FOR DELUCA HOFFMAN ASSOCIATES" BY OWEN HASKELL, INC. DATED JAN 15, 2007. UNRECORDED.

   H. "PLAN OF PROPERTY, ALFRED ROAD & ANDREWS ROAD, BIDDEFORD, MAINE MADE FOR NEW LIFE CHRISTIAN FELLOWSHIP" BY TITCOMB ASSOCIATES. DATED FEBRUARY 1, 2002. UNRECORDED.

   I. "STANDARD BOUNDARY SURVEY, LAND OF EMILY AND LILLINA VERVILLE, 583 ALFRED ST, BIDDEFORD, MAINE" BY BH2M, DATED OCT. 1999. UNRECORDED.

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8. BEARINGS SHOWN HEREON ARE IN REFERENCE TO GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1802-NAD83. ELEVATIONS DEPICTED HEREON ARE IN REFERENCE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), BASED GPS OBSERVATIONS.
9. THE LOCUS PROPERTY AS DEPICTED HEREON DOES NOT FALL WITHIN A SPECIAL FLOOD HAZARD AREA AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR CITY OF BIDDEFORD, MAINE, YORK COUNTY, COMMUNITY-PANEL NUMBER 230145 0008 B, HAVING AN EFFECTIVE DATE OF MAY 15, 1984. THE LOCUS FALLS WITHIN AN AREA IDENTIFIED AS ZONE C, AREAS OF MINIMAL FLOODING.
10. A WETLAND DELINEATION WAS PERFORMED ON THIS PROJECT SITE IN AUGUST, 2021 BY MARK CENCI, MARK CENCI GEOLOGIC, INC. AND LOCATED BY NORTHERN SURVEY ENGINEERING AND MARK CENCI GEOLOGIC, INC. THIS DELINEATION CONFORMS TO THE STANDARDS AND METHODS OUTLINED IN THE 1987 WETLANDS DELINEATION MANUAL AND NORTHEAST REGIONAL SUPPLEMENT AUTHORED AND PUBLISHED BY THE U.S. ARMY CORPS OF ENGINEERS.

    10.1. SPECIFIC WETLAND FLAGS WERE SURVEY LOCATED BY NORTHERN SURVEY ENGINEERING, LLC THE REMAINDER WHERE PROVIDED BY TERRADYN CONSULTANTS, LLC - SEE LEGEND.
11. BOUNDARY NOTES:

    11.1. ANDREWS ROAD: THREE RODS WIDE (49.5') ACCEPTED BY THE CITY OF BIDDEFORD, VOLUME 4, PAGE 114, DATED NOVEMBER 7, 1836. EXISTING MONUMENTATION HELD FOR RIGHT OF WAY.

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TARA M. MULLEN, PLS 2575

STATE OF MAINE — TARA M. MULLEN — 2575 — REGISTERED PROFESSIONAL LAND SURVEYOR

REV:	BY:	DATE:	STATUS:

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK.

NORSE
NORTHERN SURVEY ENGINEERING
207.440.3487
41 CHURCH ROAD, BRUNSWICK, MAINE 04011
www.northernsurveyengineering.com

BOUNDARY & EXISTING CONDITIONS SURVEY OF:

LAND OF NEW LIFE CHRISTIAN FELLOWSHIP

588 ALFRED ST & 590 ALFRED ST
BIDDEFORD, MAINE, 04005

FOR: TERRADYN CONSULTANTS, LLC
41 CAMPUS DRIVE, SUITE 101
NEW GLOSTER, ME 04260 (1)

RECORD OWNER:
NEW LIFE CHRISTIAN FELLOWSHIP
551 ALFRED ST, BIDDEFORD, ME 04005
BK 111110, PG 70 & BK 11449, PG 148

DRAWN	CHECKED
TMM	DJH
PROJECT NO.	DATE
21107	10/29/21
SHEET SIZE	SCALE
24" X 36"	1" = 100'

SHEET 1 OF 1

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GRAPHIC SCALE

80 0 40 80 160 160

(IN FEET)
1 inch = 80 ft.

STATE OF MAINE
RICHARD L. MEEK
No. 10668
LICENSED PROFESSIONAL ENGINEER

DATE: 02-07-2022
P.E.: RICHARD L. MEEK, P.E. 10668

NO.	DATE	REVISIONS	APP'D BY
D	02/07/2022	UPDATE DESIGN PLANS TO REFLECT ALTERNATE SITE LAYOUT #2	RLM
C	01/07/2022	MODIFIED SITE LAYOUT PER OWNER DIRECTION	RLM
B	12/17/2021	REVISED PER OWNER COMMENTS	RLM
A	11/09/2021	PRELIMINARY PLANS TO KGI	RLM

TERRADYN CONSULTANTS, LLC
41 CAMPUS DRIVE
SUITE 203
NEW GLOUCESTER, ME 04260
565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04102
OFFICE: (207) 926-5111 FAX: (207) 221-1317
www.terradynconsultants.com

Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

OVERALL SITE PLAN

CLIENT:
KGI PROPERTIES, LLC
10 MEMORIAL BOULEVARD, SUITE 901
PROVIDENCE, RI 02903

DATE:	09/28/2021
SCALE:	1" = 80'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2149.S
SHEET	C-1.0

Pineland
Cumberland Hall
41 Campus Drive, Suite 301
New Gloucester, ME 04260

Portland
565 Congress Street, Suite 201
Portland, ME 04101

September 13, 2022 21-49

Mr. Matthew Grooms, City Planner
P.O. Box 586
Biddeford, ME 04005

Planning Board Application, Major Subdivision - Devine Capital, LLC
216 Unit Multi-Family Apartment Complex (Biddeford Residential)
588 & 590 Alfred Street (Tax Map 2, Lots 6 & 12)

Dear Matthew,

On behalf of Devine Capital, LLC, we are pleased to submit the required copies of the Planning Board Application and related attachments for consideration and placement on the October 5, 2022 Planning Board meeting agenda. As you will recall, the applicant attended the August 17, 2022 Planing Board meeting and presented the proposed project as a Sketch Plan Application. The Board provided great feedback regarding the project and ultimately voted to review the project as a Major Subdivision.

In summary, the applicant intends to construct a multi-family residential development on a combined 44.5 acre parcel (Tax Map 2, Lots 6 & 12) located off of Andrews Road and Alfred St. (Rt.111). The development will consist of nine 24-unit apartment buildings (216-units), a clubhouse, mail kiosk, maintenance building, eight detached garages, surface parking, dog park, community garden and interconnected sidewalks. When completed, the site will include 497 parking spaces (371 surface spaces and 126 garage spaces). Appropriate landscaping and site lighting have been incorporated into the development.

The development will connect to existing utilities within Andrews Road including electrical power, telephone, internet and cable television. Connection to public water and sanitary sewer will occur at Alfred St. These connections will require coordination with Maine Water Company and Public Works, respectively, to extend the exisitng infrastructure to the site. Additionally, the site will require installation of a private water booster station to provide adequate domestic water pressure and fire service flows to the development. On-site propane tanks or natural gas lines (extended to the site) will supplement the cooking and heating demands of the development. Stormwater management will be accomplished by constructing a network of catch basins and storm drainage pipe to route stormwater runoff to two proposed on-site gravel wetlands.

Based upon the scope of the development, a Site Location of Development Act (SLODA) permit application is required. The City of Biddeford maintains “Capacity” to review SLODA applications in lieu of the Maine Department of Environmental Protection (MDEP). A Chapter 500 - Stormwater Management Law permit application and Natural Resources Protection Act Permit (NRPA) applications (Tier-1 and Permit by Rule) have been filed with MDEP, however, as these permits cannot be delegated to the municipality. Due to

proposed impacts to freshwater forested wetlands, the Tier-1 NRPA permit will also be filed with the U.S. Army Corps of Engineers. The anticipated trip generation for the project will exceed 100 trips. As such, a Traffic Movement Permit has been filed with the Maine Department of Transportation (MDOT). No other state or federal permits are anticipated.

The following information addresses Part III, Article VI, Section 47 – Performance Standards for Multifamily developments:

A. Applications. The written material and design plans include the information as listed in A.1.
B. Design Requirements.
   a. Connection to public water is proposed. Maine Water Company has been contacted to confirm that an adequate water supply can be provided to the development. Maine Water Company's response will be provided once received.
   b. Fire hydrants are located less than 500 feet from all buildings. The Fire Department has been contacted to verify/approve of the layout.
   c. Buildings will be constructed in accordance with the applicable State and City building standards.
   d. Buildings will be equipped with an approved fire alarm system in accordance with the applicable State and City building standards.
   e. Connection to public sewer system is proposed. Public Works has been contacted to confirm that service is available and adequate treatment capacity is available. Public Works' response will be provided once received.
   f. A common collection dumpster and recycling bins will be provided for the residents. The developer will contract with a private solid waste disposal company to manage solid waste.
   g. The development will include an on-site mail kiosk to accommodate mail delivery and pick-up. The local postmaster will be contacted to verify the kiosk is acceptable to the postal service.
C. Stormwater and Drainage. A stormwater management report is provided in Attachment 5.
D. Access, circulation and parking.
   1. The proposed access is designed to meet the City's intersection standards.
   2. Based upon the estimated trip generation for the project, a Traffic Movement Permit has been submitted to MDOT. A copy of the submission is provided in Attachment 6.
   3. Access to the site is provided directly from Andrews Road.

The following information addresses Part III, Article XI, Part II, Section 5 Site Design and Development Criteria:

A. Site Development plan.
   1-6. These items are included on the design plans.
   7a.-7u. These items are included on the design plans.
   7v. The following studies/reports are provided for reference: Traffic Study, Drainage study/calculations, and High-intensity soils study.

B. Site Design Criteria
   1. Drainage. A stormwater management report has been prepared to address the majority of these requirements. Additional coordination with Public Works and City Engineer are necessary to understand the bonding requirements of 7.g.
   2. Utilities. The design plans address the utility requirements of this section.
   3. Parking. The design plans address the parking requirements of this section.
   4. Structural layout and design.
      a. Copies of the architectural elevations and floor plans are provided for reference.
      b. All proposed buildings have been sited to adhere to setback requirements.
      c. The site has been designed to address fire protection requirements.
      d. The design plans include adequate landscaping to address landscape requirements.
      e. Trash dumpster and recycling location is identified on the design plans. No outdoor storage is proposed.
      f. Pavement is not proposed within specified setbacks.
      g. Walkways and designated parking has been designed to meet ADA standards.
      h. No loading facilities are proposed.
      i. The site has been designed to adhere to the parking, loading and protective buffer requirements.
      j. Adequate green space is incorporated within the development to meet the open space requirement.
      k. External lighting with photometric analysis is provided as part of the design plan set.
      l. Monument signs for the development will be designed to meet the requirements of Article VI.
      m. A copy of the Maine Historic Preservation Commissions response letter is provided in Attachment 4.

Additionally, the project has been designed to comply with the City of Biddeford's Code of Ordinances Subdivision Review criteria. A narrative describing how these requirements are met is provided as Attachment 3.

Lastly, the following information is provided in response to the questions asked by the Board at last month's sketch plan review:

Proposed Apartment Mix: At last month's meeting a Board member asked what apartment mix the applicant originally proposed for the project. For reference, at the February 2022 City Council workshop, the applicant originally proposed an equal number of units, i.e., 54 studio units, 54 one-bedroom units, 54 two-bedroom units, and 54 three-bedroom units (totaling 216 units). In response to the City Council's desire to have a less studio apartments, the applicant agreed to the following unit mix under the terms of the Joint Development Agreement with the City:

- studio apartments 27
- 1-bedroom apartments 54
- 2-bedroom apartments 108
- 3-bedroom apartments 27

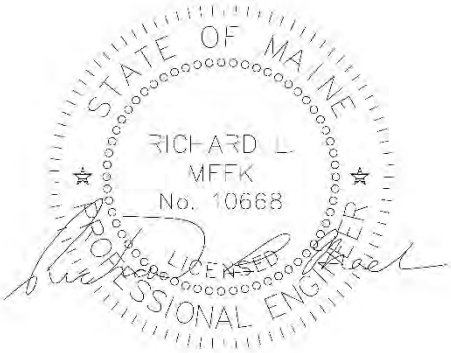
Total 216

Scarborough Rental Rates: At last month's meeting a Board member asked the applicant to provide the current rental rates at applicant's project in Scarborough (known as The Beacon at Gateway). The following are the average in-place rental rates for the Scarborough project:

- Studio $1,679
- One-bedroom $1,870
- Two-bedroom $2,304
- Three-bedroom $2,715

Please let me know if you have any questions or require additional information regarding the proposed Planning Board application. Thank you for your consideration.

Sincerely,
TERRADYN CONSULTANTS, LLC



Richard Meek, P.E.
Sr. Project Engineer

Enc.
cc: Devine Capital, LLC

Attachment 1	Application Form and Review Check Lists
Attachment 2	Right, Title, or Interest
Attachment 3	Compliance with Code of Ordinances
Attachment 4	Site Location of Development Act Permit Application
Attachment 5	Stormwater Management Report
Attachment 6	Traffic Study

Attachment 1

Application Forms and Review Check Lists

City of Biddeford – Planning Department
Planning Board Application
P.O. Box 586, 205 Main Street Biddeford, Maine 04005
207-284-9115

Type of Application:

__ Shoreland Zoning Permit _X Site Plan Review __ Extraction
__ Conditional Use Permit _X Subdivision __ Private Way
__ Other: _____

Applicant Information:

Name: Devine Capital, LLC
Mailing Address: 30 Milk Street, 3rd Floor
Telephone: 207-536-4664
Email: bmd300@gmail.com
What is your legal interest in the property?
__ Owner _X_ Potential Buyer with Contract __ Lease/Rental Agreement

Owner's Information:

Name: New Life Christian Fellowship
Mailing Address: 551 Alfred Road, Biddeford, Maine 04005-944
Telephone: 207-284-4840
Email: justin.sweeney@newlifemaine.org

Agent's Information:

Name: Roz Anton
Mailing Address: 40 Main Street, Suite #13-404, Biddedord, Maine 04005
Telephone: 207-450-3230
Email: roz@rozanton.com

Engineer/Surveyor's Information:

Name: Richard Meek, P.E., Terradyn Consultants, LLC
Mailing Address: 41 Campus Drive, Suite 301, New Gloucester, Maine 04260
Telephone: 207-459-9036
Email: rick@terradynconsultants.com

Project Location and Lot Information:

Street Address: 588 & 590 Alfred Street Drainage Watershed: Thatcher Brook
Tax Map: Tax Map 2 Lot: Lots 6 & 12
Current Zoning: B-2 Shoreland Zoning: _____
Size of Lot: 44.53 (X)acres ( )s.f. Lot Frontage: 327 ft. (Alfred St.), 721 ft. (Andrews Rd)
Existing Use of Property: Vacant land

Property currently serviced by:

_X City Road __ Public Sewer __ Public Water __ Public Trash
__ Private Road __ Septic System __ Private Well __ Private Hauler

Slope Conditions in Area of Construction (if applicable):
_X_ Flat (0-3% slope) _X_ Rolling (3-8% slope) _X_ Hilly (8-15% slope) __Steep (15%+ Slope)

Are there any wetlands or waterbodies on the site? _X_ (Yes)__(No) if yes attach information
Is the project within the 100-year floodplain? __ (Yes) X (No) if yes attach information
Do you plan to bring fill onto the lot? __(Yes) X (No) If yes attach information [Not Anticipated]

Description of proposed use of property:

Project/Proposed Use:

216 unit multi-family apartment development

Property to be Serviced by:

_X City Road _X Public Sewer _X Public Water __ Public Trash

__ Private Road __ Septic System __ Private Well __ Private Hauler

Limits of Disturbance: 18.133 (X)acres ( )s.f.

Net change in impervious cover: +8.063 (X)acres ( )s.f.

Is this project part of a larger project? __(Yes) _X(No)

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

Is this project within the Urbanized Area/MS4 (*see City Drainage Map*) __(Yes) X (No)

Is the project proposing any Stormwater facilities/BMPs? X (Yes) __(No)

Will a Traffic Movement Permit (TMP) be required?: X (Yes) __(No)

__ **If in a Shoreland Zone:**

Percent of residential lot coverage (Max 20%): N/A

Percent of structure expansion (Max 30%): N/A

__ **If Subdivision Review, number of lots proposed:** 216 apartment units

__ **If a Private Way is proposed, number of lots served:** 216 apartment units

If Site Plan Review, you must provide the following information:

Total new square feet footprint of structure: 127,290 sq. ft.

Total new square feet paving/parking: 223,950 sq. ft. (includes all non-structure impervious)

Waiver Requests (attach details):

1. _____
2. _____
3. _____
4. _____
5. _____

Required Submittal Attachments:

A. Letters of Approval
   - __ Fire Department – Contact Chief or Deputy Chief – 282-9986
   - __ Ability to Serve for Water Service – Maine Water – 282-1543
   - __ Ability to Serve for Sewer Service – Engineering Department – Tom Milligan 284-9118
   - __ Police Department – e-911 Road Name Designation – Contact Joanne Fisk 282-5127

B. Letter to Planning Board describing project, Waiver requests, proposed improvements, addressing permit requirements, etc.

C. Photographs of Site.

D. Architectural renderings/drawings of proposed buildings, as required.

E. Engineering Plans, as required.

F. Stormwater Management Report, as required.

Fees (Due at time of Submission):

- $75 Nonrefundable Administration Fee is required for every application.
- Refer to "Attachment A Fees and Charges" of the Land Development Regulations for more information. Consult with Planning Staff if you have questions.

Required Signatures:

By signing this application, as the foresaid applicant or authorized agent:

- I certify that I have read and completely understand the application;
- I certify that the information contained in this application and its attachments are true and correct;
- I understand that all information provided on this form and all other documents submitted as part of my proposal is a matter of public record;
- I understand that copies of this information may be supplied upon request to an interested party.
- I understand that additional funds may be required through the course of the review for special studies, legal review costs, and/or engineering review.
- I understand that by submitting an application I am not guaranteed a place on any particular agenda. I further understand that the City Planner will place me on an agenda for review when the application is deemed substantially complete.

Will the proposed project cause 1 acre or more of site disturbance?: X (Yes) __(No)

- **If Yes, applicant is responsible for any required Maine Construction General Permits and shall comply with the requirements of DEP Chapter 500 Stormwater Regulations, as they apply.**

Signature of Applicant: DocuSigned by: Justin Sweeney 2507456A9BB5421... **Date** 9/7/22

Signature of Property Owner: **Date** 9/7/2022

DIGITAL SUBMITTAL REQUIREMENTS FOR ALL SUBMITTALS:

A) PDF OF SIGNED APPLICATION

B) PDFs OF ALL DRAWING SETS AND OTHER REQUIRED SUBMITTAL ATTACHMENTS NOTED ABOVE

HARD-COPY SUBMITTAL REQUIREMENTS FOR PLANNING BOARD APPLICATIONS:

A) SEVEN (7) FULL-SIZE PAPER COPIES OF DRAWING SETS

DIGITAL SUBMITTAL REQUIREMENTS FOR FINAL APPROVAL:

A) INDIVIDUALLY NAMED PDFs OF EACH DRAWING (NOT A COMBINED PDF SET)

- Individual Drawing PDF Naming Format: 'PROJECT/SHEETSET NAME_INDIVDUAL DRAWING NAME.pdf'

B) PDF COPIES OF ALL PERMIT APPROVALS, APPLICATIONS, REPORTS, NARRATIVES, LETTERS, ETC.

C) FINAL CAD REFERENCE FILES IN DWG FORMAT (SURVEY & PROPOSED DESIGN LINEWORK)

- All drawings & CAD reference files must be to-scale and within the following coordinate systems:

- MAINE STATE PLANE WEST NAD83 (Horizontal Datum) & NAVD88 (Vertical Datum)

HARD-COPY SUBMITTAL REQUIREMENTS FOR FINAL APPROVAL:

A) THREE (3) FULL-SIZE PAPER COPIES OF INDIVIUDAL DRAWINGS REQUIRING BOARD SIGNATURE

B) ONE (1) FULL-SIZE PAPER COPY OF ENTIRE DRAWING SET FOR ENGINEERING RECORDS

PLEASE CONFIRM WITH PLANNING STAFF FOR CLARIFICATION

SITE PLAN REVIEW

XI Attachment 1

City of Biddeford

Site Review Checklist

PROJECT NAME: Biddeford Residential

LOCATION: Andrews Rd. and Alfred St. (Rt. 111) ZONE: B-2

DATE REVIEWED: _____

WAIVERS REQUESTED: GRANTED BY BOARD:

Section 5 – Site Design and Development Criteria

	Complete	Incomplete	N/A
A. SITE DEVELOPMENT PLAN.			
Sheet size of 24 by 36 inches.	X		
Scale not less than one inch equals 50 feet.	X		
Bar or graphic scale.	X		
Original plan or Mylar.	X		
Submitted ten paper prints.	X		
Plan shall bear the drawing/revision date.	X		
Title.	X		
North point.	X		

	Complete	Incomplete	N/A
Name and address of developer and applicant.	X		
Location/vicinity sketch (one inch equals 80 feet).	X		
A sketch showing existing natural features including:	X		
Watercourses and water bodies, seasonal wet areas.	X		
Soil type/location and test borings.	X		
Topographic contours (every five feet for 0% to 3% slope; or every two feet for steeper areas).	X		
The preservation/supplementation of existing dominant vegetation.	X		
Plan view of all buildings.	X		
First floor elevation.	X		
Outline of buildings within 200 feet.	X		
Existing use of abutting property.	X		
The location, width, curbing, and paving of accessways, egress ways and streets within the site for both pedestrian and vehicular use.	X		
Location of off-street parking and loading.	X		
Size and proposed location of water mains and sanitary sewerage facilities with all necessary engineering data.	X		
Size and location of all other existing and proposed public service connections including, without limitations, gas lines, power lines, telephone lines, and fire alarm connections and locations, indicating whether above or below ground.	X		
Type, nature, and composition of all solid, liquid, and gaseous waste, industrial or otherwise, and the location, type, and design criteria of the storage and disposal facilities dealing with such waste.	X		
Location, elevation, and layout of existing and proposed catchbasins and other surface drainage features.	X		
Existing and proposed contours and finished grade elevations as well as the type, extent, and location of existing and proposed landscaping and open space areas which will be retained.	X		

SITE PLAN REVIEW

	Complete	Incomplete	N/A
Location, size, and design of proposed signs and other advertising or instructional devices.	X		
Location and type of lighting for outdoor facilities.	X		
Lines of existing and proposed abutting streets showing width.	X		
Surveyed property lines showing their bearing and distances and monument locations	X		
Lines and names of all proposed streets, lanes, ways, or easements intended to be dedicated for public or private use.			X
Copy of any covenants or restrictions that are intended to cover all or a part of the land areas to be developed.			X
Limits of wetland areas on the property.	X		
Delineate existing zoning boundaries within 1,000 feet of the site on location map.	X		
Stamp and signature of licensed land surveyor.	X		
Stamp and signature of professional engineer.	X		
Stamp and signature of architect.	X		
Other exhibits or data that the Planning Board may require in order to adequately evaluate proposed development or project; this would include:			
Traffic study.	X		
Community fiscal impact study.			X
Drainage study/calculations.	X		
High-intensity soils study.	X		
Photographs.			X

66 Attachment 2

City of Biddeford

Appendix B
Required Information Checklist
[Ord. of 6-20-1995]

In order for any application to be considered complete the following information must be provided at least two weeks prior to the Planning Board meeting. All plans for subdivisions shall contain the following information:

	Yes	No	N/A	Remarks
(1) Name of subdivision, owner and engineer or surveyor	X			
(2) Graphic scale, date, drawn, North point and its date, and whether it is true or magnetic	X			
(3) Boundaries of the tract	X			
(4) Existing zoning	X			
(5) Ownership and location of abutting properties	X			
(6) Name, location, width, profile, cross-section, radius of curves, angles of change in direction and center line length of all angles of change in direction and center line length of all proposed streets; other public ways, building lines and easements in the subdivision; intersection of existing streets	X			
(7) Type, location, profile and cross-section of all existing and/or proposed surface water drainage	X			
(8) Location of all existing and/or proposed utilities	X			
(9) Location of all existing and/or proposed sanitary sewers showing size, profile, and cross-section, or description, plan, location of other means of sewage disposal with evidence of successful soil evaluation	X			
(10) Topography at two-foot contour intervals, unless otherwise prescribed by the Board. In addition the location of existing natural or man-made features influencing the layout of the proposed subdivision shall be shown.	X			

	Yes	No	N/A	Remarks
(11) Lot lines and approximate dimensions	X			
(12) Proposed uses of property	X			
(13) Proposed public areas, if any			X	
(14) Copy of deed, or option for purchase, for land being subdivided	X			
(15) Reserved fire lane areas			X	
(16) Location of soil evaluation test pits for each lot on plan			X	
(17) Location of well or water supply for each lot			X	
(18) Aesthetics; trees, berms, shrubs, green strips, parks, etc.	X			
(19) Location and details for sedimentation and erosion control measures	X			
The preliminary of a subdivision shall be drawn at a scale no smaller than 100 feet (1 cm = 12 m) to the inch	X			
A preliminary plan shall include a location map insert, showing the relationship of the proposed subdivision to adjacent properties and public access, and drawn at no smaller scale than 2,000 feet (1 cm = 240 m) to the inch. It is suggested that reduced sections of City maps be used for this purpose.	X			

In addition to the above plat information, the Subdivider shall provide the following documents:

	Yes	No	N/A	Remarks
Valid deed or option indicating an interest held by the subdivider in the parcel of land	X			
Completed application form	X			
Narrative of the proposed project briefly describing the general nature of the project i.e., type of project; residential or commercial; number of lots intended to create	X			
Draft covenants and deeds for each lot proposed			X	
Easement documents for proposed rights-of-way for utilities, drainage ways, roadways and other			X	

	Yes	No	N/A	Remarks
travelways or public amenities				
Statement of financial capability of subdivider to undertake the proposed project	X			
Statement identifying principals involved in the project	X			
Statement demonstrating that the subdividers have the technical capability to complete the proposed project as presented	X			
Copies of such covenants or deed restrictions as are intended to all or part of the tracts			X	
Review by water company, power company and City Engineering, Police and Fire Departments	X			Coordination is in progress

66 Attachment 3

City of Biddeford

Appendix C
Subdivision Review Criteria
[Ord. of 6-20-1995]

The Board shall base its decision on the plans meeting the conditions and requirements outlined in this chapter; and that the plan meets in a positive fashion, the following:

	Yes	No	N/A	Remarks
1. The project will not result in undue water or air pollution. In making this determination the Board shall consider:	X			
(a) The elevation land, and its relation to the floodplains;	X			
(b) The nature of the soils and the subsoils;	X			
(c) The ability to adequately support waste disposal;	X			
(d) The slope of the land and its affects on effluents;	X			
(e) The availability of streams for the disposal of effluents; and	X			
(f) The applicable state and local health and water resources regulations	X			
2. The project has sufficient water available for the reasonably foreseeable needs of the subdivision	X			
3. The project will not cause an unreasonable burden on an existing water supply, if one is utilized	X			
4. The project will not cause unreasonable soil erosion or reduction in the capacity of the land to hold water so that a dangerous or unhealthy condition may result	X			
5. The project will not cause unreasonable highway or public road congestion or unsafe conditions with respect to use of the highways or public roads existing or proposed	X			
6. The project will provide for adequate sewage/waste disposal	X			

	Yes	No	N/A	Remarks
7. The project will not cause unreasonable burden on the ability of the municipality to dispose of solid waste and sewage if municipal services are to be utilized	X			
8. The project will not have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites, or rare and irreplaceable natural areas or public rights for physical or visual access to the shoreline	X			
9. The project is in conformance with a duly adopted subdivision regulation or ordinance, Comprehensive Plan, development plan, or land use plan. In making this determination the Board is authorized to interpret these ordinances and plans.	X			
10. The subdivider has adequate financial and technical capacity to meet the above-stated standards	X			
11. Whenever situated, in whole or in part, within 250 feet of any lake, pond, river, or tidal waters, the project will not adversely affect the quality of that body of water, or unreasonably affect the shoreline of that body of water; as indicated on the City of Biddeford's Official Zoning Map and referenced in the City's Comprehensive Plan	X			
12. The project will not, alone or in conjunction with existing activities, adversely affect the quality or quantity of groundwater	X			
13. The subdivider will provide information, based on FEMA flood boundary, floodway, and flood insurance maps, whether or not the project is in a flood-prone area	X			
14. The project will not unreasonably obstruct abutting properties or structures access to direct sunlight	X			

Attachment 2

Right, Title, or Interest

BK11111PG070

WARRANTY DEED **062428**

KNOW ALL MEN BY THESE PRESENTS

THAT I, JAMES A. MININNI, SR., of Biddeford, York County, Maine, for consideration paid, grant to NEW LIFE CHRISTIAN FELLOWSHIP, a Maine religious corporation with a mailing address of 551 Alfred Road, Biddeford, Maine 04005, with **warranty covenants**, a certain parcel of land situated on the Northerly side of the Alfred Road, near the top of Chick's Hill, so-called, in Biddeford, York County, Maine, bounded and described as follows:

Beginning on said road at the corner of land formerly of one Daniel Cyr at an iron hub set in the ground; thence northeasterly by said Cyr's land and land of others to a spotted tree at a brook; thence northwesterly by the brook to land of Ben Lunt, marked by a spotted tree; thence southwesterly by said Lunt land and land of others to an oak tree and land of one Coffey; thence by said Coffey's land southerly to the road at an iron hub set in the ground; thence southeasterly by said road to said Cyr land and point of beginning.

Being the same premises conveyed to the Grantor herein by warranty deed of Lucia Mininni dated October 3, 1996, and recorded October 10, 1996, in the York County Registry of Deeds in Book 8027, Page 103.

IN WITNESS WHEREOF, I, JAMES A. MININNI, SR. have hereunto set my hand and seal this 13th day of November, 2001.

Signed, sealed and delivered
in the presence of

James A. Mininni SR.
JAMES A. MININNI, SR.

STATE OF MAINE
YORK, ss.

November 13, 2001

Personally appeared the above named James A. Mininni, Sr. and acknowledged the foregoing instrument to be his free act and deed.

Attorney at Law/~~Notary Public~~

David R Ordway
(print name)

Return to:

RECEIVED YORK S.S
2001 NOV 13 PM 4: 15
ATTEST: Lois M. Muse
REGISTER OF DEEDS

MAINE R.E. TRANSFER TAX PAID

1709 A MAIN NERSON ESQ
37 DERBY ST. SACO ME 04072

014748

WARRANTY DEED
Maine Statutory Short Form

KNOW ALL MEN BY THESE PRESENTS,

THAT **ENERGY HOMES, INC.**, a Maine corporation, with a place of business in Limerick, County of York, State of Maine,

for consideration paid,

grant to **NEW LIFE CHRISTIAN FELLOWSHIP, f/k/a NEW LIFE ADVENT CHRISTIAN CHURCH OF BIDDEFORD, MAINE**, a religious non-profit corporation, without corporate stock, organized under the laws of the State of Maine, with its principal place of business in Biddeford, County of York, State of Maine, whose mailing address is 547 Alfred Road, Biddeford, ME 04005, with **warranty covenants**, the land in the City of Biddeford, County of York, State of Maine, described as follows:

MAINE R.E. TRANSFER TAX PAID

A certain lot or parcel of land, with the buildings and improvements thereon, situated in the City of Biddeford, County of York and State of Maine, on the northerly side of the Alfred Road, so-called, bounded and described as follows:

BEGINNING on said Alfred Road at the intersection of the same with the Andrews Road, also known as Andrew Road, so-called; thence running northwesterly by said Andrews Road, to land formerly of Daniel S. Hooper; thence northeasterly by said Hooper land and land formerly of Daniel Smith and one Stimpson to land now or formerly of K. S. Gilpatrick; thence southerly by said Gilpatrick land to said Alfred Road; thence westerly by said Alfred Road to said Andrews Road and point of beginning.

EXCEPTING that portion of the above described premises which was previously conveyed to Central Maine Power Company by undated instrument recorded in the York Registry of Deeds on November 14, 1988 in Book 4901, Page 286 (erroneously referred to being recorded in Book 4901, Page 287 in deed to Energy Homes, Inc. referenced below).

ALSO EXCEPTING that portion which was conveyed to the State of Maine by deed dated January 30, 1950 and recorded in said Registry of Deeds in Book 1150, Page 211.

Being the same premises conveyed to Energy Homes, Inc. by deed of Normand R. Verville, Personal Representative of the Estate of Lillian M. Verville, dated August 4, 1999 and recorded in the York Registry of Deeds in Book 9618, Page 290.

FURTHER EXCEPTING AND RESERVING from the above described premises that portion thereof which was conveyed by Energy Homes, Inc. to David R. Pelletier and Joyce A. Pelletier by deed duly recorded in the York Registry of Deeds in Book 10872, Page 44, reference to which is hereby made for a more particular description.

BK 11449 PG 148

IN WITNESS WHEREOF, It, the said **ENERGY HOMES, INC.**, has caused this instrument to be signed in its corporate name and behalf by **ANDRE N. COTE**, its President thereunto duly authorized, this 5th day of March, 2002.

SIGNED, SEALED AND DELIVERED
IN PRESENCE OF

ENERGY HOMES, INC.

BY: _____
Andre N. Cote, President

STATE OF MAINE
YORK, ss.

March 5th, 2002

Then personally appeared the above named **ANDRE N. COTE,** President of **ENERGY HOMES, INC.** and acknowledged the foregoing instrument to be his free act and deed, in his said capacity and the free act and deed of said **ENERGY HOMES, INC.**

Before me,

_____
Bryce W. Ingraham
Attorney at Law

chi-newlife-chi-T4830-deed-del2002.wpd

RETURN RECORDED DOCUMENT TO:
New Life Christian Fellowship
547 Alfred Road
Biddeford, ME 04005

RECEIVED YORK S.S
2002 MAR 11 AM 11:31
ATTEST: Lois M. Muse
REGISTER OF DEEDS

Pleasant Homes
P.O. Box 1190
Sanford Me 04073

Dupont

OPTION TO PURCHASE AND PURCHASE AND SALE AGREEMENT

OPTION TO PURCHASE AND PURCHASE AND SALE AGREEMENT ("**Agreement**") made as of the date ("**Effective Date**") of last execution appearing below, by and between **New Life Christian Fellowship**, a Maine religious nonprofit corporation ("**Seller**"), with a mailing address of 551 Alfred Road, Biddeford, Maine 04005-9474 and **Devine Capital LLC**, a Massachusetts limited liability company, or its nominee ("**Buyer**"), with a mailing address of P.O. Box 17795, Portland, Maine 04112.

WHEREAS, Seller owns fee simple interest in that certain real property consisting of approximately 44.7 acres more or less located generally at 588 and 590 Alfred Street, in the City of Biddeford, County of York, Maine, also known as Tax Map 2, Lots 6 and 12, and more particularly described in the source deeds referenced in **Exhibit A** attached hereto (the "**Property**"); Excepting and reserving a 2.1 acre parcel conveyed to Old Dogs of Biddeford, LLC as referenced as Tax Map 2, Lot 6-3 and in the York County Registry of Deeds Book 17933 Page 197 also referenced here in Exhibit B.

WHEREAS, Seller has agreed to grant to Buyer an option to purchase the Property in the future for a set price reflected below, and does thus commit and obligate itself to sell and convey the Property to Buyer on the terms and conditions as set forth below;

NOW, THEREFORE, for good and valuable consideration, the sufficiency and receipt whereof is hereby acknowledged, the parties hereto, intending to be legally bound, hereby agree as follows, incorporating the foregoing recitals by reference as if fully restated hereinbelow:

Article I – Grant, Timing, Diligence, Permitting

1.1 *Option, Purchase Price.* For the consideration recited above, and in consideration for Buyer investing substantial time and money to review, evaluate, inspect, and explore development opportunities with respect to the Property, subject to the terms and conditions hereof, Seller hereby irrevocably grants to Buyer the exclusive right and option (the "**Option**") to purchase the Property for the sum of [redacted] (the "**Purchase Price**").

1.2 *Preliminary Diligence Deadline.* The initial term of the Option shall commence on the Effective Date and, unless otherwise extended in accordance with the terms hereof, shall expire at **6:00 p.m.** (Eastern Time), [redacted] days thereafter, during which period Buyer shall conduct its due diligence inspections (addressed in Article II below), the results of which shall be acceptable to Buyer in its sole and absolute discretion (the "**Preliminary Diligence Deadline**").

1.3 *Rezone/Permitting Deadline; Rezone/Permitting Approval Date.*

A. Upon the Preliminary Diligence Deadline, unless Buyer has terminated this Option due to the results of its due diligence being unsatisfactory to Buyer in its sole and absolute discretion, Buyer shall pay and deliver to Seller monthly payments in the amount of [redacted] in order to extend the Option term for up to [redacted] consecutive periods of [redacted] days each (all such monthly payments hereinafter referred to as the "**Option Payments**"). The Option Payments shall be nonrefundable but shall be applied to the Purchase Price at closing. Seller hereby grants to Buyer full authority to seek from any federal, state, or local governmental authority any zoning change(s) and/or permits and/or approvals whatsoever that Buyer, in its sole and absolute discretion, deems advisable for Buyer's intended development of the Property for a multi-family residential development (the "**Project**") during such extended period ("**Rezone/Permitting Deadline**"). Seller hereby agrees to fully support and cooperate with Buyer's efforts to rezone and permit the Project, and specifically agrees to appear and testify in favor of, and promptly execute any document reasonably requested by Buyer in connection with, any such efforts of Buyer, all at no cost or charge to Buyer.

B. In the event Buyer does not obtain final unappealable zoning change(s)/approvals, including conditional use and/or permits for the Project acceptable to Buyer in its sole and absolute discretion, or otherwise affirmatively elect by written notice to Seller to close notwithstanding the lack of such permits and/or approvals, by the Rezone/Permitting Deadline, then unless Buyer

elects to extend the Rezone/Permitting Deadline as provided in Section 1.4, below, this Agreement shall automatically terminate as of the Rezone/Permitting Deadline, and, promptly upon Buyer's delivery to Seller of (1) an instrument (the "**Release**") signed by Buyer and suitable to release and discharge the Record Notice, and (2) digital copies of and an assignment of all right in the all materials developed by Buyer and its contractors as part of Buyer's efforts to rezone and permit the Project (the "**Rezone Permitting Materials**"), this Agreement shall be null, void, of no further force and effect, and each party hereto shall have no further obligation one to the other.

C. If Buyer obtains zoning change(s) and permits for the Project acceptable to Buyer in its sole and absolute discretion, then promptly upon the date ("**Rezone/Permitting Approval Date**") that the last of such zoning change(s) and/or permit(s) become final and non-appealable, Buyer shall serve notice upon Seller confirming same, and Buyer shall close on the purchase by the date ("**Closing Deadline**") that is [redacted] days after the Rezone/Permitting Approval Date, and the notice described in the first sentence of this subsection shall also constitute the Exercise Notice referenced in Section 3.1, below, and shall contain the additional information specified in Section 3.2, below.

1.4 *Additional Option Extension Payments*. Notwithstanding any contrary provision herein, if Buyer has not obtained all necessary unappealable permits and/or approvals for the Project, Buyer may elect to further extend the Option and Rezone/Permitting Deadline for up to [redacted] additional, successive periods of [redacted] days each, provided Buyer shall pay and deliver to Seller monthly payments, in the amount of [redacted] (all such monthly payments hereinafter referred to as the "**Extension Payments**"). The Extension Payments shall be nonrefundable but shall be applied to the Purchase Price at closing.

1.5 *Termination*. Notwithstanding any contrary provision herein, at any time before the Rezone/Permitting Approval Date, Buyer may elect to terminate this Agreement by delivering to Seller notice thereof ("**Termination Notice**"). If a Termination Notice is given, Buyer shall promptly deliver to Seller the Release signed by Buyer and the Rezone/Permitting Materials, as described in Section 1.3 above, and upon such delivery, this Agreement shall be null and void, of no further force and effect, and each party hereto shall have no further obligation one to the other, except that Buyer's indemnification obligations under Section 2.2 shall survive any termination.

Article II – Due Diligence

2.1 To facilitate Buyer's inspections and evaluation of the Property, Seller agrees to deliver to Buyer as soon as possible, but in any event within [redacted] days from the date hereof, copies of the materials specified on the list attached hereto as **Exhibit B** (the "**Due Diligence Materials**"). In addition, Seller agrees to permit Buyer to inspect and make copies of any books and records in Seller's possession or control concerning the Property.

2.2 So long as this Agreement remains in effect, Buyer may conduct such investigations, inspections, interviews, tests, assessments and audits pertaining to the Property as Buyer elects, in Buyer's sole discretion and at Buyer's sole cost, *including but not limited to*: (i) title search; (ii) survey; (iii) environmental site assessment; (iv) review of zoning and building code requirements; and/or (v) physical/geotechnical inspection of the Property (collectively, the "**Inspections**"). Buyer shall promptly repair any physical damage to the Property caused by any such Inspections, and Buyer further agrees to indemnify and hold Seller harmless from and against any and all loss, cost, damage, or expense incurred by Seller as a result of said physical damage.

2.3 Seller agrees, in general, to cooperate in good faith with Buyer and Buyer's representatives, and, in particular:

2.3.1 so as to secure the rights granted to Buyer hereunder and to ensure that the Property shall be in substantially the same condition at the time of conveyance as exists as of the date of this Agreement, Seller agrees that for so long as this Agreement remains in

effect, then unless and until Buyer in writing consents otherwise, Seller shall maintain the Property substantially in condition as currently exists, timely paying all taxes and other impositions related to ownership thereof, and shall not: (a) transfer, encumber, mortgage, lease, alienate, impose any restriction or condition upon, or otherwise grant to any other person, firm or entity any permission, license, right or rights whatsoever in, pertaining to, or affecting any part or all of the Property; nor (b) make any change to or alter in any way whatsoever the physical or other characteristics of any part or all of the Property, including cutting of trees/timber, or contamination of any kind; and,

2.3.2 so as to ensure that there is no change in the status of the title to the Property prior to termination of this Agreement, Seller agrees to contemporaneously with its execution hereof execute and deliver to Buyer for recording in the appropriate Land Evidence Records an instrument (the "**Record Notice**") suitable under applicable law to evidence the grant of the Option and the aforesaid restrictions on the grant of any rights inconsistent with this Agreement, in form and substance as attached hereto as **Exhibit C**, or, if no such exhibit is attached, in form and substance as Buyer may reasonably request.

2.4 During the effective term of this Agreement, Buyer contemplates expending substantial sums and incurring substantial expenses to inspect, test, and analyze the Property, to conduct title research, undertake survey and site plans, and to otherwise conduct a due diligence review of the Property and all related matters, and to pursue obtaining permits for Buyer's contemplated development of the Property. To induce Buyer to make such efforts and expend such sums, Seller hereby agrees that during the effective term of this Agreement Seller shall not solicit, encourage, negotiate or entertain any offer with any other party concerning or with respect to the Property whatsoever, including offers to purchase or lease the Property, regarding any sale, financing, partnership, or other disposition of all or any part of, or interest in, the Property; Seller agrees to immediately communicate to Buyer for response any written inquiries received by Seller during the effective term of this Agreement. Seller further agrees to keep the monetary terms of this Agreement confidential, except only as may be approved by Buyer in writing, in advance.

2.5 Notwithstanding anything contained herein to the contrary, however, in the event Buyer delivers to Seller prior to expiration of the Preliminary Diligence Deadline written notice specifying with reasonable particularity matters related to the title to the Property to which Buyer objects ("**Title Objection Notice**"), then and in such event the Preliminary Diligence Deadline shall be deemed extended for an additional period beyond its then-scheduled expiration to allow Seller to, and Seller does hereby agree that Seller shall during such period, use good faith efforts to promptly and reasonably resolve such title objections. In the event Seller fails to use reasonable good faith efforts to so resolve Buyer's objections, then and in such event Seller shall be in default hereunder, and Buyer shall be entitled to its remedies for same as provided below. In addition, Buyer shall have the right to extend the Preliminary Diligence Deadline for a reasonable period of time to permit Buyer itself, at its own expense, to resolve such title objections.

Article III – Exercise, Purchase Price

3.1 In the event that Buyer elects to exercise the Option and purchase the Property, Buyer shall deliver notice ("**Exercise Notice**") to Seller pursuant to Section 1.3.C stating that Buyer elects to exercise the Option to purchase the Property.

3.2 Buyer shall specify in the Exercise Notice (but failure to so specify shall not invalidate the effectiveness of the Exercise Notice) the name of the entity, if different from Buyer, that is to take title to the Property, Seller hereby acknowledging and agreeing that Buyer may take title in the name of any entity Buyer chooses as nominee, and that for this purpose references in this Agreement to "Buyer" shall mean "Buyer or its nominee."

3.3 The Purchase Price shall be adjusted to reflect the Option Payments and Extension Payments paid to Seller by Buyer pursuant to Section 1.3, as well as the equitable apportionment as of date

of closing of unpaid real estate taxes, assessments, liens, utility bills, if any, recording charges, transfer tax, and similar items as is customary in standard conveyancing practice in the State of Maine (the Purchase Price as so adjusted may hereinafter be referred to as the "**Adjusted Purchase Price**").

Article IV – Closing Procedure

4.1 On the Closing Deadline, Seller shall sell and convey the Property to Buyer and Buyer shall purchase the Property from Seller (the "**Closing**"). At Closing, Seller shall deliver to Buyer:

4.1.1 an original deed (the "**Deed**") properly executed by or on behalf of Seller, in form and substance as attached hereto as **Exhibit D**, conveying all of Seller's interest in the Property to Buyer by good, marketable, insurable title, free and clear of all liens, encumbrances, and deficiencies, except utility easements of record, and, except easements and encumbrances of record prior to the date of this Agreement and,

4.1.2 such other documents as may be reasonably requested by Buyer, including without limitation customary title insurance affidavits, such instruments of assignment as Buyer reasonably requests, such as an Assignment of Permits, documents to evidence the existence, good standing, and authority of Seller, a settlement statement, or any other customary or reasonable documentation as may be requested (such other documents, together with the Deed, may hereinafter be referred to collectively as the "**Conveyance Documents**").

4.1.3 At Closing Buyer shall deliver to Seller the Adjusted Purchase Price in immediately available funds.

Article V - Representations

5.1 Seller hereby represents and warrants to Buyer, which representations and warranties shall be deemed restated as of closing, that:

5.1.1 Seller has good, insurable, and marketable title in fee simple to the Property, subject only to the encumbrances of record.

5.1.2 Seller is a Maine nonprofit corporation, is not a foreign person or foreign entity as defined in the Foreign Investment in Real Property Tax Act ("**FIRPTA**"), has full right, power and authority to enter into and consummate this transaction, the person executing this Agreement on behalf of Seller is an officer of Seller and is duly authorized to execute this Agreement on behalf of Seller, Seller has the power and authority without necessity of further act or consent to execute this Agreement and all other instruments and documents contemplated hereby and to perform any and all acts necessary or desirable to consummate the transactions contemplated (including a conveyance of the Property).

5.1.3 To Seller's knowledge without additional investigation, the Property is free of violations of law, is in full compliance with Federal, State, City and County ordinances and environmental laws, and there are not any current or contemplated special tax assessments known to Seller.

5.1.4 Other than to the extent granted in this Agreement, previously disclosed to Buyer in writing, or reflected as exceptions to coverage on a title commitment acceptable to Buyer, no person, firm, or entity has any rights in, pertaining to, or affecting the Property, and Seller has not granted any rights in, pertaining to, or affecting the Property to any person, firm, or entity in any unrecorded instrument or writing, nor does any person, firm, or entity have an option to purchase or right of first refusal to purchase the Property.

5.1.5 Seller is not involved as a debtor in any bankruptcy, reorganization or insolvency proceeding, and Seller has not received any notice of and has no knowledge of any

pending or threatened lawsuits, including condemnation suits, that could affect the Property or Seller's ownership of the Property.

5.1.6 To Seller's knowledge without additional investigation there have not been and there are not now any underground storage tanks located on or under the Property or if there have been or are any such tanks located on the Property, their location has been identified to Buyer in writing, they have been properly registered with all appropriate authorities, they are in full compliance with all applicable statutes, ordinances and regulations, and they have not resulted in the release of any hazardous or toxic substance, material, or waste into the environment.

5.1.7 To Seller's knowledge without additional investigation there are no past or present uses of the Property that did not comply in all material respects with all Environmental Protection Agency, Occupational Safety and Health Administration, and all other federal, state and local laws, administrative rules and regulations governing the soil, water, air and environment in and around the Property.

Article VI - Default

6.1 If Buyer fails to fulfill the Buyer's agreement herein, Seller shall retain the Option Payment(s) as liquidated damages, being Seller's sole remedy. If Seller shall fail to fulfill its obligations herein, Buyer shall have all available remedies at law and in equity, including specific performance. Notwithstanding the foregoing, the non-defaulting party agrees to provide the defaulting party with written notice providing a description of a default and provide such defaulting party with a [redacted] day cure period.

Article VII – Notice

7.1 All notices or other communications required or permitted hereunder shall be in writing, and shall be effective upon receipt or refusal when sent to the intended recipient by one of the methods set forth below:

7.1.1 regular and certified U.S. mail, postage prepaid, return receipt requested;

7.1.2 reputable national delivery service (i.e. FedEx, DHL); or,

7.1.3 otherwise hand delivered with an acknowledgment of receipt

7.1.4 electronic transmission

7.2 Each party, by written notice given to the other party in accordance herewith, may change the address to which notices or other communications hereunder shall be deemed to have been duly given; provided, however, no party may designate more than **three** notice addresses, and notice of a change of address shall be effective only upon actual delivery. Until changed as aforesaid, a notice shall be addressed to the intended recipient at their address set forth in the first paragraph on page 1 of this Agreement.

Article VIII – Miscellaneous

8.1 *Broker.* Seller and Buyer each hereby represent and warrant to the other that neither Seller nor Buyer has dealt with or employed any real estate agent, broker, or any person entitled to a commission in connection with the transaction contemplated other than [redacted] in Maine. Seller and Buyer hereby agree to indemnify, defend, and hold harmless the other from any claim or claims, action or actions, losses, payments, judgments, commission or commissions, paid or payable to any real estate agent, broker, person or entity in connection with this transaction that was not called to the attention of the other as a result of any services or facilities of any such real estate agent, broker, person or entity provided to the other. The provisions of this paragraph shall survive conveyance of the Property to Buyer.

8.2 *Governing Law, Venue, Jury Waiver.* This Agreement shall be construed in accordance with the laws of the State of Maine. Both Buyer and Seller hereby consent to the jurisdiction of the courts of said state and of the federal government, as well as to the jurisdiction of all courts from which an appeal may be taken from the aforesaid courts, for the purpose of any suit, action or other proceeding arising out of, under or with respect to this agreement, and expressly waive any and all objection each may now or hereafter have as to the venue in any of such courts, and EACH OF BUYER AND SELLER DO HEREBY EXPRESSLY WAIVE ANY RIGHT EACH MAY HAVE TO ELECT A TRIAL BY JURY AS TO ANY DISPUTE ARISING HEREUNDER. Any disputes between Buyer and Seller (which are not otherwise resolved by the parties) shall be submitted to binding arbitration in Portland, Maine administered by JAMS in accordance with its Streamlined Arbitration rules. The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction. This clause shall survive the closing of this transaction.

8.3 *Headings; Entire Agreement; Amendments.* The headings contained in this Agreement are for reference purposes only and shall not affect in any way the meaning or interpretation of this Agreement. This Agreement (including all exhibits annexed hereto) contains the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior understandings, written or oral, if any, with respect thereto. This Agreement may not be modified, changed, supplemented, or terminated, nor may any obligations hereunder be waived, except by written instrument signed by the party to be charged or by its agent duly authorized in writing or as otherwise expressly permitted herein. The Agreement shall not be binding on any party until signed by every party.

8.4 *Waiver.* No waiver of any breach of any agreement or provision herein contained shall be deemed a waiver of any preceding or succeeding breach thereof or of any other agreement or provision herein contained. No extension of time for performance of any obligations or acts shall be deemed an extension of the time for performance of any other obligations or acts.

8.5 *Binding Effect; Assigns; Benefits.* This Agreement shall inure to the benefit of and shall be binding upon the parties hereto and their respective heirs, legal representatives, successors and assigns; provided, however, Seller may not assign its rights or obligations under this Agreement absent Buyer's consent in Buyer's sole discretion.

8.6 *Exhibits, Counterparts.* All exhibits attached hereto are by this reference incorporated fully herein. This Agreement may be executed by the parties hereto in one or more counterparts, each of which shall be deemed to be an original, but all of which together shall constitute one and the same instrument.

8.7 *Severability.* The invalidity or unenforceability of any provision of this Agreement shall not affect the validity or enforceability of any other provision of this Agreement, which shall remain in full force and effect.

8.8 *Days, Interpretation.* References in this Agreement to a specified number of "days," shall mean and refer to calendar days; provided, however if any specified period would otherwise end on a day that is a Saturday, Sunday or day which is recognized by the State of Maine ("Jurisdiction") as a legal holiday, then and only in such event, the specified period shall be deemed to extend to the next following day that is not a Saturday, Sunday or legal holiday. "Business Day" means any day other than Saturday, Sunday and/or any weekday or weekend day that is a legal holiday observed by the federal government of the United States of America or the Jurisdiction. The terms of this Agreement were fully negotiated by the parties and shall not be construed for or against any party hereto.

8.9 *Prevailing Party.* In the event the parties litigate in any court or arbitration forum any dispute hereunder, then and in such event, the prevailing party shall be entitled to an award from the other of the reasonable attorney's fees and costs incurred therein by said prevailing party.

8.10 *Time of the Essence*. The parties hereto hereby agree that TIME IS OF THE ESSENCE as to each and every provision of this Agreement.

[*Signature Page Follows; Remainder Intentionally Blank*]

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed under seal by their proper officers hereunto duly authorized as of the date of last execution hereof as set forth below.

Seller:
NEW LIFE CHRISTIAN FELLOWSHIP

By:_____
Justin Sweeney
Its Duly Authorized: Lead Pastor

Date: January 25, 2021

Buyer:
DEVINE CAPITAL LLC

By:_____
Bernard M. Devine
Its Duly Authorized: President

Date: January 25, 2021

Exhibit A

Two parcels of land, excepting the third parcel conveyed to Old Dogs of Biddeford, LLC with any improvements thereon, in the City of Biddeford, York County, Maine described in the following deeds:

588 Alfred Street, Biddeford, Maine

- Warranty Deed dated November 13, 2001 from James A. Mininni, Sr. to New Life Christian Fellowship, recorded at Book 11111, Page 70 in the York County Registry of Deeds

590 Alfred Street, Biddeford, Maine

- Warranty Deed dated March 5, 2002 from Energy Homes, Inc. to New Life Christian Fellowship, recorded at Book 11449, Page 147 in the York County Registry of Deeds

Excepting the property located at Alfred Street, Biddeford, Maine, conveyed to Old Dogs of Biddeford LLC

- Warranty Deed dated April 19, 2019 from New Life Christian Fellowship to Old Dogs of Biddeford, LLC recorded at Book 17933, Page 197 in the York County Registry of Deeds

Exhibit B

Survey - Titcomb Associates 2002
588 Alfred St Deed 11111 070
590 Alfred St Deed 11449 147
588 Alfred St Disclosure
590 Alfred St Disclosure
Old Dogs 2018 Conveyance Survey
Old Dogs Deed 17933 197
Alfred St Sewer Map
Andrews Geometrics Plan Profile 2004
ARC New Building sketch
Packard Development sketch
BI3074-Va Table A Zoning Uses
Parcel 1 and 2 Tax Map copy
2003 Biddeford & Saco Water Co Letter
2003 Gorrill-Palmer Consulting Engineers re: Ability to Serve
2005 Post development AM Peak Hour
Andrews Geometrics Plan Profile 2004
Attachment B TR-20 Calculations
Attachment C Water Quality Computations
Calculations Based Upon Maine Subsurface Wastewater Rules
Capacity and Queuing Analysis Results
City of Biddeford Wastewater Dept 2003 Ability to Serve Letter
Erosion Sedimentation North C-8B
Erosion Sedimentation South C-8A
First American Gap Indemnity Agreement 5.25.2017
First American Alta 3 parcels-3.5-2002
Gorrill-Palmer Consulting Engineers 2.9.2004 Maine DOT Letter
Gorrill-Palmer Consulting Engineers 4.8.2004 Maine DOT Letter
Gorrill-Palmer Consulting Engineers 2004 Plans
Gorrill-Palmer Consulting Engineers Row Volumes, Peak Adjusted Volumes
Grading & Drainage C-3
Grading Drainage South C-4A
Grading Draining North C-4B
Lighting plan WLS Lighting Systems
Offisite Utility Profile C-17B
Offsite Utility Profile C-17A
Overall Site Layout C-1A
PreDevelopment Watershed Maps
Proposed Off-Site Improvements - Gorrill Palmer
Route 111 & Exit 4- traffic study
Route 111 & Home Depot
Route 111 at Andrews Rd
Route 111 at Exit 4 Precourt St
Route 111 at Route 35
Route 111 at Shaws Irving
Route 111 at Walmart Park n ride
RW Gillespie June 2004 geotechnical evaluation
Section 7 Wildlife and Fisheries
Section 14 Erosion and Sedimentation Control Plan
Site Layout C-1B
Site Layout North C-2C

Exhibit B (continued)

Site Layout Phase2. C-2A
Site Layout Plans C2A C1B
Site Layout South C-2B
Stormwater Management
Traffic Impact Study 2003
Trip Generation Calculations
Turning Movement Diagrams
Utility Plan C- 6
Utility Plan Phase 1 C5
Vernal Pool Application and Determination NLC
Vernal Pool Location Plan LongView Partners - 588-590 Alfred St
Wetland Reconnaissance 4-21-18- 588-590 Alfred St
Wetland Reconnaisance 6-3-20- 590 Alfred St.6-3-20
Zoning Map

Exhibit C

NOTICE OF OPTION

Notice is hereby given of the following Option to Purchase and Purchase and Sale Agreement (the "Option") vesting in Buyer an option to purchase certain real property owned by Seller:

SELLER:	New Life Christian Fellowship
BUYER:	Devine Capital LLC
DATE OF AGREEMENT:	January 25, 2021
PREMISES:	See Exhibit A attached hereto
TERM OF OPTION:	Beginning January 25, 2021 and continuing for up to [redacted] days, subject at all times to the terms and conditions of the Option Agreement.

The undersigned further expressly acknowledges that this Notice of Option is being executed pursuant to the provisions of the Option and is not intended to vary the terms or conditions of the Option.

IN WITNESS WHEREOF, the undersigned has caused this Notice of Option to be signed by its duly authorized representative.

NEW LIFE CHRISTIAN FELLOWSHIP

By:_____
Print Name: Justin Sweeney
Its Duly Authorized: President and Lead Pastor
Dated: January 25, 2021

STATE OF MAINE
COUNTY OF YORK, SS

January 25, 2021

Then personally appeared the above-named Justin Sweeney, President and Lead Pastor of NEW LIFE CHRISTIAN FELLOWSHIP and acknowledged the foregoing instrument to be his/~~her~~ free act and deed in his/~~her~~ said capacity, and the free act and deed of NEW LIFE CHRISTIAN FELLOWSHIP.

Lillian B. Camire
Notary Public / Attorney at Law
Print name:
My commission expires:

LILLIAN B. CAMIRE
Notary Public - Maine
My Commission Expires
December 17, 2023

Exhibit D

QUITCLAIM DEED
WITH COVENANT
STATUTORY SHORT FORM
TITLE 33, §775

New Life Christian Fellowship, a Maine religious nonprofit corporation, with a mailing address of 551 Alfred Street, Biddeford, Maine 04005-9474, for consideration paid, grants to _____, a _____, with a mailing address of _____, **with Quitclaim Covenant,** a certain lot or parcel of land situated in the City of Biddeford, County of York, and State of Maine, as described in **Exhibit A** attached hereto and made a part hereof.

DATED: _____, 202_ New Life Christian Fellowship

By:_____
Print Name: Justin Sweeney
Its Duly Authorized: President and Lead Pastor

STATE OF MAINE
COUNTY OF YORK, SS

_____, ___, 202_

Then personally appeared the above-named Justin Sweeney, President and Lead Pastor of NEW LIFE CHRISTIAN FELLOWSHIP and acknowledged the foregoing instrument to be his/her free act and deed in his/her said capacity, and the free act and deed of NEW LIFE CHRISTIAN FELLOWSHIP.

_____
Notary Public / Attorney at Law
Print name:
My commission expires:

Exhibit A

Two parcels of land, excepting the third parcel conveyed to Old Dogs of Biddeford, LLC with any improvements thereon, in the City of Biddeford, York County, Maine described in the following deeds:

588 Alfred Street, Biddeford, Maine

- Warranty Deed dated November 13, 2001 from James A. Mininni, Sr. to New Life Christian Fellowship, recorded at Book 11111, Page 70 in the York County Registry of Deeds

590 Alfred Street, Biddeford, Maine

- Warranty Deed dated March 5, 2002 from Energy Homes, Inc. to New Life Christian Fellowship, recorded at Book 11449, Page 147 in the York County Registry of Deeds

Excepting the property located at Alfred Street, Biddeford, Maine, conveyed to Old Dogs of Biddeford, LLC

- Warranty Deed dated April 19, 2019, from New Life Christian Fellowship to Old Dogs of Biddeford, LLC recorded at Book 17933, Page 197 in the York County Registry of Deeds

SECOND AMENDMENT TO OPTION TO PURCHASE AND PURCHASE AND SALE AGREEMENT

THIS SECOND AMENDMENT TO OPTION TO PURCHASE AND PURCHASE AND SALE AGREEMENT (this Amendment") is made and entered into as of the 14 day of January, 2022, by and between **New Life Christian Fellowship** ("Seller") and **Devine Capital LLC** ("Buyer") with respect to that certain Option To Purchase and Purchase and Sale Agreement between Seller and Buyer, with an effective date of January 25, 2021, as amended by that certain Amendment to Option to Purchase and Purchase and Sale Agreement dated May "__", 2021 (together, the "Agreement"), relating to property of the Seller located generally at 588 and 590 Alfred Street in Biddeford, Maine.

WHEREAS, Seller and Buyer wish to amend the Agreement as set forth below.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Seller and Buyer hereby agree that the Agreement shall be amended as hereinafter set forth.

A. Section 1.4 of the Agreement is hereby amended to change the monthly amount of the Extension Payments from [redacted] to [redacted] for the firs [redacted] monthly Extension Payments (i.e., the monthly Extension Payments in January 2022 through June 2022 shall be [redacted] but thereafter shall revert to [redacted]).

B. Seller and Buyer hereby ratify and confirm all terms and provisions of the Agreement and agree that, except as amended by this Amendment, all terms and provisions of the Agreement shall remain in full force and effect including.

C. This Second Amendment may be simultaneously executed in any number of counterparts, each of which when so executed and delivered shall be an original, but such counterparts shall constitute one and the same instrument. This Second Amendment may be transmitted between the parties by facsimile machine or by email attachment and signatures appearing on faxed or emailed instruments shall be treated as original signatures. Both a faxed or emailed version containing either original, faxed or emailed signatures of all parties, and multiple counterparts of the same version each containing separate original, faxed or emailed signatures of the parties, shall be binding on them.

[Signature Page Follows]

IN WITNESS WHEREOF, Seller and Buyer have executed this Second Amendment as of the date first above written.

SELLER

NEW LIFE CHRISTIAN FELLOWSHIP

DocuSigned by:
By: Justin Sweeney
2507456A9BB5421...

Name: Justin Sweeney

Its Duly Authorized: Lead Pastor

BUYER

DEVINE CAPITAL LLC

By: _____
Bernard M. Devine, Jr., Manager

Attachment 3

Compliance with Code of Ordinances

Pineland
Cumberland Hall
41 Campus Drive, Suite 301
New Gloucester, ME 04260

Portland
565 Congress Street, Suite 201
Portland, ME 04101

September 2022 Project# 21-49

COMPLIANCE WITH THE CITY OF BIDDEFORD CODE OF ORDINANCES

Biddeford Residential, Biddeford, Maine

The following information describes how the proposed project, located at 588 & 590 Alfred Street in Biddeford, Maine, complies with the Subdivision Review Criteria of the City of Biddeford Code of Ordinances.

Subdivision Review Criteria

1. *The project will not result in undue water or air pollution. In making this determination, the board shall consider:*
    a. *The elevation of land, and its relation to floodplains;*
    b. *The nature of the soils and subsoils;*
    c. *The ability to adequately support waste disposal;*
    d. *The slope of the land and its affects on effluents;*
    e. *The ability of streams for the disposal of effluents;*
    f. *The applicable state and local health and water resources regulations*

    As a residential development, with proposed connection to the City's sanitary sewer infrastructure, the project will not result in any undue water or air pollution.

    The existing soils on site have been evaluated through a Class B High-Intensity Soil Survey prepared by Mark Hampton Associates, Inc. A copy of soils report is located in Attachment 4.

2. *The project has sufficient water available for the reasonably foreseeable needs of the subdivision.*

    Maine Water Company has been contacted to confirm that an adequate water supply can be provided to the development. Maine Water Company's response will be provided once received.

3. *Will not cause an unreasonable burden on the existing water supply, if one is to be utilized;*

Maine Water Company has been contacted to confirm that an adequate water supply can be provided to the development. Maine Water Company's response will be provided once received.

4. *Will not cause unreasonable soil erosion or reduction in capacity of the land to hold water so that a dangerous or unhealthy condition may result;*

   The proposed project will not cause unreasonable soil erosion or a reduction in the capacity of the land to hold water. Erosion and sediment controls are shown on the attached plans and a stormwater management report has been prepared demonstrating that post-development runoff will not exceed predevelopment conditions.

5. *Will not cause unreasonable highway or public road congestion or unsafe conditions with respect to the use of the highways or public roads existing or proposed;*

   The project will not cause unreasonable highway or public congestion or unsafe conditions; Based upon the estimated trip generation for the project, a Traffic Movement Permit has been submitted to MDOT. A copy of the submission is provided in Attachment 6.

6. *Will provide for adequate sewage waste disposal;*

   Connection to public sewer system is proposed. Public Works has been contacted to confirm that service is available and adequate treatment capacity is available. Public Works' response will be provided once received.

7. *Will not cause an unreasonable burden on the ability of a municipality to dispose of solid waste and sewage if municipal services are to be utilized*

   A common collection dumpster and recycling bins will be provided for the residents. The developer will contract with a private solid waste disposal company to manage solid waste.

8. *Will not have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites or rare and irreplaceable natural areas, or public rights for physical or visual access to the shoreline;*

   The proposed development will not have an adverse effect on the scenic or natural beauty of the area. The proposed development is located within a designated growth area. There

are no historic sites or irreplaceable natural areas in the location of the proposed development. A landscape plan has additionally been prepared for the proposed project.

9. *In conformance with a duly adopted subdivision regulation or ordinance, comprehensive plan, development plan, or land use plan, In making this determination the board is authorized to interpret these ordinances and plans;*

   The proposed development has been designed in conformance with all applicable regulations.

10. *The subdivider has adequate financial and technical capacity to meet the above state standards;*

    A letter from the applicant's financial partner, Rockland Trust, demonstrating a commitment to provide financing for the project is provided, herein.

    The Applicant has assembled the following team of professionals to plan, permit and develop construction documents for the project:

Architect	Tim Wentz, AIA, CGP, CAPS Gate 17 Architecture, LLC 2045 Route 35 Wall, NJ 07719 (856) 429-2001
Civil Engineer	Richard Meek, P.E. Terradyn Consultants, LLC 41 Campus Drive, Suite 301 New Gloucester, ME 04260 (207) 926-5111
Surveyor	Tara Mullen, P.L.S. Colliers Engineering 41 Church Road Brunswick, ME 04011 (207) 481-7080
Landscape Architect	Barry J. Hosmer P.L.A., A.S.L.A. 196 Whitney Avenue Portland, ME 04102 (207) 874-0248

Wetland Scientist	Mark Cenci Mark Cenci Geologic, Inc. 93 Mill Road North Yarmouth, ME 04097
Soil Scientist	Mark Hampton C.S.S., L.S.E. Mark Hampton Associates, Inc P.O. Box 1931 Portland, ME 04104
Traffic Engineer	William Bray, P.E. Barton & Loguidice, LLC 383 US Route 1, Suite 2A Scarborough, ME 04074

The team of consultants retained by the Developer has expertise and experience in the design of similar projects. Resumes of key personnel for the development team can be provided upon request.

11. *Whenever situated, in whole or in part, within 250 feet of any lake, pond, river, or tidal waters, the project will not adversely affect the quality of that body of water, or unreasonably affect the shoreline of that body of water; as indicated on the City of Biddeford's Official Zoning Map and referenced in the City's Comprehensive Plan;*

    The proposed development is not located within 250 feet of a lake, pond, river or tidal waters.

12. *The project will not, alone or in conjunction with existing activities, adversely affect the quality or quantity of groundwater;*

    The proposed project will not adversely affect the quality or quantity of groundwater. The proposed lots will be serviced by public water and public sanitary sewer infrastructure. Erosion and sediment controls are shown on the attached plans, and a stormwater management report has been prepared to demonstrate that post-development runoff will not exceed predevelopment conditions

13. *The subdivider will provide information, based on FEMA flood boundary, floodway, and flood insurance maps, whether or not the project is in a flood-prone area :*

    The proposed development is not located within a FEMA flood area.

14. *<u>The project will not unreasonably obstruct abutting properties or structures access to direct sunlight;</u>*

    The proposed project will not unreasonably obstruct abutting properties or structures access to direct sunlight. The proposed development is surrounded by a vegetated buffer which helps to separate the project from abutting properties.

ROCKLAND TRUST Where Each Relationship Matters

July 29, 2022

Bureau of Land and Water Quality
312 Canco Road
Portland, ME 04103

Re: A 216 Unit Multifamily Project to be constructed in Biddeford, ME

To whom it may concern,

Rockland Trust Company will be providing the construction financing for the referenced multifamily project. Provided below is a summary of the proposed budget for this project:

Building Construction	$	29,865,000
Site Improvement Work	$	7,625,000
Soft Costs	$	2,425,000
	$	39,915,000

Our relationship with KGI Properties, LLC and their investment partners, Devine Capital, LLC and The Simon Konover Company back many years and we have most recently provided financing for The Beacon Expansion, a 48 unit expansion to The Beacon in Scarborough, ME, Mast Landing, a 144 unit multifamily project in Freeport, ME; The Cove, a 120 unit multifamily project in East Lyme, CT; The Beacon, a 288 unit multifamily project in Scarborough, ME; The Shoppes at Hanfield Village, a grocery anchored center in Indian Trail, NC; and The Sound, a 280 unit multifamily project in East Lyme, CT.

Should you have any questions concerning the proposed financing for this multifamily project, please do not hesitate to contact me directly.

Sincerely,

James J. O'Connor, Jr.
Senior Vice President

Attachment 4

Site Location of Development Act Permit Application

Pineland
Cumberland Hall
41 Campus Drive, Suite 301
New Gloucester, ME 04260

BIDDEFORD RESIDENTIAL

ALFRED ST. AND ANDREWS RD., BIDDEFORD, MAINE

SITE LOCATION OF DEVELOPMENT ACT PEMIT APPLICATION

PREPARED FOR:

DEVINE CAPITAL, LLC
30 MILK ST., THIRD FLOOR
PORTLAND, ME 04101

PREPARED BY:

TERRADYN CONSULTANTS LLC
41 CAMPUS DRIVE, SUITE 301
NEW GLOUCESTER, MAINE 04260

September 2022

Section 0 – Application Form and Checklist

The application form and checklist are attached, herein.

Department of Environmental Protection
Bureau of Land & Water Quality
17 State House Station
Augusta, Maine 04333
Telephone: 207-287-3901

FOR DEP USE
ATS # _____
L-_____
Total Fees: _____
Date: Received _____

FORM A PAGE 1

****

SITE LOCATION OF DEVELOPMENT PERMIT APPLICATION 38 M.R.SA. §§481-490

PLEASE TYPE OR PRINT IN *INK ONLY*

This application is for: (CHECK THE ONE THAT APPLIES)	☐ 20 acre development ☐ Planning Permit ☐ Metallic Mining	☐ Marine Oil Terminal ☑ Structure ☐ Subdivision	☐ Major Amendment ☐ Minor Amendment
1. Name of Applicant:	Devine Capital, LLC	**6. Name of Agent (if applicable):**	Richard Meek c/o Terradyn Consultants, LLC
2. Applicant's Mailing Address:	30 Milk St., Third Floor Portland, ME 04101	**7. Agent's Mailing Address:**	41 Campus Drive, Suite 301 New Gloucester, ME 04260
3. Applicant's Daytime Phone #:	207-536-4664	**8. Agent's Daytime Phone # :**	207-926-5111
4. Applicant's Fax # (if available):		**9. Agent's Fax # (if available):**	
5. Applicant's *e-mail address* (REQUIRED -license will be sent via: e-mail):	bmd300@gmail.com	**10. Agent's *e-mail address* (REQUIRED - license will be sent via e-mail):**	rick@terradynconsultants.com

PROJECT INFORMATION

11. Name of Development:	Biddeford Residential						
12. Map and Lot #'s:	**Map #:** 2	**Lot #:** 6 & 12	**13. Deed Reference #'s:**	**Book #:** 11111 & 11449	**Page #:** 70 & 147		
14. Location of Project City/Town:	Biddeford	**15. County:**	York	**16. UTM Northing**		**17. UTM Easting**	
18. Brief Description of Project including total parcel size:	Construct a multi-family residential development consisting of nine 24-unit apartment buildings, a clubhouse, mail kiosk, maintenance building, eight detached garage structures, surface parking, dog park, community garden and interconnected sidewalks on a 44.5 acre parcel.						
19. Type of Direct Watershed: (Check all that apply)	☐ Lake not most at risk ☐ Lake most at risk ☐ Lake most at risk, severely blooming	☑ River, stream or brook ☑ Urban impaired stream ☑ Freshwater wetland	☐ Coastal wetland ☐ Wellhead or public water				
20. Name of Waterbody Project Site drains to:	Unnamed tributary to Thatcher Brook						
21. Amount of Developed Area:	Total acres: 18.133	Existing Developed area: 0.00 acres	New Developed area: 18.133 acres				
22. Amount of Impervious Area:	Total acres: 8.06	Existing Impervious areas 0.00 acres	New Impervious area: 8.06 acres				
23. Development started prior to obtaining a license?:	☐ Yes ☑ No						
24. .Development or any portion of the site subject to enforcement action?	☐ Yes ☑ No	**If yes**, name of enforcement staff involved?					
25. Common scheme of development?:	☐ Yes ☑ No	**26. Title, Right or Interest:**	☐ own ☐ lease	☑ purchase option ☐ written agreement			
27. Natural Resources Protection Act permit required?:	☑ Yes ☐ No	**If yes:**	☑ PBR	☑ Tier 1 ☐ Tier 2	☐ Full Permit		
28. Existing DEP Permit number (if applicable):							
29. Names of DEP staff person(s) present at the pre-application meeting:	Jennifer McGill						
30. Does agent have an interest in project? If yes, what is the interest?	☐ Yes ☑ No						

CERTIFICATIONS AND SIGNATURES LOCATED ON PAGE 2

IMPORTANT: IF THE SIGNATURE BELOW IS NOT THE APPLICANT'S SIGNATURE, ATTACH LETTER OF AGENT AUTHORIZATION SIGNED BY THE APPLICANT.

By signing below the applicant (or authorized agent), certifies that he or she has read and understood the following :

CERTIFICATIONS / SIGNATURES

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein.

Further, I hereby authorize the DEP to send me an electronically signed decision on the license I am applying for with this application by emailing the decision to the electronic address located on the front page of this application (see #5 for the applicant and #10 for the agent)"..

Signed: _____ **Title** Vice President **Date:** 9/7/22

Notice of Intent to Comply with Maine Construction General Permit	**With this Site Law application form and my signature, I am filing notice of my intent to carry out work which meets the requirements of the Maine Construction General Permit (MCGP). I have read and will comply with all of the MCGP standards.** **If this form is not being signed by the landowner or lessee of the property, attach documentation showing authorization to sign.** **Signed** _____ **Date:** 9/7/22

NOTE: You must file a MCGP Notice of Termination (Form K) within 20 days of completing permanent stabilization of the project site.

CERTIFICATION

The person responsible for preparing this application and/or attaching pertinent site and design information hereto, by signing below, certifies that the application for development approval is complete and accurate to the best of his/her knowledge.

Signature: _____

Name (print): Richard Meek

Date: 9/7/22

Re/Cert/Lic No.: _____

Engineer P.E. 10668 ME

Geologist _____

Soil Scientist _____

Land Surveyor _____

Site Evaluator _____

Active Member of the Maine Bar _____

Professional Landscape Architect _____

Other _____

FORM D

SUBMISSIONS CHECKLIST

If a provision is not applicable, put "NA"

Section 1. Development description

A. Narrative

X 1. Objectives and details

N/A 2. Existing facilities (with dates of construction)

B. Topographic map

X 1. Location of development boundaries

X 2. Quadrangle name

C. Construction plan

X 1. Outline of construction sequence (major aspects)

2. Dates

D. Drawings

X 1. Development facilities

X a. Location, function and ground area

N/A b. Length/cross-sections for roads

X 2. Site work (nature and extent)

N/A 3. Existing facilities (location, function ground area and floor area)

4. Topography

X a. Pre- and post-development (contours 2 ft or less)

N/A b. Previous construction, facilities and lot lines

X **Section 2. Title, right or interest** (copy of document)

Section 3. Financial capacity

X A. Estimated costs

B. Financing

X 1. Letter of commitment to fund

2. Self-financing

N/A a. Annual report

N/A b. Bank statement

3. Other

N/A a. Cash equity commitment

N/A b. Financial plan

N/A c. Letter

N/A 4. Affordable housing information

Section 4. Technical ability (description)

X A. Prior experience (statement)

X B. Personnel (documents)

Section 5. Noise

X A. Developments producing a minor noise impact (statement)

X 1. Residential developments

N/A 2. Certain non-residential subdivisions

N/A 3. Schools and hospitals

N/A 4. Other developments

N/A a. Type, source and location of noise

N/A b. Uses, zoning and plans

N/A c. Protected locations

N/A d. Minor nature of impact

N/A e. Demonstration
N/A B. Developments producing a major noise impact (full noise study)
N/A 1. Baseline
N/A a. Uses, zoning and plans
N/A b. Protected locations
N/A c. Quiet area
N/A 2. Noise generated by the development
N/A a. Type, source and location of noise
N/A b. Sound levels
N/A c. Control measures
N/A d. Comparison with regulatory limits
N/A e. Comparison with local limits

X **Section 6. Visual quality and scenic character**(narrative, description, visual impact analysis)

X **Section 7. Wildlife and fisheries** (narrative)

X **Section 8. Historic sites** (narrative)

X **Section 9. Unusual natural areas** (narrative)

Section 10. Buffers
X A. Site plan and narrative

Section 11. Soils
X A. Soil survey map and report
X 1. Soil investigation narrative
X 2. Soil survey map
X B. Soil survey intensity level by development type
1. Class A (High Intensity) Soil Survey
2. Class B (High Intensity) Soil Survey
3. Class C (Medium High-Intensity) Soil Survey
4. Class D (Medium Intensity) Soil Survey
C. Geotechnical Investigation
N/A D. Hydric soils mapping

Section 12. Stormwater management
A. Narrative
X 1. Development location
X 2. Surface water on or abutting the site
X 3. Downstream ponds and lakes
X 4. General topography
X 5. Flooding
X 6. Alterations to natural drainage ways
X 7. Alterations to land cover
X 8. Modeling assumptions
X 9. Basic standard
X 10. Flooding standard
X 11. General standard
X 12. Parcel size
X 13. Developed area
X 14. Disturbed area
X 15. Impervious area
X B. Maps
X 1. U.S.G.S. map with site boundaries
X 2. S.C.S. soils map with site boundaries
X C. Drainage Plans (a pre-development plan and a post-development plan)

X	1. Contours
X	2. Plan elements
X	3. Land cover types and boundaries
X	4. Soil group boundaries
X	5. Stormwater quantity subwatershed boundaries
X	6. Stormwater quality subwatershed boundaries
X	7. Watershed analysis points
X	8. Hydrologic flow lines (w/flow types and flow lengths labeled)
X	9. Runoff storage areas
X	10. Roads and drives
X	11. Buildings, parking lots, and other facilities
X	12. Drainage system layout for storm drains, catch basins, and culverts
X	13. Natural and man-made open drainage channels
X	14. Wetlands
X	15. Flooded areas
X	16. Benchmark
X	17. Stormwater detention, retention, and infiltration facilities
X	18. Stormwater treatment facilities
N/A	19. Drainage easements
X	20. Identify reaches, ponds, and subwatersheds matching stormwater model
N/A	21. Buffers
X	D. Runoff analysis (pre-development and post development)
X	1. Curve number computations
X	2. Time of concentration calculations
X	3. Travel time calculations
X	4. Peak discharge calculations
X	5. Reservoir routing calculations
X	E. Flooding Standard
N/A	1. Variance submissions (if applicable)
N/A	a. Submissions for discharge to the ocean, great pond, or major river
N/A	i. Map
N/A	ii. Drainage plan
N/A	iii. Drainage system design
N/A	iv. Outfall design
N/A	v. Easements
N/A	b. Insignificant increase
N/A	i. Downstream impacts
N/A	c. Submissions for discharge to a public stormwater system
N/A	i. Letter of permission
N/A	ii. Proof of capacity
N/A	ii. Outfall analysis and design (pictures)
X	2. Sizing of storm drains and culverts
X	3. Stormwater ponds and basins
X	a. Impoundment sizing calculations
X	b. Inlet calculations
X	c. Outlet calculations
X	d. Emergency spillway calculations
X	e. Subsurface investigation report
X	f. Embankment specifications
X	g. Embankment seepage controls
X	h. Outlet seepage controls
X	i. Detail sheet
X	j. Basin cross sections
X	k. Basin plan sheet
N/A	4. Infiltration systems
N/A	a. Well locations map
N/A	b. Sand and gravel aquifer map
N/A	c. Subsurface investigation report with test pit or boring logs

N/A	d. Permeability analysis
N/A	e. Infiltration structure design
N/A	f. Pollutant generation and transport analysis
N/A	g. Monitoring and operations plan
N/A	i. Locations of storage points of potential contaminants
N/A	ii. Locations of observation wells and infiltration monitoring plan
N/A	iii. Groundwater quality monitoring plan
N/A	5. Drainage easement declarations.
X	F. Stormwater quality treatment plan peak discharge calculations
X	1. Basic stabilization plan
X	a. Ditches, swales, and other open channel stabilization
X	b. Culvert and storm-drain outfall stabilization
X	c. Earthen slope and embankment stabilization
X	d. Disturbed area stabilization
N/A	e. Gravel roads and drives stabilization
X	2. General Standard
X	a. Calculations for sizing BMP
X	b. Impervious area calculation
X	c. Developed area calculation
X	d. Summary spreadsheet of calculations
N/A	3. Phosphorus control plan
N/A	a. Calculations for the site's allowable phosphorus export
N/A	b. Calculations for determining the developed site's phosphorus export
N/A	c. Calculations for determining any phosphorus compensation fees
X	4. Offset Credits
X	a. Urban impaired stream
N/A	Offset credit calculation
N/A	b. Phosphorus credit determination
N/A	i. Location map
N/A	ii. Scaled plan
N/A	iii. Title and right
N/A	iv. Demolition plan
N/A	v. Vegetation plan
N/A	vi. Offset credit calculation
N/A	vii. Calculation for the new allowable export
X	5. Runoff treatment measures
X	a. structural measures
X	i. Design drawings and specifications
X	ii. Design calculations
X	iii. Maintenance plan
N/A	iv. TSS removal or phosphorus treatment factor determinations
X	v. Stabilization plan
N/A	b. Vegetated buffers
N/A	i. Soil survey
N/A	ii. Buffer plan
N/A	iii. Turnout and level spreader designs
N/A	iv. Deed restrictions
X	6. Control plan for thermal impacts to coldwater fisheries
N/A	7. Control plan for other pollutants
X	8. Engineering inspection of stormwater management facilities
X	G. Maintenance of common facilities or property
X	1. Components of the maintenance plan
X	A. Maintenance of facilities by owner or operator
X	1. Site owner or operator (name legally responsible party)
TBD	2. Contact person responsible for maintenance
TBD	3. Transfer mechanism

X	4. List of facilities to be maintained
X	5. List of inspection and maintenance tasks for each facility
N/A	6. Identifications of any deed covenants, easements, or restrictions
X	7. Sample maintenance log
TBD	8. Copies of any third-party maintenance contracts
N/A	B. Maintenance of facilities by homeowner's association
N/A	1. Incorporation documents for the association
N/A	2. Membership criteria
N/A	3. Association officer responsible for maintenance
N/A	4. Establishment of fee assessment for maintenance work
N/A	5. Establishment of lien system
N/A	6. Reference to department order(s) in association charter
N/A	7. Transfer mechanism from developer to association
N/A	8. List of facilities to be maintained
N/A	9. Identification of any deed covenants, easements, or restrictions
N/A	10. Renewal of covenants and leases
N/A	11. List of inspection and maintenance tasks for each facility
N/A	12. Sample maintenance log
N/A	13. Copies of any third-party maintenance contracts
N/A	C. Maintenance of facilities by municipality or municipal district
N/A	1. Identification of the municipal department or utility district
N/A	2. Contact person responsible for maintenance
N/A	3. Evidence of acceptance of maintenance responsibility
N/A	4. Transfer mechanism from developer
N/A	5. List of facilities to be maintained
N/A	6. List of inspection and maintenance tasks for each facility
N/A	7. Identifications of any deed covenants, easements, or restrictions
N/A	8. Sample maintenance log
X	2. General inspection and maintenance requirements
N/A	a. Drainage easements
X	b. Ditches, culverts, and catch-basin systems
X	c. Roadways and parking surfaces
X	d. Stormwater detention and retention facilities
X	1. Embankment inspection and maintenance
X	2. Outlet inspection and clean-out
X	3. Spillway maintenance
X	4. Sediment removal and disposal
N/A	e. Stormwater infiltration facilities
N/A	1. Sediment protection plan
N/A	2. Infiltration rehabilitation plan
N/A	3. Sediment removal and disposal
N/A	4. Groundwater monitoring plan
N/A	f. Proprietary treatment devices
N/A	g. Buffers
X	h. Other practices and measures

Section 13. Urban Impaired Stream Submissions

N/A	1. Off-site credits
X	2. Compensation fees (Urban Impaired Stream/Phosphorus)
X	3. Development impacts

Section 14. Basic Standards

X	A. Narrative
X	1. Soil types
X	2. Existing erosion problems
X	3. Critical areas
X	4. Protected natural resources
X	5. Erosion control measures

X	6. Site stabilization
X	B. Implementation schedule
X	C. Erosion and sediment control plan
X	1. Pre-development and post-development contours
X	2. Plan scale and elements
X	3. Land cover types and boundaries
X	4. Existing erosion problems
X	5. Critical areas
X	6. Protected natural resources
X	7. Locations (general)
X	8. Locations of controls
X	9. Disturbed areas
	10. Stabilized construction entrance
X	D. Details and specifications (for both temporary and permanent measures)
X	E. Design calculations
X	F. Stabilization plan
X	1. Temporary seeding
X	2. Permanent seeding
X	3. Sodding
X	4. Temporary mulching
X	5. Permanent mulching
X	G. Winter construction plan
X	1. Dormant seeding
X	2. Winter mulching
TBD	H. Third-party inspections
TBD	1. Inspector's name, address, and telephone number
TBD	2. Inspector's qualifications
TBD	3. Inspection schedule
TBD	4. Contractor contact
TBD	5. Reporting protocol

Section 15. Groundwater

X	A. Narrative
X	1. Location and maps
N/A	2. Quantity
N/A	3. Sources
N/A	4. Measures to prevent degradation
N/A	B. Groundwater protection plan
N/A	C. Monitoring plan
N/A	1. Monitoring points
N/A	2. Monitoring frequency
N/A	3. Background conditions
N/A	4. Monitoring parameters
N/A	5. Personnel qualifications
N/A	6. Proof of training
N/A	7. Equipment and methods
N/A	8. Quality assurance/quality control
N/A	9. Reporting requirements
N/A	10. Remedial action plan
N/A	D. Monitoring well installation report
N/A	1. Well location map
N/A	2. Elevation data
N/A	3. Well installation data
N/A	4. Well construction details
N/A	5. Borehole logs
N/A	6. Summary of depth measurements
N/A	7. Characteristics of subsurface strata
N/A	8. Well installation contract

N/A 9. Schematic cross-sections
N/A 10. Monitoring point summary table
N/A 11. Protective casing
N/A 12. On-site well identification

Section 16. Water supply

X A. Water supply method
N/A 1. Individual wells (evidence of sufficient/healthful supply)
N/A a. Support of findings by well drillers
N/A b. Support of findings by geologist
N/A 2. Common well(s) (reports)
N/A a. Hydrogeology report
N/A b. Engineering report
N/A c. Well installation report
N/A d. Long-term safe yield and zone of influence determination
N/A e. Public water supply
N/A i. Proposed well or wells
N/A ii. Existing well or wells
N/A iii. Water quality analysis
N/A 3. Well construction in shallow-to-bedrock areas
N/A 4. Additional information
X 5. Off-site utility company or public agency
N/A 6. Other sources
N/A B. Subsurface wastewater disposal systems (locations of systems and wells)
X C. Total usage (statement re: total anticipated water usage)

Section 17. Wastewater disposal

N/A A. On-site subsurface wastewater disposal systems (investigation results)
N/A 1. Site plan
2. Soil conditions summary table
N/A 3. Logs of subsurface explorations
4. Additional test pits, borings or probes
N/A a. Soil conditions A
N/A b. Soils with Profiles 8 and 9 parent material
N/A c. Soil conditions D
N/A d. Disposal field length 60 feet or greater
N/A 5. 3-bedroom design
N/A 6. Larger disposal systems
a. System design details
N/A b. Plan view
N/A c. Cross sections
N/A d. Test pit data
N/A e. Mounding analysis
N/A B. Nitrate-nitrogen impact assessment
N/A 1. When required
N/A a. Exempted____
i. Conventional systems meeting certain setbacks
N/A ii. Denitrification systems
N/A b. Special conditions and other exemptions
N/A 2. Assumptions
N/A a. Initial concentration
N/A b. Background concentration
N/A c. Contribution from development
N/A d. Mixing and dilution
N/A e. Severe-drought scenario
N/A f. Wastewater flow to subsurface wastewater disposal fields

N/A 3. Assessment report minimum requirements
N/A a. Narrative and calculations
N/A b. Site plan
N/A i. Well locations
N/A ii. 10 mg/l and 8 mg/l isocons
N/A iii. Groundwater contours and groundwater flow divides
N/A c. References
N/A 4. Denitrification systems
N/A a. Design plans and specifications
N/A b. Installation information
N/A c. Monitoring plan
N/A d. Maintenance
N/A e. Backup system
X D. Municipal facility or utility company letter
N/A E. Storage or treatment lagoons

X **Section 18. Solid waste** (list: type, quantity, method of collection and location)
X A. Commercial solid waste facility (final disposal location)
X B. Off-site disposal of construction/demolition debris (final disposal location)
C. On-site disposal of woodwaste/land clearing debris
N/A 1. Applicability of rules (evidence re: applicability of rules)
2. Burning of wood wastes
N/A a. Delineation on site plan
N/A b. Plans for handling unburned woodwaste and woodash
N/A c. Evidence of capacity to accept waste (approved facility)
N/A d. Usage of materials
N/A e. Data on mixing ratios and application rates
N/A D. Special or Hazardous Waste

Section 19. Flooding
N/A A. Explanation of flooding impact
N/A B. Site plan showing 100-year flood elevation
N/A C. Hydrology analysis
X D. FEMA flood zone map with site boundaries

Section 20. Blasting
N/A A. Site Plan or map
N/A B. Report
1. Assessment
2. Blasting plan

Section 21. Air emissions (narrative and summary)
N/A A. Point and non-point sources identified
N/A B. Emission components (point sources)

Section 22. Odors
N/A A. Identification of nature/source
N/A B. Estimate of areas affected
N/A C. Methods of control)

N/A **Section 23. Water vapor** (narrative)

N/A **Section 24. Sunlight** (statement and drawing, if required)

Section 25. Notices
X A. Evidence that notice sent
X B. List of abutters for purposes of notice

Supplemental requirements for Wind Energy Developments only:

Section 26. Shadow flicker

N/A A. A copy of the Windpro Analysis and associated narrative

Section 27. Public Safety

N/A A. Design safety certifications or other documents attesting to the safety of the wind turbine equipment.
N/A B. Evidence pertaining to overspeed controls
N/A C. Site plan documenting safety setbacks zones for each wind turbine
N/A D. Other documents as necessary to demonstrate safety considerations

Section 28. Tangible Benefits

N/A A. Narrative demonstration of tangible benefits

Section 29. Decommissioning

N/A A. Description of implementation trigger for decommissioning
N/A B. Description of extent of decommissioning
N/A C. Itemization of total cost to complete decommissioning
N/A D. Demonstration of financial assurance for completeness of decommissioning plan

Section 30. Generating Facility-visual Quality and Scenic Character

N/A A. (narrative, description, visual impact analysis)

Section 1 – Development Description

A. Narrative

The applicant intends to construct a multi-family residential development consisting of nine 24-unit apartment buildings, a clubhouse, mail kiosk, maintenance building, eight detached garages, surface parking, dog park, community garden and interconnected sidewalks. The development parcel includes approximately 44.5 acres and is located off Andrews Road and Alfred Street (Route 111) in Biddeford, Maine.

When completed the project will include approximately eighteen (18) acres of developed area, including approximately eight (8) acres of impervious surfaces.

The parcel is currently undeveloped. However, there is evidence of gravel extraction activities on the site. Historical aerial photographs, attached for reference, suggest that the gravel extraction started sometime in the late 1940's or early 1950's.

B. Topographic Map

A portion of the U.S. Geological Survey's Kennebunk Quadrangle, 7.5-Minute Series with the project site depicted is attached.

C. Construction Plan

The project is anticipated to begin construction in the Autumn of 2022. Site work is anticipated to take approximately 18 months to complete and will generally correspond to the following table:

	Start	Finish
1. Estimated construction time: 18 months	November 1, 2022	April 30, 2024
2 Erosion control measures placed	November 1, 2022	November 7, 2022
3. Site clearing, grubbing, excavation, and filling	November 7, 2022	December 7, 2022
4. Excavation & construction of drives, parking lots and underground utilities.	November 7, 2022	May 31, 2023
5. Mulch spread for winter erosion control	November 15, of construction year	May 1 the following year
6. Start progressive final seeding on prepared areas.	Within 24 hours of loam placement	September 15 of construction year
7. Bi-weekly monitoring of vegetative growth.	April 15, 2023	April 30, 2024

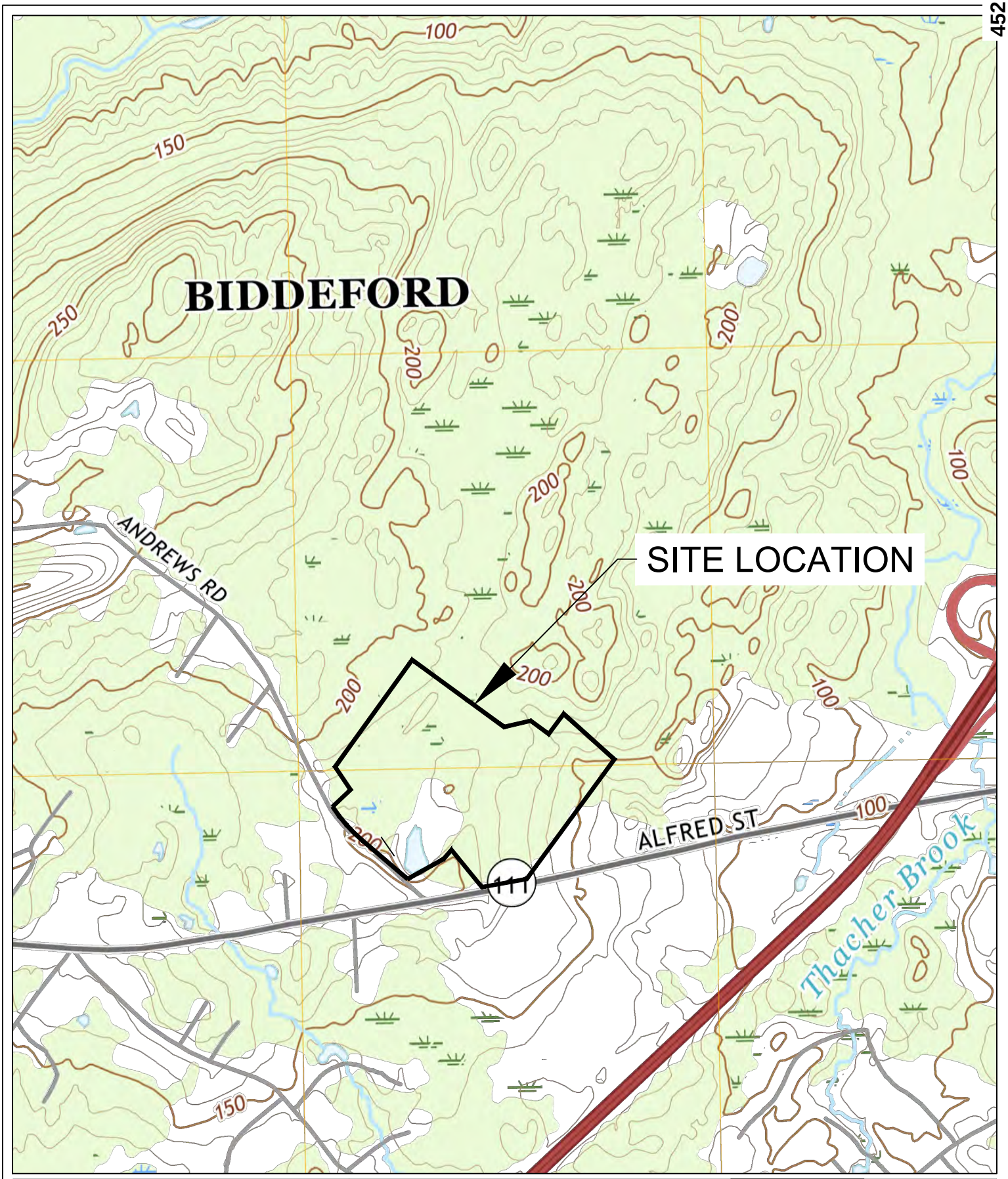
8. Re-seed, if necessary, and continue monitoring of growth until established.	May 15, 2023	April 30, 2024
9. Progressive removal of erosion control devices, based on field inspection.	June 15, 2023	April 30, 2024

Dates are subject to change at the discretion of the engineer and depending on construction progress.

D. Drawings

A complete set of the design plans is attached and includes the following:

- Cover Sheet and Location Map
- Boundary & Existing Conditions Survey
- Class 'B' High Intensity Soil Survey
- Site Plans
- Grading & Drainage Plans
- Utility Plans
- Landscape Plans
- Site Details



USGS KENNEBUNK QUADRANGLE MAP

PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

PREPARED FOR:
KGI PROPERTIES, LLC
10 Memorial Boulevard, Suite 901
Providence RI 02903

TERRADYN CONSULTANTS, LLC

PINELAND
41 CAMPUS DRIVE, SUITE 301
NEW GLOUCESTER, ME 04260

PORTLAND
565 CONGRESS STREET, SUITE 201
PORTLAND, ME 04101

207.926.5111 • info@terradynconsultants.com • www.terradynconsultants.com

PROJECT NO.	SHEET
21-49	1
DATE	OF
03/21/2022	1
SCALE	
1"=1,000'	

Section 2 – Title, Right or Interest

A copy of the property deeds, as recorded at the York County Registry of Deeds are attached.

- Book 11111, page 70
- Book 11449, pages 147-148

A copy of the purchase and sale agreement between the applicant and property owner is attached.

BK11111PG070

WARRANTY DEED **062428**

KNOW ALL MEN BY THESE PRESENTS

THAT I, JAMES A. MININNI, SR., of Biddeford, York County, Maine, for consideration paid, grant to NEW LIFE CHRISTIAN FELLOWSHIP, a Maine religious corporation with a mailing address of 551 Alfred Road, Biddeford, Maine 04005, with **warranty covenants**, a certain parcel of land situated on the Northerly side of the Alfred Road, near the top of Chick's Hill, so-called, in Biddeford, York County, Maine, bounded and described as follows:

Beginning on said road at the corner of land formerly of one Daniel Cyr at an iron hub set in the ground; thence northeasterly by said Cyr's land and land of others to a spotted tree at a brook; thence northwesterly by the brook to land of Ben Lunt, marked by a spotted tree; thence southwesterly by said Lunt land and land of others to an oak tree and land of one Coffey; thence by said Coffey's land southerly to the road at an iron hub set in the ground; thence southeasterly by said road to said Cyr land and point of beginning.

Being the same premises conveyed to the Grantor herein by warranty deed of Lucia Mininni dated October 3, 1996, and recorded October 10, 1996, in the York County Registry of Deeds in Book 8027, Page 103.

IN WITNESS WHEREOF, I, JAMES A. MININNI, SR. have hereunto set my hand and seal this 13th day of November, 2001.

Signed, sealed and delivered
in the presence of

James A. Mininni SR.
JAMES A. MININNI, SR.

STATE OF MAINE
YORK, ss.

November 13, 2001

Personally appeared the above named James A. Mininni, Sr. and acknowledged the foregoing instrument to be his free act and deed.

Attorney at Law/~~Notary Public~~

David R Ordway
(print name)

Return to:

RECEIVED YORK S.S
2001 NOV 13 PM 4: 15
ATTEST: Lois M. Muse
REGISTER OF DEEDS

MAINE R.E. TRANSFER TAX PAID

1709 A MAIN NERSON ESQ
37 BERRY ST. SACO ME 04072

014748

WARRANTY DEED
Maine Statutory Short Form

KNOW ALL MEN BY THESE PRESENTS,

THAT **ENERGY HOMES, INC.**, a Maine corporation, with a place of business in Limerick, County of York, State of Maine,

for consideration paid,

grant to **NEW LIFE CHRISTIAN FELLOWSHIP, f/k/a NEW LIFE ADVENT CHRISTIAN CHURCH OF BIDDEFORD, MAINE**, a religious non-profit corporation, without corporate stock, organized under the laws of the State of Maine, with its principal place of business in Biddeford, County of York, State of Maine, whose mailing address is 547 Alfred Road, Biddeford, ME 04005, with **warranty covenants**, the land in the City of Biddeford, County of York, State of Maine, described as follows:

MAINE R.E. TRANSFER TAX PAID

A certain lot or parcel of land, with the buildings and improvements thereon, situated in the City of Biddeford, County of York and State of Maine, on the northerly side of the Alfred Road, so-called, bounded and described as follows:

BEGINNING on said Alfred Road at the intersection of the same with the Andrews Road, also known as Andrew Road, so-called; thence running northwesterly by said Andrews Road, to land formerly of Daniel S. Hooper; thence northeasterly by said Hooper land and land formerly of Daniel Smith and one Stimpson to land now or formerly of K. S. Gilpatrick; thence southerly by said Gilpatrick land to said Alfred Road; thence westerly by said Alfred Road to said Andrews Road and point of beginning.

EXCEPTING that portion of the above described premises which was previously conveyed to Central Maine Power Company by undated instrument recorded in the York Registry of Deeds on November 14, 1988 in Book 4901, Page 286 (erroneously referred to being recorded in Book 4901, Page 287 in deed to Energy Homes, Inc. referenced below).

ALSO EXCEPTING that portion which was conveyed to the State of Maine by deed dated January 30, 1950 and recorded in said Registry of Deeds in Book 1150, Page 211.

Being the same premises conveyed to Energy Homes, Inc. by deed of Normand R. Verville, Personal Representative of the Estate of Lillian M. Verville, dated August 4, 1999 and recorded in the York Registry of Deeds in Book 9618, Page 290.

FURTHER EXCEPTING AND RESERVING from the above described premises that portion thereof which was conveyed by Energy Homes, Inc. to David R. Pelletier and Joyce A. Pelletier by deed duly recorded in the York Registry of Deeds in Book 10872, Page 44, reference to which is hereby made for a more particular description.

BK 11449 PG 148

IN WITNESS WHEREOF, It, the said **ENERGY HOMES, INC.**, has caused this instrument to be signed in its corporate name and behalf by **ANDRE N. COTE**, its President thereunto duly authorized, this 5th day of March, 2002.

SIGNED, SEALED AND DELIVERED
IN PRESENCE OF

ENERGY HOMES, INC.

BY: _____
Andre N. Cote, President

STATE OF MAINE
YORK, ss.

March 5th, 2002

Then personally appeared the above named **ANDRE N. COTE,** President of **ENERGY HOMES, INC.** and acknowledged the foregoing instrument to be his free act and deed, in his said capacity and the free act and deed of said **ENERGY HOMES, INC.**

Before me,

_____
Bryce W. Ingraham
Attorney at Law

chi-newlife-chi-T4830-deed-del2002.wpd

RETURN RECORDED DOCUMENT TO:
New Life Christian Fellowship
547 Alfred Road
Biddeford, ME 04005

RECEIVED YORK S.S
2002 MAR 11 AM 11:31
ATTEST: Lois M. Muse
REGISTER OF DEEDS

Pleasant Lemone
Post Office Box 1190
Sanford Maine 04073

Digitized

OPTION TO PURCHASE AND PURCHASE AND SALE AGREEMENT

OPTION TO PURCHASE AND PURCHASE AND SALE AGREEMENT ("**Agreement**") made as of the date ("**Effective Date**") of last execution appearing below, by and between **New Life Christian Fellowship**, a Maine religious nonprofit corporation ("**Seller**"), with a mailing address of 551 Alfred Road, Biddeford, Maine 04005-9474 and **Devine Capital LLC**, a Massachusetts limited liability company, or its nominee ("**Buyer**"), with a mailing address of P.O. Box 17795, Portland, Maine 04112.

WHEREAS, Seller owns fee simple interest in that certain real property consisting of approximately 44.7 acres more or less located generally at 588 and 590 Alfred Street, in the City of Biddeford, County of York, Maine, also known as Tax Map 2, Lots 6 and 12, and more particularly described in the source deeds referenced in **Exhibit A** attached hereto (the "**Property**"); Excepting and reserving a 2.1 acre parcel conveyed to Old Dogs of Biddeford, LLC as referenced as Tax Map 2, Lot 6-3 and in the York County Registry of Deeds Book 17933 Page 197 also referenced here in Exhibit B.

WHEREAS, Seller has agreed to grant to Buyer an option to purchase the Property in the future for a set price reflected below, and does thus commit and obligate itself to sell and convey the Property to Buyer on the terms and conditions as set forth below;

NOW, THEREFORE, for good and valuable consideration, the sufficiency and receipt whereof is hereby acknowledged, the parties hereto, intending to be legally bound, hereby agree as follows, incorporating the foregoing recitals by reference as if fully restated hereinbelow:

Article I – Grant, Timing, Diligence, Permitting

1.1 *Option, Purchase Price.* For the consideration recited above, and in consideration for Buyer investing substantial time and money to review, evaluate, inspect, and explore development opportunities with respect to the Property, subject to the terms and conditions hereof, Seller hereby irrevocably grants to Buyer the exclusive right and option (the "**Option**") to purchase the Property for the sum of [redacted] (the "**Purchase Price**").

1.2 *Preliminary Diligence Deadline.* The initial term of the Option shall commence on the Effective Date and, unless otherwise extended in accordance with the terms hereof, shall expire at **6:00 p.m.** (Eastern Time), [redacted] days thereafter, during which period Buyer shall conduct its due diligence inspections (addressed in Article II below), the results of which shall be acceptable to Buyer in its sole and absolute discretion (the "**Preliminary Diligence Deadline**").

1.3 *Rezone/Permitting Deadline; Rezone/Permitting Approval Date.*

A. Upon the Preliminary Diligence Deadline, unless Buyer has terminated this Option due to the results of its due diligence being unsatisfactory to Buyer in its sole and absolute discretion, Buyer shall pay and deliver to Seller monthly payments in the amount of [redacted] in order to extend the Option term for up to [redacted] consecutive periods of [redacted] days each (all such monthly payments hereinafter referred to as the "**Option Payments**"). The Option Payments shall be nonrefundable but shall be applied to the Purchase Price at closing. Seller hereby grants to Buyer full authority to seek from any federal, state, or local governmental authority any zoning change(s) and/or permits and/or approvals whatsoever that Buyer, in its sole and absolute discretion, deems advisable for Buyer's intended development of the Property for a multi-family residential development (the "**Project**") during such extended period ("**Rezone/Permitting Deadline**"). Seller hereby agrees to fully support and cooperate with Buyer's efforts to rezone and permit the Project, and specifically agrees to appear and testify in favor of, and promptly execute any document reasonably requested by Buyer in connection with, any such efforts of Buyer, all at no cost or charge to Buyer.

B. In the event Buyer does not obtain final unappealable zoning change(s)/approvals, including conditional use and/or permits for the Project acceptable to Buyer in its sole and absolute discretion, or otherwise affirmatively elect by written notice to Seller to close notwithstanding the lack of such permits and/or approvals, by the Rezone/Permitting Deadline, then unless Buyer

elects to extend the Rezone/Permitting Deadline as provided in Section 1.4, below, this Agreement shall automatically terminate as of the Rezone/Permitting Deadline, and, promptly upon Buyer's delivery to Seller of (1) an instrument (the "**Release**") signed by Buyer and suitable to release and discharge the Record Notice, and (2) digital copies of and an assignment of all right in the all materials developed by Buyer and its contractors as part of Buyer's efforts to rezone and permit the Project (the "**Rezone Permitting Materials**"), this Agreement shall be null, void, of no further force and effect, and each party hereto shall have no further obligation one to the other.

C. If Buyer obtains zoning change(s) and permits for the Project acceptable to Buyer in its sole and absolute discretion, then promptly upon the date ("**Rezone/Permitting Approval Date**") that the last of such zoning change(s) and/or permit(s) become final and non-appealable, Buyer shall serve notice upon Seller confirming same, and Buyer shall close on the purchase by the date ("**Closing Deadline**") that is [redacted] days after the Rezone/Permitting Approval Date, and the notice described in the first sentence of this subsection shall also constitute the Exercise Notice referenced in Section 3.1, below, and shall contain the additional information specified in Section 3.2, below.

1.4 *Additional Option Extension Payments*. Notwithstanding any contrary provision herein, if Buyer has not obtained all necessary unappealable permits and/or approvals for the Project, Buyer may elect to further extend the Option and Rezone/Permitting Deadline for up to [redacted] additional, successive periods of [redacted] days each, provided Buyer shall pay and deliver to Seller monthly payments, in the amount of [redacted] (all such monthly payments hereinafter referred to as the "**Extension Payments**"). The Extension Payments shall be nonrefundable but shall be applied to the Purchase Price at closing.

1.5 *Termination*. Notwithstanding any contrary provision herein, at any time before the Rezone/Permitting Approval Date, Buyer may elect to terminate this Agreement by delivering to Seller notice thereof ("**Termination Notice**"). If a Termination Notice is given, Buyer shall promptly deliver to Seller the Release signed by Buyer and the Rezone/Permitting Materials, as described in Section 1.3 above, and upon such delivery, this Agreement shall be null and void, of no further force and effect, and each party hereto shall have no further obligation one to the other, except that Buyer's indemnification obligations under Section 2.2 shall survive any termination.

Article II – Due Diligence

2.1 To facilitate Buyer's inspections and evaluation of the Property, Seller agrees to deliver to Buyer as soon as possible, but in any event within [redacted] days from the date hereof, copies of the materials specified on the list attached hereto as **Exhibit B** (the "**Due Diligence Materials**"). In addition, Seller agrees to permit Buyer to inspect and make copies of any books and records in Seller's possession or control concerning the Property.

2.2 So long as this Agreement remains in effect, Buyer may conduct such investigations, inspections, interviews, tests, assessments and audits pertaining to the Property as Buyer elects, in Buyer's sole discretion and at Buyer's sole cost, *including but not limited to*: (i) title search; (ii) survey; (iii) environmental site assessment; (iv) review of zoning and building code requirements; and/or (v) physical/geotechnical inspection of the Property (collectively, the "**Inspections**"). Buyer shall promptly repair any physical damage to the Property caused by any such Inspections, and Buyer further agrees to indemnify and hold Seller harmless from and against any and all loss, cost, damage, or expense incurred by Seller as a result of said physical damage.

2.3 Seller agrees, in general, to cooperate in good faith with Buyer and Buyer's representatives, and, in particular:

2.3.1 so as to secure the rights granted to Buyer hereunder and to ensure that the Property shall be in substantially the same condition at the time of conveyance as exists as of the date of this Agreement, Seller agrees that for so long as this Agreement remains in

effect, then unless and until Buyer in writing consents otherwise, Seller shall maintain the Property substantially in condition as currently exists, timely paying all taxes and other impositions related to ownership thereof, and shall not: (a) transfer, encumber, mortgage, lease, alienate, impose any restriction or condition upon, or otherwise grant to any other person, firm or entity any permission, license, right or rights whatsoever in, pertaining to, or affecting any part or all of the Property; nor (b) make any change to or alter in any way whatsoever the physical or other characteristics of any part or all of the Property, including cutting of trees/timber, or contamination of any kind; and,

2.3.2 so as to ensure that there is no change in the status of the title to the Property prior to termination of this Agreement, Seller agrees to contemporaneously with its execution hereof execute and deliver to Buyer for recording in the appropriate Land Evidence Records an instrument (the "**Record Notice**") suitable under applicable law to evidence the grant of the Option and the aforesaid restrictions on the grant of any rights inconsistent with this Agreement, in form and substance as attached hereto as **Exhibit C**, or, if no such exhibit is attached, in form and substance as Buyer may reasonably request.

2.4 During the effective term of this Agreement, Buyer contemplates expending substantial sums and incurring substantial expenses to inspect, test, and analyze the Property, to conduct title research, undertake survey and site plans, and to otherwise conduct a due diligence review of the Property and all related matters, and to pursue obtaining permits for Buyer's contemplated development of the Property. To induce Buyer to make such efforts and expend such sums, Seller hereby agrees that during the effective term of this Agreement Seller shall not solicit, encourage, negotiate or entertain any offer with any other party concerning or with respect to the Property whatsoever, including offers to purchase or lease the Property, regarding any sale, financing, partnership, or other disposition of all or any part of, or interest in, the Property; Seller agrees to immediately communicate to Buyer for response any written inquiries received by Seller during the effective term of this Agreement. Seller further agrees to keep the monetary terms of this Agreement confidential, except only as may be approved by Buyer in writing, in advance.

2.5 Notwithstanding anything contained herein to the contrary, however, in the event Buyer delivers to Seller prior to expiration of the Preliminary Diligence Deadline written notice specifying with reasonable particularity matters related to the title to the Property to which Buyer objects ("**Title Objection Notice**"), then and in such event the Preliminary Diligence Deadline shall be deemed extended for an additional period beyond its then-scheduled expiration to allow Seller to, and Seller does hereby agree that Seller shall during such period, use good faith efforts to promptly and reasonably resolve such title objections. In the event Seller fails to use reasonable good faith efforts to so resolve Buyer's objections, then and in such event Seller shall be in default hereunder, and Buyer shall be entitled to its remedies for same as provided below. In addition, Buyer shall have the right to extend the Preliminary Diligence Deadline for a reasonable period of time to permit Buyer itself, at its own expense, to resolve such title objections.

Article III – Exercise, Purchase Price

3.1 In the event that Buyer elects to exercise the Option and purchase the Property, Buyer shall deliver notice ("**Exercise Notice**") to Seller pursuant to Section 1.3.C stating that Buyer elects to exercise the Option to purchase the Property.

3.2 Buyer shall specify in the Exercise Notice (but failure to so specify shall not invalidate the effectiveness of the Exercise Notice) the name of the entity, if different from Buyer, that is to take title to the Property, Seller hereby acknowledging and agreeing that Buyer may take title in the name of any entity Buyer chooses as nominee, and that for this purpose references in this Agreement to "Buyer" shall mean "Buyer or its nominee."

3.3 The Purchase Price shall be adjusted to reflect the Option Payments and Extension Payments paid to Seller by Buyer pursuant to Section 1.3, as well as the equitable apportionment as of date

of closing of unpaid real estate taxes, assessments, liens, utility bills, if any, recording charges, transfer tax, and similar items as is customary in standard conveyancing practice in the State of Maine (the Purchase Price as so adjusted may hereinafter be referred to as the "**Adjusted Purchase Price**").

Article IV – Closing Procedure

4.1 On the Closing Deadline, Seller shall sell and convey the Property to Buyer and Buyer shall purchase the Property from Seller (the "**Closing**"). At Closing, Seller shall deliver to Buyer:

4.1.1 an original deed (the "**Deed**") properly executed by or on behalf of Seller, in form and substance as attached hereto as **Exhibit D**, conveying all of Seller's interest in the Property to Buyer by good, marketable, insurable title, free and clear of all liens, encumbrances, and deficiencies, except utility easements of record, and, except easements and encumbrances of record prior to the date of this Agreement and,

4.1.2 such other documents as may be reasonably requested by Buyer, including without limitation customary title insurance affidavits, such instruments of assignment as Buyer reasonably requests, such as an Assignment of Permits, documents to evidence the existence, good standing, and authority of Seller, a settlement statement, or any other customary or reasonable documentation as may be requested (such other documents, together with the Deed, may hereinafter be referred to collectively as the "**Conveyance Documents**").

4.1.3 At Closing Buyer shall deliver to Seller the Adjusted Purchase Price in immediately available funds.

Article V - Representations

5.1 Seller hereby represents and warrants to Buyer, which representations and warranties shall be deemed restated as of closing, that:

5.1.1 Seller has good, insurable, and marketable title in fee simple to the Property, subject only to the encumbrances of record.

5.1.2 Seller is a Maine nonprofit corporation, is not a foreign person or foreign entity as defined in the Foreign Investment in Real Property Tax Act ("**FIRPTA**"), has full right, power and authority to enter into and consummate this transaction, the person executing this Agreement on behalf of Seller is an officer of Seller and is duly authorized to execute this Agreement on behalf of Seller, Seller has the power and authority without necessity of further act or consent to execute this Agreement and all other instruments and documents contemplated hereby and to perform any and all acts necessary or desirable to consummate the transactions contemplated (including a conveyance of the Property).

5.1.3 To Seller's knowledge without additional investigation, the Property is free of violations of law, is in full compliance with Federal, State, City and County ordinances and environmental laws, and there are not any current or contemplated special tax assessments known to Seller.

5.1.4 Other than to the extent granted in this Agreement, previously disclosed to Buyer in writing, or reflected as exceptions to coverage on a title commitment acceptable to Buyer, no person, firm, or entity has any rights in, pertaining to, or affecting the Property, and Seller has not granted any rights in, pertaining to, or affecting the Property to any person, firm, or entity in any unrecorded instrument or writing, nor does any person, firm, or entity have an option to purchase or right of first refusal to purchase the Property.

5.1.5 Seller is not involved as a debtor in any bankruptcy, reorganization or insolvency proceeding, and Seller has not received any notice of and has no knowledge of any

pending or threatened lawsuits, including condemnation suits, that could affect the Property or Seller's ownership of the Property.

5.1.6 To Seller's knowledge without additional investigation there have not been and there are not now any underground storage tanks located on or under the Property or if there have been or are any such tanks located on the Property, their location has been identified to Buyer in writing, they have been properly registered with all appropriate authorities, they are in full compliance with all applicable statutes, ordinances and regulations, and they have not resulted in the release of any hazardous or toxic substance, material, or waste into the environment.

5.1.7 To Seller's knowledge without additional investigation there are no past or present uses of the Property that did not comply in all material respects with all Environmental Protection Agency, Occupational Safety and Health Administration, and all other federal, state and local laws, administrative rules and regulations governing the soil, water, air and environment in and around the Property.

Article VI - Default

6.1 If Buyer fails to fulfill the Buyer's agreement herein, Seller shall retain the Option Payment(s) as liquidated damages, being Seller's sole remedy. If Seller shall fail to fulfill its obligations herein, Buyer shall have all available remedies at law and in equity, including specific performance. Notwithstanding the foregoing, the non-defaulting party agrees to provide the defaulting party with written notice providing a description of a default and provide such defaulting party with a [redacted] day cure period.

Article VII – Notice

7.1 All notices or other communications required or permitted hereunder shall be in writing, and shall be effective upon receipt or refusal when sent to the intended recipient by one of the methods set forth below:

7.1.1 regular and certified U.S. mail, postage prepaid, return receipt requested;

7.1.2 reputable national delivery service (i.e. FedEx, DHL); or,

7.1.3 otherwise hand delivered with an acknowledgment of receipt

7.1.4 electronic transmission

7.2 Each party, by written notice given to the other party in accordance herewith, may change the address to which notices or other communications hereunder shall be deemed to have been duly given; provided, however, no party may designate more than **three** notice addresses, and notice of a change of address shall be effective only upon actual delivery. Until changed as aforesaid, a notice shall be addressed to the intended recipient at their address set forth in the first paragraph on page 1 of this Agreement.

Article VIII – Miscellaneous

8.1 *Broker.* Seller and Buyer each hereby represent and warrant to the other that neither Seller nor Buyer has dealt with or employed any real estate agent, broker, or any person entitled to a commission in connection with the transaction contemplated other than [redacted] in Maine. Seller and Buyer hereby agree to indemnify, defend, and hold harmless the other from any claim or claims, action or actions, losses, payments, judgments, commission or commissions, paid or payable to any real estate agent, broker, person or entity in connection with this transaction that was not called to the attention of the other as a result of any services or facilities of any such real estate agent, broker, person or entity provided to the other. The provisions of this paragraph shall survive conveyance of the Property to Buyer.

8.2 *Governing Law, Venue, Jury Waiver.* This Agreement shall be construed in accordance with the laws of the State of Maine. Both Buyer and Seller hereby consent to the jurisdiction of the courts of said state and of the federal government, as well as to the jurisdiction of all courts from which an appeal may be taken from the aforesaid courts, for the purpose of any suit, action or other proceeding arising out of, under or with respect to this agreement, and expressly waive any and all objection each may now or hereafter have as to the venue in any of such courts, and EACH OF BUYER AND SELLER DO HEREBY EXPRESSLY WAIVE ANY RIGHT EACH MAY HAVE TO ELECT A TRIAL BY JURY AS TO ANY DISPUTE ARISING HEREUNDER. Any disputes between Buyer and Seller (which are not otherwise resolved by the parties) shall be submitted to binding arbitration in Portland, Maine administered by JAMS in accordance with its Streamlined Arbitration rules. The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction. This clause shall survive the closing of this transaction.

8.3 *Headings; Entire Agreement; Amendments.* The headings contained in this Agreement are for reference purposes only and shall not affect in any way the meaning or interpretation of this Agreement. This Agreement (including all exhibits annexed hereto) contains the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior understandings, written or oral, if any, with respect thereto. This Agreement may not be modified, changed, supplemented, or terminated, nor may any obligations hereunder be waived, except by written instrument signed by the party to be charged or by its agent duly authorized in writing or as otherwise expressly permitted herein. The Agreement shall not be binding on any party until signed by every party.

8.4 *Waiver.* No waiver of any breach of any agreement or provision herein contained shall be deemed a waiver of any preceding or succeeding breach thereof or of any other agreement or provision herein contained. No extension of time for performance of any obligations or acts shall be deemed an extension of the time for performance of any other obligations or acts.

8.5 *Binding Effect; Assigns; Benefits.* This Agreement shall inure to the benefit of and shall be binding upon the parties hereto and their respective heirs, legal representatives, successors and assigns; provided, however, Seller may not assign its rights or obligations under this Agreement absent Buyer's consent in Buyer's sole discretion.

8.6 *Exhibits, Counterparts.* All exhibits attached hereto are by this reference incorporated fully herein. This Agreement may be executed by the parties hereto in one or more counterparts, each of which shall be deemed to be an original, but all of which together shall constitute one and the same instrument.

8.7 *Severability.* The invalidity or unenforceability of any provision of this Agreement shall not affect the validity or enforceability of any other provision of this Agreement, which shall remain in full force and effect.

8.8 *Days, Interpretation.* References in this Agreement to a specified number of "days," shall mean and refer to calendar days; provided, however if any specified period would otherwise end on a day that is a Saturday, Sunday or day which is recognized by the State of Maine ("Jurisdiction") as a legal holiday, then and only in such event, the specified period shall be deemed to extend to the next following day that is not a Saturday, Sunday or legal holiday. "Business Day" means any day other than Saturday, Sunday and/or any weekday or weekend day that is a legal holiday observed by the federal government of the United States of America or the Jurisdiction. The terms of this Agreement were fully negotiated by the parties and shall not be construed for or against any party hereto.

8.9 *Prevailing Party.* In the event the parties litigate in any court or arbitration forum any dispute hereunder, then and in such event, the prevailing party shall be entitled to an award from the other of the reasonable attorney's fees and costs incurred therein by said prevailing party.

8.10 *Time of the Essence*. The parties hereto hereby agree that TIME IS OF THE ESSENCE as to each and every provision of this Agreement.

[*Signature Page Follows; Remainder Intentionally Blank*]

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed under seal by their proper officers hereunto duly authorized as of the date of last execution hereof as set forth below.

Seller:
NEW LIFE CHRISTIAN FELLOWSHIP

By:_____
Justin Sweeney
Its Duly Authorized: Lead Pastor

Date: January 25, 2021

Buyer:
DEVINE CAPITAL LLC

By:_____
Bernard M. Devine
Its Duly Authorized: President

Date: January 25, 2021

Exhibit A

Two parcels of land, excepting the third parcel conveyed to Old Dogs of Biddeford, LLC with any improvements thereon, in the City of Biddeford, York County, Maine described in the following deeds:

588 Alfred Street, Biddeford, Maine

- Warranty Deed dated November 13, 2001 from James A. Mininni, Sr. to New Life Christian Fellowship, recorded at Book 11111, Page 70 in the York County Registry of Deeds

590 Alfred Street, Biddeford, Maine

- Warranty Deed dated March 5, 2002 from Energy Homes, Inc. to New Life Christian Fellowship, recorded at Book 11449, Page 147 in the York County Registry of Deeds

Excepting the property located at Alfred Street, Biddeford, Maine, conveyed to Old Dogs of Biddeford LLC

- Warranty Deed dated April 19, 2019 from New Life Christian Fellowship to Old Dogs of Biddeford, LLC recorded at Book 17933, Page 197 in the York County Registry of Deeds

Exhibit B

Survey - Titcomb Associates 2002
588 Alfred St Deed 11111 070
590 Alfred St Deed 11449 147
588 Alfred St Disclosure
590 Alfred St Disclosure
Old Dogs 2018 Conveyance Survey
Old Dogs Deed 17933 197
Alfred St Sewer Map
Andrews Geometrics Plan Profile 2004
ARC New Building sketch
Packard Development sketch
BI3074-Va Table A Zoning Uses
Parcel 1 and 2 Tax Map copy
2003 Biddeford & Saco Water Co Letter
2003 Gorrill-Palmer Consulting Engineers re: Ability to Serve
2005 Post development AM Peak Hour
Andrews Geometrics Plan Profile 2004
Attachment B TR-20 Calculations
Attachment C Water Quality Computations
Calculations Based Upon Maine Subsurface Wastewater Rules
Capacity and Queuing Analysis Results
City of Biddeford Wastewater Dept 2003 Ability to Serve Letter
Erosion Sedimentation North C-8B
Erosion Sedimentation South C-8A
First American Gap Indemnity Agreement 5.25.2017
First American Alta 3 parcels-3.5-2002
Gorrill-Palmer Consulting Engineers 2.9.2004 Maine DOT Letter
Gorrill-Palmer Consulting Engineers 4.8.2004 Maine DOT Letter
Gorrill-Palmer Consulting Engineers 2004 Plans
Gorrill-Palmer Consulting Engineers Row Volumes, Peak Adjusted Volumes
Grading & Drainage C-3
Grading Drainage South C-4A
Grading Draining North C-4B
Lighting plan WLS Lighting Systems
Offsite Utility Profile C-17B
Offsite Utility Profile C-17A
Overall Site Layout C-1A
PreDevelopment Watershed Maps
Proposed Off-Site Improvements - Gorrill Palmer
Route 111 & Exit 4- traffic study
Route 111 & Home Depot
Route 111 at Andrews Rd
Route 111 at Exit 4 Precourt St
Route 111 at Route 35
Route 111 at Shaws Irving
Route 111 at Walmart Park n ride
RW Gillespie June 2004 geotechnical evaluation
Section 7 Wildlife and Fisheries
Section 14 Erosion and Sedimentation Control Plan
Site Layout C-1B
Site Layout North C-2C

Exhibit B (continued)

Site Layout Phase2. C-2A
Site Layout Plans C2A C1B
Site Layout South C-2B
Stormwater Management
Traffic Impact Study 2003
Trip Generation Calculations
Turning Movement Diagrams
Utility Plan C- 6
Utility Plan Phase 1 C5
Vernal Pool Application and Determination NLC
Vernal Pool Location Plan LongView Partners - 588-590 Alfred St
Wetland Reconnaissance 4-21-18- 588-590 Alfred St
Wetland Reconnaisance 6-3-20- 590 Alfred St.6-3-20
Zoning Map

Exhibit C

NOTICE OF OPTION

Notice is hereby given of the following Option to Purchase and Purchase and Sale Agreement (the "Option") vesting in Buyer an option to purchase certain real property owned by Seller:

SELLER:	New Life Christian Fellowship
BUYER:	Devine Capital LLC
DATE OF AGREEMENT:	January 25, 2021
PREMISES:	See Exhibit A attached hereto
TERM OF OPTION:	Beginning January 25, 2021 and continuing for up to [redacted] days, subject at all times to the terms and conditions of the Option Agreement.

The undersigned further expressly acknowledges that this Notice of Option is being executed pursuant to the provisions of the Option and is not intended to vary the terms or conditions of the Option.

IN WITNESS WHEREOF, the undersigned has caused this Notice of Option to be signed by its duly authorized representative.

NEW LIFE CHRISTIAN FELLOWSHIP

By:_____
Print Name: Justin Sweeney
Its Duly Authorized: President and Lead Pastor
Dated: January 25, 2021

STATE OF MAINE
COUNTY OF YORK, SS

January 25, 2021

Then personally appeared the above-named Justin Sweeney, President and Lead Pastor of NEW LIFE CHRISTIAN FELLOWSHIP and acknowledged the foregoing instrument to be his/~~her~~ free act and deed in his/~~her~~ said capacity, and the free act and deed of NEW LIFE CHRISTIAN FELLOWSHIP.

Lillian B. Camire
Notary Public / Attorney at Law
Print name:
My commission expires:

LILLIAN B. CAMIRE
Notary Public - Maine
My Commission Expires
December 17, 2023

Exhibit D

QUITCLAIM DEED
WITH COVENANT
STATUTORY SHORT FORM
TITLE 33, §775

New Life Christian Fellowship, a Maine religious nonprofit corporation, with a mailing address of 551 Alfred Street, Biddeford, Maine 04005-9474, for consideration paid, grants to _____, a _____, with a mailing address of _____, **with Quitclaim Covenant,** a certain lot or parcel of land situated in the City of Biddeford, County of York, and State of Maine, as described in **Exhibit A** attached hereto and made a part hereof.

DATED: _____, 202_ New Life Christian Fellowship

By:_____
Print Name: Justin Sweeney
Its Duly Authorized: President and Lead Pastor

STATE OF MAINE
COUNTY OF YORK, SS

_____, ___, 202_

Then personally appeared the above-named Justin Sweeney, President and Lead Pastor of NEW LIFE CHRISTIAN FELLOWSHIP and acknowledged the foregoing instrument to be his/her free act and deed in his/her said capacity, and the free act and deed of NEW LIFE CHRISTIAN FELLOWSHIP.

_____
Notary Public / Attorney at Law
Print name:
My commission expires:

Exhibit A

Two parcels of land, excepting the third parcel conveyed to Old Dogs of Biddeford, LLC with any improvements thereon, in the City of Biddeford, York County, Maine described in the following deeds:

588 Alfred Street, Biddeford, Maine

- Warranty Deed dated November 13, 2001 from James A. Mininni, Sr. to New Life Christian Fellowship, recorded at Book 11111, Page 70 in the York County Registry of Deeds

590 Alfred Street, Biddeford, Maine

- Warranty Deed dated March 5, 2002 from Energy Homes, Inc. to New Life Christian Fellowship, recorded at Book 11449, Page 147 in the York County Registry of Deeds

Excepting the property located at Alfred Street, Biddeford, Maine, conveyed to Old Dogs of Biddeford, LLC

- Warranty Deed dated April 19, 2019, from New Life Christian Fellowship to Old Dogs of Biddeford, LLC recorded at Book 17933, Page 197 in the York County Registry of Deeds

SECOND AMENDMENT TO OPTION TO PURCHASE AND PURCHASE AND SALE AGREEMENT

THIS SECOND AMENDMENT TO OPTION TO PURCHASE AND PURCHASE AND SALE AGREEMENT (this Amendment") is made and entered into as of the 14 day of January, 2022, by and between **New Life Christian Fellowship** ("Seller") and **Devine Capital LLC** ("Buyer") with respect to that certain Option To Purchase and Purchase and Sale Agreement between Seller and Buyer, with an effective date of January 25, 2021, as amended by that certain Amendment to Option to Purchase and Purchase and Sale Agreement dated May "__", 2021 (together, the "Agreement"), relating to property of the Seller located generally at 588 and 590 Alfred Street in Biddeford, Maine.

WHEREAS, Seller and Buyer wish to amend the Agreement as set forth below.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Seller and Buyer hereby agree that the Agreement shall be amended as hereinafter set forth.

A. Section 1.4 of the Agreement is hereby amended to change the monthly amount of the Extension Payments from [redacted] to [redacted] for the firs [redacted] monthly Extension Payments (i.e., the monthly Extension Payments in January 2022 through June 2022 shall be [redacted] but thereafter shall revert to [redacted]).

B. Seller and Buyer hereby ratify and confirm all terms and provisions of the Agreement and agree that, except as amended by this Amendment, all terms and provisions of the Agreement shall remain in full force and effect including.

C. This Second Amendment may be simultaneously executed in any number of counterparts, each of which when so executed and delivered shall be an original, but such counterparts shall constitute one and the same instrument. This Second Amendment may be transmitted between the parties by facsimile machine or by email attachment and signatures appearing on faxed or emailed instruments shall be treated as original signatures. Both a faxed or emailed version containing either original, faxed or emailed signatures of all parties, and multiple counterparts of the same version each containing separate original, faxed or emailed signatures of the parties, shall be binding on them.

[Signature Page Follows]

IN WITNESS WHEREOF, Seller and Buyer have executed this Second Amendment as of the date first above written.

SELLER

NEW LIFE CHRISTIAN FELLOWSHIP

DocuSigned by:
By: Justin Sweeney
2507456A9BB5421...

Name: Justin Sweeney

Its Duly Authorized: Lead Pastor

BUYER

DEVINE CAPITAL LLC

By: _____
Bernard M. Devine, Jr., Manager

Section 3 – Financial Capacity

A. **Estimated Costs**

The anticipated project costs include the following:

Property purchase price:	$1,500,000
Soft Costs (Design, Permitting, etc.):	$2,425,000
Site Construction Costs:	$7,625,000

B. **Financing**

A letter from the applicant's financial partner, Rockland Trust, demonstrating a commitment to provide financing for the project is attached.

The applicant does not intend to provide affordable housing units within the development.

C. Certificate of Good Standing

A copy of the applicant's status with the Secretary of State is attached.

ROCKLAND TRUST Where Each Relationship Matters

July 29, 2022

Bureau of Land and Water Quality
312 Canco Road
Portland, ME 04103

Re: A 216 Unit Multifamily Project to be constructed in Biddeford, ME

To whom it may concern,

Rockland Trust Company will be providing the construction financing for the referenced multifamily project. Provided below is a summary of the proposed budget for this project:

Building Construction	$	29,865,000
Site Improvement Work	$	7,625,000
Soft Costs	$	2,425,000
	$	39,915,000

Our relationship with KGI Properties, LLC and their investment partners, Devine Capital, LLC and The Simon Konover Company back many years and we have most recently provided financing for The Beacon Expansion, a 48 unit expansion to The Beacon in Scarborough, ME, Mast Landing, a 144 unit multifamily project in Freeport, ME; The Cove, a 120 unit multifamily project in East Lyme, CT; The Beacon, a 288 unit multifamily project in Scarborough, ME; The Shoppes at Hanfield Village, a grocery anchored center in Indian Trail, NC; and The Sound, a 280 unit multifamily project in East Lyme, CT.

Should you have any questions concerning the proposed financing for this multifamily project, please do not hesitate to contact me directly.

Sincerely,

James J. O'Connor, Jr.
Senior Vice President

MAINE
Department of the Secretary of State
Bureau of Corporations, Elections and Commissions

Corporate Name Search

Information Summary

Subscriber activity report

This record contains information from the CEC database and is accurate as of: Mon Aug 01 2022 08:34:59. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
DEVINE CAPITAL LLC	20170837FC	LIMITED LIABILITY COMPANY (FOREIGN)	GOOD STANDING

Filing Date	Expiration Date	Jurisdiction
04/11/2017	N/A	MASSACHUSETTS

Other Names **(A=Assumed ; F=Former)**

NONE

Clerk/Registered Agent

JOHN D. DEVINE, ESQ.
P.O. BOX 17795
PORTLAND, ME 04112

Back to previous screen New Search

Click on a link to obtain additional information.

List of Filings View list of filings

Obtain additional information:

Additional Addresses Plain Copy Certified copy

Certificate of Existence (more info) Short Form without amendments ($30.00)

You will need Adobe Acrobat version 3.0 or higher in order to view PDF files.
If you encounter problems, visit the troubleshooting page.

Get Acrobat Reader

If you encounter technical difficulties while using these services, please contact the Webmaster. If you are unable to find the information you need through the resources provided on this web site, please contact the Bureau's Reporting and Information Section at 207-624-7752 or e-mail or visit our Feedback page.

© Department of the Secretary of State

Section 4 - Technical Ability

The applicant, KDK Biddeford, LLC, has extensive development and permitting experience within the State of Maine, including two similar projects successfully permitted within the past five years. The Beacon, a 288-unit project in Scarborough, was permitted in 2017 with construction completed in 2020. 259 Mast Landing, a 144-unit project in Freeport, was permitted in 2020 and is nearing the completion of construction.

The design phase of the project includes the preparation of detailed site plans, site grading, stormwater management, site utility layout, erosion & sediment control plans and site detail plans. The permitting phase of this project consists of the preparation of all required state and local permit applications, including the MDEP Site Location of Development Act Permit, a Tier 1 Natural Resources Protection Act Permit, and Site & Subdivision applications with the City of Biddeford.

The applicant has retained Fairbanks Engineering Corp. to evaluate the geotechnical characteristics of the project site. The principal, Robert Fairbanks, P.E., has over 35 years of geotechnical experience and has been involved with numerous successful construction projects in Maine.

The applicant has retained Terradyn Consultants, LLC (Terradyn) to lead the design and permitting effort for this project. Terradyn was established in 2005 and currently has six professional engineers on staff. Terradyn provides land planning, stormwater management design, environmental permitting, and technical assistance to developers, contractors, and municipalities for commercial, residential and industrial developments. Project manager, Richard Meek, P.E. has been involved in the successful design and permitting of numerous projects of similar size and scope. Terradyn has subcontracted with the following professionals to supplement the design:

Colliers Engineering & Design, formerly Northern Survey Engineering, has prepared the boundary and partial topographic survey for the property. The professional Land Surveyors of Northern Survey Engineering have provided high-quality, client-oriented services since 2017.

Mark Hampton Associates, Inc. prepared the Class B High Intensity Soil Survey. Mark Hampton, CSS #216, LSE #263 is a recognized expert in his field.

Mark Cenci Geologic, Inc prepared report of delineation of the onsite wetlands. Mark Cenci is a Maine certified Geologist and Licensed Site Evaluator with over 25 years' experience solving problems in innovative and cost-effective ways for hundreds of satisfied clients.

Section 5 - Noise

Sine the development is solely residential, the anticipated noise generated by the project will be minor in nature. Short-term noise impacts may occur during construction with the use of typical site construction equipment. Construction activities will be limited to the daylight hours as specified in the City of Biddeford ordinances.

Section 6 - Visual Quality and Scenic Character

Impacts to the visual quality and scenic character of the surrounding area will be minimized in the following manner:

- To the extent practical, the existing forested areas along Alfred St. (Rte. 111) and Andrews Rd. will be maintained.
- Except for two proposed stormwater outfall pipes, a minimum 100-foot buffer will be maintained for an unnamed stream, which forms a portion the development's northeast property boundary.
- The development anticipates that approximately 7,000 square feet (0.16 acre) of the property's approximate 323,000 square feet (7.41 acres) of wetland will pe permitted for impacts. This represents proposed impacts to approximately 2.1% of the property's wetlands.
- Pursuant to the terms of the Joint Development Agreement dated May 19, 2022 between the City and the developer, at the time of the initial building permit issuance, the developer will grant to the City, or its designated nonprofit conservation organization, a conservation easement over certain wetland areas as then agreed upon by the parties and upon terms and conditions satisfactory to the City, in good faith in order to preserve such wetland areas in their natural and undeveloped state.

Section 7 - Wildlife and Fisheries

The Maine Department of Inland Fisheries and Wildlife (MEIF&W) was contacted as part of the applicant's due diligence investigation of the property. A copy of MEIF&W's response letter regarding fisheries and wildlife resources is attached for reference.

JANET T. MILLS
GOVERNOR

STATE OF MAINE
DEPARTMENT OF
INLAND FISHERIES & WILDLIFE
284 STATE STREET
41 STATE HOUSE STATION
AUGUSTA ME 04333-0041

JUDITH CAMUSO
COMMISSIONER

April 21, 2021

Samantha Hartery
Flycatcher LLC
463 Blackstrap Road
Falmouth, ME 04105

RE: Information Request – KGI Properties Project, Biddeford

Dear Samantha:

Per your request received on March 31, 2021, we have reviewed current Maine Department of Inland Fisheries and Wildlife (MDIFW) information for known locations of Endangered, Threatened, and Special Concern species; designated Essential and Significant Wildlife Habitats; and inland fisheries habitat concerns within the vicinity of the *KGI Properties* project in Biddeford. Note that as project details are lacking, our comments are non-specific and should be considered preliminary.

Our Department has not mapped any Essential Habitats that would be directly affected by your project.

Endangered, Threatened, and Special Concern Species

Bats - Of the eight species of bats that occur in Maine, the three Myotis species are afforded special protection under Maine's Endangered Species Act (MESA, 12 M.R.S §12801 et. seq.): little brown bat (State Endangered), northern long-eared bat (State Endangered), and eastern small-footed bat (State Threatened). The five remaining bat species are designated as Species of Special Concern: big brown bat, red bat, hoary bat, silver-haired bat, and tri-colored bat. While a comprehensive statewide inventory for bats has not been completed, based on historical evidence it is likely that several of these species occur within the project area during migration and/or the breeding season. However, our Agency does not anticipate significant impacts to any of the bat species as a result of this project.

Significant Wildlife Habitat

Significant Vernal Pools - At this time MDIFW Significant Wildlife Habitat (SWH) maps indicate no known presence of SWHs subject to protection under the Natural Resources Protection Act (NRPA) within the project area, which include Waterfowl and Wading Bird Habitats, Seabird Nesting Islands, Shorebird Areas, and Significant Vernal Pools. However, a comprehensive statewide inventory for Significant Vernal Pools has not been completed. Therefore, we recommend that surveys for vernal pools be conducted within the project boundary by qualified wetland scientists prior to final project design to determine whether there are Significant Vernal Pools present in the area. These surveys should extend up to 250 feet beyond the anticipated project footprint because of potential performance standard requirements for off-site Significant Vernal Pools, assuming such pools are located on land owned or controlled by the applicant. Once surveys are completed, survey forms should be submitted to our Agency for review well before the submission of any necessary permits. Our Department will need to review and verify any vernal pool data prior to final determination of significance.

Fisheries Habitat

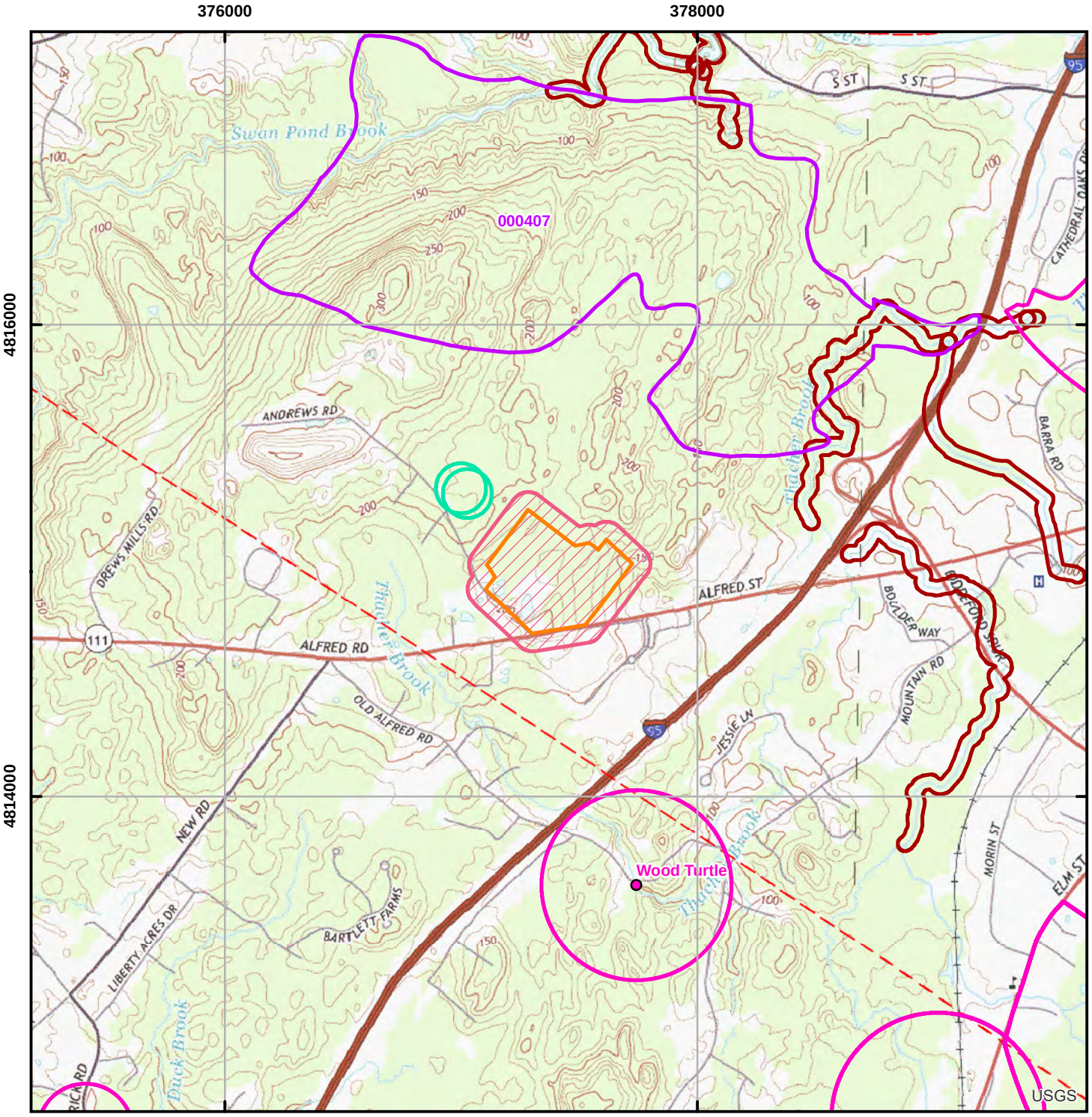
We recommend that 100-foot undisturbed vegetated buffers be maintained along streams and waterbodies. Buffers should be measured from the edge of stream or associated fringe and floodplain wetlands. Maintaining and enhancing buffers along streams that support coldwater fisheries is critical to the protection of water temperatures, water quality, natural inputs of coarse woody debris, and various forms of aquatic life necessary to support conditions required by many fish species. Stream crossings should be avoided, but if a stream crossing is necessary, or an existing crossing needs to be modified, it should be designed to provide full fish passage. Small streams, including intermittent streams, can provide crucial rearing habitat, cold water for thermal refugia, and abundant food for juvenile salmonids on a seasonal basis and undersized crossings may inhibit these functions. Generally, MDIFW recommends that all new, modified, and replacement stream crossings be sized to span at least 1.2 times the bankfull width of the stream. In addition, we generally recommend that stream crossings be open bottomed (i.e. natural bottom), although embedded structures which are backfilled with representative streambed material have been shown to be effective in not only providing habitat connectivity for fish but also for other aquatic organisms. Construction Best Management Practices should be closely followed to avoid erosion, sedimentation, alteration of stream flow, and other impacts as eroding soils from construction activities can travel significant distances as well as transport other pollutants resulting in direct impacts to fish and fisheries habitat. In addition, we recommend that any necessary instream work occur between July 15 and October 1.

This consultation review has been conducted specifically for known MDIFW jurisdictional features and should not be interpreted as a comprehensive review for the presence of other regulated features that may occur in this area. Prior to the start of any future site disturbance we recommend additional consultation with the municipality, and other state resource agencies including the Maine Natural Areas Program, Maine Department of Marine Resources, and Maine Department of Environmental Protection in order to avoid unintended protected resource disturbance.

Please feel free to contact my office if you have any questions regarding this information, or if I can be of any further assistance.

Best regards,

Becca Settele
Wildlife Biologist



Environmental Review of Fish and Wildlife Observations and Priority Habitats

Project Name: KGI Properties, Biddeford (Version 1)

Miles

0 0.1250.25 0.5 0.75 1

Projection: UTM, NAD83, Zone 19N

Date: 3/31/2021

Maine Department of Inland Fisheries and Wildlife

- ProjectPoints
- ProjectLines
- ProjectPolys
- ProjectSearchAreas - All Versions
- Maine Cliff and Talus Areas
- Deer Winter Area
- LUPC p-fw
- Cooperative DWAs
- Seabird Nesting Islands
- Shorebird Areas
- Inland Waterfowl and Wading Bird
- 2008 Iwwh - Shoreland Zoning
- Tidal Waterfowl and Wading Bird
- Significant Vernal Pools
- Environmental Review Polygons
- Roseate Tern
- Piping Plover and Least Tern
- Aquatic ETSc - 2.5 mi review
- Rare Mussels - 5 mi review
- Maine Heritage Fish Waters
- Arctic Charr Habitat
- Redfin Pickerel and Swamp Darter Habitats - buffer100ft
- Special Concern occupied habitats - 100ft buffer
- Wild Lake Trout Habitats

Section 8 - Historic Sites

The Maine Historic Preservation Commission (MHPC) was contacted as part of the applicant's due diligence investigation of the property. A copy of MHPC's response letter regarding the presence of historically significant structures is attached for reference.

The applicant has contracted with Nearview, LLC to perform the recommended Phase 1 Archaeological Survey of the site. The results of the survey will be provided when available.

MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

JANET T. MILLS
GOVERNOR

KIRK F. MOHNEY
DIRECTOR

April 14, 2021

Ms. Samantha Hartery
Flycatcher
Lower Falls Landing
106 Lafayette St.
Suite 1C
Yarmouth, ME 04096

Project: MHPC #0592-21 KGI Properties; Alfred Street
Potential Residential Development

Town: Biddeford, ME

Dear Ms. Hartery:

In response to your recent request, I have reviewed the information received March 31, 2021 to initiate consultation on the above referenced project in accordance with the requirements of the Maine Department of Environmental Protection.

This project is located in part on landscape that meets our predictive model for likely presence of prehistoric archaeological sites because sandy/gravelly soil and nearness to water (marsh, former lake). (The project land has not previously been surveyed for archaeological sites, but there is a prehistoric site on the similar terrain 2 km away, the nearest surveyed area. A Phase I prehistoric archaeological survey is necessary for the proposed project except for the deeper portions of previously developed gravel pits.

A list of qualified prehistoric archaeologists has been enclosed and can be found on our website: https://www.maine.gov/mhpc/programs/survey/approved-consultants/prehistoric

No architectural or historic archaeological resources will be affected by this undertaking.

If you have any questions regarding archaeology, please contact Dr. Arthur Spiess of this office at Arthur.Spiess@maine.gov

If you have any questions regarding above ground properties, please contact Megan Rideout of this office at megan.m.rideout@maine.gov.

Sincerely,

Kirk F. Mohney

Kirk F. Mohney
State Historic Preservation Officer

MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

JANET T. MILLS
GOVERNOR

KIRK F. MOHNEY
DIRECTOR

Archaeological Survey Guidelines

Updated: June 10, 2002

This document is provided as background information to agencies, corporations, professional consultants or individuals needing contract archaeological services (also known as Cultural Resources Management archaeology) in Maine. These guidelines are based on state rules (94-089 Chapter 812).

Project Types

The vast majority of contract archaeology survey work falls into one of three categories.

Phase I surveys are designed to determine whether or not archaeological sites exist on a particular piece of land. Such work involves checking records of previous archaeology in the area, walking over the landscape to inspect land forms and look for surface exposures of soil and possible archaeological material, and the excavation of shovel test pits in areas of high probability.

Phase II surveys are designed to focus on one or more sites that are already known to exist, find site limits by digging test pits, and determine site content and preservation. Information from Phase II survey work is used by the Maine Historic Preservation Commission (MHPC) to determine site significance (eligibility for listing in the National Register of Historic Places). Phase III archaeological work, often called data recovery, is careful excavation of a significant archaeological site to recover the artifacts and information it contains in advance of construction or other disturbance.

Archaeological sites are further divided into two broad categories of culture, prehistoric (or Native American), and historic (or European-American). Different archaeological specialists are usually needed for prehistoric or historic sites because the nature of content and preservation and site locations are quite different.

Scope of Work

In responding to a project submission, the MHPC may issue a letter specifying which type of archaeological survey is needed (prehistoric, historic or both) and at what level (Phase I, II, or III). Often the response letter contains further information, such as the suspected presence of an historic site of a certain age, or a statement that only a portion of the project parcel in question is sensitive for prehistoric sites and only that portion needs archaeological survey.

Once the project applicant has one or more scopes of work (proposals) from appropriate archaeologists (see below), the applicant should submit their preferred proposal (without attached financial information or bid total) to the MHPC for approval. MHPC will not comment upon cost, but will comment on the appropriateness of the scale and scope of the work. An approval from MHPC of the scope of work is the applicant's guarantee that, if the field and laboratory work are done according to the scope, and appropriately described in writing, the results will be accepted by MHPC.

The final written report on the project must also be submitted to MHPC for review and comment.

PHONE: (207) 287-2132

FAX: (207) 287-2335

Finding an Archaeologist

At the time that MHPC issues a letter requiring archaeological survey work, MHPC will also supply one (or more) lists of archaeologists (Levels 1 and/or 2, historic or prehistoric) appropriate to the type of work (Phase I, II, III, historic or prehistoric). Archaeologists on the Level 2 Approved Lists can do projects of any level, including Phase I archaeological survey projects. Level 1 archaeologists are restricted to doing Phase I surveys, and certain planning projects for municipal governments.

MHPC maintains lists of archaeologists interested in working in different geographic areas of Maine, and those who are qualified in different types of work. The archaeologists themselves indicate their availability (except for short-term absence) to MHPC on a periodic basis, so archaeologists on the list can be expected to respond to inquiries. The applicant should solicit proposals or bids for work from archaeologists whose names appear on the list supplied by MHPC.

These archaeologists' names are taken from lists of archaeologists approved for work in Maine by MHPC under a set of rules establishing minimal qualifications, such as previous supervisory experience in northern New England, and an appropriate graduate degree. However, the inclusion of an archaeologist on one of these lists should not be interpreted as an endorsement by the MHPC beyond these limited qualification criteria. Moreover, the MHPC cannot recommend the services of an individual archaeologist.

Project Final Report

Whatever the archaeological survey result, a final report on the project should be submitted by the applicant to the MHPC. The MHPC will review the report, and issue further guidance or issue a "clearance" letter for the project.

MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

JANET T. MILLS
GOVERNOR

KIRK F. MOHNEY
DIRECTOR

Prehistoric Archaeologists Approved List: Review and Compliance Consulting/Contracting (Active) LEVEL 2 (Phase I, II, III, date recovery, all phases of survey) LEVEL 2

Stefan Claesson, Ph.D.*
Nearview, LLC
36 Maplewood Ave
Portsmouth, NH 03801
207-200-7879
stefan@nearview.net

Mr. Jacob A. Freedman
SEARCH, INC.
247 Sullivan Street, Suite C
Claremont, NH 03743
P-207-266-7709
Jacob@searchinc.com

Dr. Nathan Hamilton
Dept. of Geography & Anthropology
University of Southern Maine
Gorham, ME 04038
P-207-780-5324
casco@usm.maine.edu

Dr. Dianna Doucette
Public Archaeology Laboratory
26 Main Street
Pawtucket, RI 02860
ddoucette@palinc.com

Dr. Gemma-Jayne Hudgell
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382 Fairbanks Road
Farmington, ME 04938
P-207-860-4032
hudgell@nearchaeology.com

Mr. Jacob Tumelaire
Independent Archaeological Consulting
34 Dover Point Road, Suite 300
Dover, NH 03820
jtumelair@iac-llc.net

Dr. Christopher Donta
SWCA Environmental Consultants
15 Research Drive
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Christopher.donta@swca.com

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Dr. Robert Goodby
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Dr. Daniel F. Cassedy, AECOM
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Maine Historic Preservation Commission
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65 State House Station
Augusta, ME 04333
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Arthur.spiess@maine.gov
(Not available for contract work)

LEVEL 1 (Phase I and reconnaissance survey only)

LEVEL 1

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Bertrand Pelletier
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Inactive, Retired, No longer doing fieldwork, no longer at address given

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Section 9 - Unusual Natural Areas

The Maine Department of Agriculture, Conservation & Forestry (MEACF) was contacted as part of the applicant's due diligence investigation of the property. A copy of MEACF's response letter regarding their review of the Maine Natural Areas Program's data system files is attached for reference.

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
177 STATE HOUSE STATION
AUGUSTA, MAINE 04333

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

April 7, 2021

Samantha Hartery
Flycatcher, LLC
Lower Falls Landing
106 Lafayette Street, Suite 1C
Yarmouth, ME 04096

Via email: sammy@flycatcherllc.com

Re: Rare and exemplary botanical features in proximity to: #21Q, Residential Subdivision, Biddeford, Maine

Dear Ms. Hartery:

I have searched the Maine Natural Areas Program's Biological and Conservation Data System files in response to your request received March 31, 2021 for information on the presence of rare or unique botanical features documented from the vicinity of the project in Biddeford, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. This lack of data may indicate minimal survey efforts rather than confirm the absence of rare botanical features. You may want to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed.

If a field survey of the project area is conducted, please refer to the enclosed supplemental information regarding rare and exemplary botanical features documented to occur in the vicinity of the project site. The list may include information on features that have been known to occur historically in the area as well as recently field-verified information. While historic records have not been documented in several years, they may persist in the area if suitable habitat exists. The enclosed list identifies features with potential to occur in the area, and it should be considered if you choose to conduct field surveys.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

MOLLY DOCHERTY, DIRECTOR
MAINE NATURAL AREAS PROGRAM
BLOSSOM LANE, DEERING BUILDING

PHONE: (207) 287-804490
WWW.MAINE.GOV/DACF/MNAP

The Maine Natural Areas Program (MNAP) is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. MNAP welcomes coordination with individuals or organizations proposing environmental alteration or conducting environmental assessments. If, however, data provided by MNAP are to be published in any form, the Program should be informed at the outset and credited as the source.

The Maine Natural Areas Program has instituted a fee structure of $75.00 an hour to recover the actual cost of processing your request for information. You will receive an invoice for $150.00 for two hours of our services.

Thank you for using MNAP in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Program or about rare or unique botanical features on this site.

Sincerely,

Lisa St. Hilaire

Lisa St. Hilaire | Information Manager | Maine Natural Areas Program
207-287-8044 | lisa.st.hilaire@maine.gov

Rare and Exemplary Botanical Features within 4 miles of
Project: #21Q, Residential Subdivision, Biddeford, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Beach Plum						
	E	S1	G4	1933-06-21	9	Rocky coastal (non-forested, upland)
Button Sedge						
	SC	S2	G5	1880-09-06	2	<null>
	SC	S2	G5	2000-08-15	3	<null>
Creeping Spike-moss						
	E	S2	G5	1920-07-30	6	Open wetland, not coastal nor rivershore (non-forested, wetland),Old field/roadside (non-forested, wetland or upland)
Estuary Bur-marigold						
	SC	S3	G4	2009-07-30	35	Tidal wetland (non-forested, wetland)
Freshwater Tidal Marsh						
	<null>	S2	G4?	2009-07-30	1	Tidal wetland (non-forested, wetland)
Georgia bulrush						
	SC	SU	G5	2007-08-22	4	<null>
Horned Pondweed						
	SC	S2	G5	1907-08-18	10	Tidal wetland (non-forested, wetland)
Lilaeopsis						
	SC	S2	G5	2012-10-21	10	Tidal wetland (non-forested, wetland)
Mountain-laurel						
	SC	S2	G5	1991-09-28	11	Conifer forest (forest, upland),Hardwood to mixed forest (forest, upland)
Northern Blazing Star						
	T	S1	G5?T3	1916-08-10	3	Dry barrens (partly forested, upland)
Pale Green Orchis						
	SC	S2	G4?T4Q	2008-06-27	52	Non-tidal rivershore (non-forested, seasonally wet),Open wetland, not

Rare and Exemplary Botanical Features within 4 miles of
Project: #21Q, Residential Subdivision, Biddeford, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
						coastal nor rivershore (non-forested, wetland)
Parker's Pipewort						
	SC	S3	G3	2017-08-31	33	Tidal wetland (non-forested, wetland)
Pendulous Bulrush						
	SC	S2	G5	2008-06-28	8	Open wetland, not coastal nor rivershore (non-forested, wetland),Old field/roadside (non-forested, wetland or upland)
Pitch Pine Bog						
	<null>	S2	G3G5	2015-09-29	20	Forested wetland,Coastal non-tidal wetland (non-forested, wetland)
Pitch Pine Woodland						
	<null>	S3	G2	2016-08-09	30	Rocky summits and outcrops (non-forested, upland)
Pocket Swamp						
	<null>	S2	G5	2004	18	Forested wetland,Hardwood to mixed forest (forest, upland)
Pygmyweed						
	SC	S2S3	G5	2009-07-29	25	Open water (non-forested, wetland)
Red Maple Swamp						
	<null>	S5	G3G5	2007-06-05	17	Forested wetland
Saltmarsh False-foxglove						
	SC	S3	G5	1982	8	Tidal wetland (non-forested, wetland)
	SC	S3	G5	1982	9	Tidal wetland (non-forested, wetland)
Scarlet Oak						
	E	S1	G5	1916-08	4	Hardwood to mixed forest (forest, upland)
Schreber's Wood-aster						
	PE	SX	G4	1894-09	1	Rocky coastal (non-forested, upland)
Slender Blue Flag						

Rare and Exemplary Botanical Features within 4 miles of
Project: #21Q, Residential Subdivision, Biddeford, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
	T	S2	G4G5	1879-08	4	Tidal wetland (non-forested, wetland)
Small Reed Grass						
	SC	S3	G5	1998-01-01	9	Old field/roadside (non-forested, wetland or upland)
	SC	S3	G5	2000-08-15	12	Old field/roadside (non-forested, wetland or upland)
Smooth Winterberry Holly						
	SC	S3	G5	1916-08-10	10	Forested wetland
	SC	S3	G5	2004	36	Forested wetland
Southern Slender Ladies'-tresses						
	PE	SH	G5T4T5	1918-08-27	1	Dry barrens (partly forested, upland)
Spongy-leaved Arrowhead						
	SC	S3	G5T4	2012-10-21	42	Tidal wetland (non-forested, wetland)
Sweet Pepper-bush						
	SC	S2	G5	1917-09	9	Hardwood to mixed forest (forest, upland),Forested wetland
Water Pimpernel						
	SC	S3	G5T5	2012-10-21	26	Tidal wetland (non-forested, wetland)
White-topped Aster						
	E	S1	G5	1916-08-10	4	Dry barrens (partly forested, upland)
Yellow Wild Indigo						
	PE	SH	G5	1960-06-21	2	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)

STATE RARITY RANKS

S1 Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.
S2 Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
S3 Rare in Maine (20-100 occurrences).
S4 Apparently secure in Maine.
S5 Demonstrably secure in Maine.
SU Under consideration for assigning rarity status; more information needed on threats or distribution.
SNR Not yet ranked.
SNA Rank not applicable.
S#? Current occurrence data suggests assigned rank, but lack of survey effort along with amount of potential habitat create uncertainty (e.g. S3?).

Note: **State Rarity Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines State Rarity Ranks for animals.

GLOBAL RARITY RANKS

G1 Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extinction.
G2 Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
G3 Globally rare (20-100 occurrences).
G4 Apparently secure globally.
G5 Demonstrably secure globally.
GNR Not yet ranked.

Note: **Global Ranks** are determined by NatureServe.

STATE LEGAL STATUS

Note: State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine's **Endangered** and **Threatened** plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program's database to recommend status changes to the Department of Conservation.

E ENDANGERED; Rare and in danger of being lost from the state in the foreseeable future; or federally listed as Endangered.
T THREATENED; Rare and, with further decline, could become endangered; or federally listed as Threatened.

NON-LEGAL STATUS

SC SPECIAL CONCERN; Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.
PE Potentially Extirpated; Species has not been documented in Maine in past 20 years or loss of last known occurrence has been documented.

Visit our website for more information on rare, threatened, and endangered species!
http://www.maine.gov/dacf/mnap

ELEMENT OCCURRENCE RANKS - EO RANKS

Element Occurrence ranks are used to describe the quality of a rare plant population or natural community based on three factors:

- **Size**: Size of community or population relative to other known examples in Maine. Community or population's viability, capability to maintain itself.
- **Condition**: For communities, condition includes presence of representative species, maturity of species, and evidence of human-caused disturbance. For plants, factors include species vigor and evidence of human-caused disturbance.
- **Landscape context**: Land uses and/or condition of natural communities surrounding the observed area. Ability of the observed community or population to be protected from effects of adjacent land uses.

These three factors are combined into an overall ranking of the feature of **A**, **B**, **C**, or **D**, where **A** indicates an **excellent** example of the community or population and **D** indicates a **poor** example of the community or population. A rank of **E** indicates that the community or population is **extant** but there is not enough data to assign a quality rank. The Maine Natural Areas Program tracks all occurrences of rare (S1-S3) plants and natural communities as well as A and B ranked common (S4-S5) natural communities.

Note: **Element Occurrence Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines Element Occurrence ranks for animals.

Visit our website for more information on rare, threatened, and endangered species!
http://www.maine.gov/dacf/mnap

Section 10 - Buffers

The development proposes to utilize a forested buffer as a component of the project's stormwater management plan. In addition, a minimum 100-foot natural buffer (except for two proposed stormwater outfall pipes) will be maintained upgradient of an unnamed stream, which forms a portion the development's northeast property boundary.

Section 11 - Soils

Mark Hampton, CSS of Mark Hampton Associates, Inc completed a Class “B” High Intensity Soils Survey for the project site. A copy of the report is attached, herein. The related soil map is included within the design plan set.

MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

6835

Andrews Road
Biddeford
New Life Christian Fellowship

Soil Narrative Report

DATE:	Soil Profiles observed on September 24, 2021
BASE MAP:	Base plan provided by Terradyne Consultants LLC scale 1 inch equals 100 feet and two foot contours.
GROUND CONTROL:	Soil survey boundaries located by Mark Hampton Associates, Inc. for Class B Soil Survey

Class B-High Intensity Soil Survey (Minimum Standards)

Mapping units of 1 acre or less.
Scale of 1"= 200 feet or larger.
Up to 25% inclusions in mapping units of which no more than 15% may be dissimilar soils.
Ground Control – test pits located by means of compass by chaining, pacing or taping from known control points
Base Map –2 foot contour intervals

Provided:

Mapping units of 1 acre or less
Base map scale of 1"= 100 feet.
Up to 25 percent inclusions in mapping units of which no more than 15 percent is dissimilar soils.
Baseline information and test pits located by gps equipment with accuracy to less than 3 feet.
Ground topographic survey with one foot contours and ground control provided.

P.O. BOX 1931 • PORTLAND, ME 04104-1931 • 207-756-2900 • mhampto1@maine.rr.com

Quality services that meet your deadline

The accompanying soil profile descriptions, soil map, and this soil narrative report were done in accordance with the standards adopted by the Maine Association of Professional Soil Scientists, and the Maine Board of Certification of Geologists and Soil Scientists.

_____ C.S.S. #216, L.S.E. #263 _____ 9/24/21

Mark J. Hampton Date

STATE OF MAINE
MARK J.
HAMPTON
#216
CERTIFIED
SOIL SCIENTIST

MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

6835

Andrews Road
Biddeford ME
New Life Christian Fellowship

Adams
(Typic Haplorthods)

SETTING

PARENT MATERIAL:	Derived from glacial-fluvial, glacio-lacustrine sand.
LANDFORM:	Outwash plains, deltas, and terraces
POSITION IN LANDSCAPE:	Sidehill, shoulders and plains
SLOPE GRADIENT RANGES:	(A) 0-3%, (B) 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Well drained. Depth to seasonal high watertable greater than 4 feet throughout the year.

TYPICAL PROFILE:

Surface Layer:	Dark Brown loamy sand, 0-8"
Subsurface Layer:	Red Brown loamy sand, 8-20"
Subsoil Layer:	Yellow-brown loamy sand, 20-30"
Substratum:	Gray-brown sand, 30-72"

HYDROLOGIC GROUP:	Group A
SURFACE RUNOFF:	Very slow to medium
PERMEABILITY:	Rapid or very rapid
DEPTH TO BEDROCK:	Greater than 65 inches
HAZARD TO FLOODING:	None

STATE OF MAINE
MARK J. HAMPTON
#216
CERTIFIED SOIL SCIENTIST

INCLUSIONS

(Within Mapping Unit)

CONTRASTING: Croghan, Made Land, Skerry, Naumburg

USE AND MANAGEMENT

DEVELOPEMENT: There are no limiting factors for building site development.

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Andrews Road
Biddeford ME
New Life Christian Fellowship

Hermon
(Typic Haplorthods)

SETTING

PARENT MATERIAL:	Derived from loose loamy glacial till.
LANDFORM:	Till plains, hills and ridges.
POSITION IN LANDSCAPE:	Plains and middle levels.
SLOPE GRADIENT RANGES:	(A) 0-3%, (B) 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Well drained

TYPICAL PROFILE:

Surface Layer:	Brown, fine sandy loam, 0-9"
Subsurface Layer:	Dark reddish brown, stony, fine sandy loam, 9-16"
Subsoil Layer:	Yellow brown, gravelly loamy sand 16-32"
Substratum:	Olive brown, Gravelly fine sand, 32-65"

HYDROLOGIC GROUP:	Group A
SURFACE RUNOFF:	Moderately Rapid
PERMEABILITY:	Moderate in solum, slow in substratum
DEPTH TO BEDROCK:	Greater than 65 inches
HAZARD TO FLOODING:	None

STATE OF MAINE
MARK J. HAMPTON
#216
CERTIFIED SOIL SCIENTIST

INCLUSIONS
(Within Mapping Unit)

CONTRASTING: Brayton, Adams, MadeLand

USE AND MANAGEMENT

Development: There are few limiting factors for building site development

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Andrews Road
Biddeford
New Life Christian Fellowship

Man Made Land

SETTING

PARENT MATERIAL:	Derived from various materials found onsite and offsite.
LANDFORM:	N/A
POSITION IN LANDSCAPE:	N/A
SLOPE GRADIENT RANGES:	(A) 0-3%, (D) 15-25%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS:	Generally poorly to moderately well drained but varies.
TYPICAL PROFILE:	Varies in profile and onsite from fine loamy sand to gravelly loamy sand
HYDROLOGIC GROUP:	Group C
SURFACE RUNOFF:	Usually very slow due to compaction
PERMEABILITY:	Slow to very slow
DEPTH TO BEDROCK:	Greater than 65 inches
HAZARD TO FLOODING:	None

INCLUSIONS
(Within Mapping Unit)

CONTRASTING:

STATE OF MAINE
MARK J.
HAMP ON
#216
CERTIFIED
SOIL SCIENTIST

USE AND MANAGEMENT

Development: There may be limiting factors for building site development.

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6835

Andrews Road
Biddeford ME
New Life Christian Fellowship

Skerry
(Aquic Haplorthods)

SETTING

PARENT MATERIAL:	Derived from compact loamy glacial till.
LANDFORM:	Till plains, hills and ridges.
POSITION IN LANDSCAPE:	Plains and middle levels.
SLOPE GRADIENT RANGES:	(B) 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Moderately well drained

TYPICAL PROFILE:

Surface Layer: Gray (10YR 6/1), fine sandy loam, 0-7
Subsurface Layer: Dark reddish brown (5YR 3/3), fine sandy loam, 7-20"
Subsoil Layer: Yellow brown (10YR 5/4), stony fine sandy loam 20-28"
Substratum: Olive brown (2.5Y5/4), stony fine sandy loam, 28-65"

HYDROLOGIC GROUP:	Group C
SURFACE RUNOFF:	Moderately Rapid
PERMEABILITY:	Moderate in solum, slow in substratum
DEPTH TO BEDROCK:	Greater than 65 inches
HAZARD TO FLOODING:	None

STATE OF MAINE
MARK J.
HAMP ON
#216
CERTIFIED
SOIL SCIENTIST

INCLUSIONS
(Within Mapping Unit)

CONTRASTING: Lyman-Tunbridge, Adams, Madeland

USE AND MANAGEMENT

Development: The limiting factor for building development is wetness due to the presence of a seasonally high watertable on top of dense glacial basal till for a portion of the year. Proper foundation drainage or site modifications are recommended.

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Quality services that meet your deadline

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6835

Andrews Road
Biddeford
New Life Christian Fellowship

Brayton
(Aeric Epiaquepts)

SETTING

PARENT MATERIAL:	Derived from dense glacial till
LANDFORM:	Toeslopes and depressions in glaciated uplands
POSITION IN LANDSCAPE:	Lower positions on landform
SLOPE GRADIENT RANGES:	(A) 0-3%,

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Poorly drained with a perched watertable from 0.0 to 1.0 feet below the surface at some time from October to May or during periods of heavy precipitation.

TYPICAL PROFILE:

Surface Layer: Dk gray, fine sandy loam 0-5",
Subsurface Layer: Gray fine sandy loam, 5-15",
Subsoil Layer: Grayish brown fine sandy loam, 15-24"
Substratum: Olive fine sandy loam, 24-65",

HYDROLOGIC GROUP:	Group C
SURFACE RUNOFF:	Moderate to moderately slow
PERMEABILITY:	Moderate and moderately slow
DEPTH TO BEDROCK:	Greater than 65 inches
HAZARD TO FLOODING:	None

STATE OF MAINE
MARK J. HAMPTON
#216
CERTIFIED SOIL SCIENTIST

INCLUSIONS
(Within Mapping Unit)

CONTRASTING: Colonel, Dixfield, Lyman-Tunbridge

USE AND MANAGEMENT

Development: The limiting factor for building site development is wetness due to the presence of an extremely high watertable for a portion of the year. This soil is not suitable for development without alteration, which may require additional permitting.

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Quality services that meet your deadline

6835

PAGE ____ OF ____

FORM F Rev. 07/11

SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
Andrews Road	New Life Christian Fellowship	Biddeford

Exploration Symbol # SS-1

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Texture	Consistency	Color	Redox Features
Sandy Loam	Friable	Black	
Sandy Loam	Firm	Gray	Common and Distinct

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
3 (Profile)	E (Condition)	2 (Percent)	6 " (Depth)	☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Brayton PD

☒ Hydric ☐ Non-hydric

Hydrologic Soil Group: ____

Exploration Symbol # SS-2

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Texture	Consistency	Color	Redox Features
Sandy Loam	Friable	Black	
Sandy Loam	Firm	Gray	Common and Distinct

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
3 (Profile)	E (Condition)	2 (Percent)	6 " (Depth)	☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Brayton PD

☒ Hydric ☐ Non-hydric

Hydrologic Soil Group: ____

Exploration Symbol # SS-3

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Texture	Consistency	Color	Redox Features
Sandy Loam	Friable	Dark Brown	
Coarse Sandy Loam	Friable	Red Brown	None Noted
Stony Sandy Loam	Friable	Tan	

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
4 (Profile)	B (Condition)	2 (Percent)	>48 " (Depth)	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Hermon WD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: ____

Exploration Symbol # SS-4

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Texture	Consistency	Color	Redox Features
Sandy Loam	Friable	Dark Brown	
Coarse Sandy Loam	Friable	Red Brown	None Noted
Stony Sandy Loam	Friable	Tan	

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
4 (Profile)	B (Condition)	6 (Percent)	>48 " (Depth)	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: HermonWD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: ____

INVESTIGATOR INFORMATION AND SIGNATURE

Signature	Date: 9/24/2021
Name Printed: Mark J. Hampton	Cert/Lic/Reg. #: 263/216

Title: ☒ Licensed Site Evaluator ☒ Certified Soil Scientist ☐ Certified Geologist ☐ Professional Engineer

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SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
Andrews Road	New Life Christian Fellowship	Biddeford

Exploration Symbol # SS-5 ☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Depth	Texture	Consistency	Color	Redox Features
0	Sandy Loam	Friable	Black	
10	Sandy Loam	Firm	Gray	
20				Common and Distinct
30				
40				
50				
60				

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
3 (Profile)	E (Condition)	2 (Percent)	6 " (Depth)	☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Brayton PD ☒ Hydric ☐ Non-hydric Hydrologic Soil Group: _____

Exploration Symbol # SS-6 ☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Depth	Texture	Consistency	Color	Redox Features
0	Varies	Friable	Varies	
10	Varies	Friable	Varies	
20				
30	Varies	Varies	Varies	Common and Distinct
40				
50				
60				

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
_____ (Profile)	_____ (Condition)	2 (Percent)	_____ " (Depth)	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Made Land ☐ Hydric ☐ Non-hydric Hydrologic Soil Group: _____

Exploration Symbol # SS-7 ☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Depth	Texture	Consistency	Color	Redox Features
0	Varies	Varies	Mixed	
10	Varies	Varies	Mixed	
20				Common and Distinct
30	Varies	Varies	Varies	
40				
50				
60				

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
_____ (Profile)	_____ (Condition)	2 (Percent)	_____ " (Depth)	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Made Land ☐ Hydric ☒ Non-hydric Hydrologic Soil Group: _____

Exploration Symbol # SS-8 ☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Depth	Texture	Consistency	Color	Redox Features
0	Varies	Varies	Mixed	
10	Varies	Varies	Mixed	
20				Common and Distinct
30	Varies	Varies	Varies	
40				
50				
60				

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
_____ (Profile)	_____ (Condition)	30 (Percent)	_____ " (Depth)	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Made Land ☐ Hydric ☒ Non-hydric Hydrologic Soil Group: _____

INVESTIGATOR INFORMATION AND SIGNATURE

Signature		Date	9/24/2021
Name Printed	Mark J. Hampton	Cert/Lic/Reg. #	263/216

Title: ☒ Licensed Site Evaluator ☒ Certified Soil Scientist ☐ Certified Geologist ☐ Professional Engineer

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SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
Andrews Road	New Life Christian Fellowship	Biddeford

Exploration Symbol # SS-9

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Texture	Consistency	Color	Redox Features
Sandy Loam	Friable	Black	
Sandy Loam	Firm	Gray	Common and Distinct

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification: Profile	Condition	Slope: Percent	Limiting Factor: Depth	
3	E	2	6 "	☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Brayton PD ☒ Hydric ☐ Non-hydric Hydrologic Soil Group

Exploration Symbol # SS-10

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Texture	Consistency	Color	Redox Features
Varies	Friable	Varies	
Varies	Friable	Varies	
Varies	Varies	Varies	Common and Distinct

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification: Profile	Condition	Slope: Percent	Limiting Factor: Depth	
		2	"	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Made Land ☐ Hydric ☐ Non-hydric Hydrologic Soil Group

Exploration Symbol # SS-11

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Texture	Consistency	Color	Redox Features
Loamy Sand	Friable	Dark Brown	
Loamy Sand	Friable	Brown	None Noted
Sand	Friable	Tan	

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification: Profile	Condition	Slope: Percent	Limiting Factor: Depth	
5	B	6	>48 "	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Adams WD ☐ Hydric ☒ Non-hydric Hydrologic Soil Group

Exploration Symbol # SS-12

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

Texture	Consistency	Color	Redox Features
Loamy Sand	Friable	Dark Brown	
Loamy Sand	Friable	Brown	None Noted
Sand	Friable	Tan	

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification: Profile	Condition	Slope: Percent	Limiting Factor: Depth	
5	B	3	>48 "	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Adams WD ☐ Hydric ☒ Non-hydric Hydrologic Soil Group

INVESTIGATOR INFORMATION AND SIGNATURE

Signature: Mark Hampton	Date: 9/24/2021
Name Printed: Mark J. Hampton	Cert/Lic/Reg. #: 263/216

Title: ☒ Licensed Site Evaluator ☒ Certified Soil Scientist ☐ Certified Geologist ☐ Professional Engineer

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SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
Andrews Road	New Life Christian Fellowship	Biddeford

Exploration Symbol # SS-13

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0	Sandy Loam	Friable	Black	
10	Sandy Loam	Firm	Gray	
20				Common and Distinct
30				
40				
50				
60				

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
3 (Profile)	E (Condition)	2 (Percent)	6 " (Depth)	☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Brayton PD

☒ Hydric ☐ Non-hydric

Hydrologic Soil Group: _____

Exploration Symbol # SS-14

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0	Sandy Loam	Friable	Dark Brown	
10	Coarse Sandy Loam	Friable	Brown	
20				
30			Tan	
40	Stony Sandy Loam	Friable		None Noted
50				
60				

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
4 (Profile)	B (Condition)	10 (Percent)	>48 " (Depth)	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Hermon WD

☐ Hydric ☐ Non-hydric

Hydrologic Soil Group: _____

Exploration Symbol # SS-15

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0	Sandy Loam	Friable	Dark Brown	
10	Sandy Loam	Friable	Brown	
20		Firm	Olive	
30	Sandy Loam			Common and Distinct
40				
50				
60				

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
3 (Profile)	C (Condition)	6 (Percent)	18 " (Depth)	☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Skerry MWD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: _____

Exploration Symbol # SS-16

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0	Sandy Loam	Friable	Black	
10	Sandy Loam	Firm	Gray	
20				Common and Distinct
30				
40				
50				
60				

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification		Slope	Limiting Factor	
3 (Profile)	E (Condition)	3 (Percent)	6 " (Depth)	☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series/Phase Name: Brayton PD

☒ Hydric ☐ Non-hydric

Hydrologic Soil Group: _____

INVESTIGATOR INFORMATION AND SIGNATURE

Signature: [signature]	Date: 9/24/2021
Name Printed: Mark J. Hampton	Cert/Lic/Reg. #: 263/216

Title: ☒ Licensed Site Evaluator ☒ Certified Soil Scientist ☐ Certified Geologist ☐ Professional Engineer

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Mark Cenci
Geologic, Inc.

CERTIFIED GEOLOGIST/LICENSED SITE EVALUATOR

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Wetland Identification and Mapping Report
Andrews Road and Alfred Street, Biddeford

Date: October 26, 2021

To: Richard Meek, P.E.
Terradyn Consultants, LLC
41 Campus Drive, Suite 101
New Gloucester, ME 04260

Summary:

Wetlands were found. flagged, delineated and located. The wetlands are formed in excavated and disturbed soils and undisturbed forested areas. The only Wetlands of Special Significance are associated with a perennial stream drainage in the northeast corner of the property. All other wetlands have no buffers of no-disturbance, but are regulated with regard to further filling and/or disturbance, regardless of origin. There are no Significant Vernal Pool Habitats on the property.

Date(s) of the Investigation: August 11, 17 and 18, 2021

Location of the Investigation:

The area investigated is located on the northeasterly corner of the intersection of Alfred Street and Andrews Road, Biddeford. The parcel is identified as Lot 6 on Biddeford Tax Map 2, and is approximately 50 acres in size.

Purposes of Investigation:

The purposes of the wetland investigation are to identify and describe wetlands according to definitions in the *Natural Resources Protection Act* (the *NRPA*); to determine if specific alteration and filling permits are required and if there are any setbacks required

under the *NRPA*; to determine the Maine DEP jurisdictional status of any streams, and to identify any potential significant vernal pools.

Method of Investigation:

A literature search and on-site investigations were made. The *Land Use Permitting Feasibility & Planning Report for Biddeford Apartments, Biddeford, Maine* by Flycatcher, LLC, dated May 2021 was reviewed. Erik Lema, botanist, of Basswood Environmental LLC, assisted in the field determination of wetland/upland boundaries.

The investigations were performed following the guidelines described in the 1987 Corps of Engineers Delineation Manual and the 2009 Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region. This procedure uses a multiple parameter approach that requires the presence of three primary components for an area to be identified as a wetland: 1) hydric soils; 2) predominance of hydrophytic vegetation; and 3) wetland hydrology.

A reconnaissance-level site map with LIDAR topography and approximate wetland locations was used in the field during the investigation.

Boundary positions were flagged on the site and locations were made with a Trimble Geo-XH 6000 GPS device, capable of sub-meter accuracy. The results were post-processed for accuracy and an AutoCAD drawing file of the results was sent to Terradyn Consultants.

Results of the Investigation:

The property is located on a dissected terrace southerly and southeasterly of low ridges (See Figure 1). Drainage is generally southerly to Thatcher Brook. Portions of the property were mined for sand and gravel in the past and there are significant site disturbances, including removal of top soils and subsoils, man-made hydric soil conditions, excavation below the water table resulting in ponding of water, piles of soil and the trenching of drainage ways. Large portions of the property have seen no such disturbance and remain forested.

The area is depicted as an association of Lyman Rock Outcrop, Chocorua peat, Hermon sandy loam and Brayton/Westbury very stony fine sandy loam on the *National Cooperative Soil Survey* (see Figure 2). These are soils formed in glacial till. The Hermon deposit would have been the mined material. The Chocorua is a hydric soil and the Brayton/Westbury can be hydric in low lying areas.

There is a drainage flowing across the northeasterly corner of the property that is regulated as a DEP jurisdictional stream. It is an incised drainage feature with minor forested wetlands along the stream channel. According to the NRPA, these wetlands are

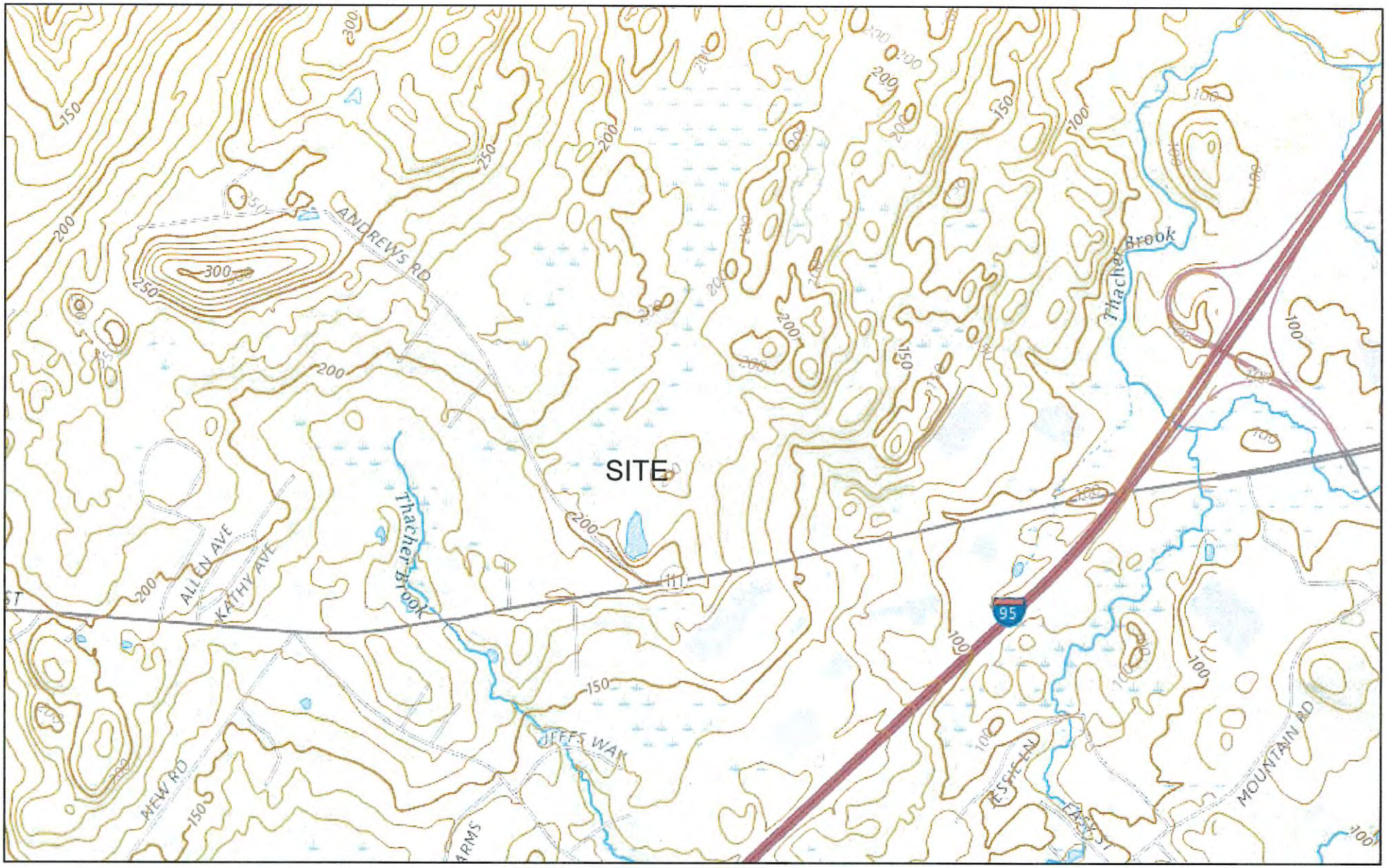
Wetlands of Special Significance (WOSS). A buffer of no-disturbance needs to be maintained from the stream channel. Unless a reduction is allowed by Permit, the buffer must be 75 feet wide.

No other wetlands on the site are WOSS, according to the NRPA. Wetlands in the forest are palustrine, forested wetlands. The wetlands around the perimeter of the excavated pond and in the areas of low gradient that were stripped of soils are palustrine, wet meadow, forested and scrub-shrub wetlands. These host a variety of hydrophytic and disturbed area vegetation, and in no location are emergent species in excess of 20,000 square feet. There are no buffers of no-disturbance associated with these wetlands. Filling and/or disturbance of any wetlands on the property is regulated by the NRPA.

As detailed in the *Report* by Flycatcher, LLC, there are no Significant Vernal Pool Habitats on the property.

Mark Cenci
Maine Certified Geologist #467

Figure 1.



10/26/2021 4:08:56 PM

Normal Intermediate Contours

Normal Index Contours

1:18,056

0 0.1 0.2 0.4 mi

0 0.17 0.35 0.7 km

USGS The National Map: National Boundaries Dataset, 3DEP Elevation

USGS
2021 USGS

Soil Map—York County, Maine
(Figure 2.)

Map Scale: 1:8,190 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 350 700 1400 2100

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 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: York County, Maine
Survey Area Data: Version 20, Aug 31, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Sep 9, 2017

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
AdB	Adams loamy sand, 0 to 8 percent slopes	4.7	1.5%
BsB	Brayton and Westbury very stony fine sandy loams, 0 to 8 percent slopes	37.4	12.0%
BuB	Buxton silt loam, 3 to 8 percent slopes	8.2	2.6%
BuC	Buxton silt loam, 8 to 15 percent slopes	7.9	2.5%
Ch	Chocorua peat	11.0	3.5%
CrB	Croghan loamy fine sand, 0 to 8 percent slopes, wooded	9.3	3.0%
HmB	Hermon sandy loam, 0 to 8 percent slopes, very stony	73.8	23.6%
HmC	Hermon sandy loam, 8 to 15 percent slopes, very stony	7.4	2.4%
LnB	Lyman loam, 3 to 8 percent slopes, rocky	4.4	1.4%
LyB	Lyman-Rock outcrop complex, 3 to 8 percent slopes	6.6	2.1%
LyC	Lyman-Rock outcrop complex, 8 to 15 percent slopes	60.5	19.4%
LyE	Lyman-Rock outcrop complex, 15 to 80 percent slopes	4.4	1.4%
Pg	Pits, gravel	27.9	8.9%
Ra	Raynham silt loam	2.2	0.7%
Sc	Scantic silt loam, 0 to 3 percent slopes	9.6	3.1%
SkB	Skerry fine sandy loam, 0 to 8 percent slopes	2.7	0.9%
SrB	Skerry fine sandy loam, 0 to 8 percent slopes, very stony	34.6	11.1%
Totals for Area of Interest		**312.3**	**100.0%**

Section 12 – Stormwater Management

The stormwater management report and calculations are provided under separate cover.

Pineland
Cumberland Hall
41 Campus Drive, Suite 301
New Gloucester, ME 04260

Portland
565 Congress Street, Suite 201
Portland, ME 04101

BIDDEFORD RESIDENTIAL

ANDREWS RD, BIDDEFORD, MAINE

STORMWATER MANAGEMENT REPORT

PREPARED FOR:

DEVINE CAPITAL, LLC
30 MILK ST., THIRD FLOOR
PORTLAND, ME 04101

PREPARED BY:

TERRADYN CONSULTANTS LLC
41 CAMPUS DRIVE, SUITE 301
NEW GLOUCESTER, MAINE 04260

AUGUST 2022

Introduction

The following Stormwater Management Report has been prepared for Devine Capital, LLC to address the potential impacts associated with this project due to the proposed modification in stormwater runoff characteristics. The stormwater management controls that are outlined in this plan were designed to suit the proposed development and comply with applicable regulatory requirements.

Existing Conditions

The project site consists of approximately 44.53 acres of undeveloped land located in Biddeford near the intersection of Andrews Road and Alfred Street (Route 111). The parcel is bounded by residential uses, commercial uses, a utility corridor and other undeveloped land. Portions of the site were utilized for gravel extraction.

Slopes on the site generally range between 0 and 15% with portions of the site draining to internal depressions created as part of the gravel extraction. The remainder of the site generally drains from west (Andrews Rd.) to east towards an unnamed stream which forms the northeastern property boundary.

The unnamed stream is tributary of Thacher Brook. Thacher Brook is listed in Chapter 502 as an Urban Impaired Stream. The proposed development area is not located in an identified flood zone per the FEMA Flood Insurance Rate Map for the City of Biddeford, Community Panel 2301450008B.

Soils

Soil characteristics were obtained from the Class B High Intensity Soil Survey completed by Mark Hampton Associates, Inc. The Hydrologic Soil Groups (HSG), as classified by USDA – Natural Resources Conservation Service, are as follows:

Soil Name	Slope (%)	HSG
Adams (A)	0-3	A
Adams (B)	3-8	A
Brayton (A)	0-3	D
Hermon (C)	8-15	A
Skerry (B)	3-8	C/D

Proposed Site Improvements

The applicant intends to construct a multi-family residential development consisting of nine 24-unit apartment buildings, a clubhouse, mail kiosk, maintenance building, eight detached garages, surface parking, dog park, community garden and interconnected sidewalks.

When completed the proposed development will consist of approximately 18.13 acres of disturbance area including approximately 8.06 acres of new impervious area.

Pre-Development Conditions

The pre-development watershed plan consists of seven (7) subcatchments, labeled 1A, 1B, 2, 3, 4A, 4B and 4C. Runoff from the seven subcatchments is routed via overland flow to four (4) Study Points identified for comparing peak runoff rates from the site.

Subcatchment 1A consists of approximately 11.8 acres of mostly forested land which will not drain to the proposed BMP in the post-development condition. Subcatchment 1B consists of approximately 10.2 acres of mostly forested land which will drain to the proposed BMP in the post-development condition. Subcatchments 1A and 1B drain to Study Point 1. Study Point 1 is in the southeast portion of the property and eventually discharges to an unnamed stream.

Subcatchment 2 consists of approximately 7.6 acres of the property which drains to Study Point 2, an internally drained depression created as part of the gravel extraction process.

Subcatchment 3 consists of approximately 6.0 acres of the property which drains to Study Point 3, an internally drained depression, which consists of wetlands and upland areas.

Subcatchment 4A consists of approximately 7.8 acres of mostly forested wetland which will not include disturbance as part of this project. Subcatchment 4B consists of approximately 0.2 acre of forested wetland which will not include disturbance as part of this project. Subcatchment 4C consists of approximately 3.7 acres of mostly forested land which will include disturbance as part of this project. Subcatchments 4A, 4B and 4C drain to Study Point 4. Study Point 4 is located on the northwestern property boundary.

Post-Development Conditions

The overall-post-development watershed area is consistent with the pre-development watershed area. However, the pre-development subcatchments have been divided into smaller subcatchment areas to reflect the changes in stormwater runoff due to the proposed development.

Study Point 1: Post-development subcatchment 11 represents the mostly undeveloped portion of land matching pre-development subcatchment 1A. Subcatchment 12 depicts the land area contributing overland stormwater runoff to proposed gravel wetland 12P. Subcatchment 13 includes the portion of development contributing stormwater runoff to proposed gravel wetland 12P via storm drainage pipe. Subcatchment 14 includes the portion of development contributing stormwater runoff to proposed gravel wetland 14P.

Study Point 2: Post-development subcatchment 21 represents the remainder of land within pre-development subcatchment 2.

Study Point 3: Post-development subcatchments 31 and 32 represent the remainder of land within pre-development subcatchment 3.

Study Point 4: Subcatchments 4A and 4B are unchanged from the pre-development condition. Post-development subcatchment 41 represents the developed condition of pre-development subcatchment 4C.

Regulatory Requirements

Basic Standard - Chapter 500, Section 4(B)

Since the project will disturb more than one (1) acre of land area, MDEP Basic Standards apply. The Basic Standard requires that the MDEP erosion & sedimentation control, inspection & maintenance, and housekeeping standards are met. Additionally, the site grading or other construction activity shall not

impede or otherwise alter drainageways so as to have an unreasonable adverse impact on a wetland or waterbody, or an adjacent downslope parcel.

A site-specific Erosion & Sedimentation Control Plan has been developed for the project. Means and methods to control erosion and sedimentation during and after construction are detailed in the erosion control plan narrative and construction details, which are included directly on the project drawings for ease of reference during construction.

General Standard - Chapter 500, Section 4(C)

Since the project will create more than one (1) acre of impervious surface, MDEP General Standards apply. The General Standard requires that a project's stormwater management system include treatment measures that will mitigate for the increased frequency and duration of channel erosive flows due to runoff from smaller storms, provide for effective treatment of pollutants in stormwater and mitigate potential temperature impacts. Treatment of no less than 95% of the impervious area and no less than 80% of the developed area is required to meet the standard.

Two proposed gravel wetlands and a forested buffer will be utilized to meet the treatment requirements of the general standard. The sizing and treatment calculations for the gravel wetlands are located in Appendix 4.

- The project includes 8.060 acres of impervious area. To meet the general standard, 7.657 acres (95%) is required to be treated. The site's proposed BMPs provide treatment for 7.956 acres (98.71%) of impervious area.
- The project includes 18.133 acres of developed area. To meet the general standard, 14.506 acres (80%) is required to be treated. The site's proposed BMPs provide treatment for 14.558 acres (80.28%) of developed area.

Flooding Standard - Chapter 500, Section 4(F)

Since the project will create more than three (3) acres of impervious surface, MDEP Flooding Standards apply. The Flooding Standard requires that a project's stormwater management system detain, retain or result in the infiltration of stormwater from 24-hour storms of the 2-year, 10-year and 25-year frequencies such that the peak flows of stormwater from the project site do not exceed the peak flows of stormwater prior to undertaking the project.

As such, a runoff evaluation was performed using the methodology outlined in the USDA Soil Conservation Service's "Urban Hydrology for Small Watersheds - Technical Release #55 (TR-55)". HydroCAD computer software (Version 10.0) was utilized to perform the calculations.

Runoff curve numbers were determined for each subcatchment by measuring the area of each hydrologic soil group within each type of land cover. Weighted curve numbers were then calculated using curve numbers for various cover types and hydrologic soil groups, assuming "good" conditions as defined in U.S Soil Conservation Service (SCS) publications. Times of concentration and travel times were determined from site topographic maps in accordance with SCS procedures. A maximum length of 150 feet was used for sheet flow. A minimum time of concentration of six minutes (0.1 hr.) was used for each subcatchment.

The 24-hour rainfall values utilized in the hydrologic model were obtained from Appendix H of MDEP's Chapter 500 rules. The rainfall values for York County are as follows:

Storm Frequency Precipitation (in./24 hr)	
2-year	3.3
10-year	4.9
25-year	6.2

The following table summarizes the results of stormwater calculations for the design storm events for the project areas:

Stormwater Runoff Summary Pre-Development vs. Post-Development						
Study Point #	2-Year/24Hr (cfs)		10-Year/24Hr (cfs)		25-Year/24Hr (cfs)	
	Pre	Post	Pre	Post	Pre	Post
SP-1	0.3	0.3	3.0	3.0	7.7	7.1
SP-2	0.0	0.0	0.0	0.0	0.0	0.0
SP-3	0.0	0.0	0.0	0.0	0.0	0.0
SP-4	4.0	4.0	8.1	8.1	11.7	11.7

Urban Impaired Stream Standard – Chapter 500, Section 4(E)

As the proposed development is tributary to Thacher Brook which is listed by the Maine Department of Environmental Protection as an Urban Impaired Stream within Chapter 502, the project will be required to meet or exceed the requirements of the Urban Impaired Stream Standard as listed in Section 4(E) of Chapter 500. The Urban Impaired Stream Standard requires a project to either pay a compensation fee or mitigate project impacts by reducing or eliminating an off-site or on-site pre-development impervious stormwater source.

The applicant will meet the Urban Impaired Stream standard by paying the compensation fee pursuant to Chapter 501.3.A.1.

Preliminary Urban Impaired Stream Compensation Fee			
	Compensation Fee per Acre	Acr18es	Compensation Fee Total
Non-roof Impervious	$12,500	5.25	$65,625
Roof Impervious	$5,000	2.81	$14,050
Landscaped	$2,500	10.073	$25,182.50
		TOTAL	$104,875.50

Summary

Erosion and sedimentation control, inspection and maintenance procedures and general housekeeping requirements have been outlined to prevent unreasonable impacts on the project site or the surrounding environment.

By utilizing Best Management practices (two proposed gravel wetlands and a forested buffer) stormwater quality treatment has been provided for a minimum of 95% of the site's impervious area and a minimum of 80% of the site's total developed area. Based upon the modeling data, the post-development peak rates of runoff for the project site will be less than or equal to the pre-development runoff rates during the design storm events (2-year, 10-year and 25-year).

With the incorporation of the referenced erosion control, treatment, and detention measures, the project is in conformance with the Maine Department of Environmental Protection Chapter 500 Stormwater Law. Accordingly, it is anticipated that stormwater runoff from the proposed development will not result in significant adverse effects to off-site receiving channels or downstream properties.

Prepared by:

Terradyn Consultants, LLC

Richard Meek, P.E.
Sr. Project Engineer

Appendices

1 – Stormwater Infrastructure Inspection & Maintenance Manual
2 – Erosion and Sediment Control Inspection & Maintenance Plan
3 – Watershed Maps
4 – BMP and HydroCAD Calculations

APPENDIX 1

STORMWATER INFRASTRUCTURE INSPECTION & MAINTENANCE MANUAL

BIDDEFORD RESIDENTIAL
BIDDEFORD, MAINE
STORMWATER MANAGEMENT SYSTEM
INSPECTION, MAINTENANCE & HOUSEKEEPING PLAN

Project Owner/Developer: Devine Capital, LLC
30 Milk St., 3rd Floor
Portland, Maine 04101
(401) 413-1590

Responsible Party: To be Determined

Prepared By: Richard Meek, P.E.
Terradyn Consultants, LLC
41 Campus Drive, Suite 301
New Glocester, ME 04260
(207) 926-5111

INTRODUCTION:

Regular inspection and maintenance of the entire stormwater management system is crucial to the long-term effectiveness of the system. The responsible party must provide regular inspection and maintenance of all permanent erosion control measures and stormwater management structures, establish any contract services required to implement the program, and keep records and a maintenance log book of inspection and maintenance activities. At a minimum, the inspection and maintenance activities outlined herein should be performed at the recommended intervals. All inspection and maintenance documentation shall be maintained for at least 5 years. This project is subject to the Maine Department of Environmental Protection's 5-year Recertification Process.

All measures must be maintained in effective operating condition. A person with knowledge of erosion and sedimentation practices, stormwater management, and the standards and conditions of all local, state and federal permits for the project shall conduct the inspections. The following areas, facilities, and measures must be inspected and identified deficiencies must be corrected.

INSPECTION TASKS

The following plan outlines the anticipated inspection, maintenance, and housekeeping procedures for the erosion and sedimentation controls as well as stormwater management devices for the project site. Also, this plan outlines several housekeeping requirements that shall be followed during and after construction. These procedures should be followed in order to ensure the intended function of the designed measures and to prevent unreasonable adverse impacts to the surrounding environment.

The procedures outlined in the Inspection, Maintenance, and Housekeeping Plan are provided as an overview of the anticipated practices to be used on this site. In some instances, additional measures may be required due to unexpected conditions. For additional details on any of the erosion and sedimentation control measures or stormwater management devices to be utilized on this project, refer to the most recently revised edition of the "Maine Erosion and Sedimentation Control BMP" manual and/or the "Stormwater Management for Maine: Best Management Practices" manual as published by the MDEP.

During Construction

1. **Inspection:** For the duration of construction activity, it is the Site Contractor's responsibility to comply with the inspection and maintenance procedures outlined in this section. These responsibilities include inspecting disturbed and impervious areas, erosion control measures, materials storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. These areas shall be inspected at least once a week as well as before and after a storm event, and prior to completing permanent stabilization measures. A person with knowledge of erosion and stormwater control, including the standards and conditions in any applicable permits, shall conduct the inspections.

2. **Maintenance:** All measures shall be maintained in an effective operating condition until areas are permanently stabilized. If Best Management Practices (BMPs) need to be maintained or modified, additional BMPs are necessary, or other corrective action is needed, implementation must be completed within seven (7) calendar days and prior to any storm event (rainfall).

3. **Documentation:** A log summarizing the inspections and any corrective action taken must be maintained on-site. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, material storage areas, and vehicle access points to the site. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken.

   The log must be made accessible to the appropriate regulatory agency upon request. The permittee shall retain a copy of the log for a period of at least three (3) years from the completion of permanent stabilization.

4. **Specific Inspection and Maintenance Tasks:** The following is a list of erosion control and stormwater management measures and the specific inspection and maintenance tasks to be performed during construction.

   A. Sediment Barriers:

   - Hay bale barriers, silt fences, and filter berms shall be inspected immediately after each rainfall and at least daily during prolonged rainfall.
   - If the fabric on a silt fence or filter barrier should decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, it shall be replaced.
   - Sediment deposits should be removed after each storm event. They must be removed before deposits reach approximately one-half the height of the barrier.
   - Filter berms shall be reshaped as needed.
   - Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required should be dressed to conform to the existing grade, prepared, and seeded.

   B. Riprap Materials:

   - Once a riprap installation has been completed, it should require very little maintenance. It shall, however, be inspected periodically to determine if high flows have caused scour beneath the riprap or dislodged any of the stone.
   - Annully inspect riprap and remove woody vegetation when discovered.

C. Erosion Control Blankets:

- Inspect these reinforced areas semi-annually and after significant rainfall events for slumping, sliding, seepage, and scour. Pay close attention to unreinforced areas adjacent to the erosion control blankets, which may experience accelerated erosion.
- Review all applicable inspection and maintenance procedures recommended by the specific blanket manufacturer. These tasks shall be included in addition to this plan.

D. Temporary Storm Drain Inlet Protection:

- The inlet protection structure shall be inspected before each rain event and repaired as necessary.
- Sediment shall be removed and the storm drain sediment barrier restored to its original dimensions when the sediment has accumulated to half of the design depth of the trap.
- Structures shall be removed upon permanent stabilization of the tributary area.
- Upon removal of the structure, all accumulated sediments downstream of the structure shallbe cleaned from the storm drain system.
- The permanent storm drainage system shall be flushed and cleaned once the site is stabilized and prior to demobilization from the site.

E. Stabilized Construction Entrances/Exits:

- The exit shall be maintained in a condition that will prevent tracking of sediment onto public rights-of-way.
- When the control pad becomes ineffective, the stone shall be removed along with the collected soil material. The entrance should then be reconstructed.
- Areas that have received mud-tracking or sediment deposits shall be swept or washed. Washing shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device (not into storm drains, ditches, or waterways).

F. Temporary Seed and Mulch:

- Mulched areas should be inspected after rain events to check for rill erosion.
- If less than 90% of the soil surface is covered by mulch, additional mulch shall be applied in bare areas.
- In applications where seeding and mulch have been applied in conjunction with erosion control blankets, the blankets must be inspected after rain events for dislocation or undercutting.
- Mulch shall continue to be reapplied until 95% of the soil surface has established temporary vegetative cover.

G. Stabilized Drainage Swales:

- Sediment accumulation in the swale shall be removed once the cross section of the swale is reduced by 25%.
- The swales shall be inspected after rainfall events. Any evidence of sloughing of the side slopes or channel erosion shall be repaired and corrective action should be taken to prevent reoccurrence of the problem.

- In addition to the stabilized lining of the channel (i.e. erosion control blankets), stone check dams may be needed to further reduce channel velocity.

H. Concrete Washout Area

- The site contractor shall establish a concrete washout area on-site which shall include sediment barrier to mitigate the transport of the washout material to the environment.
- The washout area shall be located a minimum of 25 feet from any storm drain structure or culvert and a minimum of 25 feet from any slope greater than 4:1.
- The washout area shall be inspected daily when concrete work is active and prior to any storm event.
- Accumulated concrete sediments shall be removed weekly, when concrete work is active, or when visibly encroaching on sediment barrier.

I. Dewatering

- The site contractor shall establish an on-site containment area which shall include sediment barrier to mitigate the transport of the sediment to the environment from dewatering activity.
- The containment area shall be located a minimum of 25 feet from any storm drain structure or culvert and a minimum of 25 feet from any slope greater than 4:1.
- The containment area shall include a dirt bag or similar sediment trap for treatment of the collected water.
- The containment area shall be inspected after each use to ensure that no downgradient erosion or sedimentation offsite is occurring.

5. **Housekeeping:** The following general performance standards apply to the proposed project.

A. Spill Prevention: Controls must be used to prevent pollutants from being discharged from materials on-site, including storage practices to minimize exposure of the materials to stormwater, and appropriate spill prevention, containment, and response planning and implementation.

B. Groundwater Protection: During construction, liquid petroleum products and other hazardous materials with the potential to contaminate groundwater may not be stored or handled in areasof the site draining to an infiltration area. An "infiltration area" is any area of the site that by design or as a result of soils, topography and other relevant factors, accumulates runoff that infiltrates into the soil. Dikes, berms, sumps, and other forms of secondary containment that prevent discharge to groundwater may be used to isolate portions of the site for the purposes ofstorage and handling of these materials.

C. Fugitive Sediment and Dust: Actions must be taken to insure that activities do not result in noticeable erosion of soils or fugitive dust emissions during or after construction. Oil may not be used for dust control.

D. Debris and Other Materials: Litter, construction debris, and chemicals exposed to stormwater must be prevented from becoming a pollutant source.

E. Trench or Foundation Dewatering: Trench dewatering is the removal of water from trenches, foundations, cofferdams, ponds, and other areas within the construction area that retain water after excavation. In most cases, the collected water is heavily silted and hinders correct and safe construction practices. The collected water must be removed from the ponded area, either through gravity or pumping, and must be spread through natural wooded buffers or removed to areas that are specifically designed to collect the maximum amount of sediment possible, like a

cofferdam sedimentation basin. Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved.

After Construction

1. **Inspection:** After construction, the agent shall hire a qualified post-construction stormwater inspector to, at least annually, inspect the BMPs in accordance with all municipal and state inspection, cleaning and maintenance requirements of the approved post-construction stormwater management plan.

2. **Maintenance, and repair:** If a BMP requires maintenance, repair or replacement to function as intended by the approved post-construction stormwater management plan, the owner or operator shall take corrective actions to address the deficiency or deficiencies as soon as possible after the deficiency is discovered and shall provide a record of the deficiency and corrective actions to the Town Engineer. The following is a list of permanent erosioncontrol and stormwater management measures and the inspection, maintenance, and housekeeping tasks to be performed after construction.

A. Vegetated Areas:

- Inspect vegetated areas, particularly slopes and embankments, early in the growing season or after heavy rains to identify active or potential erosion problems.
- Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows.

B. Winter Sanding:

- Clear accumulations of winter sand in parking lots and along roadways at least once a year, preferably in the spring.
- Accumulations on pavement may be removed by pavement sweeping.
- Accumulations of sand along road shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader or other acceptable method.

C. Catch Basins:

- Inspect and, if required, clean-out catch basins at least once a year, preferably in early spring.
- Clean out must include the removal and legal disposal of accumulated sediments and debris at the bottom of the basin, at any inlet grates, at any inflow channels to the basin, and at any pipes between basins.

D. Culverts:

- Inspect culverts in the spring, in the late fall, and after heavy rains to remove any obstructions to flow.
- Remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit.
- Inspect and repair any erosion damage at the culvert's inlet and outlet.
- Inspect embankment for erosion, settling, and structural failure.

E. Gravel Wetlands

1ST YEAR POST-CONSTRUCTION: Inspection frequency should be after every major storm in the first year following construction.

1. Inspect to be certain system drains within 24-48 hours.
2. Watering plants as necessary during the first growing season
3. Re-vegetating poorly established areas as necessary
4. Quarterly inspection of soil and repairing eroded areas, especially on slopes & make timely repairs.
5. Checking inlets, outlets, and overflow spillway for blockage, structural integrity, and evidence of erosion. Risers may need to be cleaned.

POST-CONSTRUCTION: Inspection frequency should be at least every 6 months and after every major storm. Activities are expected to include:

1. Check the basin for a dense root mat establishment of wetland vegetation.
2. Check and clean the risers if there is evidence of standing water, discolored water or accumulated sediments in the cells.
3. Check and clean the forebay for sediments, trash and debris. When sediments have accumulated to a depth of 12 inches, standing water is persistent or wetland vegetation become established, the forebay will need to be excavated and reformed.
4. Verify that the cells drain within 24-48 hours. Sediment will need to be removed when an accumulation of 4 inches is evident over the wetland surface.
5. Check and clean all outlets and overflow spillway if blocked or there is evidence of structural damage or erosion.
6. Remove decaying vegetation, litter and debris.
7. Check for foreign species. Particular care must be used to avoid the unintended introduction of invasive species such as purple loosestrife (Lythrum salicaria) and common reed (Phragmites australis). It is recommended that a qualified wetland biologist be consulted when these are found in the area of the gravel wetland.

F. Forested Buffer

- Buffers should be inspected annually for evidence of erosion or concentrated flows through or around the buffer. All eroded areas should be repaired, seeded and mulched.
- Access and Use: Buffers should not be traversed by all-terrain vehicles or other vehicles. Activities within buffers should be conducted so as not to damage vegetation, disturb any organic duff layer, or expose soil.
- Inspections: Conduct periodic "buffer walks" to inspect the condition of the buffer network.

- **Restrictions on Vegetated Stormwater Buffer Areas.**

  Unless the owner of the Restricted Buffer Area, or any successors or assigns, obtains the prior written approval of the MDEP, the Restricted Buffer Area must remain undeveloped in perpetuity. To maintain the ability of the Restricted Buffer Area to filter and absorb stormwater, and to maintain compliance with the Stormwater Management Law and the permit issued thereunder to the Declarant, the use of the Restricted Buffer Area is hereinafter limited as follows:

  a. No soil, loam, peat, sand, gravel, concrete, rock or other mineral substance, refuse, trash, vehicle bodies or parts, rubbish, debris, junk waste, pollutants or other fill material may be placed, stored or

dumped on the Restricted Buffer Area, nor may the topography of the area be altered or manipulated in any way.

b. Any removal of trees or other vegetation within the Restricted Buffer Area must be limited to the following:

(i) No purposefully cleared openings may be created and an evenly distributed stand of trees and other vegetation must be maintained. An "evenly distributed stand of trees" is defined as maintaining a minimum rating score of 24 points in any 25 foot by 50 foot square (2500 square feet) area, as determined by the following rating scheme:

Diameter of tree at 4 ½ feet above ground level	Points
2-4 inches	1
4-8 inches	2
8-12 inches	4
>12 inches	8

Where existing trees and other vegetation result in a rating score less than 24 points, no trees may be cut or sprayed with biocides except for the normal maintenance of dead, windblown or damaged trees and for pruning of tree branches below a height of 12 feet provided two thirds of the tree's canopy is maintained.

(ii) No undergrowth, ground cover vegetation, leaf litter, organic duff layer or mineral soil may be disturbed except that one winding path, that is no wider than six feet and that does not provide a downhill channel for runoff, is allowed through the area;
c. No building or other temporary or permanent structure may be constructed, placed or permitted to remain on the Restricted Buffer Area, except for a sign, utility pole (whether constructed of wood, steel or other materials) and appurtenant equipment such as guys and guy anchors, or fence;

d. No trucks, cars, dirt bikes, ATVs, bulldozers, backhoes, or other motorized vehicles or mechanical equipment may be permitted on the Restricted Buffer Area;

Attachments

Attachment 1 – Sample Stormwater Inspection and Maintenance Log

ATTACHMENT 1

Stormwater Management Facilities Inspection & Maintenance Log **Residences at Gateway Commons**		
General Information:		
Inspected by:	Date:	Weather:
Reason for Inspection: (Regular Inspection) (Major Rain Event)		

BMP	Conditions Observed	Repairs Needed?
1. Vegetated Areas		
2. Ditches, Swales, Open Channels		
3. Culverts		
4. Catch Basins		
5. Gravel Wetlands		
6. Forested Buffer		

Detailed Repair Notes:

BMP Type	Date	Description of Repairs & Sediment Disposal

Notes:
If a maintenance task requires the clean-out of any sediments or debris, indicate where the sediment and debris was disposed after removal. A copy of this log shall be retained for a period of at least five years from the completion of permanent stabilization. The log must be made accessible to Department of Environmental Protection staff and a copy provided to the Department upon request.

APPENDIX 2

EROSION AND SEDIMENT CONTROL INSPECTION & MAINTENANCE PLAN

BIDDEFORD RESIDENTIAL
BIDDEFORD, MAINE
EROSION & SEDIMENTATION CONTROL
INSPECTION & MAINTENANCE PLAN
CONSTRUCTION PHASE

Project Owner/Developer: Devine Capital, LLC
30 Milk St., 3rd Floor
Portland, Maine 04009
(401) 413-1590

Responsible Party: Site Contractor
TBD

Prepared By: Richard Meek, P.E.
Terradyn Consultants, LLC
41 campus Drive, Suite 301
New Gloucester, ME 04260
(207) 926-5111

INTRODUCTION:

Anyone who conducts or directs an activity that involves exposing, filling or displacing soil or other earthen materials must take appropriate measures to prevent erosion and the loss of sediment beyond the project site or into a sensitive resource.

Erosion and sediment control measures should be in place before the activity begins and should remain functional until the site is permanently stabilized. All measures should remain effective until all areas are permanently stabilized. Any disturbed area should be regularly inspected until the site is fully stabilized with either 90% grass cover or a permanent impervious surface such as pavement.

The following information describes the Inspection, Maintenance and Documentation necessary during construction to comply with the State of Maine Stormwater Management Law.

INSPECTION

Inspect disturbed and impervious areas, erosion control measures, materials storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. Inspect these areas at least once a week as well as before and within 24 hours after a storm event (rainfall), and prior to completing permanent stabilization measures. For the purposes of this plan, a storm event is rainfall greater than 0.5 inches in a 24 hour period.

The person conducting inspections shall have knowledge of erosion and sedimentation practices, stormwater management, and the standards and conditions of all local, state and federal permits for the project.

MAINTENANCE AND CORRECTIVE ACTION

If best management practices (BMPs) need to be repaired, the repair work should be initiated upon discovery of the problem but no later than the end of the next workday. If additional BMPs or significant repair of BMPs are necessary, implementation must be completed within 7 calendar days and prior to any storm event (rainfall). All measures must be maintained in effective operating condition until areas are permanently stabilized.

DOCUMENTATION

Keep a log (report) summarizing the inspections and any corrective actions taken. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, materials storage areas, and vehicles access points to the parcel. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and location(s) where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken.

The log attached at the end of this plan is from the *Maine Erosion and Sediment Control Best Management Practices (BMPs) Manual for Designers and Engineers (May 2016)*. The log may be used or adapted for this project.

Documentation must be retained for a minimum of three years after permanent stabilization has been achieved on the site and must be made accessible to the Maine Department of Environmental Protection upon request.

INSPECTION DURING CONSTRUCTION

1. **Inspection:** For the duration of construction activity, it is the Site Contractor's responsibility to comply with the inspection and maintenance procedures outlined in this section. These responsibilities include inspecting disturbed and impervious areas, erosion control measures, materials storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. These areas shall be inspected at least once a week as well as before and after a storm event, and prior to completing permanent stabilization measures. A person with knowledge of erosion and stormwater control, including the standards and conditions in any applicable permits, shall conduct the inspections.

2. **Maintenance:** All measures shall be maintained in an effective operating condition until areas are permanently stabilized. If Best Management Practices (BMPs) need to be maintained or modified, additional BMPs are necessary, or other corrective action is needed, implementation must be completed within seven (7) calendar days and prior to any storm event (rainfall).

3. **Documentation:** A log summarizing the inspections and any corrective action taken must be maintained on-site. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, material storage areas, and vehicle access points to the site. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular

location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken.

The log must be made accessible to the appropriate regulatory agency upon request. The permittee shall retain a copy of the log for a period of at least three (3) years from the completion of permanent stabilization.

4. **Specific Inspection and Maintenance Tasks:** The following is a list of erosion control and stormwater management measures and the specific inspection and maintenance tasks to be performed during construction.

A. Sediment Barriers:

- Hay bale barriers, silt fences, and filter berms shall be inspected immediately after each rainfall and at least daily during prolonged rainfall.
- If the fabric on a silt fence or filter barrier should decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, it shall be replaced.
- Sediment deposits should be removed after each storm event. They must be removed before deposits reach approximately one-half the height of the barrier.
- Filter berms shall be reshaped as needed.
- Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required should be dressed to conform to the existing grade, prepared, and seeded.

B. Riprap Materials:

- Once a riprap installation has been completed, it should require very little maintenance. It shall, however, be inspected periodically to determine if high flows have caused scour beneath the riprap or dislodged any of the stone.
- Annully inspect riprap and remove woody vegetation when discovered.

C. Erosion Control Blankets:

- Inspect these reinforced areas semi-annually and after significant rainfall events for slumping, sliding, seepage, and scour. Pay close attention to unreinforced areas adjacent to the erosion control blankets, which may experience accelerated erosion.
- Review all applicable inspection and maintenance procedures recommended by the specific blanket manufacturer. These tasks shall be included in addition to this plan.

D. Temporary Storm Drain Inlet Protection:

- The inlet protection structure shall be inspected before each rain event and repaired as necessary.
- Sediment shall be removed and the storm drain sediment barrier restored to its original dimensions when the sediment has accumulated to half of the design depth of the trap.

- Structures shall be removed upon permanent stabilization of the tributary area.
- Upon removal of the structure, all accumulated sediments downstream of the structure shallbe cleaned from the storm drain system.
- The permanent storm drainage system shall be flushed and cleaned once the site is stabilized and prior to demobilization from the site.

E. Stabilized Construction Entrances/Exits:

- The exit shall be maintained in a condition that will prevent tracking of sediment onto publicrights-of-way.
- When the control pad becomes ineffective, the stone shall be removed along with the collected soil material. The entrance should then be reconstructed.
- Areas that have received mud-tracking or sediment deposits shall be swept or washed. Washing shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device (not into storm drains, ditches, or waterways).

F. Temporary Seed and Mulch:

- Mulched areas should be inspected after rain events to check for rill erosion.
- If less than 90% of the soil surface is covered by mulch, additional mulch shall be applied inbare areas.
- In applications where seeding and mulch have been applied in conjunction with erosion control blankets, the blankets must be inspected after rain events for dislocation or undercutting.
- Mulch shall continue to be reapplied until 95% of the soil surface has established temporaryvegetative cover.

G. Stabilized Drainage Swales:

- Sediment accumulation in the swale shall be removed once the cross section of the swale isreduced by 25%.
- The swales shall be inspected after rainfall events. Any evidence of sloughing of the side slopes or channel erosion shall be repaired and corrective action should be taken to preventreoccurrence of the problem.
- In addition to the stabilized lining of the channel (i.e. erosion control blankets), stone checkdams may be needed to further reduce channel velocity.

H. Concrete Washout Area

- The site contractor shall establish a concrete washout area on-site which shall include sediment barrier to mitigate the transport of the washout material to the environment.
- The washout area shall be located a minimum of 25 feet from any storm drain structure or culvert and a minimum of 25 feet from any slope greater than 4:1.
- The washout area shall be inspected daily when concrete work is active and prior to any storm event.
- Accumulated concrete sediments shall be removed weekly, when concrete work is

active, or when visibly encroaching on sediment barrier.

I. Dewatering

- The site contractor shall establish an on-site containment area which shall include sediment barrier to mitigate the transport of the sediment to the environment from dewatering activity.
- The containment area shall be located a minimum of 25 feet from any storm drain structure or culvert and a minimum of 25 feet from any slope greater than 4:1.
- The containment area shall include a dirt bag or similar sediment trap for treatment of the collected water.
- The containment area shall be inspected after each use to ensure that no downgradient erosion or sedimentation offsite is occurring.

REFERENCES

Design Drawings:
C-2.0 thru C-2.7 Grading and Drainage Plans
C-5.1 Site Details (Erosion Control Notes and Details)

Maine Erosion and Sediment Control Best Management Practices (BMPs) Manual for Designers and Engineers (May 2016), Maine Department of Environmental Protection

Maine Erosion and Sediment Control Practices Field Guide for Contractors, Maine Department of Environmental Protection

CONSTRUCTION INSPECTION FORM FOR EROSION AND SEDIMENT CONTROL					
General Information:					
Site Name:	Date:		Inspected by:		
Owner:					
Retained 3PI:	Last Rain Date:			Amount:	
Reason for Inspection:	Weekly	Winter	Final	Rain Event	Complaint
Description of disturbed area:					
Photos:					
	YES/NO/NA	**COMMENTS**			
1. Is an Erosion and Sediment Control Plan available?					
ESC plan on-site and followed					
Other:					
2. Are all erosion control practices installed properly, maintained and functioning?					
Disturbed areas stable					
Concentrated flow inlet/outlet protection					
All areas at final grade					
Disturbed dormant areas stabilized					
Access roads and parking					
Hillsides and stockpiles					
Other:					
3. Are all sedimentation control practices installed properly, maintained and functioning?					
Construction entrance					
Sedimentation basins/traps/diversions					
Perimeter controls					
Check dams					
Other:					
4. Is maintenance of ESC measures, construction activities and housekeeping kept-up?					
Sedimentation/erosion in ditches					
Tracked Sediment or dust at exits					
Hazardous material storage and spill control practices					
Waste management (concrete, hazardous material, etc.)					
Other:					
5. Violation, Corrective Actions, Recommendations					
Sediment discharged from site?					
Corrective action required?					
Site compliant with all permits?					
Notice of violation or stop work order issued?					
Comments/Corrective Actions (complete corrective actions before the next rain event and within 7 day)					

APPENDIX 3

WATERSHED MAPS

STATE OF MAINE
RICHARD L. MEEK
No. 10668
PROFESSIONAL ENGINEER

DATE:	08-17-2022
P.E.: RICHARD L. MEEK, P.E. 10668	

NO.	DATE	REVISIONS	APP'D BY
H	08-17-2022	SUBMIT STORMWATER APPLICATION TO D.E.P.	RLM

TERRADYN CONSULTANTS, LLC
41 CAMPUS DRIVE
SUITE 301
NEW GLOUCESTER, ME 04260
565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04102
OFFICE: (207) 926-5111 FAX: (207) 221-1317
www.terradynconsultants.com
Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting

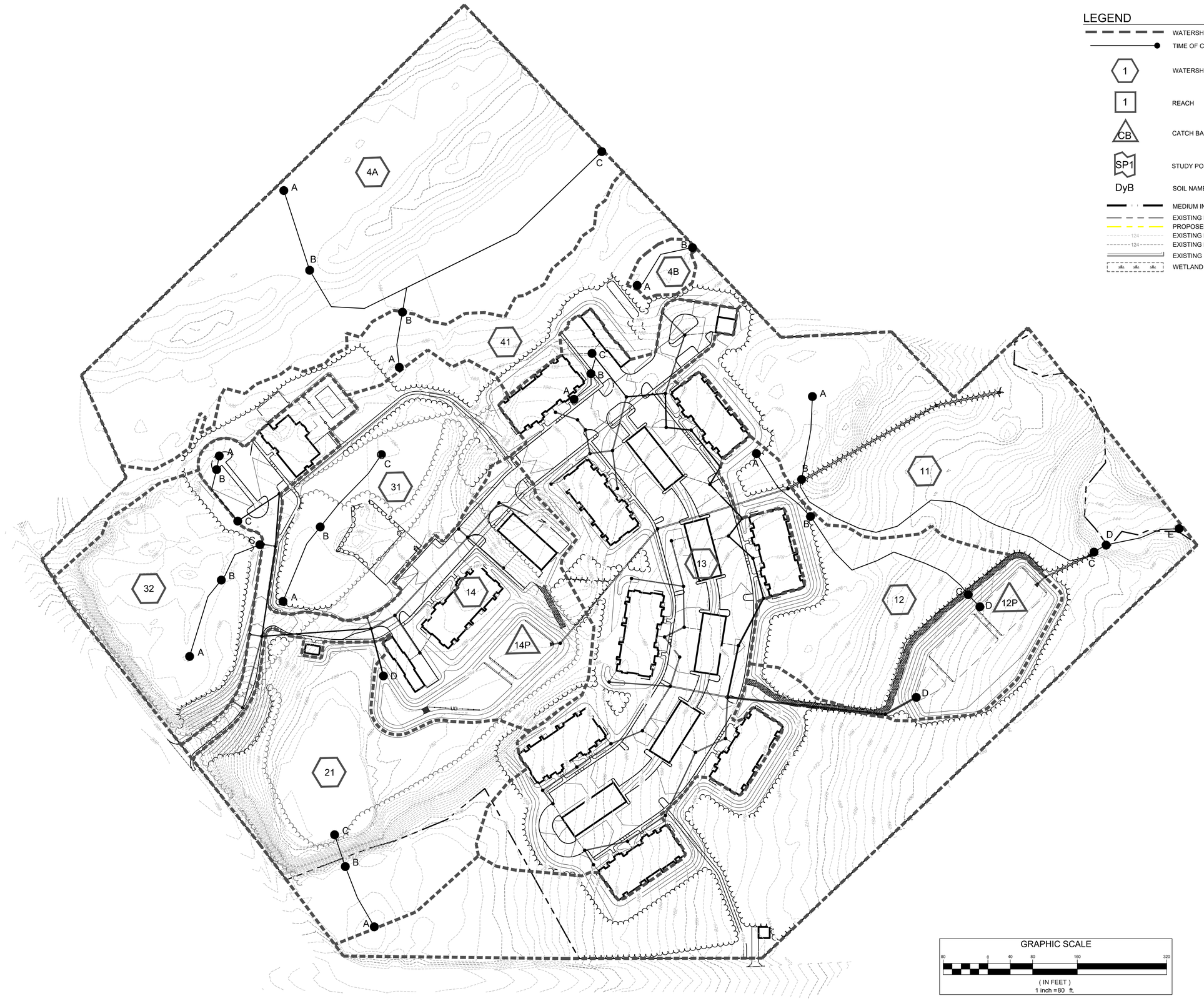
PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

PRE-DEVELOPMENT WATERSHED MAP

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	07-29-2022
SCALE:	
DESIGNED:	RLM
JOB NO:	2149
FILE:	
SHEET	SWP-1



LEGEND

- WATERSHED BOUNDARY
- TIME OF CONCENTRATION
- 1 — WATERSHED LABEL
- 1 — REACH
- CB — CATCH BASIN
- SP1 — STUDY POINT
- DyB — SOIL NAME
- MEDIUM INTENSITY SOIL BOUNDARY
- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- 124 — EXISTING MINOR CONTOUR
- 124 — EXISTING MAJOR CONTOUR
- EXISTING BUILDING
- WETLAND AREA

GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)
1 inch = 80 ft.

STATE OF MAINE
RICHARD L. MEEK
No. 10668
LICENSED
PROFESSIONAL ENGINEER

DATE: 08-17-2022
P.E.: RICHARD L. MEEK, P.E. 10668

NO.	DATE	REVISIONS	APP'D BY
H	08-17-2022	SUBMIT STORMWATER APPLICATION TO D.E.P.	RLM

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Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting

PERMIT DRAWING
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PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

POST-DEVELOPMENT WATERSHED MAP

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	07-29-2022
SCALE:	
DESIGNED:	RLM
JOB NO:	2149
FILE:	
SHEET	SWP-2

APPENDIX 4

BMP & HYDROCAD CALCULATIONS

GENERAL STANDARD CALCULATIONS

Project # 21-49 Biddeford Residential

SUBCATCHMENT ID	DESCRIPTION	SUBCATCHMENT AREA	Areas Requiring Treatment: IMPERVIOUS AREA (acre)	LANDSCAPED AREA (acre)	TOTAL DEVELOPED AREAS (acre)	RECEIVES TREATMENT (YES/NO)	IMPERVIOUS AREA TREATED (acre)	LANDSCAPED AREA TREATED (acre)	DEVELOPED AREA TREATED (acre)	TREATMENT BMP
11	Undeveloped area tributary to SP1	11.462	0.056	1.312	1.368	YES	0.025	0.873	0.898	Buffer
12	Undeveloped area tributary to Gravel wetland #2	3.575	0.092	1.836	1.928	YES	0.092	1.836	1.928	GW_2
13	Developed area tributary to Gravel wetland #2	8.057	5.503	2.115	7.618	YES	5.503	2.115	7.618	GW_2
14	Developed area tributary to Gravel wetland #1	4.348	2.336	1.778	4.114	YES	2.336	1.778	4.114	GW_1
21	Undeveloped area tributary to SP2	4.170	0.000	0.841	0.841	NO	0.000	0.000	0.000	
31	Undeveloped area tributary to SP3 (west of access rd.)	2.885	0.073	1.065	1.138	NO	0.000	0.000	0.000	
32	Undeveloped area tributary to SP3 (east of access rd.)	2.498	0.000	0.373	0.373	NO	0.000	0.000	0.000	
4A	Undeveloped area tributary to SP4 (large wetlands HSG D)	7.826	0.000	0.000	0.000	NO	0.000	0.000	0.000	
4B	Undeveloped area tributary to SP4 (small wetlands HSG D)	0.210	0.000	0.000	0.000	NO	0.000	0.000	0.000	
41	Developed area tributary to SP4 (HSG A)	2.381	0.000	0.753	0.753	NO	0.000	0.000	0.000	
TOTAL (ACRE)		47.412	8.060	10.073	18.133		7.956	6.602	14.558	

TOTAL IMPERVIOUS AREA (ACRE) (requiring treatment)	8.060	TOTAL DEVELOPED AREA (ACRE) (requiring treatment)	18.133
TOTAL IMPERVIOUS AREA RECEIVING TREATMENT (ACRE)	7.956	TOTAL DEVELOPED AREA RECEIVING TREATMENT (ACRE)	14.558
% OF IMPERVIOUS AREA RECEIVING TREATMENT	98.71%	% OF DEVELOPED AREA RECEIVING TREATMENT	80.28%

Terradyn Consultants, LLC
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New Gloucester, ME 04260
(207) 926-5111

JOB	Biddeford Residential		
SHEET NO.	1	OF	1
CALCULATED BY	RLM	DATE	8/17/2022
FILE NAME		PRNT DATE	8/17/2022

GRAVEL WETLAND

Task: Calculate water quality volume per MDEP chapter 500 regulations

References
1. Maine DEP Chapter 500, Section 4.C.(3)(b)
   "must detain a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area"
2. Maine DEP Best Management Practices Stormwater Manual, Section 7.4
   a. "two wetland cells must be capable of holding 45% of the water quality volume each."
   b. "forebay and any swale or discharge pipe to the system....holding 10% of the water quality volume"
   c. "surface should represent 5% of impervious area and 2% of landscaped area"

Tributary to Gravel Wetland: GW_1

Landscaped Area	2.336	Acre			
Impervious Area	1.778	Acre			

Minimum Surface Area

Required (2% X Landscaped + 5%" X Impervious)

Total Landscaped Area	2.336	Acre	2,035	SF	
Total Impervious Area	1.778	Acre	3,872	SF	
Required Minimum Surface Area			5,908	SF	
Provided Surface Area			12,200	Acre	

Treatment Volume

Required (0.4" X Landscaped + 1.0" X Impervious)

Landscaped Area	2.336	AC.	Volume	3,392		
Impervious Area	1.778	AC.	Volume	6,454		
Treatment Volume Required				9,846	CF	0.226 AF
Minimum Treatment Cell Volume (45%)				4,431	CF	0.102 AF
Provided Treatment Volume (Bay 1)				7,325	CF	
Provided Treatment Volume (Bay 2)				7,325	CF	
Minimum "Forebay" Cell Volume (10%)				985	CF	
Provided Treatment Volume (Forebay)				1,630	CF	

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JOB	Biddeford Residential		
SHEET NO.	1	OF	1
CALCULATED BY	RLM	DATE	8/17/2022
FILE NAME		PRNT DATE	8/17/2022

GRAVEL WETLAND

Task: Calculate water quality volume per MDEP chapter 500 regulations

References
1. Maine DEP Chapter 500, Section 4.C.(3)(b)
"must detain a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area"

2. Maine DEP Best Management Practices Stormwater Manual, Section 7.4
   a. "two wetland cells must be capable of holding 45% of the water quality volume each."
   b. "forebay and any swale or discharge pipe to the system....holding 10% of the water quality volume"
   c. "surface should represent 5% of impervious area and 2% of landscaped area"

Tributary to Gravel Wetland: GW_2

Landscaped Area	5.595	Acre			
Impervious Area	3.951	Acre			

Minimum Surface Area

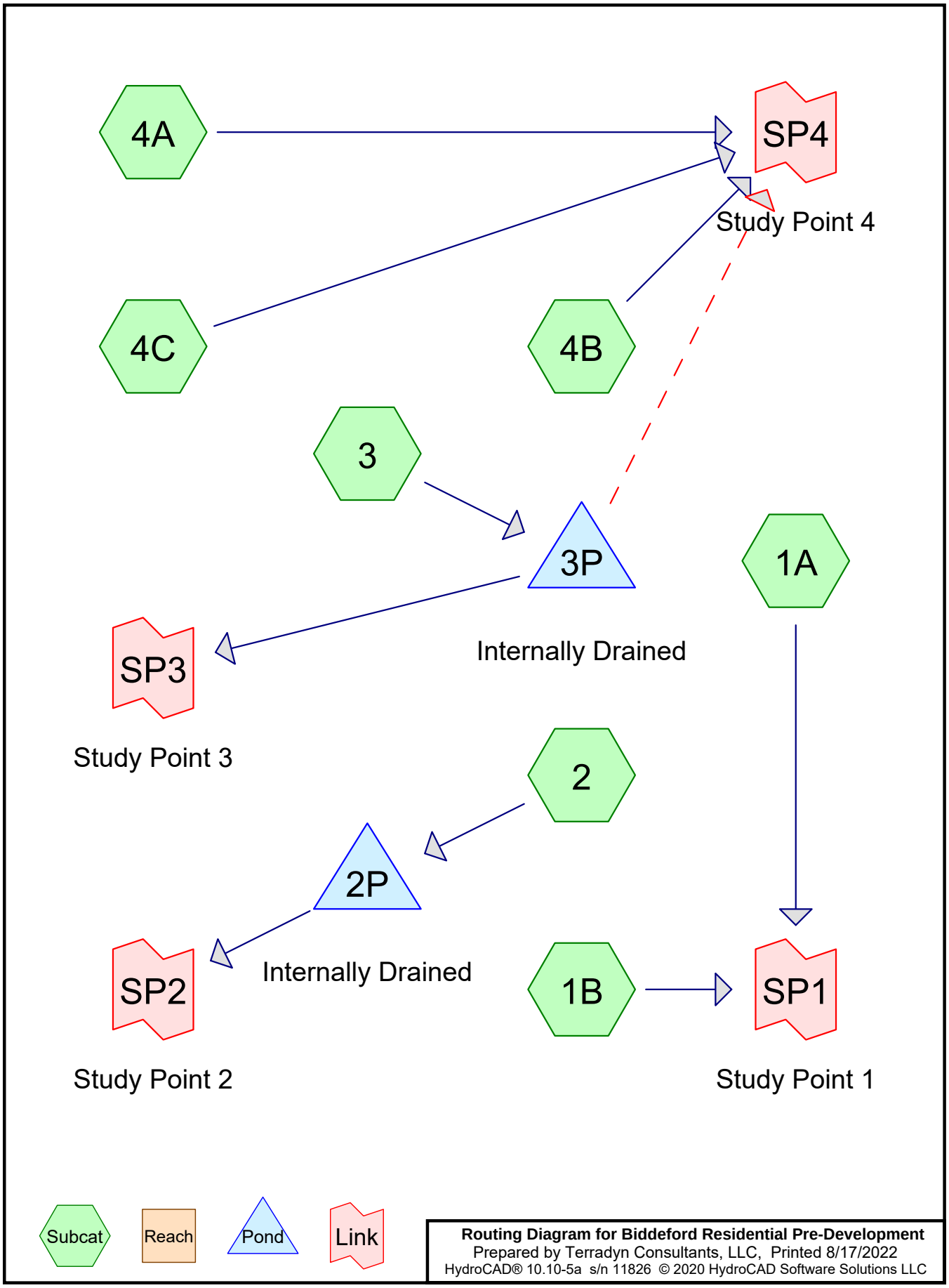
Required (2% X Landscaped + 5%" X Impervious)

Total Landscaped Area	5.595	Acre	4,874	SF	
Total Impervious Area	3.951	Acre	8,605	SF	
Required Minimum Surface Area			13,480	SF	
Provided Surface Area			15,030	Acre	

Treatment Volume

Required (0.4" X Landscaped + 1.0" X Impervious)

Landscaped Area	5.595	AC.	Volume	8,124		
Impervious Area	3.951	AC.	Volume	14,342		
Treatment Volume Required				22,466	CF	0.516 AF
Minimum Treatment Cell Volume (45%)				10,110	CF	0.232 AF
Provided Treatment Volume (Bay 1)				12,150	CF	
Provided Treatment Volume (Bay 2)				12,150	CF	
Minimum "Forebay" Cell Volume (10%)				2,247	CF	
Provided Treatment Volume (Forebay)				2,700	CF	


4A
SP4
Study Point 4
4C
4B
3
3P
1A
SP3
Internally Drained
Study Point 3
2
2P
SP2
Internally Drained
1B
SP1
Study Point 2
Study Point 1
Subcat
Reach
Pond
Link
Routing Diagram for Biddeford Residential Pre-Development
Prepared by Terradyn Consultants, LLC, Printed 8/17/2022
HydroCAD® 10.10-5a s/n 11826 © 2020 HydroCAD Software Solutions LLC

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Runoff Area=11.787 ac 0.51% Impervious Runoff Depth=0.15"
Flow Length=925' Tc=40.4 min CN=50 Runoff=0.3 cfs 0.147 af

Subcatchment 1B: Runoff Area=10.221 ac 0.19% Impervious Runoff Depth=0.00"
Flow Length=1,115' Tc=36.9 min CN=37 Runoff=0.0 cfs 0.000 af

Subcatchment 2: Runoff Area=7.633 ac 16.72% Impervious Runoff Depth=0.15"
Flow Length=430' Tc=13.0 min CN=50 Runoff=0.2 cfs 0.095 af

Subcatchment 3: Runoff Area=6.052 ac 4.28% Impervious Runoff Depth=0.02"
Flow Length=470' Tc=41.5 min CN=42 Runoff=0.0 cfs 0.010 af

Subcatchment 4A: Runoff Area=7.826 ac 0.00% Impervious Runoff Depth=1.28"
Flow Length=800' Tc=75.1 min CN=77 Runoff=3.9 cfs 0.837 af

Subcatchment 4B: Runoff Area=0.210 ac 0.00% Impervious Runoff Depth=1.28"
Flow Length=130' Slope=0.0080 '/' Tc=37.6 min CN=77 Runoff=0.2 cfs 0.022 af

Subcatchment 4C: Runoff Area=3.683 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=575' Tc=36.0 min CN=30 Runoff=0.0 cfs 0.000 af

Pond 2P: Internally Drained Peak Elev=178.13' Storage=4,138 cf Inflow=0.2 cfs 0.095 af
Outflow=0.0 cfs 0.000 af

Pond 3P: Internally Drained Peak Elev=184.10' Storage=430 cf Inflow=0.0 cfs 0.010 af
Primary=0.0 cfs 0.000 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Link SP1: Study Point 1 Inflow=0.3 cfs 0.147 af
Primary=0.3 cfs 0.147 af

Link SP2: Study Point 2 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP3: Study Point 3 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP4: Study Point 4 Inflow=4.0 cfs 0.860 af
Primary=4.0 cfs 0.860 af

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Runoff Area=11.787 ac 0.51% Impervious Runoff Depth=0.65"
Flow Length=925' Tc=40.4 min CN=50 Runoff=2.9 cfs 0.640 af

Subcatchment 1B: Runoff Area=10.221 ac 0.19% Impervious Runoff Depth=0.12"
Flow Length=1,115' Tc=36.9 min CN=37 Runoff=0.2 cfs 0.103 af

Subcatchment 2: Runoff Area=7.633 ac 16.72% Impervious Runoff Depth=0.65"
Flow Length=430' Tc=13.0 min CN=50 Runoff=2.8 cfs 0.415 af

Subcatchment 3: Runoff Area=6.052 ac 4.28% Impervious Runoff Depth=0.29"
Flow Length=470' Tc=41.5 min CN=42 Runoff=0.3 cfs 0.145 af

Subcatchment 4A: Runoff Area=7.826 ac 0.00% Impervious Runoff Depth=2.54"
Flow Length=800' Tc=75.1 min CN=77 Runoff=7.9 cfs 1.656 af

Subcatchment 4B: Runoff Area=0.210 ac 0.00% Impervious Runoff Depth=2.54"
Flow Length=130' Slope=0.0080 '/' Tc=37.6 min CN=77 Runoff=0.3 cfs 0.044 af

Subcatchment 4C: Runoff Area=3.683 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=575' Tc=36.0 min CN=30 Runoff=0.0 cfs 0.001 af

Pond 2P: Internally Drained Peak Elev=178.55' Storage=18,057 cf Inflow=2.8 cfs 0.415 af
Outflow=0.0 cfs 0.000 af

Pond 3P: Internally Drained Peak Elev=184.41' Storage=6,288 cf Inflow=0.3 cfs 0.145 af
Primary=0.0 cfs 0.000 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Link SP1: Study Point 1 Inflow=3.0 cfs 0.743 af
Primary=3.0 cfs 0.743 af

Link SP2: Study Point 2 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP3: Study Point 3 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP4: Study Point 4 Inflow=8.1 cfs 1.701 af
Primary=8.1 cfs 1.701 af

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Runoff Area=11.787 ac 0.51% Impervious Runoff Depth=1.24"
Flow Length=925' Tc=40.4 min CN=50 Runoff=6.9 cfs 1.220 af

Subcatchment 1B: Runoff Area=10.221 ac 0.19% Impervious Runoff Depth=0.39"
Flow Length=1,115' Tc=36.9 min CN=37 Runoff=0.9 cfs 0.336 af

Subcatchment 2: Runoff Area=7.633 ac 16.72% Impervious Runoff Depth=1.24"
Flow Length=430' Tc=13.0 min CN=50 Runoff=7.1 cfs 0.790 af

Subcatchment 3: Runoff Area=6.052 ac 4.28% Impervious Runoff Depth=0.69"
Flow Length=470' Tc=41.5 min CN=42 Runoff=1.4 cfs 0.346 af

Subcatchment 4A: Runoff Area=7.826 ac 0.00% Impervious Runoff Depth=3.65"
Flow Length=800' Tc=75.1 min CN=77 Runoff=11.4 cfs 2.383 af

Subcatchment 4B: Runoff Area=0.210 ac 0.00% Impervious Runoff Depth=3.65"
Flow Length=130' Slope=0.0080 '/' Tc=37.6 min CN=77 Runoff=0.5 cfs 0.064 af

Subcatchment 4C: Runoff Area=3.683 ac 0.00% Impervious Runoff Depth=0.09"
Flow Length=575' Tc=36.0 min CN=30 Runoff=0.0 cfs 0.029 af

Pond 2P: Internally Drained Peak Elev=179.00' Storage=34,420 cf Inflow=7.1 cfs 0.790 af
Outflow=0.0 cfs 0.000 af

Pond 3P: Internally Drained Peak Elev=184.64' Storage=15,055 cf Inflow=1.4 cfs 0.346 af
Primary=0.0 cfs 0.000 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Link SP1: Study Point 1 Inflow=7.7 cfs 1.556 af
Primary=7.7 cfs 1.556 af

Link SP2: Study Point 2 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP3: Study Point 3 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP4: Study Point 4 Inflow=11.7 cfs 2.476 af
Primary=11.7 cfs 2.476 af

Summary for Subcatchment 1A:

Runoff = 6.9 cfs @ 12.66 hrs, Volume= 1.220 af, Depth= 1.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	6.056	30	Woods, Good, HSG A
	4.392	70	Woods, Good, HSG C
	1.156	77	Woods, Good, HSG D
	0.123	39	>75% Grass cover, Good, HSG A
*	0.060	98	Existing impervious
	11.787	50	Weighted Average
	11.727		99.49% Pervious Area
	0.060		0.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.2	150	0.0220	0.09		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
9.2	615	0.0500	1.12		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
0.2	25	0.2400	2.45		**Shallow Concentrated Flow, C to D** Woodland Kv= 5.0 fps
2.8	135	0.0260	0.81		**Shallow Concentrated Flow, D to E** Woodland Kv= 5.0 fps
40.4	925	Total			

Summary for Subcatchment 1B:

Runoff = 0.9 cfs @ 12.86 hrs, Volume= 0.336 af, Depth= 0.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	8.339	30	Woods, Good, HSG A
	1.683	70	Woods, Good, HSG C
	0.180	30	Meadow, non-grazed, HSG A
*	0.019	98	Existing impervious
	10.221	37	Weighted Average
	10.202		99.81% Pervious Area
	0.019		0.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.0	150	0.0460	0.12		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
4.2	260	0.0420	1.02		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
5.8	300	0.0300	0.87		**Shallow Concentrated Flow, C to D** Woodland Kv= 5.0 fps
5.9	405	0.0520	1.14		**Shallow Concentrated Flow, D to E** Woodland Kv= 5.0 fps
36.9	1,115	Total			

Summary for Subcatchment 2:

Runoff = 7.1 cfs @ 12.22 hrs, Volume= 0.790 af, Depth= 1.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	2.057	30	Woods, Good, HSG A
	1.344	77	Woods, Good, HSG D
	2.365	30	Meadow, non-grazed, HSG A
	0.591	39	>75% Grass cover, Good, HSG A
*	0.553	98	Existing impervious
*	0.723	98	Water
	7.633	50	Weighted Average
	6.357		83.28% Pervious Area
	1.276		16.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	150	0.0400	0.28		**Sheet Flow, A to B** Range n= 0.130 P2= 3.30"
4.0	280	0.0280	1.17		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
13.0	430	Total			

Summary for Subcatchment 3:

Runoff = 1.4 cfs @ 12.78 hrs, Volume= 0.346 af, Depth= 0.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	4.349	30	Woods, Good, HSG A
	0.773	77	Woods, Good, HSG D
	0.221	30	Meadow, non-grazed, HSG A
	0.450	78	Meadow, non-grazed, HSG D
*	0.259	98	Existing impervious
	6.052	42	Weighted Average
	5.793		95.72% Pervious Area
	0.259		4.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.2	150	0.0200	0.09		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
8.6	200	0.0060	0.39		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
3.7	120	0.0060	0.54		**Shallow Concentrated Flow, C to D** Short Grass Pasture Kv= 7.0 fps
41.5	470	Total			

Summary for Subcatchment 4A:

Runoff = 11.4 cfs @ 13.00 hrs, Volume= 2.383 af, Depth= 3.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
7.826	77	Woods, Good, HSG D
7.826		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
44.5	150	0.0070	0.06		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
30.6	650	0.0050	0.35		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
75.1	800	Total			

Summary for Subcatchment 4B:

Runoff = 0.5 cfs @ 12.52 hrs, Volume= 0.064 af, Depth= 3.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
0.210	77	Woods, Good, HSG D
0.210		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.6	130	0.0080	0.06		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"

Summary for Subcatchment 4C:

Runoff = 0.0 cfs @ 15.70 hrs, Volume= 0.029 af, Depth= 0.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
3.683	30	Woods, Good, HSG A
3.683		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0600	0.12		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
22.4	475	0.0050	0.35		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
36.0	575	Total			

Summary for Pond 2P: Internally Drained

Inflow Area = 7.633 ac, 16.72% Impervious, Inflow Depth = 1.24" for 25-YR event
Inflow = 7.1 cfs @ 12.22 hrs, Volume= 0.790 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 179.00' @ 24.80 hrs Surf.Area= 37,257 sf Storage= 34,420 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	178.00'	1,036,250 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
178.00	31,500	0	0
180.00	43,000	74,500	74,500
182.00	72,000	115,000	189,500
184.00	116,500	188,500	378,000
185.50	174,000	217,875	595,875
186.00	162,500	84,125	680,000
187.00	178,000	170,250	850,250
188.00	194,000	186,000	1,036,250

Device	Routing	Invert	Outlet Devices
#1	Primary	185.50'	**100.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=178.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond 3P: Internally Drained

Inflow Area = 6.052 ac, 4.28% Impervious, Inflow Depth = 0.69" for 25-YR event
Inflow = 1.4 cfs @ 12.78 hrs, Volume= 0.346 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 184.64' @ 26.45 hrs Surf.Area= 45,900 sf Storage= 15,055 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	184.00'	476,033 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
184.00	1,110	0	0
185.50	106,000	80,333	80,333
186.00	118,600	56,150	136,483
187.00	170,000	144,300	280,783
188.00	220,500	195,250	476,033

Device	Routing	Invert	Outlet Devices
#1	Primary	185.50'	**100.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Secondary	187.00'	**50.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=184.00' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=184.00' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link SP1: Study Point 1

Inflow Area = 22.008 ac, 0.36% Impervious, Inflow Depth = 0.85" for 25-YR event
Inflow = 7.7 cfs @ 12.69 hrs, Volume= 1.556 af
Primary = 7.7 cfs @ 12.69 hrs, Volume= 1.556 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Summary for Link SP2: Study Point 2

Inflow Area = 7.633 ac, 16.72% Impervious, Inflow Depth = 0.00" for 25-YR event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Summary for Link SP3: Study Point 3

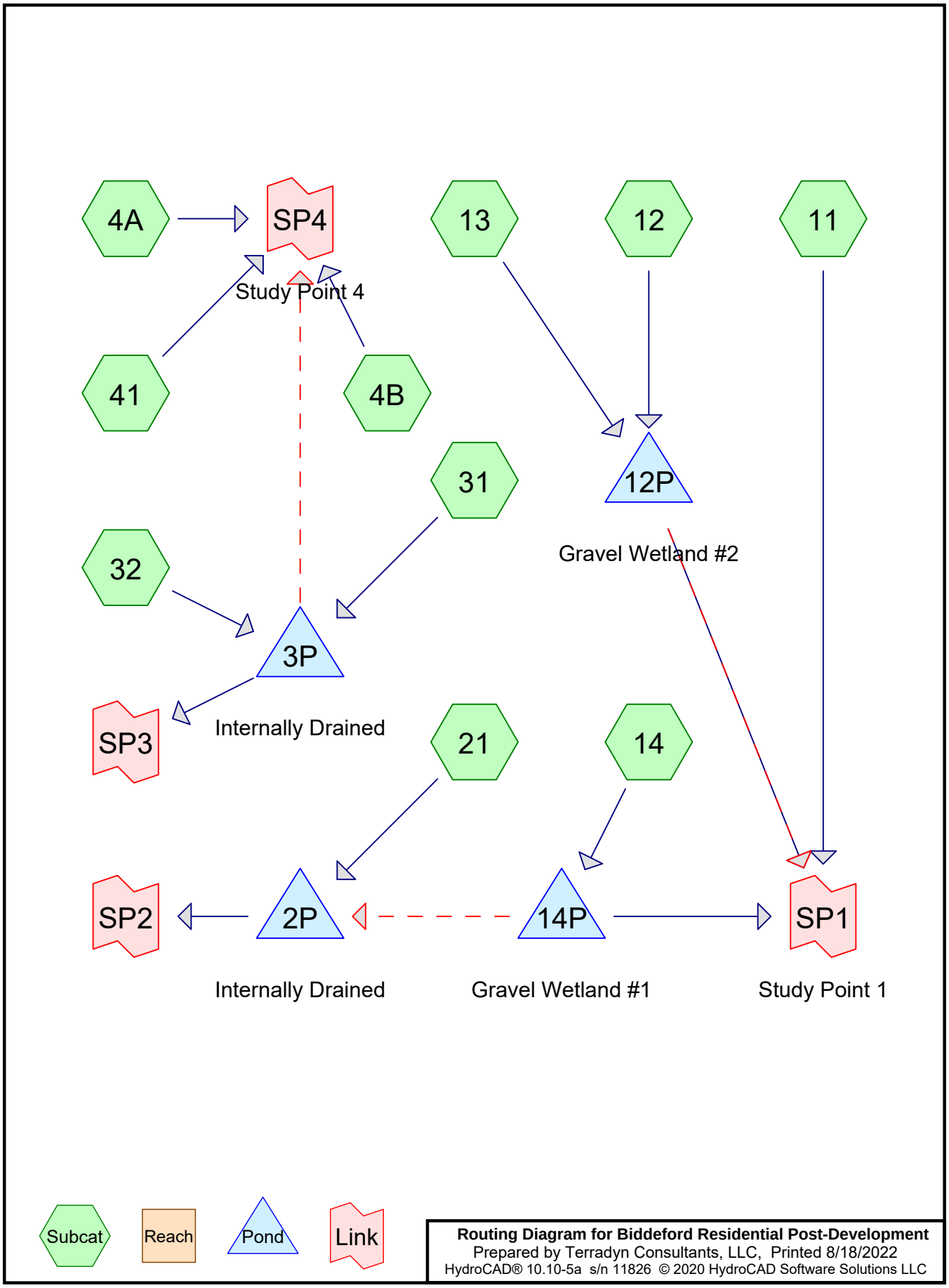
Inflow Area = 6.052 ac, 4.28% Impervious, Inflow Depth = 0.00" for 25-YR event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Summary for Link SP4: Study Point 4

Inflow Area = 11.719 ac, 0.00% Impervious, Inflow Depth = 2.54" for 25-YR event
Inflow = 11.7 cfs @ 12.98 hrs, Volume= 2.476 af
Primary = 11.7 cfs @ 12.98 hrs, Volume= 2.476 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs


4A
SP4
13
12
11
Study Point 4
41
4B
31
12P
32
Gravel Wetland #2
3P
SP3
Internally Drained
21
14
SP2
2P
14P
SP1
Internally Drained
Gravel Wetland #1
Study Point 1
Subcat
Reach
Pond
Link
Routing Diagram for Biddeford Residential Post-Development
Prepared by Terradyn Consultants, LLC, Printed 8/18/2022
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Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 4A: Runoff Area=7.826 ac 0.00% Impervious Runoff Depth=1.28"
Flow Length=800' Tc=75.1 min CN=77 Runoff=3.9 cfs 0.837 af

Subcatchment 4B: Runoff Area=0.210 ac 0.00% Impervious Runoff Depth=1.28"
Flow Length=130' Slope=0.0080 '/' Tc=37.6 min CN=77 Runoff=0.2 cfs 0.022 af

Subcatchment 11: Runoff Area=11.462 ac 1.01% Impervious Runoff Depth=0.15"
Flow Length=925' Tc=40.4 min CN=50 Runoff=0.3 cfs 0.143 af

Subcatchment 12: Runoff Area=3.575 ac 2.57% Impervious Runoff Depth=0.28"
Flow Length=540' Tc=27.8 min CN=55 Runoff=0.3 cfs 0.084 af

Subcatchment 13: Runoff Area=8.057 ac 68.30% Impervious Runoff Depth=1.41"
Flow Length=1,290' Tc=12.8 min CN=79 Runoff=10.4 cfs 0.948 af

Subcatchment 14: Runoff Area=4.348 ac 53.73% Impervious Runoff Depth=0.79"
Flow Length=765' Tc=9.7 min CN=68 Runoff=3.0 cfs 0.285 af

Subcatchment 21: Runoff Area=4.170 ac 19.66% Impervious Runoff Depth=0.07"
Flow Length=210' Tc=9.2 min CN=46 Runoff=0.0 cfs 0.025 af

Subcatchment 31: Runoff Area=2.885 ac 2.53% Impervious Runoff Depth=0.25"
Flow Length=320' Tc=36.5 min CN=54 Runoff=0.2 cfs 0.061 af

Subcatchment 32: Runoff Area=2.498 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=250' Tc=28.4 min CN=39 Runoff=0.0 cfs 0.000 af

Subcatchment 41: Runoff Area=2.381 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=575' Tc=36.0 min CN=33 Runoff=0.0 cfs 0.000 af

Pond 2P: Internally Drained Peak Elev=178.03' Storage=1,075 cf Inflow=0.0 cfs 0.025 af
Outflow=0.0 cfs 0.000 af

Pond 3P: Internally Drained Peak Elev=184.26' Storage=2,641 cf Inflow=0.2 cfs 0.061 af
Primary=0.0 cfs 0.000 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond 12P: Gravel Wetland #2 Peak Elev=154.57' Storage=43,279 cf Inflow=10.5 cfs 1.032 af
Primary=0.0 cfs 0.079 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.079 af

Pond 14P: Gravel Wetland #1 Peak Elev=178.73' Storage=11,318 cf Inflow=3.0 cfs 0.285 af
Primary=0.0 cfs 0.051 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.051 af

Link SP1: Study Point 1 Inflow=0.3 cfs 0.273 af
Primary=0.3 cfs 0.273 af

Link SP2: Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP3: Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP4: Study Point 4 Inflow=4.0 cfs 0.860 af
Primary=4.0 cfs 0.860 af

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 4A: Runoff Area=7.826 ac 0.00% Impervious Runoff Depth=2.54"
Flow Length=800' Tc=75.1 min CN=77 Runoff=7.9 cfs 1.656 af

Subcatchment 4B: Runoff Area=0.210 ac 0.00% Impervious Runoff Depth=2.54"
Flow Length=130' Slope=0.0080 '/' Tc=37.6 min CN=77 Runoff=0.3 cfs 0.044 af

Subcatchment 11: Runoff Area=11.462 ac 1.01% Impervious Runoff Depth=0.65"
Flow Length=925' Tc=40.4 min CN=50 Runoff=2.9 cfs 0.623 af

Subcatchment 12: Runoff Area=3.575 ac 2.57% Impervious Runoff Depth=0.93"
Flow Length=540' Tc=27.8 min CN=55 Runoff=1.8 cfs 0.277 af

Subcatchment 13: Runoff Area=8.057 ac 68.30% Impervious Runoff Depth=2.72"
Flow Length=1,290' Tc=12.8 min CN=79 Runoff=20.4 cfs 1.823 af

Subcatchment 14: Runoff Area=4.348 ac 53.73% Impervious Runoff Depth=1.81"
Flow Length=765' Tc=9.7 min CN=68 Runoff=7.8 cfs 0.655 af

Subcatchment 21: Runoff Area=4.170 ac 19.66% Impervious Runoff Depth=0.46"
Flow Length=210' Tc=9.2 min CN=46 Runoff=0.9 cfs 0.158 af

Subcatchment 31: Runoff Area=2.885 ac 2.53% Impervious Runoff Depth=0.87"
Flow Length=320' Tc=36.5 min CN=54 Runoff=1.2 cfs 0.210 af

Subcatchment 32: Runoff Area=2.498 ac 0.00% Impervious Runoff Depth=0.18"
Flow Length=250' Tc=28.4 min CN=39 Runoff=0.1 cfs 0.038 af

Subcatchment 41: Runoff Area=2.381 ac 0.00% Impervious Runoff Depth=0.03"
Flow Length=575' Tc=36.0 min CN=33 Runoff=0.0 cfs 0.007 af

Pond 2P: Internally Drained Peak Elev=178.21' Storage=6,895 cf Inflow=0.9 cfs 0.158 af
Outflow=0.0 cfs 0.000 af

Pond 3P: Internally Drained Peak Elev=184.54' Storage=10,754 cf Inflow=1.2 cfs 0.247 af
Primary=0.0 cfs 0.000 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond 12P: Gravel Wetland #2 Peak Elev=155.48' Storage=75,414 cf Inflow=21.0 cfs 2.101 af
Primary=0.4 cfs 0.725 af Secondary=0.0 cfs 0.000 af Outflow=0.4 cfs 0.725 af

Pond 14P: Gravel Wetland #1 Peak Elev=179.52' Storage=26,837 cf Inflow=7.8 cfs 0.655 af
Primary=0.1 cfs 0.078 af Secondary=0.0 cfs 0.000 af Outflow=0.1 cfs 0.078 af

Link SP1: Study Point 1 Inflow=3.0 cfs 1.426 af
Primary=3.0 cfs 1.426 af

Link SP2: Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP3: Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP4: Study Point 4 Inflow=8.1 cfs 1.707 af
Primary=8.1 cfs 1.707 af

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 4A: Runoff Area=7.826 ac 0.00% Impervious Runoff Depth=3.65"
Flow Length=800' Tc=75.1 min CN=77 Runoff=11.4 cfs 2.383 af

Subcatchment 4B: Runoff Area=0.210 ac 0.00% Impervious Runoff Depth=3.65"
Flow Length=130' Slope=0.0080 '/' Tc=37.6 min CN=77 Runoff=0.5 cfs 0.064 af

Subcatchment 11: Runoff Area=11.462 ac 1.01% Impervious Runoff Depth=1.24"
Flow Length=925' Tc=40.4 min CN=50 Runoff=6.7 cfs 1.187 af

Subcatchment 12: Runoff Area=3.575 ac 2.57% Impervious Runoff Depth=1.63"
Flow Length=540' Tc=27.8 min CN=55 Runoff=3.6 cfs 0.487 af

Subcatchment 13: Runoff Area=8.057 ac 68.30% Impervious Runoff Depth=3.86"
Flow Length=1,290' Tc=12.8 min CN=79 Runoff=28.9 cfs 2.591 af

Subcatchment 14: Runoff Area=4.348 ac 53.73% Impervious Runoff Depth=2.78"
Flow Length=765' Tc=9.7 min CN=68 Runoff=12.2 cfs 1.006 af

Subcatchment 21: Runoff Area=4.170 ac 19.66% Impervious Runoff Depth=0.95"
Flow Length=210' Tc=9.2 min CN=46 Runoff=2.8 cfs 0.331 af

Subcatchment 31: Runoff Area=2.885 ac 2.53% Impervious Runoff Depth=1.55"
Flow Length=320' Tc=36.5 min CN=54 Runoff=2.4 cfs 0.373 af

Subcatchment 32: Runoff Area=2.498 ac 0.00% Impervious Runoff Depth=0.50"
Flow Length=250' Tc=28.4 min CN=39 Runoff=0.4 cfs 0.105 af

Subcatchment 41: Runoff Area=2.381 ac 0.00% Impervious Runoff Depth=0.20"
Flow Length=575' Tc=36.0 min CN=33 Runoff=0.1 cfs 0.040 af

Pond 2P: Internally Drained Peak Elev=178.44' Storage=14,400 cf Inflow=2.8 cfs 0.331 af
Outflow=0.0 cfs 0.000 af

Pond 3P: Internally Drained Peak Elev=184.76' Storage=20,835 cf Inflow=2.8 cfs 0.478 af
Primary=0.0 cfs 0.000 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond 12P: Gravel Wetland #2 Peak Elev=155.73' Storage=84,790 cf Inflow=30.7 cfs 3.078 af
Primary=2.7 cfs 1.668 af Secondary=0.0 cfs 0.000 af Outflow=2.7 cfs 1.668 af

Pond 14P: Gravel Wetland #1 Peak Elev=179.62' Storage=28,989 cf Inflow=12.2 cfs 1.006 af
Primary=0.8 cfs 0.425 af Secondary=0.0 cfs 0.000 af Outflow=0.8 cfs 0.425 af

Link SP1: Study Point 1 Inflow=7.1 cfs 3.280 af
Primary=7.1 cfs 3.280 af

Link SP2: Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP3: Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP4: Study Point 4 Inflow=11.7 cfs 2.488 af
Primary=11.7 cfs 2.488 af

Summary for Subcatchment 4A:

Runoff = 11.4 cfs @ 13.00 hrs, Volume= 2.383 af, Depth= 3.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
7.826	77	Woods, Good, HSG D
7.826		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
44.5	150	0.0070	0.06		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
30.6	650	0.0050	0.35		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
75.1	800	Total			

Summary for Subcatchment 4B:

Runoff = 0.5 cfs @ 12.52 hrs, Volume= 0.064 af, Depth= 3.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
0.210	77	Woods, Good, HSG D
0.210		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.6	130	0.0080	0.06		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"

Summary for Subcatchment 11:

Runoff = 6.7 cfs @ 12.66 hrs, Volume= 1.187 af, Depth= 1.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	5.661	30	Woods, Good, HSG A
	3.720	70	Woods, Good, HSG C
	1.153	77	Woods, Good, HSG D
	0.113	30	Meadow, non-grazed, HSG A
	0.260	71	Meadow, non-grazed, HSG C
	0.003	78	Meadow, non-grazed, HSG D
	0.349	39	>75% Grass cover, Good, HSG A
	0.087	74	>75% Grass cover, Good, HSG C
*	0.060	98	Existing impervious
*	0.056	98	Proposed Impervious
	11.462	50	Weighted Average
	11.346		98.99% Pervious Area
	0.116		1.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.2	150	0.0220	0.09		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
9.2	615	0.0500	1.12		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
0.2	25	0.2400	2.45		**Shallow Concentrated Flow, C to D** Woodland Kv= 5.0 fps
2.8	135	0.0260	0.81		**Shallow Concentrated Flow, D to E** Woodland Kv= 5.0 fps
40.4	925	Total			

Summary for Subcatchment 12:

Runoff = 3.6 cfs @ 12.44 hrs, Volume= 0.487 af, Depth= 1.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	0.971	30	Woods, Good, HSG A
	0.676	70	Woods, Good, HSG C
	1.233	71	Meadow, non-grazed, HSG C
	0.603	39	>75% Grass cover, Good, HSG A
*	0.092	98	Proposed Impervious
	3.575	55	Weighted Average
	3.483		97.43% Pervious Area
	0.092		2.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.2	150	0.0400	0.11		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
5.5	360	0.0470	1.08		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
0.1	30	0.3000	3.83		**Shallow Concentrated Flow, C to D** Short Grass Pasture Kv= 7.0 fps
27.8	540	Total			

Summary for Subcatchment 13:

Runoff = 28.9 cfs @ 12.18 hrs, Volume= 2.591 af, Depth= 3.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	2.115	39	>75% Grass cover, Good, HSG A
*	5.503	98	Proposed Impervious
	0.439	30	Woods, Good, HSG A
	8.057	79	Weighted Average
	2.554		31.70% Pervious Area
	5.503		68.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	60	0.0170	0.10		**Sheet Flow, A to B** Grass: Dense n= 0.240 P2= 3.30"
0.6	40	0.0200	1.16		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 3.30"
2.2	1,190	0.0200	9.11	16.09	**Pipe Channel, C to D** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
12.8	1,290	Total			

Summary for Subcatchment 14:

Runoff = 12.2 cfs @ 12.14 hrs, Volume= 1.006 af, Depth= 2.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	0.946	30	Meadow, non-grazed, HSG A
	0.832	39	>75% Grass cover, Good, HSG A
*	2.336	98	Proposed Impervious
	0.234	30	Woods, Good, HSG A
	4.348	68	Weighted Average
	2.012		46.27% Pervious Area
	2.336		53.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	25	0.0100	0.07		**Sheet Flow, A to B** Grass: Dense n= 0.240 P2= 3.30"
1.4	110	0.0150	1.27		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 3.30"
2.2	630	0.0070	4.77	5.86	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
9.7	765	Total			

Summary for Subcatchment 21:

Runoff = 2.8 cfs @ 12.17 hrs, Volume= 0.331 af, Depth= 0.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	1.328	30	Woods, Good, HSG A
	0.976	30	Meadow, non-grazed, HSG A
	1.046	39	>75% Grass cover, Good, HSG A
*	0.097	98	Existing impervious
*	0.723	98	Water
	4.170	46	Weighted Average
	3.350		80.34% Pervious Area
	0.820		19.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	150	0.0400	0.28		**Sheet Flow, A to B** Range n= 0.130 P2= 3.30"
0.2	60	0.4000	4.43		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
9.2	210	Total			

Summary for Subcatchment 31:

Runoff = 2.4 cfs @ 12.57 hrs, Volume= 0.373 af, Depth= 1.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	0.340	30	Woods, Good, HSG A
	0.637	77	Woods, Good, HSG D
	0.125	30	Meadow, non-grazed, HSG A
	0.450	78	Meadow, non-grazed, HSG D
	1.260	39	>75% Grass cover, Good, HSG A
*	0.073	98	Proposed impervious
	2.885	54	Weighted Average
	2.812		97.47% Pervious Area
	0.073		2.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.2	150	0.0200	0.09		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
7.3	170	0.0060	0.39		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
36.5	320	Total			

Summary for Subcatchment 32:

Runoff = 0.4 cfs @ 12.66 hrs, Volume= 0.105 af, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
1.728	30	Woods, Good, HSG A
0.397	77	Woods, Good, HSG D
0.373	39	>75% Grass cover, Good, HSG A
2.498	39	Weighted Average
2.498		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.8	150	0.0250	0.09		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	100	0.0420	1.02		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
28.4	250	Total			

Summary for Subcatchment 41:

Runoff = 0.1 cfs @ 14.18 hrs, Volume= 0.040 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
1.528	30	Woods, Good, HSG A
0.853	39	>75% Grass cover, Good, HSG A
2.381	33	Weighted Average
2.381		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0600	0.12		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
22.4	475	0.0050	0.35		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
36.0	575	Total			

Summary for Pond 2P: Internally Drained

Inflow Area = 4.170 ac, 19.66% Impervious, Inflow Depth = 0.95" for 25-YR event
Inflow = 2.8 cfs @ 12.17 hrs, Volume= 0.331 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 178.44' @ 24.55 hrs Surf.Area= 34,027 sf Storage= 14,400 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	178.00'	1,036,250 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
178.00	31,500	0	0
180.00	43,000	74,500	74,500
182.00	72,000	115,000	189,500
184.00	116,500	188,500	378,000
185.50	174,000	217,875	595,875
186.00	162,500	84,125	680,000
187.00	178,000	170,250	850,250
188.00	194,000	186,000	1,036,250

Device	Routing	Invert	Outlet Devices
#1	Primary	185.50'	**100.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=178.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond 3P: Internally Drained

Inflow Area = 5.383 ac, 1.36% Impervious, Inflow Depth = 1.07" for 25-YR event
Inflow = 2.8 cfs @ 12.59 hrs, Volume= 0.478 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 184.76' @ 26.10 hrs Surf.Area= 53,992 sf Storage= 20,835 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	184.00'	476,033 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
184.00	1,110	0	0
185.50	106,000	80,333	80,333
186.00	118,600	56,150	136,483
187.00	170,000	144,300	280,783
188.00	220,500	195,250	476,033

Device	Routing	Invert	Outlet Devices
#1	Primary	185.50'	**100.0' long x 20.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Secondary	187.00'	**50.0' long x 20.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=184.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=184.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond 12P: Gravel Wetland #2

Inflow Area = 11.632 ac, 48.10% Impervious, Inflow Depth = 3.18" for 25-YR event
Inflow = 30.7 cfs @ 12.18 hrs, Volume= 3.078 af
Outflow = 2.7 cfs @ 14.24 hrs, Volume= 1.668 af, Atten= 91%, Lag= 123.6 min
Primary = 2.7 cfs @ 14.24 hrs, Volume= 1.668 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 155.73' @ 14.24 hrs Surf.Area= 37,550 sf Storage= 84,790 cf

Plug-Flow detention time= 475.3 min calculated for 1.668 af (54% of inflow)
Center-of-Mass det. time= 359.2 min (1,192.4 - 833.2)

Volume	Invert	Avail.Storage	Storage Description
#1	153.00'	134,485 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
153.00	16,700	0	0
154.00	32,070	24,385	24,385
154.50	33,700	16,443	40,828
156.00	38,380	54,060	94,888
157.00	40,815	39,598	134,485

Device	Routing	Invert	Outlet Devices
#1	Primary	152.67'	**18.0" Round Culvert** L= 83.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 152.67' / 151.50' S= 0.0141 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	154.50'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	155.50'	**6.0' long x 0.70' rise Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)
#4	Device 1	150.00'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 4	150.00'	**6.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 150.00' / 150.00' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#6	Device 5	153.00'	**2.410 in/hr Exfiltration over Surface area above 153.00'** Conductivity to Groundwater Elevation = 152.67' Excluded Surface area = 16,700 sf
#7	Secondary	156.00'	**12.0' long x 9.0' 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 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69

Primary OutFlow Max=2.7 cfs @ 14.24 hrs HW=155.73' (Free Discharge)
- **1=Culvert** (Passes 2.7 cfs of 12.9 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 0.4 cfs @ 4.97 fps)
  - **3=Sharp-Crested Vee/Trap Weir** (Weir Controls 2.2 cfs @ 1.58 fps)
  - **4=Orifice/Grate** (Orifice Controls 0.0 cfs @ 8.43 fps)
    - **5=Culvert** (Passes 0.0 cfs of 1.6 cfs potential flow)
      - **6=Exfiltration** (Passes 0.0 cfs of 4.0 cfs potential flow)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=153.00' (Free Discharge)
- **7=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond 14P: Gravel Wetland #1

Inflow Area =	4.348 ac, 53.73% Impervious, Inflow Depth = 2.78" for 25-YR event			
Inflow =	12.2 cfs @	12.14 hrs, Volume=	1.006 af	
Outflow =	0.8 cfs @	14.99 hrs, Volume=	0.425 af, Atten= 94%, Lag= 170.8 min	
Primary =	0.8 cfs @	14.99 hrs, Volume=	0.425 af	
Secondary =	0.0 cfs @	0.00 hrs, Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 179.62' @ 14.99 hrs Surf.Area= 21,962 sf Storage= 28,989 cf

Plug-Flow detention time= 406.4 min calculated for 0.425 af (42% of inflow)
Center-of-Mass det. time= 280.5 min (1,125.2 - 844.7)

Volume	Invert	Avail.Storage	Storage Description
#1	178.00'	89,610 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
178.00	13,570	0	0
179.50	21,650	26,415	26,415
180.00	22,970	11,155	37,570
181.00	26,130	24,550	62,120
182.00	28,850	27,490	89,610

Device	Routing	Invert	Outlet Devices
#1	Primary	177.67'	**18.0" Round Culvert** L= 265.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 177.67' / 175.43' S= 0.0085 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	179.50'	**6.0' long x 2.00' rise Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)
#3	Device 2	179.00'	**15.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 179.00' / 179.00' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#4	Device 1	175.00'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 4	175.00'	**6.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 175.00' / 175.00' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#6	Device 5	178.00'	**2.410 in/hr Exfiltration over Surface area above 178.00'** Conductivity to Groundwater Elevation = 177.67' Excluded Surface area = 13,570 sf
#7	Secondary	181.00'	**12.0' long x 9.0' 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 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69

Primary OutFlow Max=0.8 cfs @ 14.99 hrs HW=179.62' (Free Discharge)
└─**1=Culvert** (Passes 0.8 cfs of 9.3 cfs potential flow)
  ├─**2=Sharp-Crested Vee/Trap Weir** (Passes 0.8 cfs of 0.8 cfs potential flow)
  │ └─**3=Culvert** (Outlet Controls 0.8 cfs @ 1.87 fps)
  └─**4=Orifice/Grate** (Orifice Controls 0.0 cfs @ 6.72 fps)
    └─**5=Culvert** (Passes 0.0 cfs of 1.3 cfs potential flow)
      └─**6=Exfiltration** (Passes 0.0 cfs of 1.0 cfs potential flow)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=178.00' (Free Discharge)
└─**7=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link SP1: Study Point 1

Inflow Area = 27.442 ac, 29.32% Impervious, Inflow Depth > 1.43" for 25-YR event
Inflow = 7.1 cfs @ 12.67 hrs, Volume= 3.280 af
Primary = 7.1 cfs @ 12.67 hrs, Volume= 3.280 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Summary for Link SP2:

Inflow Area = 4.170 ac, 19.66% Impervious, Inflow Depth = 0.00" for 25-YR event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Summary for Link SP3:

Inflow Area = 5.383 ac, 1.36% Impervious, Inflow Depth = 0.00" for 25-YR event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Summary for Link SP4: Study Point 4

Inflow Area = 10.417 ac, 0.00% Impervious, Inflow Depth = 2.87" for 25-YR event
Inflow = 11.7 cfs @ 12.98 hrs, Volume= 2.488 af
Primary = 11.7 cfs @ 12.98 hrs, Volume= 2.488 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Section 13 - Urban Impaired Stream

The development will result in more than three acres of impervious area and is located within the Thacher Brook watershed, which is an Urban Impaired Stream as identified in Appendix B of Chapter 502: Direct Watersheds of Lakes Most at Risk from New Development, and Urban Impaired Streams.

Thacher Brook is eligible for mitigation, of the projects Urban Impaired Stream impacts, via payment of a compensation fee as outlined in Chapter 501: Stormwater Management Compensation Fees and Mitigation Credit. A copy of the Compensation Fee Utilization Plan for Thacher Brook is attached for reference. The compensation fee is calculated as follows:

Table 1: Compensation Fee Calculation			
Type of surface	Compensation fee (per acre)	Development area (acres)	Calculated fee
Non-roof impervious area	$12,500	5.25	$65,625
Roof	$5,000	2.81	$14,050
Landscape Area	$2,500	10.073	$25,182.50
Total Fee:			$104,875.50

Section 14 - Basic Standards

A. INTRODUCTION:

Anyone who conducts or directs an activity that involves exposing, filling or displacing soil or other earthen materials must take appropriate measures to prevent erosion and the loss of sediment beyond the project site or into a sensitive resource.

Erosion and sediment control measures should be in place before the activity begins and should remain functional until the site is permanently stabilized. All measures should remain effective until all areas are permanently stabilized. Any disturbed area should be regularly inspected until the site is fully stabilized with either 90% grass cover or a permanent impervious surface such as pavement.

The following information describes the Inspection, Maintenance and Documentation necessary during construction to comply with the State of Maine Stormwater Management Law.

B. INSPECTION

Inspect disturbed and impervious areas, erosion control measures, materials storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. Inspect these areas at least once a week as well as before and within 24 hours after a storm event (rainfall), and prior to completing permanent stabilization measures. For the purposes of this plan, a storm event is rainfall greater than 0.5 inches in a 24-hour period.

The person conducting inspections shall have knowledge of erosion and sedimentation practices, stormwater management, and the standards and conditions of all local, state and federal permits for the project.

C. MAINTENANCE AND CORRECTIVE ACTION

If best management practices (BMPs) need to be repaired, the repair work should be initiated upon discovery of the problem but no later than the end of the next workday. If additional BMPs or significant repair of BMPs are necessary, implementation must be completed within 7 calendar days and prior to any storm event (rainfall). All measures must be maintained in effective operating condition until areas are permanently stabilized.

D. DOCUMENTATION

Keep a log (report) summarizing the inspections and any corrective actions taken. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, materials storage areas, and vehicles access points to the parcel. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and location(s) where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken.

The log attached at the end of this plan is from the Maine Erosion and Sediment Control Best Management Practices (BMPs) Manual for Designers and Engineers (May 2016). The log may be used or adapted for this project.

Documentation must be retained for a minimum of three years after permanent stabilization has been achieved on the site and must be made accessible to the Maine Department of Environmental Protection upon request

E. <u>INSPECTION DURING CONSTRUCTION:</u>

1. **Inspection:** For the duration of construction activity, it is the Site Contractor's responsibility to comply with theinspection and maintenance procedures outlined in this section. These responsibilities include inspecting disturbed and impervious areas, erosion control measures, materials storage areas thatare exposed to precipitation, and locations where vehicles enter or exit the site. These areas shall be inspected at least once a week as well as before and after a storm event, and prior to completing permanent stabilization measures. A person with knowledge of erosion and stormwater control, including the standards and conditions in any applicable permits, shall conduct the inspections.

2. **Maintenance:** All measures shall be maintained in an effective operating condition until areas are permanently stabilized. If Best Management Practices (BMPs) need to be maintained or modified, additional BMPs are necessary, or other corrective action is needed, implementation must be completed within seven (7) calendar days and prior to any storm event (rainfall).

3. **Documentation:** A log summarizing the inspections and any corrective action taken must be maintained on-site. The log must include the name(s) and qualifications of the person making theinspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, material storage areas, and vehicle access points to the site. Major observations must include BMPs that need maintenance, BMPs that failedto operate as designed or proved inadequate for a particular location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and locationneeding additional BMPs, note in the log the corrective action taken and when it was taken.

   The log must be made accessible to the appropriate regulatory agency upon request. The permittee shall retain a copy of the log for a period of at least three (3) years from the completion of permanent stabilization.

4. **Specific Inspection and Maintenance Tasks:** The following is a list of erosion control and stormwatermanagement measures and the specific inspection and maintenance tasks to be performed duringconstruction.

   A. <u>Sediment Barriers:</u>

   - Hay bale barriers, silt fences, and filter berms shall be inspected immediately

after eachrainfall and at least daily during prolonged rainfall.

- If the fabric on a silt fence or filter barrier should decompose or become ineffective prior tothe end of the expected usable life and the barrier is still necessary, it shall be replaced.
- Sediment deposits should be removed after each storm event. They must be removedbefore deposits reach approximately one-half the height of the barrier.
- Filter berms shall be reshaped as needed.
- Any sediment deposits remaining in place after the silt fence or filter barrier is no longerrequired should be dressed to conform to the existing grade, prepared, and seeded.

B. Riprap Materials:

- Once a riprap installation has been completed, it should require very little maintenance. It shall, however, be inspected periodically to determine if high flows have caused scour beneath the riprap or dislodged any of the stone.
- Annully inspect riprap and remove woody vegetation when discovered.

C. Erosion Control Blankets:

- Inspect these reinforced areas semi-annually and after significant rainfall events for slumping, sliding, seepage, and scour. Pay close attention to unreinforced areas adjacent to the erosion control blankets, which may experience accelerated erosion.
- Review all applicable inspection and maintenance procedures recommended by the specific blanket manufacturer. These tasks shall be included in addition to this plan.

D. Temporary Storm Drain Inlet Protection:

- The inlet protection structure shall be inspected before each rain event and repaired asnecessary.
- Sediment shall be removed and the storm drain sediment barrier restored to its originaldimensions when the sediment has accumulated to half of the design depth of the trap.
- Structures shall be removed upon permanent stabilization of the tributary area.
- Upon removal of the structure, all accumulated sediments downstream of the structure shallbe cleaned from the storm drain system.
- The permanent storm drainage system shall be flushed and cleaned once the site is stabilized and prior to demobilization from the site.

E. Stabilized Construction Entrances/Exits:

- The exit shall be maintained in a condition that will prevent tracking of sediment onto publicrights-of-way.

- When the control pad becomes ineffective, the stone shall be removed along with the collected soil material. The entrance should then be reconstructed.
- Areas that have received mud-tracking or sediment deposits shall be swept or washed. Washing shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device (not into storm drains, ditches, or waterways).

F. Temporary Seed and Mulch:

- Mulched areas should be inspected after rain events to check for rill erosion.
- If less than 90% of the soil surface is covered by mulch, additional mulch shall be applied inbare areas.
- In applications where seeding and mulch have been applied in conjunction with erosion control blankets, the blankets must be inspected after rain events for dislocation or undercutting.
- Mulch shall continue to be reapplied until 95% of the soil surface has established temporary vegetative cover.

G. Stabilized Drainage Swales:

- Sediment accumulation in the swale shall be removed once the cross section of the swale isreduced by 25%.
- The swales shall be inspected after rainfall events. Any evidence of sloughing of the side slopes or channel erosion shall be repaired and corrective action should be taken to preventreoccurrence of the problem.
- In addition to the stabilized lining of the channel (i.e. erosion control blankets), stone check dams may be needed to further reduce channel velocity.

H. Concrete Washout Area

- The site contractor shall establish a concrete washout area on-site which shall include sediment barrier to mitigate the transport of the washout material to the environment.
- The washout area shall be located a minimum of 25 feet from any storm drain structure or culvert and a minimum of 25 feet from any slope greater than 4:1.
- The washout area shall be inspected daily when concrete work is active and prior to any storm event.
- Accumulated concrete sediments shall be removed weekly, when concrete work is active, or when visibly encroaching on sediment barrier.

I. Dewatering

- The site contractor shall establish an on-site containment area which shall include sediment barrier to mitigate the transport of the sediment to the environment from

dewatering activity.

- The containment area shall be located a minimum of 25 feet from any storm drain structure or culvert and a minimum of 25 feet from any slope greater than 4:1.
- The containment area shall include a dirt bag or similar sediment trap for treatment of the collected water.
- The containment area shall be inspected after each use to ensure that no downgradient erosion or sedimentation offsite is occurring.

REFERENCES

Design Drawings:
C-2.1 Grading & Drainage Plan-1
C-2.2 Grading & Drainage Plan-2
C-2.3 Grading & Drainage Plan-3
C-2.4 Grading & Drainage Plan-4
C-2.5 Grading & Drainage Plan-5
C-2.6 Grading & Drainage Plan-6
C-2.7 Grading & Drainage Plan-7
C-5.1 Site Details

Maine Erosion and Sediment Control Best Management Practices (BMPs) Manual for Designers and Engineers (May 2016), Maine Department of Environmental Protection

Maine Erosion and Sediment Control Practices Field Guide for Contractors, Maine Department of Environmental Protection

CONSTRUCTION INSPECTION FORM FOR EROSION AND SEDIMENT CONTROL					
General Information:					
Site Name:	Date:		Inspected by:		
Owner:					
Retained 3PI:	Last Rain Date:			Amount:	
Reason for Inspection:	Weekly	Winter	Final	Rain Event	Complaint
Description of disturbed area:					
Photos:					

	YES/NO/NA	COMMENTS
1. Is an Erosion and Sediment Control Plan available?		
ESC plan on-site and followed		
Other:		
2. Are all erosion control practices installed properly, maintained and functioning?		
Disturbed areas stable		
Concentrated flow inlet/outlet protection		
All areas at final grade		
Disturbed dormant areas stabilized		
Access roads and parking		
Hillsides and stockpiles		
Other:		
3. Are all sedimentation control practices installed properly, maintained and functioning?		
Construction entrance		
Sedimentation basins/traps/diversions		
Perimeter controls		
Check dams		
Other:		
4. Is maintenance of ESC measures, construction activities and housekeeping kept-up?		
Sedimentation/erosion in ditches		
Tracked Sediment or dust at exits		
Hazardous material storage and spillcontrol practices		
Waste management (concrete, hazardousmaterial, etc.)		
Other:		
5. Violation, Corrective Actions, Recommendations		
Sediment discharged from site?		
Corrective action required?		
Site compliant with all permits?		
Notice of violation or stop work orderissued?		
Comments/Corrective Actions (complete corrective actions before the next rain event and within 7 day)		

Section 15 - Groundwater

A. Narrative and Report

Not applicable. The development intends to connect to public water infrastructure for domestic water demands and connect to public sanitary sewer infrastructure for wastewater collection and treatment.

B. Groundwater Protection Plan

Not applicable. No storage of petroleum products, pesticides, herbicides, fertilizer, road salt, solvents, acids or other materials with the potential to contaminate groundwater is proposed for this development.

C. Monitoring Plan

Not applicable. No known requirement to monitor surface water or groundwater applies to this property.

D. Monitoring Well Installation Report

Not applicable. No monitoring wells are proposed for this project.

Section 16 - Water Supply

E. Water Supply Method

Maine Water Company has been contacted to confirm that there is sufficient healthful water supply to serve the project. A copy of the Maine Water Company's response will be forwarded upon receipt.

F. Subsurface Wastewater Disposal

Not applicable. This project intends to connect to the City's existing wastewater infrastructure.

G. Total Usage

As indicated in the letter to Maine Water Company, the anticipated domestic water demand will be approximately 43,121 gallons per day (GPD).

TERRADYN
CONSULTANTS, LLC

Pineland
Cumberland Hall
41 Campus Drive, Suite 301
New Gloucester, ME 04260

August 9, 2022 2149

Marcus Knipp
Maine Water Company
93 Industrial Park Road
Saco, ME 04072

CONFIRMATION OF ABILITY TO SERVE; DEVINE CAPITAL, LLC
BIDDEFORD RESIDENTIAL PROJECT; BIDDEFORD MAINE

Dear Marcus:

On behalf of the applicant, Devine Capital, LLC, we request confirmation that Maine Water Company has sufficient healthful water supply to serve their proposed development. The proposed apartment complex, to be located on a vacant parcel with frontage on Alfred Street (Rt. 111) and Andrews Road in Biddeford, will include 216 apartment units in nine buildings, a clubhouse and maintenance building.

The Maine Subsurface Wastewater Disposal Rules (MSWDR) were utilized to estimate anticipated wastewater discharges from the development, which will approximate the anticipated domestic water demand for the site. Based upon the MSWDR, dwelling units with two or less bedrooms are expected to generate 180 gallons per day (GPD) and 3-bedroom dwelling units are expected to generate 270 GPD. Since the clubhouse will provide many functions to the residents, the anticipated flow was estimated utilizing the "public restroom" design flows, which includes 325 GPD per toilet and 162 GPD per urinal. The maintenance building was estimated as "a place of employment with no showers", which includes 12 GPD per employee.

The proposed mix of apartment sizes will include: (27) studio units, (54) 1-bedroom units, (108) 2-bedroom units, and (27) 3-bedroom units. The clubhouse will include five (5) toilets and one (1) urinal. Two employees will have access to the maintenance building. Based upon these assumptions, the anticipated water demand for the project site will be approximately 43,121 GPD.

Based upon the available water pressure in the project's vicinity, the developer anticipates the need for a private water booster station to serve the site. As the design progresses, the estimated demand will be refined by calculating usage by the total number proposed fixtures for each meter required. In the interim, let me know if you have any questions or require additional information to determine that there is sufficient supply to serve this development.

Sincerely,
TERRADYN CONSULTANTS LLC

Richard Meek, P.E.
Sr. Project Engineer

Cc: Devine Capital, LLC

Section 17 - Wastewater Disposal

A. On-Site Subsurface Wastewater Disposal Systems

Not applicable. This project intends to connect to the City's existing wastewater infrastructure.

B. Nitrate-Nitrogen Impact Analysis

Not applicable. This project intends to connect to the City's existing wastewater infrastructure.

C. Municipal Facility or Utility Company Letter

The City of Biddeford's Public Works Department – Wastewater Division has been contacted to confirm that there is sufficient collection and treatment capacity to serve the project. A copy of the Wastewater Division's response will be forwarded upon receipt.

D. Municipal Facility or Utility Company Letter

Not applicable. No discharge of wastewater into any stream, river, pond, lake or other water bodies is anticipated.

E. Storage or Treatment Lagoons

Not applicable. No storage of wastewater in lagoons, impoundments or similar storage structures is proposed.

Section 18 - Solid Waste

The development will generate solid waste during land clearing, construction of the infrastructure & buildings and after occupation. The specific types, quantities, haulers and disposal sites are described below.

Woodwaste, Stumps & Grubbings

The majority of the waste will be generated by the harvesting of trees and the removal of stumps. Marketable timber will be removed from the project site and sold. Smaller woody debris will be mulched and used as a soil amendment or as an erosion control measure. Stump grindings will be used to make erosion control mix berm whenever possible, which will be used to augment or substitute for silt fence. An estimate of the amount of stumps/grinding waste can be calculated by assuming that 400 CY of material produced per acre of disturbance of mature forest. This approximation yields 5,720 CY for the estimated 14.3 acres of clearing required.

Construction & Demolition Debris

The construction waste generation rate for both residential & commercial construction is approximately 4.4 lb/ft^2. This value is from Estimating 2003 Building-Related Construction and Demolition Materials Amounts, published by the US EPA. The project site includes the following:

(1) Clubhouse @ 7,750 SF	7,750 SF
(1) Mail Kiosk @ 410 SF	410 SF
(1) Maintenance building @ 910 SF	910 SF
(9) 3-story apartment buildings @ 9,155 SF per floor	247,185 SF
(2) garage buildings @ 2,630 SF ea	5,260 SF
(6) garage buildings @ 4,370 SF ea	26,220 SF
Total	287,735 SF

This equates to approximately 633 tons of expected construction debris.

General construction waste material from roadway, utility, and infrastructure construction as well as building construction will be disposed of at appropriately licensed disposal facilities. It is anticipated that construction and demolition debris will be transported by Casella Waste and disposed of at the Juniper Ridge Landfill in West Old Town, ME or by Waste Management of Maine, Inc and disposed of at the Crossroads Landfill in Norridgewock, Maine or the Turnkey Landfill in Rochester, NH.

Once the construction phase is completed, any general construction debris will be disposed of at appropriately licensed disposal facilities.

No site demolition is anticipated as part of this project.

Household Solid Waste
It is estimated by the US EPA (https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/national-overview-facts-and-figures-materials) that as of 2017, the average person generates 4.51 lbs per day.

Each of the nine proposed apartment buildings will include three (3) studio apartments, six (6) one-bedroom apartments, twelve (12) two-bedroom apartments, and three (3) three-bedroom apartments. The studio & one-bedroom units would likely average no more than two people per unit. The two and three-bedroom units would likely be closer to the average household. According to the Pew Research Center (https://www.pewresearch.org/fact-tank/2019/10/01/the-number-of-people-in-the-average-u-s-household-is-going-up-for-the-first-time-in-over-160-years), the average person lives in a household consisting of 3.4 people. Based upon this data, the development average is (2 x 81 + 3.4 x 135)/216 = 2.88 people per apartment. Therefore, the assumed amount of household waste is approximately (4.51 lbs/person/day x 2.88 people per apartment x 216 apartments) 2,806 lbs/day (512 tons/year).

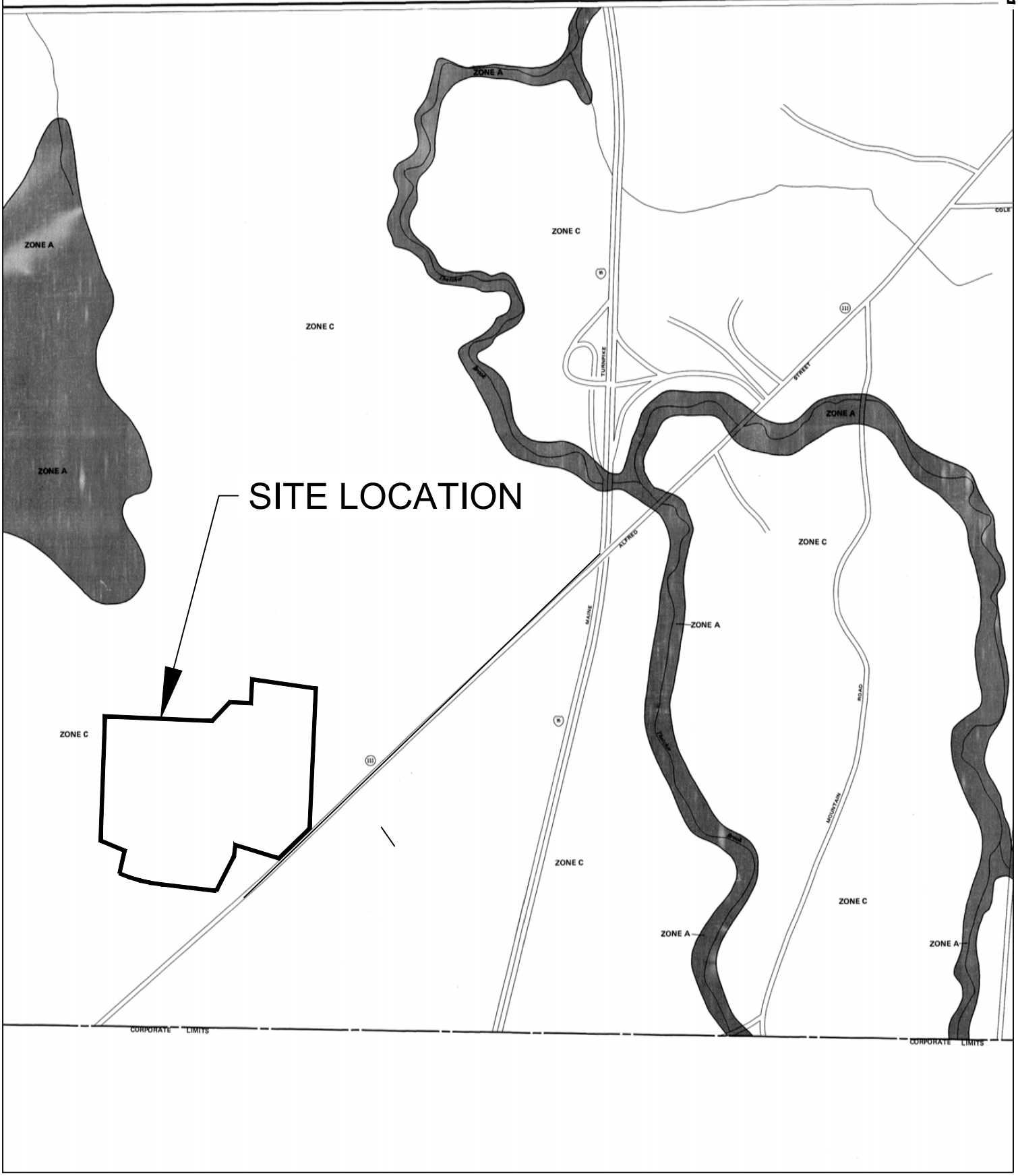
All waste from the apartments will be stored on-site in proposed dumpsters and recycling receptacles that will be located adjacent to the proposed maintenance building. It is anticipated that the waste will be collected by Troiano Waste Services and transported to one of ecomaine's incineration facilities.

Industrial Solid Wastes – Not applicable

Special & Hazardous Wastes – Not applicable

Section 19 - Flooding

A portion of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (Community Panel: 2301450008B), with the project site location identified, is attached.



FEMA MAP (COMMUNITY PANEL: 2301450008B)	TERRADYN CONSULTANTS, LLC	PINELAND 41 CAMPUS DRIVE, SUITE 301 NEW GLOUCESTER, ME 04260 PORTLAND 565 CONGRESS STREET, SUITE 201 PORTLAND, ME 04101	PROJECT NO. 21-49	SHEET 1
PROJECT: BIDDEFORD RESIDENTIAL ANDREWS ROAD, BIDDEFORD, MAINE	207.926.5111 • info@terradynconsultants.com • www.terradynconsultants.com		DATE 03/21/2021	OF 1
PREPARED FOR: KGI PROPERTIES, LLC 10 Memorial Boulevard, Suite 901 Providence RI 02903			SCALE 1"=1,000'	

Section 20 - Blasting

Based upon subsurface investigations, no blasting is anticipated for road construction, foundations, utility trenching or stormwater management construction.

Section 21 - Air Emissions

Not applicable. Since the project is solely residential, no significant adverse air emissions are anticipated.

Section 22 - Odors

Not applicable. Since the project is solely residential no significant sources of odor are anticipated.

Section 23 - Water Vapor

Not applicable. Since the project is solely residential, no large-scale water vapor emissions are anticipated.

Section 24 - Sunlight

Not applicable. Based upon the required building setbacks, proposed structure heights and proposed structure locations within the site, access to direct sunlight will not blocked for any abutting structures utilizing solar energy through active or passive systems.

Section 25 – Notices

A copy of the notice of intent to file (Form B), which was sent to the abutting property owners and published in the Portland Press Herald, is attached. Additionally, the completed Public Notice Filing and Certification (Form C) is attached.

A list of names and addresses of the abutting property owners is attached.

Public Notice: Notice of Intent to File

Please take notice that Devine Capital, LLC, 3 Milk St., Third Floor, Portland, ME 04101, (207) 536-4664 is intending to file a Site Location of Development Act permit application with the City of Biddeford in accordance with their Capacity status and pursuant to the provisions of 38 M.R.S.A. §§ 481 thru 490 on or about August 9, 2022. In addition, a public informational meeting will be held on August 8, 2022 at 6:00 p.m. and will be located at Biddeford City Hall, 205 Main Street, Biddeford, Maine.

This application is for construction of nine 24-unit apartment buildings, a clubhouse, mail kiosk, maintenance building, eight detached garages and surface parking. The project is to be located on Andrews Road in Biddeford, ME.

A request for a public hearing or a request that the Board of Environmental Protection assume jurisdiction over this application must be received by the Department of Environmental Protection in writing, no later than 20 days after the application is found by the City of Biddeford to be complete and is accepted for processing. A public hearing may or may not be held at the discretion of the Commissioner or Board of Environmental Protection. Public comment on the application will be accepted throughout the processing of the application.

Written public comments may be sent to Biddeford City Hall, 205 Main Street, Biddeford, Maine 04005, where the application is filed for public inspection.

FORM C

PUBLIC NOTICE FILING AND CERTIFICATION

The DEP Rules, Chapter 2, require an applicant to provide public notice for all Site Location projects with the exception of minor revisions and condition compliance applications. In the notice, the applicant must describe the proposed activity and where it is located. **"Abutter"** for the purposes of the notice provision means any person who owns property that is BOTH (1) adjoining and (2) within one mile of the delineated project boundary, including owners of property directly across a public or private right of way.

1. **Newspaper:** You must publish the Notice of Intent to File in a newspaper circulated in the area where the activity is located. The notice must appear in the newspaper within 30 days prior to the filing of the application with the Department. You may use the attached Notice of Intent to File form, or one containing identical information, for newspaper publication and certified mailing.

2. **Abutting Property Owners:** You must send a copy of the Notice of Intent to File by certified mail to the owners of the property abutting the activity. Their names and addresses can be obtained from the town tax maps or local officials. They must receive notice within 30 days prior to the filing of the application with the Department.

3. **Municipal Office:** You must send a copy of the Notice of Intent to File and a **duplicate of the entire application** to the Municipal Office.

ATTACH a list of the names and addresses of the owners of abutting property.

CERTIFICATION

By signing below, the applicant or authorized agent certifies that:

1. A Notice of Intent to File was published in a newspaper circulated in the area where the project site is located within 30 days prior to filing the application;
2. A certified mailing of the Notice of Intent to File was sent to all abutters within 30 days of the filing of the application;
3. A certified mailing of the Notice of Intent to File, and a duplicate copy of the application was sent to the town office of the municipality in which the project is located; and
4. Provided notice of, if required, and held a public informational meeting in accordance with Chapter 2, Rules Concerning the Processing of Applications, Section 14, prior to filing the application. Notice of the meeting was sent by certified mail to abutters and to the town office of the municipality in which the project is located at least ten days prior to the meeting. Notice of the meeting was also published once in a newspaper circulated in the area where the project site is located at least seven days prior to the meeting.

The Public Informational Meeting was held on AUGUST 8, 2022.
Date

Approximately Ø members of the public attended the Public Informational Meeting.

Signature of Applicant or Authorized Agent

8/9/2022
Date

Abutter's List

Map/Lot	Name	Address
2/5-2	Gary & Jeanine Thebarge	9 Andrews Rd. Biddeford, ME 04005
2/5-5	Gary & Chad Thebarge	9 Andrews Rd. Biddeford, ME 04005
2/6-2	David R. & Joyce Pelletier	23 School St., Unit 6 Old Orchard Beach, ME 04064
2/6-3	Old Dogs of Biddeford, LLC	47 Waites Landing Rd. Falmouth, ME 04105
2/10 2/10-1	Michael & Linda Beaulieu	594 Alfred St. Biddeford, ME 04005
2/11	Robert R. Letellier	5 Letellier Ln. Biddeford, ME 04005
2/15-1	Central Maine Power Co. C/o Avangrid Management Co.	One City Center, 5th Floor Portland, ME 04101
2/23	Michael J. Thibault	477 Mouse Ln. Alfred, ME 04002
2/23-1	Winchendon, LLC	355 Main St., Suite 25 Woburn, MA 01801
2/23-3	Gartland Assets, LLC	4 Dusty Acres Biddeford, ME 04005
2/26	DSM MB II, LLC C/O Demoulas Super Markets, Inc.	875 East St. Tewksbury, MA 01876
2/37	HD Development of Maryland, Inc. C/O Home Depot USA Prop Tax Dept 2405	P.O. Box 105842 Atlanta, GA 30348

Attachment 5

Stormwater Management Report

Pineland
Cumberland Hall
41 Campus Drive, Suite 301
New Gloucester, ME 04260

Portland
565 Congress Street, Suite 201
Portland, ME 04101

BIDDEFORD RESIDENTIAL

ANDREWS RD, BIDDEFORD, MAINE

STORMWATER MANAGEMENT REPORT

PREPARED FOR:

DEVINE CAPITAL, LLC
30 MILK ST., THIRD FLOOR
PORTLAND, ME 04101

PREPARED BY:

TERRADYN CONSULTANTS LLC
41 CAMPUS DRIVE, SUITE 301
NEW GLOUCESTER, MAINE 04260

AUGUST 2022

Introduction

The following Stormwater Management Report has been prepared for Devine Capital, LLC to address the potential impacts associated with this project due to the proposed modification in stormwater runoff characteristics. The stormwater management controls that are outlined in this plan were designed to suit the proposed development and comply with applicable regulatory requirements.

Existing Conditions

The project site consists of approximately 44.53 acres of undeveloped land located in Biddeford near the intersection of Andrews Road and Alfred Street (Route 111). The parcel is bounded by residential uses, commercial uses, a utility corridor and other undeveloped land. Portions of the site were utilized for gravel extraction.

Slopes on the site generally range between 0 and 15% with portions of the site draining to internal depressions created as part of the gravel extraction. The remainder of the site generally drains from west (Andrews Rd.) to east towards an unnamed stream which forms the northeastern property boundary.

The unnamed stream is tributary of Thacher Brook. Thacher Brook is listed in Chapter 502 as an Urban Impaired Stream. The proposed development area is not located in an identified flood zone per the FEMA Flood Insurance Rate Map for the City of Biddeford, Community Panel 2301450008B.

Soils

Soil characteristics were obtained from the Class B High Intensity Soil Survey completed by Mark Hampton Associates, Inc. The Hydrologic Soil Groups (HSG), as classified by USDA – Natural Resources Conservation Service, are as follows:

Soil Name	Slope (%)	HSG
Adams (A)	0-3	A
Adams (B)	3-8	A
Brayton (A)	0-3	D
Hermon (C)	8-15	A
Skerry (B)	3-8	C/D

Proposed Site Improvements

The applicant intends to construct a multi-family residential development consisting of nine 24-unit apartment buildings, a clubhouse, mail kiosk, maintenance building, eight detached garages, surface parking, dog park, community garden and interconnected sidewalks.

When completed the proposed development will consist of approximately 18.13 acres of disturbance area including approximately 8.06 acres of new impervious area.

Pre-Development Conditions

The pre-development watershed plan consists of seven (7) subcatchments, labeled 1A, 1B, 2, 3, 4A, 4B and 4C. Runoff from the seven subcatchments is routed via overland flow to four (4) Study Points identified for comparing peak runoff rates from the site.

Subcatchment 1A consists of approximately 11.8 acres of mostly forested land which will not drain to the proposed BMP in the post-development condition. Subcatchment 1B consists of approximately 10.2 acres of mostly forested land which will drain to the proposed BMP in the post-development condition. Subcatchments 1A and 1B drain to Study Point 1. Study Point 1 is in the southeast portion of the property and eventually discharges to an unnamed stream.

Subcatchment 2 consists of approximately 7.6 acres of the property which drains to Study Point 2, an internally drained depression created as part of the gravel extraction process.

Subcatchment 3 consists of approximately 6.0 acres of the property which drains to Study Point 3, an internally drained depression, which consists of wetlands and upland areas.

Subcatchment 4A consists of approximately 7.8 acres of mostly forested wetland which will not include disturbance as part of this project. Subcatchment 4B consists of approximately 0.2 acre of forested wetland which will not include disturbance as part of this project. Subcatchment 4C consists of approximately 3.7 acres of mostly forested land which will include disturbance as part of this project. Subcatchments 4A, 4B and 4C drain to Study Point 4. Study Point 4 is located on the northwestern property boundary.

Post-Development Conditions

The overall-post-development watershed area is consistent with the pre-development watershed area. However, the pre-development subcatchments have been divided into smaller subcatchment areas to reflect the changes in stormwater runoff due to the proposed development.

Study Point 1: Post-development subcatchment 11 represents the mostly undeveloped portion of land matching pre-development subcatchment 1A. Subcatchment 12 depicts the land area contributing overland stormwater runoff to proposed gravel wetland 12P. Subcatchment 13 includes the portion of development contributing stormwater runoff to proposed gravel wetland 12P via storm drainage pipe. Subcatchment 14 includes the portion of development contributing stormwater runoff to proposed gravel wetland 14P.

Study Point 2: Post-development subcatchment 21 represents the remainder of land within pre-development subcatchment 2.

Study Point 3: Post-development subcatchments 31 and 32 represent the remainder of land within pre-development subcatchment 3.

Study Point 4: Subcatchments 4A and 4B are unchanged from the pre-development condition. Post-development subcatchment 41 represents the developed condition of pre-development subcatchment 4C.

Regulatory Requirements

Basic Standard - Chapter 500, Section 4(B)

Since the project will disturb more than one (1) acre of land area, MDEP Basic Standards apply. The Basic Standard requires that the MDEP erosion & sedimentation control, inspection & maintenance, and housekeeping standards are met. Additionally, the site grading or other construction activity shall not

impede or otherwise alter drainageways so as to have an unreasonable adverse impact on a wetland or waterbody, or an adjacent downslope parcel.

A site-specific Erosion & Sedimentation Control Plan has been developed for the project. Means and methods to control erosion and sedimentation during and after construction are detailed in the erosion control plan narrative and construction details, which are included directly on the project drawings for ease of reference during construction.

General Standard - Chapter 500, Section 4(C)

Since the project will create more than one (1) acre of impervious surface, MDEP General Standards apply. The General Standard requires that a project's stormwater management system include treatment measures that will mitigate for the increased frequency and duration of channel erosive flows due to runoff from smaller storms, provide for effective treatment of pollutants in stormwater and mitigate potential temperature impacts. Treatment of no less than 95% of the impervious area and no less than 80% of the developed area is required to meet the standard.

Two proposed gravel wetlands and a forested buffer will be utilized to meet the treatment requirements of the general standard. The sizing and treatment calculations for the gravel wetlands are located in Appendix 4.

- The project includes 8.060 acres of impervious area. To meet the general standard, 7.657 acres (95%) is required to be treated. The site's proposed BMPs provide treatment for 7.956 acres (98.71%) of impervious area.
- The project includes 18.133 acres of developed area. To meet the general standard, 14.506 acres (80%) is required to be treated. The site's proposed BMPs provide treatment for 14.558 acres (80.28%) of developed area.

Flooding Standard - Chapter 500, Section 4(F)

Since the project will create more than three (3) acres of impervious surface, MDEP Flooding Standards apply. The Flooding Standard requires that a project's stormwater management system detain, retain or result in the infiltration of stormwater from 24-hour storms of the 2-year, 10-year and 25-year frequencies such that the peak flows of stormwater from the project site do not exceed the peak flows of stormwater prior to undertaking the project.

As such, a runoff evaluation was performed using the methodology outlined in the USDA Soil Conservation Service's "Urban Hydrology for Small Watersheds - Technical Release #55 (TR-55)". HydroCAD computer software (Version 10.0) was utilized to perform the calculations.

Runoff curve numbers were determined for each subcatchment by measuring the area of each hydrologic soil group within each type of land cover. Weighted curve numbers were then calculated using curve numbers for various cover types and hydrologic soil groups, assuming "good" conditions as defined in U.S Soil Conservation Service (SCS) publications. Times of concentration and travel times were determined from site topographic maps in accordance with SCS procedures. A maximum length of 150 feet was used for sheet flow. A minimum time of concentration of six minutes (0.1 hr.) was used for each subcatchment.

The 24-hour rainfall values utilized in the hydrologic model were obtained from Appendix H of MDEP's Chapter 500 rules. The rainfall values for York County are as follows:

Storm Frequency Precipitation (in./24 hr)	
2-year	3.3
10-year	4.9
25-year	6.2

The following table summarizes the results of stormwater calculations for the design storm events for the project areas:

Stormwater Runoff Summary Pre-Development vs. Post-Development						
Study Point #	2-Year/24Hr (cfs)		10-Year/24Hr (cfs)		25-Year/24Hr (cfs)	
	Pre	Post	Pre	Post	Pre	Post
SP-1	0.3	0.3	3.0	3.0	7.7	7.1
SP-2	0.0	0.0	0.0	0.0	0.0	0.0
SP-3	0.0	0.0	0.0	0.0	0.0	0.0
SP-4	4.0	4.0	8.1	8.1	11.7	11.7

Urban Impaired Stream Standard – Chapter 500, Section 4(E)

As the proposed development is tributary to Thacher Brook which is listed by the Maine Department of Environmental Protection as an Urban Impaired Stream within Chapter 502, the project will be required to meet or exceed the requirements of the Urban Impaired Stream Standard as listed in Section 4(E) of Chapter 500. The Urban Impaired Stream Standard requires a project to either pay a compensation fee or mitigate project impacts by reducing or eliminating an off-site or on-site pre-development impervious stormwater source.

The applicant will meet the Urban Impaired Stream standard by paying the compensation fee pursuant to Chapter 501.3.A.1.

Preliminary Urban Impaired Stream Compensation Fee			
	Compensation Fee per Acre	Acr18es	Compensation Fee Total
Non-roof Impervious	$12,500	5.25	$65,625
Roof Impervious	$5,000	2.81	$14,050
Landscaped	$2,500	10.073	$25,182.50
		TOTAL	$104,875.50

Summary

Erosion and sedimentation control, inspection and maintenance procedures and general housekeeping requirements have been outlined to prevent unreasonable impacts on the project site or the surrounding environment.

By utilizing Best Management practices (two proposed gravel wetlands and a forested buffer) stormwater quality treatment has been provided for a minimum of 95% of the site's impervious area and a minimum of 80% of the site's total developed area. Based upon the modeling data, the post-development peak rates of runoff for the project site will be less than or equal to the pre-development runoff rates during the design storm events (2-year, 10-year and 25-year).

With the incorporation of the referenced erosion control, treatment, and detention measures, the project is in conformance with the Maine Department of Environmental Protection Chapter 500 Stormwater Law. Accordingly, it is anticipated that stormwater runoff from the proposed development will not result in significant adverse effects to off-site receiving channels or downstream properties.

Prepared by:

Terradyn Consultants, LLC

Richard Meek, P.E.
Sr. Project Engineer

Appendices

1 – Stormwater Infrastructure Inspection & Maintenance Manual
2 – Erosion and Sediment Control Inspection & Maintenance Plan
3 – Watershed Maps
4 – BMP and HydroCAD Calculations

APPENDIX 1

STORMWATER INFRASTRUCTURE INSPECTION & MAINTENANCE MANUAL

BIDDEFORD RESIDENTIAL
BIDDEFORD, MAINE
STORMWATER MANAGEMENT SYSTEM
INSPECTION, MAINTENANCE & HOUSEKEEPING PLAN

Project Owner/Developer: Devine Capital, LLC
30 Milk St., 3rd Floor
Portland, Maine 04101
(401) 413-1590

Responsible Party: To be Determined

Prepared By: Richard Meek, P.E.
Terradyn Consultants, LLC
41 Campus Drive, Suite 301
New Glocester, ME 04260
(207) 926-5111

INTRODUCTION:

Regular inspection and maintenance of the entire stormwater management system is crucial to the long-term effectiveness of the system. The responsible party must provide regular inspection and maintenance of all permanent erosion control measures and stormwater management structures, establish any contract services required to implement the program, and keep records and a maintenance log book of inspection and maintenance activities. At a minimum, the inspection and maintenance activities outlined herein should be performed at the recommended intervals. All inspection and maintenance documentation shall be maintained for at least 5 years. This project is subject to the Maine Department of Environmental Protection's 5-year Recertification Process.

All measures must be maintained in effective operating condition. A person with knowledge of erosion and sedimentation practices, stormwater management, and the standards and conditions of all local, state and federal permits for the project shall conduct the inspections. The following areas, facilities, and measures must be inspected and identified deficiencies must be corrected.

INSPECTION TASKS

The following plan outlines the anticipated inspection, maintenance, and housekeeping procedures for the erosion and sedimentation controls as well as stormwater management devices for the project site. Also, this plan outlines several housekeeping requirements that shall be followed during and after construction. These procedures should be followed in order to ensure the intended function of the designed measures and to prevent unreasonable adverse impacts to the surrounding environment.

The procedures outlined in the Inspection, Maintenance, and Housekeeping Plan are provided as an overview of the anticipated practices to be used on this site. In some instances, additional measures may be required due to unexpected conditions. For additional details on any of the erosion and sedimentation control measures or stormwater management devices to be utilized on this project, refer to the most recently revised edition of the "Maine Erosion and Sedimentation Control BMP" manual and/or the "Stormwater Management for Maine: Best Management Practices" manual as published by the MDEP.

During Construction

1. **Inspection:** For the duration of construction activity, it is the Site Contractor's responsibility to comply with the inspection and maintenance procedures outlined in this section. These responsibilities include inspecting disturbed and impervious areas, erosion control measures, materials storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. These areas shall be inspected at least once a week as well as before and after a storm event, and prior to completing permanent stabilization measures. A person with knowledge of erosion and stormwater control, including the standards and conditions in any applicable permits, shall conduct the inspections.

2. **Maintenance:** All measures shall be maintained in an effective operating condition until areas are permanently stabilized. If Best Management Practices (BMPs) need to be maintained or modified, additional BMPs are necessary, or other corrective action is needed, implementation must be completed within seven (7) calendar days and prior to any storm event (rainfall).

3. **Documentation:** A log summarizing the inspections and any corrective action taken must be maintained on-site. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, material storage areas, and vehicle access points to the site. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken.

   The log must be made accessible to the appropriate regulatory agency upon request. The permittee shall retain a copy of the log for a period of at least three (3) years from the completion of permanent stabilization.

4. **Specific Inspection and Maintenance Tasks:** The following is a list of erosion control and stormwater management measures and the specific inspection and maintenance tasks to be performed during construction.

   A. Sediment Barriers:

   - Hay bale barriers, silt fences, and filter berms shall be inspected immediately after each rainfall and at least daily during prolonged rainfall.
   - If the fabric on a silt fence or filter barrier should decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, it shall be replaced.
   - Sediment deposits should be removed after each storm event. They must be removed before deposits reach approximately one-half the height of the barrier.
   - Filter berms shall be reshaped as needed.
   - Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required should be dressed to conform to the existing grade, prepared, and seeded.

   B. Riprap Materials:

   - Once a riprap installation has been completed, it should require very little maintenance. It shall, however, be inspected periodically to determine if high flows have caused scour beneath the riprap or dislodged any of the stone.
   - Annully inspect riprap and remove woody vegetation when discovered.

C. Erosion Control Blankets:

- Inspect these reinforced areas semi-annually and after significant rainfall events for slumping, sliding, seepage, and scour. Pay close attention to unreinforced areas adjacent to the erosion control blankets, which may experience accelerated erosion.
- Review all applicable inspection and maintenance procedures recommended by the specific blanket manufacturer. These tasks shall be included in addition to this plan.

D. Temporary Storm Drain Inlet Protection:

- The inlet protection structure shall be inspected before each rain event and repaired as necessary.
- Sediment shall be removed and the storm drain sediment barrier restored to its original dimensions when the sediment has accumulated to half of the design depth of the trap.
- Structures shall be removed upon permanent stabilization of the tributary area.
- Upon removal of the structure, all accumulated sediments downstream of the structure shallbe cleaned from the storm drain system.
- The permanent storm drainage system shall be flushed and cleaned once the site is stabilized and prior to demobilization from the site.

E. Stabilized Construction Entrances/Exits:

- The exit shall be maintained in a condition that will prevent tracking of sediment onto public rights-of-way.
- When the control pad becomes ineffective, the stone shall be removed along with the collected soil material. The entrance should then be reconstructed.
- Areas that have received mud-tracking or sediment deposits shall be swept or washed. Washing shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device (not into storm drains, ditches, or waterways).

F. Temporary Seed and Mulch:

- Mulched areas should be inspected after rain events to check for rill erosion.
- If less than 90% of the soil surface is covered by mulch, additional mulch shall be applied in bare areas.
- In applications where seeding and mulch have been applied in conjunction with erosion control blankets, the blankets must be inspected after rain events for dislocation or undercutting.
- Mulch shall continue to be reapplied until 95% of the soil surface has established temporary vegetative cover.

G. Stabilized Drainage Swales:

- Sediment accumulation in the swale shall be removed once the cross section of the swale is reduced by 25%.
- The swales shall be inspected after rainfall events. Any evidence of sloughing of the side slopes or channel erosion shall be repaired and corrective action should be taken to prevent reoccurrence of the problem.

- In addition to the stabilized lining of the channel (i.e. erosion control blankets), stone check dams may be needed to further reduce channel velocity.

H. Concrete Washout Area

- The site contractor shall establish a concrete washout area on-site which shall include sediment barrier to mitigate the transport of the washout material to the environment.
- The washout area shall be located a minimum of 25 feet from any storm drain structure or culvert and a minimum of 25 feet from any slope greater than 4:1.
- The washout area shall be inspected daily when concrete work is active and prior to any storm event.
- Accumulated concrete sediments shall be removed weekly, when concrete work is active, or when visibly encroaching on sediment barrier.

I. Dewatering

- The site contractor shall establish an on-site containment area which shall include sediment barrier to mitigate the transport of the sediment to the environment from dewatering activity.
- The containment area shall be located a minimum of 25 feet from any storm drain structure or culvert and a minimum of 25 feet from any slope greater than 4:1.
- The containment area shall include a dirt bag or similar sediment trap for treatment of the collected water.
- The containment area shall be inspected after each use to ensure that no downgradient erosion or sedimentation offsite is occurring.

5. **Housekeeping:** The following general performance standards apply to the proposed project.

A. Spill Prevention: Controls must be used to prevent pollutants from being discharged from materials on-site, including storage practices to minimize exposure of the materials to stormwater, and appropriate spill prevention, containment, and response planning and implementation.

B. Groundwater Protection: During construction, liquid petroleum products and other hazardous materials with the potential to contaminate groundwater may not be stored or handled in areasof the site draining to an infiltration area. An "infiltration area" is any area of the site that by design or as a result of soils, topography and other relevant factors, accumulates runoff that infiltrates into the soil. Dikes, berms, sumps, and other forms of secondary containment that prevent discharge to groundwater may be used to isolate portions of the site for the purposes ofstorage and handling of these materials.

C. Fugitive Sediment and Dust: Actions must be taken to insure that activities do not result in noticeable erosion of soils or fugitive dust emissions during or after construction. Oil may not be used for dust control.

D. Debris and Other Materials: Litter, construction debris, and chemicals exposed to stormwater must be prevented from becoming a pollutant source.

E. Trench or Foundation Dewatering: Trench dewatering is the removal of water from trenches, foundations, cofferdams, ponds, and other areas within the construction area that retain water after excavation. In most cases, the collected water is heavily silted and hinders correct and safe construction practices. The collected water must be removed from the ponded area, either through gravity or pumping, and must be spread through natural wooded buffers or removed to areas that are specifically designed to collect the maximum amount of sediment possible, like a

cofferdam sedimentation basin. Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved.

After Construction

1. **Inspection:** After construction, the agent shall hire a qualified post-construction stormwater inspector to, at least annually, inspect the BMPs in accordance with all municipal and state inspection, cleaning and maintenance requirements of the approved post-construction stormwater management plan.

2. **Maintenance, and repair:** If a BMP requires maintenance, repair or replacement to function as intended by the approved post-construction stormwater management plan, the owner or operator shall take corrective actions to address the deficiency or deficiencies as soon as possible after the deficiency is discovered and shall provide a record of the deficiency and corrective actions to the Town Engineer. The following is a list of permanent erosioncontrol and stormwater management measures and the inspection, maintenance, and housekeeping tasks to be performed after construction.

A. Vegetated Areas:

- Inspect vegetated areas, particularly slopes and embankments, early in the growing season or after heavy rains to identify active or potential erosion problems.
- Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows.

B. Winter Sanding:

- Clear accumulations of winter sand in parking lots and along roadways at least once a year, preferably in the spring.
- Accumulations on pavement may be removed by pavement sweeping.
- Accumulations of sand along road shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader or other acceptable method.

C. Catch Basins:

- Inspect and, if required, clean-out catch basins at least once a year, preferably in early spring.
- Clean out must include the removal and legal disposal of accumulated sediments and debris at the bottom of the basin, at any inlet grates, at any inflow channels to the basin, and at any pipes between basins.

D. Culverts:

- Inspect culverts in the spring, in the late fall, and after heavy rains to remove any obstructions to flow.
- Remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit.
- Inspect and repair any erosion damage at the culvert's inlet and outlet.
- Inspect embankment for erosion, settling, and structural failure.

E. Gravel Wetlands

1ST YEAR POST-CONSTRUCTION: Inspection frequency should be after every major storm in the first year following construction.

1. Inspect to be certain system drains within 24-48 hours.
2. Watering plants as necessary during the first growing season
3. Re-vegetating poorly established areas as necessary
4. Quarterly inspection of soil and repairing eroded areas, especially on slopes & make timely repairs.
5. Checking inlets, outlets, and overflow spillway for blockage, structural integrity, and evidence of erosion. Risers may need to be cleaned.

POST-CONSTRUCTION: Inspection frequency should be at least every 6 months and after every major storm. Activities are expected to include:

1. Check the basin for a dense root mat establishment of wetland vegetation.
2. Check and clean the risers if there is evidence of standing water, discolored water or accumulated sediments in the cells.
3. Check and clean the forebay for sediments, trash and debris. When sediments have accumulated to a depth of 12 inches, standing water is persistent or wetland vegetation become established, the forebay will need to be excavated and reformed.
4. Verify that the cells drain within 24-48 hours. Sediment will need to be removed when an accumulation of 4 inches is evident over the wetland surface.
5. Check and clean all outlets and overflow spillway if blocked or there is evidence of structural damage or erosion.
6. Remove decaying vegetation, litter and debris.
7. Check for foreign species. Particular care must be used to avoid the unintended introduction of invasive species such as purple loosestrife (Lythrum salicaria) and common reed (Phragmites australis). It is recommended that a qualified wetland biologist be consulted when these are found in the area of the gravel wetland.

F. Forested Buffer

- Buffers should be inspected annually for evidence of erosion or concentrated flows through or around the buffer. All eroded areas should be repaired, seeded and mulched.
- Access and Use: Buffers should not be traversed by all-terrain vehicles or other vehicles. Activities within buffers should be conducted so as not to damage vegetation, disturb any organic duff layer, or expose soil.
- Inspections: Conduct periodic "buffer walks" to inspect the condition of the buffer network.

- **Restrictions on Vegetated Stormwater Buffer Areas.**

  Unless the owner of the Restricted Buffer Area, or any successors or assigns, obtains the prior written approval of the MDEP, the Restricted Buffer Area must remain undeveloped in perpetuity. To maintain the ability of the Restricted Buffer Area to filter and absorb stormwater, and to maintain compliance with the Stormwater Management Law and the permit issued thereunder to the Declarant, the use of the Restricted Buffer Area is hereinafter limited as follows:

  a. No soil, loam, peat, sand, gravel, concrete, rock or other mineral substance, refuse, trash, vehicle bodies or parts, rubbish, debris, junk waste, pollutants or other fill material may be placed, stored or

dumped on the Restricted Buffer Area, nor may the topography of the area be altered or manipulated in any way.

b. Any removal of trees or other vegetation within the Restricted Buffer Area must be limited to the following:

(i) No purposefully cleared openings may be created and an evenly distributed stand of trees and other vegetation must be maintained. An "evenly distributed stand of trees" is defined as maintaining a minimum rating score of 24 points in any 25 foot by 50 foot square (2500 square feet) area, as determined by the following rating scheme:

Diameter of tree at 4 ½ feet above ground level	Points
2-4 inches	1
4-8 inches	2
8-12 inches	4
>12 inches	8

Where existing trees and other vegetation result in a rating score less than 24 points, no trees may be cut or sprayed with biocides except for the normal maintenance of dead, windblown or damaged trees and for pruning of tree branches below a height of 12 feet provided two thirds of the tree's canopy is maintained.

(ii) No undergrowth, ground cover vegetation, leaf litter, organic duff layer or mineral soil may be disturbed except that one winding path, that is no wider than six feet and that does not provide a downhill channel for runoff, is allowed through the area;
c. No building or other temporary or permanent structure may be constructed, placed or permitted to remain on the Restricted Buffer Area, except for a sign, utility pole (whether constructed of wood, steel or other materials) and appurtenant equipment such as guys and guy anchors, or fence;

d. No trucks, cars, dirt bikes, ATVs, bulldozers, backhoes, or other motorized vehicles or mechanical equipment may be permitted on the Restricted Buffer Area;

Attachments

Attachment 1 – Sample Stormwater Inspection and Maintenance Log

ATTACHMENT 1

Stormwater Management Facilities Inspection & Maintenance Log **Residences at Gateway Commons**		
General Information:		
Inspected by:	Date:	Weather:
Reason for Inspection: (Regular Inspection) (Major Rain Event)		

BMP	Conditions Observed	Repairs Needed?
1. Vegetated Areas		
2. Ditches, Swales, Open Channels		
3. Culverts		
4. Catch Basins		
5. Gravel Wetlands		
6. Forested Buffer		

Detailed Repair Notes:

BMP Type	Date	Description of Repairs & Sediment Disposal

Notes:
If a maintenance task requires the clean-out of any sediments or debris, indicate where the sediment and debris was disposed after removal. A copy of this log shall be retained for a period of at least five years from the completion of permanent stabilization. The log must be made accessible to Department of Environmental Protection staff and a copy provided to the Department upon request.

APPENDIX 2

EROSION AND SEDIMENT CONTROL INSPECTION & MAINTENANCE PLAN

BIDDEFORD RESIDENTIAL
BIDDEFORD, MAINE
EROSION & SEDIMENTATION CONTROL
INSPECTION & MAINTENANCE PLAN
CONSTRUCTION PHASE

Project Owner/Developer: Devine Capital, LLC
30 Milk St., 3rd Floor
Portland, Maine 04009
(401) 413-1590

Responsible Party: Site Contractor
TBD

Prepared By: Richard Meek, P.E.
Terradyn Consultants, LLC
41 campus Drive, Suite 301
New Gloucester, ME 04260
(207) 926-5111

INTRODUCTION:

Anyone who conducts or directs an activity that involves exposing, filling or displacing soil or other earthen materials must take appropriate measures to prevent erosion and the loss of sediment beyond the project site or into a sensitive resource.

Erosion and sediment control measures should be in place before the activity begins and should remain functional until the site is permanently stabilized. All measures should remain effective until all areas are permanently stabilized. Any disturbed area should be regularly inspected until the site is fully stabilized with either 90% grass cover or a permanent impervious surface such as pavement.

The following information describes the Inspection, Maintenance and Documentation necessary during construction to comply with the State of Maine Stormwater Management Law.

INSPECTION

Inspect disturbed and impervious areas, erosion control measures, materials storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. Inspect these areas at least once a week as well as before and within 24 hours after a storm event (rainfall), and prior to completing permanent stabilization measures. For the purposes of this plan, a storm event is rainfall greater than 0.5 inches in a 24 hour period.

The person conducting inspections shall have knowledge of erosion and sedimentation practices, stormwater management, and the standards and conditions of all local, state and federal permits for the project.

MAINTENANCE AND CORRECTIVE ACTION

If best management practices (BMPs) need to be repaired, the repair work should be initiated upon discovery of the problem but no later than the end of the next workday. If additional BMPs or significant repair of BMPs are necessary, implementation must be completed within 7 calendar days and prior to any storm event (rainfall). All measures must be maintained in effective operating condition until areas are permanently stabilized.

DOCUMENTATION

Keep a log (report) summarizing the inspections and any corrective actions taken. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, materials storage areas, and vehicles access points to the parcel. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and location(s) where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken.

The log attached at the end of this plan is from the *Maine Erosion and Sediment Control Best Management Practices (BMPs) Manual for Designers and Engineers (May 2016)*. The log may be used or adapted for this project.

Documentation must be retained for a minimum of three years after permanent stabilization has been achieved on the site and must be made accessible to the Maine Department of Environmental Protection upon request.

INSPECTION DURING CONSTRUCTION

1. **Inspection:** For the duration of construction activity, it is the Site Contractor's responsibility to comply with the inspection and maintenance procedures outlined in this section. These responsibilities include inspecting disturbed and impervious areas, erosion control measures, materials storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. These areas shall be inspected at least once a week as well as before and after a storm event, and prior to completing permanent stabilization measures. A person with knowledge of erosion and stormwater control, including the standards and conditions in any applicable permits, shall conduct the inspections.

2. **Maintenance:** All measures shall be maintained in an effective operating condition until areas are permanently stabilized. If Best Management Practices (BMPs) need to be maintained or modified, additional BMPs are necessary, or other corrective action is needed, implementation must be completed within seven (7) calendar days and prior to any storm event (rainfall).

3. **Documentation:** A log summarizing the inspections and any corrective action taken must be maintained on-site. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, material storage areas, and vehicle access points to the site. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular

location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken.

The log must be made accessible to the appropriate regulatory agency upon request. The permittee shall retain a copy of the log for a period of at least three (3) years from the completion of permanent stabilization.

4. **Specific Inspection and Maintenance Tasks:** The following is a list of erosion control and stormwater management measures and the specific inspection and maintenance tasks to be performed during construction.

A. Sediment Barriers:

- Hay bale barriers, silt fences, and filter berms shall be inspected immediately after each rainfall and at least daily during prolonged rainfall.
- If the fabric on a silt fence or filter barrier should decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, it shall be replaced.
- Sediment deposits should be removed after each storm event. They must be removed before deposits reach approximately one-half the height of the barrier.
- Filter berms shall be reshaped as needed.
- Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required should be dressed to conform to the existing grade, prepared, and seeded.

B. Riprap Materials:

- Once a riprap installation has been completed, it should require very little maintenance. It shall, however, be inspected periodically to determine if high flows have caused scour beneath the riprap or dislodged any of the stone.
- Annully inspect riprap and remove woody vegetation when discovered.

C. Erosion Control Blankets:

- Inspect these reinforced areas semi-annually and after significant rainfall events for slumping, sliding, seepage, and scour. Pay close attention to unreinforced areas adjacent to the erosion control blankets, which may experience accelerated erosion.
- Review all applicable inspection and maintenance procedures recommended by the specific blanket manufacturer. These tasks shall be included in addition to this plan.

D. Temporary Storm Drain Inlet Protection:

- The inlet protection structure shall be inspected before each rain event and repaired as necessary.
- Sediment shall be removed and the storm drain sediment barrier restored to its original dimensions when the sediment has accumulated to half of the design depth of the trap.

- Structures shall be removed upon permanent stabilization of the tributary area.
- Upon removal of the structure, all accumulated sediments downstream of the structure shallbe cleaned from the storm drain system.
- The permanent storm drainage system shall be flushed and cleaned once the site is stabilized and prior to demobilization from the site.

E. Stabilized Construction Entrances/Exits:

- The exit shall be maintained in a condition that will prevent tracking of sediment onto publicrights-of-way.
- When the control pad becomes ineffective, the stone shall be removed along with the collected soil material. The entrance should then be reconstructed.
- Areas that have received mud-tracking or sediment deposits shall be swept or washed. Washing shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device (not into storm drains, ditches, or waterways).

F. Temporary Seed and Mulch:

- Mulched areas should be inspected after rain events to check for rill erosion.
- If less than 90% of the soil surface is covered by mulch, additional mulch shall be applied inbare areas.
- In applications where seeding and mulch have been applied in conjunction with erosion control blankets, the blankets must be inspected after rain events for dislocation or undercutting.
- Mulch shall continue to be reapplied until 95% of the soil surface has established temporaryvegetative cover.

G. Stabilized Drainage Swales:

- Sediment accumulation in the swale shall be removed once the cross section of the swale isreduced by 25%.
- The swales shall be inspected after rainfall events. Any evidence of sloughing of the side slopes or channel erosion shall be repaired and corrective action should be taken to preventreoccurrence of the problem.
- In addition to the stabilized lining of the channel (i.e. erosion control blankets), stone checkdams may be needed to further reduce channel velocity.

H. Concrete Washout Area

- The site contractor shall establish a concrete washout area on-site which shall include sediment barrier to mitigate the transport of the washout material to the environment.
- The washout area shall be located a minimum of 25 feet from any storm drain structure or culvert and a minimum of 25 feet from any slope greater than 4:1.
- The washout area shall be inspected daily when concrete work is active and prior to any storm event.
- Accumulated concrete sediments shall be removed weekly, when concrete work is

active, or when visibly encroaching on sediment barrier.

I. Dewatering

- The site contractor shall establish an on-site containment area which shall include sediment barrier to mitigate the transport of the sediment to the environment from dewatering activity.
- The containment area shall be located a minimum of 25 feet from any storm drain structure or culvert and a minimum of 25 feet from any slope greater than 4:1.
- The containment area shall include a dirt bag or similar sediment trap for treatment of the collected water.
- The containment area shall be inspected after each use to ensure that no downgradient erosion or sedimentation offsite is occurring.

REFERENCES

Design Drawings:
C-2.0 thru C-2.7 Grading and Drainage Plans
C-5.1 Site Details (Erosion Control Notes and Details)

Maine Erosion and Sediment Control Best Management Practices (BMPs) Manual for Designers and Engineers (May 2016), Maine Department of Environmental Protection

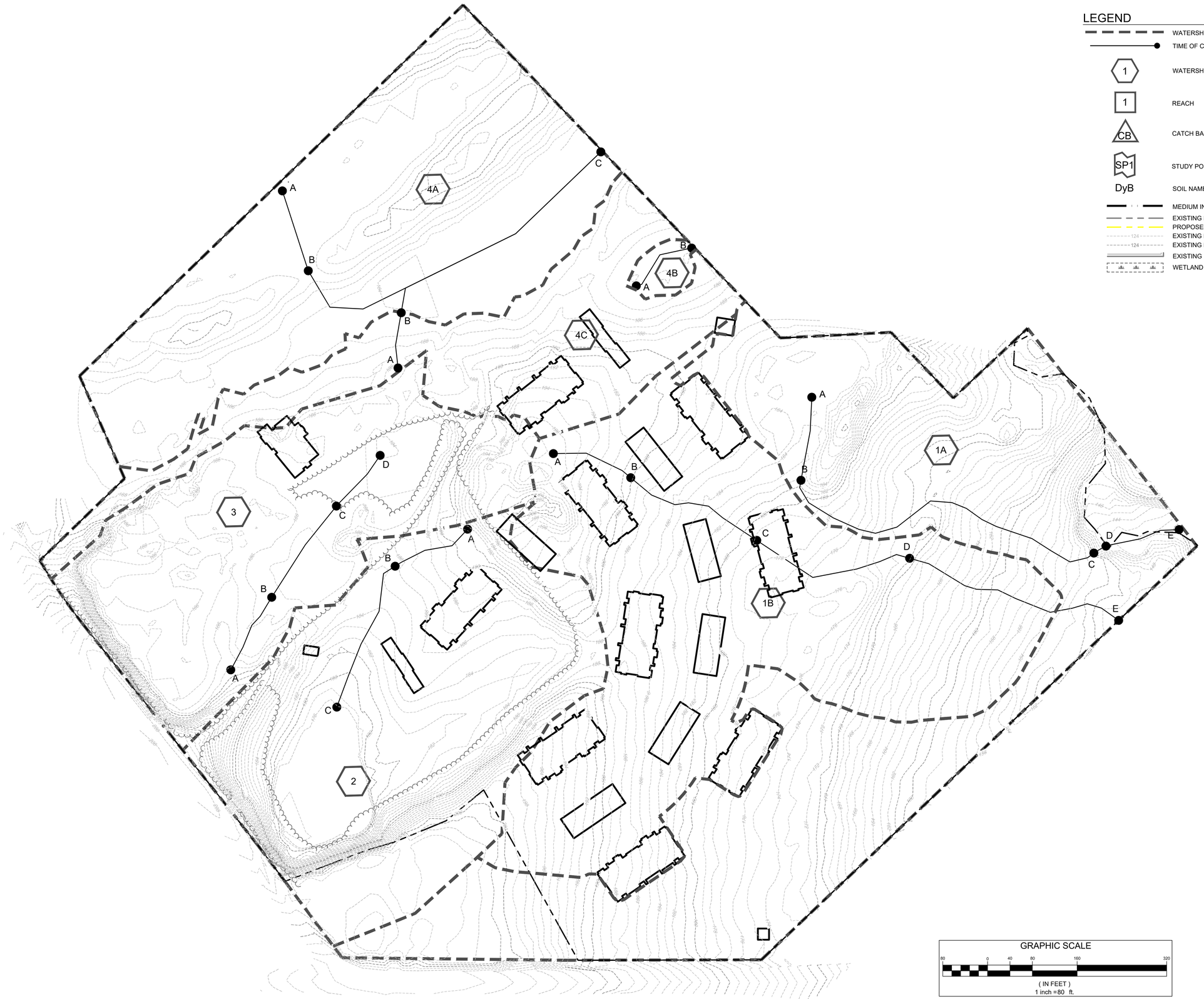
Maine Erosion and Sediment Control Practices Field Guide for Contractors, Maine Department of Environmental Protection

CONSTRUCTION INSPECTION FORM FOR EROSION AND SEDIMENT CONTROL					
General Information:					
Site Name:	Date:		Inspected by:		
Owner:					
Retained 3PI:	Last Rain Date:			Amount:	
Reason for Inspection:	Weekly	Winter	Final	Rain Event	Complaint
Description of disturbed area:					
Photos:					

	YES/NO/NA	COMMENTS
1. Is an Erosion and Sediment Control Plan available?		
ESC plan on-site and followed		
Other:		
2. Are all erosion control practices installed properly, maintained and functioning?		
Disturbed areas stable		
Concentrated flow inlet/outlet protection		
All areas at final grade		
Disturbed dormant areas stabilized		
Access roads and parking		
Hillsides and stockpiles		
Other:		
3. Are all sedimentation control practices installed properly, maintained and functioning?		
Construction entrance		
Sedimentation basins/traps/diversions		
Perimeter controls		
Check dams		
Other:		
4. Is maintenance of ESC measures, construction activities and housekeeping kept-up?		
Sedimentation/erosion in ditches		
Tracked Sediment or dust at exits		
Hazardous material storage and spill control practices		
Waste management (concrete, hazardous material, etc.)		
Other:		
5. Violation, Corrective Actions, Recommendations		
Sediment discharged from site?		
Corrective action required?		
Site compliant with all permits?		
Notice of violation or stop work order issued?		
Comments/Corrective Actions (complete corrective actions before the next rain event and within 7 day)		

APPENDIX 3

WATERSHED MAPS



STATE OF MAINE
RICHARD L. MEEK
No. 10668
PROFESSIONAL ENGINEER

DATE:	08-17-2022
P.E.: RICHARD L. MEEK, P.E. 10668	

NO.	DATE	REVISIONS	APP'D BY
H	08-17-2022	SUBMIT STORMWATER APPLICATION TO D.E.P.	RLM

TERRADYN CONSULTANTS, LLC
41 CAMPUS DRIVE
SUITE 301
NEW GLOUCESTER, ME 04260
565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04102
OFFICE: (207) 926-5111 FAX: (207) 221-1317
www.terradynconsultants.com
Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting

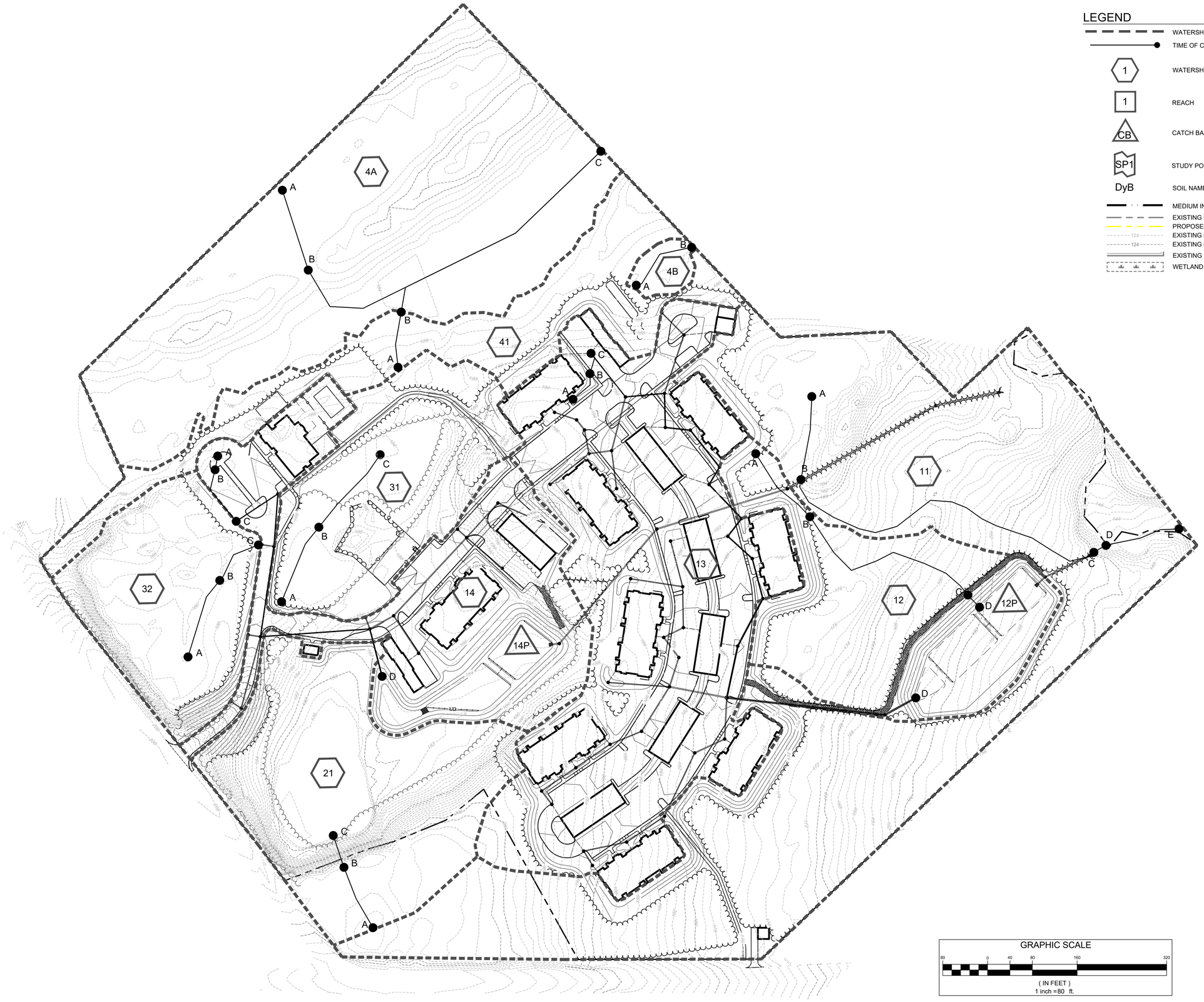
PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

PRE-DEVELOPMENT WATERSHED MAP

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	07-29-2022
SCALE:	
DESIGNED:	RLM
JOB NO:	2149
FILE:	
SHEET	SWP-1



LEGEND

- WATERSHED BOUNDARY
- TIME OF CONCENTRATION
- 1 — WATERSHED LABEL
- 1 — REACH
- CB — CATCH BASIN
- SP1 — STUDY POINT
- DyB — SOIL NAME
- MEDIUM INTENSITY SOIL BOUNDARY
- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- 124 — EXISTING MINOR CONTOUR
- 124 — EXISTING MAJOR CONTOUR
- EXISTING BUILDING
- WETLAND AREA

GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)
1 inch = 80 ft.

STATE OF MAINE
RICHARD L. MEEK
No. 10668
LICENSED
PROFESSIONAL ENGINEER

DATE: 08-17-2022
P.E.: RICHARD L. MEEK, P.E. 10668

NO.	DATE	REVISIONS	APP'D BY
H	08-17-2022	SUBMIT STORMWATER APPLICATION TO D.E.P.	RLM

TERRADYN CONSULTANTS, LLC
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Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

POST-DEVELOPMENT WATERSHED MAP

CLIENT:
DEVINE CAPITAL, LLC
30 MILK STREET, THIRD FLOOR
PORTLAND, MAINE 04101

DATE:	07-29-2022
SCALE:	
DESIGNED:	RLM
JOB NO:	2149
FILE:	
SHEET	SWP-2

APPENDIX 4

BMP & HYDROCAD CALCULATIONS

GENERAL STANDARD CALCULATIONS

Project # 21-49 Biddeford Residential

SUBCATCHMENT ID	DESCRIPTION	SUBCATCHMENT AREA	Areas Requiring Treatment: IMPERVIOUS AREA (acre)	LANDSCAPED AREA (acre)	TOTAL DEVELOPED AREAS (acre)	RECEIVES TREATMENT (YES/NO)	IMPERVIOUS AREA TREATED (acre)	LANDSCAPED AREA TREATED (acre)	DEVELOPED AREA TREATED (acre)	TREATMENT BMP
11	Undeveloped area tributary to SP1	11.462	0.056	1.312	1.368	YES	0.025	0.873	0.898	Buffer
12	Undeveloped area tributary to Gravel wetland #2	3.575	0.092	1.836	1.928	YES	0.092	1.836	1.928	GW_2
13	Developed area tributary to Gravel wetland #2	8.057	5.503	2.115	7.618	YES	5.503	2.115	7.618	GW_2
14	Developed area tributary to Gravel wetland #1	4.348	2.336	1.778	4.114	YES	2.336	1.778	4.114	GW_1
21	Undeveloped area tributary to SP2	4.170	0.000	0.841	0.841	NO	0.000	0.000	0.000	
31	Undeveloped area tributary to SP3 (west of access rd.)	2.885	0.073	1.065	1.138	NO	0.000	0.000	0.000	
32	Undeveloped area tributary to SP3 (east of access rd.)	2.498	0.000	0.373	0.373	NO	0.000	0.000	0.000	
4A	Undeveloped area tributary to SP4 (large wetlands HSG D)	7.826	0.000	0.000	0.000	NO	0.000	0.000	0.000	
4B	Undeveloped area tributary to SP4 (small wetlands HSG D)	0.210	0.000	0.000	0.000	NO	0.000	0.000	0.000	
41	Developed area tributary to SP4 (HSG A)	2.381	0.000	0.753	0.753	NO	0.000	0.000	0.000	
TOTAL (ACRE)		47.412	8.060	10.073	18.133		7.956	6.602	14.558	

TOTAL IMPERVIOUS AREA (ACRE) (requiring treatment)	8.060	TOTAL DEVELOPED AREA (ACRE) (requiring treatment)	18.133
TOTAL IMPERVIOUS AREA RECEIVING TREATMENT (ACRE)	7.956	TOTAL DEVELOPED AREA RECEIVING TREATMENT (ACRE)	14.558
% OF IMPERVIOUS AREA RECEIVING TREATMENT	98.71%	% OF DEVELOPED AREA RECEIVING TREATMENT	80.28%

Terradyn Consultants, LLC
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(207) 926-5111

JOB	Biddeford Residential		
SHEET NO.	1	OF	1
CALCULATED BY	RLM	DATE	8/17/2022
FILE NAME		PRNT DATE	8/17/2022

GRAVEL WETLAND

Task: Calculate water quality volume per MDEP chapter 500 regulations

References
1. Maine DEP Chapter 500, Section 4.C.(3)(b)
   "must detain a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area"
2. Maine DEP Best Management Practices Stormwater Manual, Section 7.4
   a. "two wetland cells must be capable of holding 45% of the water quality volume each."
   b. "forebay and any swale or discharge pipe to the system....holding 10% of the water quality volume"
   c. "surface should represent 5% of impervious area and 2% of landscaped area"

Tributary to Gravel Wetland: GW_1

Landscaped Area	2.336	Acre			
Impervious Area	1.778	Acre			
Minimum Surface Area					
Required	(2% X Landscaped + 5%" X Impervious)				
Total Landscaped Area	2.336	Acre	2,035	SF	
Total Impervious Area	1.778	Acre	3,872	SF	
Required Minimum Surface Area			5,908	SF	
Provided Surface Area			12,200	Acre	
Treatment Volume					
Required	(0.4" X Landscaped + 1.0" X Impervious)				
Landscaped Area	2.336	AC.	Volume	3,392	
Impervious Area	1.778	AC.	Volume	6,454	
Treatment Volume Required			9,846	CF	0.226 AF
Minimum Treatment Cell Volume (45%)			4,431	CF	0.102 AF
Provided Treatment Volume (Bay 1)			7,325	CF	
Provided Treatment Volume (Bay 2)			7,325	CF	
Minimum "Forebay" Cell Volume (10%)			985	CF	
Provided Treatment Volume (Forebay)			1,630	CF	

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SHEET NO.	1	OF	1
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FILE NAME		PRNT DATE	8/17/2022

GRAVEL WETLAND

Task: Calculate water quality volume per MDEP chapter 500 regulations

References
1. Maine DEP Chapter 500, Section 4.C.(3)(b)
   "must detain a runoff volume equal to 1.0 inch times the subcatchment's impervious area plus 0.4 inch times the subcatchment's landscaped area"
2. Maine DEP Best Management Practices Stormwater Manual, Section 7.4
   a. "two wetland cells must be capable of holding 45% of the water quality volume each."
   b. "forebay and any swale or discharge pipe to the system....holding 10% of the water quality volume"
   c. "surface should represent 5% of impervious area and 2% of landscaped area"

Tributary to Gravel Wetland: GW_2

Landscaped Area	5.595	Acre				
Impervious Area	3.951	Acre				

Minimum Surface Area

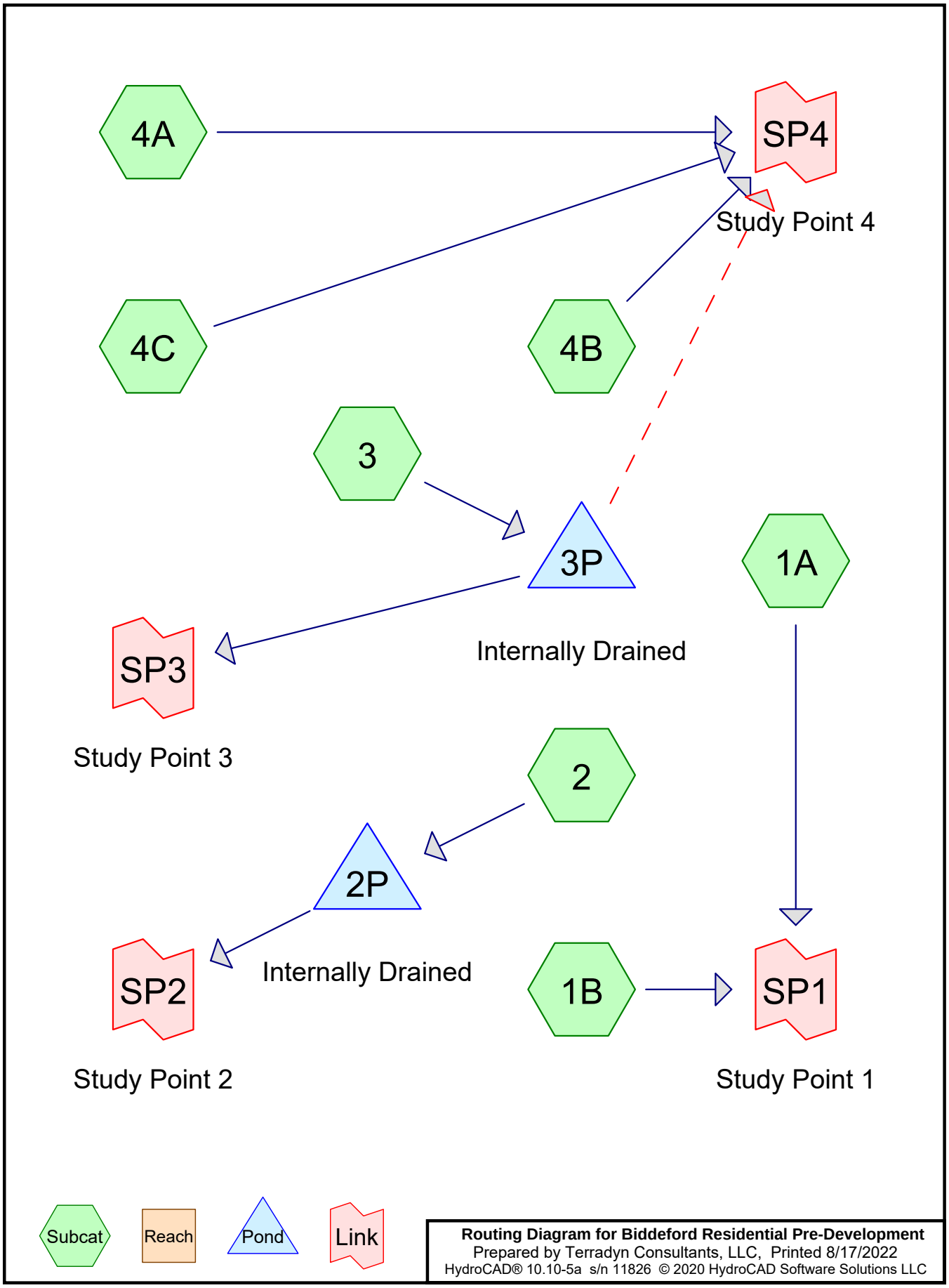
Required (2% X Landscaped + 5%" X Impervious)

Total Landscaped Area	5.595	Acre	4,874	SF	
Total Impervious Area	3.951	Acre	8,605	SF	
Required Minimum Surface Area			13,480	SF	
Provided Surface Area			15,030	Acre	

Treatment Volume

Required (0.4" X Landscaped + 1.0" X Impervious)

Landscaped Area	5.595	AC.	Volume	8,124		
Impervious Area	3.951	AC.	Volume	14,342		
Treatment Volume Required				22,466	CF	0.516 AF
Minimum Treatment Cell Volume (45%)				10,110	CF	0.232 AF
Provided Treatment Volume (Bay 1)				12,150	CF	
Provided Treatment Volume (Bay 2)				12,150	CF	
Minimum "Forebay" Cell Volume (10%)				2,247	CF	
Provided Treatment Volume (Forebay)				2,700	CF	


4A
SP4
Study Point 4
4C
4B
3
3P
1A
SP3
Internally Drained
Study Point 3
2
2P
SP2
Internally Drained
1B
SP1
Study Point 2
Study Point 1
Subcat
Reach
Pond
Link
Routing Diagram for Biddeford Residential Pre-Development
Prepared by Terradyn Consultants, LLC, Printed 8/17/2022
HydroCAD® 10.10-5a s/n 11826 © 2020 HydroCAD Software Solutions LLC

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Runoff Area=11.787 ac 0.51% Impervious Runoff Depth=0.15"
Flow Length=925' Tc=40.4 min CN=50 Runoff=0.3 cfs 0.147 af

Subcatchment 1B: Runoff Area=10.221 ac 0.19% Impervious Runoff Depth=0.00"
Flow Length=1,115' Tc=36.9 min CN=37 Runoff=0.0 cfs 0.000 af

Subcatchment 2: Runoff Area=7.633 ac 16.72% Impervious Runoff Depth=0.15"
Flow Length=430' Tc=13.0 min CN=50 Runoff=0.2 cfs 0.095 af

Subcatchment 3: Runoff Area=6.052 ac 4.28% Impervious Runoff Depth=0.02"
Flow Length=470' Tc=41.5 min CN=42 Runoff=0.0 cfs 0.010 af

Subcatchment 4A: Runoff Area=7.826 ac 0.00% Impervious Runoff Depth=1.28"
Flow Length=800' Tc=75.1 min CN=77 Runoff=3.9 cfs 0.837 af

Subcatchment 4B: Runoff Area=0.210 ac 0.00% Impervious Runoff Depth=1.28"
Flow Length=130' Slope=0.0080 '/' Tc=37.6 min CN=77 Runoff=0.2 cfs 0.022 af

Subcatchment 4C: Runoff Area=3.683 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=575' Tc=36.0 min CN=30 Runoff=0.0 cfs 0.000 af

Pond 2P: Internally Drained Peak Elev=178.13' Storage=4,138 cf Inflow=0.2 cfs 0.095 af
Outflow=0.0 cfs 0.000 af

Pond 3P: Internally Drained Peak Elev=184.10' Storage=430 cf Inflow=0.0 cfs 0.010 af
Primary=0.0 cfs 0.000 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Link SP1: Study Point 1 Inflow=0.3 cfs 0.147 af
Primary=0.3 cfs 0.147 af

Link SP2: Study Point 2 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP3: Study Point 3 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP4: Study Point 4 Inflow=4.0 cfs 0.860 af
Primary=4.0 cfs 0.860 af

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Runoff Area=11.787 ac 0.51% Impervious Runoff Depth=0.65"
Flow Length=925' Tc=40.4 min CN=50 Runoff=2.9 cfs 0.640 af

Subcatchment 1B: Runoff Area=10.221 ac 0.19% Impervious Runoff Depth=0.12"
Flow Length=1,115' Tc=36.9 min CN=37 Runoff=0.2 cfs 0.103 af

Subcatchment 2: Runoff Area=7.633 ac 16.72% Impervious Runoff Depth=0.65"
Flow Length=430' Tc=13.0 min CN=50 Runoff=2.8 cfs 0.415 af

Subcatchment 3: Runoff Area=6.052 ac 4.28% Impervious Runoff Depth=0.29"
Flow Length=470' Tc=41.5 min CN=42 Runoff=0.3 cfs 0.145 af

Subcatchment 4A: Runoff Area=7.826 ac 0.00% Impervious Runoff Depth=2.54"
Flow Length=800' Tc=75.1 min CN=77 Runoff=7.9 cfs 1.656 af

Subcatchment 4B: Runoff Area=0.210 ac 0.00% Impervious Runoff Depth=2.54"
Flow Length=130' Slope=0.0080 '/' Tc=37.6 min CN=77 Runoff=0.3 cfs 0.044 af

Subcatchment 4C: Runoff Area=3.683 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=575' Tc=36.0 min CN=30 Runoff=0.0 cfs 0.001 af

Pond 2P: Internally Drained Peak Elev=178.55' Storage=18,057 cf Inflow=2.8 cfs 0.415 af
Outflow=0.0 cfs 0.000 af

Pond 3P: Internally Drained Peak Elev=184.41' Storage=6,288 cf Inflow=0.3 cfs 0.145 af
Primary=0.0 cfs 0.000 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Link SP1: Study Point 1 Inflow=3.0 cfs 0.743 af
Primary=3.0 cfs 0.743 af

Link SP2: Study Point 2 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP3: Study Point 3 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP4: Study Point 4 Inflow=8.1 cfs 1.701 af
Primary=8.1 cfs 1.701 af

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Runoff Area=11.787 ac 0.51% Impervious Runoff Depth=1.24"
Flow Length=925' Tc=40.4 min CN=50 Runoff=6.9 cfs 1.220 af

Subcatchment 1B: Runoff Area=10.221 ac 0.19% Impervious Runoff Depth=0.39"
Flow Length=1,115' Tc=36.9 min CN=37 Runoff=0.9 cfs 0.336 af

Subcatchment 2: Runoff Area=7.633 ac 16.72% Impervious Runoff Depth=1.24"
Flow Length=430' Tc=13.0 min CN=50 Runoff=7.1 cfs 0.790 af

Subcatchment 3: Runoff Area=6.052 ac 4.28% Impervious Runoff Depth=0.69"
Flow Length=470' Tc=41.5 min CN=42 Runoff=1.4 cfs 0.346 af

Subcatchment 4A: Runoff Area=7.826 ac 0.00% Impervious Runoff Depth=3.65"
Flow Length=800' Tc=75.1 min CN=77 Runoff=11.4 cfs 2.383 af

Subcatchment 4B: Runoff Area=0.210 ac 0.00% Impervious Runoff Depth=3.65"
Flow Length=130' Slope=0.0080 '/' Tc=37.6 min CN=77 Runoff=0.5 cfs 0.064 af

Subcatchment 4C: Runoff Area=3.683 ac 0.00% Impervious Runoff Depth=0.09"
Flow Length=575' Tc=36.0 min CN=30 Runoff=0.0 cfs 0.029 af

Pond 2P: Internally Drained Peak Elev=179.00' Storage=34,420 cf Inflow=7.1 cfs 0.790 af
Outflow=0.0 cfs 0.000 af

Pond 3P: Internally Drained Peak Elev=184.64' Storage=15,055 cf Inflow=1.4 cfs 0.346 af
Primary=0.0 cfs 0.000 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Link SP1: Study Point 1 Inflow=7.7 cfs 1.556 af
Primary=7.7 cfs 1.556 af

Link SP2: Study Point 2 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP3: Study Point 3 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP4: Study Point 4 Inflow=11.7 cfs 2.476 af
Primary=11.7 cfs 2.476 af

Summary for Subcatchment 1A:

Runoff = 6.9 cfs @ 12.66 hrs, Volume= 1.220 af, Depth= 1.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	6.056	30	Woods, Good, HSG A
	4.392	70	Woods, Good, HSG C
	1.156	77	Woods, Good, HSG D
	0.123	39	>75% Grass cover, Good, HSG A
*	0.060	98	Existing impervious
	11.787	50	Weighted Average
	11.727		99.49% Pervious Area
	0.060		0.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.2	150	0.0220	0.09		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
9.2	615	0.0500	1.12		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
0.2	25	0.2400	2.45		**Shallow Concentrated Flow, C to D** Woodland Kv= 5.0 fps
2.8	135	0.0260	0.81		**Shallow Concentrated Flow, D to E** Woodland Kv= 5.0 fps
40.4	925	Total			

Summary for Subcatchment 1B:

Runoff = 0.9 cfs @ 12.86 hrs, Volume= 0.336 af, Depth= 0.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	8.339	30	Woods, Good, HSG A
	1.683	70	Woods, Good, HSG C
	0.180	30	Meadow, non-grazed, HSG A
*	0.019	98	Existing impervious
	10.221	37	Weighted Average
	10.202		99.81% Pervious Area
	0.019		0.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.0	150	0.0460	0.12		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
4.2	260	0.0420	1.02		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
5.8	300	0.0300	0.87		**Shallow Concentrated Flow, C to D** Woodland Kv= 5.0 fps
5.9	405	0.0520	1.14		**Shallow Concentrated Flow, D to E** Woodland Kv= 5.0 fps
36.9	1,115	Total			

Summary for Subcatchment 2:

Runoff = 7.1 cfs @ 12.22 hrs, Volume= 0.790 af, Depth= 1.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	2.057	30	Woods, Good, HSG A
	1.344	77	Woods, Good, HSG D
	2.365	30	Meadow, non-grazed, HSG A
	0.591	39	>75% Grass cover, Good, HSG A
*	0.553	98	Existing impervious
*	0.723	98	Water
	7.633	50	Weighted Average
	6.357		83.28% Pervious Area
	1.276		16.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	150	0.0400	0.28		**Sheet Flow, A to B** Range n= 0.130 P2= 3.30"
4.0	280	0.0280	1.17		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
13.0	430	Total			

Summary for Subcatchment 3:

Runoff = 1.4 cfs @ 12.78 hrs, Volume= 0.346 af, Depth= 0.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	4.349	30	Woods, Good, HSG A
	0.773	77	Woods, Good, HSG D
	0.221	30	Meadow, non-grazed, HSG A
	0.450	78	Meadow, non-grazed, HSG D
*	0.259	98	Existing impervious
	6.052	42	Weighted Average
	5.793		95.72% Pervious Area
	0.259		4.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.2	150	0.0200	0.09		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
8.6	200	0.0060	0.39		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
3.7	120	0.0060	0.54		**Shallow Concentrated Flow, C to D** Short Grass Pasture Kv= 7.0 fps
41.5	470	Total			

Summary for Subcatchment 4A:

Runoff = 11.4 cfs @ 13.00 hrs, Volume= 2.383 af, Depth= 3.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
7.826	77	Woods, Good, HSG D
7.826		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
44.5	150	0.0070	0.06		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
30.6	650	0.0050	0.35		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
75.1	800	Total			

Summary for Subcatchment 4B:

Runoff = 0.5 cfs @ 12.52 hrs, Volume= 0.064 af, Depth= 3.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
0.210	77	Woods, Good, HSG D
0.210		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.6	130	0.0080	0.06		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"

Summary for Subcatchment 4C:

Runoff = 0.0 cfs @ 15.70 hrs, Volume= 0.029 af, Depth= 0.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
3.683	30	Woods, Good, HSG A
3.683		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0600	0.12		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
22.4	475	0.0050	0.35		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
36.0	575	Total			

Summary for Pond 2P: Internally Drained

Inflow Area = 7.633 ac, 16.72% Impervious, Inflow Depth = 1.24" for 25-YR event
Inflow = 7.1 cfs @ 12.22 hrs, Volume= 0.790 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 179.00' @ 24.80 hrs Surf.Area= 37,257 sf Storage= 34,420 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	178.00'	1,036,250 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
178.00	31,500	0	0
180.00	43,000	74,500	74,500
182.00	72,000	115,000	189,500
184.00	116,500	188,500	378,000
185.50	174,000	217,875	595,875
186.00	162,500	84,125	680,000
187.00	178,000	170,250	850,250
188.00	194,000	186,000	1,036,250

Device	Routing	Invert	Outlet Devices
#1	Primary	185.50'	**100.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=178.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond 3P: Internally Drained

Inflow Area = 6.052 ac, 4.28% Impervious, Inflow Depth = 0.69" for 25-YR event
Inflow = 1.4 cfs @ 12.78 hrs, Volume= 0.346 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 184.64' @ 26.45 hrs Surf.Area= 45,900 sf Storage= 15,055 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	184.00'	476,033 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
184.00	1,110	0	0
185.50	106,000	80,333	80,333
186.00	118,600	56,150	136,483
187.00	170,000	144,300	280,783
188.00	220,500	195,250	476,033

Device	Routing	Invert	Outlet Devices
#1	Primary	185.50'	**100.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Secondary	187.00'	**50.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=184.00' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=184.00' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link SP1: Study Point 1

Inflow Area = 22.008 ac, 0.36% Impervious, Inflow Depth = 0.85" for 25-YR event
Inflow = 7.7 cfs @ 12.69 hrs, Volume= 1.556 af
Primary = 7.7 cfs @ 12.69 hrs, Volume= 1.556 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Summary for Link SP2: Study Point 2

Inflow Area = 7.633 ac, 16.72% Impervious, Inflow Depth = 0.00" for 25-YR event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Summary for Link SP3: Study Point 3

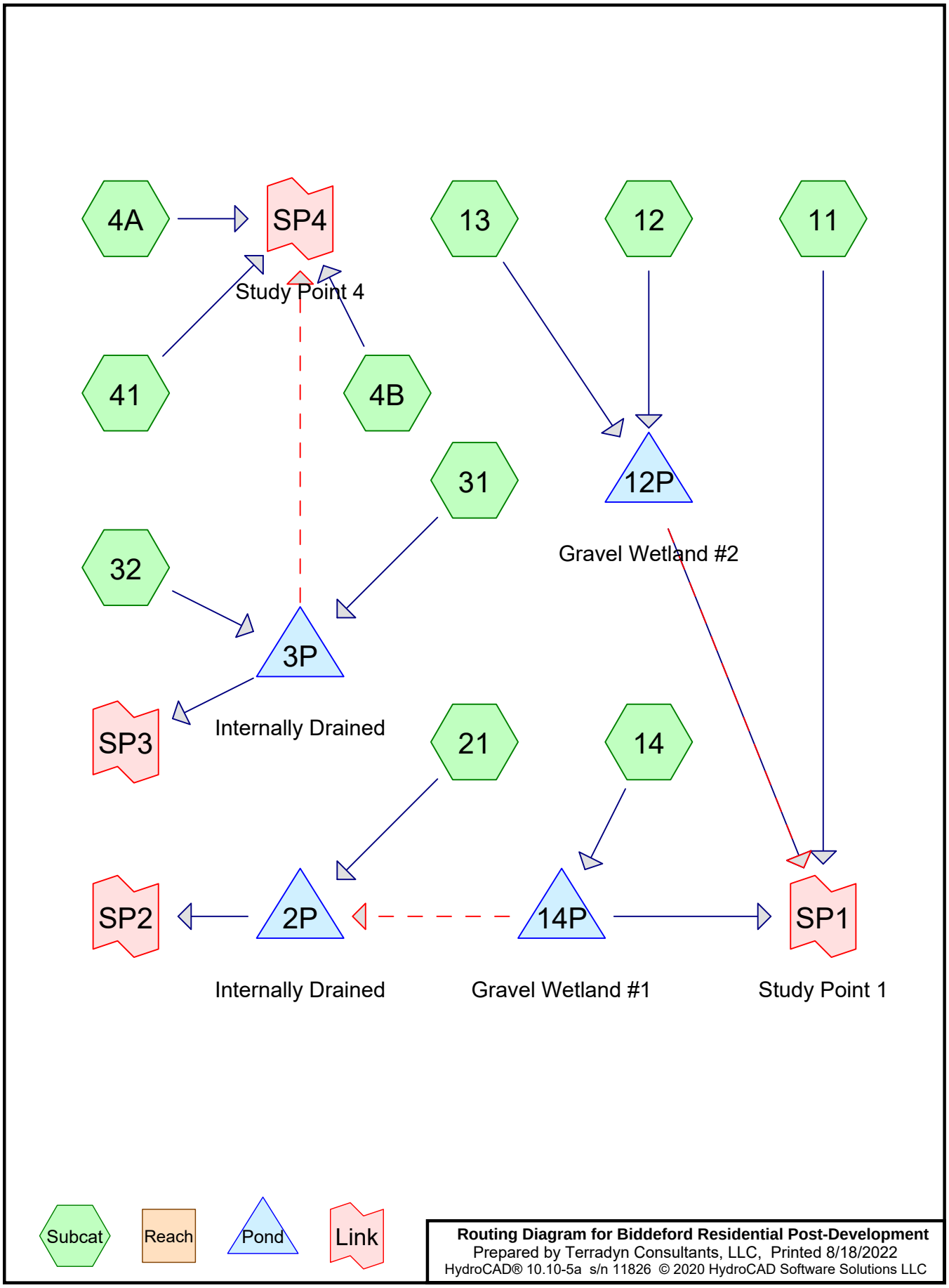
Inflow Area = 6.052 ac, 4.28% Impervious, Inflow Depth = 0.00" for 25-YR event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Summary for Link SP4: Study Point 4

Inflow Area = 11.719 ac, 0.00% Impervious, Inflow Depth = 2.54" for 25-YR event
Inflow = 11.7 cfs @ 12.98 hrs, Volume= 2.476 af
Primary = 11.7 cfs @ 12.98 hrs, Volume= 2.476 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs


4A
SP4
13
12
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Study Point 4
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4B
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12P
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Gravel Wetland #2
3P
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Internally Drained
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Subcat
Reach
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Link
Routing Diagram for Biddeford Residential Post-Development
Prepared by Terradyn Consultants, LLC, Printed 8/18/2022
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Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 4A: Runoff Area=7.826 ac 0.00% Impervious Runoff Depth=1.28"
Flow Length=800' Tc=75.1 min CN=77 Runoff=3.9 cfs 0.837 af

Subcatchment 4B: Runoff Area=0.210 ac 0.00% Impervious Runoff Depth=1.28"
Flow Length=130' Slope=0.0080 '/' Tc=37.6 min CN=77 Runoff=0.2 cfs 0.022 af

Subcatchment 11: Runoff Area=11.462 ac 1.01% Impervious Runoff Depth=0.15"
Flow Length=925' Tc=40.4 min CN=50 Runoff=0.3 cfs 0.143 af

Subcatchment 12: Runoff Area=3.575 ac 2.57% Impervious Runoff Depth=0.28"
Flow Length=540' Tc=27.8 min CN=55 Runoff=0.3 cfs 0.084 af

Subcatchment 13: Runoff Area=8.057 ac 68.30% Impervious Runoff Depth=1.41"
Flow Length=1,290' Tc=12.8 min CN=79 Runoff=10.4 cfs 0.948 af

Subcatchment 14: Runoff Area=4.348 ac 53.73% Impervious Runoff Depth=0.79"
Flow Length=765' Tc=9.7 min CN=68 Runoff=3.0 cfs 0.285 af

Subcatchment 21: Runoff Area=4.170 ac 19.66% Impervious Runoff Depth=0.07"
Flow Length=210' Tc=9.2 min CN=46 Runoff=0.0 cfs 0.025 af

Subcatchment 31: Runoff Area=2.885 ac 2.53% Impervious Runoff Depth=0.25"
Flow Length=320' Tc=36.5 min CN=54 Runoff=0.2 cfs 0.061 af

Subcatchment 32: Runoff Area=2.498 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=250' Tc=28.4 min CN=39 Runoff=0.0 cfs 0.000 af

Subcatchment 41: Runoff Area=2.381 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=575' Tc=36.0 min CN=33 Runoff=0.0 cfs 0.000 af

Pond 2P: Internally Drained Peak Elev=178.03' Storage=1,075 cf Inflow=0.0 cfs 0.025 af
Outflow=0.0 cfs 0.000 af

Pond 3P: Internally Drained Peak Elev=184.26' Storage=2,641 cf Inflow=0.2 cfs 0.061 af
Primary=0.0 cfs 0.000 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond 12P: Gravel Wetland #2 Peak Elev=154.57' Storage=43,279 cf Inflow=10.5 cfs 1.032 af
Primary=0.0 cfs 0.079 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.079 af

Pond 14P: Gravel Wetland #1 Peak Elev=178.73' Storage=11,318 cf Inflow=3.0 cfs 0.285 af
Primary=0.0 cfs 0.051 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.051 af

Link SP1: Study Point 1 Inflow=0.3 cfs 0.273 af
Primary=0.3 cfs 0.273 af

Link SP2: Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP3: Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP4: Study Point 4 Inflow=4.0 cfs 0.860 af
Primary=4.0 cfs 0.860 af

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 4A: Runoff Area=7.826 ac 0.00% Impervious Runoff Depth=2.54"
Flow Length=800' Tc=75.1 min CN=77 Runoff=7.9 cfs 1.656 af

Subcatchment 4B: Runoff Area=0.210 ac 0.00% Impervious Runoff Depth=2.54"
Flow Length=130' Slope=0.0080 '/' Tc=37.6 min CN=77 Runoff=0.3 cfs 0.044 af

Subcatchment 11: Runoff Area=11.462 ac 1.01% Impervious Runoff Depth=0.65"
Flow Length=925' Tc=40.4 min CN=50 Runoff=2.9 cfs 0.623 af

Subcatchment 12: Runoff Area=3.575 ac 2.57% Impervious Runoff Depth=0.93"
Flow Length=540' Tc=27.8 min CN=55 Runoff=1.8 cfs 0.277 af

Subcatchment 13: Runoff Area=8.057 ac 68.30% Impervious Runoff Depth=2.72"
Flow Length=1,290' Tc=12.8 min CN=79 Runoff=20.4 cfs 1.823 af

Subcatchment 14: Runoff Area=4.348 ac 53.73% Impervious Runoff Depth=1.81"
Flow Length=765' Tc=9.7 min CN=68 Runoff=7.8 cfs 0.655 af

Subcatchment 21: Runoff Area=4.170 ac 19.66% Impervious Runoff Depth=0.46"
Flow Length=210' Tc=9.2 min CN=46 Runoff=0.9 cfs 0.158 af

Subcatchment 31: Runoff Area=2.885 ac 2.53% Impervious Runoff Depth=0.87"
Flow Length=320' Tc=36.5 min CN=54 Runoff=1.2 cfs 0.210 af

Subcatchment 32: Runoff Area=2.498 ac 0.00% Impervious Runoff Depth=0.18"
Flow Length=250' Tc=28.4 min CN=39 Runoff=0.1 cfs 0.038 af

Subcatchment 41: Runoff Area=2.381 ac 0.00% Impervious Runoff Depth=0.03"
Flow Length=575' Tc=36.0 min CN=33 Runoff=0.0 cfs 0.007 af

Pond 2P: Internally Drained Peak Elev=178.21' Storage=6,895 cf Inflow=0.9 cfs 0.158 af
Outflow=0.0 cfs 0.000 af

Pond 3P: Internally Drained Peak Elev=184.54' Storage=10,754 cf Inflow=1.2 cfs 0.247 af
Primary=0.0 cfs 0.000 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond 12P: Gravel Wetland #2 Peak Elev=155.48' Storage=75,414 cf Inflow=21.0 cfs 2.101 af
Primary=0.4 cfs 0.725 af Secondary=0.0 cfs 0.000 af Outflow=0.4 cfs 0.725 af

Pond 14P: Gravel Wetland #1 Peak Elev=179.52' Storage=26,837 cf Inflow=7.8 cfs 0.655 af
Primary=0.1 cfs 0.078 af Secondary=0.0 cfs 0.000 af Outflow=0.1 cfs 0.078 af

Link SP1: Study Point 1 Inflow=3.0 cfs 1.426 af
Primary=3.0 cfs 1.426 af

Link SP2: Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP3: Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP4: Study Point 4 Inflow=8.1 cfs 1.707 af
Primary=8.1 cfs 1.707 af

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 4A: Runoff Area=7.826 ac 0.00% Impervious Runoff Depth=3.65"
Flow Length=800' Tc=75.1 min CN=77 Runoff=11.4 cfs 2.383 af

Subcatchment 4B: Runoff Area=0.210 ac 0.00% Impervious Runoff Depth=3.65"
Flow Length=130' Slope=0.0080 '/' Tc=37.6 min CN=77 Runoff=0.5 cfs 0.064 af

Subcatchment 11: Runoff Area=11.462 ac 1.01% Impervious Runoff Depth=1.24"
Flow Length=925' Tc=40.4 min CN=50 Runoff=6.7 cfs 1.187 af

Subcatchment 12: Runoff Area=3.575 ac 2.57% Impervious Runoff Depth=1.63"
Flow Length=540' Tc=27.8 min CN=55 Runoff=3.6 cfs 0.487 af

Subcatchment 13: Runoff Area=8.057 ac 68.30% Impervious Runoff Depth=3.86"
Flow Length=1,290' Tc=12.8 min CN=79 Runoff=28.9 cfs 2.591 af

Subcatchment 14: Runoff Area=4.348 ac 53.73% Impervious Runoff Depth=2.78"
Flow Length=765' Tc=9.7 min CN=68 Runoff=12.2 cfs 1.006 af

Subcatchment 21: Runoff Area=4.170 ac 19.66% Impervious Runoff Depth=0.95"
Flow Length=210' Tc=9.2 min CN=46 Runoff=2.8 cfs 0.331 af

Subcatchment 31: Runoff Area=2.885 ac 2.53% Impervious Runoff Depth=1.55"
Flow Length=320' Tc=36.5 min CN=54 Runoff=2.4 cfs 0.373 af

Subcatchment 32: Runoff Area=2.498 ac 0.00% Impervious Runoff Depth=0.50"
Flow Length=250' Tc=28.4 min CN=39 Runoff=0.4 cfs 0.105 af

Subcatchment 41: Runoff Area=2.381 ac 0.00% Impervious Runoff Depth=0.20"
Flow Length=575' Tc=36.0 min CN=33 Runoff=0.1 cfs 0.040 af

Pond 2P: Internally Drained Peak Elev=178.44' Storage=14,400 cf Inflow=2.8 cfs 0.331 af
Outflow=0.0 cfs 0.000 af

Pond 3P: Internally Drained Peak Elev=184.76' Storage=20,835 cf Inflow=2.8 cfs 0.478 af
Primary=0.0 cfs 0.000 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond 12P: Gravel Wetland #2 Peak Elev=155.73' Storage=84,790 cf Inflow=30.7 cfs 3.078 af
Primary=2.7 cfs 1.668 af Secondary=0.0 cfs 0.000 af Outflow=2.7 cfs 1.668 af

Pond 14P: Gravel Wetland #1 Peak Elev=179.62' Storage=28,989 cf Inflow=12.2 cfs 1.006 af
Primary=0.8 cfs 0.425 af Secondary=0.0 cfs 0.000 af Outflow=0.8 cfs 0.425 af

Link SP1: Study Point 1 Inflow=7.1 cfs 3.280 af
Primary=7.1 cfs 3.280 af

Link SP2: Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP3: Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link SP4: Study Point 4 Inflow=11.7 cfs 2.488 af
Primary=11.7 cfs 2.488 af

Summary for Subcatchment 4A:

Runoff = 11.4 cfs @ 13.00 hrs, Volume= 2.383 af, Depth= 3.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
7.826	77	Woods, Good, HSG D
7.826		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
44.5	150	0.0070	0.06		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
30.6	650	0.0050	0.35		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
75.1	800	Total			

Summary for Subcatchment 4B:

Runoff = 0.5 cfs @ 12.52 hrs, Volume= 0.064 af, Depth= 3.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
0.210	77	Woods, Good, HSG D
0.210		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.6	130	0.0080	0.06		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"

Summary for Subcatchment 11:

Runoff = 6.7 cfs @ 12.66 hrs, Volume= 1.187 af, Depth= 1.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	5.661	30	Woods, Good, HSG A
	3.720	70	Woods, Good, HSG C
	1.153	77	Woods, Good, HSG D
	0.113	30	Meadow, non-grazed, HSG A
	0.260	71	Meadow, non-grazed, HSG C
	0.003	78	Meadow, non-grazed, HSG D
	0.349	39	>75% Grass cover, Good, HSG A
	0.087	74	>75% Grass cover, Good, HSG C
*	0.060	98	Existing impervious
*	0.056	98	Proposed Impervious
	11.462	50	Weighted Average
	11.346		98.99% Pervious Area
	0.116		1.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.2	150	0.0220	0.09		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
9.2	615	0.0500	1.12		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
0.2	25	0.2400	2.45		**Shallow Concentrated Flow, C to D** Woodland Kv= 5.0 fps
2.8	135	0.0260	0.81		**Shallow Concentrated Flow, D to E** Woodland Kv= 5.0 fps
40.4	925	Total			

Summary for Subcatchment 12:

Runoff = 3.6 cfs @ 12.44 hrs, Volume= 0.487 af, Depth= 1.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	0.971	30	Woods, Good, HSG A
	0.676	70	Woods, Good, HSG C
	1.233	71	Meadow, non-grazed, HSG C
	0.603	39	>75% Grass cover, Good, HSG A
*	0.092	98	Proposed Impervious
	3.575	55	Weighted Average
	3.483		97.43% Pervious Area
	0.092		2.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.2	150	0.0400	0.11		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
5.5	360	0.0470	1.08		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
0.1	30	0.3000	3.83		**Shallow Concentrated Flow, C to D** Short Grass Pasture Kv= 7.0 fps
27.8	540	Total			

Summary for Subcatchment 13:

Runoff = 28.9 cfs @ 12.18 hrs, Volume= 2.591 af, Depth= 3.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	2.115	39	>75% Grass cover, Good, HSG A
*	5.503	98	Proposed Impervious
	0.439	30	Woods, Good, HSG A
	8.057	79	Weighted Average
	2.554		31.70% Pervious Area
	5.503		68.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	60	0.0170	0.10		**Sheet Flow, A to B** Grass: Dense n= 0.240 P2= 3.30"
0.6	40	0.0200	1.16		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 3.30"
2.2	1,190	0.0200	9.11	16.09	**Pipe Channel, C to D** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
12.8	1,290	Total			

Summary for Subcatchment 14:

Runoff = 12.2 cfs @ 12.14 hrs, Volume= 1.006 af, Depth= 2.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	0.946	30	Meadow, non-grazed, HSG A
	0.832	39	>75% Grass cover, Good, HSG A
*	2.336	98	Proposed Impervious
	0.234	30	Woods, Good, HSG A
	4.348	68	Weighted Average
	2.012		46.27% Pervious Area
	2.336		53.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	25	0.0100	0.07		**Sheet Flow, A to B** Grass: Dense n= 0.240 P2= 3.30"
1.4	110	0.0150	1.27		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 3.30"
2.2	630	0.0070	4.77	5.86	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
9.7	765	Total			

Summary for Subcatchment 21:

Runoff = 2.8 cfs @ 12.17 hrs, Volume= 0.331 af, Depth= 0.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	1.328	30	Woods, Good, HSG A
	0.976	30	Meadow, non-grazed, HSG A
	1.046	39	>75% Grass cover, Good, HSG A
*	0.097	98	Existing impervious
*	0.723	98	Water
	4.170	46	Weighted Average
	3.350		80.34% Pervious Area
	0.820		19.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	150	0.0400	0.28		**Sheet Flow, A to B** Range n= 0.130 P2= 3.30"
0.2	60	0.4000	4.43		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
9.2	210	Total			

Summary for Subcatchment 31:

Runoff = 2.4 cfs @ 12.57 hrs, Volume= 0.373 af, Depth= 1.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

	Area (ac)	CN	Description
	0.340	30	Woods, Good, HSG A
	0.637	77	Woods, Good, HSG D
	0.125	30	Meadow, non-grazed, HSG A
	0.450	78	Meadow, non-grazed, HSG D
	1.260	39	>75% Grass cover, Good, HSG A
*	0.073	98	Proposed impervious
	2.885	54	Weighted Average
	2.812		97.47% Pervious Area
	0.073		2.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.2	150	0.0200	0.09		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
7.3	170	0.0060	0.39		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
36.5	320	Total			

Summary for Subcatchment 32:

Runoff = 0.4 cfs @ 12.66 hrs, Volume= 0.105 af, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
1.728	30	Woods, Good, HSG A
0.397	77	Woods, Good, HSG D
0.373	39	>75% Grass cover, Good, HSG A
2.498	39	Weighted Average
2.498		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.8	150	0.0250	0.09		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	100	0.0420	1.02		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
28.4	250	Total			

Summary for Subcatchment 41:

Runoff = 0.1 cfs @ 14.18 hrs, Volume= 0.040 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
1.528	30	Woods, Good, HSG A
0.853	39	>75% Grass cover, Good, HSG A
2.381	33	Weighted Average
2.381		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0600	0.12		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 3.30"
22.4	475	0.0050	0.35		**Shallow Concentrated Flow, B to C** Woodland Kv= 5.0 fps
36.0	575	Total			

Summary for Pond 2P: Internally Drained

Inflow Area = 4.170 ac, 19.66% Impervious, Inflow Depth = 0.95" for 25-YR event
Inflow = 2.8 cfs @ 12.17 hrs, Volume= 0.331 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 178.44' @ 24.55 hrs Surf.Area= 34,027 sf Storage= 14,400 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	178.00'	1,036,250 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
178.00	31,500	0	0
180.00	43,000	74,500	74,500
182.00	72,000	115,000	189,500
184.00	116,500	188,500	378,000
185.50	174,000	217,875	595,875
186.00	162,500	84,125	680,000
187.00	178,000	170,250	850,250
188.00	194,000	186,000	1,036,250

Device	Routing	Invert	Outlet Devices
#1	Primary	185.50'	**100.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=178.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond 3P: Internally Drained

Inflow Area = 5.383 ac, 1.36% Impervious, Inflow Depth = 1.07" for 25-YR event
Inflow = 2.8 cfs @ 12.59 hrs, Volume= 0.478 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 184.76' @ 26.10 hrs Surf.Area= 53,992 sf Storage= 20,835 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	184.00'	476,033 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
184.00	1,110	0	0
185.50	106,000	80,333	80,333
186.00	118,600	56,150	136,483
187.00	170,000	144,300	280,783
188.00	220,500	195,250	476,033

Device	Routing	Invert	Outlet Devices
#1	Primary	185.50'	**100.0' long x 20.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Secondary	187.00'	**50.0' long x 20.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=184.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=184.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond 12P: Gravel Wetland #2

Inflow Area = 11.632 ac, 48.10% Impervious, Inflow Depth = 3.18" for 25-YR event
Inflow = 30.7 cfs @ 12.18 hrs, Volume= 3.078 af
Outflow = 2.7 cfs @ 14.24 hrs, Volume= 1.668 af, Atten= 91%, Lag= 123.6 min
Primary = 2.7 cfs @ 14.24 hrs, Volume= 1.668 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 155.73' @ 14.24 hrs Surf.Area= 37,550 sf Storage= 84,790 cf

Plug-Flow detention time= 475.3 min calculated for 1.668 af (54% of inflow)
Center-of-Mass det. time= 359.2 min (1,192.4 - 833.2)

Volume	Invert	Avail.Storage	Storage Description
#1	153.00'	134,485 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
153.00	16,700	0	0
154.00	32,070	24,385	24,385
154.50	33,700	16,443	40,828
156.00	38,380	54,060	94,888
157.00	40,815	39,598	134,485

Device	Routing	Invert	Outlet Devices
#1	Primary	152.67'	**18.0" Round Culvert** L= 83.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 152.67' / 151.50' S= 0.0141 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	154.50'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	155.50'	**6.0' long x 0.70' rise Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)
#4	Device 1	150.00'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 4	150.00'	**6.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 150.00' / 150.00' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#6	Device 5	153.00'	**2.410 in/hr Exfiltration over Surface area above 153.00'** Conductivity to Groundwater Elevation = 152.67' Excluded Surface area = 16,700 sf
#7	Secondary	156.00'	**12.0' long x 9.0' 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 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69

Primary OutFlow Max=2.7 cfs @ 14.24 hrs HW=155.73' (Free Discharge)
└─**1=Culvert** (Passes 2.7 cfs of 12.9 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.4 cfs @ 4.97 fps)
  ├─**3=Sharp-Crested Vee/Trap Weir** (Weir Controls 2.2 cfs @ 1.58 fps)
  └─**4=Orifice/Grate** (Orifice Controls 0.0 cfs @ 8.43 fps)
    └─**5=Culvert** (Passes 0.0 cfs of 1.6 cfs potential flow)
      └─**6=Exfiltration** (Passes 0.0 cfs of 4.0 cfs potential flow)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=153.00' (Free Discharge)
└─**7=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond 14P: Gravel Wetland #1

Inflow Area =	4.348 ac, 53.73% Impervious, Inflow Depth = 2.78" for 25-YR event			
Inflow =	12.2 cfs @	12.14 hrs, Volume=	1.006 af	
Outflow =	0.8 cfs @	14.99 hrs, Volume=	0.425 af, Atten= 94%, Lag= 170.8 min	
Primary =	0.8 cfs @	14.99 hrs, Volume=	0.425 af	
Secondary =	0.0 cfs @	0.00 hrs, Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 179.62' @ 14.99 hrs Surf.Area= 21,962 sf Storage= 28,989 cf

Plug-Flow detention time= 406.4 min calculated for 0.425 af (42% of inflow)
Center-of-Mass det. time= 280.5 min (1,125.2 - 844.7)

Volume	Invert	Avail.Storage	Storage Description
#1	178.00'	89,610 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
178.00	13,570	0	0
179.50	21,650	26,415	26,415
180.00	22,970	11,155	37,570
181.00	26,130	24,550	62,120
182.00	28,850	27,490	89,610

Device	Routing	Invert	Outlet Devices
#1	Primary	177.67'	**18.0" Round Culvert** L= 265.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 177.67' / 175.43' S= 0.0085 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	179.50'	**6.0' long x 2.00' rise Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)
#3	Device 2	179.00'	**15.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 179.00' / 179.00' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#4	Device 1	175.00'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 4	175.00'	**6.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 175.00' / 175.00' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#6	Device 5	178.00'	**2.410 in/hr Exfiltration over Surface area above 178.00'** Conductivity to Groundwater Elevation = 177.67' Excluded Surface area = 13,570 sf
#7	Secondary	181.00'	**12.0' long x 9.0' 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 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69

Primary OutFlow Max=0.8 cfs @ 14.99 hrs HW=179.62' (Free Discharge)
└─**1=Culvert** (Passes 0.8 cfs of 9.3 cfs potential flow)
  ├─**2=Sharp-Crested Vee/Trap Weir** (Passes 0.8 cfs of 0.8 cfs potential flow)
  │ └─**3=Culvert** (Outlet Controls 0.8 cfs @ 1.87 fps)
  └─**4=Orifice/Grate** (Orifice Controls 0.0 cfs @ 6.72 fps)
    └─**5=Culvert** (Passes 0.0 cfs of 1.3 cfs potential flow)
      └─**6=Exfiltration** (Passes 0.0 cfs of 1.0 cfs potential flow)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=178.00' (Free Discharge)
└─**7=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link SP1: Study Point 1

Inflow Area = 27.442 ac, 29.32% Impervious, Inflow Depth > 1.43" for 25-YR event
Inflow = 7.1 cfs @ 12.67 hrs, Volume= 3.280 af
Primary = 7.1 cfs @ 12.67 hrs, Volume= 3.280 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Summary for Link SP2:

Inflow Area = 4.170 ac, 19.66% Impervious, Inflow Depth = 0.00" for 25-YR event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Summary for Link SP3:

Inflow Area = 5.383 ac, 1.36% Impervious, Inflow Depth = 0.00" for 25-YR event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Summary for Link SP4: Study Point 4

Inflow Area = 10.417 ac, 0.00% Impervious, Inflow Depth = 2.87" for 25-YR event
Inflow = 11.7 cfs @ 12.98 hrs, Volume= 2.488 af
Primary = 11.7 cfs @ 12.98 hrs, Volume= 2.488 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Attachment 6

Traffic Study

TRAFFIC MOVEMENT PERMIT APPLICATION

FOR PROPOSED

"Biddeford Residential"

Andrews Road, Biddeford

PREPARED FOR: KDK Biddeford, LLC
PREPARED BY: William J. Bray, PE

April 11, 2022

Provisionally Adopted 1/10/00

Department of Transportation
Traffic Engineering Division
16 State House Station
Augusta, Maine 04333
Telephone: 207-287-3775

FOR MDOT USE 1/2000
ID #

Total Fees:
Date: Received

****

PERMIT APPLICATION – TRAFFIC
TRAFFIC MOVEMENT PERMIT, 23 M.R.S.A. § 704 – A

Please type or print:

This application is for: Traffic 100-200 PCE's **X**
Traffic 200 + PC-E's _____

Name of Applicant: **KDK Biddeford, LLC.**

Address: **10 Memorial Boulevard, Suite 901, Providence, Rhode Island, 02903** Telephone: **401-273-8600**

Name of local contact or agent: **John Q. Adams, P.E., PTOE, Barton & Loguidice, LLC.**

Address: **383 U.S. Route 1, Suite 2A, Box 4, Scarborough, Maine 04074**

Telephone: **(207) 331-6694**

Name and type of development: **Biddeford Residential Development**

Location of development including road, street, or nearest route number: **Andrews Road, Biddeford, ME 04005**

City/Town/Plantation: **Biddeford**, County: **York**, Tax Map **2** Lot **# 6 & 12**

Do you want a consolidated review with DEP pursuant to 23 M.R.S.A. § 704-A (7)? Yes ____ No **X**

Was this development started prior to obtaining a traffic permit? **No**

Is the project located in an area designated as a growth area (as defined in M.R.S.A. title 30 – A, chapter 187)?
Yes, _____ No **X**

Is this project located within a compact area of an urban compact municipality? Yes _____ No **X**

Is this development or any portion of the site currently subject to state or municipal enforcement action? **No**

Existing DEP or MDOT permit number (if applicable): **N/A**

Name(s) of DOT staff person(s) contacted concerning this application: **N/A**

Name(s) of DOT staff person(s) present at the scoping meeting for 200+ applications: _____

NOTICE OF INTENT TO FILE

Please take notice that:

KDK Biddeford, LLC
10 Memorial Boulevard, Suite 901
Providence, RI 02903

Is intending to file a Traffic Movement Permit application with the Maine Department of Transportation pursuant to the provisions of 23 M.R.S.A. § 704 – A on or about

April 11, 2022

This application is for:

A proposed 216-unit residential apartment complex located in the northeast quadrant of the Alfred Road (Route 111) and Andrews Road intersection.

The proposed project generates a total of 102 trips during the weekday AM peak hour of the site and 124 trips during the weekday PM peak hour of the site.

At the following location: **Northeast quadrant of the Alfred Road (Route 111) and Andrews Road intersection, Biddeford, Maine.**

A request for a public hearing must be received by the Department, in writing, no later than 20 days after the application is found by the Department to be complete and is accepted for processing. Public comment on the application will be accepted throughout the processing of the application.

The application will be filed for public inspection at the Department of Transportation Division office, during normal working hours. A copy of the application may also be seen at the municipal offices in:

City of Biddeford Planning Office

Written public comments may be sent to the Department of Transportation, Traffic Engineering Division, 16 State House Station, Augusta, Maine 04333.

1/2000

CERTIFICATION

The traffic engineer responsible for preparing this application and/or attaching pertinent site and traffic information hereto, by signing below, certifies that the application for traffic approval is complete and accurate to the best of his/her knowledge.

Signature: _____ Re/Cert/Lic No.: 4907

Name (print): William Bray

Date: 3-25-2022

If the signature below is not the applicant's signature, attach letter of agent authorization signed by applicant.

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Francis X Daugherty — 4/7/22

Signature of applicant — Date

North is based on the Maine State Coordinate System NAD 1983

North Rotation is -33°

100 0 100 200 300 Feet

UPDATED THROUGH APRIL 1, 2021

FOR ASSESSMENT PURPOSES ONLY
NOT TO BE USED FOR CONVEYANCES

The City of Biddeford, Maine
OFFICIAL TAX MAP
Office of The Tax Assessor
Nicholas D. Desjardins, CMA
Assessor

CITY OF BIDDEFORD MAINE

This Map is Prepared By
The City of Biddeford, Maine
Technology Department
GIS Division
205 Main Street · P.O. Box 586 · Biddeford, Maine 04005
207- 571-0660 · gis@biddefordmaine.org

2
Tax Map

ABUTTERS LIST

Map	Lot	Owner	Co-Owner	Mailing Address	City	State	Zip Code
2	15-1	CENTRAL MAINE POWER CO	AVANGRID MANAGEMENT CO – LOCAL TAX	ONE CITY CENTER, 5TH FLOOR	PORTLAND	ME	4101
2	37	HD DEVELOPMENT OF MARYLAND INC	HOME DEPOT USA PROP TAX DEPT 2405	PO BOX 105842	ATLANTA	GA	30348-5842
2	23-3	GARTLAND ASSETS, LLC		4 DUSTY ACRES	BIDDEFORD	ME	4005
2	23	MICHAEL J THIBAULT		477 MOUSE LN	ALFRED	ME	4002
2	23-1	WINCHENDON, LLC		355 MAIN ST, SUITE 25	WOBURN	MA	1801
2	26	DSM MB II LLC	DEMOULAS SUPER MARKETS, INC	875 EAST ST	TEWKSBURY	MA	1876
2	11	ROBERT R. LETELLIER		5 LETELLIER LN	BIDDEFORD	ME	4005
2	6-3	OLD DOGS OF BIDDEFORD, LLC		47 WAITES LANDING RD	FALMOUTH	ME	4105
2	10-1	MICHAEL & LINDA N. BEAULIEU		594 ALFRED ST	BIDDEFORD	ME	04005-9483
2	10	MICHAEL & LINDA N. BEAULIEU		594 ALFRED ST	BIDDEFORD	ME	04005-9483
2	5-2	GARY & JEANINE THEBARGE		9 ANDREWS RD	BIDDEFORD	ME	4005
2	5-5	GARY & CHAD THEBARGE		9 ANDREWS RD	BIDDEFORD	ME	4005
2	6-2	DAVID R. & JOYCE PELLEYIER		23 SCHOOL ST, UNIT 6	OLD ORCHARD BEACH	ME	4064
2	19-1	THE MAINE WATER COMPANY		93 INDUSTRIAL PARK RD	SACO	ME	4072

SECTION 1

A. SITE PLAN

KDK Biddeford, LLC, is proposing a residential development on Andrews Road in Biddeford. The site totals 44.53 acres and is located in the northeast quadrant of the intersection of Andrews Road and Route 111. The site has frontage on both Andrews Road and Route 111. The site will provide 216 low-rise multi-family residential units with 491 total parking spaces (365 surface, 126 garage). The site will be served by a single 24-foot wide entrance on the east side of Andrews Road, located approximately 450-feet north of Route 111. Access to the site will be provided by Route 111 via Andrews Road.

The site features nine (9) multi-unit buildings, numbered Building 1000 – Building 9000, with internal access roads, adjacent parking areas, garages, and sidewalks provided for each. The eight (8) parking garages provided on-site are identified as Garages 1 – 8. In addition there is a clubhouse provided with a pool and dog park for residents. The internal access roads are identified as Road A, Road B and Road C, and they are 24-feet wide and bi-directional throughout the site. A sidewalk is provided from the site to Andrews Road.

Traffic control at the site's intersection with Andrews Road is provided with a stop sign and stop bar on the site entrance while Andrew's Road is free-flowing without traffic control.

A copy of the site plan is enclosed, herein, at the end of this document.

SECTION 1

B. EXISTING AND PROPOSED SITE USES

Proposed

KDK Biddeford, LLC, is proposing a residential development on Andrews Road in Biddeford. The site totals 44.53 acres and is located in the northeast quadrant of the intersection of Andrews Road and Route 111. The site will provide 216 low-rise multi-family residential units with 491 total parking spaces (365 surface, 126 garage). The site will be served by a single 24-foot wide entrance on the east side of Andrews Road, located approximately 450- feet north of Route 111. Access to the site will be provided by Route 111 via Andrews Road.

The site features nine (9) multi-unit buildings, numbered Building 1000 – Building 9000, with internal access roads, adjacent parking areas, garages, and sidewalks provided for each. The eight (8) parking garages provided on-site are identified as Garages 1 – 8. In addition, there is a clubhouse provided with a pool and dog park for residents. The internal access roads are identified as Road A, Road B and Road C. A sidewalk is provided from the site to Andrews Road.

A copy of the site plan is enclosed, herein, at the end of this document.

Existing

The existing site is currently vacant and is provided with a single entrance on Andrews Road.

C. SITE AND VICINITY BOUNDARIES

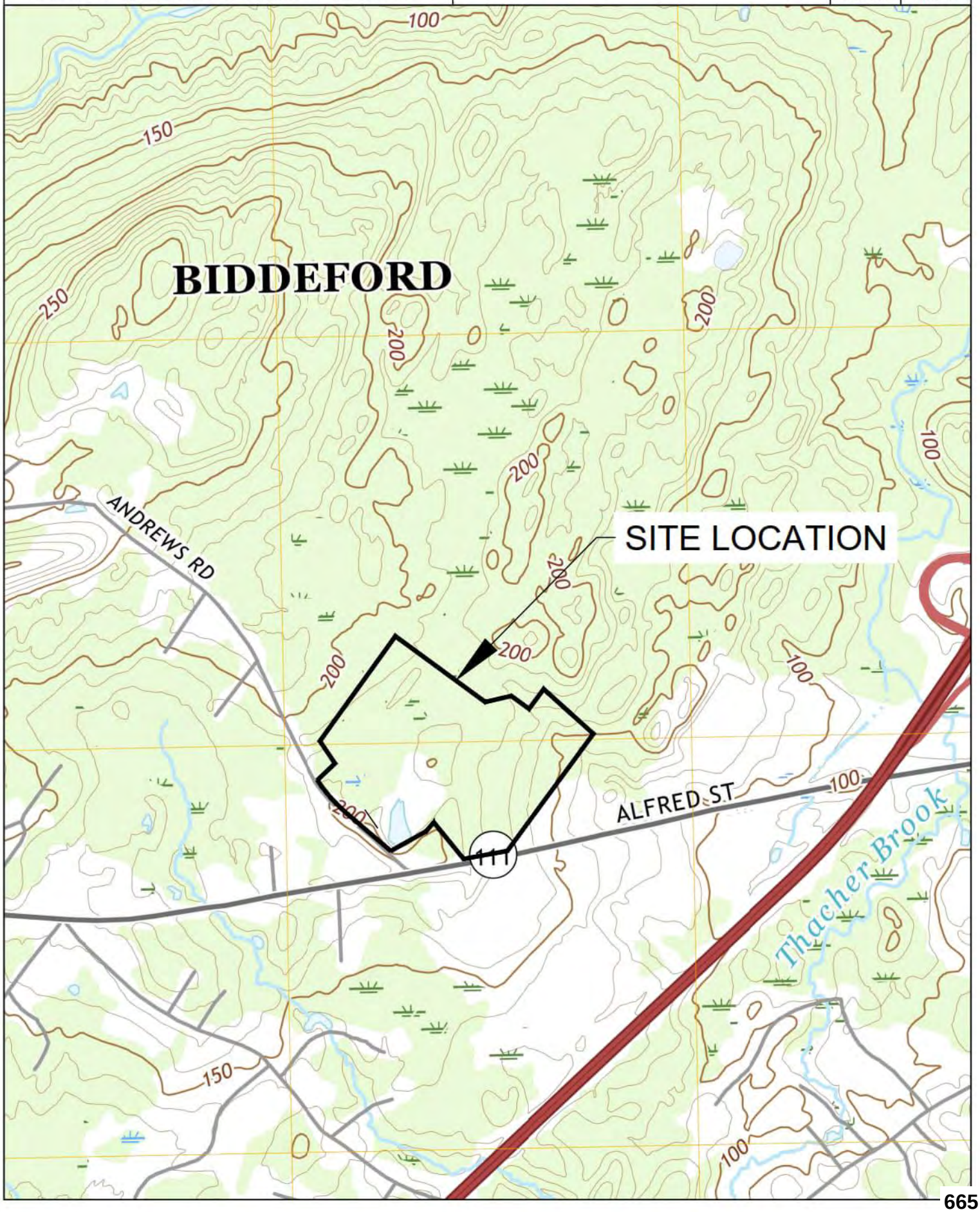
The attached map depicts the proposed Biddeford Apartments site. The site is located in the northeast quadrant of the Andrews Road/Alfred Road (Route 111) intersection.

Barton & Loguidice
383 US Route 1, Suite 2A
Scarborough, ME, 04074
1 (800) 724-1070
info@bartonandloguidice.com
Civil Engineering • Environmental Consulting • Land Surveying • Construction Management

BIDDEFORD RESIDENTIAL LOCATION MAP

ANDREWS ROAD, BIDDEFORD, ME

FIGURE	1
PROJECT 4502.002	DATE 4/4/22



D. PROPOSED USES IN THE GENERAL VICINITY OF THE PROPOSED DEVELOPMENT

Traffic generated by projects that have been approved by the planning board and/or the Maine Department of Transportation, yet are not opened, must be included in the estimate of pre-development traffic. The City of Biddeford was consulted to identify any and all development projects whose peak hour trips potentially impact the study area. Based on discussions with the City Planners office there are no other projects being reviewed or approved that will impact this intersection.

E. TRIP GENERATION

Site Trip Generation: Trip generation for the proposed Biddeford Apartment development was estimated based upon the latest edition (11th) of the Institute of Transportation Engineer's (ITE) Trip Generation Manual (TGM). The expected trip generation for the proposed development was estimated using the relevant land use code from the TGM, **LUC #220 – Multi-family Housing (Low-Rise) Not Close to Rail Transit.** Table 1.1 summarizes the calculations.

Table 1.1
ITE Trip Generation Calculations

Land Use	Multi-family Housing (Low-Rise) Not Close to Rail Transit - LUC #220					
Time Period	**Dwelling Units**	**Trip Generation Rate Trips/Dwelling Units**	**Trips Generated**	**Distribution Entering / Exiting**	**Enter**	**Exit**
AM Weekday Peak Hour (Street)	216	0.40	87	24% / 76%	21	66
PM Weekday Peak Hour (Street)	216	0.51	111	63% / 37%	70	41
AM Weekday Peak Hour (Generator)	216	0.47	102	24% / 76%	24	78
PM Weekday Peak Hour (Generator)	216	0.57	124	62% / 38%	77	47
Saturday Peak Hour*						
Sunday Peak Hour *						

*Trip generation is unavailable for the Saturday and Sunday Peak Hours

The proposed project is projected to generate 87 trips during the AM peak hour of the (street) and 111 trips in the evening peak hour of the street. Peak hour trip generation values forecast for the peak hour of the site (generator) are slightly higher at 102 trips in the AM peak hour and 124 trips in the PM peak hour.

F. SITE TRIP DISTRIBUTION

Vehicle trips generated during the noted weekday AM peak hour and PM peak hour were assigned to/from the proposed site based upon the following directional splits presented in the Institute of Transportation Engineer's Trip Generation Manual for **LUC #220 – Multi-family Housing (Low-Rise)**. The enter/exit percentages are shown below in Table 1.2.

Table 1.2 Trip Enter/Exit Distribution Percent Values

LUC 220 Multifamily Housing (Low-Rise)	
Time Period	**Enter/Exit**
AM Peak Hour Street	24% / 76%
PM Peak Hour Street	63% / 37%
AM Peak Hour - Generator	24% / 76%
PM Peak Hour - Generator	62% / 38%

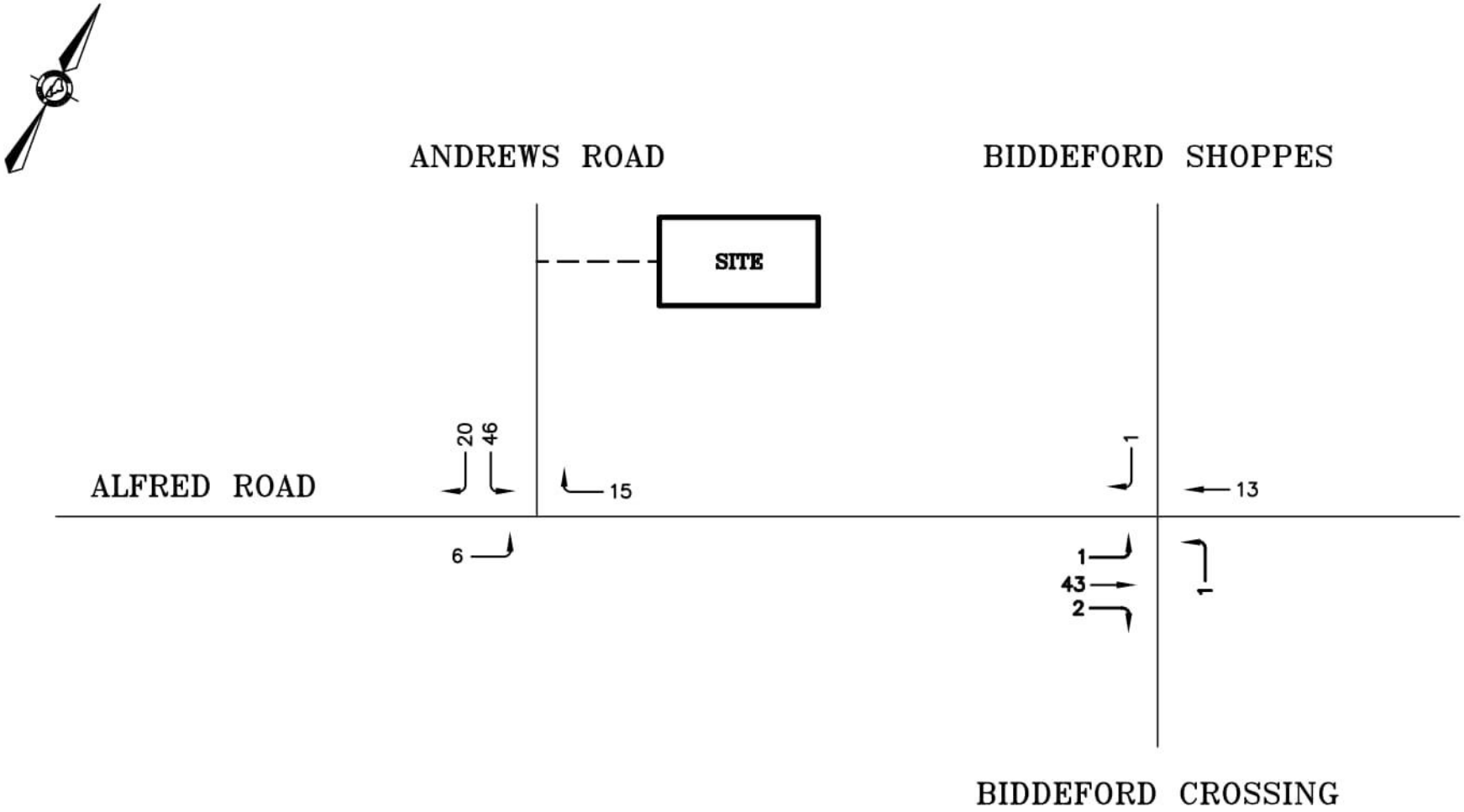
***Note that trip generation data is unavailable for the Saturday and Sunday peak**

SECTION 1

G. TRIP ASSIGNMENT

Peak hour site trips generated by the proposed Andrews Road residential apartment project during both the morning and evening peak hours were assigned to the study intersections at Andrews Road/Alfred Road and Alfred Road/Biddeford Crossing and Biddeford Shoppes based upon existing traffic data collected at both locations in September, 2021. Copies of the peak hour summary sheets are attached for reference.

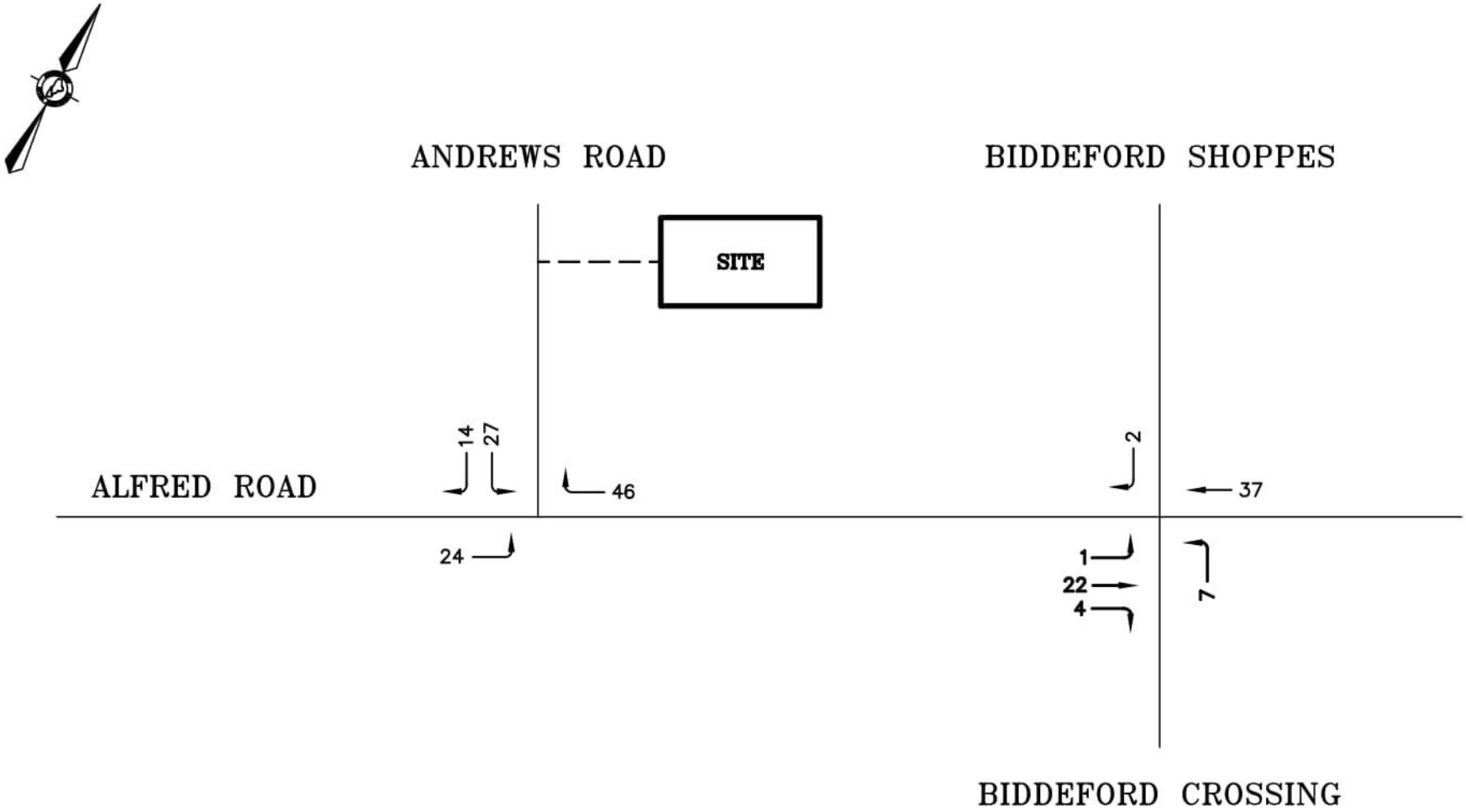
The following Figures, 1 and 2 illustratively present the trip assignment for the AM and PM peak hours at both study intersections.



SITE TRIP ASSIGNMENT
WEEKDAY AM PEAK HOUR
FIGURE 1

E:\LAND PROJECTS\34000\34399 TRAFFIC SOLUTIONSBIDDEFORD APARTMENT FIGURES\PLANSET\BIDDEFORD APRTMENT FIGS.DWG

Project Name and Location BIDDEFORD APARTMENTS ANDREWS ROAD, BIDDEFORD, ME	TRAFFIC SOLUTIONS/ BARTON & LOGUIDICE, LLC 383 US ROUTE ONE, SCARBOROUGH, MAINE 04074
DATE: MARCH, 2022 FIGURE: 1	



SITE TRIP ASSIGNMENT
WEEKDAY PM PEAK HOUR
FIGURE 2

E:\LAND PROJECTS\34000\34399 TRAFFIC SOLUTIONS\BIDDEFORD APARTMENT FIGURES\PLANSET\BIDDEFORD APRTMENT FIGS.DWG

Project Name and Location
BIDDEFORD APARTMENTS
ANDREWS ROAD, BIDDEFORD, ME

DATE: MARCH, 2022 | FIGURE: 2

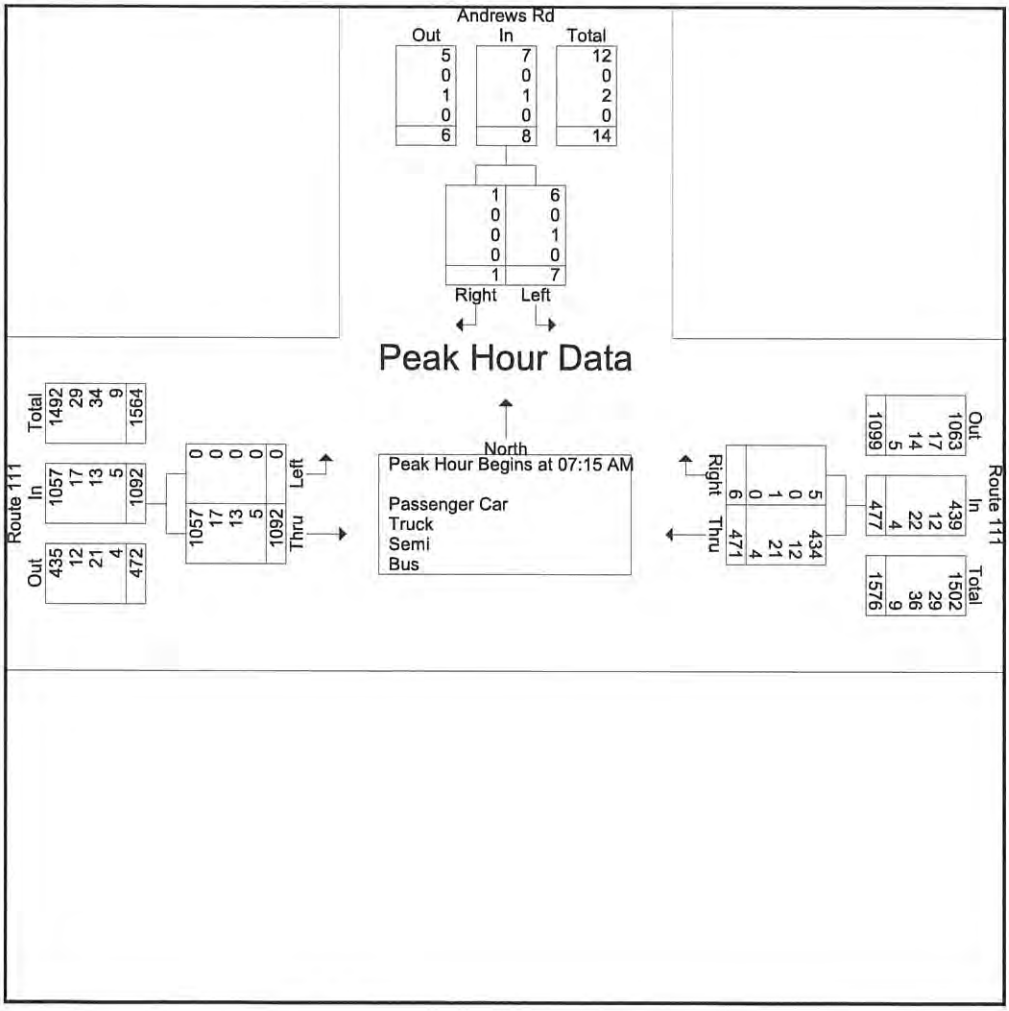
TRAFFIC SOLUTIONS/
BARTON & LOGUIDICE, LLC
383 US ROUTE ONE, SCARBOROUGH, MAINE 04074

Traffic Solutions

17 Mount View Dr
Gorham, ME 04038

File Name : Biddeford Route 111 & Andrews Rd 9-28-21 AM
Site Code : 00928211
Start Date : 9/28/2021
Page No : 4

	Andrews Rd From North			Route 111 From East			Route 111 From West			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	0	0	0	1	123	124	281	0	281	**405**
07:30 AM	0	**3**	3	**3**	**127**	**130**	269	0	269	402
07:45 AM	0	1	1	1	94	95	**297**	0	**297**	393
08:00 AM	**1**	3	**4**	1	127	128	245	0	245	377
Total Volume	1	7	8	6	471	477	1092	0	1092	1577
% App. Total	12.5	87.5		1.3	98.7		100	0		
PHF	.250	.583	.500	.500	.927	.917	.919	.000	.919	.973
Passenger Car	1	6	7	5	434	439	1057	0	1057	1503
% Passenger Car	100	85.7	87.5	83.3	92.1	92.0	96.8	0	96.8	95.3
Truck	0	0	0	0	12	12	17	0	17	29
% Truck	0	0	0	0	2.5	2.5	1.6	0	1.6	1.8
Semi	0	1	1	1	21	22	13	0	13	36
% Semi	0	14.3	12.5	16.7	4.5	4.6	1.2	0	1.2	2.3
Bus	0	0	0	0	4	4	5	0	5	9
% Bus	0	0	0	0	0.8	0.8	0.5	0	0.5	0.6

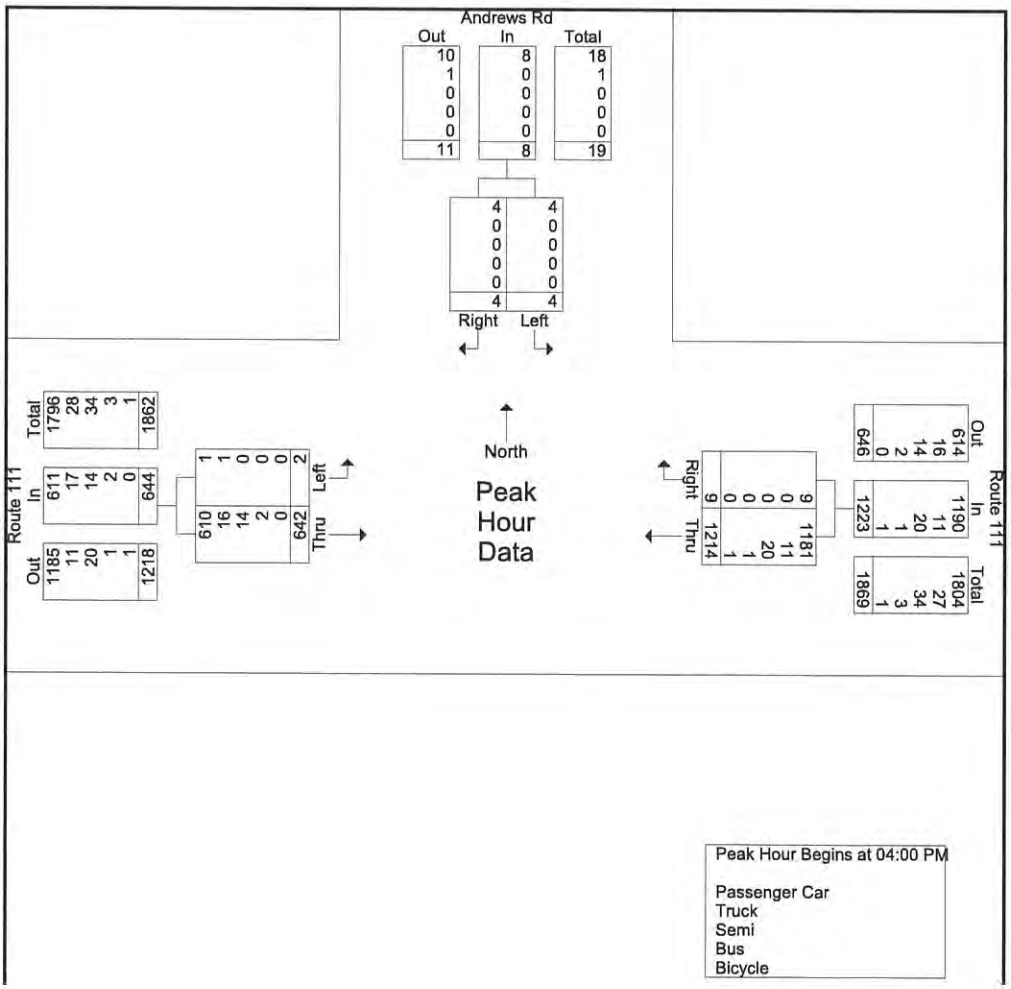


Traffic Solutions

17 Mount View Dr
Gorham, ME 04038

File Name : Biddeford Route 111 & Andrews Rd 9-28-21 PM
Site Code : 00928212
Start Date : 9/28/2021
Page No : 4

	Andrews Rd From North			Route 111 From East			Route 111 From West			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	**1**	1	**3**	299	302	156	**1**	157	460
04:15 PM	0	1	1	2	302	304	151	0	151	456
04:30 PM	0	1	1	2	**315**	**317**	**173**	0	**173**	**491**
04:45 PM	**4**	1	**5**	2	298	300	162	1	163	468
Total Volume	4	4	8	9	1214	1223	642	2	644	1875
% App. Total	50	50		0.7	99.3		99.7	0.3		
PHF	.250	1.00	.400	.750	.963	.965	.928	.500	.931	.955
Passenger Car	4	4	8	9	1181	1190	610	1	611	1809
% Passenger Car	100	100	100	100	97.3	97.3	95.0	50.0	94.9	96.5
Truck	0	0	0	0	11	11	16	1	17	28
% Truck	0	0	0	0	0.9	0.9	2.5	50.0	2.6	1.5
Semi	0	0	0	0	20	20	14	0	14	34
% Semi	0	0	0	0	1.6	1.6	2.2	0	2.2	1.8
Bus	0	0	0	0	1	1	2	0	2	3
% Bus	0	0	0	0	0.1	0.1	0.3	0	0.3	0.2
Bicycle	0	0	0	0	1	1	0	0	0	1
% Bicycle	0	0	0	0	0.1	0.1	0	0	0	0.1

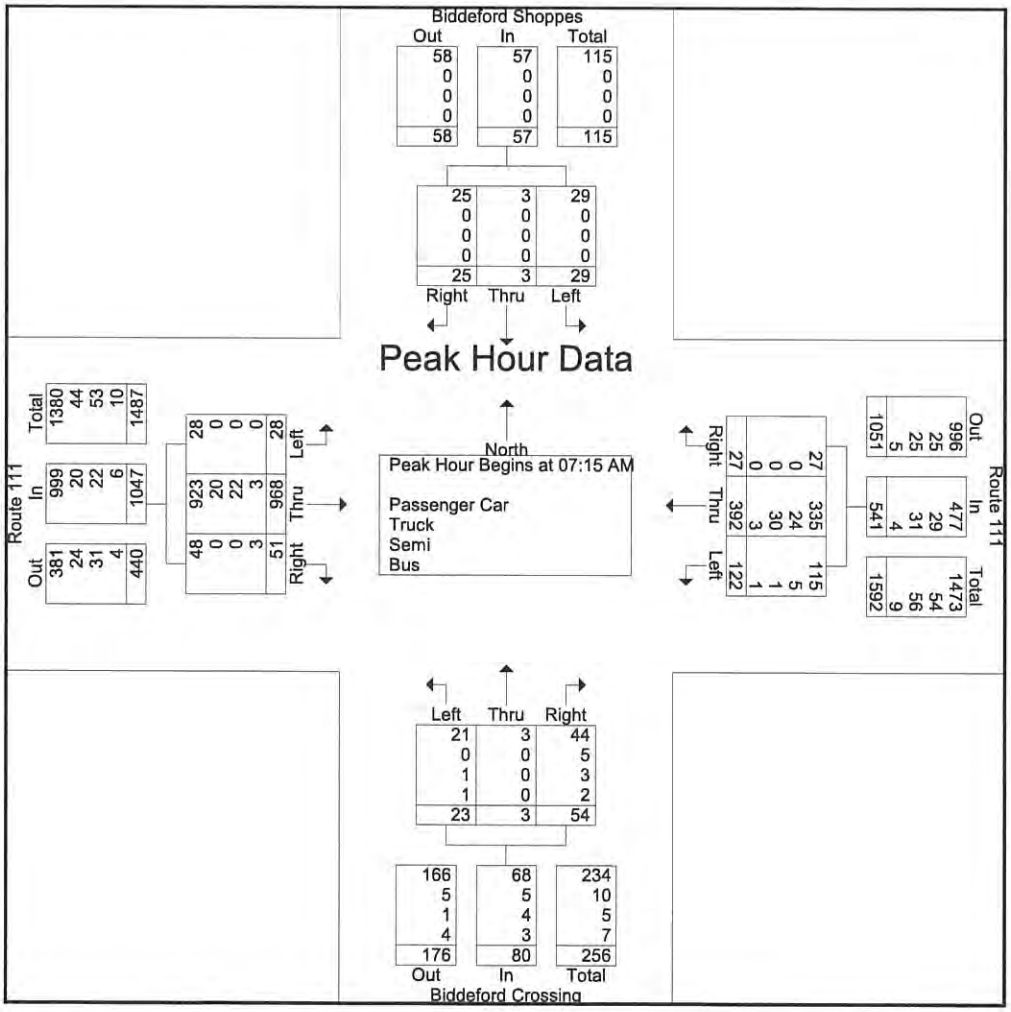


Traffic Solutions

17 Mount View Dr
Gorham, ME 04038

File Name : Biddeford Route 111 & Shopping Plazas 9-29-21 AM
Site Code : 00929211
Start Date : 9/29/2021
Page No : 4

	Biddeford Shoppes From North				Route 111 From East				Biddeford Crossing From South				Route 111 From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	5	0	6	11	7	86	21	114	9	1	5	15	12	236	5	253	393
07:30 AM	**9**	1	**8**	**18**	**8**	90	24	122	**18**	0	**7**	**25**	11	254	4	269	434
07:45 AM	4	0	8	12	5	**114**	36	**155**	10	0	5	15	11	**262**	**13**	**286**	**468**
08:00 AM	7	**2**	7	16	7	102	**41**	150	17	**2**	6	25	**17**	216	6	239	430
Total Volume	25	3	29	57	27	392	122	541	54	3	23	80	51	968	28	1047	1725
% App. Total	43.9	5.3	50.9		5	72.5	22.6		67.5	3.8	28.8		4.9	92.5	2.7		
PHF	.694	.375	.906	.792	.844	.860	.744	.873	.750	.375	.821	.800	.750	.924	.538	.915	.921
Passenger Car	25	3	29	57	27	335	115	477	44	3	21	68	48	923	28	999	1601
% Passenger Car	100	100	100	100	100	85.5	94.3	88.2	81.5	100	91.3	85.0	94.1	95.4	100	95.4	92.8
Truck	0	0	0	0	0	24	5	29	5	0	0	5	0	20	0	20	54
% Truck	0	0	0	0	0	6.1	4.1	5.4	9.3	0	0	6.3	0	2.1	0	1.9	3.1
Semi	0	0	0	0	0	30	1	31	3	0	1	4	0	22	0	22	57
% Semi	0	0	0	0	0	7.7	0.8	5.7	5.6	0	4.3	5.0	0	2.3	0	2.1	3.3
Bus	0	0	0	0	0	3	1	4	2	0	1	3	3	3	0	6	13
% Bus	0	0	0	0	0	0.8	0.8	0.7	3.7	0	4.3	3.8	5.9	0.3	0	0.6	0.8

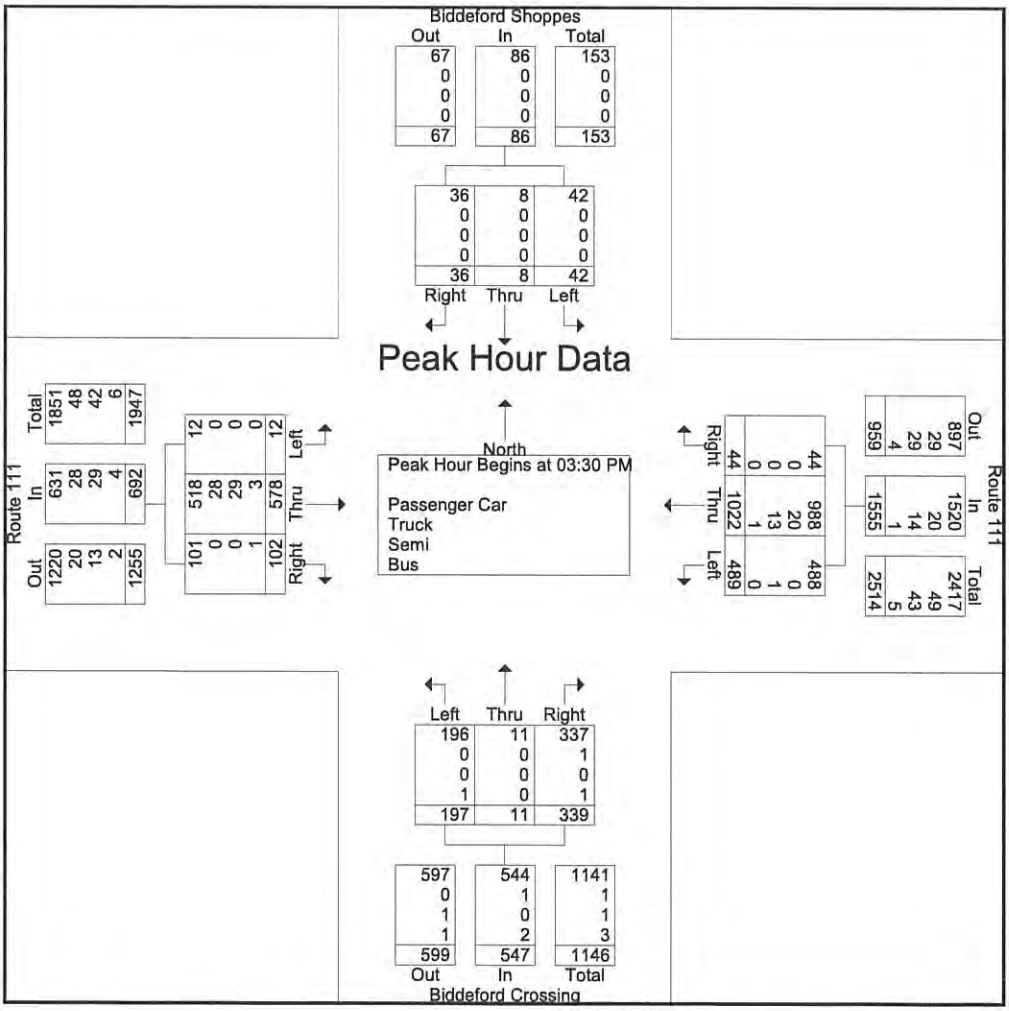


Traffic Solutions

17 Mount View Dr
Gorham, ME 04038

File Name : Biddeford Route 111 & Shopping Plazas 9-29-21 PM
Site Code : 00929212
Start Date : 9/29/2021
Page No : 4

	Biddeford Shoppes From North				Route 111 From East				Biddeford Crossing From South				Route 111 From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:30 PM																	
03:30 PM	8	**4**	9	21	8	269	**143**	420	93	**5**	40	138	**32**	**160**	2	**194**	**773**
03:45 PM	**12**	1	11	**24**	10	227	97	334	80	1	53	134	30	156	3	189	681
04:00 PM	7	2	**13**	22	**16**	**284**	123	**423**	**99**	3	42	**144**	25	109	**6**	140	729
04:15 PM	9	1	9	19	10	242	126	378	67	2	**62**	131	15	153	1	169	697
Total Volume	36	8	42	86	44	1022	489	1555	339	11	197	547	102	578	12	692	2880
% App. Total	41.9	9.3	48.8		2.8	65.7	31.4		62	2	36		14.7	83.5	1.7		
PHF	.750	.500	.808	.896	.688	.900	.855	.919	.856	.550	.794	.950	.797	.903	.500	.892	.931
Passenger Car	36	8	42	86	44	988	488	1520	337	11	196	544	101	518	12	631	2781
% Passenger Car	100	100	100	100	100	96.7	99.8	97.7	99.4	100	99.5	99.5	99.0	89.6	100	91.2	96.6
Truck	0	0	0	0	0	20	0	20	1	0	0	1	0	28	0	28	49
% Truck	0	0	0	0	0	2.0	0	1.3	0.3	0	0	0.2	0	4.8	0	4.0	1.7
Semi	0	0	0	0	0	13	1	14	0	0	0	0	0	29	0	29	43
% Semi	0	0	0	0	0	1.3	0.2	0.9	0	0	0	0	0	5.0	0	4.2	1.5
Bus	0	0	0	0	0	1	0	1	1	0	1	2	1	3	0	4	7
% Bus	0	0	0	0	0	0.1	0	0.1	0.3	0	0.5	0.4	1.0	0.5	0	0.6	0.2



SECTION 2

TRAFFIC ACCIDENTS

2018 - 2020 Accident Summary
Alfred Road (a.k.a. ME Route 111)

Location	Number of Accidents	Critical Rate Factor
1. Alfred Road/Biddeford Shoppes/Biddeford Crossing Intersection	24	0.78
2. Alfred Road & Andrews Road	2	0.31
3. Alfred Road & New Road/Old Alfred Road intersection (Town of Arundel) (**2019-2021**, after intersection improvements)	4	N/A
4. Alfred Road/Biddeford Shoppes/Biddeford Crossing intersection west to the end of raised traffic island	1	0.14
5. Alfred Road btw. Andrews Road and end of traffic island east of Andrews Road intersection	6	0.54
6. Alfred Road btw. Andrews Road and Arundel Town Line	5	0.43
7. Alfred Road btw. Arundel Town Line and New Road	5	0.68

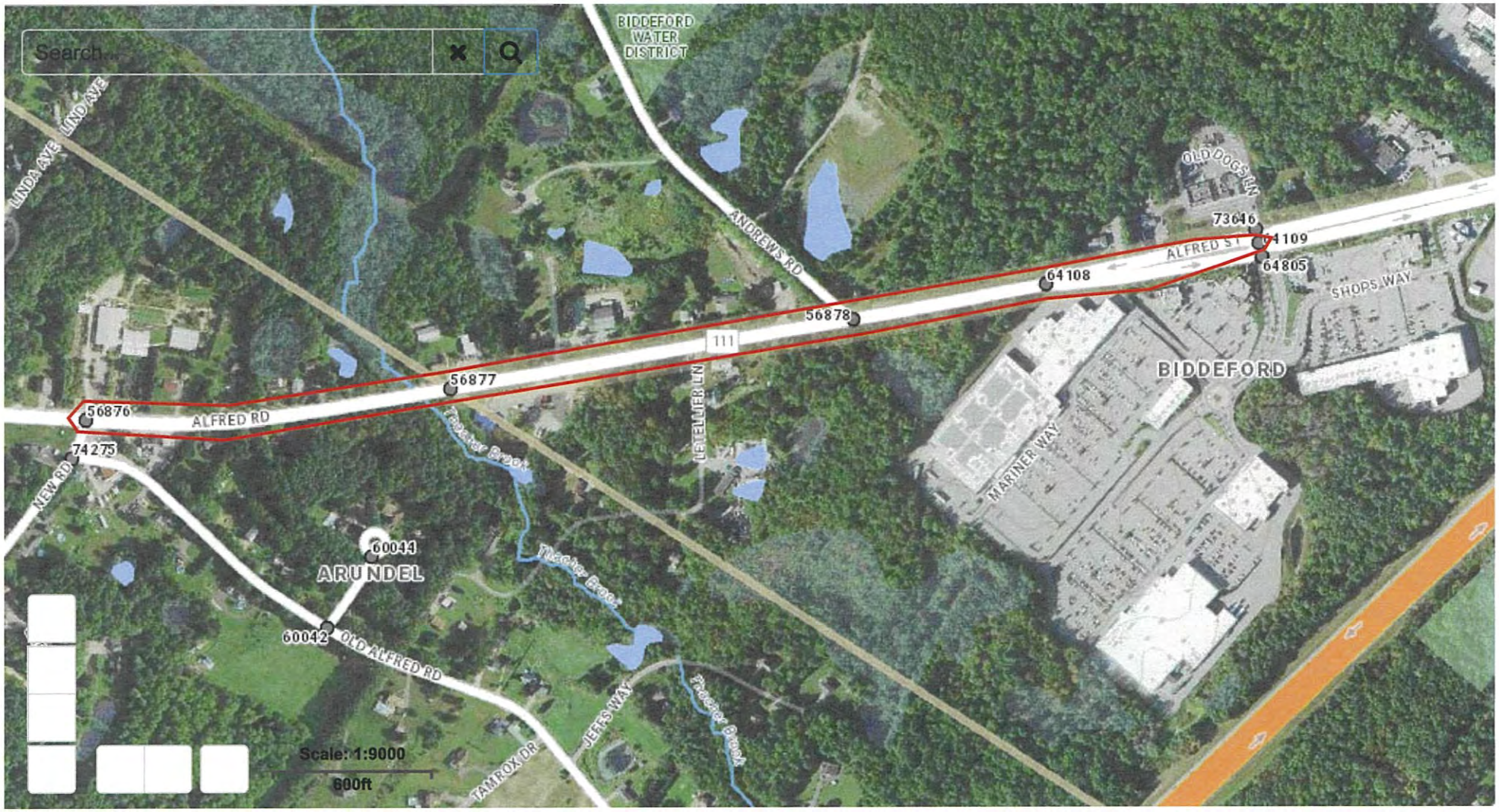
The MDOT considers any roadway intersection or segment a high crash location if both of the following criteria are met:

- ***8 or more accidents and,***
- ***A Critical Rate Factor greater than 1.00***

As the data presented in the chart shows, there are no identified high crash locations.

MaineDOT completed a safety improvement project at the Old Alfred Road/New Road intersection, a former high crash location, in the Town of Arundel in 2020 that tied the Old Alfred Road approach into New Road further back from Alfred Road creating a simple and basic "tee" intersection. A dedicated left-turn lane was added on the west bound approach of Alfred Road accommodating left-turn movements to the re-aligned New Road approach. MaineDOT's preliminary safety report for the years 2019 through 2021 (see attachment) shows that a total of four crashes were reported for the three-year study period with three of the crashes occurring in 2019, one crash in 2020 and zero crashes in 2021.

Item # 3


Search...
BIDDEFORD WATER DISTRICT
LINDA AVE
ANDREWS RD
OLD DOGS RN
73646
64109
64805
ALFRED ST
64108
SHOPS WAY
56878
111
BIDDEFORD
56877
56876
ALFRED RD
74275
NEW RD
LETELLIER LN
MARINER WAY
60044
ARUNDEL
60042
OLD ALFRED RD
JEFFS WAY
TAMROX DR
Scale: 1:9000
600ft

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

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ **Crash Summary I** ☐ **Section Detail** ☑ **Crash Summary II** ☐ **1320 Public** ☐ **1320 Private** ☐ **1320 Summary**

REPORT DESCRIPTION

Biddeford/Arundel
Rte. 111/Alfred Rd./St. from Shopping Mall Ent. to New Rd.

REPORT PARAMETERS

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

Route: **0111X**	Start Node: **64109**	Start Offset: **0**	☐ **Exclude First Node**
	End Node: **56876**	End Offset: **0**	☐ **Exclude Last Node**
Route: **0111E**	Start Node: **64108**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **64109**	End Offset: **0**	☑ **Exclude Last Node**

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
64109	0111X - 3.29	Int of ALFRED ST OLD DOGS LN RD INV 3201693	9	24	0	0	0	9	15	37.5	8.613	0.93	1.20	0.78
												Statewide Crash Rate:	0.77	
64108	0111X - 3.44	Non Int ALFRED ST	2	1	0	0	0	0	1	0.0	6.361	0.05	0.35	0.00
												Statewide Crash Rate:	0.15	
56878	0111X - 3.58	Int of ALFRED ST ANDREWS RD	2	2	0	0	1	0	1	50.0	6.116	0.11	0.36	0.00
												Statewide Crash Rate:	0.15	
56877	0111X - 3.87	TL Arundel Biddeford	2	0	0	0	0	0	0	0.0	2.975	0.00	0.43	0.00
												Statewide Crash Rate:	0.15	
56876	0111X - 4.13	Int of ALFRED RD NEW RD	1	9	0	0	0	2	7	22.2	5.971	0.50	0.32	1.56
												Statewide Crash Rate:	0.13	
Study Years:	3.00	**NODE TOTALS:**		36	0	0	1	11	24	33.3	30.036	0.40	0.47	0.85

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
64108	64109	3139654	0 - 0.15	0111X - 3.29	0.15	2	1	0	0	0	0	1	0.0	0.00488	68.30	489.10	0.00
Non Int ALFRED ST				ST RTE 111											Statewide Crash Rate: 212.74		
56878	64108	3123089	0 - 0.14	0111X - 3.44	0.14	2	6	0	0	1	0	5	16.7	0.00870	229.85	426.14	0.00
Int of ALFRED ST ANDREWS RD				ST RTE 111											Statewide Crash Rate: 212.74		
56877	56878	3114384	0 - 0.29	0111X - 3.58	0.29	2	8	0	0	2	4	2	75.0	0.01726	154.53	368.21	0.42
TL Arundel Biddeford				ST RTE 111											Statewide Crash Rate: 212.74		
56876	56877	5205276	0 - 0.26	0111X - 3.87	0.26	1	5	0	0	0	1	4	20.0	0.01547	107.72	253.21	0.00
Int of ALFRED RD NEW RD				ST RTE 111											Statewide Crash Rate: 128.46		
64108	64109	3119895	0 - 0.16	0111E - 0.29	0.16	2	5	0	0	0	1	4	20.0	0.00509	327.20	483.96	0.00
Non Int ALFRED ST				ST RTE 111E											Statewide Crash Rate: 212.74		
Study Years:	3.00			**Section Totals:**	1.00		25	0	0	3	6	16	36.0	0.05140	162.12	273.92	0.59
				Grand Totals:	1.00		61	0	0	4	17	40	34.4	0.05140	395.56	375.86	1.05

Item # 3

H. C. L.
CRASH COLLISION DIAGRAM DATA PACKAGE

COUNTY: **YORK** TOWN: **ARUNDEL**

LOW NODE: **56876** HIGH NODE: **0000** REGION: **1** U/R: **RURAL**

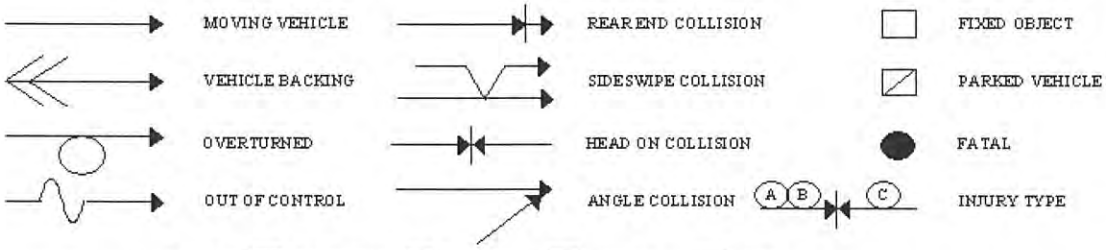
DESCRIPTION: **Jct of Alfred Rd & New Rd/Old Alfred Rd**

RTE # / RD #: **0111X** DATE DRAWN: **4/13/2021** DRAWN BY: **Michelle**

STUDY FROM: **1/1/2018** STUDY TO: **12/31/2020**

CRASH RATE: **0.49** CRF: **1.54** % INJURY: **22.2** TOTAL CRASHES: **9**

LEGEND



PATH OF: P PEDESTRIAN B BICYCLE A ANIMAL S SLED

PAVEMENT: D - DRY, I - ICY, W - WET, S - SNOW

WEATHER: C - CLEAR, F - FOG, R - RAIN, SL - SLEET, S - SNOW, CL - CLOUDY

TIME: A - AM, P - PM

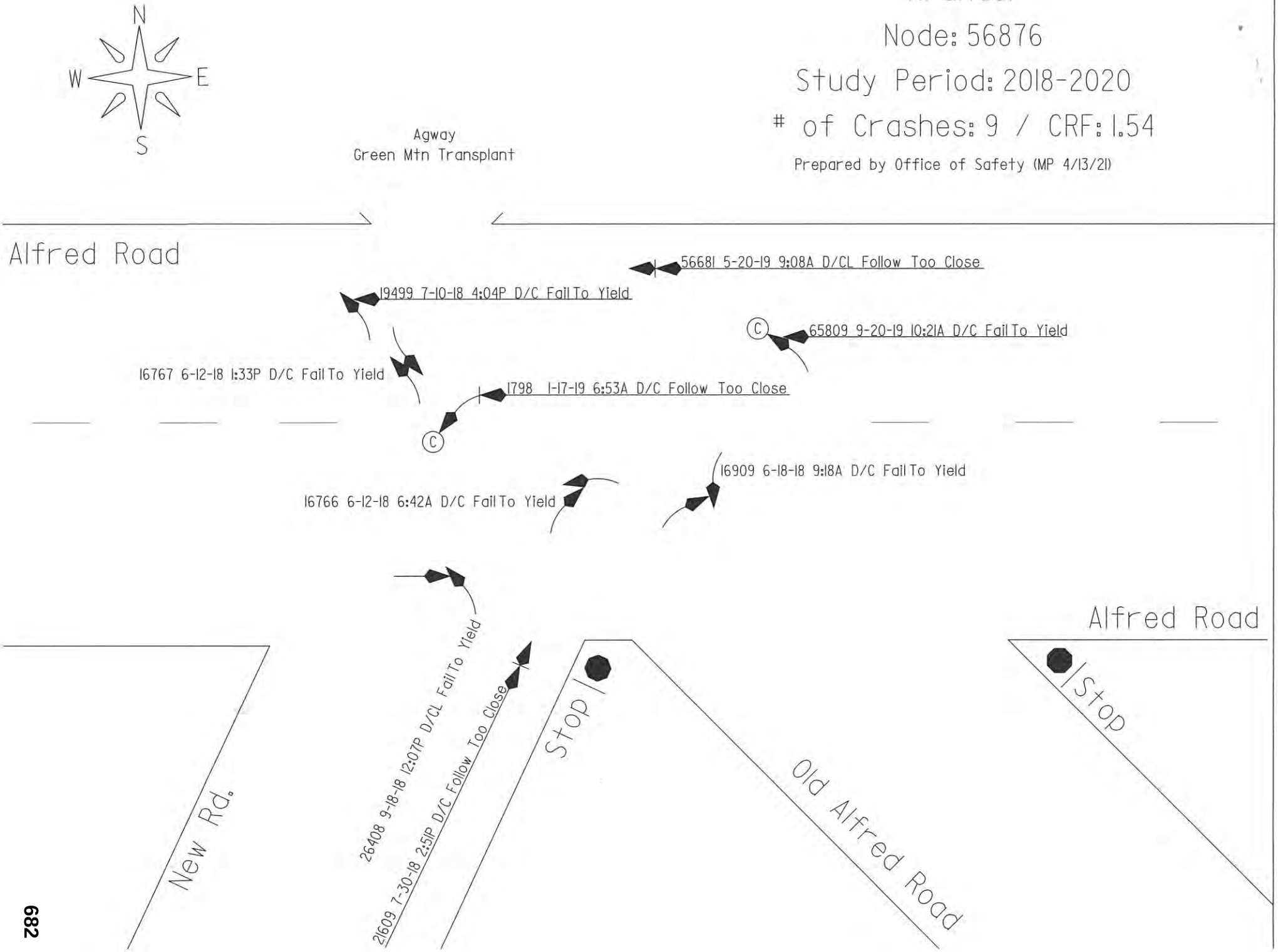
Arundel

Node: 56876

Study Period: 2018-2020

# of Crashes: 9 / CRF: 1.54

Prepared by Office of Safety (MP 4/13/21)



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

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

- [x] Crash Summary I - Single Node
- [ ] Section Detail
- [x] Crash Summary II
- [ ] 1320 Public
- [ ] 1320 Private
- [ ] 1320 Summary

REPORT DESCRIPTION

Arundel
Intersection of Rte. 111/Alfred Rd. & New Rd.

REPORT PARAMETERS

Year 2019, Start Month 1 through Year 2021 End Month: 12

Route: **0111X**	Start Node: **56876**	Start Offset: **0**	[ ] **Exclude First Node**
	End Node: **56876**	End Offset: **0**	[ ] **Exclude Last Node**

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

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
56876	0111X - 4.13	Int of ALFRED RD NEW RD	1	4	0	0	0	2	2	50.0	5.971	0.22	0.32	0.00
												Statewide Crash Rate:	0.13	
Study Years:	3.00	NODE TOTALS:		4	0	0	0	2	2	50.0	5.971	0.22	0.32	0.69

****None of these Rates (Crash, Critical, CRF) are accurate as they are based off 2020 AADT's, not 2021 AADT's).

SECTION 3

A. ENTRANCE/EXIT LOCATON

The existing site, located in the northeast quadrant of the Andrews Road/Alfred Road (Route 111) intersection, is provided access with a gravel driveway located on the east side of Andrews Road. Access to the property will continue to be provided at the existing driveway location. As part of the development of the site, the existing driveway will be improved and widened to 24-feet.

SECTION 3

B. ENTRANCE AND EXIT PLAN VIEW

Vehicle sight distance measurements were field determined for the Andrews Road approach at the Alfred Road (Route 111), and the site driveway entrance located on Andrews Road. The measured distances are listed as follows:

Andrews Road @ Route 111
Left = 450'+
Right = 500'+

Site Entrance @ Andrews Road
Left = To Alfred Road
Right = 325'

The posted speed limit on Alfred Road at Andrews Road is 35mph; the posted speed limit increases to 40mph just west of the Andrews Road intersection.

SECTION 3

C. ENTRANCE/EXIT DESIGN

The proposed development, including any required off-site improvements, will be designed and constructed as directed by the City of Biddeford and/or the Maine DOT.

SECTION 4

OPTION AGREEMENT, RIGHT OR INTEREST

A OPTION TO PURCHASE AND PURCHASE AND SALE AGREEMENT signed and dated January 25, 2021 along with a SECOND AMENDMENT to the OPTION AGREEMENT provides documentation of Devine Capital, LLC's ownership in the property located in the northeast quadrant of the Andrews Road and Alfred Road intersection.

OPTION TO PURCHASE AND PURCHASE AND SALE AGREEMENT

OPTION TO PURCHASE AND PURCHASE AND SALE AGREEMENT ("**Agreement**") made as of the date ("**Effective Date**") of last execution appearing below, by and between **New Life Christian Fellowship**, a Maine religious nonprofit corporation ("**Seller**"), with a mailing address of 551 Alfred Road, Biddeford, Maine 04005-9474 and **Devine Capital LLC**, a Massachusetts limited liability company, or its nominee ("**Buyer**"), with a mailing address of P.O. Box 17795, Portland, Maine 04112.

WHEREAS, Seller owns fee simple interest in that certain real property consisting of approximately 44.7 acres more or less located generally at 588 and 590 Alfred Street, in the City of Biddeford, County of York, Maine, also known as Tax Map 2, Lots 6 and 12, and more particularly described in the source deeds referenced in **Exhibit A** attached hereto (the "**Property**"); Excepting and reserving a 2.1 acre parcel conveyed to Old Dogs of Biddeford, LLC as referenced as Tax Map 2, Lot 6-3 and in the York County Registry of Deeds Book 17933 Page 197 also referenced here in Exhibit B.

WHEREAS, Seller has agreed to grant to Buyer an option to purchase the Property in the future for a set price reflected below, and does thus commit and obligate itself to sell and convey the Property to Buyer on the terms and conditions as set forth below;

NOW, THEREFORE, for good and valuable consideration, the sufficiency and receipt whereof is hereby acknowledged, the parties hereto, intending to be legally bound, hereby agree as follows, incorporating the foregoing recitals by reference as if fully restated hereinbelow:

Article I – Grant, Timing, Diligence, Permitting

1.1 *Option, Purchase Price.* For the consideration recited above, and in consideration for Buyer investing substantial time and money to review, evaluate, inspect, and explore development opportunities with respect to the Property, subject to the terms and conditions hereof, Seller hereby irrevocably grants to Buyer the exclusive right and option (the "**Option**") to purchase the Property for the sum of [redacted] (the "**Purchase Price**").

1.2 *Preliminary Diligence Deadline.* The initial term of the Option shall commence on the Effective Date and, unless otherwise extended in accordance with the terms hereof, shall expire at **6:00 p.m.** (Eastern Time), [redacted] days thereafter, during which period Buyer shall conduct its due diligence inspections (addressed in Article II below), the results of which shall be acceptable to Buyer in its sole and absolute discretion (the "**Preliminary Diligence Deadline**").

1.3 *Rezone/Permitting Deadline; Rezone/Permitting Approval Date.*

A. Upon the Preliminary Diligence Deadline, unless Buyer has terminated this Option due to the results of its due diligence being unsatisfactory to Buyer in its sole and absolute discretion, Buyer shall pay and deliver to Seller monthly payments in the amount of [redacted] in order to extend the Option term for up to [redacted] consecutive periods of [redacted] days each (all such monthly payments hereinafter referred to as the "**Option Payments**"). The Option Payments shall be nonrefundable but shall be applied to the Purchase Price at closing. Seller hereby grants to Buyer full authority to seek from any federal, state, or local governmental authority any zoning change(s) and/or permits and/or approvals whatsoever that Buyer, in its sole and absolute discretion, deems advisable for Buyer's intended development of the Property for a multi-family residential development (the "**Project**") during such extended period ("**Rezone/Permitting Deadline**"). Seller hereby agrees to fully support and cooperate with Buyer's efforts to rezone and permit the Project, and specifically agrees to appear and testify in favor of, and promptly execute any document reasonably requested by Buyer in connection with, any such efforts of Buyer, all at no cost or charge to Buyer.

B. In the event Buyer does not obtain final unappealable zoning change(s)/approvals, including conditional use and/or permits for the Project acceptable to Buyer in its sole and absolute discretion, or otherwise affirmatively elect by written notice to Seller to close notwithstanding the lack of such permits and/or approvals, by the Rezone/Permitting Deadline, then unless Buyer

elects to extend the Rezone/Permitting Deadline as provided in Section 1.4, below, this Agreement shall automatically terminate as of the Rezone/Permitting Deadline, and, promptly upon Buyer's delivery to Seller of (1) an instrument (the "**Release**") signed by Buyer and suitable to release and discharge the Record Notice, and (2) digital copies of and an assignment of all right in the all materials developed by Buyer and its contractors as part of Buyer's efforts to rezone and permit the Project (the "**Rezone Permitting Materials**"), this Agreement shall be null, void, of no further force and effect, and each party hereto shall have no further obligation one to the other.

C. If Buyer obtains zoning change(s) and permits for the Project acceptable to Buyer in its sole and absolute discretion, then promptly upon the date ("**Rezone/Permitting Approval Date**") that the last of such zoning change(s) and/or permit(s) become final and non-appealable, Buyer shall serve notice upon Seller confirming same, and Buyer shall close on the purchase by the date ("**Closing Deadline**") that is [redacted] days after the Rezone/Permitting Approval Date, and the notice described in the first sentence of this subsection shall also constitute the Exercise Notice referenced in Section 3.1, below, and shall contain the additional information specified in Section 3.2, below.

1.4 *Additional Option Extension Payments*. Notwithstanding any contrary provision herein, if Buyer has not obtained all necessary unappealable permits and/or approvals for the Project, Buyer may elect to further extend the Option and Rezone/Permitting Deadline for up to [redacted] additional, successive periods of [redacted] days each, provided Buyer shall pay and deliver to Seller monthly payments, in the amount of [redacted] (all such monthly payments hereinafter referred to as the "**Extension Payments**"). The Extension Payments shall be nonrefundable but shall be applied to the Purchase Price at closing.

1.5 *Termination*. Notwithstanding any contrary provision herein, at any time before the Rezone/Permitting Approval Date, Buyer may elect to terminate this Agreement by delivering to Seller notice thereof ("**Termination Notice**"). If a Termination Notice is given, Buyer shall promptly deliver to Seller the Release signed by Buyer and the Rezone/Permitting Materials, as described in Section 1.3 above, and upon such delivery, this Agreement shall be null and void, of no further force and effect, and each party hereto shall have no further obligation one to the other, except that Buyer's indemnification obligations under Section 2.2 shall survive any termination.

Article II – Due Diligence

2.1 To facilitate Buyer's inspections and evaluation of the Property, Seller agrees to deliver to Buyer as soon as possible, but in any event within [redacted] days from the date hereof, copies of the materials specified on the list attached hereto as **Exhibit B** (the "**Due Diligence Materials**"). In addition, Seller agrees to permit Buyer to inspect and make copies of any books and records in Seller's possession or control concerning the Property.

2.2 So long as this Agreement remains in effect, Buyer may conduct such investigations, inspections, interviews, tests, assessments and audits pertaining to the Property as Buyer elects, in Buyer's sole discretion and at Buyer's sole cost, *including but not limited to*: (i) title search; (ii) survey; (iii) environmental site assessment; (iv) review of zoning and building code requirements; and/or (v) physical/geotechnical inspection of the Property (collectively, the "**Inspections**"). Buyer shall promptly repair any physical damage to the Property caused by any such Inspections, and Buyer further agrees to indemnify and hold Seller harmless from and against any and all loss, cost, damage, or expense incurred by Seller as a result of said physical damage.

2.3 Seller agrees, in general, to cooperate in good faith with Buyer and Buyer's representatives, and, in particular:

2.3.1 so as to secure the rights granted to Buyer hereunder and to ensure that the Property shall be in substantially the same condition at the time of conveyance as exists as of the date of this Agreement, Seller agrees that for so long as this Agreement remains in

effect, then unless and until Buyer in writing consents otherwise, Seller shall maintain the Property substantially in condition as currently exists, timely paying all taxes and other impositions related to ownership thereof, and shall not: (a) transfer, encumber, mortgage, lease, alienate, impose any restriction or condition upon, or otherwise grant to any other person, firm or entity any permission, license, right or rights whatsoever in, pertaining to, or affecting any part or all of the Property; nor (b) make any change to or alter in any way whatsoever the physical or other characteristics of any part or all of the Property, including cutting of trees/timber, or contamination of any kind; and,

2.3.2 so as to ensure that there is no change in the status of the title to the Property prior to termination of this Agreement, Seller agrees to contemporaneously with its execution hereof execute and deliver to Buyer for recording in the appropriate Land Evidence Records an instrument (the "**Record Notice**") suitable under applicable law to evidence the grant of the Option and the aforesaid restrictions on the grant of any rights inconsistent with this Agreement, in form and substance as attached hereto as **Exhibit C**, or, if no such exhibit is attached, in form and substance as Buyer may reasonably request.

2.4 During the effective term of this Agreement, Buyer contemplates expending substantial sums and incurring substantial expenses to inspect, test, and analyze the Property, to conduct title research, undertake survey and site plans, and to otherwise conduct a due diligence review of the Property and all related matters, and to pursue obtaining permits for Buyer's contemplated development of the Property. To induce Buyer to make such efforts and expend such sums, Seller hereby agrees that during the effective term of this Agreement Seller shall not solicit, encourage, negotiate or entertain any offer with any other party concerning or with respect to the Property whatsoever, including offers to purchase or lease the Property, regarding any sale, financing, partnership, or other disposition of all or any part of, or interest in, the Property; Seller agrees to immediately communicate to Buyer for response any written inquiries received by Seller during the effective term of this Agreement. Seller further agrees to keep the monetary terms of this Agreement confidential, except only as may be approved by Buyer in writing, in advance.

2.5 Notwithstanding anything contained herein to the contrary, however, in the event Buyer delivers to Seller prior to expiration of the Preliminary Diligence Deadline written notice specifying with reasonable particularity matters related to the title to the Property to which Buyer objects ("**Title Objection Notice**"), then and in such event the Preliminary Diligence Deadline shall be deemed extended for an additional period beyond its then-scheduled expiration to allow Seller to, and Seller does hereby agree that Seller shall during such period, use good faith efforts to promptly and reasonably resolve such title objections. In the event Seller fails to use reasonable good faith efforts to so resolve Buyer's objections, then and in such event Seller shall be in default hereunder, and Buyer shall be entitled to its remedies for same as provided below. In addition, Buyer shall have the right to extend the Preliminary Diligence Deadline for a reasonable period of time to permit Buyer itself, at its own expense, to resolve such title objections.

Article III – Exercise, Purchase Price

3.1 In the event that Buyer elects to exercise the Option and purchase the Property, Buyer shall deliver notice ("**Exercise Notice**") to Seller pursuant to Section 1.3.C stating that Buyer elects to exercise the Option to purchase the Property.

3.2 Buyer shall specify in the Exercise Notice (but failure to so specify shall not invalidate the effectiveness of the Exercise Notice) the name of the entity, if different from Buyer, that is to take title to the Property, Seller hereby acknowledging and agreeing that Buyer may take title in the name of any entity Buyer chooses as nominee, and that for this purpose references in this Agreement to "Buyer" shall mean "Buyer or its nominee."

3.3 The Purchase Price shall be adjusted to reflect the Option Payments and Extension Payments paid to Seller by Buyer pursuant to Section 1.3, as well as the equitable apportionment as of date

of closing of unpaid real estate taxes, assessments, liens, utility bills, if any, recording charges, transfer tax, and similar items as is customary in standard conveyancing practice in the State of Maine (the Purchase Price as so adjusted may hereinafter be referred to as the "**Adjusted Purchase Price**").

Article IV – Closing Procedure

4.1 On the Closing Deadline, Seller shall sell and convey the Property to Buyer and Buyer shall purchase the Property from Seller (the "**Closing**"). At Closing, Seller shall deliver to Buyer:

4.1.1 an original deed (the "**Deed**") properly executed by or on behalf of Seller, in form and substance as attached hereto as **Exhibit D**, conveying all of Seller's interest in the Property to Buyer by good, marketable, insurable title, free and clear of all liens, encumbrances, and deficiencies, except utility easements of record, and, except easements and encumbrances of record prior to the date of this Agreement and,

4.1.2 such other documents as may be reasonably requested by Buyer, including without limitation customary title insurance affidavits, such instruments of assignment as Buyer reasonably requests, such as an Assignment of Permits, documents to evidence the existence, good standing, and authority of Seller, a settlement statement, or any other customary or reasonable documentation as may be requested (such other documents, together with the Deed, may hereinafter be referred to collectively as the "**Conveyance Documents**").

4.1.3 At Closing Buyer shall deliver to Seller the Adjusted Purchase Price in immediately available funds.

Article V - Representations

5.1 Seller hereby represents and warrants to Buyer, which representations and warranties shall be deemed restated as of closing, that:

5.1.1 Seller has good, insurable, and marketable title in fee simple to the Property, subject only to the encumbrances of record.

5.1.2 Seller is a Maine nonprofit corporation, is not a foreign person or foreign entity as defined in the Foreign Investment in Real Property Tax Act ("**FIRPTA**"), has full right, power and authority to enter into and consummate this transaction, the person executing this Agreement on behalf of Seller is an officer of Seller and is duly authorized to execute this Agreement on behalf of Seller, Seller has the power and authority without necessity of further act or consent to execute this Agreement and all other instruments and documents contemplated hereby and to perform any and all acts necessary or desirable to consummate the transactions contemplated (including a conveyance of the Property).

5.1.3 To Seller's knowledge without additional investigation, the Property is free of violations of law, is in full compliance with Federal, State, City and County ordinances and environmental laws, and there are not any current or contemplated special tax assessments known to Seller.

5.1.4 Other than to the extent granted in this Agreement, previously disclosed to Buyer in writing, or reflected as exceptions to coverage on a title commitment acceptable to Buyer, no person, firm, or entity has any rights in, pertaining to, or affecting the Property, and Seller has not granted any rights in, pertaining to, or affecting the Property to any person, firm, or entity in any unrecorded instrument or writing, nor does any person, firm, or entity have an option to purchase or right of first refusal to purchase the Property.

5.1.5 Seller is not involved as a debtor in any bankruptcy, reorganization or insolvency proceeding, and Seller has not received any notice of and has no knowledge of any

pending or threatened lawsuits, including condemnation suits, that could affect the Property or Seller's ownership of the Property.

5.1.6 To Seller's knowledge without additional investigation there have not been and there are not now any underground storage tanks located on or under the Property or if there have been or are any such tanks located on the Property, their location has been identified to Buyer in writing, they have been properly registered with all appropriate authorities, they are in full compliance with all applicable statutes, ordinances and regulations, and they have not resulted in the release of any hazardous or toxic substance, material, or waste into the environment.

5.1.7 To Seller's knowledge without additional investigation there are no past or present uses of the Property that did not comply in all material respects with all Environmental Protection Agency, Occupational Safety and Health Administration, and all other federal, state and local laws, administrative rules and regulations governing the soil, water, air and environment in and around the Property.

Article VI - Default

6.1 If Buyer fails to fulfill the Buyer's agreement herein, Seller shall retain the Option Payment(s) as liquidated damages, being Seller's sole remedy. If Seller shall fail to fulfill its obligations herein, Buyer shall have all available remedies at law and in equity, including specific performance. Notwithstanding the foregoing, the non-defaulting party agrees to provide the defaulting party with written notice providing a description of a default and provide such defaulting party with a [redacted] day cure period.

Article VII – Notice

7.1 All notices or other communications required or permitted hereunder shall be in writing, and shall be effective upon receipt or refusal when sent to the intended recipient by one of the methods set forth below:

7.1.1 regular and certified U.S. mail, postage prepaid, return receipt requested;

7.1.2 reputable national delivery service (i.e. FedEx, DHL); or,

7.1.3 otherwise hand delivered with an acknowledgment of receipt

7.1.4 electronic transmission

7.2 Each party, by written notice given to the other party in accordance herewith, may change the address to which notices or other communications hereunder shall be deemed to have been duly given; provided, however, no party may designate more than **three** notice addresses, and notice of a change of address shall be effective only upon actual delivery. Until changed as aforesaid, a notice shall be addressed to the intended recipient at their address set forth in the first paragraph on page 1 of this Agreement.

Article VIII – Miscellaneous

8.1 *Broker.* Seller and Buyer each hereby represent and warrant to the other that neither Seller nor Buyer has dealt with or employed any real estate agent, broker, or any person entitled to a commission in connection with the transaction contemplated other than [redacted] in Maine. Seller and Buyer hereby agree to indemnify, defend, and hold harmless the other from any claim or claims, action or actions, losses, payments, judgments, commission or commissions, paid or payable to any real estate agent, broker, person or entity in connection with this transaction that was not called to the attention of the other as a result of any services or facilities of any such real estate agent, broker, person or entity provided to the other. The provisions of this paragraph shall survive conveyance of the Property to Buyer.

8.2 *Governing Law, Venue, Jury Waiver.* This Agreement shall be construed in accordance with the laws of the State of Maine. Both Buyer and Seller hereby consent to the jurisdiction of the courts of said state and of the federal government, as well as to the jurisdiction of all courts from which an appeal may be taken from the aforesaid courts, for the purpose of any suit, action or other proceeding arising out of, under or with respect to this agreement, and expressly waive any and all objection each may now or hereafter have as to the venue in any of such courts, and EACH OF BUYER AND SELLER DO HEREBY EXPRESSLY WAIVE ANY RIGHT EACH MAY HAVE TO ELECT A TRIAL BY JURY AS TO ANY DISPUTE ARISING HEREUNDER. Any disputes between Buyer and Seller (which are not otherwise resolved by the parties) shall be submitted to binding arbitration in Portland, Maine administered by JAMS in accordance with its Streamlined Arbitration rules. The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction. This clause shall survive the closing of this transaction.

8.3 *Headings; Entire Agreement; Amendments.* The headings contained in this Agreement are for reference purposes only and shall not affect in any way the meaning or interpretation of this Agreement. This Agreement (including all exhibits annexed hereto) contains the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior understandings, written or oral, if any, with respect thereto. This Agreement may not be modified, changed, supplemented, or terminated, nor may any obligations hereunder be waived, except by written instrument signed by the party to be charged or by its agent duly authorized in writing or as otherwise expressly permitted herein. The Agreement shall not be binding on any party until signed by every party.

8.4 *Waiver.* No waiver of any breach of any agreement or provision herein contained shall be deemed a waiver of any preceding or succeeding breach thereof or of any other agreement or provision herein contained. No extension of time for performance of any obligations or acts shall be deemed an extension of the time for performance of any other obligations or acts.

8.5 *Binding Effect; Assigns; Benefits.* This Agreement shall inure to the benefit of and shall be binding upon the parties hereto and their respective heirs, legal representatives, successors and assigns; provided, however, Seller may not assign its rights or obligations under this Agreement absent Buyer's consent in Buyer's sole discretion.

8.6 *Exhibits, Counterparts.* All exhibits attached hereto are by this reference incorporated fully herein. This Agreement may be executed by the parties hereto in one or more counterparts, each of which shall be deemed to be an original, but all of which together shall constitute one and the same instrument.

8.7 *Severability.* The invalidity or unenforceability of any provision of this Agreement shall not affect the validity or enforceability of any other provision of this Agreement, which shall remain in full force and effect.

8.8 *Days, Interpretation.* References in this Agreement to a specified number of "days," shall mean and refer to calendar days; provided, however if any specified period would otherwise end on a day that is a Saturday, Sunday or day which is recognized by the State of Maine ("Jurisdiction") as a legal holiday, then and only in such event, the specified period shall be deemed to extend to the next following day that is not a Saturday, Sunday or legal holiday. "Business Day" means any day other than Saturday, Sunday and/or any weekday or weekend day that is a legal holiday observed by the federal government of the United States of America or the Jurisdiction. The terms of this Agreement were fully negotiated by the parties and shall not be construed for or against any party hereto.

8.9 *Prevailing Party.* In the event the parties litigate in any court or arbitration forum any dispute hereunder, then and in such event, the prevailing party shall be entitled to an award from the other of the reasonable attorney's fees and costs incurred therein by said prevailing party.

8.10 *Time of the Essence*. The parties hereto hereby agree that TIME IS OF THE ESSENCE as to each and every provision of this Agreement.

[*Signature Page Follows; Remainder Intentionally Blank*]

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed under seal by their proper officers hereunto duly authorized as of the date of last execution hereof as set forth below.

Seller:
NEW LIFE CHRISTIAN FELLOWSHIP

By:_____
Justin Sweeney
Its Duly Authorized: Lead Pastor

Date: January 25, 2021

Buyer:
DEVINE CAPITAL LLC

By:_____
Bernard M. Devine
Its Duly Authorized: President

Date: January 25, 2021

Exhibit A

Two parcels of land, excepting the third parcel conveyed to Old Dogs of Biddeford, LLC with any improvements thereon, in the City of Biddeford, York County, Maine described in the following deeds:

588 Alfred Street, Biddeford, Maine

- Warranty Deed dated November 13, 2001 from James A. Mininni, Sr. to New Life Christian Fellowship, recorded at Book 11111, Page 70 in the York County Registry of Deeds

590 Alfred Street, Biddeford, Maine

- Warranty Deed dated March 5, 2002 from Energy Homes, Inc. to New Life Christian Fellowship, recorded at Book 11449, Page 147 in the York County Registry of Deeds

Excepting the property located at Alfred Street, Biddeford, Maine, conveyed to Old Dogs of Biddeford LLC

- Warranty Deed dated April 19, 2019 from New Life Christian Fellowship to Old Dogs of Biddeford, LLC recorded at Book 17933, Page 197 in the York County Registry of Deeds

Exhibit B

Survey - Titcomb Associates 2002
588 Alfred St Deed 11111 070
590 Alfred St Deed 11449 147
588 Alfred St Disclosure
590 Alfred St Disclosure
Old Dogs 2018 Conveyance Survey
Old Dogs Deed 17933 197
Alfred St Sewer Map
Andrews Geometrics Plan Profile 2004
ARC New Building sketch
Packard Development sketch
BI3074-Va Table A Zoning Uses
Parcel 1 and 2 Tax Map copy
2003 Biddeford & Saco Water Co Letter
2003 Gorrill-Palmer Consulting Engineers re: Ability to Serve
2005 Post development AM Peak Hour
Andrews Geometrics Plan Profile 2004
Attachment B TR-20 Calculations
Attachment C Water Quality Computations
Calculations Based Upon Maine Subsurface Wastewater Rules
Capacity and Queuing Analysis Results
City of Biddeford Wastewater Dept 2003 Ability to Serve Letter
Erosion Sedimentation North C-8B
Erosion Sedimentation South C-8A
First American Gap Indemnity Agreement 5.25.2017
First American Alta 3 parcels-3.5-2002
Gorrill-Palmer Consulting Engineers 2.9.2004 Maine DOT Letter
Gorrill-Palmer Consulting Engineers 4.8.2004 Maine DOT Letter
Gorrill-Palmer Consulting Engineers 2004 Plans
Gorrill-Palmer Consulting Engineers Row Volumes, Peak Adjusted Volumes
Grading & Drainage C-3
Grading Drainage South C-4A
Grading Draining North C-4B
Lighting plan WLS Lighting Systems
Offisite Utility Profile C-17B
Offsite Utility Profile C-17A
Overall Site Layout C-1A
PreDevelopment Watershed Maps
Proposed Off-Site Improvements - Gorrill Palmer
Route 111 & Exit 4- traffic study
Route 111 & Home Depot
Route 111 at Andrews Rd
Route 111 at Exit 4 Precourt St
Route 111 at Route 35
Route 111 at Shaws Irving
Route 111 at Walmart Park n ride
RW Gillespie June 2004 geotechnical evaluation
Section 7 Wildlife and Fisheries
Section 14 Erosion and Sedimentation Control Plan
Site Layout C-1B
Site Layout North C-2C

Exhibit B (continued)

Site Layout Phase2. C-2A
Site Layout Plans C2A C1B
Site Layout South C-2B
Stormwater Management
Traffic Impact Study 2003
Trip Generation Calculations
Turning Movement Diagrams
Utility Plan C- 6
Utility Plan Phase 1 C5
Vernal Pool Application and Determination NLC
Vernal Pool Location Plan LongView Partners - 588-590 Alfred St
Wetland Reconnaissance 4-21-18- 588-590 Alfred St
Wetland Reconnaisance 6-3-20- 590 Alfred St.6-3-20
Zoning Map

Exhibit C

NOTICE OF OPTION

Notice is hereby given of the following Option to Purchase and Purchase and Sale Agreement (the "Option") vesting in Buyer an option to purchase certain real property owned by Seller:

SELLER:	New Life Christian Fellowship
BUYER:	Devine Capital LLC
DATE OF AGREEMENT:	January 25, 2021
PREMISES:	See Exhibit A attached hereto
TERM OF OPTION:	Beginning January 25, 2021 and continuing for up to [redacted] days, subject at all times to the terms and conditions of the Option Agreement.

The undersigned further expressly acknowledges that this Notice of Option is being executed pursuant to the provisions of the Option and is not intended to vary the terms or conditions of the Option.

IN WITNESS WHEREOF, the undersigned has caused this Notice of Option to be signed by its duly authorized representative.

NEW LIFE CHRISTIAN FELLOWSHIP

By:_____
Print Name: Justin Sweeney
Its Duly Authorized: President and Lead Pastor
Dated: January 25, 2021

STATE OF MAINE
COUNTY OF YORK, SS

January 25, 2021

Then personally appeared the above-named Justin Sweeney, President and Lead Pastor of NEW LIFE CHRISTIAN FELLOWSHIP and acknowledged the foregoing instrument to be his/~~her~~ free act and deed in his/~~her~~ said capacity, and the free act and deed of NEW LIFE CHRISTIAN FELLOWSHIP.

Lillian B. Camire
Notary Public / Attorney at Law
Print name:
My commission expires:

LILLIAN B. CAMIRE
Notary Public - Maine
My Commission Expires
December 17, 2023

Exhibit D

QUITCLAIM DEED
WITH COVENANT
STATUTORY SHORT FORM
TITLE 33, §775

New Life Christian Fellowship, a Maine religious nonprofit corporation, with a mailing address of 551 Alfred Street, Biddeford, Maine 04005-9474, for consideration paid, grants to _____, a _____, with a mailing address of _____, **with Quitclaim Covenant,** a certain lot or parcel of land situated in the City of Biddeford, County of York, and State of Maine, as described in **Exhibit A** attached hereto and made a part hereof.

DATED: _____, 202_ New Life Christian Fellowship

By:_____
Print Name: Justin Sweeney
Its Duly Authorized: President and Lead Pastor

STATE OF MAINE
COUNTY OF YORK, SS

_____, ___, 202_

Then personally appeared the above-named Justin Sweeney, President and Lead Pastor of NEW LIFE CHRISTIAN FELLOWSHIP and acknowledged the foregoing instrument to be his/her free act and deed in his/her said capacity, and the free act and deed of NEW LIFE CHRISTIAN FELLOWSHIP.

_____
Notary Public / Attorney at Law
Print name:
My commission expires:

Exhibit A

Two parcels of land, excepting the third parcel conveyed to Old Dogs of Biddeford, LLC with any improvements thereon, in the City of Biddeford, York County, Maine described in the following deeds:

588 Alfred Street, Biddeford, Maine

- Warranty Deed dated November 13, 2001 from James A. Mininni, Sr. to New Life Christian Fellowship, recorded at Book 11111, Page 70 in the York County Registry of Deeds

590 Alfred Street, Biddeford, Maine

- Warranty Deed dated March 5, 2002 from Energy Homes, Inc. to New Life Christian Fellowship, recorded at Book 11449, Page 147 in the York County Registry of Deeds

Excepting the property located at Alfred Street, Biddeford, Maine, conveyed to Old Dogs of Biddeford, LLC

- Warranty Deed dated April 19, 2019, from New Life Christian Fellowship to Old Dogs of Biddeford, LLC recorded at Book 17933, Page 197 in the York County Registry of Deeds

SECOND AMENDMENT TO OPTION TO PURCHASE AND PURCHASE AND SALE AGREEMENT

THIS SECOND AMENDMENT TO OPTION TO PURCHASE AND PURCHASE AND SALE AGREEMENT (this Amendment") is made and entered into as of the 14 day of January, 2022, by and between **New Life Christian Fellowship** ("Seller") and **Devine Capital LLC** ("Buyer") with respect to that certain Option To Purchase and Purchase and Sale Agreement between Seller and Buyer, with an effective date of January 25, 2021, as amended by that certain Amendment to Option to Purchase and Purchase and Sale Agreement dated May "__", 2021 (together, the "Agreement"), relating to property of the Seller located generally at 588 and 590 Alfred Street in Biddeford, Maine.

WHEREAS, Seller and Buyer wish to amend the Agreement as set forth below.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Seller and Buyer hereby agree that the Agreement shall be amended as hereinafter set forth.

A. Section 1.4 of the Agreement is hereby amended to change the monthly amount of the Extension Payments from [redacted] to [redacted] for the firs [redacted] monthly Extension Payments (i.e., the monthly Extension Payments in January 2022 through June 2022 shall be [redacted] but thereafter shall revert to [redacted]).

B. Seller and Buyer hereby ratify and confirm all terms and provisions of the Agreement and agree that, except as amended by this Amendment, all terms and provisions of the Agreement shall remain in full force and effect including.

C. This Second Amendment may be simultaneously executed in any number of counterparts, each of which when so executed and delivered shall be an original, but such counterparts shall constitute one and the same instrument. This Second Amendment may be transmitted between the parties by facsimile machine or by email attachment and signatures appearing on faxed or emailed instruments shall be treated as original signatures. Both a faxed or emailed version containing either original, faxed or emailed signatures of all parties, and multiple counterparts of the same version each containing separate original, faxed or emailed signatures of the parties, shall be binding on them.

[Signature Page Follows]

IN WITNESS WHEREOF, Seller and Buyer have executed this Second Amendment as of the date first above written.

SELLER

NEW LIFE CHRISTIAN FELLOWSHIP

DocuSigned by:
By: Justin Sweeney
2507456A9BB5421...

Name: Justin Sweeney

Its Duly Authorized: Lead Pastor

BUYER

DEVINE CAPITAL LLC

By: _____
Bernard M. Devine, Jr., Manager

SECTION 5

PUBLIC OR PRIVATE RIGHTS-OF-WAY

On the south side of the proposed site, along Alfred Road (Route 111), exists a 10-foot right-of-way (R.O.W.) easement. The Boundary & Existing Conditions Survey plan describes said easement as follows:

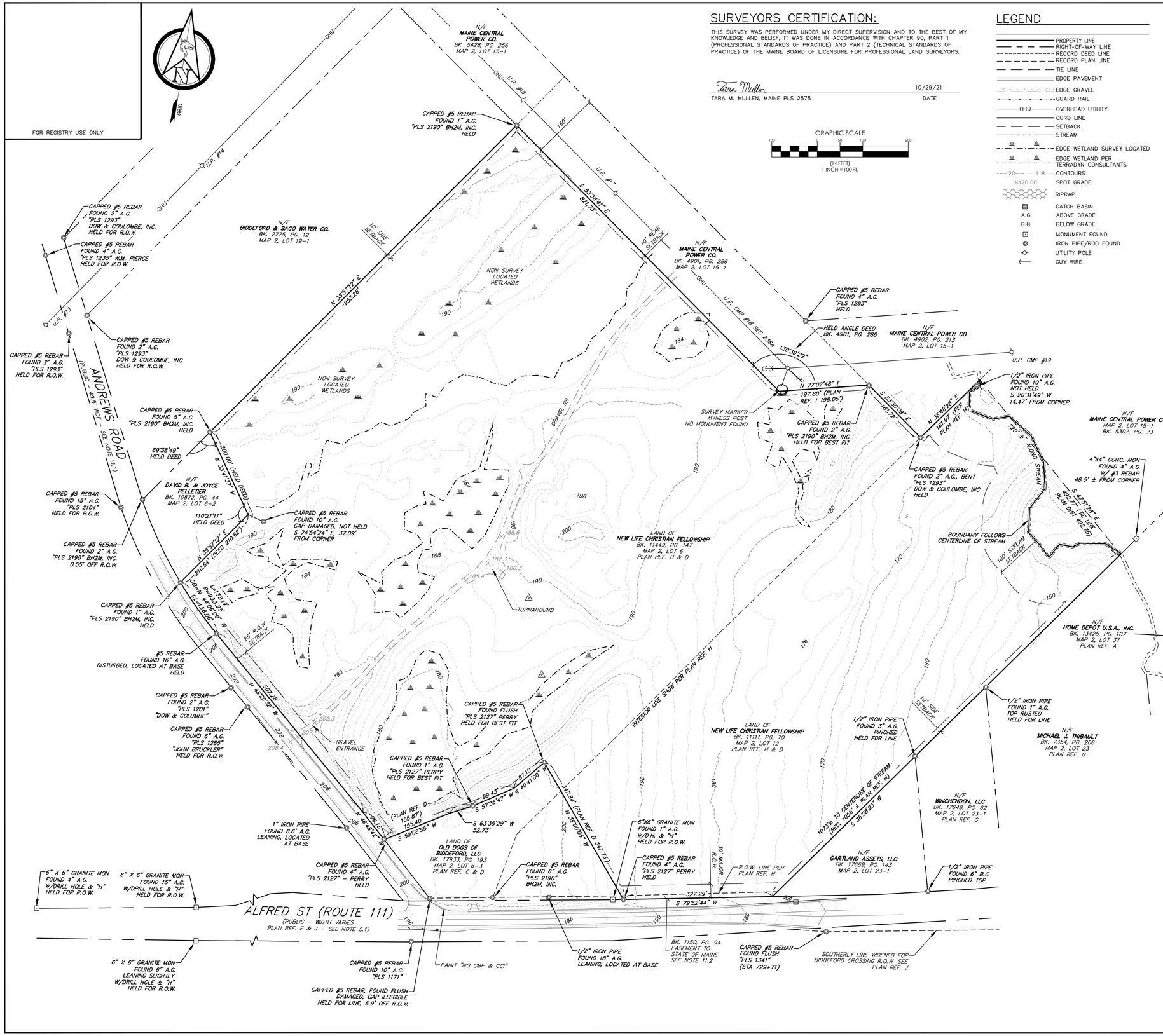
"*When the 1948 R.O.W. for Route 111 was established, an easement was granted by the former owner of Map 2, Lot 12, Vito Mininni, to the State of Maine, see Book 1150, page 94 dated January 12, 1950. The limits of the easement are shown on plan Ref. E as the edge of the R.O.W. of Route 111 and were held for the current R.O.W. of Route 111.*"

SECTION 6

SCHEDULE

KDK Biddeford, LLC, is anticipating start of construction during the fall of 2022 with a fall 2023 completion.

FOR REGISTRY USE ONLY



SURVEYORS CERTIFICATION:

THIS SURVEY WAS PERFORMED UNDER MY DIRECT SUPERVISION AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT WAS DONE IN ACCORDANCE WITH CHAPTER 90, PART 1 (PROFESSIONAL STANDARDS OF PRACTICE) AND PART 2 (TECHNICAL STANDARDS OF PRACTICE) OF THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS.

Tara Mullen — 10/29/21

TARA M. MULLEN, MAINE PLS 2575 — DATE

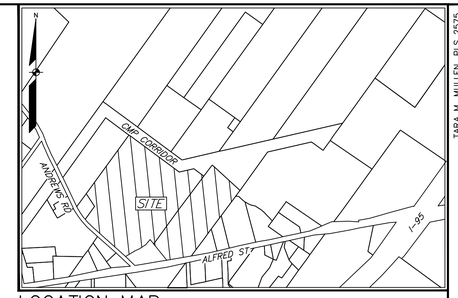
GRAPHIC SCALE

100 0 50 100 200

(IN FEET)
1 INCH = 100 FT.

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- RECORD DEED LINE
- RECORD PLAN LINE
- TIE LINE
- EDGE PAVEMENT
- EDGE GRAVEL
- GUARD RAIL
- OHU — OVERHEAD UTILITY
- CURB LINE
- SETBACK
- STREAM
- EDGE WETLAND SURVEY LOCATED
- EDGE WETLAND PER TERRADYN CONSULTANTS
- 120 118 — CONTOURS
- ×120.00 — SPOT GRADE
- RIPRAP
- CATCH BASIN
- A.G. — ABOVE GRADE
- B.G. — BELOW GRADE
- MONUMENT FOUND
- IRON PIPE/ROD FOUND
- UTILITY POLE
- GUY WIRE



LOCATION MAP

N.T.S.

GENERAL NOTES:

1. THE RECORD OWNER OF THE PARCEL IS NEW LIFE CHRISTIAN CHURCH BY DEEDS DATED NOVEMBER 13, 2001 AND MARCH 5, 2002 AND RECORDED AT THE YORK COUNTY REGISTRY OF DEEDS IN BOOK 11111, PAGE 70 AND BOOK 11449, PAGE 148, RESPECTIVELY AND IS SHOWN AS LOTS 6 & 12, RESPECTIVELY, ON THE CITY OF BIDDEFORD TAX MAP 2.
2. THE PROPERTY IS LOCATED IN THE HIGHWAY BUSINESS (B2) DISTRICT.

   LAND USE REGULATIONS ARE AS FOLLOWS:

MINIMUM LOT SIZE:	40,000 SF - NEITHER WATER NOR SEWER
MINIMUM STREET FRONTAGE:	150 FT
MINIMUM FRONT YARD:	30 FT MAJOR ROW. 25 FT OTHER ROW
MINIMUM SIDE & REAR YARD:	10 FT
STREAM SETBACK:	100 FT FROM STREAM**
MAXIMUM BUILDING HEIGHT:	35 FT (3 STORIES)

   * SEE ORDINANCE FOR MORE PARTICULAR INFORMATION.

   ** STREAM SETBACK PER BIDDEFORD SHORELAND ZONING ORDINANCE. LOCATION AND EXTENTS OF THE STREAM CHANNEL SHOWN IS BASED ON VISUAL INTERPRETATION DURING THE FIELD SURVEY.
3. TOTAL AREA OF PARCEL IS APPROXIMATELY 44.53 ACRES.

   MAP 2, LOT 12 600,700 ± S.F. (13.79 ± ACRES)
   MAP 2, LOT 6 1,351,500 ± S.F. (31.03 ± ACRES)
4. BOUNDARY INFORMATION SHOWN HEREON IS BASED UPON PLAN REF. D, E, H & I TIED TO FIELD MEASUREMENTS OBSERVED BY NORTHERN SURVEY ENGINEERING, LLC IN AUGUST & SEPTEMBER, 2021. VERIFIED BY RECORDS SEARCH COMPLETED AS PART OF THIS SURVEY..
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10. A WETLAND DELINEATION WAS PERFORMED ON THIS PROJECT SITE IN AUGUST, 2021 BY MARK CENCI, MARK CENCI GEOLOGIC, INC. AND LOCATED BY NORTHERN SURVEY ENGINEERING AND MARK CENCI GEOLOGIC, INC. THIS DELINEATION CONFORMS TO THE STANDARDS AND METHODS OUTLINED IN THE 1987 WETLANDS DELINEATION MANUAL AND NORTHEAST REGIONAL SUPPLEMENT AUTHORED AND PUBLISHED BY THE U.S. ARMY CORPS OF ENGINEERS.

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TARA M. MULLEN, PLS 2575

STATE OF MAINE — TARA M. MULLEN — 2575 — REGISTERED PROFESSIONAL LAND SURVEYOR

REV:	BY:	DATE:	STATUS:

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK.

NORSE
NORTHERN SURVEY ENGINEERING
207.440.3487
41 CHURCH ROAD, BRUNSWICK, MAINE 04011
www.northernsurveyengineering.com

BOUNDARY & EXISTING CONDITIONS SURVEY

OF:
LAND OF NEW LIFE CHRISTIAN FELLOWSHIP
588 ALFRED ST & 590 ALFRED ST
BIDDEFORD, MAINE, 04005

FOR:
TERRADYN CONSULTANTS, LLC
41 CAMPUS DRIVE, SUITE 101
NEW GLOSTER, ME 04260 111

RECORD OWNER:
NEW LIFE CHRISTIAN FELLOWSHIP
551 ALFRED ST, BIDDEFORD, ME 04005
BK 111110, PG 70 & BK 11449, PG 148

DRAWN	CHECKED
TMM	DJH
PROJECT NO.	DATE
21107	10/29/21
SHEET SIZE	SCALE
24" X 36"	1" = 100'

SHEET 1 OF 1

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GRAPHIC SCALE

80 0 40 80 160 160

(IN FEET)
1 inch = 80 ft.

STATE OF MAINE
RICHARD L. MEEK
No. 10668
PROFESSIONAL ENGINEER

DATE: 02-07-2022
P.E.: RICHARD L. MEEK, P.E. 10668

NO.	DATE	REVISIONS	APP'D BY
D	02/07/2022	UPDATE DESIGN PLANS TO REFLECT ALTERNATE SITE LAYOUT #2	RLM
C	01/07/2022	MODIFIED SITE LAYOUT PER OWNER DIRECTION	RLM
B	12/17/2021	REVISED PER OWNER COMMENTS	RLM
A	11/09/2021	PRELIMINARY PLANS TO KGI	RLM

TERRADYN CONSULTANTS, LLC
41 CAMPUS DRIVE
SUITE 203
NEW GLOUCESTER, ME 04260
565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04102
OFFICE: (207) 926-5111 FAX: (207) 221-1317
www.terradynconsultants.com
Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT:
BIDDEFORD RESIDENTIAL
ANDREWS ROAD, BIDDEFORD, MAINE

OVERALL SITE PLAN

CLIENT:
KGI PROPERTIES, LLC
10 MEMORIAL BOULEVARD, SUITE 901
PROVIDENCE, RI 02903

DATE:	09/28/2021
SCALE:	1" = 80'
DESIGNED:	RLM
JOB NO:	2149
FILE:	2149.S
SHEET	C-1.0

Site Design Associates
Consulting Engineering and Land Planning

September 28, 2022

Mr. Matthew Grooms
Via email

RE: Biddeford Residential
Andrews Road

Dear Matt;

Per your request Site Design Associates has undertaken a review of the plans submitted in support of a preliminary subdivision application for the referenced project.

Our review was based on preliminary civil engineering plans dated 09-13-22.

We are aware that the plans are preliminary, and may not contain the detail one would expect in the final documents. Our comments include some items that may be closer associated with final documentation, in order for the applicant to consider them prior to the final plan submission. Our review was limited to the plans, as no other documentation was provided.

Based on our review we offer the following comments for your, the planning board's, and the applicant's consideration:

A. General

1. The status box on the drawings indicates that an application for a stormwater permit was submitted to MDEP. It appears the proposed new devegetated area is over three acres which would require a Site Location of Development Act permit from MDEP. In either case, MDEP would be reviewing the stormwater management plans.
2. Has a trip generation analysis or traffic report been submitted?
3. Will an MDOT Traffic Movement Permit be required?
4. Will there be any issues at the Andrews Road/Route 111 intersection due to increased traffic?
5. The plans indicate that they have applied to the city for subdivision approval. It seems that a development of this nature would also require site plan approval.
6. Have photometric plans been provided?
7. Is one point of access into the site acceptable to the fire department?
8. It appears that none of the roads are intended to be developed as public or private ways.

B. Drawings

1. Existing Conditions Plan

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

a. The plan indicates some of the onsite wetlands are not survey located. How were they located?
b. Is the standing water located in the southeast corner of the property a Wetland of Special Significance as defined by chapter 310 of the Natural Resources Protection Act?
c. The existing overhead utilities in Andrews Road should be shown.

2. Site Plans

a. Is an accessible handicap parking space necessary at the mail pick up?
b. Is it the intent for all curbing to be vertical slip form?
c. A sawcut and butt joint should be noted at Andrews Road, in sound pavement, and a detail provided.
d. How will the "skewed" tipdown at the intersection of roads A and B be constructed?
e. Should a sidewalk tipdown be provided at Andrews Road?
f. Why are the clearing limits for the dog park noted as "to be determined"? Should they be determined as part of the review process? This would need to be considered in the stormwater management analysis as well.
g. Are tipdowns required on the northerly side of the access drive to garage 1?
h. What is the purpose of the large size of concrete trash enclosure at the maintenance building? Access for garbage trucks to the dumpsters would only be available at the front portion of the pad.
i. The outside radii on the ends of the parking areas and maintenance building drives are less than 50 ft, and the inside radii are relatively short as well. Access for the larger fire apparatus may be difficult. Typically, 50 ft. outside radii are provided. The fire department should review and comment.

3. Grading and Drainage Plans

a. More spot grades should be provided in some areas to better define the drainage intent, including at the accessible parking limits.
b. There are areas where the pavement will be very flat, and slopes less than desirable for proper drainage.
c. The grade of the drive at Andrews Road should be a maximum of 3% for a minimum of 75 feet to provide suitable access for winter conditions.
d. There are going to be issues during construction with a grading design based on LIDAR contours with a 2 foot contour interval.
e. There are undrained low areas shown westerly of building 1000.
f. The gravel wetland cell easterly of building 7000 outlets onto a relatively steep slope. Further energy dissipation and slope protection may be warranted.

4. Utility Plans

    a. Where will the pool backwash outlet?
    b. What are the utility piping materials?

5. Site Details

    a. Requirements for inspections during construction should be included on Drawing C5.1 and should be consistent with the requirements of the MDEP stormwater checklist.
    b. Sewer pump station details should be provided.
    c. The vertical curb detail shown will result in a curb with a 5.5" reveal, and should be revised.
    d. Will there be sloped curbing adjacent to non-sidewalk paved areas?
    e. Typical sections for the 10 ft wide access drive and the site drive should be provided.
    f. The handicap ramp detail is not applicable at most locations on the plan. The appropriate detail should be provided.
    g. The gravel wetland details are incomplete.

We do not believe that these comments, which are generally technical in nature, will significantly impact the overall design concept, and that they could be satisfactorily addressed at the time of the final plan submission, if the planning board and you concur. If you have any questions, or require additional information, please do not hesitate to contact me.

Sincerely,
Site Design Associates

Tom Saucier, P.E.
President

PAUL P. GADBOIS PE, PLS

Civil Engineering, Surveying, Land Planning
Structural Engineering, DEP Permitting

P.O. Box 327
Saco, ME 04072
Phone & Fax (207) 283-3980
Email: pgadbois53@gmail.com

City of Biddeford
Planning Department
205 Main Street
Biddeford, Maine

April 19, 2022

Re: McPheeters Property, 81 Guinea Road, Tax Map 76, Lot 37, and Map 77, Lot 35.

Planning Department,

The owner / applicants Peter McPheeters and Susan McPheeters wish to subdivide their 20-acre parcel of land into four residential house lots.

Access to the property is from a 50-foot strip of land requiring the construction of a 4-lot private way.

The property will be serviced by public water, underground utilities, and on-lot septic. The project is located in the SR-1 Zone requiring 100 foot of street frontage and a minimum lot size of 20,000 square feet.

The project will require a DEP Maine Construction General Permit, a DEP Stream Crossing Permit, a DEP, and Army Corp Wetland Fill Permit. The project proposes to fill 9,250 square feet of wetlands to provide for access to the property.

The project is designed in accordance with the Stream Smart Road Crossing Guide by utilizing an Arch Culvert at the crossing.

Wetlands were delineated by Mark Hampton and are considered wetlands of special significance. See attached report.

New Earth Ecological Consulting performed a Site Constraint assessment on the property (See attached report). The SP-Zone Line shown on the plan is 100 feet from the wetland edge. Wetlands were mapped by Mark Hampton. New Earth Ecological Consulting Vernal Pool survey. See attached report.

We look forward to discussing this conceptual plan submission with the staff and planning board prior to submitting DEP and Army Corp permits required for this project.

Very truly yours,

Paul P. Gadbois

Paul P. Gadbois, P.E., P.L.S.

CITY OF BIDDEFORD, MAINE
PLANNING BOARD

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

APPLICATION FORM

Type of Application:

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

Applicant Information:

Applicant's Name: PETER AND SUSAN MCPHEETERS
Applicant's Mailing Address: P.O. Box 224 BIDDEFORD
Applicant's Telephone: (207) 468-1704
What is Applicant's legal interest in the property?
☒ Owner ☐ Potential Buyer with Contract ☐ Lease/Rental Agreement

Owner's Name: _____
Owner's Address: _____
Owner's Telephone: _____

Agent's Name: PAUL P. GADBOIS
Agent's Address: P.O. Box 327 SACO, MAINE 04072
Telephone: (207) 283-3980

Engineer/Surveyor: SAME AS AGENT
Engineer/Surveyor's Address: _____
Telephone: _____

Project Location and Lot Information:

Street Address: 81 GUINEA RD
Tax Map: 76 Lot: 37 AND 77/35
Current Zoning: SR-1 & RF Shoreland Zoning: SP

Size of lot: 20 ☒ acres ☐ s.f. Lot Frontage: 52'

Existing Use of Property: VACANT

Property currently serviced by:

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

Slope Conditions in Area of Construction (if applicable):

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

Are there any wetlands or waterbodies on the site? ☒ Yes ☐ No If yes, attach information

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

Description of proposed use of property:

Project/Proposed Use Description: CONSTRUCT PRIVATE ROAD FOR ACCESS TO 4 SINGLE FAMILY HOUSE LOTS

Property to be serviced by:

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

Is this project part of a larger project? ☐ Yes ☒ No

☐ If in a Shoreland Zone:

Percent of residential lot coverage (Max. 20%): N/A

Percent of structure expansion (Max. 30%): _____

☒ If Subdivision Review, number of lots proposed: 4

☒ If a Private Way is proposed, number of lots served: 4

☐ **If Site Plan Review, you must provide the following information:**

Total new square feet footprint of structures: _____

Total new square feet paving/parking: _____

Waiver Requests (attach details):

1. _____
2. _____
3. _____
4. _____
5. _____

Attachments:

A. Letters of Approval

- ☐ Fire Department - Contact Chief or Deputy Chief - 282-9986
- ☐ Ability to Serve for Water Service – Maine Water - 282-1543
- ☐ Ability to Serve for Sewer Service- Engineering Dept (Sewer) - Tom Milligan 284-9118
- ☐ Police Department - E-911 Road Name Designation - Contact Joanne Fisk - 282-5127

B. Letter to Planning Board describing project, waiver requests, proposed improvements, addressing permit requirements, etc.

C. Photographs of site.

D. Architectural renderings/drawings of proposed buildings, as required.

E. Engineered Plans, as required.

Fees (due at time of application):

Refer to "Attachment A Fees and Charges" of the Land Development Regulations for more information. Consult with Planning Staff if you have questions.

Required Signatures:

By signing this application, as the foresaid applicant or authorized agent:

- I certify that I have read and completely understand the application;
- I certify that the information contained in this application and it's attachments are true and correct;
- I understand that all information provided on this form and all other documents submitted as part of my proposal is a matter of public record;
- I understand that copies of this information may be supplied upon request to an interested party.
- I understand that additional funds may be required through the course of review for special studies, legal review costs, and/or engineering review.
- I understand that by submitting this application I am not guaranteed a place on any particular agenda. I further understand that the City Planner will place me on an agenda for review when the application is deemed substantially complete.

☒ Project proposed to have 1 acre or more of site disturbance:

-Project may need to apply for a Maine Construction General Permit and shall comply with the requirements of DEP Chapter 500 Stormwater Regulations, as they apply.

Signature of ~~applicant~~ AGENT: Paul P. Gallois Date: 4/19/22

Signature of owner of property: _____ Date: _____

IF PLAN APPROVAL IS ANTICIPATED, PROVIDE 2 FULL SIZE MYLARS & 2 FULL SIZE PAPER COPIES FOR BOARD SIGNATURE (AS APPLICABLE). CHECK WITH PLANNING STAFF FOR CLARIFICATION.

PAUL P. GADBOIS PE, PLS

Civil Engineering, Surveying, Land Planning
Structural Engineering, DEP Permitting

P.O. Box 327
Saco, ME 04072
Phone & Fax (207) 283-3980
Email: pgadbois53@gmail.com

April 7, 2022

Paul P. Gadbois, P.E., P.L.S.
Paul P. Gadbois Engineering
P.O. Box 327
Saco, Maine 04072

Re: McPheeters Property 81 Guinea Road Tax Map 76, Lot 37 & Map 77, Lot 35.

Dear Paul,

This letter will serve as authorization for Paul P. Gadbois Engineering to act as agent on the above referenced project with regards to various land use permitting requirements for the property in Biddeford. This will include any submissions to the DEP, ACOE, and the City.

Very Truly Yours,

Peter McPheeters

MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

3748

March 23, 2021

Mr. Peter McPheeters
P. O. Box 224
Biddeford Pool, ME 04005

Re: Delineation of wetlands 25+ acre parcel, 97 Guinea Road, Biddeford, ME

Dear Peter,

I have completed a delineation of wetlands on a 25+ acre parcel located at 97 Guinea Road Biddeford, ME. The wetland delineation was completed in accordance with the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual for the Northcentral and Northeast Regions dated January 2012. These manuals require the presence of three parameters for a wetland to be present, wetland hydrology, hydrophytic vegetation, and hydric soils.

The wetlands I found on the parcel were flagged with yellow flagging. The wetland flags are labeled in an alpha-numeric sequence and were located with GPS equipment. The wetlands found onsite are forested wetlands located adjacent to a unnamed stream and Moors Brook. The wetlands on the property meet the definition of wetlands of special significance as defined by Maine Department of Environmental Protection because they are floodplain wetlands to the streams or brook.

If you have any questions or require additional information, please contact me.

Sincerely,

Mark J. Hampton C.S.S., L.S.E.
Certified Soil Scientist #216
Licensed Site Evaluator #263

P.O. BOX 1931 • PORTLAND, ME 04104-1931 • 207-756-2900 • mhampto1@maine.rr.com

Quality services that meet your deadline

March 1, 2021

Peter McPheeters
OceanView Properties, Inc.
18 Yates Street
PO Box 224
Biddeford Pool, Maine 04006

RE: Site Constraints Assessment Summary – 81 & 97 Guinea Road

Dear Mr. McPheeters:

NewEarth Ecological Consulting, LLC (NewEarth) has completed the requested environmental constraints assessment of the properties located at 81 and 97 Guinea Road, Biddeford, Maine (Figure 1).

As detailed in the attached summary, our assessment identified several potential environmental constraints that may be present on the property(s), including wetlands, streams, and possibly vernal pools.

Since the assessment was performed during the winter season, resource surveys during the appropriate season are recommended to confirm the presence/absence of potential resources and to establish their regulatory status and required protections. Federal, state, and local regulatory agencies should be contacted regarding the specifics of any proposed development of the site.

Please do not hesitate to contact me if you have any questions or would like any additional information. Thank you for the opportunity to support you with this effort.

Sincerely,

Stacie L. Grove
Principal Environmental Biologist

Attachments:
Text: Summary of Assessment & Recommendations
Figures: 1: Site Location; 2a: Previously Mapped Wetlands, Waterbodies and Biddeford Protection Districts; 2b: Floodplains, 3: Previously Documented Rare, Threatened, or Endangered Species or Habitat Locations; 4: Potential Resources Identified During Site Walk
Table: Table Constraints Review Summary

CC: K. Bloomer, NewEarth file 21_OCEAN_001

CALL 207.286.3259 SEND 169 Watson Mill Road, Saco, ME 04072 VISIT www.newearthecological.com

NewEarth Ecological Consulting, LLC (NewEarth) was contracted by Oceanview Properties to identify potential environmental constraints on the parcels located at 81 and 97 Guinea Road, Biddeford, ME (Figure 1). A certified Wildlife Biologist/Professional Wetland Scientist from NewEarth conducted a review of publicly available environmental information (Table 1), and performed on-site assessment of the parcels on February 25, 2021 (Figure 1). Please note, should you plan to develop the site, appropriate local, state, and federal agencies should be contacted to discuss the specifics of your proposed action and applicable laws and regulations. A summary of identified potential constraints and some general recommendations are presented below.

Waterbodies

Perennial or intermittent streams which are regulated by federal, state and local jurisdictions align the property (Figure 2a). A City of Biddeford-imposed 100-foot Stream Protection buffer aligns each. Federal Emergency Management Agency-designated floodplain areas also align these streams (Figure 2b), but it appears that the floodplain areas fall within the 100-foot Stream Protection zone. A formal waterbody delineation would be needed to accurately locate and map the boundaries of each.

Several ephemeral drainages were identified during the site walk (Figure 4). These features carry water but are not regulated. However, although it appears none of the drainage would meet the regulatory definition of a river, stream or brook, the characteristics of these features should be reassessed during the spring-summer season.

Wetlands

According to existing databases no wetlands, which are regulated by federal, state and local jurisdictions, have been mapped on the parcels (Figure 2a). However, based on the site walk, wetlands are present along the stream resources noted above and at several other locations on the parcels (Figure 4). A formal wetland delineation by a certified professional wetland scientist would be needed to confirm if the areas meet criteria for designation as wetlands and to accurately locate and map the boundaries of each.

Wetlands associated with floodplains, stream resources, and significant wildlife habitat (SWH) such as vernal pools are considered wetlands of special significance, per Maine's Natural Resource Protection Act (NRPA). A variety of restrictions and compensation requirements are associated with impacts to WOSS and SWH and should be discussed with regulating agencies.

Although the boundaries of streams and wetlands have not been confirmed/mapped, most wetlands appear to fall within the 100-foot Stream Protection zone. No additional protection buffers would be added to wetlands that extend beyond, or are outside of, the 100-foot Stream Protection Zone unless it turns out that they have a vernal pool in them or abut a new stream.

Listed Species and Significant Wildlife Habitat

MDIFW databases indicate that much of the parcels could contain occurrences of state-listed species (turtles) or habitat for those species (Figure 3). However, based on discussions with MDIFW staff, and observations form the site walk, habitat found on the parcels would be highly unlikely to support these listed wildlife species. Plant species have also been documented near the site (Figure 3). It is unlikely that

surveys for any rare plant or animal species would be needed unless impacts are proposed to wetland within the 100-foot Stream Protection zone.

No vernal pools are known to occur on the site but based on the site walk that occurred during snow-covered conditions, several wetland areas could contain vernal pool habitat. MDIFW will require that a qualified person assess the parcels for vernal pool habitat when snow cover is not present. If potential pools are identified, a formal vernal pool survey would be required during the appropriate spring April-May amphibian breeding season.

Recommendations

Conduct a spring assessment for VPs (conducted between April 10th and April 25th). Subsequent surveys, reporting and submittal to MDIFW would be required if potential habitat is found.

Conduct a formal wetland and waterbody delineation and sub-meter accuracy GPS data collection of feature boundaries

No fill in wetlands and no impacts to streams – no federal permits needed.

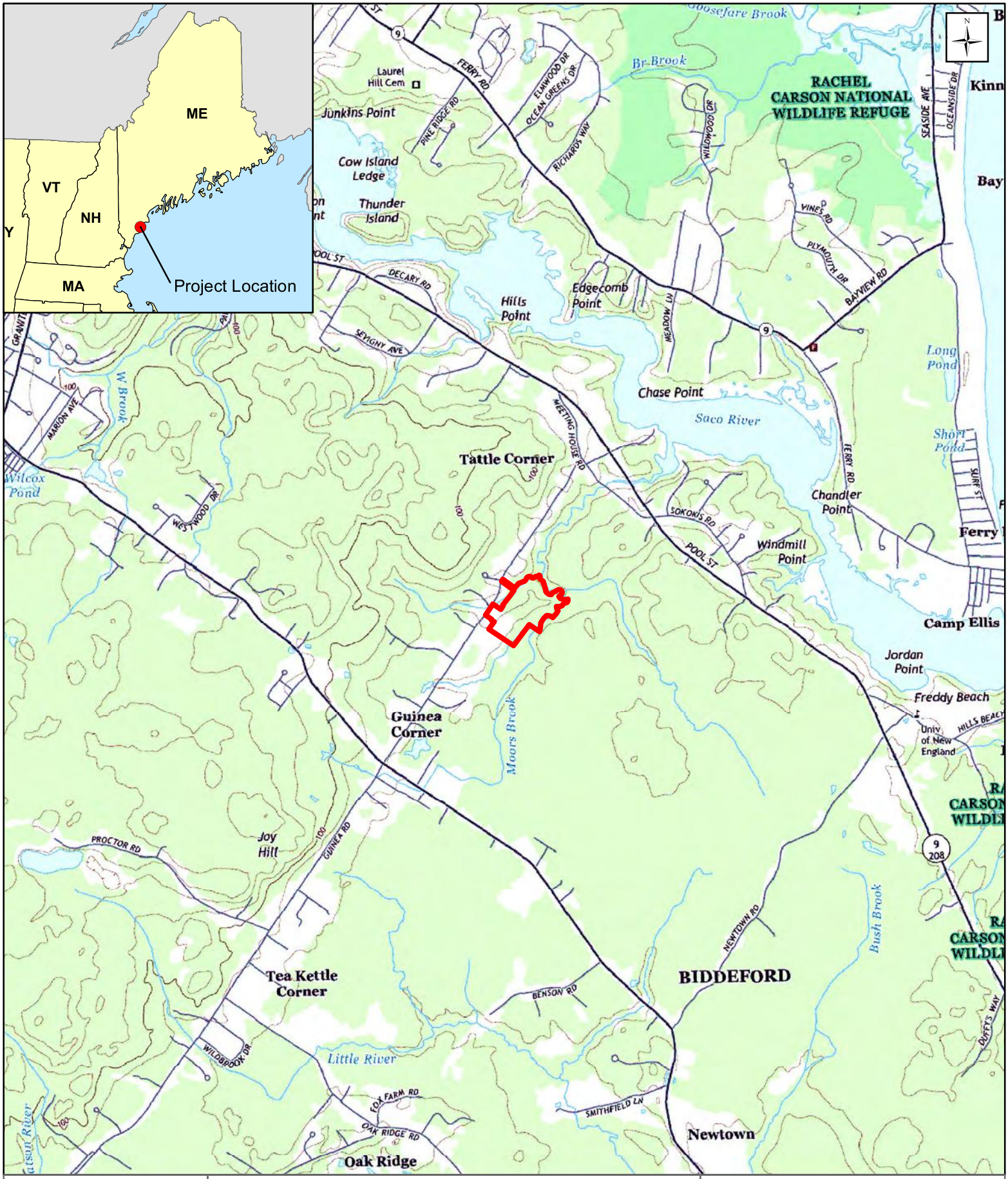
Per Maine DEP Fill in wetlands < 4,300 square feet (0.1 acre) and NOT within 100 feet of other protected resources (i.e., e.g., river, stream, brook, great pond, and freshwater wetland containing significant wildlife habitat) – no state NRPA permit needed. Unless vernal pools or new streams are identified, the 100-foot Stream Protection zone covers the protected resources that would be included in this.

Should you plan to impact streams, go within the 100' buffer, or impact more that 4,300 square feet elsewhere on the parcels, a federal US Army Corps of Engineers permit and NRPA Tier permit would be needed for the impacts. The NRPA tier level would be based on the amount and type of impact. Tier I >4,300 sq. ft < 15,000 sq. ft; Tier II > 15,000 sq. ft and < 43,560 sq. ft; Tier III > 43,560 sq. ft and impacts to WOSS, SWH etc.

Disturbance under 1 acre - no state stormwater permit needed.

City of Biddeford land use ordinances and regulations apply to activities within 100 feet of streams as well as within high-risk flood zones which occur along the streams that abut the parcels. Flood zones have significant engineering/permit requirements. Confirm the location of these boundaries and the applicable regulations with the City.

It is recommended (but likely would not be required), that forest removal activities take place after October 31st and before April 16th to minimize impacts to breeding/nesting migratory birds and bats.



Prepared For:

Prepared By:

NewEarth ECOLOGICAL CONSULTING, LLC

Legend

Surveyed Area

0 0.5 1 Miles

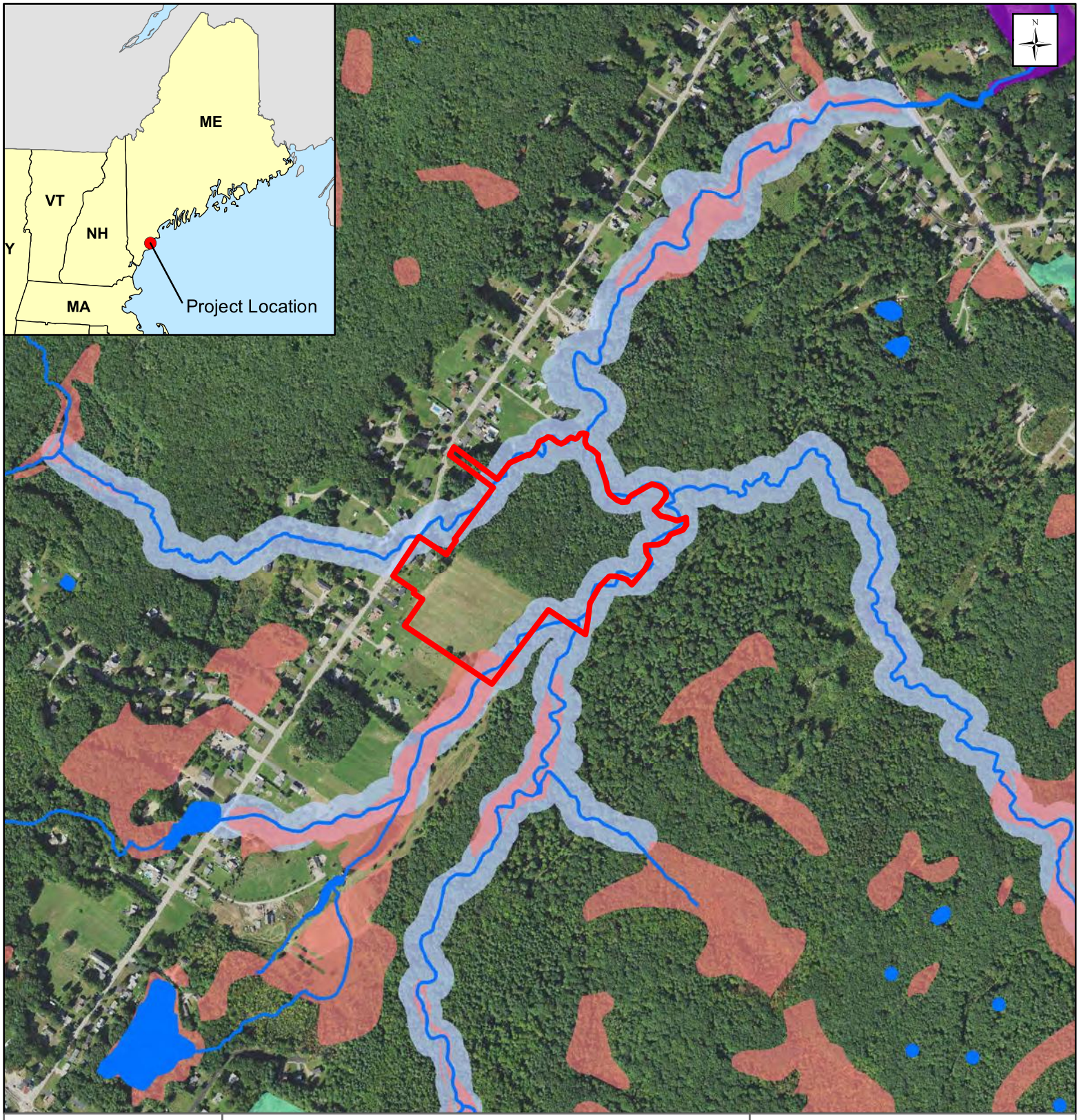
Figure 1. Site Location

81 and 97 Guinea Road
Biddeford, Maine

722

Source: United States Geological Survey, 2014.

Date: 2/21/2021



Prepared For:

Prepared By:

NewEarth
ECOLOGICAL CONSULTING, LLC

Legend

- Surveyed Area
- Perennial Stream
- Pond
- Stream Protection District
- Freshwater Emergent Wetland
- Freshwater Forested / Shrub Wetland
- Estuarine and Marine Wetland

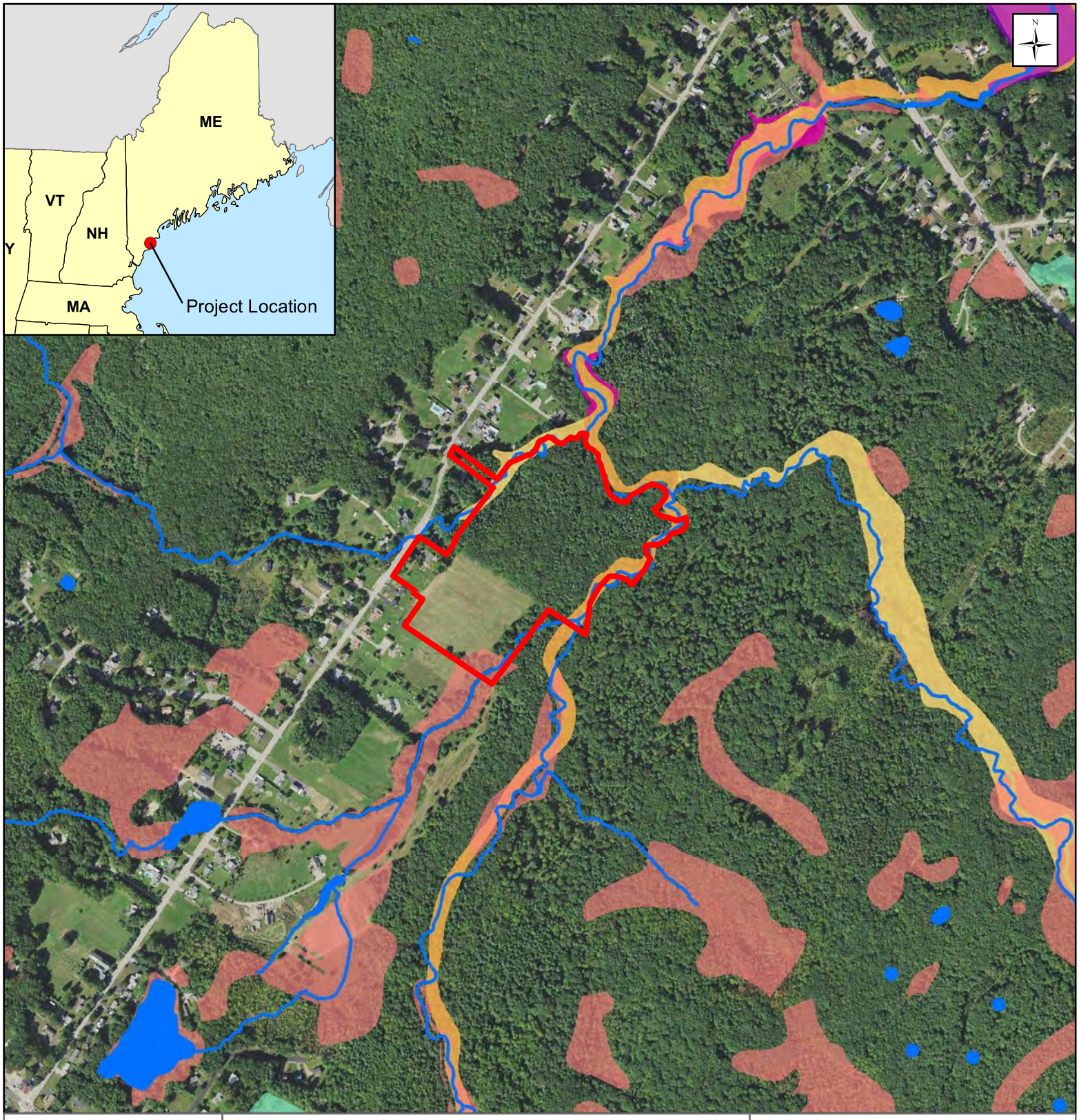
0 1,000 2,000 Feet

Figure 2. Wetlands, Streams, Water Bodies and Floodplains

81 and 97 Guinea Road
Biddeford, Maine

Source: USFWS NWI Wetlands, 2020; Biddeford Stream Protection District, 2019; USGS National Hydro Data, 2018; FEMA Flood Zones, 1984; USDA NAIP, 2018.

Date: 2/21



Prepared For:

Prepared By:

NewEarth
ECOLOGICAL CONSULTING, LLC

Legend

- Surveyed Area
- Perennial Stream
- Pond
- Freshwater Emergent Wetland
- Freshwater Forested / Shrub Wetland
- Estuarine and Marine Wetland
- A: 1% Annual Flood Risk, no BFE
- AE: 1% Annual Flood Risk, with BFE
- X500: 0.2% Annual Chance of Flooding

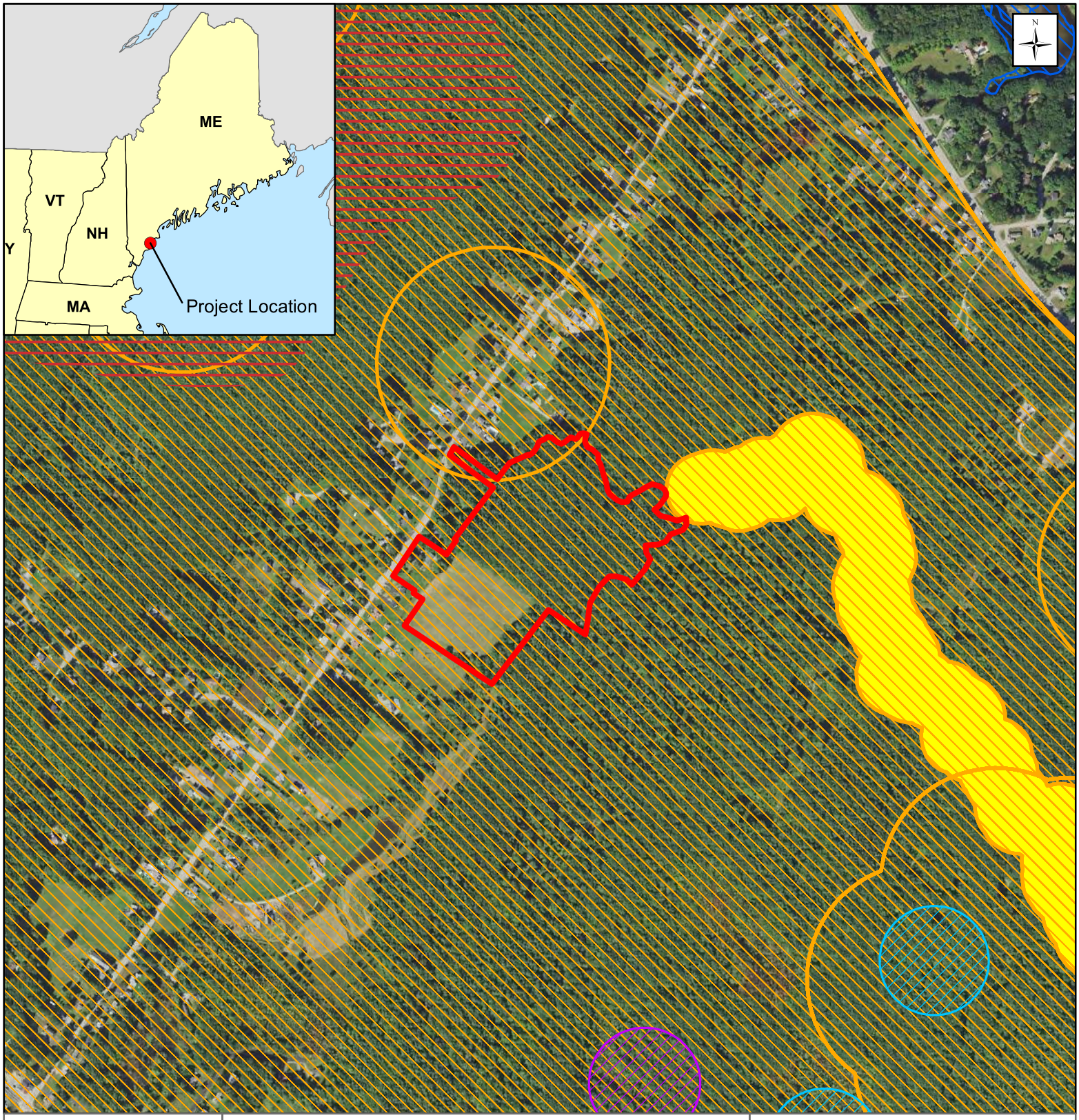
0 1,000 2,000 Feet

Figure 2. Wetlands, Streams, Water Bodies and Floodplains

81 and 97 Guinea Road
Biddeford, Maine

Source: USFWS NWI Wetlands, 2020; Biddeford Stream Protection District, 2019; USGS National Hydro Data, 2018; FEMA Flood Zones, 1984; USDA NAIP, 2018.

Date: 2/21



Prepared For:

Prepared By:

NewEarth
ECOLOGICAL CONSULTING, LLC

Legend

- Surveyed Area
- Potentially Significant Vernal Pool
- Significant Vernal Pool
- Tidal Waterfowl/Wading Bird Habitat
- Deer Wintering Areas
- Southern Pygmy Clubtail
- Rare Animal

0 1,000 2,000 Feet

Figure 3. Rare, Threatened, Endangered and Potential Significant Wildlife Habitats

81 and 97 Guinea Road
Biddeford, Maine

Source: Maine Geolibrary, 2020 and 2021; USDA NAIP, 2018.

Date: 2/23/2021

Hi

Sketch for general reference only – Resources have not been confirmed during the appropriate season, locations are estimated.

Environmental Constraints Review: 81 and 97 Guinea Road, Biddeford, Maine

Environmental Review Category	Resources Likely Present	Comments
Land Uses and Cover Types	Lot 81 – 12.5 acres, undeveloped primarily forested land, that is generally abutted to north, east, and west by streams. Land use code 1310 (RES ACLNPO), Zones RF (Rural Farm), SR1 (Suburban Residential), as well as SP (Stream Protection). Neighborhood 0002. The RF zone occupies a small area along the east border of the parcel. Lot 97 – 9.84 acres, currently developed with a single-family home and outbuildings, which appear to be consistent with Biddeford's zoning. The parcel is generally comprised of open field, some forested areas, and is abutted to the east and west by streams. Land use code 1010 (Singl Fam MDL-01), Zone SR1 as well as SP (stream protection). Neighborhood 0002. https://ecode360.com/BI3074	The SR zone is generally limited to single-family residential use, with provisions for professional offices in the home under special circumstances. These areas are typically large lot single-family homes on public sewer and water, or at least public water. The SP zone includes all land areas within 100 feet, horizontal distance, of the normal high-water line of a stream (as determined in the field). No additional protection zones are applied to wetlands outside of the 100' zone. See City of Biddeford Land Development Regulations (particularly Section 15 Land Use Standards) for details on allowable uses. Projects must undergo the City's Site Plan Review for approval.
Section 4(f) or 6(f)	Not applicable.	Not applicable.
Historical/Cultural Resources (Section 106)	No resources were identified within a mile of the properties based on a search of the national registry. The closest recorded resource in the national registry is the First Parish Meetinghouse located on Meeting House Road, over ½ mile from the properties. No historic properties or features were identified during a February 25, 2021 on-site assessment. https://www.nps.gov/subjects/nationalregister/database-research.htm	A review of the proposed project by the Maine Historic Preservation Commission would be performed concurrent to Maine DEP and US Army Corps of Engineers (USACE) review, should proposed activities require state or federal permits.
Visual Assessment/Properties of Special Significance (parks, conservation lands, cultural or natural landmarks, refuges, etc.)	No designated local, state or federal parks, refuges, landmarks, conservation lands, or ecological reserves occur on or immediately adjacent to the properties. The closest properties of significance include 1) a collective of several land parcels comprising the Blanding's Park Wildlife Sanctuary, and located approximately 1,800 feet to the northwest, and 2) a parcel comprising an unnamed parcel owned by the City and located approximately 1,850 feet to the north. Large tracts of forested lands surround much of the properties and several additional conservation lands are located to the northeast, south and southwest and are within a mile of the properties. https://www.maine.gov/dacf/parks/publications_maps/conservation_lands_maine.html	Completion of a straightforward visual assessment form may be required if proposed activities require Maine DEP Natural Resource Protection Act (NRPA) permits.

Environmental Constraints Review: 81 and 97 Guinea Road, Biddeford, Maine

Environmental Review Category	Resources Likely Present	Comments
Hydric Soils/Farmland Soils of Importance	Soils of the properties are comprised of BuC, BuD and SC soil types. All are generally comprised of silt loam materials over silt clay. BuC soil types are designated Farmlands of Statewide Importance. The SC soil type is hydric, which is typically indicative of wetlands, and are present throughout much of both properties. Soils with slopes between 15% and 25% area also present, but most fall within the 100'stream protection zone. https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm	Project footprints should be minimized on these soil types and best management practices must be used. Impacts must be minimized through use of Maine DEP recommended Best Management Practices (BMPs)/erosion control measures. https://www.maine.gov/dep/land/erosion/escbmps/ State and local permits will require submittal of an erosion and sediment control plan if soil disturbance is proposed.
Coastal Resources	The site is not in a coastal resource zone https://www.maine.gov/dmr/mcp/about/coastal-zone-map.htm	NA
Wetlands	See Attached Figure 2a. Based on US Fish & Wildlife Service National Wetland Inventory (NWI) data, no wetlands occur on the parcels. However, NWI does depict wetlands along the streams south of parcel #97 and it is likely that these wetlands would continue along the same stream and into both the 91 and 81 parcels. https://www.fws.gov/wetlands/data/mapper.html See Attached Figure 5. Several potential wetlands were identified during a February 25, 2021 on-site assessment. Most occur within the 100 ft stream protection zone.	Must coordinate with Maine DEP and USACE staff for review and permit, fees, & compensation requirements. Projects impacting less than 4,300 sq. ft. (0.1 acre) of wetland and not in, or within, 75ft of other protected resources and not wetland of special significance (WOSS), are generally exempt from the NRPA, provided impacts do not occur within a municipal shoreland zone or another protected natural resource (i.e., WOSS or habitat for state or federally-listed species) and the project complies with the Erosion and Sedimentation Control law. If these conditions cannot be met, a tiered NRPA permit from Maine DEP would be required. The City of Biddeford has a 100 ft setback from streams (which includes most wetlands on site). Wetlands beyond the 100ft zone do not have any additional protection zone per the City. Certain land use standards would apply, and a permit is needed from the City. If no wetland fill is involved, a federal USACE permit is not required.
Wetland Functions	A full assessment of wetland quality has not been performed.	The wetland functional assessment may or may not be required depending on the amount (square feet) of impact within wetlands.
Water Bodies	See Figure 2a. Based on US Geologic Service (USGS) data, two streams (Moors Brook, and an unnamed tributary to Moors Brook) occur on/along the properties. https://www.maine.gov/megis/catalog/ https://viewer.nationalmap.gov/basic/ See Attached Figure 5. Several drainages were identified during a February 25, 2021 on-site assessment. One could meet the criteria for a stream and if so would have a 100 foot protection buffer.	Stream resources would be fall under the regulatory jurisdiction of both the USACE and Maine DEP. Direct impacts to streams would trigger the need for both permits, whereas federal permits can be avoided if there are no direct impacts. Ephemeral drainages are not regulated as water resources, but most are regulated as wetland habitat if the required hydric indicators are present. A formal wetland delineation would be required to make this determination. Per Maine DEP, minimum protection zones for non-tidal stream resources is 75 feet, however, the City of Biddeford requires a 100-foot setback along streams for new development.

Environmental Constraints Review: 81 and 97 Guinea Road, Biddeford, Maine

Environmental Review Category	Resources Likely Present	Comments
Impaired Watershed	The site falls within the Saco Hydrologic Unit (Code 01060002), which is not an Urban Impaired Stream Watershed. https://www.maine.gov/megis/catalog/	NA
Floodplains	See attached Figure 2b. According to the City's GIS database (August 6, 2020), which are used for regulatory purposes, the streams along the properties are in High Risk flood zones "A" or "AE", which means they have a 1% chance of annual flooding and a 26% chance of flooding at least once within a 30-year mortgage.	A flood hazard development permit would be required for any development within the designated floodplain high risk zones (which all appear to fall within the "footprint" of the 100-foot stream protection buffer zone). Such a permit may also require detailed topographic data collection, flood analysis certification by an approved engineer, and additional fees if the City needs to obtain assistance of a professional engineer or other expert for plan/permit review.
Water Supplies (wells, aquifers, etc.)	No known significant sand and gravel aquifers, source water protection areas, or water well protection zones are documented near the site. https://www.maine.gov/dacf/mgs/pubs/online/aquifers/aquifers.htm ; https://www.maine.gov/megis/catalog/	NA
Federally-listed Species & Critical Wildlife Habitat	Based on a February 2021 Information, Planning, and Consultation System (IPAC System) review. One federally-listed species, the tree-dwelling Northern Long-eared Bat, was identified as potentially occurring in the vicinity of the properties. Twenty-five migratory birds were also identified as species likely to breed on or near the sites. The project does not fall within federally-designated critical habitat for any species. https://ecos.fws.gov/ipac/location/index	An official review by USFWS via IPAC would need to take place if federal permits are required. A federal permit would be needed if there is any impacts to a stream or any fill within a wetland. Tree removals would likely be eligible for federal review/approval under 4(d) rule which will allow the removals, but USACE will request that they take place after October 31st and before April 16th. Migratory Birds - avoiding bird nesting season from April through July is recommended to minimize impacts (but is not required).
State-listed Species & Significant Wildlife Habitat	See attached Figure 3. Based on agency data, several state-listed turtles, bats, and a rare plant could occur on the properties, but no significant wildlife habitats are known to be present. https://www.maine.gov/dep/gis/datamaps/ . However, based on direct correspondence with Maine Department of Inland Fish & Wildlife (MDIFW) staff on February 19, 2021, the available habitat does not appear to be suitable for listed turtle species. Staff could not confirm that vernal pool habitat is/is not present and indicated a vernal pool survey during the appropriate season would be needed. A February 25, 2021 on-site assessment confirmed that all wetlands on site are either palustrine forest or managed agricultural areas, which are unlikely to support state-listed turtles. No potential vernal pool habitat was identified on the properties during the site walk, but habitat could be present and hidden beneath snow-cover.	A review of the proposed project by MDIFW would be performed concurrent to Maine DEP review if proposed activities require a state permit. MDIFW and/or NRDC may request additional surveys for specific species/habitats, although this would not likely be required based on habitats available, and wetland areas within the 100' protection zone are avoided. Ideally tree removals should take place after October 31st and before April 16th to minimize impacts to birds and bats, but MDIFW will not require this timing restriction since no hibernacula occur in the area. A biologist must assess the site during the spring and provide a letter indicating that no vernal pool (VP) habitat exists. If any is present, a formal survey of the VP areas would be required and would need to be performed between April 10th and April 25th (a 2nd visit between April 20th and May 10th may also be required). Vernal pools that meet certain requirements, have a 250-foot protection zone from the edge of each vernal pool depression.

Environmental Constraints Review: 81 and 97 Guinea Road, Biddeford, Maine

Environmental Review Category	Resources Likely Present	Comments
Ledge, Rock Outcroppings, Steep Slopes	Based on the on-site assessment performed on the parcels on February 25, 2021, no notable ledges, rock outcroppings, or steep slopes are present on the parcels.	NA
Dredge Materials	No dredge disposal is anticipated.	NA
Stormwater	The properties are not located within an impaired watershed. https://www.maine.gov/megis/catalog/	Maine DEP Stormwater Permitting: < 1 acre of new disturbance – no permit needed. > 1 acre, one of the following apply: 〉 Permit by Rule if in at risk or urban impaired watershed: if < 20,000 sq ft (0.46 acre) of new impervious or < 5 acres (217,800 sq ft) of new development within an impaired watershed. Basic standards apply. 〉 Permit by Rule if in any other watershed: if < 43,560 sq. ft. (1 acre) of new impervious or < 5 acres (217,800 sq ft) of new development within an impaired watershed. Basic standards apply. 〉 Full permit required if > 1 acre of new impervious or 5 acres of new development. General standard + basic standards apply.
Existing Permits	No Permit by Rule, Site, or Stormwater Permits with DEP are known to have been issued for either property since 2006. https://www.maine.gov/dep/gis/datamaps/	Check with Maine DEP for any updates. If permits were previously issued for the parcel, impacts are cumulative from all previous approved permits (post-1974) for both Site Law and NRPA. Depending on the amount and type of impacts, projects may be eligible for a minor amendment if there is an existing Site Law permit in place.
Hazardous Materials	No superfund, hazardous materials, or underground storage tanks (UST) sites are documented in or adjacent to the project site. https://www.epa.gov/me/list-superfund-npl-sites-maine https://www.maine.gov/dep/gis/datamaps/index.html#brwm_ic No potentially hazardous materials were identified during the February 25, 2021 on-site assessment.	NA
Other Considerations	See attached Figure 1. Access points into the properties would be via Guinea Road. The closest school, nursing home, library, or hospital is the University of New England, located 1.5 miles to the southeast of the properties. https://www.maine.gov/dep/gis/datamaps/; https://geolibrary-maine.opendata.arcgis.com/datasets/4b4774be84cc4fc6908dc916f3149499	Coordination with the Biddeford City Planner regarding any proposed site development/use is recommended. Road frontage, structure type-size -location, and other local ordinances regarding the development and use of the properties would apply. Once a basic preliminary site plan is known, call Maine DEP to discuss and confirm permit requirements. They will identify if federal permits are also needed. Development over 20-acres requires a Maine DEP permit under Site Law.

NewEarth
ECOLOGICAL CONSULTING, LLC

May 10, 2021
Email Submittal

Mr. Peter McPheeters
Oceanview Properties, Inc.
18 Yates Street
Biddeford Pool, Maine 04006
207.282.1732

RE: 2021 Vernal Pool Survey Results – Guinea Road Properties

Dear Peter,

NewEarth Ecological Consulting, LLC (NewEarth) has completed spring vernal pool surveys on lots 81, 97 and 77-35 in Biddeford, Maine per your request.

As detailed in the attached materials, based on our April 11th and April 29th, 2021 surveys one ephemeral low-lying water-filled area, referred to as PVP1, was identified on the lot 97 property which meets the Maine Department of Environmental Protection (DEP) and US Army Corps of Engineers (USACE) definition of vernal pool habitat. However, while egg masses for a target indicator species were located in PVP1 (i.e., spotted salamander), there were not a sufficient number present to meet Maine DEP's biological criteria for designation as a significant vernal pool; which is considered significant wildlife habitat in Maine. Although a wetland delineation was not part of this effort, based on site characteristics it is likely that PVP1 occurs within a wetland complex. As such, avoidance of the pool perimeter may be required by the USACE.

The attached materials should be submitted to Biologist Jason Czapiga at Maine Department of Inland Fisheries and Wildlife Jason.Czapiga@maine.gov for a formal determination and recommendations regarding our findings.

Please do not hesitate to contact me if you have any questions or would like any additional information.

Sincerely,

Stacie L. Grove

Stacie L. Grove
Principal Environmental Biologist

Attachments: PVP Data Form, PVP Location Figure, PVP Photographs
CC: K. Bloomer (NewEarth), NewEarth files 20_OCEAN_001

CALL 207.286.3259 SEND 169 Watson Mill Road, Saco, ME 04072 VISIT www.newearthecological.com

Maine State Vernal Pool Assessment Form

INSTRUCTIONS:

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

Observer's Pool ID: PVP1 **MDIFW Pool ID:** _____

1. PRIMARY OBSERVER INFORMATION

a. Observer name: Stacie Grove

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

2. PROJECT CONTACT INFORMATION

a. Contact name: ◉ same as observer ○ other _____

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ◉ Yes

c. Project Name: Oceanview 81 & 97 Guinea Road

3. LANDOWNER CONTACT INFORMATION

a. Are you the landowner? ○ Yes ◉ No If no, was landowner permission obtained for survey? ◉ Yes ○ No

b. Landowner's contact information (required)

Name: Peter McPheeters, Oceanview Properties Phone: 207.468.1704

Street Address: 18 Yates Street, Biddeford Pool City: Zip: 04006 State: ME Zip: _____

c. ☐ Large Projects: check if separate project landowner data file submitted

4. VERNAL POOL LOCATION INFORMATION

a. Location Township: Biddeford, York County

Brief site directions to the pool (using mapped landmarks):

Park at 97 Guinea Road. The PVP is located within the property at 81 Guinea Road to the northeast.

b. Mapping Requirements

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. GPS location of vernal pool (use Datum NAD83 / WGS84)

Longitude/Easting: -70.418575° Latitude/Northing: 43.464761°

Coordinate system: WGS84/Dec Degr

Check one:

○ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

◉ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

5. VERNAL POOL HABITAT INFORMATION

a. Habitat survey date (only if different from indicator survey dates on page 3): _____

b. Wetland habitat characterization

■ Choose the best descriptor for the landscape setting:

- ○ Isolated depression
- ○ Floodplain depression
- ◉ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☐ Forested swamp
- ☑ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☑ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

c. Vernal pool status under the Natural Resources Protection Act (NRPA)

i. Pool Origin: ◉ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

ii. Pool Hydrology

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ◉ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

Evidence of drying throughout elevated areas of wetland, along pool, and on shrubs/trees (watermarks). Organic soils present, but not widespread or deep.

■ Maximum depth at survey: ◉ 0-12" (0-1 ft.) ○ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 25 ○ m ◉ ft Length: 175 ○ m ◉ ft

■ Predominate substrate in order of increasing hydroperiod:

- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ◉ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☑ Wet site ferns (e.g. royal fern, marsh fern)
- ☑ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☐ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☑ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

iii. Inlet/Outlet Flow Permanency

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ○ No inlet or outlet
- ◉ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

6. VERNAL POOL INDICATOR INFORMATION

a. Indicator survey dates: 4/11/2021; 4/29/2021

b. Indicator abundance criteria and pool survey effort

- Is pool depression bisected by 2 ownerships (straddler pool)? ○ Yes ◉ No
- Was the entire pool surveyed for egg masses? ◉ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

INDICATOR SPECIES	Egg Masses (or adult Fairy Shrimp)									Tadpoles/Larvae[4]					
	Visit #1	Visit #2	Visit #3	Confidence Level[1]			Egg Mass Maturity[2]			Observed			Confidence Level[1]		
Wood Frog	0	0		3	3										
Spotted Salamander	4	5		3	3		M	M/A							
Blue-spotted Salamander	0	0		3	3										
Fairy Shrimp[3]	0	0		3	3										

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%
2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching
3-Fairy shrimp: X = present
4-Tadpoles/larvae: X = present

c. Rarity criteria

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

SPECIES	Method of Verification*			CL**	SPECIES	Method of Verification*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	☐	☐	☐		Wood Turtle	☐	☐	☐	
Spotted Turtle	☐	☐	☐		Ribbon Snake	☐	☐	☐	
Ringed Boghaunter	☐	☐	☐		Other:	☐	☐	☐	

*Method of verification: P = Photographed, H = Handled, S = Seen
**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

d. Optional observer recommendation:

☐ SVP ☐ Potential SVP ☑ Non Significant VP ☐ Indicator Breeding Area

e. General vernal pool comments and/or observations of other wildlife:

15" water 1st visit; 13" water 2nd visit 2021 primarily in a 10 x 10 area. Rest of pool mostly shallow water < 6" and water column leaf-filled. Per landowner - GPS data for pool perimeter and wetland to be collected by 3rd party.

Send completed form and supporting documentation to: Jason.Czapiga@maine.gov

NOTE: Digital submissions are preferred but if not possible, please mail to: Maine Department of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street
Bangor, ME 04401

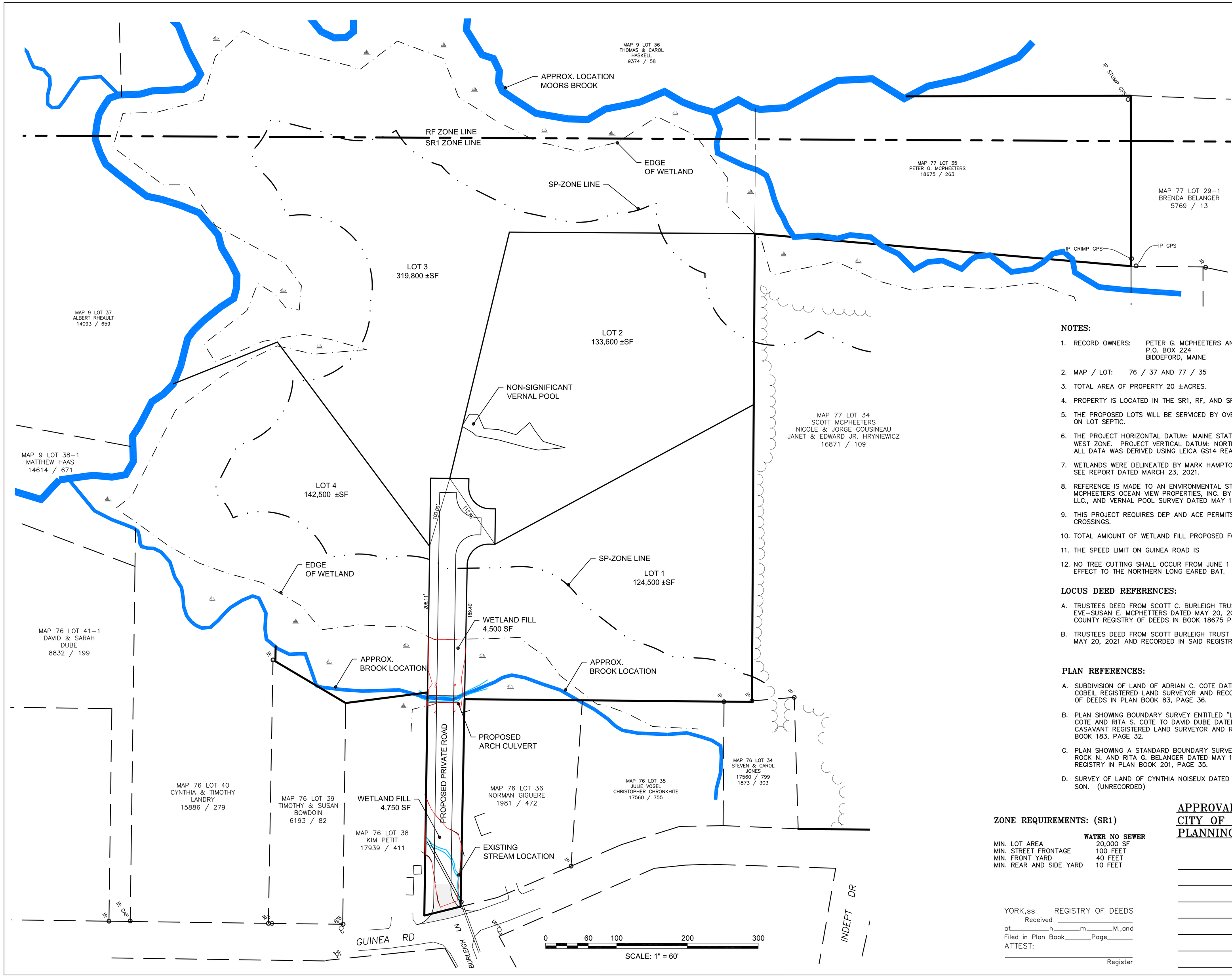
For MDIFW use only Reviewed by MDIFW Date:_____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments:

81 and 97 Guinea Road, Biddeford, ME_Vernal Pool Survey Results

PVP1 (4/11/2021)	PVP1 (4/29/2021)
PVP1 SS Egg	PVP1 SS Eggs



NOTES:

1. RECORD OWNERS: PETER G. MCPHEETERS AND EVE-SUSAN E. MCPHEETERS
   P.O. BOX 224
   BIDDEFORD, MAINE
2. MAP / LOT: 76 / 37 AND 77 / 35
3. TOTAL AREA OF PROPERTY 20 ±ACRES.
4. PROPERTY IS LOCATED IN THE SR1, RF, AND SP ZONES.
5. THE PROPOSED LOTS WILL BE SERVICED BY OVERHEAD UTILITIES, PUBLIC WATER AND ON LOT SEPTIC.
6. THE PROJECT HORIZONTAL DATUM: MAINE STATE PLANE COORDINATE SYSTEM, MAINE WEST ZONE. PROJECT VERTICAL DATUM: NORTH AMERICAN DATUM 1988 (NAVD88). ALL DATA WAS DERIVED USING LEICA GS14 REAL TIME KINEMATICS GPS.
7. WETLANDS WERE DELINEATED BY MARK HAMPTON ASSOCIATES FOR PETER MCPHEETERS SEE REPORT DATED MARCH 23, 2021.
8. REFERENCE IS MADE TO AN ENVIRONMENTAL STUDY DATED MARCH 1, 2021 FOR PETER MCPHEETERS OCEAN VIEW PROPERTIES, INC. BY NEW EARTH ECOLOGICAL CONSULTING, LLC., AND VERNAL POOL SURVEY DATED MAY 10, 2012.
9. THIS PROJECT REQUIRES DEP AND ACE PERMITS FOR WETLAND FILL AND STREAM CROSSINGS.
10. TOTAL AMIOUNT OF WETLAND FILL PROPOSED FOR THIS PROJECT IS 9,250 ±SF.
11. THE SPEED LIMIT ON GUINEA ROAD IS
12. NO TREE CUTTING SHALL OCCUR FROM JUNE 1 TO JULY 31 TO MINIMIZE THE POTENTIAL EFFECT TO THE NORTHERN LONG EARED BAT.

LOCUS DEED REFERENCES:

A. TRUSTEES DEED FROM SCOTT C. BURLEIGH TRUST TO PETER g. MCPHEETER AND EVE-SUSAN E. MCPHETTERS DATED MAY 20, 2021 AND RECORDED IN THE YORK COUNTY REGISTRY OF DEEDS IN BOOK 18675 PAGE 261.

B. TRUSTEES DEED FROM SCOTT BURLEIGH TRUST TO PETER G. MCPHEETERS DATED MAY 20, 2021 AND RECORDED IN SAID REGISTRY IN BOOK 18675 PAGE 263.

PLAN REFERENCES:

A. SUBDIVISION OF LAND OF ADRIAN C. COTE DATED OCTOBER 6, 1976 BY ROGER COBEIL REGISTERED LAND SURVEYOR AND RECORDED IN THE YORK COUNTY REGISTRY OF DEEDS IN PLAN BOOK 83, PAGE 36.

B. PLAN SHOWING BOUNDARY SURVEY ENTITLED "LAND TO BE CONVEYED BY ADRIEN G. COTE AND RITA S. COTE TO DAVID DUBE DATED SEPTEMBER 9, 1989 BY GUY CASAVANT REGISTERED LAND SURVEYOR AND RECORDED IN SAID REGISTRY IN PLAN BOOK 183, PAGE 32.

C. PLAN SHOWING A STANDARD BOUNDARY SURVEY OF LAND TO BE CONVEYED BY ROCK N. AND RITA G. BELANGER DATED MAY 12, 1991 AND RECORDED IN SAID REGISTRY IN PLAN BOOK 201, PAGE 35.

D. SURVEY OF LAND OF CYNTHIA NOISEUX DATED JANUARY 18, 2007 BY LEGASSIE & SON. (UNRECORDED)

ZONE REQUIREMENTS: (SR1)

	WATER NO SEWER
MIN. LOT AREA	20,000 SF
MIN. STREET FRONTAGE	100 FEET
MIN. FRONT YARD	40 FEET
MIN. REAR AND SIDE YARD	10 FEET

YORK,ss REGISTRY OF DEEDS
Received _____
at_____h_____m_____M.,and
Filed in Plan Book_____Page_____
ATTEST:
_____
Register

APPROVAL
CITY OF BIDDEFORD
PLANNING BOARD

_____ DATE

_____ CHAIRPERSON

REVISIONS:

DRAWN: P.P.G.
CHECKED: P.P.G.
SCALE: 1"= 60'
FIELD BOOK:
DATE: 04-16-2022
JOB NO. 1790
SHEET 1 OF 3

RECORD OWNERS
PETER AND EVE-SUSAN MCPHEETERS
P.O. BOX 224
BIDDEFORD, MAINE 04005

CONCEPT PLAN
PETER AND EVE-SUSAN MCPHEETERS
81 GUINEA ROAD
BIDDEFORD, ME

PAUL P. GADBOIS
ENGINEERING SURVEYING
LAND PLANNING
P.O. BOX 327, SACO, MAINE 04072
(207) 283-3980

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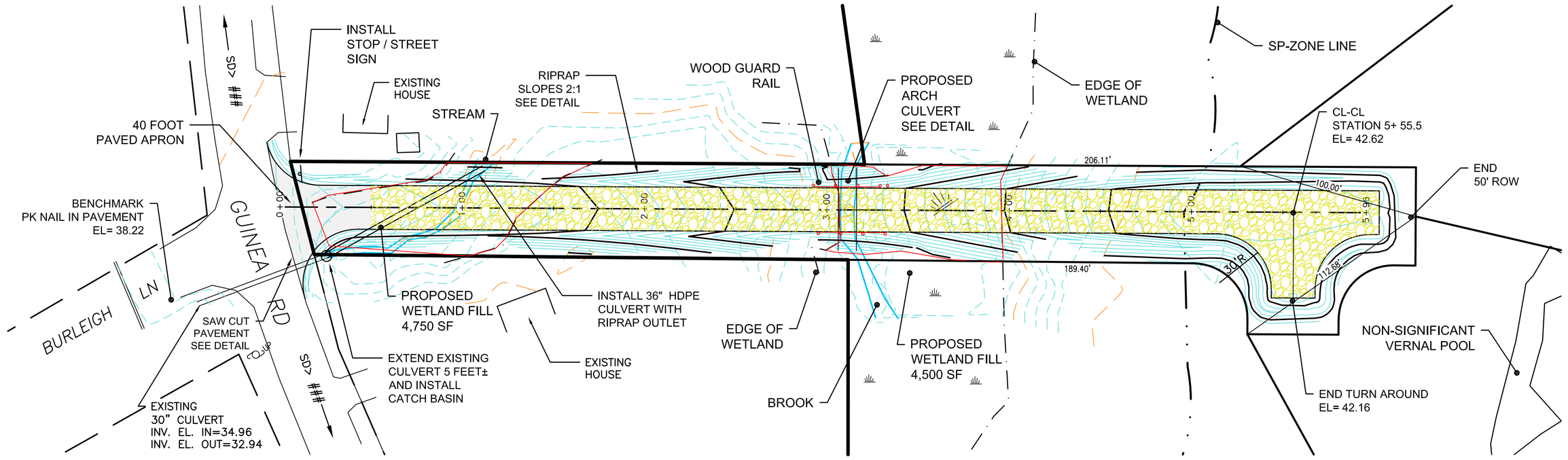
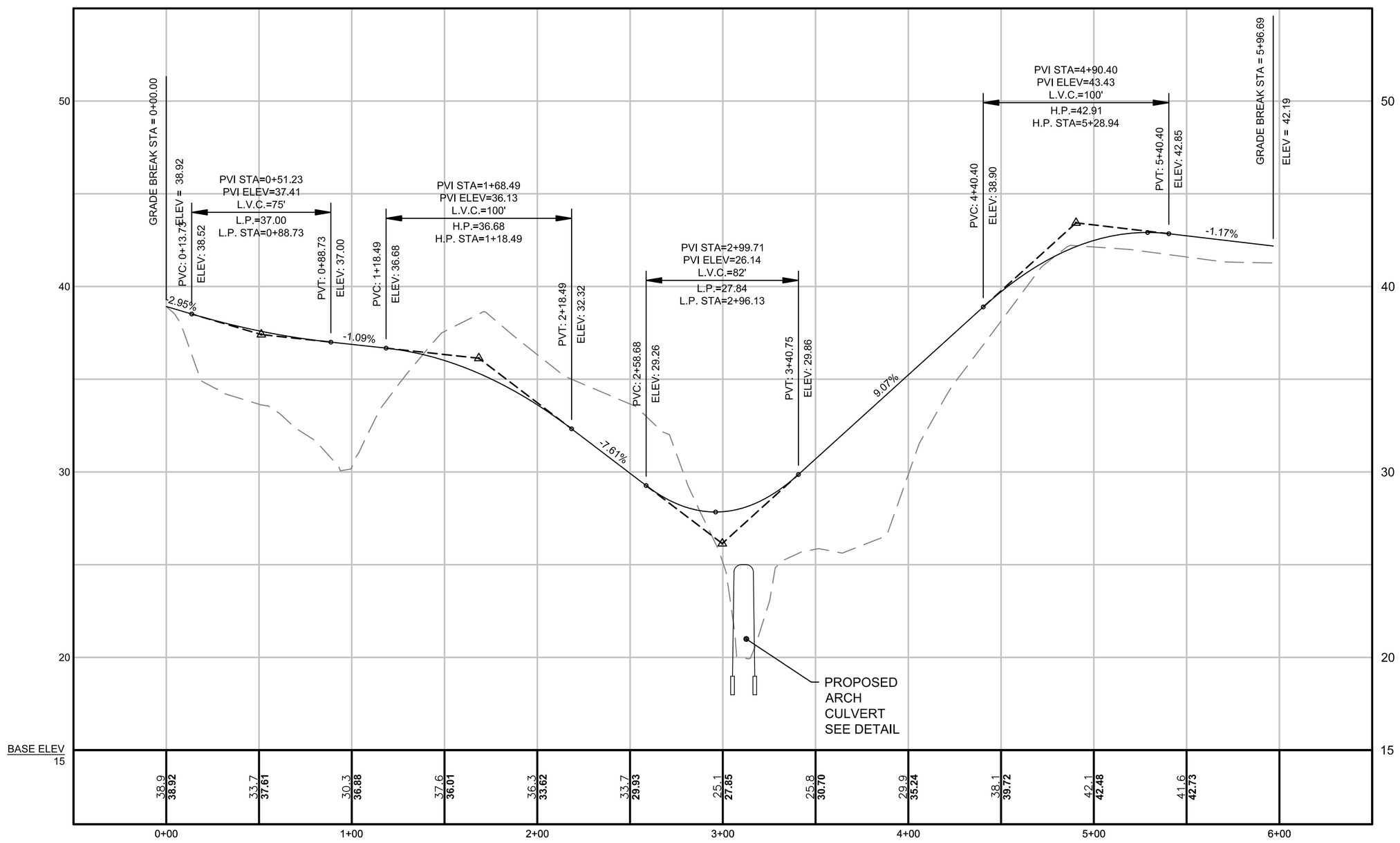
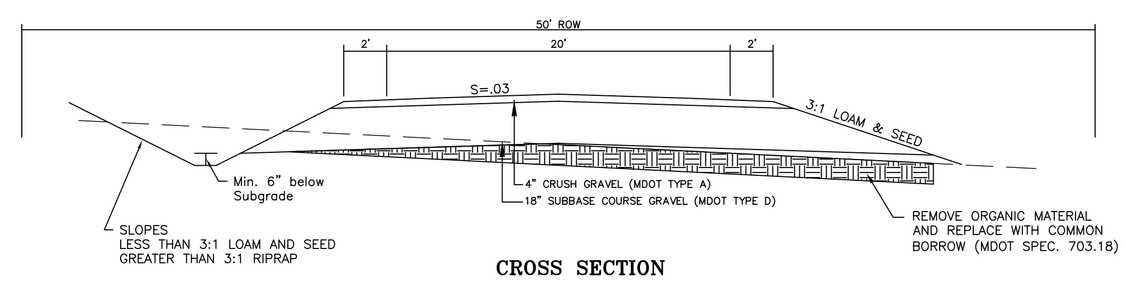


PRIVATE WAY NOTES:

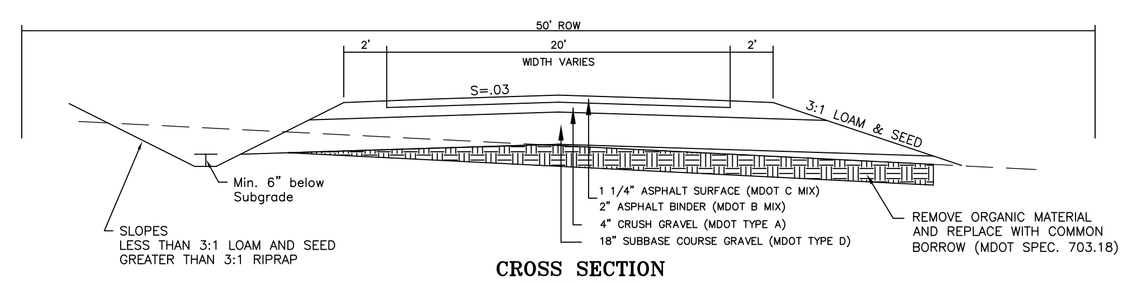
1. THE PROPOSED RIGHT OF WAY IS TO BE A PRIVATE ROAD. THE CITY OF BIDDEFORD WILL NOT BE RESPONSIBLE FOR THE CONSTRUCTION AND MAINTENANCE OF ANY KIND, SNOW PLOWING, OR TRASH PICKUP OF THE PRIVATE WAY AND THAT FURTHER LOT DIVISION UTILIZING THE PRIVATE WAY ARE PROHIBITED WITHOUT PRIOR APPROVAL OF THE BOARD.
2. NO NEW STREET LIGHTS ARE PROPOSED FOR THIS PROJECT.
3. ALL CONSTRUCTION AND SITE ALTERATIONS SHALL BE DONE IN ACORDANCE WITH THE EROSION PREVENTION PROVISIONS AS OUTLINED IN THE MAINE EROSION CONTROL AND SEDIMENTATION HANDBOOK FOR CONSTRUCTION "BEST MANAGEMENT PRACTICES, "LATEST REVISION".
4. DRIVEWAY APRONS MUST COMPLY WITH CHAPTER 62 SECTION 62–111 OF THE BIDDEFORD ORDINANCE.
5. IN LIEU OF A FULL PERFORMANCE GUARANTEE, THE APPLICANT SHALL NOT RECEIVE A BUILDING PERMIT UNTIL THE PRIVATE WAY IS CONSTRUCTED ACCORDING TO THE APPROVED PLAN AND ACCEPTED BY THE CITY ENGINEER'S OFFICE, OR A LETTER OF CREDIT IS SUBMITTED TO THE CITY FOR 150% OF THE RIGHT OF WAY IMPROVEMENT COSTS. AT A MINIMUM AN EROSION CONTROL BOND WILL BE REQUIRED.
6. NOTIFY THE ENGINEERING DEPARTMENT TO SCHEDULE INSPECTION OF WORK AS REQUIRED BY BIDDEFORD CITY ORDINANCES.
7. THE PRIVATE WAY PLAN SHALL BE RECORDED IN THE YORK COUNTY REGISTRY OF DEEDS WITHIN 30 DAYS OF THE DATE OF THE PLANNING BOARD APPROVAL. IF THE PLAN IS NOT RECORDED WITHIN THIS TIME PERIOD, THE APPROVAL OF THE BOARD SHALL BE NULL AND VOID.
8. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH MDOT STANDARDS FOR ROADWAY EXCAVATION AND THE PLACEMENT OF FILL.
9. NO LOT MAY BE ACCESSED FROM EITHER ENDS OF THE HAMMERHEAD.



PROFILE: PCL (2)



CROSS SECTION
PAVED APRON
0+50 TO 5+96



CROSS SECTION
PAVED APRON
0+00 TO 0+50

LEGEND

- FOUND IRON ROD OR PIPE
- IRON ROD TO BE SET
- PROPERTY LINE
- ABUTTERS PROPERTY LINE
- SETBACK LINE
- N/F NOW OR FORMERLY
- UTILITY POLE
- OU OVERHEAD UTILITIES
- DRAINAGE ARROW
- EXISTING FIRE HYDRANT

HOR. SCALE IN FEET
40 0 40 80
4 0 4 8
VER. SCALE IN FEET

PROGRESS PLAN
NOT FOR CONSTRUCTION

THIS DOCUMENT IS ISSUED FOR INFORMATIONAL PURPOSES ONLY. THE DATA SHOWN HEREON IS SUBJECT TO REVISION.

I HEREBY CERTIFY THAT THE INFORMATION SHOWN ON THIS PLAN IS CORRECT TO THE BEST OF MY KNOWLEDGE.

STATE OF MAINE
PAUL P. GADBOIS 4521
LICENSED
PROFESSIONAL ENGINEER

PAUL P. GADBOIS, P.E. # 4521

REVISIONS:

DRAWN: P.P.G.
CHECKED: P.P.G.
SCALE:
FIELD BOOK:
DATE: 04–16–2022
JOB NO. 1790–22
SHEET 2 OF 3

RECORD OWNER
PETER AND EVE–SUSAN MCPHEETERS
P.O. BOX 224
BIDDEFORD, MAINE 04005

PLAN OF PRIVATE WAY
PETER AND EVE–SUSAN MCPHEETRES
81 GUINEA ROAD
BIDDEFORD, MAINE

PAUL P. GADBOIS
ENGINEERING SURVEYING
LAND PLANNING
P.O. BOX 327 SACO, MAINE 04072
(207) 283–3980

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MAINE CONSTRUCTION GENERAL PERMIT

APPENDICES -- BASIC PERFORMANCE STANDARDS

APPENDIX A. EROSION AND SEDIMENTATION CONTROL. 1
APPENDIX B. INSPECTION AND MAINTENANCE 4
APPENDIX C. HOUSEKEEPING 4

APPENDIX A. EROSION AND SEDIMENTATION CONTROL

A PERSON WHO CONDUCTS, OR CAUSES TO BE CONDUCTED, AN ACTIVITY THAT INVOLVES FILLING, DISPLACING OR EXPOSING SOIL OR OTHER EARTHEN MATERIALS SHALL TAKE MEASURES TO PREVENT UNREASONABLE EROSION OF SOIL OR SEDIMENT BEYOND THE PROJECT SITE OR INTO A PROTECTED NATURAL RESOURCE AS DEFINED IN 38 MRSA § 480-B. EROSION CONTROL MEASURES MUST BE IN PLACE BEFORE THE ACTIVITY BEGINS. MEASURES MUST REMAIN IN PLACE AND FUNCTIONAL UNTIL THE SITE IS PERMANENTLY STABILIZED. ADEQUATE AND TIMELY TEMPORARY AND PERMANENT STABILIZATION MEASURES MUST BE TAKEN.

NOTE: THE SITE MUST BE MAINTAINED TO PREVENT UNREASONABLE EROSION AND SEDIMENTATION. SEE 38 M.R.S.A § 420-C (IN PART). A LICENSE IS REQUIRED FOR ANY STORMWATER DISCHARGE THAT THE DEPARTMENT "DETERMINES TO CONTRIBUTE TO A VIOLATION OF A WATER QUALITY STANDARD OR IS A SIGNIFICANT CONTRIBUTOR OF POLLUTANTS TO WATERS OF THE STATE". 06-096 CMR 521(9)(A)(1)(V)(IN PART).

(1) POLLUTION PREVENTION. MINIMIZE DISTURBED AREAS AND PROTECT NATURAL DOWNGRADIENT BUFFER AREAS TO THE EXTENT PRACTICABLE. THE DISCHARGE MAY NOT RESULT IN EROSION OF ANY OPEN DRAINAGE CHANNELS, SWALES, UPLAND, OR COASTAL OR FRESHWATER WETLANDS.

NOTE: BUFFERS IMPROVE WATER QUALITY BY HELPING TO FILTER POLLUTANTS IN RUN-OFF BOTH DURING AND AFTER CONSTRUCTION. MINIMIZING DISTURBED AREAS THROUGH PHASING LIMITS THE AMOUNT OF EXPOSED SOIL ON THE SITE THROUGH RETENTION OF NATURAL COVER AND BY RETIRING AREAS AS PERMANENTLY STABILIZED. LESS EXPOSED SOIL RESULTS IN FEWER EROSION CONTROLS TO INSTALL AND MAINTAIN. IF WORK WITHIN AN AREA IS NOT ANTICIPATED TO BEGIN WITHIN TWO WEEKS TIME, CONSIDER LEAVING THE AREA IN ITS NATURALLY EXISTING COVER.

(2) SEDIMENT BARRIERS. PRIOR TO CONSTRUCTION, PROPERLY INSTALL SEDIMENT BARRIERS AT THE EDGE OF ANY DOWNGRADIENT DISTURBED AREA AND ADJACENT TO ANY DRAINAGE CHANNELS WITHIN THE DISTURBED AREA. MAINTAIN THE SEDIMENT BARRIERS UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED.

(3) TEMPORARY STABILIZATION. STABILIZE WITH MULCH, OR OTHER NON-ERODABLE COVER ANY EXPOSED SOILS THAT WILL NOT BE WORKED FOR MORE THAN 7 DAYS. STABILIZE AREAS WITHIN 75 FEET OF A WETLAND OR WATERBODY WITHIN 48 HOURS OF THE INITIAL DISTURBANCE OF THE SOIL OR PRIOR TO ANY STORM EVENT, WHICHEVER COMES FIRST.

NOTE: FOR GUIDANCE ON EROSION AND SEDIMENTATION CONTROLS, CONSULT *THE MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION -- BEST MANAGEMENT PRACTICES* OR *THE MAINE EROSION AND SEDIMENTATION CONTROL BEST MANAGEMENT PRACTICES*.

(1) REMOVAL OF TEMPORARY MEASURES. REMOVE ANY TEMPORARY CONTROL MEASURES, SUCH AS SILT FENCE, WITHIN 30 DAYS AFTER PERMANENT STABILIZATION IS ATTAINED. REMOVE ANY ACCUMULATED SEDIMENTS AND STABILIZE.
NOTE: IT IS RECOMMENDED THAT SILT FENCE BE REMOVED BY CUTTING THE FENCE MATERIALS AT GROUND LEVEL SO AS TO AVOID ADDITIONAL SOIL DISTURBANCE.

(1) PERMANENT STABILIZATION. IF THE AREA WILL NOT BE WORKED FOR MORE THAN ONE YEAR OR HAS BEEN BROUGHT TO FINAL GRADE, THEN PERMANENTLY STABILIZE THE AREA WITHIN 7 DAYS BY PLANTING VEGETATION, SEEDING, SOD, OR THROUGH THE USE OF PERMANENT MULCH, OR RIPRAP, OR ROAD SUB-BASE. IF USING VEGETATION FOR STABILIZATION, SELECT THE PROPER VEGETATION FOR THE LIGHT, MOISTURE, AND SOIL CONDITIONS; AMEND AREAS OF DISTURBED SUBSOILS WITH TOPSOIL, COMPOST, OR FERTILIZERS; PROTECT SEEDED AREAS WITH MULCH OR, IF NECESSARY, EROSION CONTROL BLANKETS; AND SCHEDULE SODDING, PLANTING, AND SEEDING SO TO AVOID DIE-OFF FROM SUMMER DROUGHT AND FALL FROSTS. NEWLY SEEDED OR SODDED AREAS MUST BE PROTECTED FROM VEHICLE TRAFFIC, EXCESSIVE PEDESTRIAN TRAFFIC, AND CONCENTRATED RUNOFF UNTIL THE VEGETATION IS WELL-ESTABLISHED. IF NECESSARY, AREAS MUST BE REWORKED AND RESTABILIZED IF GERMINATION IS SPARSE, PLANT COVERAGE IS SPOTTY, OR TOPSOIL EROSION IS EVIDENT. ONE OR MORE OF THE FOLLOWING MAY APPLY TO A PARTICULAR SITE.

(a) SEEDED AREAS. FOR SEEDED AREAS, PERMANENT STABILIZATION MEANS A 90% COVER OF THE DISTURBED AREA WITH MATURE, HEALTHY PLANTS WITH NO EVIDENCE OF WASHING OR RILLING OF THE TOPSOIL.

(b) SODDED AREAS. FOR SODDED AREAS, PERMANENT STABILIZATION MEANS THE COMPLETE BINDING OF THE SOD ROOTS INTO THE UNDERLYING SOIL WITH NO SLUMPING OF THE SOD OR DIE-OFF.

(c) PERMANENT MULCH. FOR MULCHED AREAS, PERMANENT MULCHING MEANS TOTAL COVERAGE OF THE EXPOSED AREA WITH AN APPROVED MULCH MATERIAL. EROSION CONTROL MIX MAY BE USED AS MULCH FOR PERMANENT STABILIZATION ACCORDING TO THE APPROVED APPLICATION RATES AND LIMITATIONS.

(d) RIPRAP. FOR AREAS STABILIZED WITH RIPRAP, PERMANENT STABILIZATION MEANS THAT SLOPES STABILIZED WITH RIPRAP HAVE AN APPROPRIATE BACKING OF A WELL-GRADED GRAVEL OR APPROVED GEOTEXTILE TO PREVENT SOIL MOVEMENT FROM BEHIND THE RIPRAP. STONE MUST BE SIZED APPROPRIATELY. IT IS RECOMMENDED THAT ANGULAR STONE BE USED.

(e) AGRICULTURAL USE. FOR CONSTRUCTION PROJECTS ON LAND USED FOR AGRICULTURAL PURPOSES (E.G., PIPELINES ACROSS CROP LAND), PERMANENT STABILIZATION MAY BE ACCOMPLISHED BY RETURNING THE DISTURBED LAND TO AGRICULTURAL USE.

(f) PAVED AREAS. FOR PAVED AREAS, PERMANENT STABILIZATION MEANS THE PLACEMENT OF THE COMPACTED GRAVEL SUBBASE IS COMPLETED.

(g) DITCHES, CHANNELS, AND SWALES. FOR OPEN CHANNELS, PERMANENT STABILIZATION MEANS THE CHANNEL IS STABILIZED WITH MATURE VEGETATION AT LEAST THREE INCHES IN HEIGHT, WITH WELL- GRADED RIPRAP LINING, OR WITH ANOTHER NON-EROSIVE LINING CAPABLE OF WITHSTANDING THE ANTICIPATED FLOW VELOCITIES AND FLOW DEPTHS WITHOUT RELIANCE ON CHECK DAMS TO SLOW FLOW. THERE MUST BE NO EVIDENCE OF SLUMPING OF THE LINING, UNDERCUTTING OF THE BANKS, OR DOWN- CUTTING OF THE CHANNEL.

(6) WINTER CONSTRUCTION. "WINTER CONSTRUCTION" IS CONSTRUCTION ACTIVITY PERFORMED DURING THE PERIOD FROM NOVEMBER 1 THROUGH APRIL 15. IF AREAS WITHIN THE CONSTRUCTION ACTIVITY ARE NOT STABILIZED WITH TEMPORARY OR PERMANENT MEASURES OUTLINED ABOVE BY NOVEMBER 15, THEN THE SITE MUST BE PROTECTED WITH ADDITIONAL STABILIZATION MEASURES THAT ARE SPECIFIC TO WINTER CONDITIONS. NO MORE THAN ONE ACRE OF THE SITE MAY BE WITHOUT STABILIZATION AT ONE TIME.

(a) SITE STABILIZATION. FOR WINTER STABILIZATION, HAY MULCH IS APPLIED AT TWICE THE STANDARD TEMPORARY STABILIZATION RATE. AT THE END OF EACH CONSTRUCTION DAY, AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE MUST BE STABILIZED. MULCH MAY NOT BE SPREAD ON TOP OF SNOW.

(b) SEDIMENT BARRIERS. ALL AREAS WITHIN 75 FEET OF A PROTECTED NATURAL RESOURCE MUST BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIERS.

(c) DITCH. ALL VEGETATED DITCH LINES THAT HAVE NOT BEEN STABILIZED BY NOVEMBER 1, OR WILL BE WORKED DURING THE WINTER CONSTRUCTION PERIOD, MUST BE STABILIZED WITH AN APPROPRIATE STONE LINING BACKED BY AN APPROPRIATE GRAVEL BED OR GEOTEXTILE UNLESS SPECIFICALLY RELEASED FROM THIS STANDARD BY THE DEPARTMENT.

(d) SLOPES. MULCH NETTING MUST BE USED TO ANCHOR MULCH ON ALL SLOPES GREATER THAN 8% UNLESS EROSION CONTROL BLANKETS OR EROSION CONTROL MIX IS BEING USED ON THESE SLOPES.

NOTE: FOR GUIDANCE ON WINTER CONSTRUCTION STANDARDS, SEE THE "MAINE EROSION AND SEDIMENT CONTROL BMPS", MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

(7) STORMWATER CHANNELS. DITCHES, SWALES, AND OTHER OPEN STORMWATER CHANNELS MUST BE DESIGNED, CONSTRUCTED, AND STABILIZED USING MEASURES THAT ACHIEVE LONG-TERM EROSION CONTROL. DITCHES, SWALES AND OTHER OPEN STORMWATER CHANNELS MUST BE SIZED TO HANDLE, AT A MINIMUM, THE EXPECTED VOLUME RUN-OFF. EACH CHANNEL SHOULD BE CONSTRUCTED IN SECTIONS SO THAT THE SECTION'S GRADING, SHAPING, AND INSTALLATION OF THE PERMANENT LINING CAN BE COMPLETED THE SAME DAY. IF THE CHANNEL'S FINAL GRADING OR LINING INSTALLATION MUST BE DELAYED, THEN DIVERSION BERMS MUST BE USED TO DIVERT STORMWATER AWAY FROM THE CHANNEL, PROPERLY-SPACED CHECK DAMS MUST BE INSTALLED IN THE CHANNEL TO SLOW THE WATER VELOCITY, AND A TEMPORARY LINING INSTALLED ALONG THE CHANNEL TO PREVENT SCOURING. PERMANENT STABILIZATION FOR CHANNELS IS ADDRESSED UNDER APPENDIX A(5)(G) ABOVE.

NOTE: (1) THE CHANNEL SHOULD RECEIVE ADEQUATE ROUTINE MAINTENANCE TO MAINTAIN CAPACITY AND PREVENT OR CORRECT ANY EROSION OF THE CHANNEL'S BOTTOM OR SIDE SLOPES. (2) WHEN THE WATERSHED DRAINING TO A DITCH OR SWALE IS LESS THAN 1 ACRE OF TOTAL DRAINAGE AND LESS THAN ¼ ACRE OF IMPERVIOUS AREA, DIVERSION OF RUNOFF TO ADJACENT WOODED OR OTHERWISE VEGETATED BUFFER AREAS IS ENCOURAGED WHERE THE OPPORTUNITY EXISTS.

(1) ROADS. GRAVEL AND PAVED ROADS MUST BE DESIGNED AND CONSTRUCTED WITH CROWNS OR OTHER MEASURES, SUCH AS WATER BARS, TO ENSURE THAT STORMWATER IS DELIVERED IMMEDIATELY TO ADJACENT STABLE DITCHES, VEGETATED BUFFER AREAS, CATCH BASIN INLETS, OR STREET GUTTERS.

NOTE: (1) GRAVEL AND PAVED ROADS SHOULD BE MAINTAINED SO THAT THEY CONTINUE TO CONFORM TO THIS STANDARD IN ORDER TO PREVENT EROSION PROBLEMS. (2) THE DEPARTMENT RECOMMENDS THAT IMPERVIOUS SURFACES, INCLUDING ROADS, BE DESIGNED AND CONSTRUCTED SO THAT STORMWATER IS DISTRIBUTED IN SHEET FLOW TO NATURAL VEGETATED BUFFER AREAS WHEREVER SUCH AREAS ARE AVAILABLE. ROAD DITCHES SHOULD BE DESIGNED SO THAT STORMWATER IS FREQUENTLY (AT LEAST EVERY 100 TO 200 FEET) DISCHARGED VIA DITCH TURNOUTS IN SHEET FLOW TO ADJACENT NATURAL BUFFER AREAS WHEREVER POSSIBLE.

(1) CULVERTS. CULVERTS MUST BE SIZED TO AVOID UNINTENDED FLOODING OF UPSTREAM AREAS OR FREQUENT OVERTOPPING OF ROADWAYS. CULVERT INLETS MUST BE PROTECTED WITH APPROPRIATE MATERIALS FOR THE EXPECTED ENTRANCE VELOCITY, AND PROTECTION MUST EXTEND AT LEAST AS HIGH AS THE EXPECTED MAXIMUM ELEVATION OF STORAGE BEHIND THE CULVERT. CULVERT OUTLET DESIGN MUST INCORPORATE MEASURES, SUCH AS APRONS OR PLUNGE POOLS, TO PREVENT SCOUR OF THE STREAM CHANNEL. OUTLET PROTECTION MEASURES MUST BE DESIGNED TO STAY WITHIN THE CHANNEL LIMITS. THE DESIGN MUST TAKE ACCOUNT OF TAILWATER DEPTH.

(2) PARKING AREAS. PARKING AREAS MUST BE CONSTRUCTED TO ENSURE RUNOFF IS DELIVERED TO ADJACENT SWALES, CATCH BASINS, CURB GUTTERS, OR BUFFER AREAS WITHOUT ERODING AREAS DOWNSLOPE. THE PARKING AREA'S SUBBASE COMPACTION AND GRADING MUST BE DONE TO ENSURE RUNOFF IS EVENLY DISTRIBUTED TO ADJACENT BUFFERS OR SIDE SLOPES. CATCH BASINS MUST BE LOCATED AND SET TO PROVIDE ENOUGH STORAGE DEPTH AT THE INLET SO TO ALLOW INFLOW OF PEAK RUNOFF RATES WITHOUT BY-PASS OF RUNOFF TO OTHER AREAS.

(3) ADDITIONAL REQUIREMENTS. ADDITIONAL REQUIREMENTS MAY BE APPLIED ON A SITE-SPECIFIC BASIS.

APPENDIX B. INSPECTION AND MAINTENANCE

(1) INSPECTION AND MAINTENANCE. INSPECT DISTURBED AND IMPERVIOUS AREAS, AND EROSION AND STORMWATER CONTROL MEASURES, AREAS USED FOR STORAGE THAT ARE EXPOSED TO PRECIPITATION, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE. INSPECT THESE AREAS AT LEAST ONCE A WEEK AS WELL AS AND BEFORE AND AFTER A STORM EVENT, AND PRIOR TO COMPLETION OF PERMANENT STABILIZATION MEASURES. A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING THE STANDARDS IN THIS PERMIT AND ANY DEPARTMENTAL COMPANION DOCUMENT TO THIS PERMIT, MUST CONDUCT THE INSPECTION. THIS PERSON MUST BE IDENTIFIED IN THE INSPECTION LOG. IF BEST MANAGEMENT PRACTICES (BMPS) NEED TO BE MODIFIED OR IF ADDITIONAL BMPS ARE NECESSARY, IMPLEMENTATION MUST BE COMPLETED WITHIN 7 CALENDAR DAYS AND PRIOR TO ANY STORM EVENT (RAINFALL). ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION UNTIL AREAS ARE PERMANENTLY STABILIZED.

(2) INSPECTION LOG (REPORT). A LOG (REPORT) MUST BE KEPT SUMMARIZING THE SCOPE OF THE INSPECTION, NAME(S) AND QUALIFICATIONS OF THE PERSONNEL MAKING THE INSPECTION, THE DATE(S) OF THE INSPECTION, AND MAJOR OBSERVATIONS RELATING TO OPERATION OF EROSION AND SEDIMENTATION CONTROLS AND POLLUTION PREVENTION MEASURES. MAJOR OBSERVATIONS MUST INCLUDE BMPS THAT NEED MAINTENANCE, BMPS THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION, AND LOCATION(S) WHERE ADDITIONAL BMPS ARE NEEDED. FOR EACH BMP REQUIRING MAINTENANCE, BMP NEEDING REPLACEMENT, AND LOCATION NEEDING ADDITIONAL BMPS, NOTE IN THE LOG THE CORRECTIVE ACTION TAKEN AND WHEN IT WAS TAKEN. THE LOG MUST BE MADE ACCESSIBLE TO DEPARTMENT STAFF AND A COPY MUST BE PROVIDED UPON REQUEST. THE PERMITTEE SHALL RETAIN A COPY OF THE LOG FOR A PERIOD OF AT LEAST THREE YEARS FROM THE COMPLETION OF PERMANENT STABILIZATION.

APPENDIX C. HOUSEKEEPING

THESE PERFORMANCE STANDARDS APPLY TO ALL SITES.

(1) SPILL PREVENTION. CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM CONSTRUCTION AND WASTE MATERIALS STORED ON-SITE, INCLUDING STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER, AND APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESPONSE PLANNING AND IMPLEMENTATION.

(2) GROUNDWATER PROTECTION. DURING CONSTRUCTION, LIQUID PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUNDWATER MAY NOT BE STORED OR HANDLED IN AREAS OF THE SITE DRAINING TO AN INFILTRATION AREA. AN "INFILTRATION AREA" IS ANY AREA OF THE SITE THAT BY DESIGN OR AS A RESULT OF SOILS, TOPOGRAPHY AND OTHER RELEVANT FACTORS ACCUMULATES RUNOFF THAT INFILTRATES INTO THE SOIL. DIKES, BERMS, SUMPS, AND OTHER FORMS OF SECONDARY CONTAINMENT THAT PREVENT DISCHARGE TO GROUNDWATER MAY BE USED TO ISOLATE PORTIONS OF THE SITE FOR THE PURPOSES OF STORAGE AND HANDLING OF THESE MATERIALS.

NOTE: LACK OF APPROPRIATE POLLUTANT REMOVAL BEST MANAGEMENT PRACTICES (BMPS) MAY RESULT IN VIOLATIONS OF THE GROUNDWATER QUALITY STANDARD ESTABLISHED BY 38 M.R.S.A. §465-C(1). ANY PROJECT PROPOSING INFILTRATION OF STORMWATER MUST PROVIDE ADEQUATE PRE-TREATMENT OF STORMWATER PRIOR TO DISCHARGE OF STORMWATER TO THE INFILTRATION AREA, OR PROVIDE FOR TREATMENT WITHIN THE INFILTRATION AREA, IN ORDER TO PREVENT THE ACCUMULATION OF FINES, REDUCTION IN INFILTRATION RATE, AND CONSEQUENT FLOODING AND DESTABILIZATION.

(1) FUGITIVE SEDIMENT AND DUST. ACTIONS MUST BE TAKEN TO ENSURE THAT ACTIVITIES DO NOT RESULT IN NOTICEABLE EROSION OF SOILS OR FUGITIVE DUST EMISSIONS DURING OR AFTER CONSTRUCTION. OIL MAY NOT BE USED FOR DUST CONTROL.

EXAMPLES OF BMPS -- OPERATIONS DURING WET MONTHS, THAT EXPERIENCE TRACKING OF MUD OFF THE CONSTRUCTION SITE ONTO PUBLIC ROADS, SHOULD PROVIDE FOR SWEEPING OF ROAD AREAS AT LEAST ONCE A WEEK AND PRIOR TO SIGNIFICANT STORM EVENTS. WHERE CHRONIC MUD TRACKING OCCURS, A STABILIZED CONSTRUCTION ENTRANCE SHOULD BE PROVIDED. OPERATIONS DURING DRY MONTHS, THAT EXPERIENCE FUGITIVE DUST PROBLEMS, SHOULD WET DOWN THE ACCESS ROADS ONCE A WEEK OR MORE FREQUENTLY IF NEEDED.

NOTE: DEWATERING A STREAM WITHOUT A PERMIT FROM THE DEPARTMENT VIOLATES STATE WATER QUALITY STANDARDS AND THE NATURAL RESOURCES PROTECTION ACT.

(1) DEBRIS AND OTHER MATERIALS. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.

NOTE: TO PREVENT THESE MATERIALS FROM BECOMING A SOURCE OF POLLUTANTS, CONSTRUCTION ACTIVITIES RELATED TO A PROJECT MAY BE REQUIRED TO COMPLY WITH APPLICABLE PROVISION OF RULES RELATED TO SOLID, UNIVERSAL, AND HAZARDOUS WASTE, INCLUDING, BUT NOT LIMITED TO, THE MAINE SOLID WASTE AND HAZARDOUS WASTE MANAGEMENT RULES; MAINE HAZARDOUS WASTE MANAGEMENT RULES; MAINE OIL CONVEYANCE AND STORAGE RULES; AND MAINE PESTICIDE REQUIREMENTS.

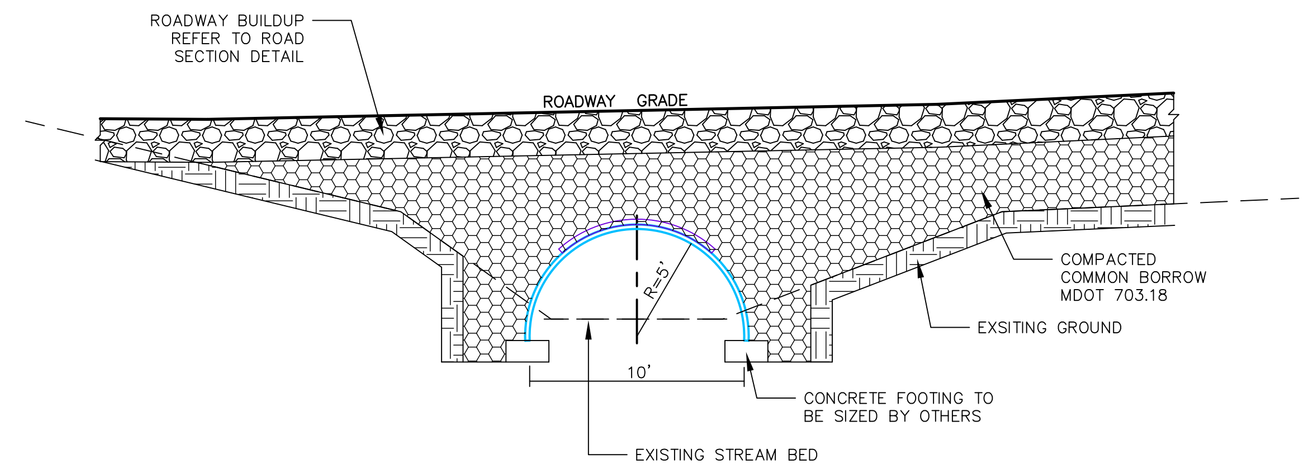
(1) TRENCH OR FOUNDATION DE-WATERING. TRENCH DE-WATERING IS THE REMOVAL OF WATER FROM TRENCHES, FOUNDATIONS, COFFER DAMS, PONDS, AND OTHER AREAS WITHIN THE CONSTRUCTION AREA THAT RETAIN WATER AFTER EXCAVATION. IN MOST CASES THE COLLECTED WATER IS HEAVILY SILTED AND HINDERS CORRECT AND SAFE CONSTRUCTION PRACTICES. THE COLLECTED WATER REMOVED FROM THE PONDED AREA, EITHER THROUGH GRAVITY OR PUMPING, MUST BE SPREAD THROUGH NATURAL WOODED BUFFERS OR REMOVED TO AREAS THAT ARE SPECIFICALLY DESIGNED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE, LIKE A COFFERDAM SEDIMENTATION BASIN. AVOID ALLOWING THE WATER TO FLOW OVER DISTURBED AREAS OF THE SITE.

NOTE: FOR GUIDANCE ON DE-WATERING CONTROLS, CONSULT THE MAINE EROSION AND SEDIMENT CONTROL BMPS", MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION."

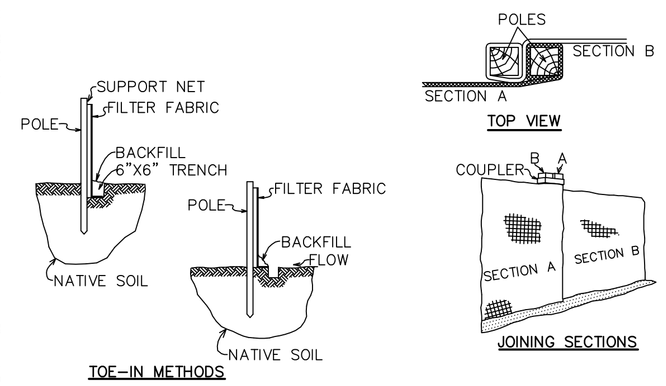
(1) NON-STORMWATER DISCHARGES. IDENTIFY AND PREVENT CONTAMINATION BY NON-STORMWATER DISCHARGES. WHERE ALLOWED NON-STORMWATER DISCHARGES EXIST, THEY MUST BE IDENTIFIED AND STEPS SHOULD BE TAKEN TO ENSURE THE IMPLEMENTATION OF APPROPRIATE POLLUTION PREVENTION MEASURES FOR THE NON-STORMWATER COMPONENT(S) OF THE DISCHARGE. AUTHORIZED NON-STORMWATER DISCHARGES ARE:

(i) DISCHARGES FROM FIREFIGHTING ACTIVITY;
(ii) FIRE HYDRANT FLUSHINGS.[1]
(iii) VEHICLE WASHWATER IF DETERGENTS ARE NOT USED AND WASHING IS LIMITED TO THE EXTERIOR OF VEHICLES (ENGINE, UNDERCARRAIGE AND TRANSMISSION WASHING IS PROHIBITED);
(iv) DUST CONTROL RUNOFF IN ACCORDANCE WITH PERMIT CONDITIONS AND APPENDIX (C)(3);
(v) ROUTINE EXTERNAL BUILDING WASHDOWN, NOT INCLUDING SURFACE PAINT REMOVAL, THAT DOES NOT INVOLVE DETERGENTS;
(vi) PAVEMENT WASHWATER (WHERE SPILLS/LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE NOT OCCURRED, UNLESS ALL SPILLED MATERIAL HAD BEEN REMOVED) IF DETERGENTS ARE NOT USED;
(vii) UNCONTAMINATED AIR CONDITIONING OR COMPRESSOR CONDENSATE;
(viii) UNCONTAMINATED GROUNDWATER OR SPRING WATER;
(ix) FOUNDATION OR FOOTER DRAIN-WATER WHERE FLOWS ARE NOT CONTAMINATED; AND
(x) UNCONTAMINATED EXCAVATION DEWATERING (SEE REQUIREMENTS IN APPENDIX C(5)).
(vi) POTABLE WATER SOURCES INCLUDING WATERLINE FLUSHINGS.[2]

ALLOWABLE NON-STORMWATER DISCHARGES CANNOT BE AUTHORIZED UNDER THIS PERMIT UNLESS THEY ARE DIRECTLY RELATED TO AND ORIGINATE FROM A CONSTRUCTION SITE OR DEDICATED SUPPORT ACTIVITY (E.G., A PRESSURE WASHING COMPANY CANNOT BROADLY USE THIS GENERAL PERMIT FOR THEIR BUSINESS OPERATIONS, BECAUSE GENERAL VEHICLE WASHING IS NOT ASSOCIATED WITH A CONSTRUCTION SITE). IT IS NOT NECESSARY TO LIST THESE SOURCES OF NON-STORMWATER IN THE NOI.



ARCH CULVERT CROSS SECTION
10' SPAN 5'-2" RISE



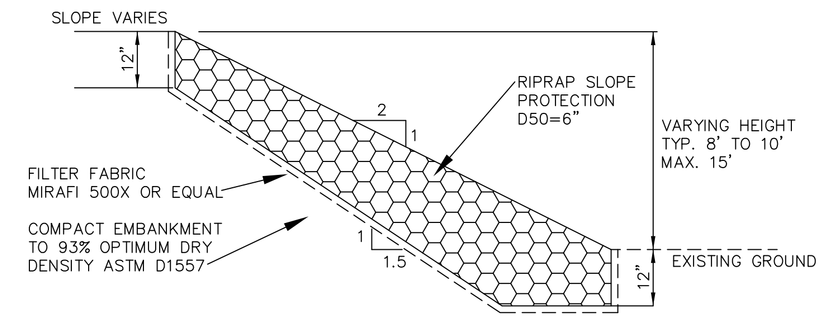
SILTATION FENCING

1. INSTALL DOWNSLOPE OF ALL CONSTRUCTION ACTIVITIES AS NECCESSARY.
2. INSPECTION SHOULD BE FREQUENT AND REPAIR OR REPLACEMENT MADE PROMPTLY AS NEEDED. CHECK AFTER EACH RAINFALL.
3. BARRIERS SHOULD BE REMOVED WHEN THAY HAVE SERVED THEIR USEFULNESS, BUT NOT BEFORE THE UPSLOPE AREAS HAVE BEEN PERMANENTLY STABILIZED.
4. AREAS DISTURBED DURING CONSTRUCTION AND NOT STABILIZED IN SOME OTHER MANNER SHALL BE RE-ESTABLISHED AS FOLLOWS:

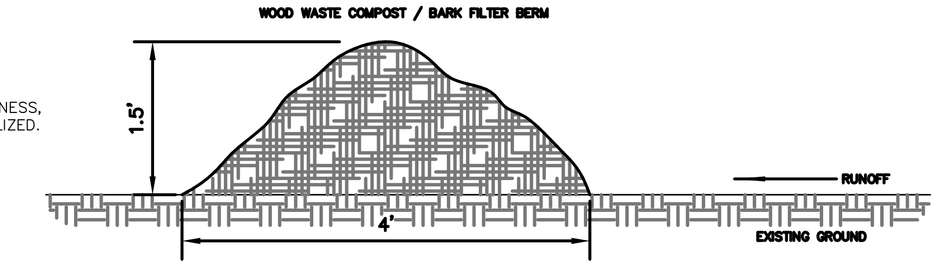
LIME	140# PER 1000 SF
FERTILIZER	30# PER 1000 SF
HAY MULCH	2 BALES PER 1000 SF

SEED SHALL BE SCS MIXTURE #5 OR #6 SOWN AT 1 1/2# PER 1000 SF

5. IF WORK IS COMPLETED BETWEEN SEPTEMBER 15 AND APRIL 15 OF ANY CALENDER YEAR, A TEMPORARY HAY MULCH AND EROSION CONTROL MESH SHALL BE INSTALLED OVER DENUDED AREAS TO PROTECT THEM FROM EROSION UNTIL PERMANENT REVEGETATION MEASURES CAN BE UNDERTAKEN.



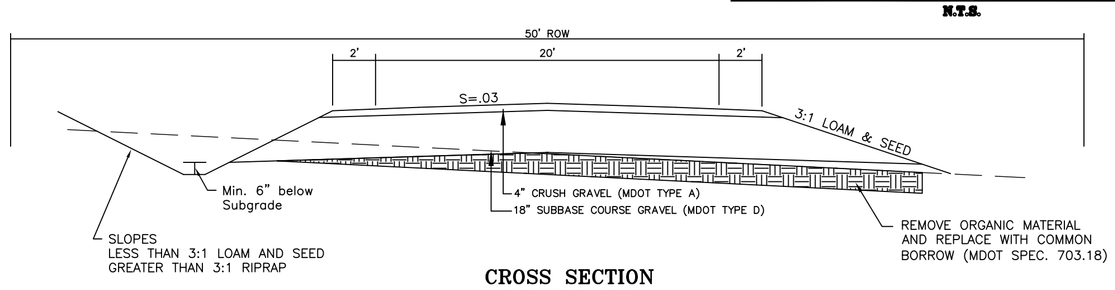
RIPRAP SLOPE DETAIL
N.T.S.



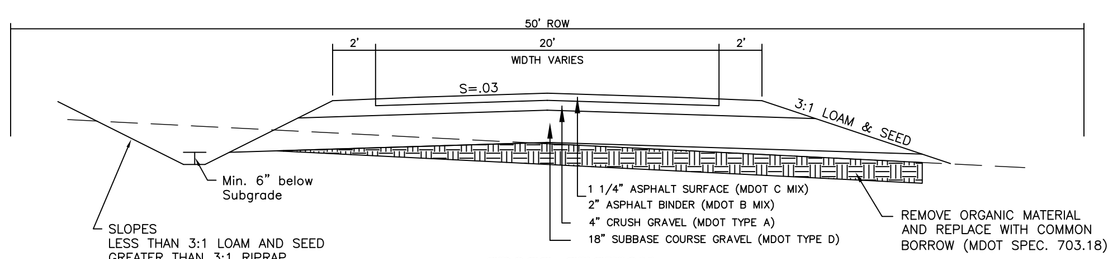
NOTE:

WOOD WASTE COMPOST / BARK FILTER BERMS MAY BE USED IN COMBINATION WITH SILT FENCE TO IMPROVE SEDIMENT REMOVAT AND PREVENT DOGGING OF THE WOOD WASTE COMPOST / BARK BERM BY LARGER SEDIMENT PARTICIES. (SILT FENCE PLACED TO FILTER RUNOFF BEFORE WOOD WASTE COMPOST / BARK)

WOOD WASTE COMPOST / BARK FILTER BERM
N.T.S.



CROSS SECTION
PAVED APRON
0+50 TO 5+96



CROSS SECTION
PAVED APRON
0+00 TO 0+50

PROGRESS PLAN
NOT FOR CONSTRUCTION

THIS DOCUMENT IS ISSUED FOR INFORMATIONAL PURPOSES ONLY. THE DATA SHOWN HEREON IS SUBJECT TO REVISION.

REVISIONS:

DRAWN: P.P.G.
CHECKED: P.P.G.
SCALE:
FIELD BOOK:
DATE: 04-16-2022
JOB NO. 1790-22
SHEET 3OF 3

RECORD OWNERS
PETER & EVE-SUSAN MCPHEETERS
P.O. BOX 224
BIDDEFORD, MAINE 04005

EROSION CONTROL & DETAILS
PETER & EVE-SUSAN MCPHEETERS
81 GUINEA ROAD
BIDDEFORD, ME

PAUL P. GADBOIS
ENGINEERING SURVEYING
LAND PLANNING
P.O. BOX 327, SACO, MAINE 04072
(207) 283-3980

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NANCY E HAMMOND, REGISTER OF DEEDS
Bk 18675 PG 261
Instr # 2021029640
05/24/2021 02:11:47 PM
Pages 2 YORK CO

TRUSTEE'S DEED

SCOTT C. BURLEIGH, Trustee of the Scott Burleigh Revocable Trust u/a dated July 16, 2013, of Los Angeles in the County of Los Angeles and State of California, by the power conferred by law, and every other power, for consideration paid, grants to **PETER G. McPHEETERS and EVE-SUSAN E. McPHEETERS**, husband and wife, both of Biddeford in the County of York and State of Maine, whose mailing address is P.O. Box 224, Biddeford Pool, ME 04006, as joint tenants, the following:

SEE **EXHIBIT A** APPENDED HERETO AND MADE A PART HEREOF
FOR A COMPLETE DESCRIPTION OF SUBJECT PROPERTIES

WITNESS my hand this 20th day of May, 2021.

THE SCOTT BURLEIGH REVOCABLE TRUST

Robert B Woodman
Witness

By: _____
Scott C. Burleigh, Trustee

Maine R.E. Transfer Tax Paid

STATE OF MAINE
COUNTY OF YORK, SS.

May 20, 2021

Then personally appeared the above named **Scott C. Burleigh** and acknowledged the foregoing instrument to be his free act and deed, in his said capacity.

Before me, Robert B Woodman
~~Notary Public~~ Attorney at law
Print Name: Robert B. Woodman
My Commission Expires: _____

Burleigh to McPheeters

EXHIBIT A

A certain lot or parcel of land with any improvements thereon situated in the City of Biddeford, County of York and State of Maine, and lying Southeasterly of the Guinea Road; said certain lot or parcel of land being the first lot described in a deed from Crague H. Burleigh and Patricia A. Burleigh to Scott C. Burleigh dated April 4, 1981 and recorded in the York County Registry of Deeds in Book 2774, Page 214; the verbatim description of said certain lot according to the aforementioned deed being as follows:

> "A certain lot or parcel of land with the buildings thereon situated in the City of Biddeford, in the County of York and State of Maine, bounded and described as follows: Beginning at an iron pipe driven into the ground on the southeasterly side of the Guinea Road, said iron pipe being the westerly corner of land conveyed to one Cordeau by deed dated April 13, 1960 and recorded in York Registry of Deeds, Book 1431, Page 12; thence South 37° 34' East by said land conveyed to Cordeau 306.13 feet to an iron pipe driven into the ground; thence North 48° 12' East by said land conveyed to Cordeau 116.57 feet to an iron pipe driven into the ground and land conveyed to one LaChance by deed dated January 9, 1958 and recorded in said Registry Book 1362, Page 219; thence North 83° 57' East by said land conveyed to LaChance 117.38 feet to an iron pipe driven into the ground and land now or formerly of one Dorais; thence South 37 38' East by said land now or formerly of Dorais 6 feet, more or less, to a small brook; thence easterly by said brook, it being partly by said land now or formerly of Dorais and partly by land now or formerly of one Pombriant, to Moore's Brook, so-called; thence southerly, southwesterly and westerly by said Moore's brook to the second parcel herein; thence North 38° 06' West by said second parcel 2. feet, more or less, to an iron pipe driven into the ground near the top of the bank; thence North 38° 06' West by second parcel, and by other land of Burleigh 817 feet to an iron pipe driven into the ground and land now or formerly of one Emmons; thence North 50° 27' East by said land now or formerly of Emmons 38 feet to an iron pipe driven into the ground; thence N 51° 54' E by land of Myers or owner, two hundred (200) feet, thence N 52° 13' E by land of Giguere or owner one hundred sixty six and 24/100 (166.24) feet; thence Northwesterly by said Giguere land (which line is parallel to and fifty (50) feet from said Cordeau land) two hundred ninety two and 95/100 (292.95) feet to the Guinea Road; thence Northeasterly by said road fifty one, and 76/100 (51.76) feet to the point of beginning.
>
> Being the land conveyed to grantors by deed recorded in said Registry in Book 1622, Page 347, but excepting two lots sold by grantors to Myers and Giguere."

Title reference – with respect to sources of title to the hereinabove described property reference may be had to a deed from Scott C. Burleigh to Scott C. Burleigh, Trustee of the Scott Burleigh Revocable Trust, dated December 28, 2017 and recorded in said Registry of Deeds in Book 17637, Page 941.

WOODMAN EDMANDS DANYLIK AUSTIN
SMITH & JACQUES, P.A.
P.O. BOX 468
BIDDEFORD, ME 04005-0468
(207) 284-4581

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NANCY E HAMMOND, REGISTER OF DEEDS
Bk 18675 PG 263
Instr # 2021029641
05/24/2021 02:11:47 PM
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TRUSTEE'S DEED

SCOTT C. BURLEIGH, Trustee of the Scott Burleigh Revocable Trust u/a dated July 16, 2013, of Los Angeles in the County of Los Angeles and State of California, by the power conferred by law, and every other power, for consideration paid, grants to **PETER G. McPHEETERS** of Biddeford in the County of York and State of Maine, whose mailing address is P.O. Box 224, Biddeford Pool, ME 04006, the following:

SEE **EXHIBIT A** APPENDED HERETO AND MADE A PART HEREOF FOR A COMPLETE DESCRIPTION OF SUBJECT PROPERTIES

WITNESS my hand this 20th day of May, 2021.

THE SCOTT BURLEIGH REVOCABLE TRUST

Robert B Woodman
Witness

By: _____
Scott C. Burleigh, Trustee

STATE OF MAINE
COUNTY OF YORK, SS.

May 20, 2021

Then personally appeared the above named **Scott C. Burleigh** and acknowledged the foregoing instrument to be his free act and deed, in his said capacity.

Before me, Robert B Woodman
~~Notary Public~~ Attorney at Law
Print Name: Robert B. Woodman
My Commission Expires: _____

Maine R.E. Transfer Tax Paid

Burleigh to McPheeters

EXHIBIT A

A certain lot or parcel of land with any improvements thereon situated in the City of Biddeford, County of York and State of Maine, and lying Southeasterly of but not adjacent to the Guinea Road; said certain lot or parcel of land being the second lot described in a deed from Crague H. Burleigh and Patricia A. Burleigh to Scott C. Burleigh dated April 4, 1981 and recorded in the York County Registry of Deeds in Book 2774, Page 214; the verbatim description of said certain lot according to the aforementioned deed being as follows:

> "Also an adjacent lot or parcel of land with any buildings thereon, bounded and described as follows:
>
> Beginning at an iron pipe at the southeast corner of the Burleigh Farm described in deed of Arthur Burleigh to Ray Burleigh November 30, 1936 recorded in Book 892, Page 152, then southwesterly 32 ½ rods to an iron post at the S.W. Corner of the Burleigh Farm, thence 224' northwesterly by land now of Lehouillier formerly John R. Staples 224' to an iron post, thence northeasterly 32 ½ rods by land of Doris Burleigh to land of grantee to an iron post, said post being 832' from an iron pipe located at the NE corner of Doris Burleigh Farm at South side of Guinea Road, thence 224' southeasterly to point of beginning, containing approximately 2.75 acres.
>
> Being the same premises conveyed to grantor Crague H. Burleigh by deed of Doris Burleigh, dated August 6, 1973 and recorded in said Registry in Book 2005, Page 489, from which deed the above description is taken verbatim."

Title reference – with respect to sources of title to the hereinabove described property reference may be had to a deed from Scott C. Burleigh to Scott C. Burleigh, Trustee of the Scott Burleigh Revocable Trust, dated December 28, 2017 and recorded in said Registry of Deeds in Book 17637, Page 941.

WOODMAN EDMANDS DANYLIK AUSTIN
SMITH & JACQUES, P.A.
P.O. BOX 468
BIDDEFORD, ME 04005-0468
(207) 284-4581

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CITY OF BIDDEFORD

Planning and Development Department

Matthew Grooms, AICP
City Planner
205 Main Street
P.O. Box 586
Biddeford, ME 04005
(207) 284-9115
Matthew.Grooms@biddefordmaine.org

PLANNING BOARD REPORT

TO: Chair Southwick and the Biddeford Planning Board

FROM: Matthew Grooms, AICP, City Planner

DATE: July 28, 2022

RE: New Business Item 7.A. – 2022.17 Sketch Plan Review for 4-lot single-family subdivision and private roadway construction at 81/97 Guinea Road (Tax Map 76/77, Lots 37/35) in the SR-1 and SP zones.

MEETING DATE: Wednesday, August 3, 2022 at 6:00 pm

I. INTRODUCTION

The proposal before the Planning Board is for a four-lot, single-family subdivision of a 22.34-acre parcel of land at 81 Guinea Road in the Suburban Residential (SR-1) and Stream Protection (SP) sub-district of the shoreland zone. While the subdivision would result in four new buildable lots, the scope of work proposed at this time is limited to the development of a private roadway and extension of water and underground electrical service. The project would result in 9,250 square feet of wetland fill, and will require a DEP Maine Construction General Permit, a DEP Stream Crossing permit, and both a DEP and Army Corps of Engineers Wetland Fill permit.

The application appears to be consistent with the City's major subdivision definition, which the Planning Board will determine as part of this meeting. This finding is due to the proposed creation of a new private way, and extension of public water to service the four lots. This determination will be made at the Planning Board's August 3rd meeting.

II. PROJECT INFORMATION

	SUBJECT	INFORMATION
1.	Applicant/Property Owner	Peter and Susan McPheeters P.O. Box 224 Biddeford
2.	Agent/Engineer	Paul Gadbois, P.E., P.L.S. P.O. Box 327 Saco, ME 04072
3.	Project Location	81/97 Guinea Road
4.	Map/Lot	Tax Map 76/ Lot 37 AND Map 77/Lot 35
5.	City Approvals Required	Minor Subdivision/Site Plan

6.	Existing Zoning	Suburban Residential (SR-1)
7.	Overlay Zoning	Stream Protection (SP) Shoreland Zone
8.	Existing Use	Undeveloped property. Mixture of woodlands, wetlands, and field.
9.	Proposed Use	Single-Family Residential
10.	Uses in the Vicinity	Residential
11.	Parcel Size	22.34 acres
12.	Water Supply	Maine Water
13.	Sewerage Disposal	Private Septic
14.	Solid Waste Disposal	City of Biddeford
15.	Fire Protection	City of Biddeford
16.	Parking Spaces Required	2 spaces/dwelling unit
17.	Parking Spaces Provided	Minimum of 8 (within driveways)
18.	Ownership of Road	Private Roadway, to be managed by HOA
19.	Estimated Site Development Costs	Not provided
20.	Financial Capacity Letter	Applicant shall provide financial capacity letter.
21.	Waivers Needed/Requested	No waivers have been requested
22.	Waivers Granted	N/A
23.	Additional Approvals/Permits Needed	DEP Maine Construction General Permit, DEP Stream Crossing permit, and both a DEP and Army Corps of Engineers Wetland Fill permit
24.	Fees Paid (LDR Attachment A)	All application fees paid
25.	Planning Board Review History	Preliminary Review – 8/3/2022

III. AREAS OF REVIEW

The proposed development is subject to the following areas of review.

A. Zoning:

The property is zoned Suburban Residential (SR-1) which permits by right single-family development. Based upon the proposed utility infrastructure, with water service and no sanitary sewer, the minimum lot size is 20,000 square feet, with a minimum frontage requirement of 100 feet, front setback requirements of 40 feet, and side and rear setbacks of 10 feet. The maximum building height is 35 feet. At this time, given that no buildings are being proposed, staff can confirm that the lots meet minimum lot size and frontage requirements. Setbacks and building heights will be confirmed when applications are submitted for the individual buildings.

The Stream Protection (SP) sub-district of the shoreland zone permits both roadways and single-family development, though a variance from the Zoning Board of Appeals is required for any portion of a single-family home or driveway within the stream protection zone. The exact boundaries of the SP zone are to be determined in the field as part of an application. The applicant should clarify building envelopes, and indicate whether any portion of driveway or building is likely to occur within the SP zone.

B. Subdivision:

The City's subdivision ordinance specifies that the subdivision of property involving development of a new public or private way, along with the extension of public utilities, regardless of the number of lots being developed, is considered a 'major subdivision', which requires sketch plan, preliminary plan, and final plan review.

The City has reviewed this application against the City's subdivision requirements and relevant zoning performance standards, including Sections 26 (Erosion Control), 50 (Preservation of Landscape/Natural Vegetation), 51 (Private Ways and Roads), 61 (Stormwater Management), and 70 (Wildlife Preservation). Review comments are provided below.

1. **General Subdivision**
   i. A boundary survey shall be provided.
   ii. An existing conditions plan shall be provided as part of the final plan set.
   iii. Yard areas shall be depicted on the final subdivision plan.
   iv. Proposed monumentation should be shown on the final subdivision plan. Per Section 51.D.1, monumentation is required per the standards of Section 62-87.
   v. Existing and proposed contours should be labeled.
   vi. Given the existing location of wetlands, and the proposal to have two lots fronting on the proposed turnaround, we recommend that proposed driveway locations be shown for the four lots.
   vii. The final plans should include details for all storm drainage, including how the existing culvert will be extended, trench sections, elevations and materials, etc.
   viii. The applicant shall provide draft covenants and deeds for each lot being proposed per Section 66-35(d).
   ix. A statement of financial capability shall be provided.
   x. Applicant shall provide letters of approval from the following entities in support of the project; Fire Department, Maine Water, and Police Department.
   xi. The application indicates that properties are to be serviced by public trash pick-up. Section 66-20 states that no private ways shall be serviced by municipal services, which includes trash, snow plowing, or street building and/or maintenance.

2. **Roadway Design and Maintenance**
   i. The plan calls for a 40 foot paved apron, while a 50 foot paved apron is required per Article VI, Section 51.D.9. Table 6-50 for paved streets.
   ii. Article VI, Section 51.D.6. requires that a road maintenance agreement be provided. A draft copy of this shall be provided for review by City staff as part of the final plan submission.
   iii. Side and back slopes along the road are called out as 2H:1V, but are closer to 1.5H:1V. The plans should be updated to reflect this.
   iv. The roadway typical section reflects 3H:1V side slopes and back slopes. The typical sections should be revised, and the methods for stabilizing these slopes shown.
   v. Can the road be slightly adjusted to closer align with Burleigh Lane?
   vi. The applicant shall clarify whether the proposed grading reflects the bottom of the ditch 6 inches below the subgrade?
   vii. All radii and turnaround dimensions should be shown.

viii. We recommend that the gravel end of the proposed grade break at Sta 5+96.69, and the proposed slope beyond the gravel be shown in the profile.
ix. Roadway ditch protection should be specified.
x. Pavement joint details shall be provided.
xi. Design calculations for the proposed pipe arch should be provided. There will also need to be a submittal stamped by a Maine Registered Professional Engineer provided to the City Engineer.

3. **Utilities:**
   i. Utilities shall be shown on the plans. The cover letter indicates that the utilities will be underground, while the plans call for overhead electric and communication.

4. **Environment:**
   i. It appears that it will be difficult to modify the existing 30" diameter culvert and install the proposed 36" diameter culvert without encroaching on the abutting property.
   ii. Applicant should consider limiting forest removal activities to the period of time between October 31st and April 16th, to minimize impacts to breeding/nesting migratory birds and bats.
   iii. The application identifies three separate soil types (BuC, BuD, and SC) across the property. In accordance with the environmental constraints review, development footprints should be minimized on these soil types.

C. Waivers:

The following waivers have been identified by the City's peer review engineer as being required for the project to proceed. The applicant shall submit formal waiver requests to be evaluated by the City.\

1. Article VI, Section 51.D.9. Table 6-50. This standard pertains to maximum road slope. The maximum permitted slope is 8%.

2. Article VI, Section 26.F. This standard states:

   The top of a cut or the bottom of a fill section shall not be closer than 10 feet to an adjoining property, nor shall said cut or fill exceed the three-to-one slope unless the Planning Board waives either or both requirements upon the applicant's demonstration, certified by a Maine licensed professional engineer (P.E.), that a steeper slope, whether or not closer than 10 feet to the adjoining property, is stable, will not result in excessive downstream erosion or sedimentation, nor cause any additional adverse impact on the adjoining property.

3. The applicant has requested that, in lieu of providing a performance guarantee for the roadway construction, that the issuance of building permits be contingent upon construction of the road in accordance with the approved plan.

IV. COMPLETENESS REVIEW

This application is before the Planning Board as required by Chapter 66 (Subdivisions) subject to Subdivision review and approval. Per the City's Subdivision ordinance (66-26), all applications have a three tier approval process beginning with a Sketch Plan review. The applicant has submitted information that is adequate for a Sketch Plan review.

V. CONCLUSION

The submitted application provides enough information for the Board to comment on and familiarize themselves with the project. The scope of the application appears to be aligned with the definition of a major subdivision.

The Planning Board, after it has completed the conceptual review and provided feedback to the applicant, can consider voting to determine the major/minor classification per Sec. 66-30(b) and direct the applicant to prepare and submit, presumably, a final plan application.

VI. SAMPLE MOTIONS

A. Motion to classify the 4-lot subdivision at 81/97 Guinea Road (Tax Map 76/ Lot 37 AND Map 77/Lot 35) a (**Minor/Major**) Subdivision.

VII. ATTACHMENTS

A. Application Package dated April 16, 2022
B. Supporting Materials

CITY OF BIDDEFORD

Planning and Development Department

Eric Freeman
Assistant City Planner
205 Main Street
P.O. Box 586
Biddeford, ME 04005
(207) 284-9115
Eric.Freeman@biddefordmaine.org

To: William Southwick, Chair & Members of the Biddeford Planning Board

From: Eric Freeman, Assistant Planner

Date: September 26th, 2022

Re: 2022.38 Sketch Plan Review for a proposed single family home and 8-unit duplex subdivision at 37 Newtown Rd.

Meeting Date: October 5, 2022

---

1. PROPOSAL

This application contains materials for a Sketch Plan review for a proposed duplex subdivision consisting of 5 buildings and 9 units. at 37 Newtown Rd. (Tax Map 4, Lot 22-6). The parcel is located in the RF zone. The property currently consists of a single duplex housing unit accessible from Newtown Rd. This plan calls for four (4) additional duplex structures and one new single-family structure. On-site parking for each unit is provided.

2. Project Information

	SUBJECT	INFORMATION
1.	Applicant	Coastal Oaks, LLC 198 Saco Avenue Old Orchard Beach, Maine 04064
2.	Property Owner	Same as Applicant
3.	Engineer/Surveyor	Sebago Technics, LLC 75 John Roberts Rd. Suite 4A South Portland, ME 04106 207-200-2081
4.	Agent	Same as Engineer / Surveyor
5.	Project Location	37 Newtown Rd.
6.	Map/Lot	Map 4, Lot 22-6

7.	City Approvals Required	Site Plan, Subdivision
8.	Existing Zoning	RF (Rural Farm)
9.	Overlay Zoning	None
10.	Existing Use	Duplex, forest cover
11.	Proposed Use	Duplex Residential, Single-Family Residential
12.	Uses in the Vicinity	Low density residential
13.	Parcel Size	43,560 Sq. Ft
14.	Limits of Disturbance	26,500 Sq. Ft
15.	Drainage Watershed	Saco River
16.	Water Supply	Private Well
17.	Sewerage Disposal	Private Septic
18.	Fire Protection	City of Biddeford
19.	Ownership of Road	Private
20.	Additional Approvals/Permits Needed	None
21.	Fees Paid (LDR Attachment A)	All Fees paid
22.	Planning Board Review History	October 5th, 2022

3. COMPLIANCE WITH CITY ORDINANCES

Per the City of Biddeford Code of Ordinances Chapter 66 *Subdivisions*, Section 30, the purpose of the Sketch Plan review is for the Board to review the overall layout plan and offer general feedback to the applicant, to inform the Preliminary submission.

The Board may also request additional studies to be made, at the applicant's expense, to inform the design and approval process. The Board must also make the determination that the proposed subdivision is a major or minor subdivision, based on the following criteria:

Major subdivisions:

Propose to develop any type of additional roadways, whether public or private; or extend public water or sewer lines; where five or more lots are proposed; or are considered planned unit developments.

This determination will dictate whether the application must proceed with a preliminary and final approval in two distinct steps, or if both may be granted simultaneously. If the application is deemed a major subdivision, the applicant must submit all information required in Section 66-35 to be considered for preliminary approval. The Board may also request additional studies to be made, at the applicant's expense, to inform the design and approval process.

This project was reviewed by the City's third party engineer who offered the following comments:

- Note 31 is the standard private way note from the code. Is a private way proposed or necessary?
- The application states that electric and communication will be underground, while note 11 suggests an above ground installation for these utilities.
- The purpose of note 32 is unclear.
- The application form has the box checked indicating it is a subdivision application. For a development of this nature, site plan and subdivision approvals may be required.
- Should any ADA accessible parking spaces be provided?

Staff recommend these comments be addressed by the applicant in future submissions.

4. WAIVER REQUESTS

None at this time. Upon review of the submission requirements, the applicant may wish to submit a request for a waiver.

5. RECOMMENDATIONS

At this time, the Board should review the application, listen to the applicant's presentation, and ask questions/make comments to better inform the project. The purpose of the Sketch Plan review is for the Board to review the overall concept of the proposal and gain a better understanding of the project as a whole. The Board must also determine if the application constitutes a major or minor subdivision. By definition, the project is a major subdivision.

6. SAMPLE MOTION

A. Motion to designate the application for a 9-unit residential subdivision at 37 Newtown Rd. (Tax Map 4, Lot 22-6) as a Major Subdivision.

Sketch Plan Review Application

To:

City of Biddeford

For:

Newtown Road Condominium

Biddeford, Maine

Prepared for:
Coastal Oaks, LLC
198 Saco Avenue
Old Orchard Beach, Maine 04064

Prepared by:
Sebago Technics, Inc.
75 John Roberts Road, Suite 1A
South Portland, Maine 04106

September 2022
20023

SEBAGO TECHNICS

40 YEARS OWNERSHIP · GROWTH

September 12, 2022
20023

Matthew Grooms, City Planner
City of Biddeford
205 Main Street
Biddeford, ME 04005

Sketch Plan Submission, Newtown Road Condominium
Newtown Road, Tax Map 4/Lot 22-6
Coastal Oaks, LLC

Dear Matthew:

On behalf of Coastal Oaks, LLC, we are pleased to submit the enclosed Sketch Plan Application for a new condominium development to be located off of Newtown Road in Biddeford. The site includes an existing duplex unit and historically undeveloped land. The property is identified on Tax Map 4 as Lot 22-6, and is within the Rural Farm zoning district. The proposed development will include the construction of 4 duplex units and 1 single unit, a drive aisle, parking, and a dumpster enclosure. A total of 11 units are proposed with the inclusion of the existing duplex.

The project proposes to extend underground electric from Newtown Road. New structures will be served by common wastewater disposal systems and wells. Wastewater systems will be designed to handle less than 2,000 gallons per day (GPD). Approximately 26,500 square feet of total impervious area is anticipated for the development.

To assist the Planning Board, we have compiled a sketch plan showing the units and drive aisle layout for the proposed project. We are hopeful that we have provided sufficient information for the committee to review before the meeting. Upon your review of the submitted information, please do not hesitate to contact us if you have any questions, or need additional information. Thank you for your consideration.

Sincerely,

SEBAGO TECHNICS, INC.

Craig Burgess

Craig A. Burgess, P.E.
Senior Project Manager

Cc: Coastal Oaks, LLC

CITY OF BIDDEFORD, MAINE
PLANNING BOARD

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

APPLICATION FORM

Type of Application:

☐ Shoreland Zoning Permit ☐ Site Plan Review ☐ Extraction
☐ Conditional Use Permit ☑ Subdivision ☐ Private Way
☑ Other: Sketch Plan

Applicant Information:

Applicant's Name: Coastal Oaks, LLC
Applicant's Mailing Address: 198 Saco Avenue Old Orchard Beach, Maine 04064
Applicant's Telephone:
What is Applicant's legal interest in the property?
☑ Owner ☐ Potential Buyer with Contract ☐ Lease/Rental Agreement

Owner's Name: Coastal Oaks, LLC
Owner's Address: 198 Saco Avenue Old Orchard Beach, Maine 04064
Owner's Telephone:

Agent's Name: Sebago Technics Inc.
Agent's Address: 75 John Roberts Road Suite 4A South Portland, Maine 04106
Telephone: 207-200-2081

Engineer/Surveyor: Sebago Technics Inc.
Engineer/Surveyor's Address: 75 John Roberts Road Suite 4A South Portland, Maine 04106
Telephone: 207-200-2081

Project Location and Lot Information:

Street Address: 37 Newtown Road Biddeford, Maine 04005
Tax Map: 4 Lot: 22-6
Current Zoning: RF (Rural Farm) Shoreland Zoning: No

Size of lot: 7.2 ☑ acres ☐ s.f. Lot Frontage: 201 ft.

Existing Use of Property: Existing duplex and undeveloped land

Property currently serviced by:

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

Slope Conditions in Area of Construction (if applicable):

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

Are there any wetlands or waterbodies on the site? ◉ Yes ○ No If yes, attach information

Do you plan to bring fill onto the lot? ○ Yes ○ No If yes, attach information

Description of proposed use of property:

Project/Proposed Use Description: Includes the construction of 4 duplex units and 1 single unit, a drive aisle, parking, and a dumpster enclosure.

Property to be serviced by:

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

Is this project part of a larger project? ○ Yes ◉ No

☐ If in a Shoreland Zone:

Percent of residential lot coverage (Max. 20%): _____

Percent of structure expansion (Max. 30%): _____

☐ If Subdivision Review, number of lots proposed: _____

☐ If a Private Way is proposed, number of lots served: _____

☑ **If Site Plan Review, you must provide the following information:**

Total new square feet footprint of structures: ~6500 SF

Total new square feet paving/parking: ~20,300 SF

Waiver Requests (attach details):

1. _____
2. _____
3. _____
4. _____
5. _____

Attachments:

A. Letters of Approval

- ☐ Fire Department - Contact Chief or Deputy Chief - 282-9986
- ☐ Ability to Serve for Water Service – Maine Water - 282-1543
- ☐ Ability to Serve for Sewer Service- Engineering Dept (Sewer) - Tom Milligan 284-9118
- ☐ Police Department - E-911 Road Name Designation - Contact Joanne Fisk - 282-5127

B. Letter to Planning Board describing project, waiver requests, proposed improvements, addressing permit requirements, etc.

C. Photographs of site.

D. Architectural renderings/drawings of proposed buildings, as required.

E. Engineered Plans, as required.

Fees (due at time of application):

Refer to "Attachment A Fees and Charges" of the Land Development Regulations for more information. Consult with Planning Staff if you have questions.

Required Signatures:

By signing this application, as the foresaid applicant or authorized agent:

- I certify that I have read and completely understand the application;
- I certify that the information contained in this application and it's attachments are true and correct;
- I understand that all information provided on this form and all other documents submitted as part of my proposal is a matter of public record;
- I understand that copies of this information may be supplied upon request to an interested party.
- I understand that additional funds may be required through the course of review for special studies, legal review costs, and/or engineering review.
- I understand that by submitting this application I am not guaranteed a place on any particular agenda. I further understand that the City Planner will place me on an agenda for review when the application is deemed substantially complete.

☑ Project proposed to have 1 acre or more of site disturbance:

-Project may need to apply for a Maine Construction General Permit and shall comply with the requirements of DEP Chapter 500 Stormwater Regulations, as they apply.

Signature of applicant: _____ Date: _____

Signature of owner of property: _____ Date: _____

IF PLAN APPROVAL IS ANTICIPATED, PROVIDE 2 FULL SIZE MYLARS & 2 FULL SIZE PAPER COPIES FOR BOARD SIGNATURE (AS APPLICABLE). CHECK WITH PLANNING STAFF FOR CLARIFICATION.

CHECKLIST FOR *SITE PLAN* REQUIREMENTS

YES	NO	
☑	☐	Be on sheet size of 24 by 36 inches.
☑	☐	The scale of said plan shall be not less than one inch equals 50 feet and shall be indicated on the plat by use of a bar scale.
☑	☐	The plan shall bear the date, title, north point.
☑	☐	The plan shall contain a location or vicinity sketch (suggested scale one inch equals 800 feet).
☑	☐	The plan shall contain the name and address of the developer and applicant.
☑	☐	All appropriate dimensional requirements.
☑	☐	Existing and proposed easements.
☑	☐	Plan of the site showing existing watercourses and water bodies, seasonal wet areas.
☑	☐	Plan of the site showing soil type and location of test borings.
☑	☐	Location of all existing and proposed utilities.
☐	☐	Topographic contours (every five percent for zero to three percent slope; or every two feet for steeper areas).
☐	☐	Plan should include preservation and supplementation of existing dominant vegetation.
☑	☐	Plan shall indicate which features are to be retained and which are to be removed or altered.
☑	☐	Location of stonewalls, graveyards, fences, stands of trees, and other important unique natural areas and site features, including but not limited to floodplains, deer wintering areas, significant wildlife habitats, fisheries, scenic areas, habitat for rare and endangered plants and animals, unique natural communities and natural areas, sand and gravel aquifers, and historic and/or archaeological resources, together with description of such features.
☑	☐	Plan view of all buildings with their use, size, location, and first-floor elevation in respect to grade.
☐	☐	Standard elevation view of existing and proposed buildings or structures on-site.

YES	NO	
☐	☐	Outline of any buildings located within 200 feet of such existing or proposed buildings or structures indicating their shape, size, location, heights and volume.
☑	☐	Existing use of abutting properties shall be identified with approximate location of any structures thereon including access roads.
☑	☐	Location, width, curbing, and paving of access ways, egress ways, and streets within the site for both pedestrian and vehicular use.
☑	☐	The location of off-street parking and loading spaces with a layout of the parking indicated.
☑	☐	The size and proposed location of water mains and sanitary sewerage facilities will all necessary engineering data.
☑	☐	The size and location of all other existing and proposed public service connections including, without limitation, gas lines, power lines, telephone lines, and fire alarm connections and locations, indicating whether above or below ground.
☐	☐	The type, nature, and composition of all solid, liquid, and gaseous waste, industrial or otherwise, and the location, type, and design criteria of the storage and disposal facilities dealing with such waste.
☐	☐	A landscape plan and open space areas indicating grade change, vegetation to be preserved, new plantings used to stabilize areas of cut and fill, screening; plus size, location, purpose and type of vegetation.
☐	☐	A drainage plan including location, elevation, layout of catch basins and other surface and subsurface drainage features.
☐	☐	Location, size and design of proposed signs and other advertising or instructional devices.
☐	☐	Existing and proposed contours and finished grade elevations as well as the type, extent, and location of existing and proposed landscaping and open space areas which will be retained.
☐	☐	Location and type of lighting for outdoor facilities.
☐	☐	Lines of existing and proposed abutting streets showing width.
☐	☐	Surveyed property lines showing their bearing and distances and monument locations.
☑	☐	If subdivision is involved, the lines and names of all proposed streets, lanes, ways, or easements intended to be dedicated for public or private use.

YES	NO	
☐	☐	Provide copies of any covenants or restrictions that are intended to cover all or part of the land area to be developed.
☑	☐	Indicate limits of the wetland areas on the property.
☐	☐	Delineate existing zoning boundaries within 1,000 feet of the site.
☐	☐	Stamp and signature of either a Maine licensed land surveyor, professional engineer, or architect responsible for said plan.
☐	☐	Any other exhibits or data deemed necessary by the Planning Board to evaluate the proposed development for site plan review purposes.

Table of Contents

Cover Letter
Application Form

Exhibit 1 Right, Title, & Interest

Exhibit 2 Site Location Map

Exhibit 3 Sketch Plan

Exhibit 4 Wetland Location

Exhibit 1

Right, Title, & Interest

BK 17193 PGS 978 - 979 03/07/2016 09:43:21 AM
INSTR # 2016008539 DEBRA ANDERSON
RECEIVED YORK SS REGISTER OF DEEDS

WARRANTY DEED
Maine Statutory Short Form

KNOW ALL MEN BY THESE PRESENTS,

THAT **DENIS R. LABBE and LINDA D. LABBE**, of the Town of Dayton, County of York, State of Maine,

For no consideration paid, interfamily gift

grant to **JEFFERY LABBE and LINDSEY LABBE** of Arundel, County of York, State of Maine, whose mailing address is 37 Greenbrook Lane, Arundel, ME 04046 with **warranty covenants**, as joint tenants, the land in the City of Biddeford, County of York, State of Maine, described as follows:

A certain lot or parcel of land together with any improvements thereon, situated on the norjthwesterly side of the Newtown Road in the City of Biddeford, County of York, State of Maine and being more particularly bounded and described as follows:

Beginning at a #5 rebar on the northwesterly sideline of the Newtown Road, said #5 being the southerly corner of the lot herein described and being the easterly corner of land now or formerly of Matthew W. Petermann and Teri L. Petermann as described in a deed dated December 4, 2006 and recorded in the York County Registry of Deeds in Book 15030, Page 491;

Thence N 63° 36' 05" W along said land now or formerly of Matthew W. Petermann and Teri L. Petermann, a distance of two hundred and no hundredths (200.00) feet to the northerly corner of said land now or formerly of Matthew W. Petermann and Teri L. Petermann marked by a #5 rebr and land now or formerly of Ronald T. Paul as described in a deed dated November 8, 2006 and recorded in the York County Registry of Deeds in Book 15007, Page 576;

Thence, N 37° 34' 45" W along said land now or formerly of Ronald T. Paul, a distance of one thousand one hundred ninety five and twenty four hundredths (1,195.24) feet to a #5 rebar set in a pile of stones and land now or formerly of the University of New England, as described in the following deeds recorded in the York County Registry of deeds in Book 7311, Page 113 and Book 7613, Page 282;

Thence N 40° 22' 15" E along said land now or formerly of the University of New England, a distance of two hundred eighteen and eighty three hundredths (218.83) feet to a point and remaining land of Denis R. Labbe and Linda D. Labbe to be conveyed to Tiffany Labbe to be recorded;

Thence S 43° 10' 15" E along said land to be conveyed to Tiffany Labbe, a distance of one thousand three hundred sixty two and twenty five hundredths (1,362.25) fet to a point on said Northwesterly sideline of the Newtown Road;

Thence S 49° 07' 20" W along said northwesterly sideline of the Newtown Road, a distance of one hundred forty three and twenty five hundredths (143.25) feet to an angle point in said northwesterly sideline of the Newtown Road;

Thence S 26° 23' 55" W along said northwesterly sideline of the Newtown Road, a distance of one hundred twenty nine and nine hundredths (129.09) feet to the point of beginning.

Said parcel contains 8.7 acres, more or less.
Said bearings refer to a 2005 Magnetic Observaton.

Being a portion of the premises conveyed to Denis R. Labbe and Linda D. Labbe by deed dated November 6, 2006 and recorded in the York County Registry of Deeds in Book 15007, Page 574.

No R.E. Transfer Tax Paid

2P

INGRAHAM TITLE COMPANY
338 Main Street
Saco, ME 04072

IN WITNESS WHEREOF, we, the said Denis R. Labbe and Linda D. Labbe, have hereunto set our hands and seals, this 3 day of March, 2016.

SIGNED, SEALED AND DELIVERED
IN PRESENCE OF

For both

Denis R. Labbe

Linda D. Labbe

STATE OF MAINE
YORK, ss.

March 03, 2016

Then personally appeared the above named Denis R. Labbe and Linda D. Labbe and acknowledged the foregoing instrument to be their free act and deed.

Before me,

Notary Public

Print Name Kimberly A Phinney

Commission Expires 11-09-22

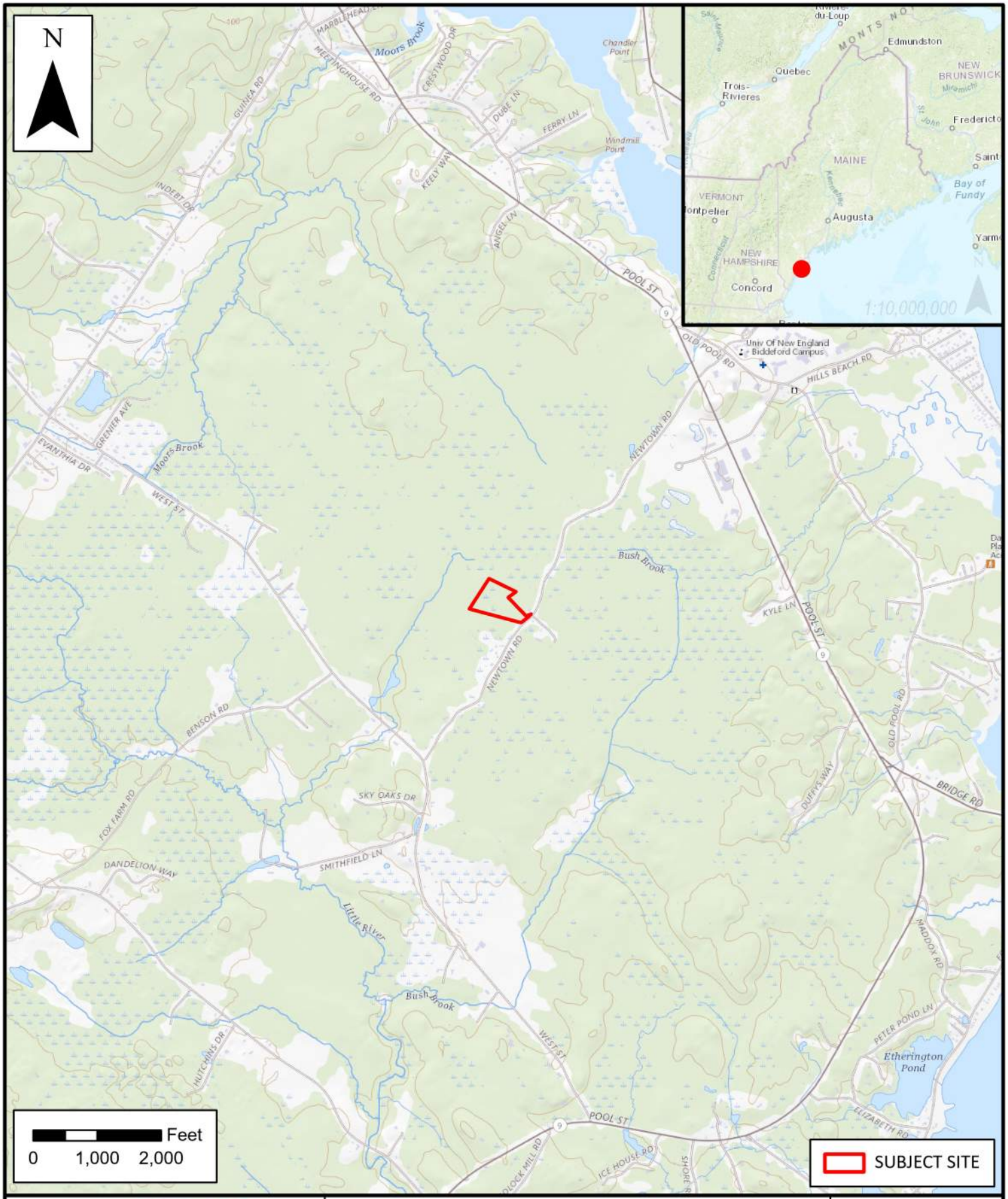
Seal

RETURN RECORDED DOCUMENT TO:

Judy deeds labbe, denis and linda to labbe, jeffery and lindsey, 2016

Exhibit 2

Site Location Map



SEBAGO TECHNICS

WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. - Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

LOCATION MAP

KING REAL ESTATE

SCALE:	1:24,000
DATE:	9/6/2022

LOCATION:
37 NEWTOWN ROAD
BIDDEFORD, ME

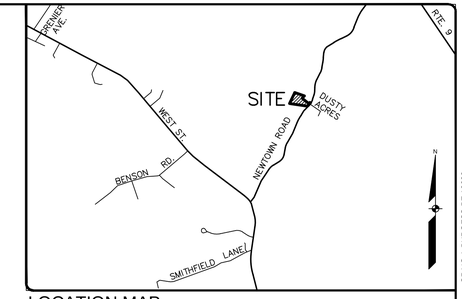
INFORMATION:
CITY OF BIDDEFORD, ME
USGS QUADRANGLE

Location Map, 20023.aprx

Project Number: 20023

Exhibit 3

Sketch Plan



LOCATION MAP N.T.S.

NET RESIDENTIAL DENSITY CALCULATIONS:

TOTAL PARCEL AREA:	314,618 SF
TOTAL UNUSABLE LAND:	84,745 SF
BUILDABLE AREA:	229,873 SF
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MAX ALLOWABLE DENSITY:	11.49 UNITS
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_____ COUNTY SS REGISTRY OF DEEDS

RECEIVED _____, 20____

AT ___h ____m _____M. AND RECORDED IN

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ATTEST _____ REGISTRAR

APPROVAL-
CITY OF BIDDEFORD
PLANNING BOARD

_____

GRAPHIC SCALE

40 0 20 40 80

(IN FEET)
1 INCH = 40 FT.

CRAIG A BURGESS PE 12638

NOT FOR CONSTRUCTION

REV	BY	DATE	STATUS
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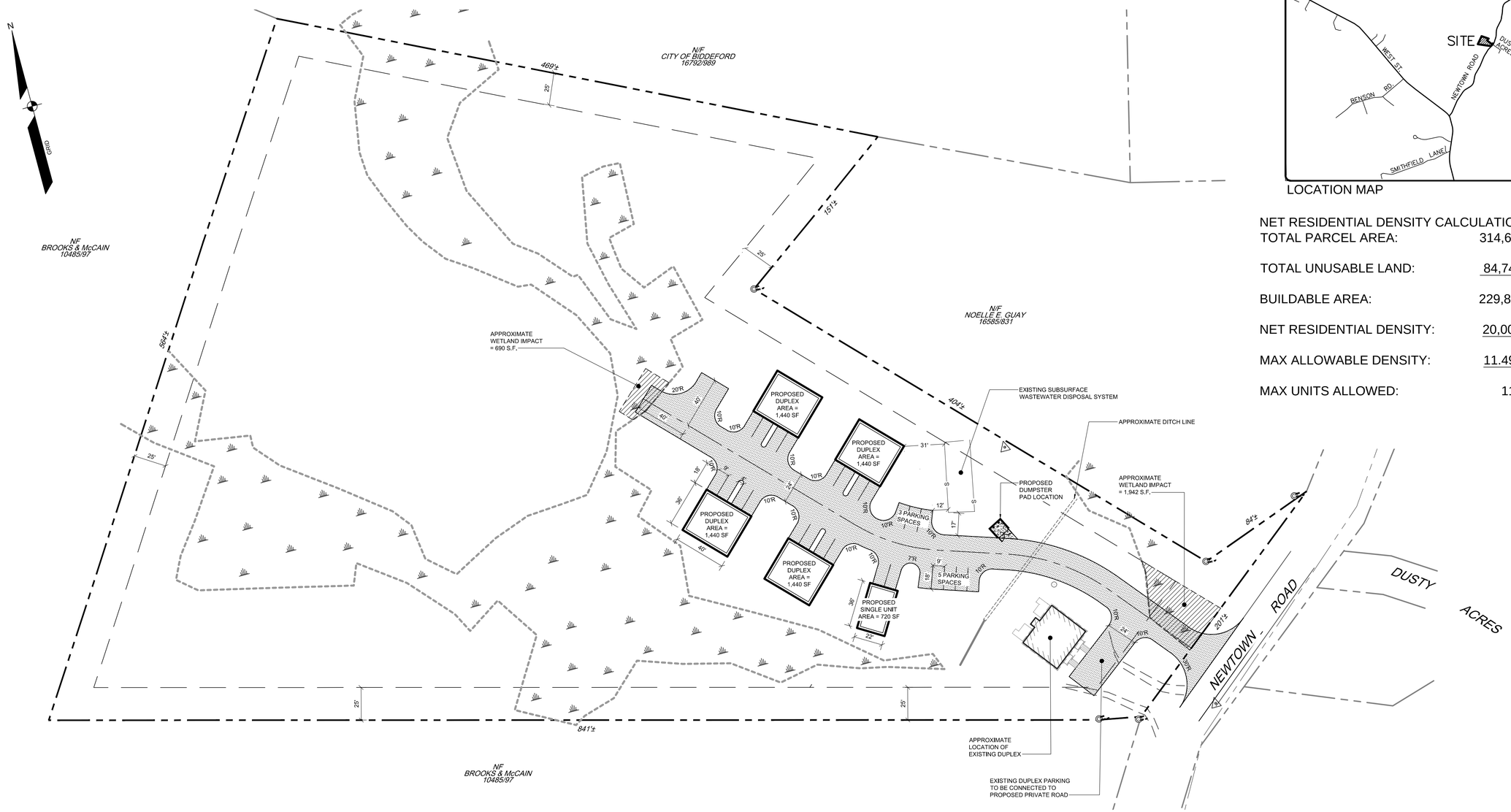
SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd.
Suite A
South Portland, ME 04106
Tel. 207-200-2100

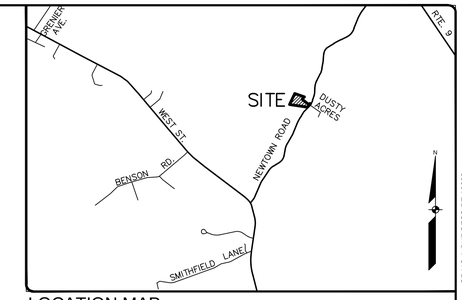
SUBDIVISION PLAN
OF:
NEWTOWN ROAD SUBDIVISION
37 NEWTOWN ROAD
BIDDEFORD, MAINE
FOR:
COASTAL OAKS, LLC
198 SACO AVENUE
OLD ORCHARD BEACH, ME 04064

DESIGNED	BAM/TFG
DRAWN	MRS/TFG
CHECKED	CAB
DATE	07/25/2022
SCALE	1" = 40'
PROJECT	20023

SHEET 1 OF 1

20023 S dwg, TAB 2 SUBDIVISION PLAN





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(IN FEET)
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SUBDIVISION PLAN
OF:
NEWTOWN ROAD SUBDIVISION
37 NEWTOWN ROAD
BIDDEFORD, MAINE
FOR:
COASTAL OAKS, LLC
198 SACO AVENUE
OLD ORCHARD BEACH, ME 04064

DESIGNED	BAM/TFG
DRAWN	MRS/TFG
CHECKED	CAB
DATE	07/25/2022
SCALE	1" = 40'
PROJECT	20023

20023 S dwg, TAB 2 SUBDIVISION PLAN

SHEET 2 OF 2

City of Biddeford – Planning Department
Planning Board Application
P.O. Box 586, 205 Main Street Biddeford, Maine 04005
207-284-9115

Type of Application:

☐ Shoreland Zoning Permit ☑ Site Plan Review ☐ Extraction
☐ Conditional Use Permit ☑ Subdivision ☐ Private Way
☑ Other: Sketch Plan

Applicant Information:

Name: Coastal Oaks, LLC.
Mailing Address: 198 Saco Avenue Old Orchard Beach, Maine 04064
Telephone:
Email:
What is your legal interest in the property?
☑ Owner ☐ Potential Buyer with Contract ☐ Lease/Rental Agreement

Owner's Information:

Name: Coastal Oaks, LLC.
Mailing Address: 198 Saco Avenue Old Orchard Beach, Maine 04064
Telephone:
Email:

Agent's Information:

Name: Sebago Technics Inc.
Mailing Address: 75 John Roberts Road Suite 4A South Portland, Maine 04106
Telephone: 207-200-2081
Email: cburgess@sebagotechnics.com

Engineer/Surveyor's Information:

Name: Sebago Technics Inc.
Mailing Address: 75 John Roberts Road Suite 4A South Portland, Maine 04106
Telephone: 207-200-2081
Email: cburgess@sebagotechnics.com

Project Location and Lot Information:

Street Address: 37 Newtown Road Biddeford Drainage Watershed:
Tax Map: 4 Lot: 22-6
Current Zoning: RF (Rural Farm) Shoreland Zoning: No
Size of Lot: 7.2 ☑ acres ☐ s.f. Lot Frontage: 201 ft
Existing Use of Property: Existing duplex and undeveloped land

Property currently serviced by:

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

Slope Conditions in Area of Construction (if applicable):

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

Are there any wetlands or waterbodies on the site? ☑ (Yes) ☐ (No) if yes attach information
Is the project within the 100-year floodplain? ☐ (Yes) ☑ (No) if yes attach information
Do you plan to bring fill onto the lot? ☐ (Yes) ☐ (No) If yes attach information

Description of proposed use of property:

Project/Proposed Use:

Includes the construction of 4 duplex units and 1 single unit, a drive aisle, parking, and a dumpster enclosure.

Property to be Serviced by:

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

Limits of Disturbance: ~ 1 ☑ acres ☐ s.f.
Net change in impervious cover: ~ 20,300 ☐ acres ☑ s.f.
Is this project part of a larger project? ☐(Yes) ☑(No)
Is the project proposing a new Private or Public Road? ☐(Yes, Private) ☐(Yes, Public) ☑(No)
Is this project within the Urbanized Area/MS4 (*see City Drainage Map*) ☐(Yes) ☑(No)
Is the project proposing any Stormwater facilities/BMPs? ☐(Yes) ☑(No)
Will a Traffic Movement Permit (TMP) be required?: ☐(Yes) ☑(No)

☐ **If in a Shoreland Zone:**
Percent of residential lot coverage (Max 20%): _____
Percent of structure expansion (Max 30%): _____
☑ **If Subdivision Review, number of lots proposed:** 10 total units
☐ **If a Private Way is proposed, number of lots served:** _____

If Site Plan Review, you must provide the following information:

Total new square feet footprint of structure: 6,500 SF
Total new square feet paving/parking: 20,300 SF

Waiver Requests (attach details):

1. _____
2. _____
3. _____
4. _____
5. _____

Required Submittal Attachments:

A. Letters of Approval
   ☐ Fire Department – Contact Chief or Deputy Chief – 282-9986
   ☐ Ability to Serve for Water Service – Maine Water – 282-1543
   ☐ Ability to Serve for Sewer Service – Engineering Department – Tom Milligan 284-9118
   ☐ Police Department – e-911 Road Name Designation – Contact Joanne Fisk 282-5127
B. Letter to Planning Board describing project, Waiver requests, proposed improvements, addressing permit requirements, etc.
C. Photographs of Site.
D. Architectural renderings/drawings of proposed buildings, as required.
E. Engineering Plans, as required.
F. Stormwater Management Report, as required.

Fees (Due at time of Submission):

- $75 Nonrefundable Administration Fee is required for every application.
- Refer to "Attachment A Fees and Charges" of the Land Development Regulations for more information. Consult with Planning Staff if you have questions.

Required Signatures:

By signing this application, as the foresaid applicant or authorized agent:

- I certify that I have read and completely understand the application;
- I certify that the information contained in this application and its attachments are true and correct;
- I understand that all information provided on this form and all other documents submitted as part of my proposal is a matter of public record;
- I understand that copies of this information may be supplied upon request to an interested party.
- I understand that additional funds may be required through the course of the review for special studies, legal review costs, and/or engineering review.
- I understand that by submitting an application I am not guaranteed a place on any particular agenda. I further understand that the City Planner will place me on an agenda for review when the application is deemed substantially complete.

Will the proposed project cause 1 acre or more of site disturbance?: ☑(Yes) ☐(No)

- **If Yes, applicant is responsible for any required Maine Construction General Permits and shall comply with the requirements of DEP Chapter 500 Stormwater Regulations, as they apply.**

Signature of Applicant: _____ **Date** _____

Signature of Property Owner: _____ **Date** _____

DIGITAL SUBMITTAL REQUIREMENTS FOR ALL SUBMITTALS:

A) PDF OF SIGNED APPLICATION

B) PDFs OF ALL DRAWING SETS AND OTHER REQUIRED SUBMITTAL ATTACHMENTS NOTED ABOVE

HARD-COPY SUBMITTAL REQUIREMENTS FOR PLANNING BOARD APPLICATIONS:

A) SEVEN (7) FULL-SIZE PAPER COPIES OF DRAWING SETS

DIGITAL SUBMITTAL REQUIREMENTS FOR FINAL APPROVAL:

A) INDIVIDUALLY NAMED PDFs OF EACH DRAWING (NOT A COMBINED PDF SET)

- Individual Drawing PDF Naming Format: 'PROJECT/SHEETSET NAME INDIVDUAL DRAWING NAME.pdf'

B) PDF COPIES OF ALL PERMIT APPROVALS, APPLICATIONS, REPORTS, NARRATIVES, LETTERS, ETC.

C) FINAL CAD REFERENCE FILES IN DWG FORMAT (SURVEY & PROPOSED DESIGN LINEWORK)

- All drawings & CAD reference files must be to-scale and within the following coordinate systems:

- MAINE STATE PLANE WEST NAD83 (Horizontal Datum) & NAVD88 (Vertical Datum)

HARD-COPY SUBMITTAL REQUIREMENTS FOR FINAL APPROVAL:

A) THREE (3) FULL-SIZE PAPER COPIES OF INDIVIUDAL DRAWINGS REQUIRING BOARD SIGNATURE

B) ONE (1) FULL-SIZE PAPER COPY OF ENTIRE DRAWING SET FOR ENGINEERING RECORDS

PLEASE CONFIRM WITH PLANNING STAFF FOR CLARIFICATION

Invoice for Services
Submitted by Mark Ward
Ecological Consultant
October 2022

Services Rendered: Preparation, rapid reconnaissance, and completion of report on current condition of two parcels (Map 7, Lot 8 and Map 2, Lot 38) in western Biddeford for Biddeford Conservation Commission.

Expenses
Preparation for field work: 2 hrs X $42.50 = $85
Travel and Field work: 7 hrs X $42.50 = $297.50
Reporting: 4 hrs x $42.50 = $170
Travel RT from Bristol: 1 trip @ 160 miles x .585/mile = $93.60
Total Estimated Budget $646.10

Amount requested: **$646.10**

Contractor's Address and Phone #:
Mark Ward
Ecological Consultant
28 Poor Farm Road
Bristol, ME 04539
207-350-6537

Proposal for the Drafting of Memos on two projects in eastern Biddeford

Submitted
October 10, 2022
by
Mark Ward
Ecological Consultant
28 Poor Farm Road
Bristol, ME 04539
207-350-6537
akamward@gmail.com

I propose to draft two memos for the Biddeford Conservation Commission on the potential impacts to sensitive ecological features on two proposed projects in the Moors Brook Habitat Block of eastern Biddeford. The two projects are proposed for: 1) Tax Map 4, Lot 22-6 along Newtown Road and 2) Tax Map 76, Lot 36 and Tax Map 77, 335 along Guinea Road. Both of these proposed projects are located within the Biddeford-Kennebunkport Vernal Pool Complex. I plan to review existing data available to the Biddeford Conservation Commission within the Moors Brook Habitat Block and provide memos of potential impact for each of these projects.

Proposed Budget

Summarizing and analyzing existing data: 2 hrs X $42.50 = $85

Drafting two memos: 6 hrs x $42.50 = $255

Total Estimated Budget $340