

Town of Kittery Planning Board Meeting February 14, 2019

ITEM 2 - 459 U.S. Route One – Site and Subdivision Final Plan Review

Action: Accept and deny application. Approve, approve with conditions, disapprove, postpone action or continue plan. Owner, DSS Land Holdings LLC, and applicant, Michael Brigham, request consideration of a mixed-use development consisting of a 112-room hotel, and three residential buildings with 32 elderly housing units and 12 residential units located at 459 U.S. Route 1 (Tax Map 60 Lot 24) in the Mixed Use (MU) Zone. Agent is Ken Wood, Attar Engineering.

PROJECT TRACKING

REQ'D	ACTION	COMMENTS	STATUS
YES	Sketch Plan Acceptance/Approval	Approved on July 12, 2018	DONE
NO	Site Visit	Not held for this plan – was held for the prior approved sketch and prelim plan	
NO	Master Site Development Plan	Preliminary Master Site Development Plan review October 11, 2018	APPROVED
YES	Preliminary Plan Review Completeness/Acceptance	October 11, 2018	ACCEPTED
YES	Public Hearing	November 8, 2018	HELD
YES	Preliminary Plan Approval	November 8, 2018	APPROVED
YES	Final Plan Review and Decision	1 ST Review - February 14, 2019	PENDING
<p>Applicant: Prior to the signing of the approved Plan any Conditions of Approval related to the Findings of Fact along with waivers and variances (by the BOA) must be placed on the Final Plan and, when applicable, recorded at the York County Registry of Deeds. PLACE THE MAP AND LOT NUMBER IN 1/4" HIGH LETTERS AT LOWER RIGHT BORDER OF ALL PLAN SHEETS. As per Section 16.4.4.L - Grading/construction final plan required. Grading or construction of roads, grading of land or lots, or construction of buildings is prohibited until the original copy of the approved final plan endorsed has been duly recorded in the York County registry of deeds when applicable.</p>			

Background

This is the final plan application submission for a proposed mixed-use development located at 459 State Route 1 in the Mixed-Use Zone, previously approved as the Sowerby mixed use in 2008 and in May of 2018 as a mixed-use preliminary plan including commercial units, apartments and age-restricted single-family homes. A sewer force main has been installed connecting residential lots on Adams Road to public sewer from Route 1 via an easement that burdens this property. The property has wetlands on three sides.

This plan details this mixed-use development consisting of thirty-two (32) elderly apartments and twelve (12) single-family residential units in three (3) buildings and a 112 room hotel. Single-family residential units on the upper floors of a mixed-use building are a permitted use and housing for the elderly and the hotel are special exception uses. The property is to be subdivided into two separate parcels. Lot 1 has 590,468 sf of area and 552' of street frontage. Lot 2 has 285,904 sf of area and 1104' of street frontage.

Sketch Plan

At the July 12 meeting, the Board accepted and approved the sketch plan for the proposed development but wanted the applicant to provide additional information regarding the integration of the elderly housing into the overall plan for the mixed-use development.

Preliminary Master Site Development Plan / Master Site Development Plan Property Plat

At the October 11 meeting, the Board voted to approve the preliminary master site development plan. The master site development plan property plat was approved by the Board at the November 8, 2018 meeting. The signed Mylar has been recorded at the Registry.

Preliminary Plan

Also, at the October 11 meeting, the Board accepted the site and subdivision preliminary plan as complete and scheduled a public hearing on the application for the November 8, 2018 meeting. At the November 8, 2018 meeting, the Board approved the site and subdivision preliminary plan with the conditions that all CMA Engineers comments must be addressed, the Inspection and Maintenance Log of the Operation and Maintenance Manual be revised to the satisfaction of the Town's Shoreland Resource Officer / Stormwater Coordinator, and additional ones that may arise from town department head comment and the public hearing.

Staff Review

Uses

1. All of the proposed uses are allowed in the Mixed-Use Zone. Elderly housing (age-restricted housing) and the hotel are special exception uses while the apartments on the upper floors of a mixed-use building are a permitted use. Title 16 clearly states in 16.3.2.13.D.4 (Mixed Use Requirement) that a permitted retail use and a special exception retail use are not eligible to be deemed a mixed-use. However, the ordinance is silent about a permitted residential use and a special exception residential use.
2. The Board has discussed with the Applicant how the Special Exception uses requested meet the criteria per 16.6.4 D. (2), 16.6.6.2, and 16.2 (the definition of Special Exception). In particular, concern about the proposed uses and the code definition for Elderly Housing. At the August 9th meeting, the Board discussed how the Applicant could meet the intent of the definition of elderly housing to provide very limited community space and shared dining and kitchen facilities. The applicant stated that he would consider turning one of the elderly housing units into a community kitchen / dining space to meet the intent of the Code. Update: Note 19 has been added to the cover sheet. It states that a kitchenette / meeting space to be included on first floor of western apartment.
3. Plan note 15 states that the owners of the two types of residential units will be able to purchase health club and/or pool memberships from the hotel. This could be considered towards addressing 16.3.2.13.D.10.F's requirements for elderly housing to be integrated and to provide pedestrian access to services and facilities within the area for the residents of the elderly housing.
 - a. The plans show a grilling/picnic area; 20'x20' covered pavilion and volleyball/badminton area;
 - b. The plans show a passive recreation/park (1.5 acres) which will include trails with a natural bed and will involve no grading within the 100' setback.

Net Residential Density

4. Note 6 shows the net residential calculations. It appears that the travel ways, easements and parking numbers have been re-calculated due to the change in uses and are slightly more (2.85 acres rather than 2.51 acres) than the previous approved preliminary plan. Elderly housing is allowed at 10,000 sf

per unit because of the parking provided within the building and being on public sewer. The other dwelling units are similarly allowed at 7,500 sf per unit because of the ground floor parking and access to sewer. Note that the net residential calculations are based on the entire development area and not on each individual parcel due to the project classification as a Master Site Development Plan.

Mixed-Use Requirements

5. Note 7 demonstrates that the smallest use in terms of floor area, dwelling units on the upper floors of a mixed-use building, exceeds the 10% minimum requirement per 16.3.2.13.D.4. Note that the required 10% mixed-use calculation is based on the entire development area and not on each individual parcel due to the project classification as a Master Site Development Plan
6. Section 16.3.2.13.D.10.E includes several additional requirements for a motel or hotel. The first encourages a multi-story building, and the plans indicate a proposed 4-story hotel. The second states that *wherever practicable building orientation should not be parallel with U.S. Route 1 but must take maximum advantage of the depth of the mixed-use zone*. The proposed hotel is parallel to Route 1 with additional development behind it. The third requirement is that more than three motels and/or hotels are not allowed in the mixed-use zone. There are currently no motels or hotels in the mixed-use zone.
 - a. At the meeting of July 12, the Board discussed the siting of the hotel based on the overall plan proposed. The Board noted that the parking is currently proposed for the back of the hotel building which is preferred and not necessarily achievable if the hotel building is repositioned.
7. Building Design Standards. Section 16.3.2.13.D. (1) and (6) requires that the proposed buildings comply with the standards contained Kittery's Design Handbook. The building renderings that have been submitted are only conceptual showing only the building design and don't call out the specific exterior details. For the Final Plan submission, more detail will be required for the proposed buildings showing design, elevations, materials and colors. The Board will ensure the proposed building are compatible with Kittery's characteristic styles. Update: More detailed plans have been submitted for the residential buildings which show that the proposed structures comply with the standards contained in Kittery's Design Handbook. The applicant is still awaiting design plans from the prospective hotel for the hotel building.

50-foot MU Zone Boundary Extension

8. The submission letter makes the MU Zone boundary extension request but a plan note needs to be included that references the boundary extension. The plan notes have been updated to reference the proposed fifty (50) foot MU Zone boundary extension.

Open Space, Stormwater and Wetland Setbacks

9. The Open Space requirements appear to have been met in a similar way as the previously approved preliminary plan.
10. A trail runs from the residential buildings to the passive recreation area and beyond, then loops back. It is noted above that additional recreational opportunities are to be provided.

11. Wetland setbacks are shown at 75 and 100-feet. No drainage structures are proposed for the northern wetlands which are wetlands of special significance. Two drainage structures are proposed for the southern wetlands – one is beyond the 100 foot setback and one is between the 75 and 100 foot setbacks. A third, rather large stormwater pond is within the developed area of the residences.
12. A note on the plan specifies the 100-foot buffer to the north will be a designated no-cut buffer. Staff also recommends that it be a no-disturb buffer. Staff will provide applicant appropriate wording for the plans and for the HOA documents.
13. Snow storage location near Pond 1 needs to be relocated further from the pond to protect the pond from accumulation of sand/salt/debris in the winter months. Snow storage has been moved further away from Pond 1.
14. The arrow pointing to the 100 foot wetland setback from the northern wetland references Note 14 is inaccurate. It should reference Note 17 and Note 17 needs to be amended to state the following: “With the exception of the proposed construction in this plan the 100 foot setback from the northern wetland will become a no cut, no disturb restricted buffer area and must remain undeveloped and undisturbed in perpetuity, including no mowing or removal of any vegetation without a permit from the Code Enforcement Officer. This buffer shall be maintained with restrictions for the “No-Cut No-Disturb Restricted Buffer Area” as defined in the Declaration of Restrictions in the HOA documents.

Traffic, Circulation and Parking

15. Daily traffic counts are shown in Note 14. The residential uses will generate only about 10% of the total traffic with the hotel generating the rest of the 1,190 trips per day. Both the number of trips per day and the number of parking spaces will trigger the traffic impact analysis requirement as stated in Section 16.10.5.2.C.10. A Traffic Impact Study has been submitted. A copy has been forwarded to CMA Engineers for their review and comment. The traffic calculations are being updated to include the doctor’s office. Update: AM and PM peak hours trips have been estimated at 115 and 133 respectively (development and abutting medical office). The applicant is still awaiting approval of the Traffic Movement Permit Modification from Maine DOT (MDOT).
16. Section 16.8.4.2.C states that any development that exceeds a daily average of 200 trips per day must have two entrances/exits to a public road. The same section, 16.8.4.2.F states that entrances/exits onto an existing arterial or secondary arterial must be at least 1,000 feet apart. The plan shows two entrances which while required, do not meet the second requirement that they be spaced 1,000 feet apart. A large wetland to the north along the road factors into the location of the entrances.
 - a. The applicant has requested a waiver of Section 16.8.4.2.F to allow the entrances to be less than 1,000 feet apart.
17. Internal pedestrian walkways link the residential units to the hotel and to the walking trail. Vehicular travel ways also connect the two uses. There doesn’t seem to be a separate entrance for the hotel, both entrances appear able to serve the hotel and the residential buildings.
18. The roads will be private (see Note 16 on the plan) and the plans show the road at about 22 feet wide plus sidewalks and shoulders near the hotel, then narrowing to 20 feet towards the residences. The width of the sidewalks varies, with the portion nearest the hotel at 6 feet and then narrowing to 5 feet as Homestead Lane moves towards the proposed residences.

19. Parking for the hotel is located behind the building as required by Section 16.3.2.13.D. (5). Parking for the residential units is shown as 30 spaces on the ground floor of each building (90 spaces total) which is more than the 24 parking spaces required. The hotel parking includes 1 space per room (112) plus 3 additional spaces for a conference room (1 space per 100 sf of meeting room area).

Landscaping and Buffering

20. Per Section 16.8.9.4.G *Parking Standards*, landscaping is required for the hotel parking area since it contains well over 10 spaces. One tree is required for every eight (8) parking spaces. There are 14 trees shown in the parking area which meets the requirements (115 parking spaces / 8 spaces = 14 trees).

21. Trees line the road called Homestead Lane and are also shown along all sides of the hotel building and on one side of the other road called Hospitality Road. The applicant appears to be demonstrating that fairly extensive landscaping will be provided. While no detailed landscaping plan has yet been submitted, it is required for Final Plan Review.

22. The landscaping requires a 30-foot landscaped buffer strip per 16.3.2.13.D. (7) (a) along the length of the developed portion of the property's frontage. The plan shows landscaping including trees and shrubs along much of the property except in the wetlands that abut Route 1. Note 10 has been revised to include a mixture of evergreen and deciduous trees to be planted every 25 feet on centerline with a mix of 10 shrubs and/perennials for every 40 feet of frontage.

Update: A detailed landscaping plan has been submitted as Sheet 6.2. It appears to meet the required standards for the Mixed Use Zone and the landscaping standards contained in Chapters 16.8 and 16.9. It is not clear, however, from the plan sheet what evergreen types are due to the lack of symbols and a species listing.

Stormwater Management

23. Under Section 16.10.5.2.C supporting documentation must include a stormwater management plan. The applicant has submitted a Stormwater Management Study for the project and a copy has been forwarded to CMA Engineers for their review and comment. Staff has also done a review of the study and the Stormwater Management Plan and has some suggested edits:

- a. Operation and Maintenance Program Stormwater Management BMPs
 - i. Snow Removal – second sentence change “shall be avoided” to “is prohibited”.
 - ii. Record Keeping – last line of first paragraph add “or Town of Kittery” before “upon request”.
- b. Inspection & Maintenance Log - The Homestead – Mixed Use Development
 - i. Specifically list out each BMP to be inspected on the form, form needs more detail.

Update: It is noted that there are now six (6) stormwater ponds proposed for the development. A more detailed Inspection & Maintenance Log has been submitted to the satisfaction of the Town's Stormwater Coordinator.

Maintenance Plan and Agreement

24. The applicant will need to prepare a maintenance plan and agreement for the common areas defining maintenance responsibilities, responsible parties, shared costs and schedule as part of the final plan submission. These will need to be reviewed by the Town's attorney at the applicant's expense.

Phasing Plan

25. Upon the applicant's request, the Board may permit phasing of the plans, where it can be demonstrated to the Board's satisfaction that such phasing would result in safe and orderly development of the plan. The Board has previously approved the Master Site Development Plan which includes proposed phasing of the overall site development but the sequence of development has now changed. On Sheet 1.5 Phasing Plan of the plan set, it lists the hotel to be constructed as Phase 2A after completion of the site improvements. The applicant would now like to construct the residential buildings first and then the hotel. The Phasing Notes should be revised to reflect this change.

Sidewalks

26. Sidewalk will need to be furnished and installed within the road ROW along the entire property frontage on Route 1 for future connectivity with other properties they get developed. Sidewalk is currently shown only between the two proposed entrances to the development.

Peer Review

27. CMA Engineers' review comments are attached. They are of the nature that can be handled by a condition of approval.

Recommendation / Action

Staff recommends that the Planning Board take following actions at the February 14, 2019 meeting:

Approve the 50-foot extension of the MU Zone as allowed by Section 16.7.2.5 of the LUDC.

Approve the waiver request from Section 16.8.4.2.F of the LUDC to allow two entrances closer than 1,000 feet apart.

Approve the mixed-use development final plan application dated 1/24/2019 prepared by Attar Engineering, Inc. for owner DSS Land Holdings LLC, and presented by applicant Michael Brigham, Landmark Hill, LLC, for 459 U.S. Route 1 (Tax Map 60 Lot 24) in the Mixed-Use Zone with the following conditions: sidewalk to be furnished and installed to the satisfaction of the Public Works Commissioner and at the developer's expense along entire property frontage on Route 1; design plans for the hotel that comply with Kittery's building design standards for the MU zone be approved prior issuance of a building permit for the hotel building; more detail be provided to the satisfaction of the Town Planner for the landscape plantings within the parking areas; the maintenance plan and agreement for the common areas shall be reviewed and found satisfactory by the CMA Engineers and the Town's attorney, and all of CMA Engineers' review comments are addressed to their satisfaction.



February 7, 2019

Jamie Steffen, Town Planner
Town of Kittery
200 Rogers Road
Kittery, Maine 03904

**RE: Town of Kittery, Planning Board Services
Final Site Plan Review Application
The Homestead 459 U.S. Route 1 (Tax Map 60, Lot 24)
CMA #591.121**

Dear Mr. Steffen:

CMA Engineers received the following information for Assignment #121, review of the site plan application for property at 459 U.S. Route 1:

- 1) "The Homestead Subdivision, 459 US Route 1 Kittery, Maine", prepared for Landmark Hill, LLC, 79 Congress Street Portsmouth, NH by Attar Engineering, Inc., 1284 State Road, Eliot, ME 03903 dated February 8, 2018 and revised January 24, 2019.
- 2) "459 US Route 1-Kittery, Final Plan Application" by Attar Engineering, Inc., 1284 State Road, Eliot, ME 03903 dated January 24, 2018 (sic).
- 3) The Homestead-Mixed Use Development, U.S. Route 1, Kittery, Maine, Stormwater Management Study" by Attar Engineering, Inc. 1284 State Road, Eliot, ME 03903 dated January 24, 2018 (sic).

We have reviewed the information submitted for conformance with the Kittery Land Use and Development Code Zoning Ordinance and general engineering practices and offer the comments below that correspond directly to the Town's Ordinances. The project is in the Mixed Use, Residential-Rural and Shoreland Overlay Zone districts.

16.3.2.1 Residential-Rural (R-RL)

Several proposed uses (retail, office) are neither permitted or special exception uses in the R-RL zone, however no development is proposed in this portion of the site.

16.3.2.13 Mixed Use (MU)

B&C. All proposed uses are allowable or special exception uses.

D.2. In note 4 on Sheet 1.1, the applicant should list the provided setbacks, frontage and lot size in addition to the required zoning information. *(We note that this comment was included in our previous review from November 2018 and was not addressed).*

The applicant has met all minimum dimensional standards.

16.3.2.17 Shoreland Overlay Zone (OZ-SL)

There is no proposed development within the overlay.

We note that the applicant has requested a 50' Mixed Use zone boundary extension under 16.7.2.5. It appears that the applicant's justification is approvable if the board desires. We are unsure why the zone boundary extension is requested. *(We note that this comment was included in our previous review from November 2018 and was not addressed).*

16.7 General Development Requirements

Article II. Conformity

16.7.2.5 The applicant has requested a 50' Mixed Use zone boundary extension. It appears that this request is supportable. We are not sure of the reason or motivation is for the extension. *(We note that this comment was included in our previous review from November 2018 and was not addressed).*

16.8 Design and Performance Standards-Built Environment

Article IV. Streets and Pedestrian Ways/Sidewalks Site Design Standards

The applicant has previously provided a traffic analysis. A traffic movement permit was previously issued by the Maine Department of Transportation (MaineDOT) for 619 peak hour trips. The proposed mixed use development will have a significantly lower number of peak hour trips at 102 (16% of the approved amount).

16.8.4.2.F. There are two proposed entrances within 1000' of each other. The applicant has applied for a waiver.

16.8.4.3.F. The roadway appears to have been designed to minor street standards. Without an estimated average daily trips (ADT) specified, it is not possible to determine if this is correct, however we note that the proposed roadway design is likely fine for this development. *(We note that this comment was included in our previous review from November 2018 and was not addressed).*

Table 1 Chapter 16.8:

Street Width Design:

- a. **Right-of-way:** The roadway appears to have been designed to minor street standards. Is a right-of-way required for this roadway?

Article VI.: Water Supply

16.8.6.1 The water service detail indicates a curb stop but the plans show gate valves. Are there curb stops proposed? If so, please indicate their locations on the plans. IF there are no curb stops proposed, please amend the detail to indicate that gate valves are

being used. *(We note that this comment was included in our previous review from November 2018 and was not addressed).*

The line type for the water services is dashed, the legend should reflect this or the lines should match those in the legend.

The water services to the hotel do not appear to connect to the water line (but appears to connect to the property line).

Article VII.: Sewage Disposal

16.8.7.1 The existing sewer size, elevation and location should be shown on the profile on Sheet 3.2. *(We note that this comment was included in our previous review from November 2018 and was not addressed).*

Proposed sewer service sizes and cleanout locations should be shown on the plan. *(We note that this comment was included in our previous review from November 2018 and was not addressed).*

The proposed location of the sewer main is primarily cross country in the grass, under parking areas and potentially outside of the right-of-way. The applicant should justify the location of the main. Are sewer easements necessary if the main stays outside of the right-of-way? *(We note that this comment was included in our previous review from November 2018 and was not addressed).*

The inverts, rim elevation, etc. should be provided for SMH-4. *(We note that this comment was included in our previous review from November 2018 and was not addressed).*

Article VIII. Surface Drainage

The proposed stormwater management system appears to limit post development flows to levels lower than pre-development flows for the 2, 10 and 25-year storms and is appropriate for this site, however we have the following minor comments:

- The Stormwater Management Study only shows a full analysis for the 25-year storm in the post-development calculations and only a summary of the 2-year and 10-year storms. Full calculations should be provided. We note that there is no discussion of 50 or 100-year storm events.
- The applicant should either show a 25% surplus for future flows or demonstrate that there is no additional developable land upstream of the project. *(We note that this comment was included in our previous review from November 2018 and was not addressed).*
- The grate elevations in Underdrained Soil Filter Pond P1 detail and stormwater management study 25-year storm calculations do not match. This should be corrected and the calculations rechecked.

Article IX: Parking, Loading and Traffic

16.8.9.4.B. Parking space dimensions should be indicated on the plans. *(We note that this comment was included in our previous review from November 2018 and was not addressed).*

16.8.9.4.D.I.1 The applicant should show dimensions of the accessible parking spaces on the plans. *(We note that this comment was included in our previous review from November 2018 and was not addressed).*

Article X. Signs

The Applicant should submit details of proposed signs for CEO approval. *(We note that this comment was included in our previous review from November 2018 and was not addressed).*

Article XXIV. Exterior Lighting

The Applicant should provide lighting details (mounting height, uniformity ratios, etc.) to demonstrate conformance with the Ordinance. *(We note that this comment was included in our previous review from November 2018 and was not addressed).*

General Comments

1. The applicant should provide an existing condition plan that is representative of the current site conditions (grading, utilities, easements, etc.), or confirm that it is still representative. *(We note that this comment was included in our previous review from November 2018 and was not addressed).*
2. The applicant should provide a cover sheet. *(We note that this comment was included in our previous review from November 2018 and was not addressed).*
3. The applicant should provide a lighting plan. *(We note that this comment was included in our previous review from November 2018 and was not addressed).*

Should you have any questions, please do not hesitate to call.

Very truly yours,

CMA ENGINEERS, INC.



Jodie Bray Strickland, P.E.
Project Engineer

Jamie Steffen

From: William Straub <wstraub@cmaengineers.com>
Sent: Thursday, February 07, 2019 3:24 PM
To: Jamie Steffen
Cc: Ken Wood; info@attarengineering.com; Jodie Bray Strickland
Subject: ADDENDUM to Homestead 459 U.S. Route 1 Review dated Feb 7, 2019

Jamie,

Please consider this email an addendum to the letter provided earlier today on the Homestead 459 U.S. Route 1 Review dated Feb 7, 2019, of the final project submittal.

16.8.4.3.F

The on-site roadway appears to have an ADT of over 2,000 vehicles, based on the Traffic Impact Study prepared for the project in September, 2018. If that volume is translated to the Kittery roadway standards (Table 1 Chapter 16.8, Article IV) the roadway would be classified as a Primary Collector. The roadway is designed to the Minor Street Standard (ADT up to 200). The roadway, however, is an on-site feature within the private development. It should be determined that as such, the Kittery roadway standards do not strictly apply. If they do apply, then waivers would be required, or the roadway re-designed to the primary collector standard (which is slightly larger in several dimensions). The applicant should confirm the adequacy of the roadway as designed for the volumes that will be experienced, in this situation.

Article XXIV. Exterior Lighting

We regrettably missed the photometric Plan ,sheet 8.1. (We note there is no cover sheet that delineates the sheets in the set, which is commonly done; we have offered that comment. The photometric plan appears to demonstrate that the lighting intensities and ratios meet the Kittery standards.

However, the plan is incomplete should be accompanied by:

- Plans that indicate the locations of all exterior lighting fixtures , be they on buildings or pole mounted
- Confirmation that the fixtures are in compliance with the requirements of 16.8.24.2, including height, cut-off design, and luminance.

Please include this email with our letter in providing information for the Board.

Please let us know if you have any questions.

Best,

Bill

William A. Straub, P.E.
Principal/Project Manager



CMA Engineers, Inc.

35 Bow Street
Portsmouth, NH 03801
603-431-6196

M60 L24**FINDINGS OF FACT****UNAPPROVED****For 459 Route 1****Subdivision / Site Plan Review**

Note: This approval by the Planning Board constitutes an agreement between the Town and the Developer incorporating the Development plan and supporting documentation, the Findings of Fact, and all waivers and/or conditions approved and required by the Planning Board.

WHEREAS: Owner DSS Land Holdings LLC, and applicant, Michael Brigham, proposes a mixed-use development consisting of a 112-room hotel, and three residential buildings with 32 elderly housing units and 12 residential units located at 459 U.S. Route 1 (Tax Map 60 Lot 24) in the Mixed Use (MU) Zone.

Hereinafter the “Development,”

And pursuant to the Plan Review meetings conducted by the Planning Board as duly noted in the Plan Review Notes dated 2/14/2019;

Sketch Plan Review	APPROVED	07/12/2018
Preliminary Plan Completeness Review	ACCEPTED	10/11/2018
Preliminary Master Site Development Plan Review	APPROVED	10/11/2018
Site Walk	N/A	
Public Hearing	HELD	11/08/2018
Preliminary Plan Approval	GRANTED with conditions	11/08/2018
Master Site Development Plan Property Plat	APPROVED	11/08/2018
Final Plan Approval	GRANTED with conditions	2/14/2019

And pursuant to the application, plans and other documents considered to be a part of the plan approval by the Planning Board in this finding consist of the following { *as noted in the Plan Review Notes prepared for 2/14/2019* } (hereinafter the “Plan”):

1. Final Plan Application with Municipal Impact Statement, Attar Engineering, Inc., dated January 24, 2019
2. Overall Site Plan and associated plan set, Sheets 1.1 – 1.5; Sheets 2.1, 3.1 & 3.2, 4.1; Attar Engineering, dated 1/18/2018; revised 01/24/2019
3. Site Details, Sheets 5.1 – 5.3; Attar Engineering, dated 1/18/2018; revised 01/24/2019; Sheets 6.1, Subdivision Plan, Anderson Livingston Engineers, Inc., dated September 14, 2007 & 6.2 Landscaping Plan, Attar Engineering, dated 02/08/2018; revised 01/24/2019; 8.1 Photometric Plan, Attar Engineering, dated 4/11/2018; revised 01/24/2019
4. Stormwater Management Study and Plans, Sheets 7.1 Stormwater: Existing Conditions & Sheet 7.2 Stormwater: Proposed Conditions, Attar Engineering, Inc., study dated January 24, 2019, plans dated 02/08/2018; revised 01/24/2019
5. Building Design and Floor Plans – 12 Unit Multi-Family Residential Building, Gavin and Sullivan Architects, Inc., dated January 21, 2019

6. Master Site Development Plat, Attar Engineering, Inc., dated 11/01/2018
7. Traffic Impact Study, Proposed hotel & Residential Apartments, Route 1, Kittery, Maine, Maine Traffic Resources, dated September 7, 2018
8. Traffic Movement Permit (TMP) Modification Application, James W. Sewall Company / Maine Traffic Resources

NOW THEREFORE, based on the entire record before the Planning Board as and pursuant to the applicable standards in the Land Use and Development Code, the Planning Board makes the following factual findings as required by section **16.10.8.3.4** and as recorded below:

FINDINGS OF FACT	
Action by the Planning Board must be based upon findings of fact which certify or waive compliance with all the required standards of this Code, and which certify the development meets the following requirements:	
A. Development Conforms to Local Ordinances.	
<i>The proposed development conforms to a duly adopted comprehensive plan as per adopted provisions in the Town Code, zoning ordinance, subdivision regulation or ordinance, development plan or land use plan, if any. In making this determination, the municipal reviewing authority may interpret these ordinances and plans.</i>	
<u>Finding:</u> The proposed development conforms to the primary objective of the comprehensive plan for economic development as it seeks to redevelop an abandoned commercial property with mixed use. The site plan and subdivision plans comply with the provisions of Title 16.	
<u>Conclusion:</u> This standard appears to be met.	
Vote of <u> </u> in favor <u> </u> against <u> </u> abstaining	
B. Freshwater Wetlands Identified.	
<i>All freshwater wetlands within the project area have been identified on any maps submitted as part of the application, regardless of the size of these wetlands.</i>	
<u>Finding:</u> Wetlands have been delineated and are depicted on the overall site plan.	
<u>Conclusion:</u> This standard appears to be met.	
Vote of <u> </u> in favor <u> </u> against <u> </u> abstaining	
C. River, Stream or Brook Identified.	
<i>Any river, stream or brook within or abutting the proposed project area has been identified on any maps submitted as part of the application. For purposes of this section, “river, stream or brook” has the same meaning as in 38 M.R.S. §480-B, Subsection 9.</i>	
<u>Finding:</u> A small portion of Stream Protection District (Shoreland Overlay) is identified and depicted on the overall site plan.	
<u>Conclusion:</u> This standard appears to be met.	
Vote of <u> </u> in favor <u> </u> against <u> </u> abstaining	
D. Water Supply Sufficient.	
<i>The proposed development has sufficient water available for the reasonably foreseeable needs of the development.</i>	

E. Municipal Water Supply Available.
<i>The proposed development will not cause an unreasonable burden on an existing water supply, if one is to be used.</i>
Finding: The Kittery Water District has the capacity to supply municipal water service for both domestic and fire protection purposes to the proposed development.
Conclusion: This standard appears to be met.
Vote of _ in favor _ against _ abstaining
F. Sewage Disposal Adequate.
<i>The proposed development will provide for adequate sewage waste disposal and will not cause an unreasonable burden on municipal services if they are utilized.</i>
Finding: By letter from the Town's Superintendent of Wastewater Services, the Town sanitary sewer service is available for the proposed development and the sewer system will have the capacity and ability to handle the discharge flow estimates.
Conclusion: This standard appears to be met.
Vote of _ in favor _ against _ abstaining
G. Municipal Solid Waste Disposal Available.
<i>The proposed development will not cause an unreasonable burden on the municipality's ability to dispose of solid waste, if municipal services are to be used.</i>
Finding: Solid waste disposal will either be by contracted curb-side pick-up or residents may elect to utilize the Town Resource Recovery Facility. The proposed development will not burden the facility.
Conclusion: This standard appears to be met.
Vote of _ in favor _ against _ abstaining
H. Water Body Quality and Shoreline Protected.
<i>Whenever situated entirely or partially within two hundred fifty (250) feet of any wetland, the proposed development will not adversely affect the quality of that body of water or unreasonably affect the shoreline of that body of water.</i>
Finding: A 100' setback from the northern wetland will become a no cut, no disturb area and will remain undeveloped and undisturbed in perpetuity, including no mowing or removal of any vegetation without a permit from the Code Enforcement Officer.
Conclusion: This standard appears to be met.
Vote of _ in favor _ against _ abstaining
I. Groundwater Protected.
<i>The proposed development will not, alone or in conjunction with existing activities, adversely affect the quality or quantity of groundwater.</i>
Finding: The proposed development will be serviced by Town sewer. The runoff from developed areas on site will receive treatment in USF ponds prior to being discharged into on-site wetlands.
Conclusion: This standard appears to be met.
Vote of _ in favor _ against _ abstaining

J. Flood Areas Identified and Development Conditioned.

All flood-prone areas within the project area have been identified on maps submitted as part of the application based on the Federal Emergency Management Agency's Flood Boundary and Floodway Maps and Flood Insurance Rate Maps, and information presented by the applicant. If the proposed development, or any part of it, is in such an area, the applicant must determine the one hundred (100) year flood elevation and flood hazard boundaries within the project area. The proposed plan must include a condition of plan approval requiring that principal structures in the development will be constructed with their lowest floor, including the basement, at least one foot above the one hundred (100) year flood elevation.

Finding: There is no proposed development located within a flood prone area.

Conclusion: This standard appears to be met.

Vote of in favor against abstaining

K. Stormwater Managed.

The proposed development will provide for adequate stormwater management.

Finding: The use of Underdrained Soil Filter (USF) ponds to attenuate peak flows will result in no increases in peak runoff quantity from the proposed development. No adverse effects are anticipated on any downstream properties or drainage structures for the analyzed storm events. Runoff quality is addressed by use of USF ponds.

Conclusion: This standard appears to be met.

Vote of in favor against abstaining

L. Erosion Controlled.

The proposed development will not cause unreasonable soil erosion or a reduction in the land's capacity to hold water so that a dangerous or unhealthy condition results.

Finding: All "cells" shall be protected by erosion & sediment control best management practices as required by the Erosion & Sedimentation Control Plan.

Conclusion: This standard appears to be met.

Vote of in favor against abstaining

M. Traffic Managed.

The proposed development will:

- 1. 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; and*
- 2. Provide adequate traffic circulation, both on-site and off-site.*

Finding: The applicant has provided a traffic analysis.

1. A traffic movement permit was previously issued by Maine Department of Transportation (MDOT) for 619 peak hour trips. The proposed mixed use development will have a significantly lower number of peak hour trips at 115 AM and 133 PM. There are two proposed entrances within 1000' of each other. The applicant has received a waiver from this requirement. Site distance from both site drives was measured by Attar Engineering, Inc. and was found to exceed 800' in both directions.
2. The project roadways and drives are designed to accommodate the projected traffic numbers and provide adequate traffic circulation.

<p><u>Conclusion:</u> This standard appears to be met.</p>
<p>Vote of __ in favor __ against __ abstaining</p>
<p>N. Water and Air Pollution Minimized.</p>
<p><i>The proposed development will not result in undue water or air pollution. In making this determination, the following must be considered:</i></p> <ol style="list-style-type: none"> 1. Elevation of the land above sea level and its relation to the floodplains; 2. Nature of soils and sub-soils and their ability to adequately support waste disposal; 3. Slope of the land and its effect on effluents; 4. Availability of streams for disposal of effluents; 5. Applicable state and local health and water resource rules and regulations; and 6. Safe transportation, disposal and storage of hazardous materials.
<p><u>Finding:</u></p> <ol style="list-style-type: none"> 1. The proposed development is located outside of a floodplain. 2-4. The proposed development will be serviced by Town sewer. 5. The proposed development will adhere to all applicable State regulations. 6. Not applicable to the proposed development.
<p><u>Conclusion:</u> This standard appears to be met.</p>
<p>Vote of __ in favor __ against __ abstaining</p>
<p>O. Aesthetic, Cultural and Natural Values Protected.</p>
<p><i>The proposed development will not have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites, significant wildlife habitat identified by the department of inland fisheries and wildlife or the municipality, or rare and irreplaceable natural areas or any public rights for physical or visual access to the shoreline.</i></p>
<p><u>Finding:</u> The property does not include any significant aesthetic, cultural or natural values that require protection.</p>
<p><u>Conclusion:</u> The requirement appears to be met.</p>
<p>Vote of __ in favor __ against __ abstaining</p>
<p>P. Developer Financially and Technically Capable.</p>
<p><i>Developer is financially and technically capable to meet the standards of this section.</i></p>
<p><u>Finding:</u> The developer has been involved with large scale construction projects through completion. The developer will provide an inspection escrow in an amount suitable to cover the costs of on-site inspection by the Peer Review Engineer to ensure the proposed development is constructed according to the approved plan.</p>
<p><u>Conclusion:</u> This standard appears to be met.</p>
<p>Vote of __ in favor __ against __ abstaining</p>

NOW THEREFORE the Kittery Planning Board adopts each of the foregoing Findings of Fact and, based on these findings, determines that the proposed development will have no significant detrimental impact. The Kittery Planning Board hereby grants final approval, including approval for a special exception use request for the development at the above referenced property, including any waivers granted or conditions as noted.

Waivers:

1. Section 16.8.4.2.F of the LUDC to allow two entrances closer than 1,000 feet apart.

Conditions of Approval (to be depicted on the final site plan):

1. Sidewalk be installed to the satisfaction of the Public Works Commissioner along the property's Route 1 frontage.
2. Design plans for the hotel that comply with Kittery's building design standards for the MU zone be approved prior issuance of a building permit for the hotel building.
3. More detail be provided to the satisfaction of the Town Planner for the landscape plantings within the parking areas.
4. The maintenance plan and agreement for the common areas shall be reviewed and found satisfactory by the CMA Engineers and the Town's attorney.
5. All of CMA Engineers' review comments are addressed to their satisfaction.
6. No changes, erasures, modifications, or revisions may be made to the approved plan, including no further land division or additional dwelling units established prior to Planning Board-approval.
7. Applicant/contractor will follow Maine DEP *Best Management Practices* for all work associated with site and building construction to ensure adequate erosion control and slope stabilization.
8. Prior to the commencement of grading and/or construction within a building envelope, as shown on the Plan, the owner and/or developer must stake all corners of the envelope. These markers must remain in place until the Code Enforcement Officer determines construction is complete and there is no danger of damage to areas that are, per Planning Board approval, to remain undisturbed.
9. All Notices to Applicant contained in the Findings of Fact (dated: February 14, 2019).

Conditions of Approval (NOT to be depicted on the final plan):

10. Incorporate any plan revisions on the final plan as recommended by Staff, Planning Board, or Peer Review Engineer, and submit for Staff review prior to presentation of final Mylar. The amended subdivision plan must be submitted to Staff for review prior to recording with the York County Registry of Deeds within 90-days of approval.
11. Prior to any earthwork and clearing, all required Maine Department of Environmental Protection permits must be approved and submitted to the Town for recording.

Notices to Applicant (NOT to be depicted on the final plan):

1. Prior to the release of the signed plans, the applicant must pay all outstanding fees associated with review, including, but not limited to, Town Attorney fees, peer review, newspaper advertisements and abutter notification.
2. State law requires all subdivision and shoreland development plans, and any plans receiving waivers or variances, be recorded at the York County Registry of Deeds within 90 days of the final approval.

3. One (1) mylar copy and one (1) paper copy of the final plan (recorded plan if applicable) and any and all related state/federal permits or legal documents that may be required, must be submitted to the Town Planning Department. Date of Planning Board approval shall be included on the final plan in the Signature Block.
4. This approval by the Town Planning Board constitutes an agreement between the Town and the Developer, incorporating the Plan and supporting documentation, the Findings of Fact, and any Conditions of Approval.
5. Where required the applicant must provide to the Town a performance guaranty and an inspection escrow to cover the construction of all improvements that will be utilized in common use or by the general public.

The Planning Board authorizes the Planning Board Chairperson, or Vice Chair, to sign the Final Plan and the Findings of Fact upon confirmation of compliance with any conditions of approval.

Vote of __ in favor __ against __ abstaining

APPROVED BY THE KITTERY PLANNING BOARD ON February 14, 2019

Karen Kalmar, Planning Board Vice Chair

Per Title 16.6.2.A – An aggrieved party with legal standing may appeal a final decision of the Planning Board to the York County Superior Court in accordance with Maine Rules of Civil Procedures Section 80B, within forty-five (45) days from the date the decision by the Planning Board was rendered.



ATTAR

ENGINEERING, INC

CIVIL • STRUCTURAL • MARINE

Jamie Steffen
Town Planner
Town of Kittery
P.O. Box 808
Kittery, Maine 03904

January 24, 2018
Project No.: C052-18

**Re: 459 US Route 1 - Kittery
Final Plan Application**

Dear Mr. Steffen:

On behalf of Michael Brigham, President of Landmark Hill, LLC, I have enclosed a revised Plan for your review and consideration. The site is located on 459 US Route 1 in the Mixed-Use District and is described by the Town of Kittery Assessor's Map 60 as Lot 24. The parcel contains 20 +/- acres and is located in the Mixed-Use (MU) District.

The proposed development consists of a 112-room hotel, 32 elderly residential units and 12 single family residential units on the upper floors of 3 Mixed-Use buildings. We believe that the 3 Mixed-Uses proposed complement one another; elderly and the residential dwelling unit residents will have the option of membership in the hotel's health club and indoor pool and guests visiting any residents have an opportunity of staying at the hotel. There are also sidewalks, trails, a volleyball court, 3 season pavilion and an outdoor cooking area which offer passive recreation to all of the development's residents and guests.

As suggested at our initial sketch plan review, we respectfully request that the Board consider a 50' MU Zone Boundary Extension as allowed by Section 16.7.2.5. The current MU Boundary is within 50' of the parcel's northeast sideline. Extending this boundary does not result in any development closer to the residential out-parcel lots on Adams Road. Additionally, this extension will not prevent the orderly and reasonable use of the adjacent residential properties and will be in harmony with the adjacent zone as the 2 districts are separated and buffered by a large forested wetland complex. Property values in the adjacent neighborhoods will not be diminished and will more likely see an increase in value as a result of this project. The granting of the extension will not result in any traffic hazards, emissions or disturbance of natural features and adequate screening, provided by the wooded wetland, setbacks and limitation on development adjacent to the residential zone, is provided and will be maintained.

The only major adjustment from the Preliminary Plan was the revising of the stormwater pond arrangement. The current layout is less impactful to the site and provides greater protection to the surrounding wetlands.

The stamped High Intensity Soil Survey has been included in this submission. It is the same document from previous submission.

We look forward to further discussion of this project at the next available meeting.
Please contact me for any additional information or clarifications required.

Sincerely,

A handwritten signature in black ink, appearing to read "Kenneth A. Wood". The signature is fluid and cursive, with the first name "Kenneth" being the most prominent part.

Kenneth A. Wood, P.E.
President

cc: Landmark Hill, LLC

C052-18 Kittery Site App Cover-ConceptPlan.doc



ATTAR

ENGINEERING, INC

CIVIL • STRUCTURAL • MARINE

MUNICIPAL IMPACT STATEMENT – THE HOMESTEAD SUBDIVISION January 24, 2019

The following “Impact Statements” are provided for the municipal impact analysis:

- The Homestead Subdivision consists of 32 Elderly (Over-55) and 12 single family apartments and a 112 room hotel. The single family units may have school-aged children which will utilize the municipal bus transportation service currently provided to residences in the area. However, a significant impact is not anticipated considering the relatively small (up to 6 families assuming 50% have school aged children) addition to the surrounding residential uses.
- Road maintenance will be the responsibility of the Homeowners Association; as noted on the plan the road will remain private.
- Solid waste disposal will either be by contracted curb-side pick up or residents may elect to use the municipal Transfer Station.
- Wastewater disposal shall be by the municipal system; a letter of capacity from the Sewer Department has been issued.
- Domestic water supply will be supplied by the Kittery Water District; a Letter of Capacity has been issued.
- Police, Fire, and Ambulance services will be required to in the event of any medical or fire emergencies. The Kittery Fire Chief has reviewed the plan.
- Stormwater Management will be accomplished with various stormwater quality and quantity control Best Management Practices. Maintenance will be provided by the Owners of the Apartments and the Hotel.
- No active recreation is proposed; passive recreation is allowed on site and a recreational area is designated on the plans.
- Investment costs for construction of the apartments is approximately \$8.5mil; the Hotel is approximately \$12.5mil for a total construction cost (structures) of \$21mil. Assuming these costs are comparable to the eventual assessed value tax revenue (at the current rate of \$16.80/thousand). The anticipated tax revenue of approximately \$352,800/Year will exceed the cost of any municipal services.

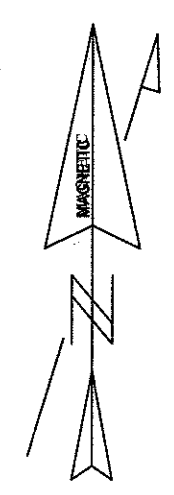
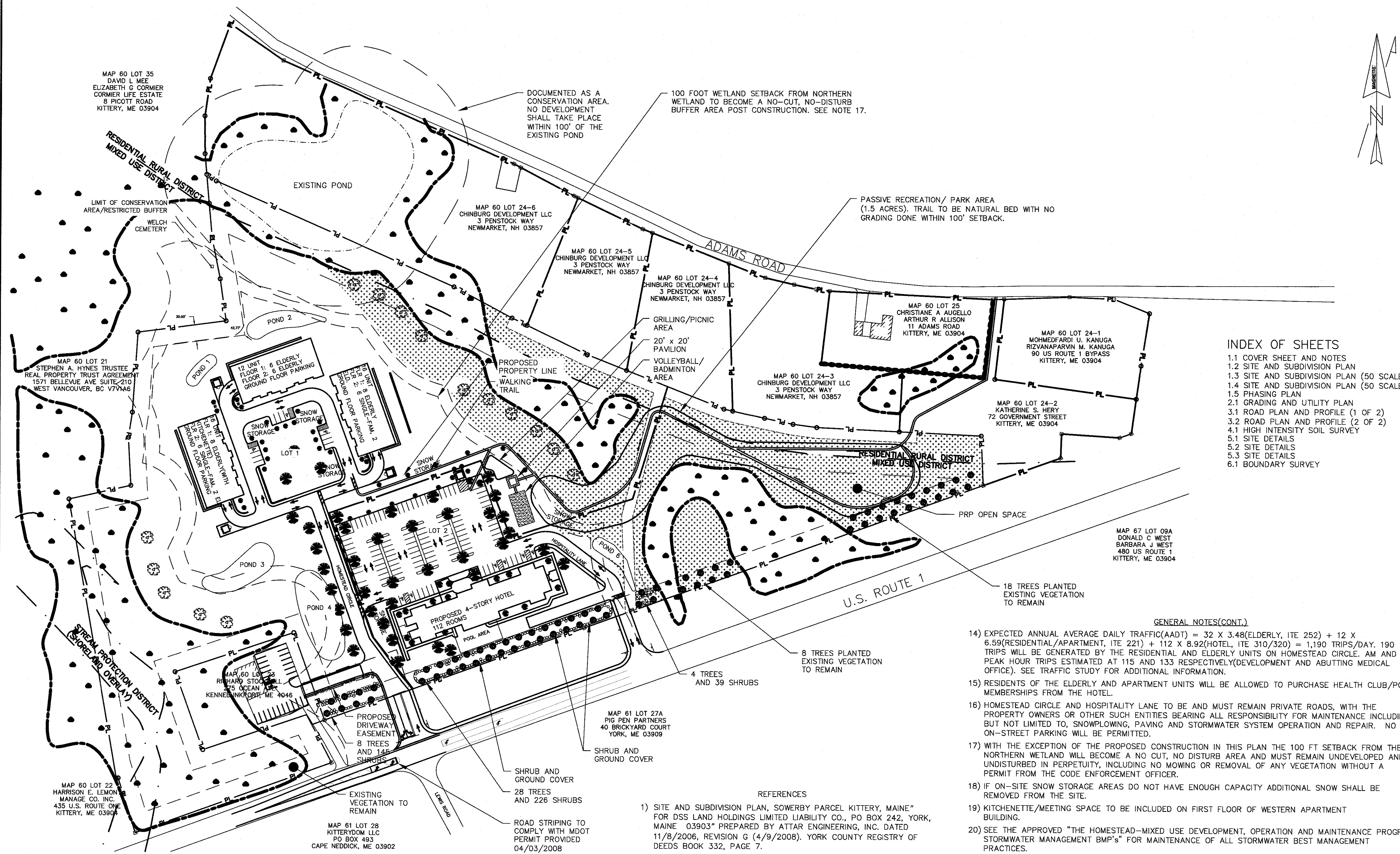
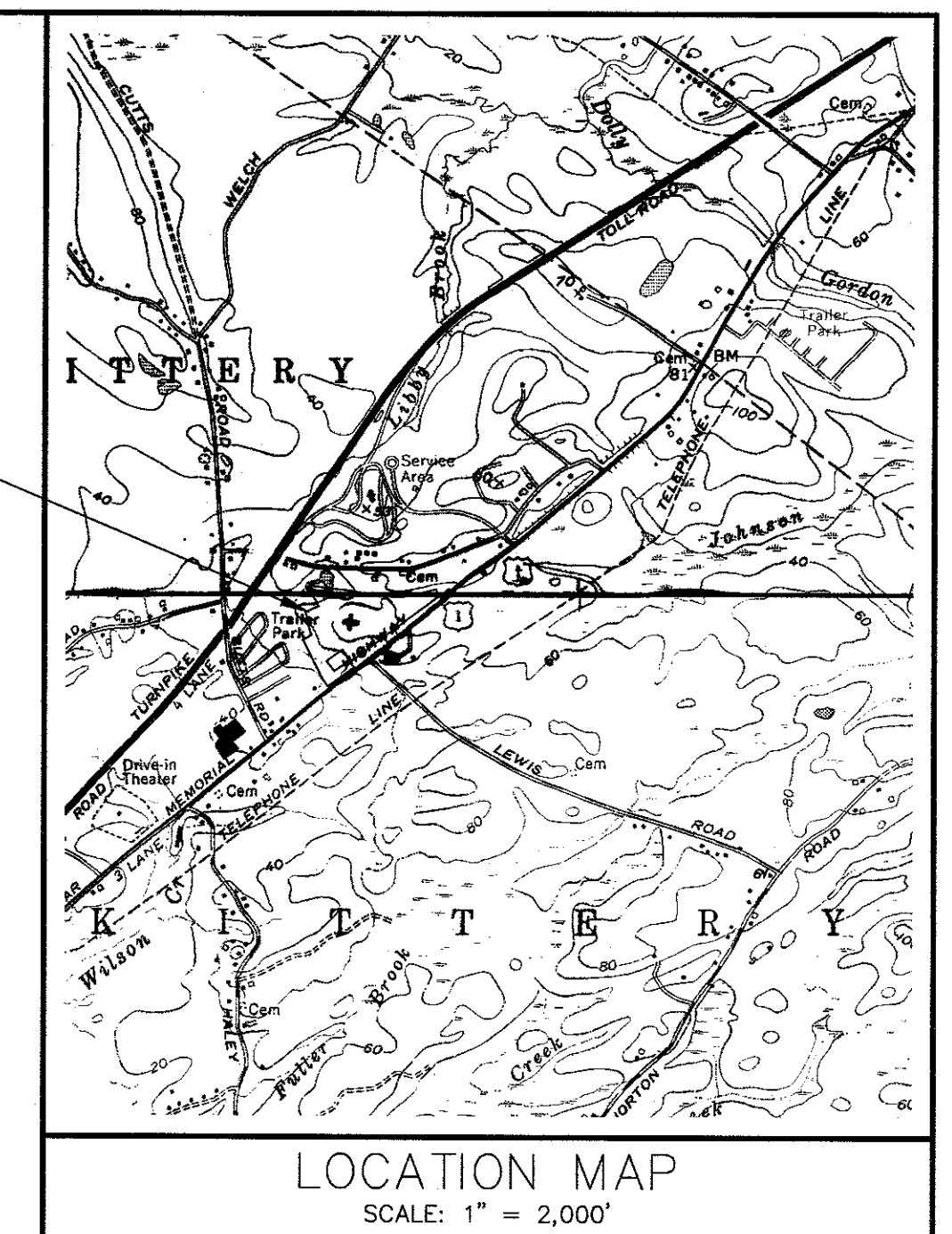
Please contact me for any additional information or clarifications required.

Sincerely,

Kenneth A. Wood, P.E.
President

THE HOMESTEAD SUBDIVISION

U.S. ROUTE 1, KITTERY, MAINE



INDEX OF SHEETS

- 1.1 COVER SHEET AND NOTES
- 1.2 SITE AND SUBDIVISION PLAN
- 1.3 SITE AND SUBDIVISION PLAN (50 SCALE)
- 1.4 SITE AND SUBDIVISION PLAN (50 SCALE)
- 1.5 PHASING PLAN
- 2.1 GRADING AND UTILITY PLAN
- 3.1 ROAD PLAN AND PROFILE (1 OF 2)
- 3.2 ROAD PLAN AND PROFILE (2 OF 2)
- 4.1 HIGH INTENSITY SOIL SURVEY
- 5.1 SITE DETAILS
- 5.2 SITE DETAILS
- 5.3 SITE DETAILS
- 6.1 BOUNDARY SURVEY

GENERAL NOTES

- 1) THIS PLAN PROVIDES DETAILS FOR A MIXED USE DEVELOPMENT AT 459 U.S. ROUTE 1 CONSISTING OF 32 SINGLE-FAMILY (ELDERLY) APARTMENTS AND 12 SINGLE-FAMILY RESIDENTIAL UNITS IN 3 BUILDINGS AND A 112 ROOM HOTEL. SINGLE-FAMILY RESIDENTIAL UNITS ON THE UPPER FLOORS OF A MIXED-USE BUILDING ARE A "PERMITTED USE". HOUSING FOR THE ELDERLY AND A HOTEL ARE "SPECIAL EXCEPTION USES". THE PROPERTY IS TO BE SUBDIVIDED INTO TWO SEPARATE PROPERTIES (SEE PROPOSED PROPERTY LINE ON SITE PLANS). LOT 1 HAS 590,468 SF OF AREA AND 552' OF STREET FRONTAGE. LOT 2 HAS 285,904 SF OF AREA AND 1104' OF STREET FRONTAGE.
- 2) THIS SITE WAS PREVIOUSLY APPROVED AS THE SOWERBY MIXED-USE PROJECT IN 2008. SEE REF. 1.
- 3) THE PARCEL, IDENTIFIED AS LOT 24 ON TAX MAP 60, CONTAINS APPROXIMATELY 20.12 ACRES; AND IS LOCATED WITHIN THE MIXED-USE (MU), RESIDENTIAL RURAL (R-RL) AND SHORELAND OVERLAY ZONING DISTRICTS. THE PARCEL IS SERVED BY MUNICIPAL WATER AND SEWER SYSTEMS.
- 4) SPACE AND BULK REQUIREMENTS FOR THE MIXED USE ZONING DISTRICT ARE AS FOLLOWS:

MIXED USE DISTRICT

MIN. LOT AREA	200,000 SF
MIN. STREET FRONTAGE	250'
MIN. FRONT SETBACK	30'
MIN. SIDE SETBACK	40'
MIN. REAR SETBACK	40'
MAX BUILDING HEIGHT	40'

5) PARKING IS CALCULATED AS FOLLOWS:

UNIT TYPE	NO. OF UNITS./SF	SPACES/UNIT	SF/UNIT	REQUIRED
ELDERLY	32 UNITS	1.5	N/A	48
APARTMENTS	12 UNITS	2	N/A	24
HOTEL	112	1	N/A	115(CONF.ROOM)

TOTAL REQUIRED SPACES = 187 WITH 199 PROVIDED(24 ON GROUND FLOOR OF RESIDENTIAL BUILDINGS, EACH WITH 2 ADA SPACES, 12 EXTERIOR GUEST SPACES (3 ADA), 6 ADA SPACES AT HOTEL)

6) BUILDABLE AREA/RESIDENTIAL DENSITY

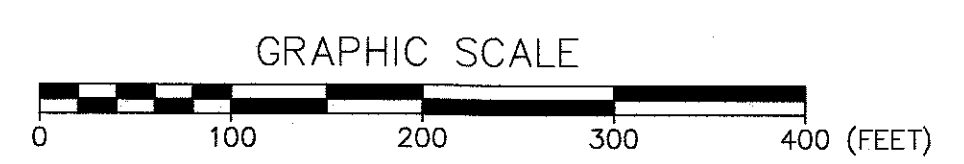
TOTAL PARCEL AREA	=	876,427.2 S.F.	=	20.12 AC.
LESS 50% OF WETLANDS SETBACK	=	137,495.6 S.F.	=	3.16 AC.
LESS UNSUITABLE SOILS*	=	200,630 S.F.	=	4.61 AC.
LESS RIGHTS OF WAY/EASEMENTS**	=	124,314 S.F.	=	2.85 AC.

GENERAL NOTES (CONT.)

- 14) EXPECTED ANNUAL AVERAGE DAILY TRAFFIC(AADT) = 32 X 3.48(ELDERLY, ITE 252) + 12 X 6.59(RESIDENTIAL/APARTMENT, ITE 221) + 112 X 8.92(HOTEL, ITE 310/320) = 1,190 TRIPS/DAY. 190 TRIPS WILL BE GENERATED BY THE RESIDENTIAL AND ELDERLY UNITS ON HOMESTEAD CIRCLE. AM AND PM PEAK HOUR TRIPS ESTIMATED AT 115 AND 133 RESPECTIVELY(DEVELOPMENT AND ADJUTING MEDICAL OFFICE). SEE TRAFFIC STUDY FOR ADDITIONAL INFORMATION.
- 15) RESIDENTS OF THE ELDERLY AND APARTMENT UNITS WILL BE ALLOWED TO PURCHASE HEALTH CLUB/POOL MEMBERSHIPS FROM THE HOTEL.
- 16) HOMESTEAD CIRCLE AND HOSPITALITY LANE TO BE AND MUST REMAIN PRIVATE ROADS, WITH THE PROPERTY OWNERS OR OTHER SUCH ENTITIES BEARING ALL RESPONSIBILITY FOR MAINTENANCE INCLUDING BUT NOT LIMITED TO, SNOWPLOWING, PAVING AND STORMWATER SYSTEM OPERATION AND REPAIR. NO ON-STREET PARKING WILL BE PERMITTED.
- 17) WITH THE EXCEPTION OF THE PROPOSED CONSTRUCTION IN THIS PLAN THE 100 FT SETBACK FROM THE NORTHERN WETLAND WILL BECOME A NO CUT, NO DISTURB AREA AND MUST REMAIN UNDEVELOPED AND PERMIT FROM THE CODE ENFORCEMENT OFFICER.
- 18) IF ON-SITE SNOW STORAGE AREAS DO NOT HAVE ENOUGH CAPACITY ADDITIONAL SNOW SHALL BE REMOVED FROM THE SITE.
- 19) KITCHENETTE/MEETING SPACE TO BE INCLUDED ON FIRST FLOOR OF WESTERN APARTMENT BUILDING.
- 20) SEE THE APPROVED "THE HOMESTEAD-MIXED USE DEVELOPMENT, OPERATION AND MAINTENANCE PROGRAM STORMWATER MANAGEMENT BMP'S" FOR MAINTENANCE OF ALL STORMWATER BEST MANAGEMENT PRACTICES.
- 21) A ROAD ACCESS EASEMENT SHALL BE PROVIDED TO LOT 2(HOTEL) FOR THE USE OF HOMESTEAD CIRCLE IN ORDER TO ENTER AND EXIT THE HOTEL PARKING LOT.

REFERENCES

- 1) SITE AND SUBDIVISION PLAN, SOWERBY PARCEL KITTEY, MAINE FOR DSS LAND HOLDINGS LIMITED LIABILITY CO., PO BOX 242, YORK, MAINE 03903* PREPARED BY ATTAR ENGINEERING, INC. DATED 11/8/2006, REVISION G (4/9/2008). YORK COUNTY REGISTRY OF DEEDS BOOK 332, PAGE 7.



LEGEND

NEW SETBACK	UNDER GROUND UTILITIES	UGU	DRAINAGE STRUCTURE	⊙
DESIGNATED OPEN SPACE	SEWER MANHOLE	⊙	WATER VALVE	⊙
PROPERTY LINE	EXISTING WATER LINE	EW	WATER SHUT OFF	⊙
EXISTING CONTOUR	EXISTING SEWER LINE	ES	HYDRANT	⊙
PROPOSED CONTOUR	UTILITY POLE	⊙		
PROPOSED WATER LINE	IRON PIN	⊙		
PROPOSED SEWER LINE	STONE MONUMENT	⊙		

TOWN OF KITTEY PLANNING BOARD

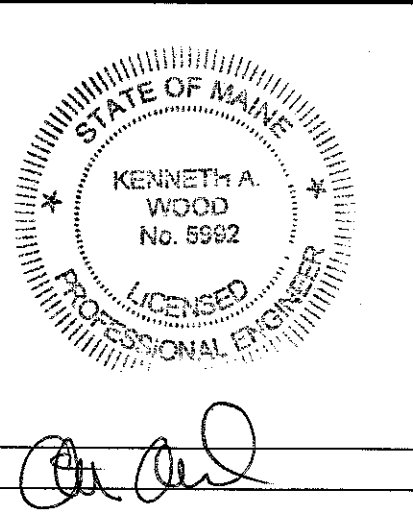
DATE _____

STATE OF MAINE
YORK COUNTY ss. REGISTRY OF DEEDS
RECEIVED _____ 20____
AT _____, m., AND RECORDED IN
PLAN BOOK _____, PAGE _____
ATTEST _____ REGISTER

OWNER: DSS LAND HOLDINGS LLC
PO BOX 242
YORK, ME 03909

APPLICANT: LANDMARK HILL, LLC
79 CONGRESS ST.
PORTSMOUTH, NH 03801

NO.	DESCRIPTION	DATE
I	FINAL PLAN SUBMISSION	01/24/2019
H	MDEP SUBMISSION	01/23/2019
G	PRELIMINARY PLAN REVISION	11/08/2018
F	PRELIMINARY PLAN REVISION	10/18/2018
E	PRELIMINARY PLAN SUBMISSION	9/20/2018
D	PLANNING REVIEW COMMENTS	8/9/2018
C	SKETCH PLAN REVISION	7/19/2018
B	CONCEPT PLAN REVISION	6/20/2018
A	PRELIMINARY PLAN REVISION	1/18/2018



1.1

OVERALL SITE PLAN
THE HOMESTEAD
459 US ROUTE 1 KITTEY, MAINE

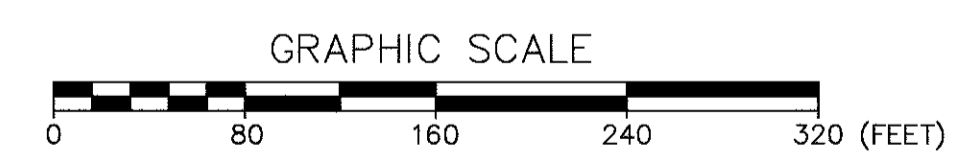
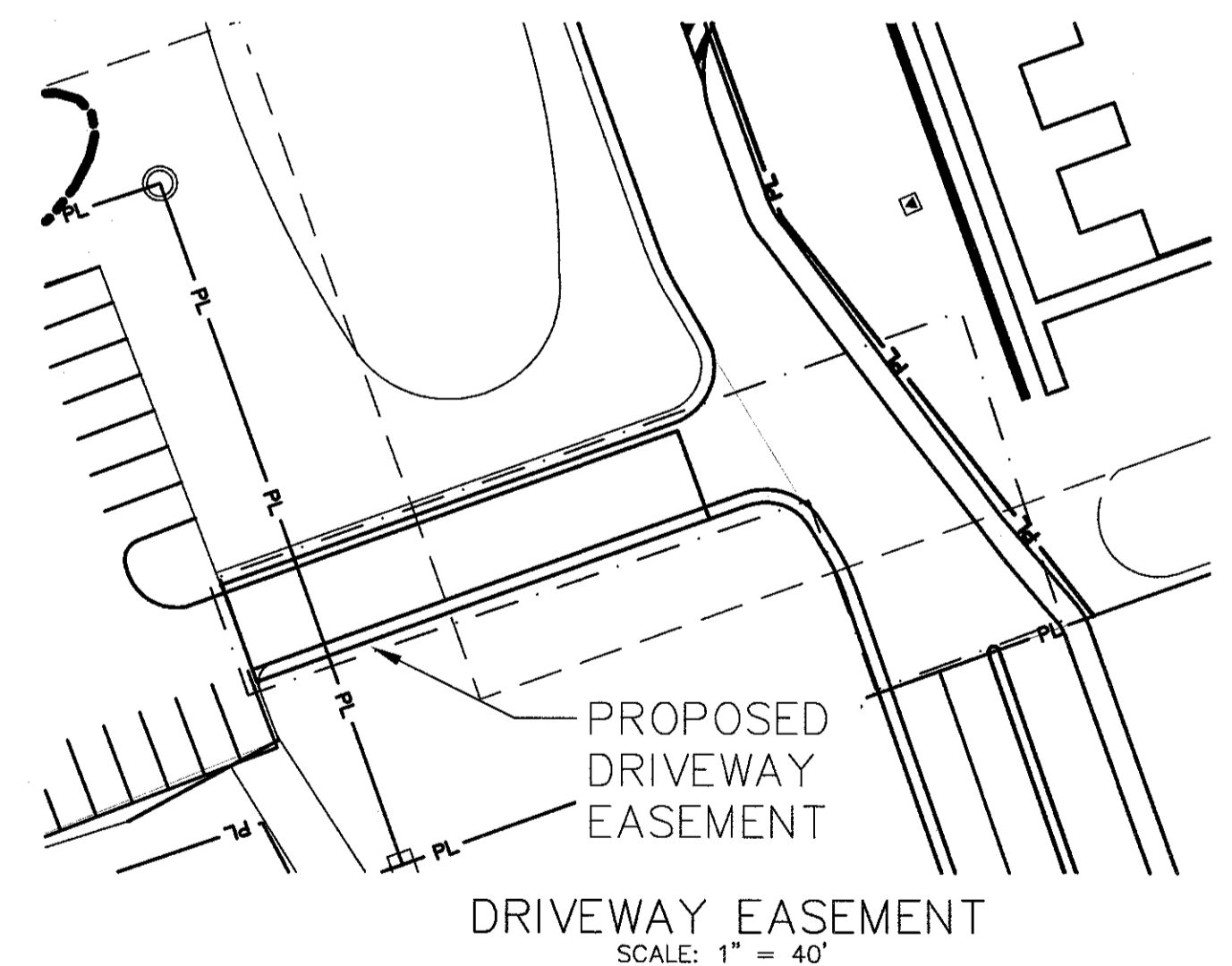
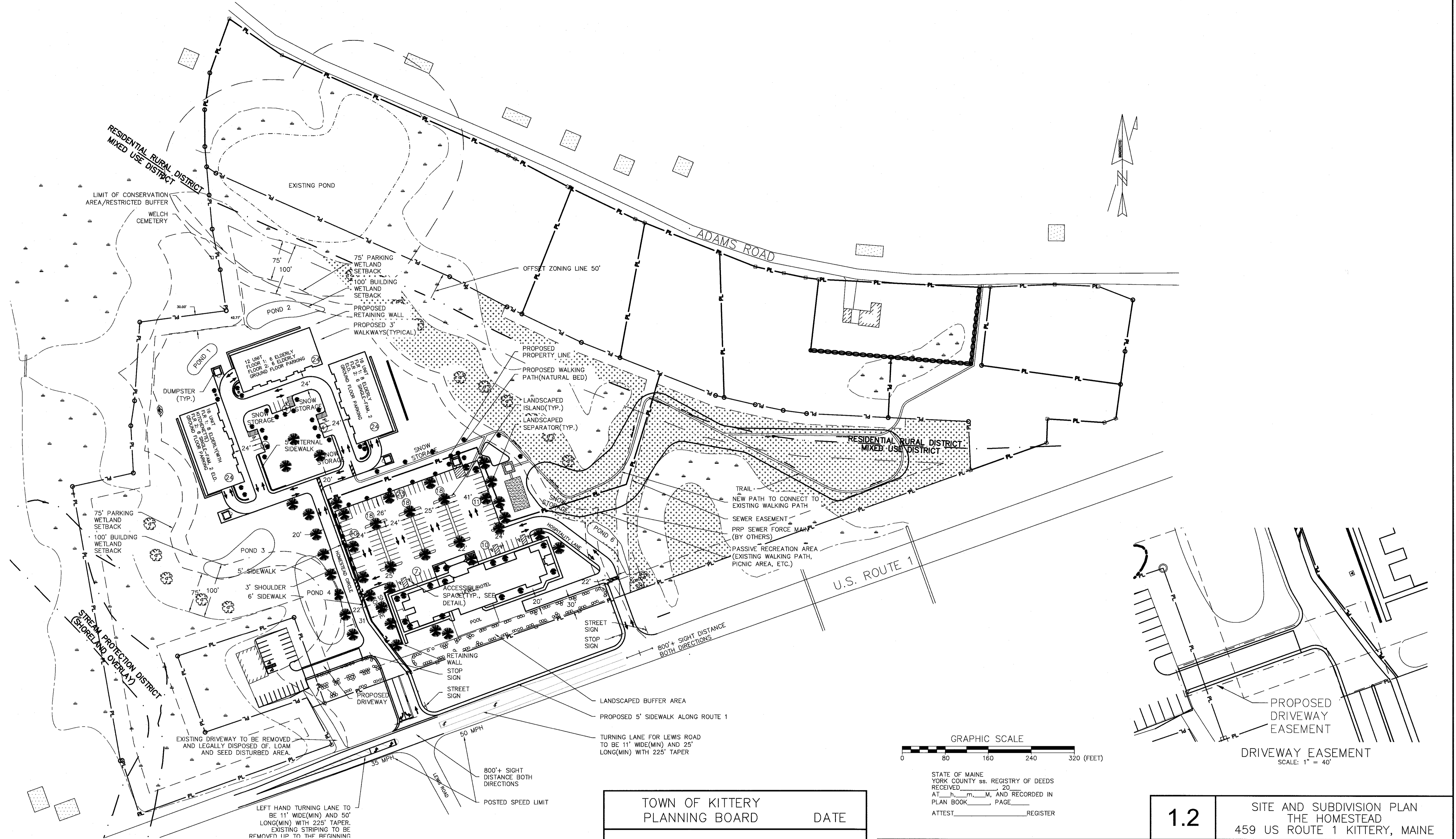
FOR: LANDMARK HILL, LLC
79 CONGRESS ST
PORTSMOUTH, NH 03801

ATTAR ENGINEERING, INC.
CIVIL • STRUCTURAL • MARINE
1284 STATE ROAD - ELIOT, MAINE 03903
PHONE: (207)439-6023 FAX: (207)439-2128

SCALE: 1" = 100'
DATE: 02/08/2018
JOB NO: C052-18

APPROVED BY: [Signature]
DRAWN BY: BRN
REVISION : DATE
1: 01/24/2019

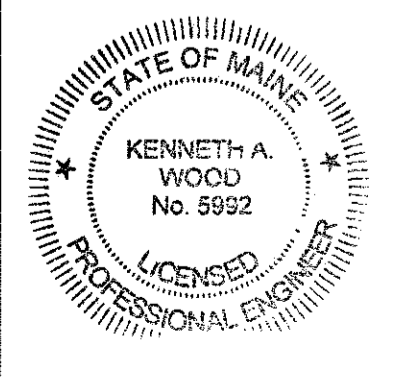
FILE: THE HOMESTEAD BASE
SHEET 1.1
TAX MAP 60, LOT 24



STATE OF MAINE
 YORK COUNTY ss. REGISTRY OF DEEDS
 RECEIVED _____ 20____
 AT _____ M., AND RECORDED IN
 PLAN BOOK _____ PAGE _____
 ATTEST _____ REGISTER

TOWN OF KITTERY PLANNING BOARD	DATE

NO.	DESCRIPTION	DATE
I	FINAL PLAN SUBMISSION	01/24/2019
H	MDEP SUBMISSION	01/23/2019
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E	PRELIMINARY PLAN SUBMISSION	9/20/2018
D	PLANNING REVIEW COMMENTS	8/9/2018
C	SKETCH PLAN REVISION	7/19/2018
B	CONCEPT PLAN REVISION	6/20/2018
A	PRELIMINARY PLAN REVISION	1/18/2018



1.2 SITE AND SUBDIVISION PLAN
 THE HOMESTEAD
 459 US ROUTE 1 KITTERY, MAINE

FOR: LANDMARK HILL, LLC
 79 CONGRESS ST
 PORTSMOUTH, NH 03801

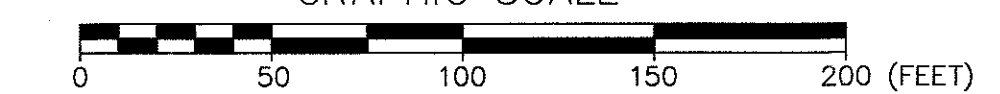
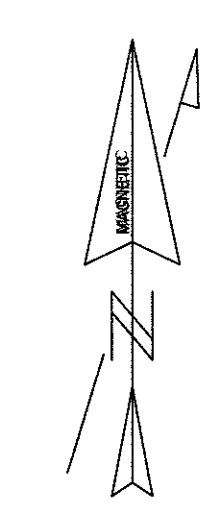
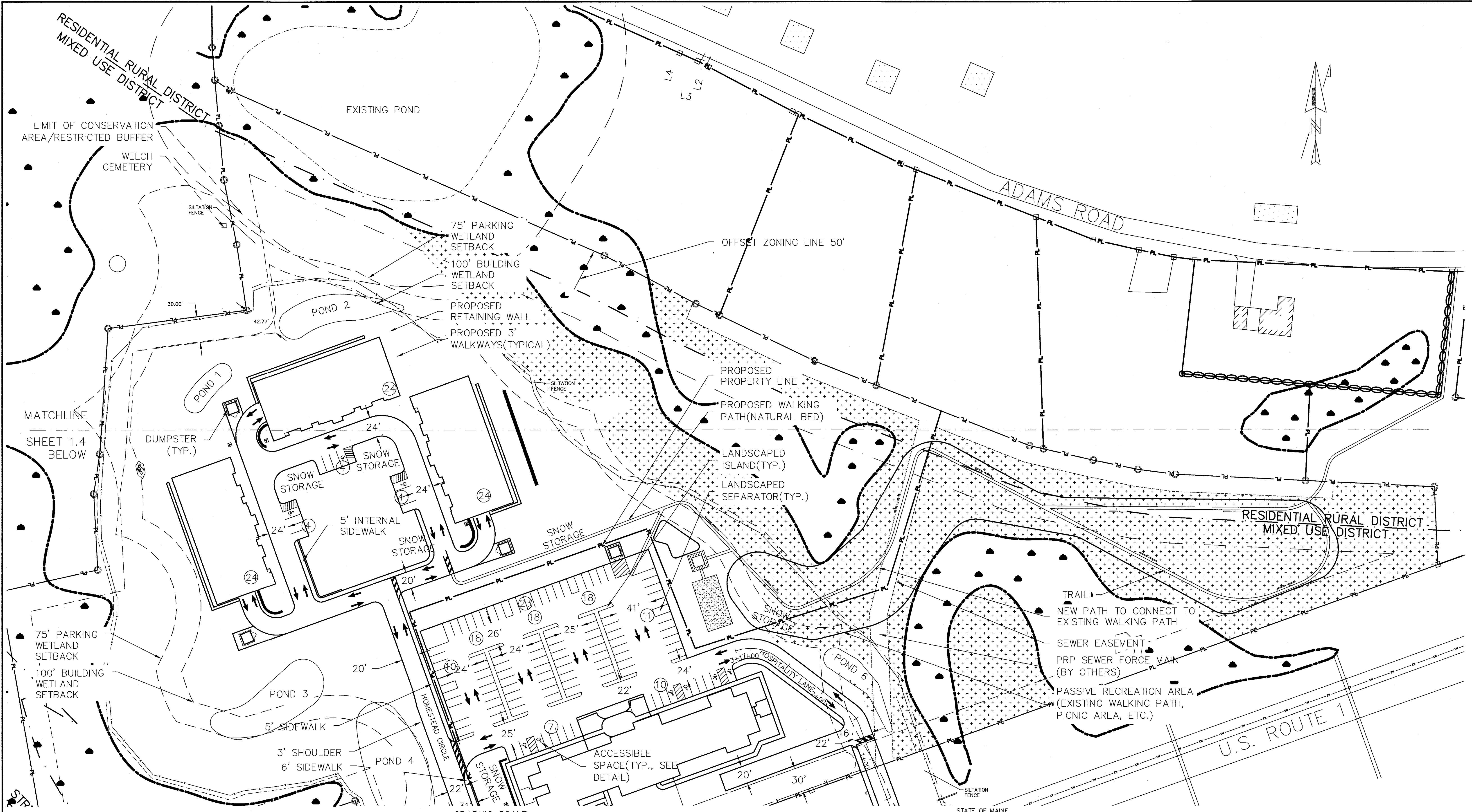
ATTAR ENGINEERING, INC.
 CIVIL • STRUCTURAL • MARINE
 1284 STATE ROAD - ELIOT, MAINE 03903
 PHONE: (207)439-6023 FAX: (207)439-2128

SCALE: 1" = 80'
 DATE: 02/08/2018
 JOB NO: C052-18 FILE: THE HOMESTEAD BASE

APPROVED BY: *Attar*
 1/24/2019

DRAWN BY: BRN
 REVISION: DATE
 1: 01/24/2019
 SHEET 1.2

LEGEND			
NEW SETBACK	—	UNDER GROUND UTILITIES	UGU
DESIGNATED OPEN SPACE	▨	SEWER MANHOLE	⊙
PROPERTY LINE	—	EXISTING WATER LINE	EW
EXISTING CONTOUR	---XXX---	EXISTING SEWER LINE	ES
PROPOSED CONTOUR	---XXX---	UTILITY POLE	⊙
PROPOSED WATER LINE	—W—	IRON PIN	⊙
PROPOSED SEWER LINE	—S—	STONE MONUMENT	⊙
		DRAINAGE STRUCTURE	⊙
		WATER VALVE	⊙
		WATER SHUT OFF	⊙
		HYDRANT	⊙



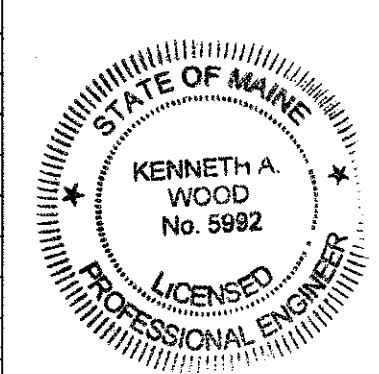
LEGEND			
NEW SETBACK	---	UNDER GROUND UTILITIES	--- UGU ---
DESIGNATED OPEN SPACE	[Stippled Area]	SEWER MANHOLE	⊙
PROPERTY LINE	---	EXISTING WATER LINE	EW ---
EXISTING CONTOUR	---XXX---	EXISTING SEWER LINE	ES ---
PROPOSED CONTOUR	---XXX---	UTILITY POLE	⊙
PROPOSED WATER LINE	---W---	IRON PIN	⊙
PROPOSED SEWER LINE	---S---	STONE MONUMENT	⊙
		DRAINAGE STRUCTURE	⊙
		WATER VALVE	⊙
		WATER SHUT OFF	⊙
		HYDRANT	⊙

TOWN OF KITTEERY PLANNING BOARD	DATE

STATE OF MAINE
YORK COUNTY ss. REGISTRY OF DEEDS
RECEIVED _____ 20____
AT _____ M, AND RECORDED IN
PLAN BOOK _____ PAGE _____
ATTEST _____ REGISTER

1.3 SITE AND SUBDIVISION PLAN 50 SCALE
THE HOMESTEAD
459 US ROUTE 1 KITTEERY, MAINE

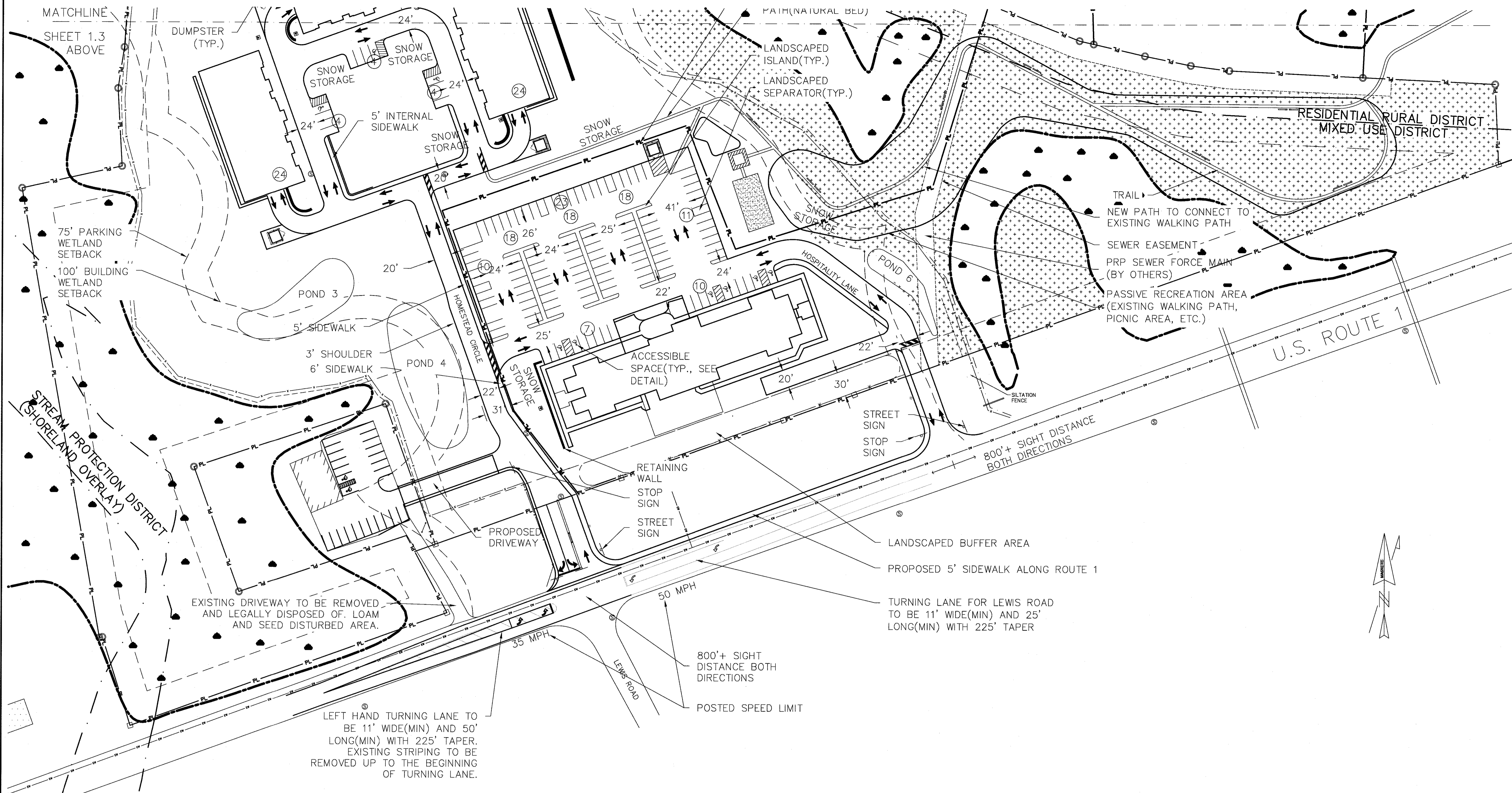
NO.	DESCRIPTION	DATE
I	FINAL PLAN SUBMISSION	01/24/2019
H	MDEP SUBMISSION	01/23/2019
G	PRELIMINARY PLAN REVISION	11/08/2018
F	PRELIMINARY PLAN REVISION	10/18/2018
E	PRELIMINARY PLAN SUBMISSION	9/20/2018
D	PLANNING REVIEW COMMENTS	8/9/2018
C	SKETCH PLAN REVISION	7/19/2018
B	CONCEPT PLAN REVISION	6/20/2018
A	PRELIMINARY PLAN REVISION	1/18/2018
NO.	DESCRIPTION	DATE



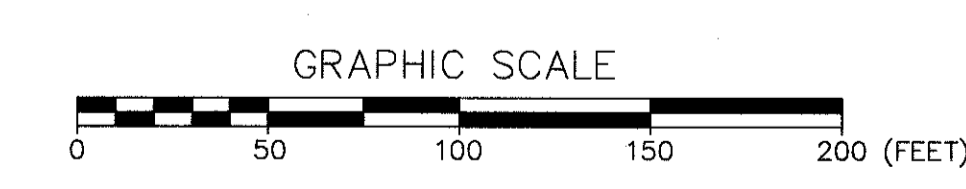
FOR: LANDMARK HILL, LLC
79 CONGRESS ST
PORTSMOUTH, NH 03801

ATTAR ENGINEERING, INC.
CIVIL • STRUCTURAL • MARINE
1284 STATE ROAD - ELIOT, MAINE 03903
PHONE: (207)439-6023 FAX: (207)439-2128

SCALE: 1" = 50'	APPROVED BY: <i>[Signature]</i>	DRAWN BY: BRN
DATE: 02/08/2018		REVISION: DATE I: 01/24/2019
JOB NO: C052-18	FILE: THE HOMESTEAD BASE	SHEET 1.3



MATCHLINE
SHEET 1.3
ABOVE

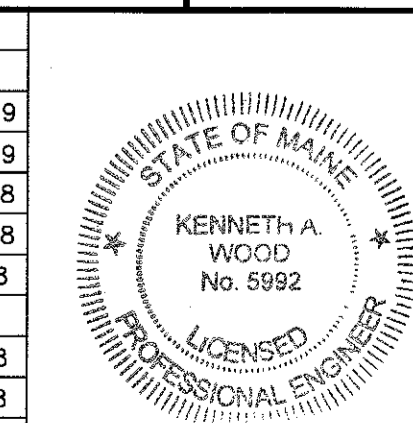


LEGEND			
NEW SETBACK	---	UNDER GROUND UTILITIES	UGU
DESIGNATED OPEN SPACE	[Stippled Area]	SEWER MANHOLE	⊙
PROPERTY LINE	---	EXISTING WATER LINE	EW
EXISTING CONTOUR	---XXX---	EXISTING SEWER LINE	ES
PROPOSED CONTOUR	---XXX---	UTILITY POLE	⊕
PROPOSED WATER LINE	---	IRON PIN	⊙
PROPOSED SEWER LINE	---	STONE MONUMENT	⊠
		DRAINAGE STRUCTURE	⊕
		WATER VALVE	⊕
		WATER SHUT OFF	⊕
		HYDRANT	⊕

TOWN OF KITTELY PLANNING BOARD	DATE

STATE OF MAINE
YORK COUNTY ss. REGISTRY OF DEEDS
RECEIVED _____ 20____
AT _____ M, AND RECORDED IN
PLAN BOOK _____ PAGE _____
ATTEST _____ REGISTER

NO.	DESCRIPTION	DATE
I	FINAL PLAN SUBMISSION	01/24/2019
H	MDEP SUBMISSION	01/23/2019
G	PRELIMINARY PLAN REVISION	11/08/2018
F	PRELIMINARY PLAN REVISION	10/18/2018
E	PRELIMINARY PLAN SUBMISSION	9/20/2018
D	PLANNING REVIEW COMMENTS	8/9/2018
C	SKETCH PLAN REVISION	7/19/2018
B	CONCEPT PLAN REVISION	6/20/2018
A	PRELIMINARY PLAN REVISION	1/18/2018
NO.	DESCRIPTION	DATE



1.4

SITE AND SUBDIVISION 50 SCALE
THE HOMESTEAD
459 US ROUTE 1 KITTELY, MAINE

FOR: LANDMARK HILL, LLC
79 CONGRESS ST
PORTSMOUTH, NH 03801

ATTAR ENGINEERING, INC.
CIVIL • STRUCTURAL • MARINE
1284 STATE ROAD - ELIOT, MAINE 03903
PHONE: (207)439-6023 FAX: (207)439-2128

SCALE: 1" = 50'
DATE: 02/08/2018
JOB NO: C052-18 FILE: THE HOMESTEAD BASE

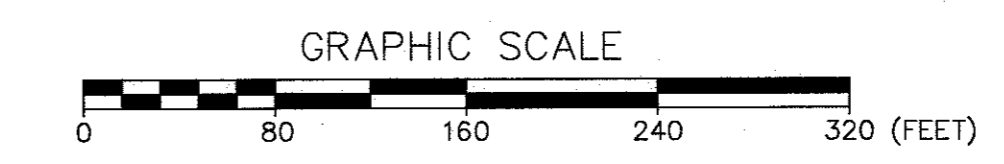
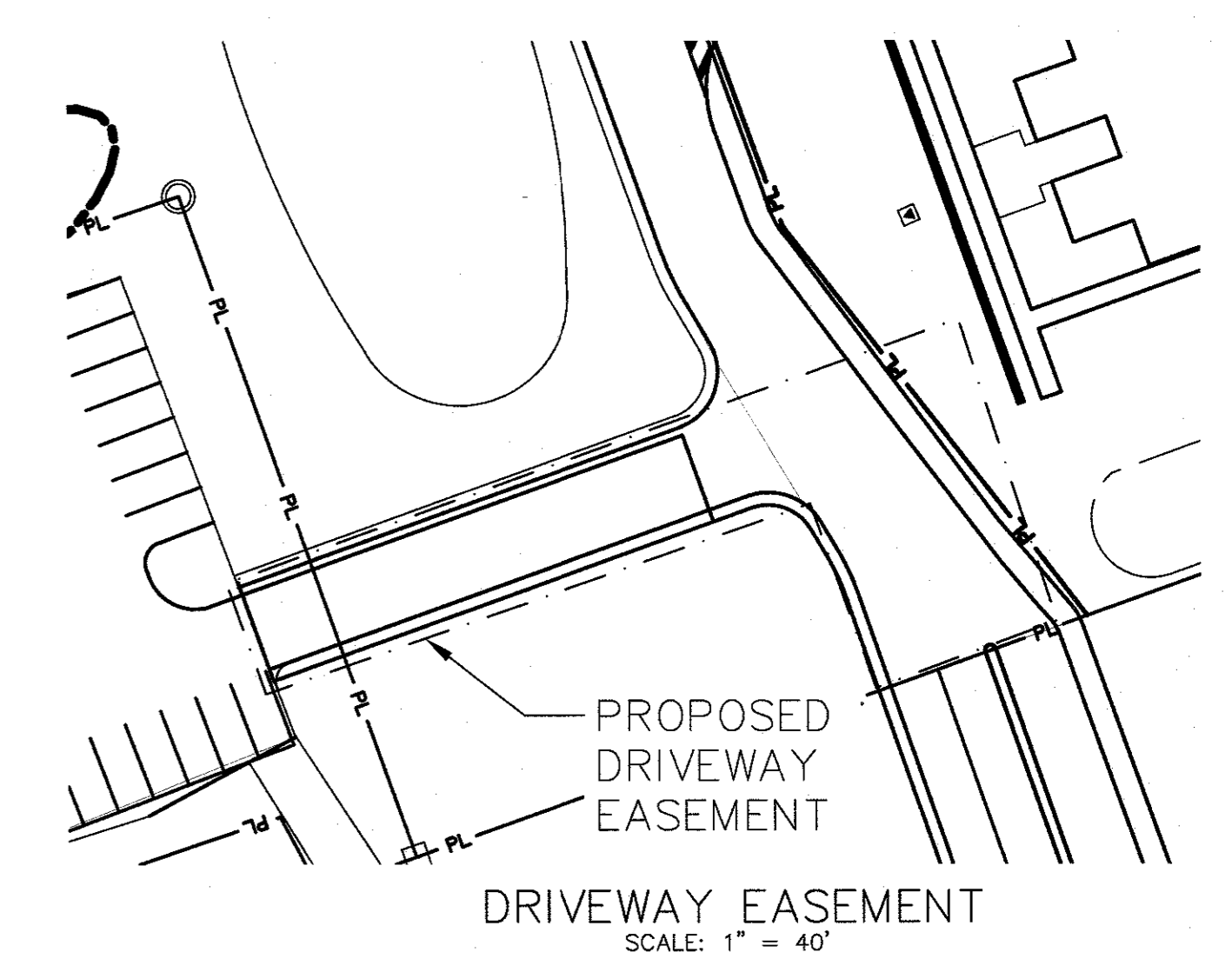
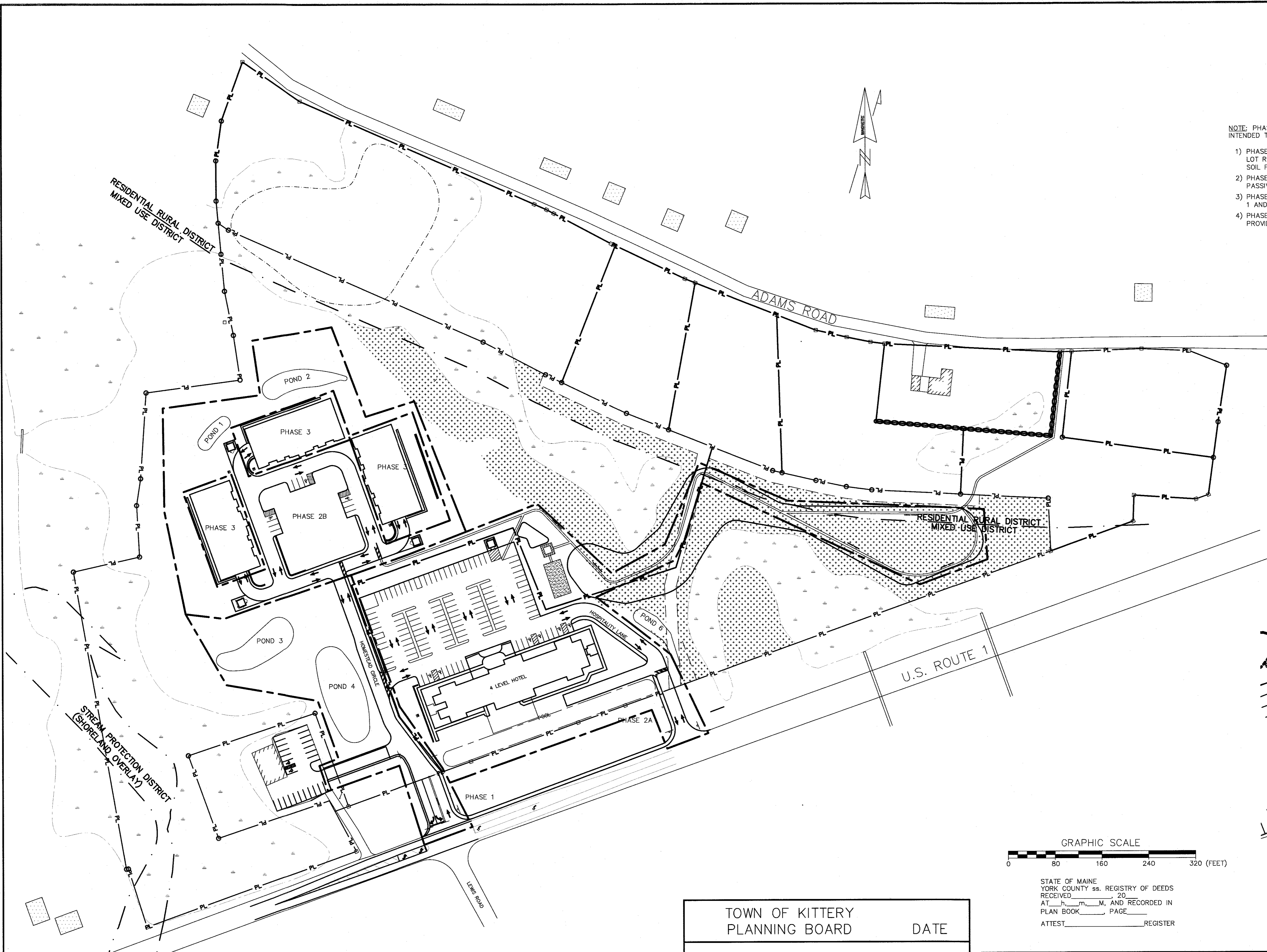
APPROVED BY: *[Signature]*
DRAWN BY: BRN
REVISION: DATE
SHEET 1.4

PHASING NOTES

CONSTRUCTION PHASING TO BE AS FOLLOWS:

NOTE: PHASING LINES ARE FOR PLANNING AND COORDINATION PURPOSES ONLY. THEY ARE NOT INTENDED TO DEPICT THE LIMITS OF PROPOSED CONSTRUCTION.

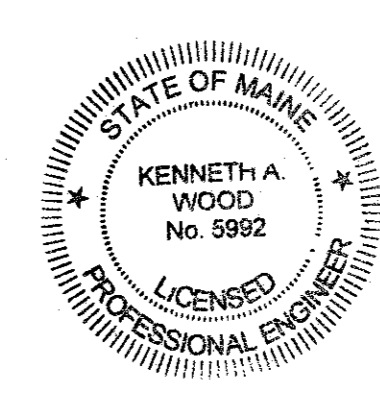
- 1) PHASE 1: PROPOSED ROAD, PROPOSED DRIVEWAY TO ABUTTER(OFFICE), ABUTTER PARKING LOT RE-STRIPING, WATER, SEWER, ELECTRICAL SITE CONNECTIONS, AND UNDERDRAINED SOIL FILTERS (POND 3 AND POND 4) TO BE CONSTRUCTED.
- 2) PHASE 2A: HOTEL, UNDERDRAINED SOIL FILTER (POND 6), LANDSCAPED BUFFER AREA AND PASSIVE RECREATION AREA TO BE CONSTRUCTED.
- 3) PHASE 2B: APARTMENT BUILDING FOUNDATIONS AND UNDERDRAINED SOIL FILTERS (POND 1 AND 2) TO BE CONSTRUCTED. PHASE 2A AND 2B CAN OCCUR SIMULTANEOUSLY.
- 4) PHASE 3: INDIVIDUAL APARTMENT BUILDINGS TO BE CONSTRUCTED ON A SCHEDULE PROVIDED BY THE OWNER.



STATE OF MAINE
 YORK COUNTY ss. REGISTRY OF DEEDS
 RECEIVED _____ 20____
 AT _____ M., AND RECORDED IN
 PLAN BOOK _____ PAGE _____
 ATTEST _____ REGISTER

TOWN OF KITTERY PLANNING BOARD	DATE

NO.	DESCRIPTION	DATE
G	FINAL PLAN SUBMISSION	01/24/2019
F	PRELIMINARY PLAN REVISION	10/18/2018
E	PRELIMINARY PLAN SUBMISSION	9/20/2018
D	PLANNING REVIEW COMMENTS	8/9/2018
C	SKETCH PLAN REVISION	7/19/2018
B	CONCEPT PLAN REVISION	6/20/2018
A	PRELIMINARY PLAN REVISION	1/18/2018



1.5	PHASING PLAN THE HOMESTEAD 459 US ROUTE 1 KITTERY, MAINE	
	FOR: LANDMARK HILL, LLC 79 CONGRESS ST PORTSMOUTH, NH 03801	
ATTAR ENGINEERING, INC. CIVIL • STRUCTURAL • MARINE 1284 STATE ROAD - ELIOT, MAINE 03903 PHONE: (207)439-6023 FAX: (207)439-2128		
SCALE: 1" = 80'	APPROVED BY: <i>[Signature]</i>	DRAWN BY: BRN
DATE: 02/08/2018	REVISION : DATE G: 01/24/2019	SHEET 1.5
JOB NO: C052-18	FILE: THE HOMESTEAD BASE	TAX MAP 60, LOT 24

GENERAL NOTES

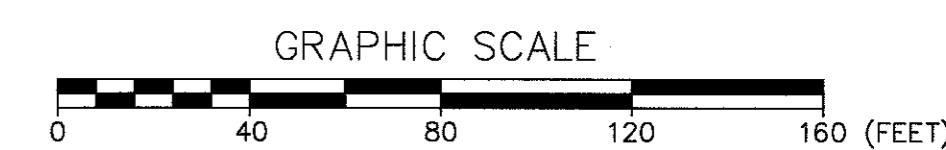
- SEWER MAINS TO BE 8" SDR 35 PVC. ALL OTHER APPURTENANCES SHALL MEET KITTEERY SEWER DISTRICT STANDARDS.
- ALL PIPES, VALVES, FITTINGS, AND CONNECTIONS SHALL MEET CURRENT KITTEERY WATER DISTRICT STANDARDS.
- ALL WATER SERVICES TO BE EQUIPPED WITH CURB STOPS.
- ALL STORM DRAINS TO BE ADS N-12 (PE) OR APPROVED EQUAL.
- A MINIMUM OF 5.0' OF COVER SHALL BE MAINTAINED OVER ALL WATER LINES.
- CENTRAL MAINE POWER COMPANY WILL PREPARE THE ELECTRICAL PLAN FOR CONSTRUCTION. ALL ELECTRICAL, TELEPHONE, AND CABLE SERVICES WILL BE UNDERGROUND.
- NEW WATER AND SEWER LINES SHALL BE TESTED IN ACCORDANCE WITH RESPECTIVE DISTRICT REQUIREMENTS.
- EACH E & S CELL REPRESENTS A LIMITED AREA TO BE CONSTRUCTED WITH ALL EROSION & SEDIMENT CONTROL MEASURES IN PLACE. ALL "CELLS" SHALL BE PROTECTED BY EROSION & SEDIMENT CONTROL BEST MANAGEMENT PRACTICES AS REQUIRED BY THE E & S PLAN. EROSION & SEDIMENT CONTROL SHALL BE MAINTAINED FOR EACH CELL THROUGH-OUT THE COMPLETION OF THE ENTIRE PROJECT. THE CELLS SHALL BE ESTABLISHED IN THERE NUMERICAL ORDER.

DRAINAGE STRUCTURE SCHEDULE

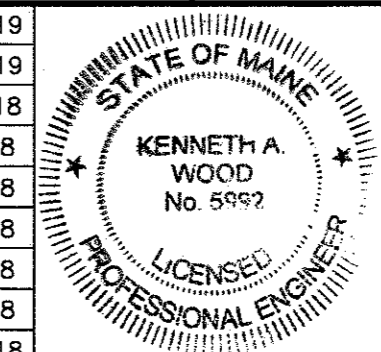
DESC	RIM ELEV	INV IN	INV OUT	PIPE SIZE(IN.)
CB 1	57.0	-	52.0	12
CB 2	51.9	-	48.2	12
CB 3	53.80	-	51.0	12
DMH 1	53.8	50.4	50.3	12
CB 4	57.9	-	51.5	12
CB 5	53.9	-	50.8	12
CB 6	58.5	50.9	50.8	12
CB 7	59.4	55.0	54.9	12
CB 8	60.0	55.7	55.6	12
CB 9	60.8	56.6	56.5	12
CB 10	53.9	50.6	50.5	12
CB 11	55.8	52.8	52.7	12
CB 12	57.3	54.3	54.2	12
CB 13	58.0	55.1	55.0	12
DMH 2	54.0	48.7	48.6	12
CB 14	60.4	57.5	57.4	12
CB 15	59.8	-	56.7	12
CB 16	53.5	-	50.5	12
CB 17	54.0	48.6	48.5	12
CB 18	55.5	-	51.0	12

LEGEND

NEW SETBACK	---
DESIGNATED OPEN SPACE	[Pattern]
PROPERTY LINE	---
EXISTING CONTOUR	---XXX---
PROPOSED CONTOUR	---XXX---
PROPOSED WATER LINE	---W---
PROPOSED SEWER LINE	---S---
UNDER GROUND UTILITIES	---UGU---
SEWER MANHOLE	⊙
EXISTING WATER LINE	---EW---
EXISTING SEWER LINE	---ES---
UTILITY POLE	⊙
IRON PIN	⊙
STONE MONUMENT	⊙
DRAINAGE STRUCTURE	⊙
WATER VALVE	⊕
WATER SHUT OFF	⊕
HYDRANT	⊕



2.1 GRADING AND UTILITY PLAN THE HOMESTEAD 459 US ROUTE 1 KITTEERY, MAINE



FOR: LANDMARK HILL, LLC
79 CONGRESS ST
PORTSMOUTH, NH 03801

ATTOR ENGINEERING, INC.
CIVIL • STRUCTURAL • MARINE
1284 STATE ROAD - ELLIOT, MAINE 03903
PHONE: (207)439-6023 FAX: (207)439-2128

NO.	DESCRIPTION	DATE
L	FINAL PLAN SUBMISSION	01/24/2019
K	MDEP SUBMISSION	01/23/2019
J	PRELIMINARY PLAN SUBMISSION	11/08/2018
I	PRELIMINARY PLAN SUBMISSION	9/20/2018
H	PRELIMINARY PLAN REVISION	5/08/2018
G	SW REVISION	4/20/2018
F	PRELIMINARY PLAN REVISION	4/19/2018
E	SW PLAN REVISION	4/16/2018
D	PRELIMINARY PLAN REVISION	03/27/2018
C	SW POND ADJUSTMENT	02/08/2018
-	SEE EARLIER PLANS FOR PREVIOUS REVISIONS	-
NO.	DESCRIPTION	DATE
	REVISIONS	

SCALE: 1" = 40'

DATE: 02/08/2018

JOB NO: C052-18

APPROVED BY: [Signature]

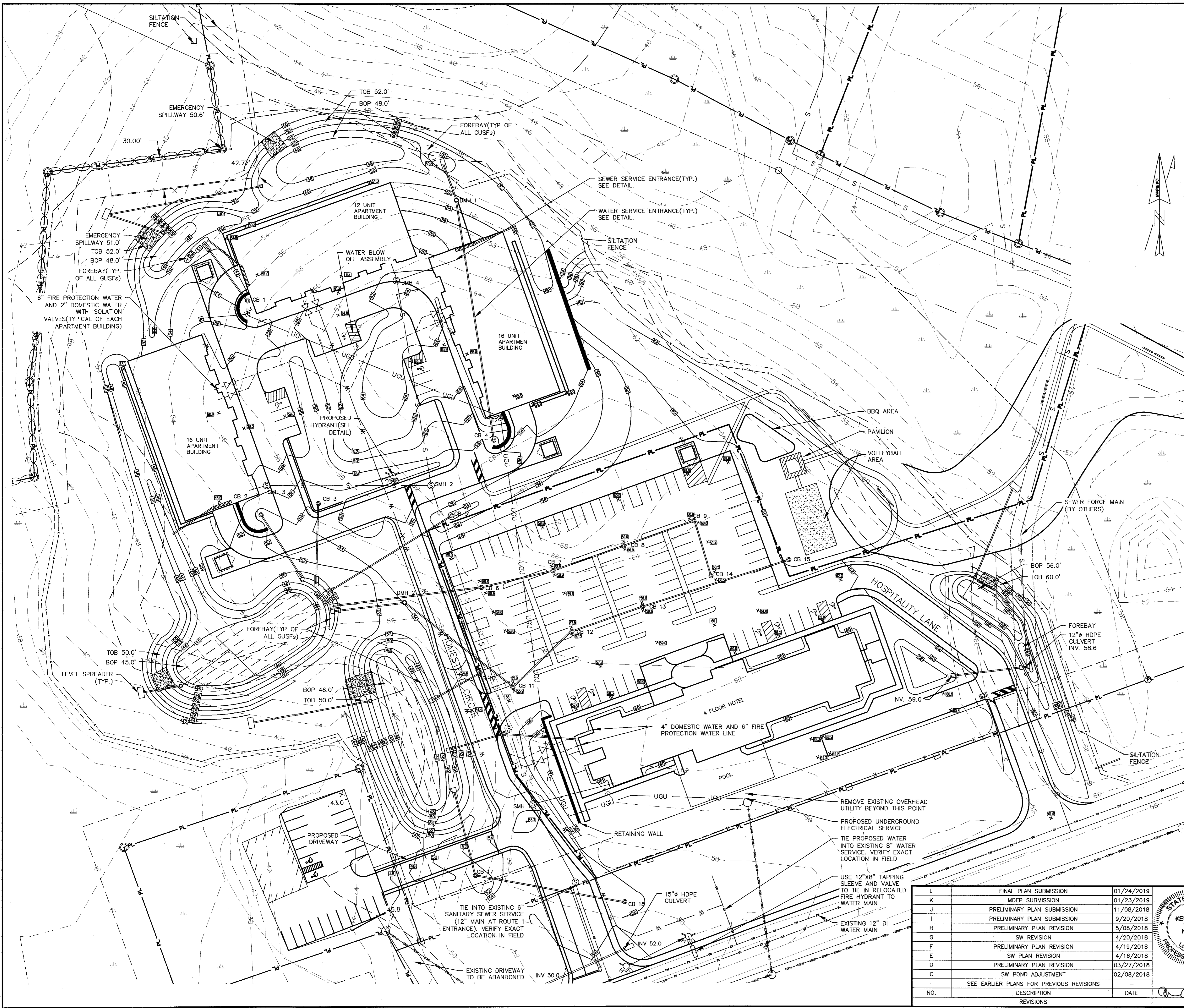
FILE: THE HOMESTEAD BASE

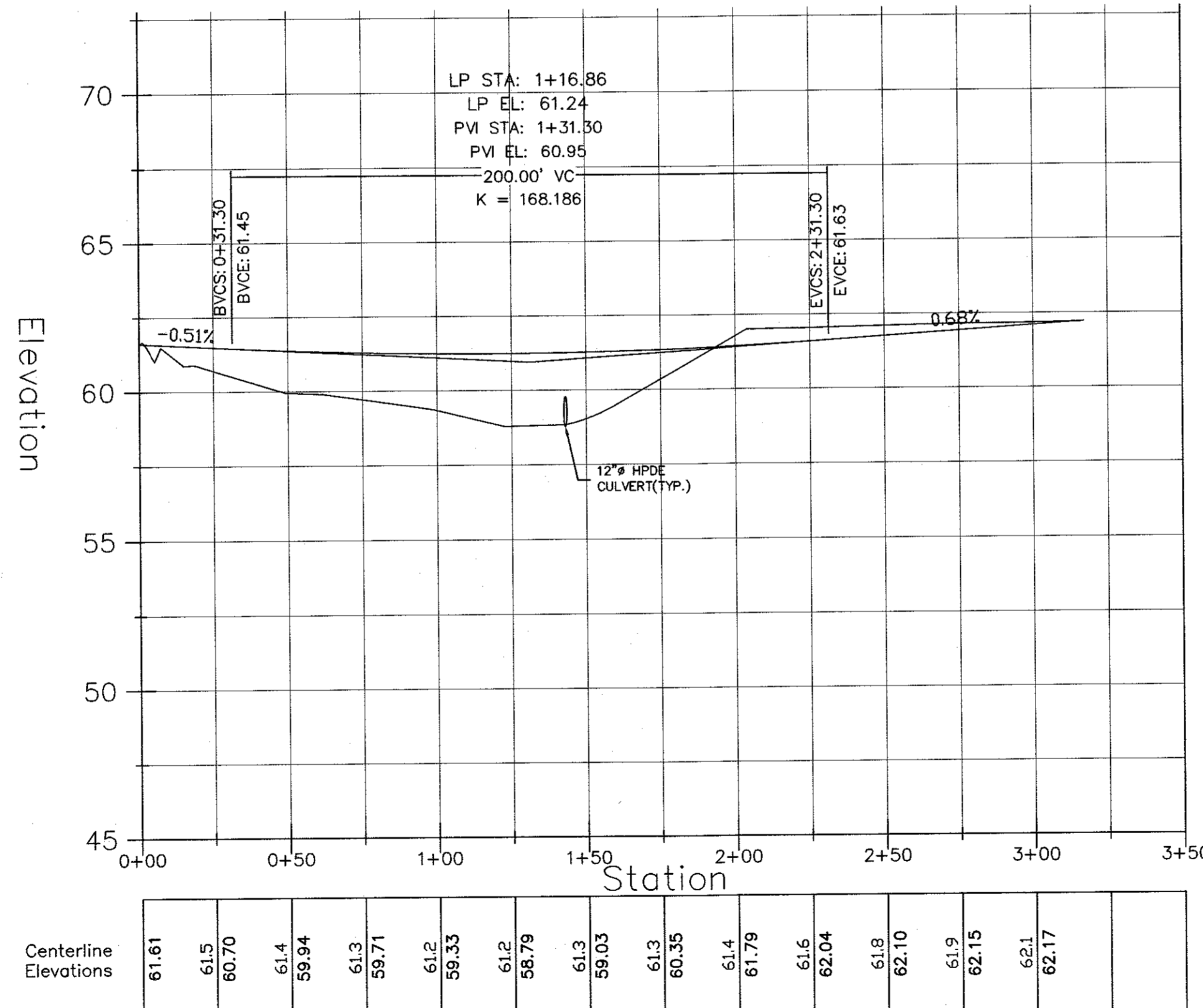
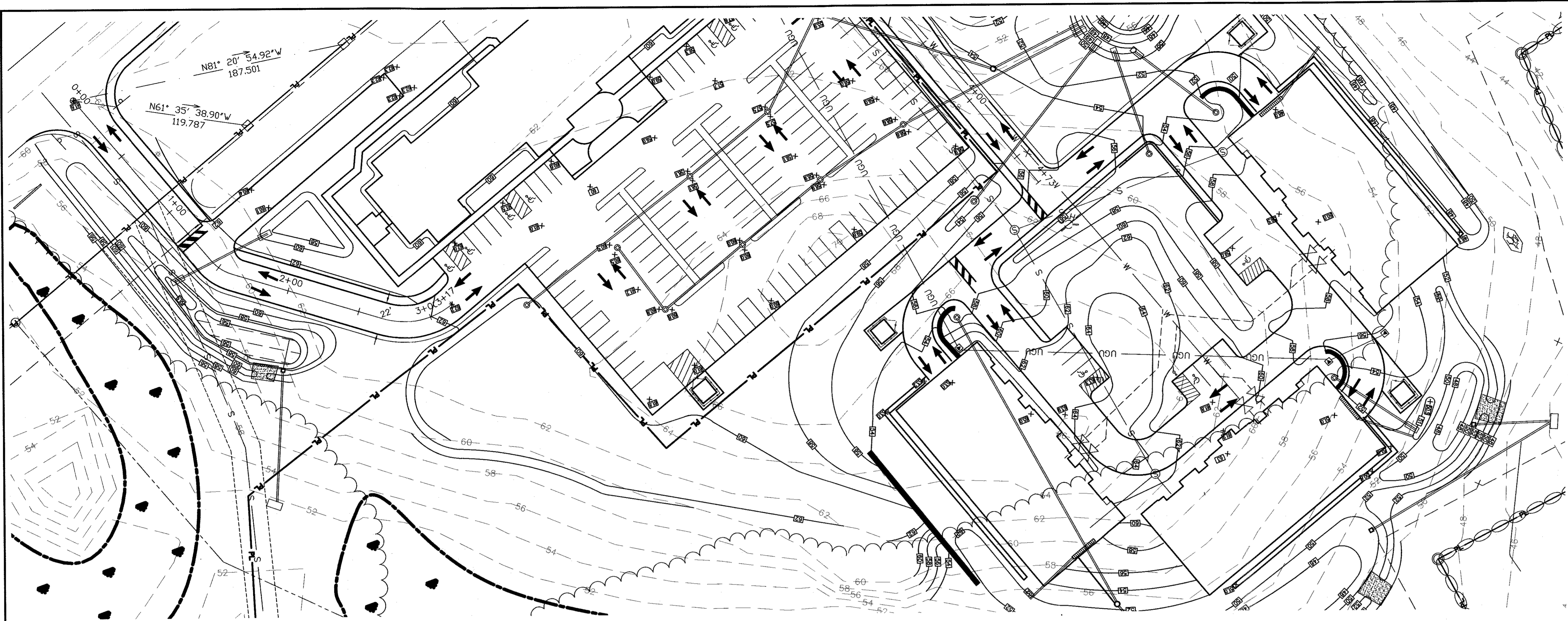
DRAWN BY: BRN

REVISION : DATE L: 01/24/2019

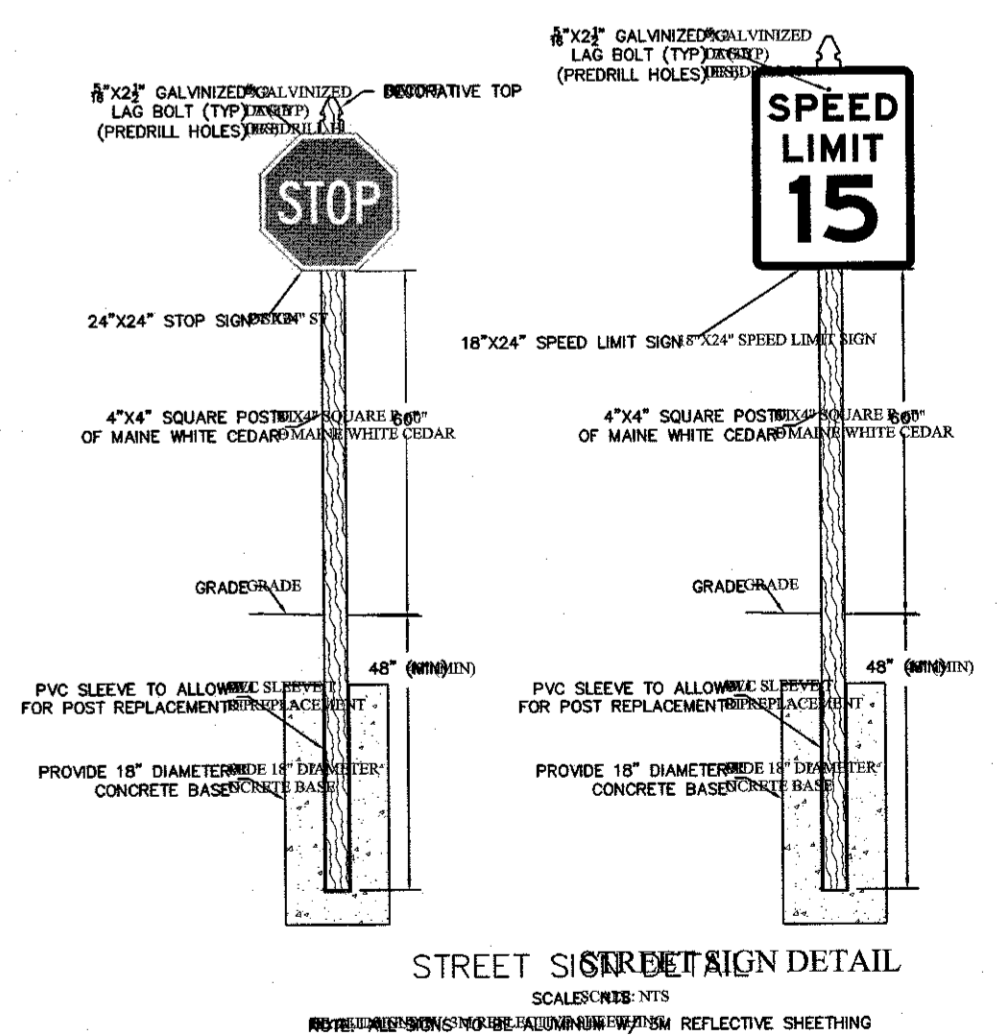
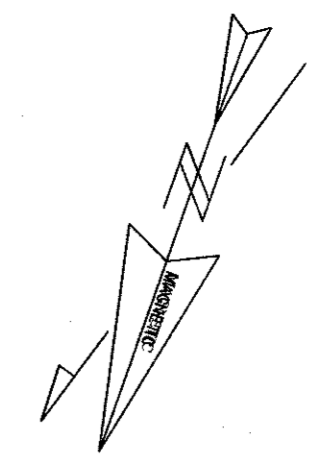
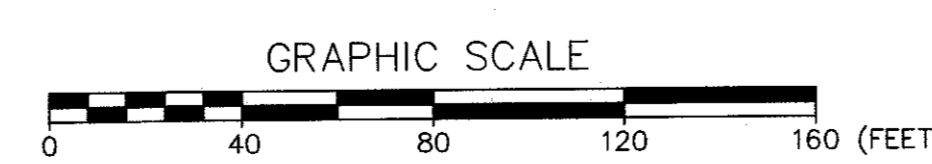
SHEET 2.1

TAX MAP 60, LOT 24



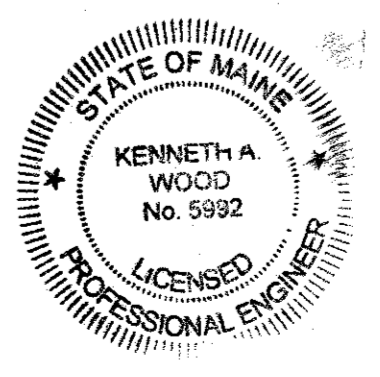


ROAD DESIGN NOTES
 1) TOTAL ROAD LENGTH OF HOMESTEAD CIRCLE IS: 473'
 2) TOTAL ROAD LENGTH OF HOSPITALITY LANE IS: 317'



3.1
 ROAD PLAN AND PROFILE
 THE HOMESTEAD
 459 US ROUTE 1 KITTEERY, MAINE

NO.	DESCRIPTION	DATE
K	FINAL PLAN SUBMISSION	01/24/2019
J	MDEP SUBMISSION	01/23/2019
I	PRELIMINARY PLAN SUBMISSION	9/20/2018
H	PRELIMINARY PLAN REVISION	5/08/2018
G	SW REVISION	4/20/2018
F	PRELIMINARY PLAN REVISION	4/19/2018
E	SW PLAN REVISION	4/16/2018
D	PRELIMINARY PLAN REVISION	03/27/2018
C	SW POND ADJUSTMENT	02/08/2018
B	SW POND ADJUSTMENT	02/06/2018
A	PRELIMINARY PLAN REVISION	1/18/2018
NO.	DESCRIPTION	DATE
	REVISIONS	



FOR: LANDMARK HILL, LLC
 79 CONGRESS ST
 PORTSMOUTH, NH 03801

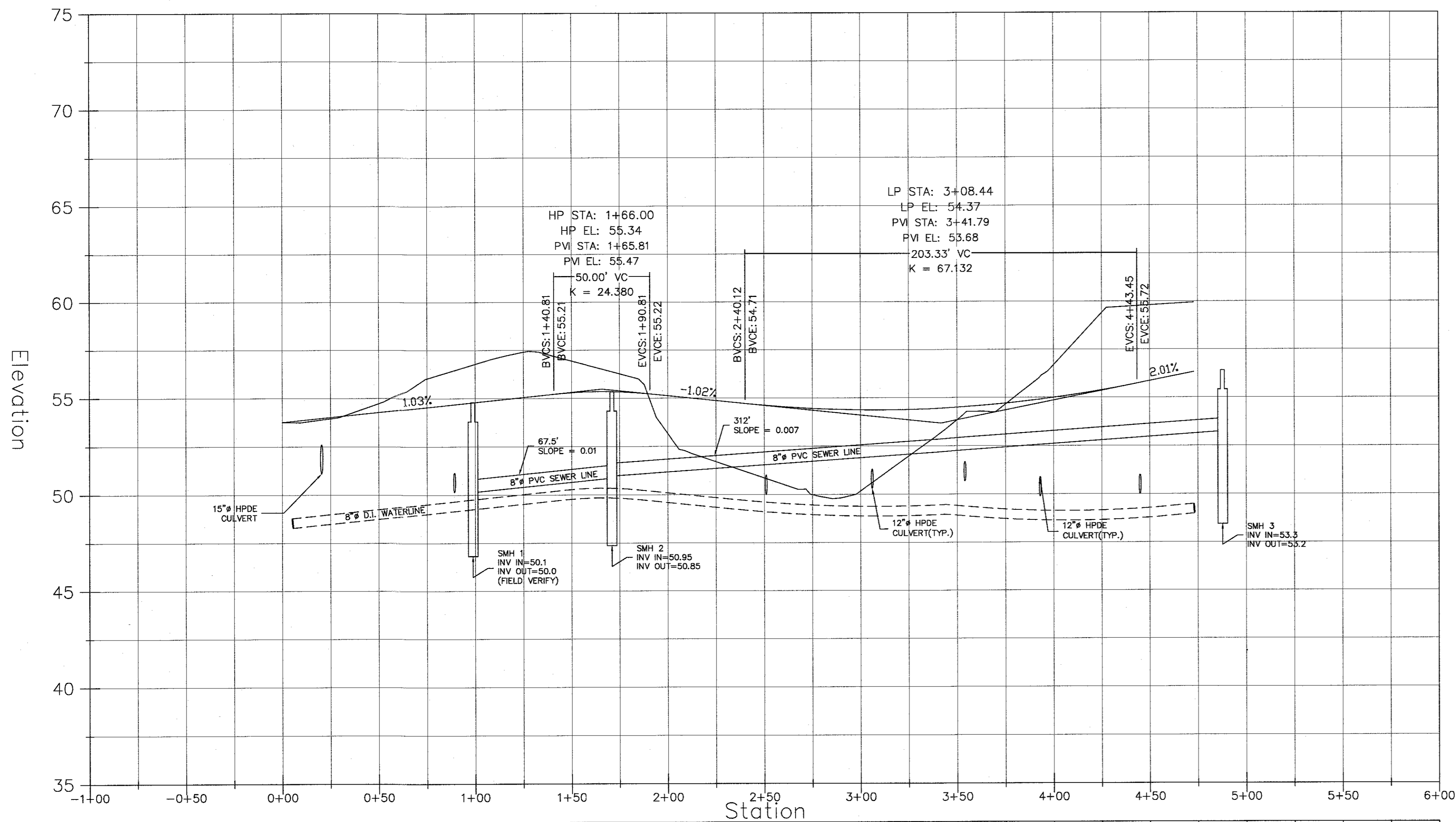
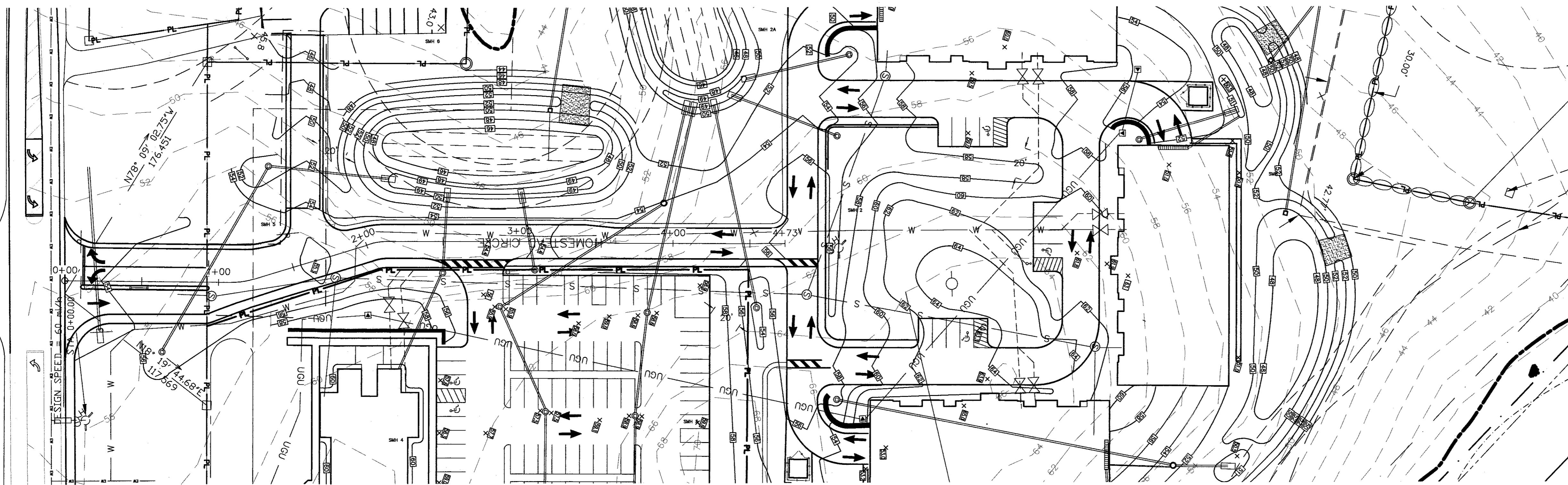
ATTAR ENGINEERING, INC.
 CIVIL • STRUCTURAL • MARINE
 1284 STATE ROAD - ELIOT, MAINE 03903
 PHONE: (207)439-6023 FAX: (207)439-2128

SCALE: 1" = 40'
 DATE: 02/08/2018
 JOB NO: C052-18

APPROVED BY: *[Signature]*
 REVISION: DATE
 K: 01/24/2019

DRAWN BY: BRN
 SHEET 3.1

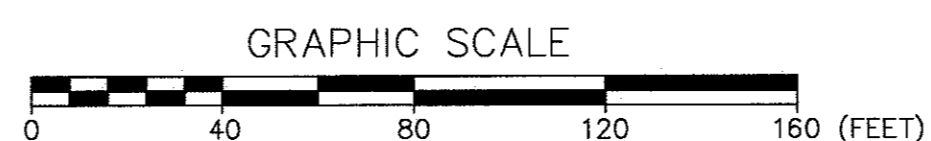
FILE: THE HOMESTEAD BASE
 TAX MAP 60, LOT 24



Station	Centerline Elevations
-1+00	
-0+50	
0+00	53.8
0+50	53.76
1+00	54.0
1+50	53.95
2+00	54.3
2+50	54.73
3+00	54.5
3+50	56.03
4+00	54.8
4+50	56.77
5+00	55.0
5+50	55.3
6+00	56.84
	55.3
	56.26
	55.1
	55.16
	54.9
	51.70
	54.6
	50.86
	54.4
	49.88
	54.4
	50.17
	54.4
	51.88
	54.5
	53.84
	54.7
	54.65
	55.0
	56.68
	55.4
	59.40
	55.9
	59.80

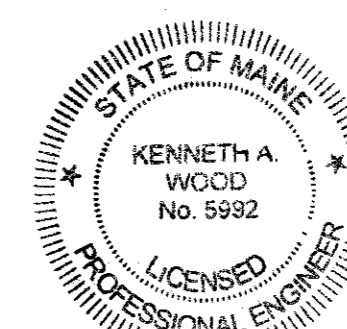
ROAD PROFILE - HOMESTEAD CIRCLE

H. SCALE: 1" = 40'
V. SCALE: 1" = 4'



- ROAD DESIGN NOTES
- TOTAL ROAD LENGTH OF HOMESTEAD CIRCLE IS: 473'
 - TOTAL ROAD LENGTH OF HOSPITALITY LANE IS: 317'

NO.	DESCRIPTION	DATE
J	FINAL PLAN SUBMISSION	01/24/2019
I	MDEP SUBMISSION	01/23/2019
H	PRELIMINARY PLAN SUBMISSION	9/20/2018
G	PRELIMINARY PLAN REVISION	5/08/2018
F	PRELIMINARY PLAN REVISION	4/19/2018
E	SW PLAN REVISION	4/16/2018
D	PRELIMINARY PLAN REVISION	03/27/2018
C	SW POND ADJUSTMENT	02/08/2018
B	SW POND ADJUSTMENT	02/06/2018
A	PRELIMINARY PLAN REVISION	1/18/2018
NO.	DESCRIPTION	DATE
	REVISIONS	



3.2	ROAD PLAN AND PROFILE THE HOMESTEAD 459 US ROUTE 1 KITTERY, MAINE	
	FOR: LANDMARK HILL, LLC 79 CONGRESS ST PORTSMOUTH, NH 03801	
 ATTAR ENGINEERING, INC. CIVIL • STRUCTURAL • MARINE 1284 STATE ROAD - ELIOT, MAINE 03903 PHONE: (207)439-6023 FAX: (207)439-2128		APPROVED BY:
SCALE: 1" = 40'	DATE: 02/08/2018	DRAWN BY: BRN
JOB NO: C052-18	FILE: THE HOMESTEAD BASE	REVISION : DATE J: 01/24/2019
		SHEET 3.2



SYMBOL	SOIL SERIES
Bm	BIDDEFORD MUCKY PEAT*
BS	BIDDEFORD-SCANTIC COMPLEX, FILLED AND DITCHED*
DANI	DEVELOPED AREA NOT INVESTIGATED
Dx	DIXFIELD FINE SANDY LOAM
Em	ELMWOOD VERY FINE SANDY LOAM
LT	LYMAN-TUNBRIDGE COMPLEX
Sc	SCANTIC SILT LOAM*
Sw	SWANTON VERY FINE SANDY LOAM
Ws	WESTBURY FINE SANDY LOAM

SOIL BOUNDARY	---
SOIL/WETLAND BOUNDARY	- - - - -
SOIL BORING	●
TEST PIT	⊕

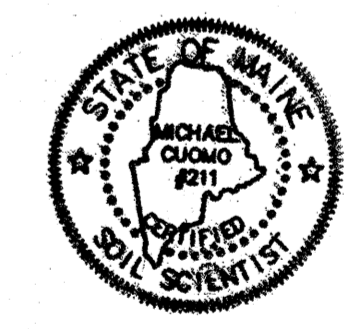
SLOPE LEGEND

(NONE)	0 - 3%
B	3 - 8%
C	8 - 15%
D	15 - 25%

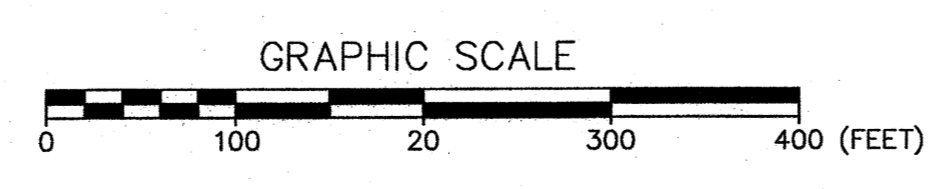
GENERAL NOTES

- PROPERTY LINES, WETLANDS, EXISTING CONDITIONS AND TOPOGRAPHY ARE FROM REFERENCE 1. WETLANDS WERE IDENTIFIED IN THE FIELD BY KENNETH A. WOOD, CWS IN DECEMBER, 1999 AND MICHAEL R. CUOMO, CWS, CSS IN MARCH, 2000. WETLANDS WERE LOCATED WITH SURVEY INSTRUMENT BY ATTAR ENGINEERING, INC. FROM DECEMBER, 1999 THROUGH APRIL, 2000. WETLAND DELINEATION WAS VERIFIED IN 2017 BY KENNETH A. WOOD, CWS. NO CHANGES WERE NOTED FROM THE PREVIOUS DELINEATION.
- SOIL TYPES SHOWN ON THIS PLAN WERE IDENTIFIED BY MICHAEL CUOMO (MAINE CERTIFIED SOIL SCIENTIST #211) IN APRIL, 2000.

Michael Cuomo 10 Jan 2018
 MICHAEL CUOMO, MAINE CERTIFIED SOIL SCIENTIST #211



THIS MAP COMPLIES WITH THE STANDARDS FOR CLASS "B" HIGH INTENSITY SOIL SURVEY. SEE REPORT DATED 14 APRIL 2000 FOR DESCRIPTION METHODS OF SOIL.



4.1 HIGH INTENSITY SOIL SURVEY
 THE HOMESTEAD
 459 US ROUTE 1 KITTERY, MAINE

NO.	DESCRIPTION	DATE

FOR: LANDMARK HILL, LLC 79 CONGRESS ST PORTSMOUTH, NH 03801		
ATTAR ENGINEERING, INC. CIVIL • STRUCTURAL • MARINE 1284 STATE ROAD - ELIOT, MAINE 03903 PHONE: (207)439-6023 FAX: (207)439-2128		
SCALE: 1" = 100'	APPROVED BY: <i>[Signature]</i> 12/20/2017	DRAWN BY: BRN REVISION : DATE --:--
JOB NO: C052-17	CAD FILE: MBRIGHAM LBASE	SHEET 4.1

EROSION & SEDIMENTATION CONTROL NOTES

- SILTATION FENCE OR HAY BALE BARRIERS WILL BE INSTALLED DOWNSLOPE OF ALL STRIPPING OR CONSTRUCTION OPERATIONS. A DOUBLE SILT FENCE BARRIER SHALL BE INSTALLED DOWNSLOPE OF ANY SOIL MATERIAL STOCKPILES. SILT FENCES SHALL BE INSPECTED AFTER EACH RAIN EVENT AND DAILY DURING PROLONGED RAIN. SILT AND SOIL PARTICLES ACCUMULATING BEHIND THE FENCE SHALL BE REMOVED AFTER EACH SIGNIFICANT RAIN EVENT AND IN NO INSTANCE SHOULD ACCUMULATION EXCEED 1/2 THE HEIGHT OF THE FENCE. TORN OR DAMAGED AREAS SHALL BE REPAIRED.
- TEMPORARY AND PERMANENT VEGETATION AND MULCHING IS AN INTEGRAL COMPONENT OF THE EROSION AND SEDIMENTATION CONTROL PLAN. ALL AREAS SHALL BE INSPECTED AND MAINTAINED UNTIL THE DESIRED VEGETATIVE COVER IS ESTABLISHED. THESE CONTROL MEASURES ARE ESSENTIAL TO EROSION PREVENTION AND ALSO REDUCE COSTLY REWORK OF GRADED AND SHAPED AREAS.
- SEEDING, FERTILIZER AND LIME RATES AND TIME OF APPLICATION WILL BE DEPENDENT ON SOIL REQUIREMENTS. TEMPORARY VEGETATION SHALL BE MAINTAINED IN THESE AREAS UNTIL PERMANENT SEEDING IS APPLIED. ADDITIONALLY, EROSION AND SEDIMENTATION MEASURES SHALL BE MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED.
- ALL LAWN AREA, OUTER POND SIDE SLOPES AND SWALES SHALL BE PERMANENTLY SEEDED WITH THE FOLLOWING MIXTURE: 20 LB/ACRE CREEPING RED FESCUE, 2 LB/ACRE REDTOP OR 20 LB/ACRE TALL FESCUE FOR A TOTAL OF 42 LB/ACRE. FERTILIZER AND LIME RATES SHALL BE DEPENDENT ON SOIL TESTING. IN THE ABSENCE OF SOIL TESTS, FERTILIZE WITH 10-20-20 (N-P205-K201) AT 800 LB/ACRE AND LIME AT 3 TONS/ACRE. MULCH WITH HAY AT 70-90 LB/1000 S.F. 4" OF LOAM SHALL BE APPLIED PRIOR TO SEEDING.
- POND BOTTOMS AND INNER POND SIDESLOPES SHALL BE PERMANENTLY SEEDED WITH THE FOLLOWING MIXTURE: 20 LB/ACRE CREEPING RED FESCUE, 8 LB/ACRE BIRDSFOOT TREFOL AND 20 LB/ACRE TALL FESCUE FOR A TOTAL OF 48 LB/ACRE. SEE THE ABOVE NOTE FOR FERTILIZER, LIME AND MULCHING RATES.
- TEMPORARY VEGETATION OF ALL DISTURBED AREAS, MATERIAL STOCKPILES AND OTHER SUCH AREAS SHALL BE ESTABLISHED BY SEEDING WITH EITHER WINTER RYE AT A RATE OF 112 LB/ACRE OR ANNUAL RYEGRASS AT A RATE OF 40 LB/ACRE. WINTER RYE SHALL BE USED FOR FALL SEEDING AND ANNUAL RYEGRASS FOR SHORT DURATION SEEDING. SEEDING SHALL BE ACCOMPLISHED BEFORE OCTOBER 1.
- TEMPORARY SEEDING OF DISTURBED AREAS SHALL BE ACCOMPLISHED BEFORE OCTOBER 1. PERMANENT SEEDING SHALL BE ACCOMPLISHED BEFORE SEPTEMBER 15.
- ALL SEEDED AREAS SHALL BE MULCHED WITH HAY AT A RATE OF 2 BALES (70-90 LB) PER 1000 S.F. OF SEEDED AREA.
- SLOPES 2:1 OR STEEPER SHALL BE TREATED WITH POLYJUTE OPEN WEAVE GEOTEXTILE (OR EQUIVALENT) AFTER SEEDING. JUTE MATS SHALL BE ANCHORED PER MANUFACTURER'S SPECIFICATIONS.
- EXCESSIVE DUST CAUSED BY CONSTRUCTION OPERATIONS SHALL BE CONTROLLED BY APPLICATION OF WATER OR CALCIUM CHLORIDE.
- THE CONTRACTOR MAY OPT TO USE EROSION CONTROL MIX BERM AS A SEDIMENT BARRIER IN LIEU OF SILTATION FENCE OR HAY BALE BARRIERS WITH APPROVAL FROM THE INSPECTING ENGINEER.
- MINIMIZE DISTURBED AREAS AND PROTECT NATURAL DOWNGRADIENT BUFFER AREAS TO THE EXTENT PRACTICABLE. CONTROL STORMWATER VOLUME AND VELOCITY WITHIN THE SITE TO MINIMIZE SOIL EROSION. MINIMIZE THE DISTURBANCE OF STEEP SLOPES. CONTROL STORMWATER DISCHARGES, INCLUDING BOTH PEAK FLOW RATES AND VOLUME, TO MINIMIZE EROSION AT OUTLETS. THE DISCHARGE MAY NOT RESULT IN EROSION OF ANY OPEN DRAINAGE CHANNELS, SWALES, STREAM CHANNELS OR STREAM BANKS, UPLAND, OR COASTAL OR FRESHWATER WETLANDS OFF THE PROJECT SITE.

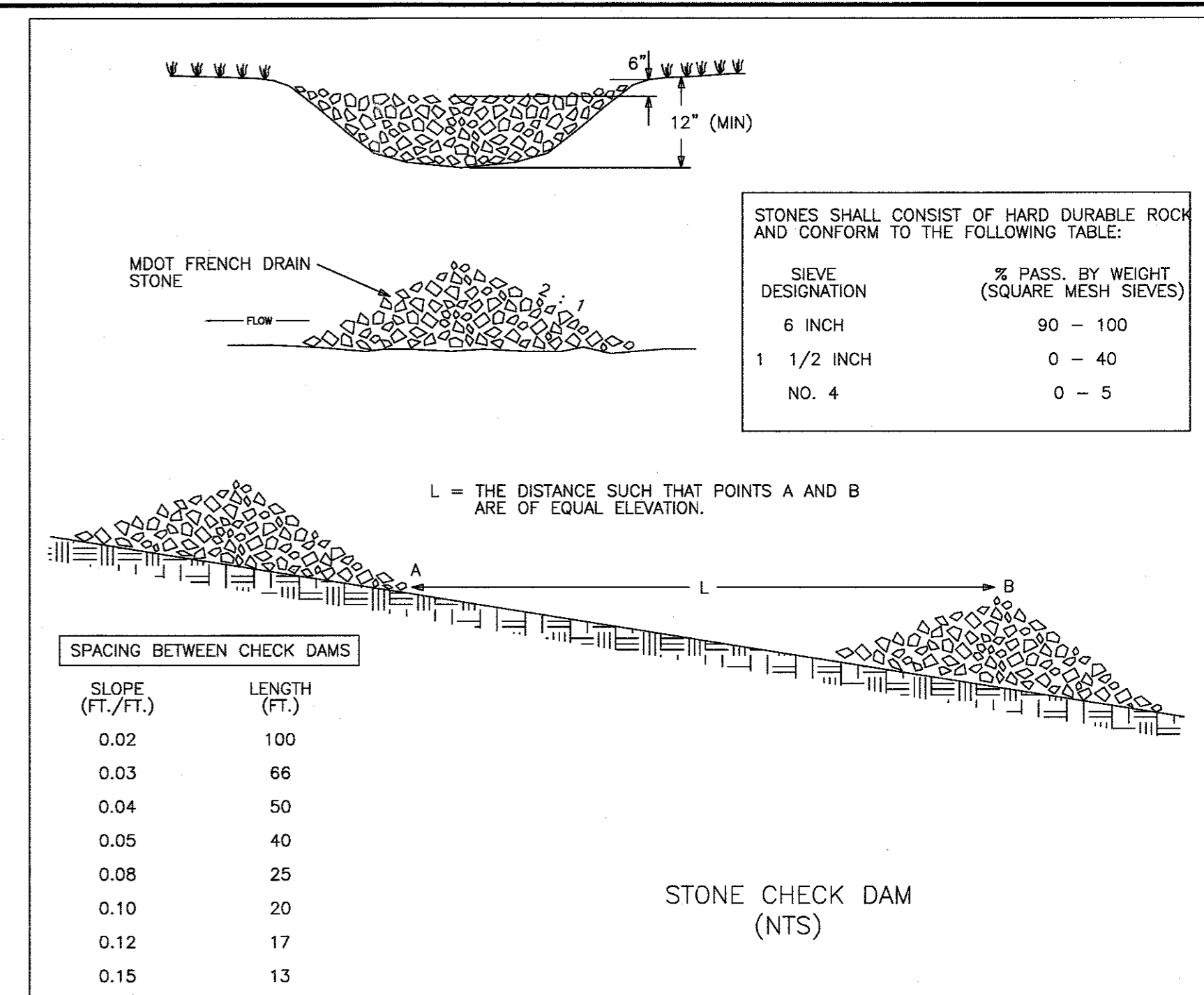
EROSION & SED. CONTROL NOTES (CONT.)

- WHENEVER PRACTICABLE, NO DISTURBANCE ACTIVITIES SHOULD TAKE PLACE WITHIN 50 FEET OF ANY PROTECTED NATURAL RESOURCE. IF DISTURBANCE ACTIVITIES TAKE PLACE BETWEEN 30 FEET AND 50 FEET OF ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TOWARD THE PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED. IF DISTURBANCE ACTIVITIES TAKE PLACE LESS THAN 30 FEET FROM ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TOWARD THE PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED AND DISTURBED AREAS MUST BE TEMPORARILY OR PERMANENTLY STABILIZED WITHIN 7 DAYS.
- PRIOR TO CONSTRUCTION, PROPERLY INSTALL SEDIMENT BARRIERS AT THE DOWNGRADIENT EDGE OF ANY AREA TO BE DISTURBED AND ADJACENT TO ANY DRAINAGE CHANNELS WITHIN THE DISTURBED AREA. SEDIMENT BARRIERS SHOULD BE INSTALLED DOWNGRADIENT OF SOIL OR SEDIMENT STOCKPILES AND STORMWATER PREVENTED FROM RUNNING ONTO THE STOCKPILE. MAINTAIN THE SEDIMENT BARRIERS BY REMOVING ACCUMULATED SEDIMENT, OR REMOVING AND REPLACING THE BARRIER, UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED. WHERE A DISCHARGE TO A STORM DRAIN INLET OCCURS, IF THE STORM DRAIN CARRIES WATER DIRECTLY TO A SURFACE WATER AND YOU HAVE AUTHORITY TO ACCESS THE STORM DRAIN INLET, YOU MUST INSTALL AND MAINTAIN PROTECTION MEASURES THAT REMOVE SEDIMENT FROM THE DISCHARGE.
- PRIOR TO CONSTRUCTION, PROPERLY INSTALL A STABILIZED CONSTRUCTION ENTRANCE (SCE) AT ALL POINTS OF EGRESS FROM THE SITE. THE SCE IS A STABILIZED PAD OF AGGREGATE, UNDERLAIN BY A GEOTEXTILE FILTER FABRIC, USED TO PREVENT TRAFFIC FROM TRACKING MATERIAL AWAY FROM THE SITE ONTO PUBLIC ROW'S. MAINTAIN THE SCE UNTIL ALL DISTURBED AREAS ARE STABILIZED.
- WITHIN 7 DAYS OF THE CESSATION OF CONSTRUCTION ACTIVITIES IN AN AREA THAT WILL NOT BE WORKED FOR MORE THAN 7 DAYS, STABILIZE ANY EXPOSED SOIL WITH MULCH, OR OTHER NON-ERODIBLE COVER. 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.
- REMOVE ANY TEMPORARY CONTROL MEASURES, SUCH AS SILTATION FENCE, WITHIN 30 DAYS AFTER PERMANENT STABILIZATION IS ATTAINED. REMOVE ANY ACCUMULATED SEDIMENTS AND STABILIZE.
- 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 WITH 90% COVER BY HEALTHY VEGETATION. IF NECESSARY, AREAS MUST BE REWORKED AND RE-STABILIZED 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.
- 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.
- 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.
- 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.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATE HOUSEKEEPING PRACTICES DURING THE CONSTRUCTION OF THE PROJECT. THESE STANDARDS CAN BE FOUND IN THE FOLLOWING DOCUMENT: MDEP CHAPTER 500 (STORMWATER MANAGEMENT), APPENDIX C. HOUSEKEEPING. HOUSEKEEPING PRACTICES INCLUDE, BUT ARE NOT LIMITED TO, SPILL PREVENTION, GROUNDWATER PROTECTION, FUGITIVE SEDIMENT AND DUST, DEBRIS AND OTHER MATERIALS, EXCAVATION DEWATERING, AUTHORIZED NON-STORMWATER DISCHARGES AND UNAUTHORIZED NON-STORMWATER DISCHARGES.

WINTER CONSTRUCTION NOTES

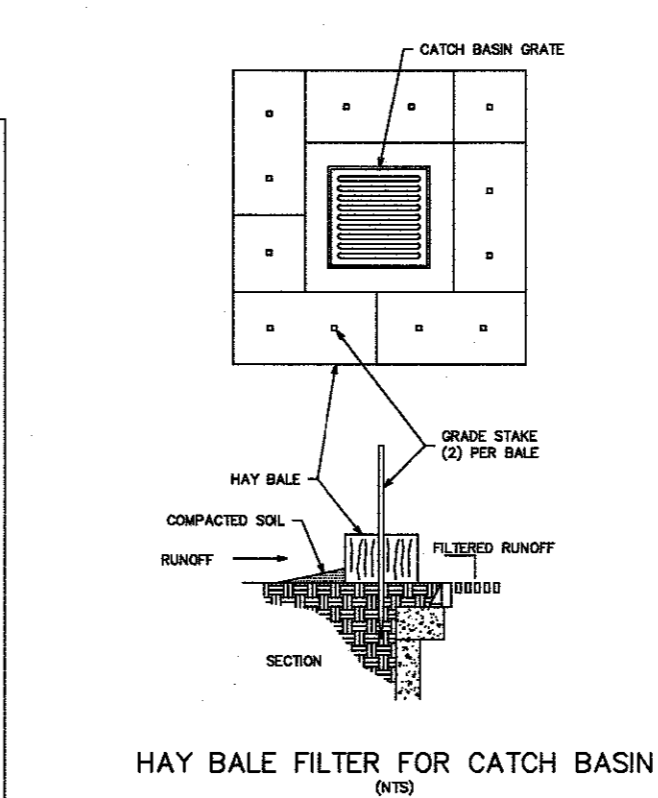
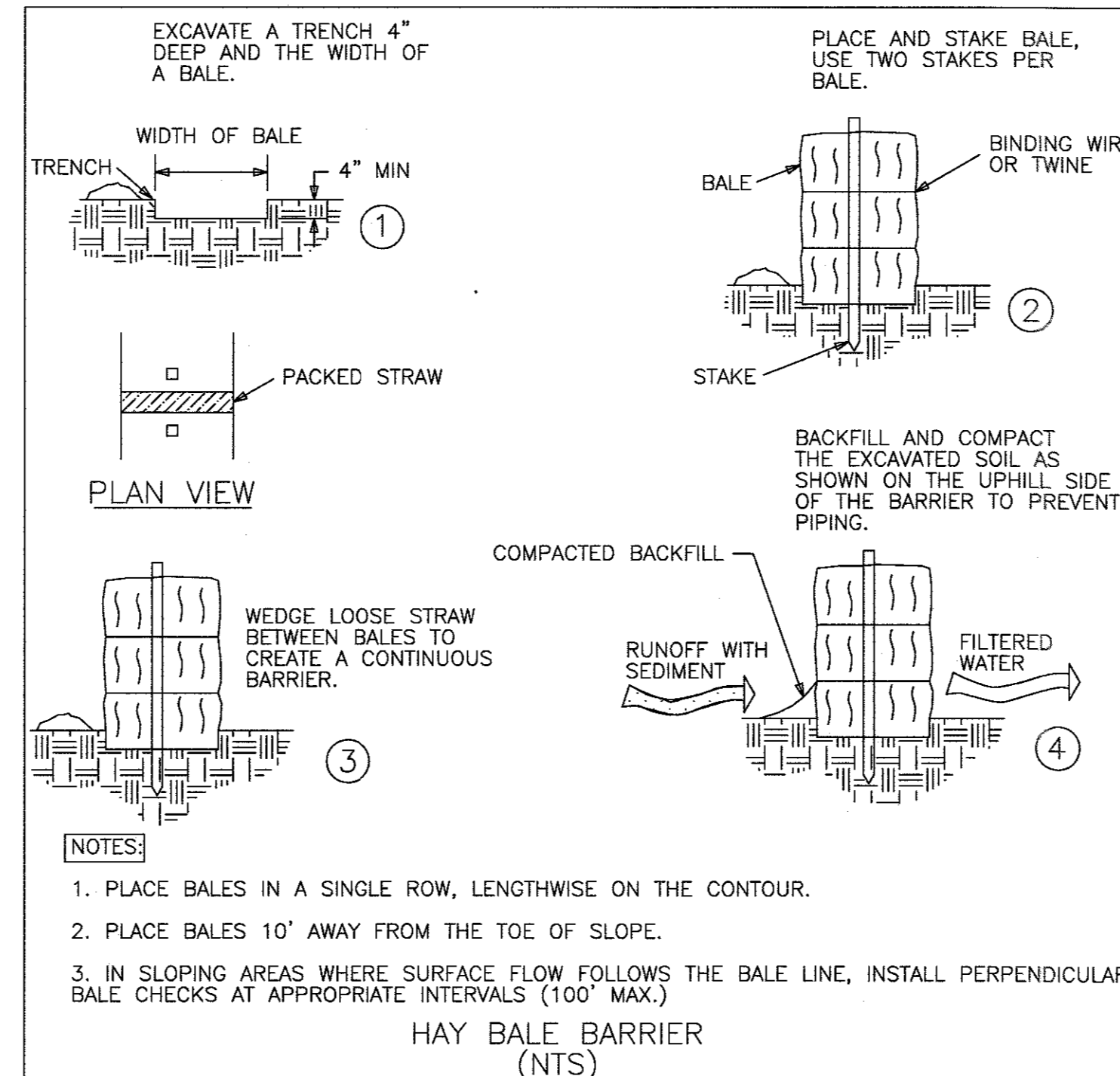
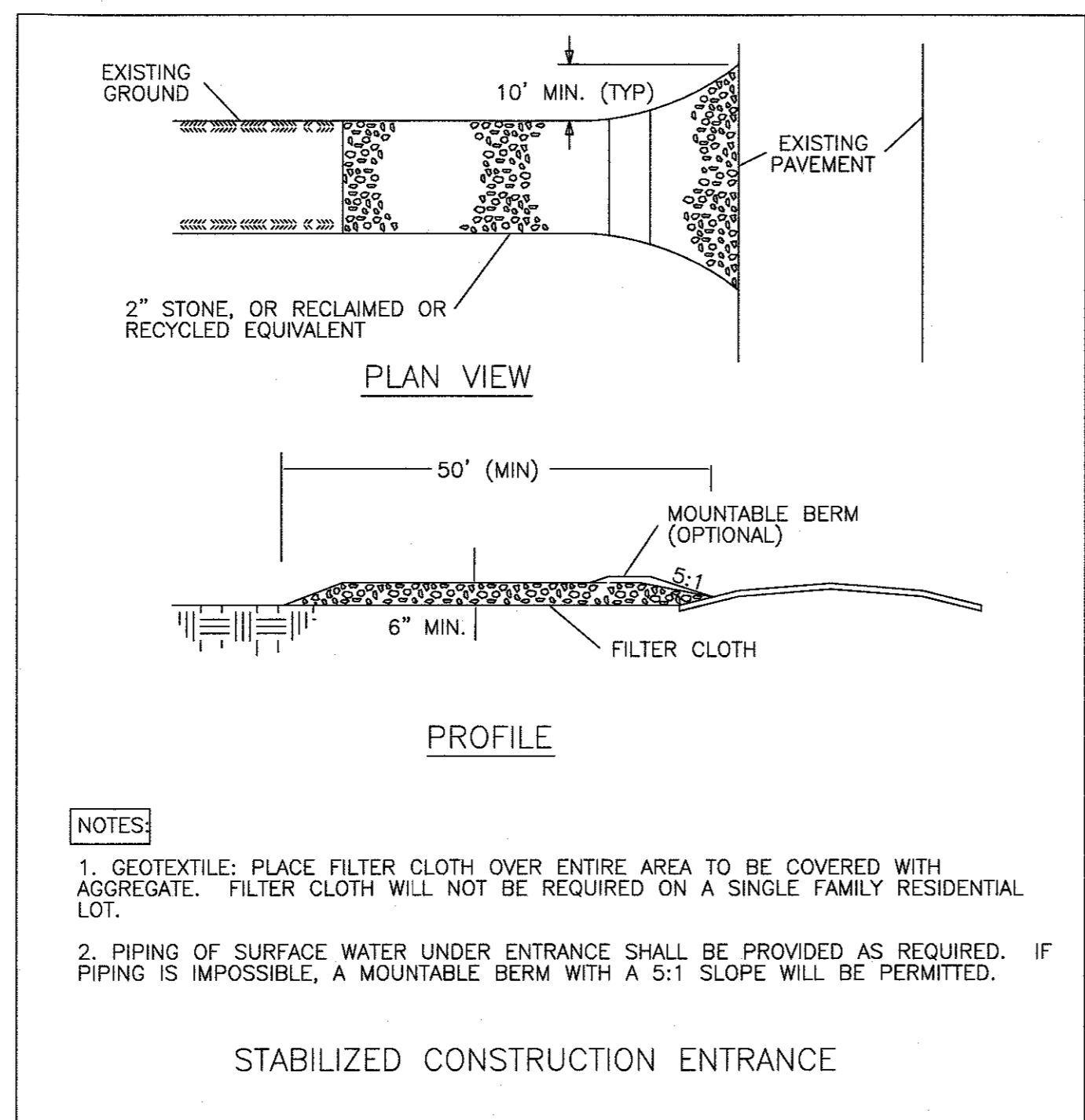
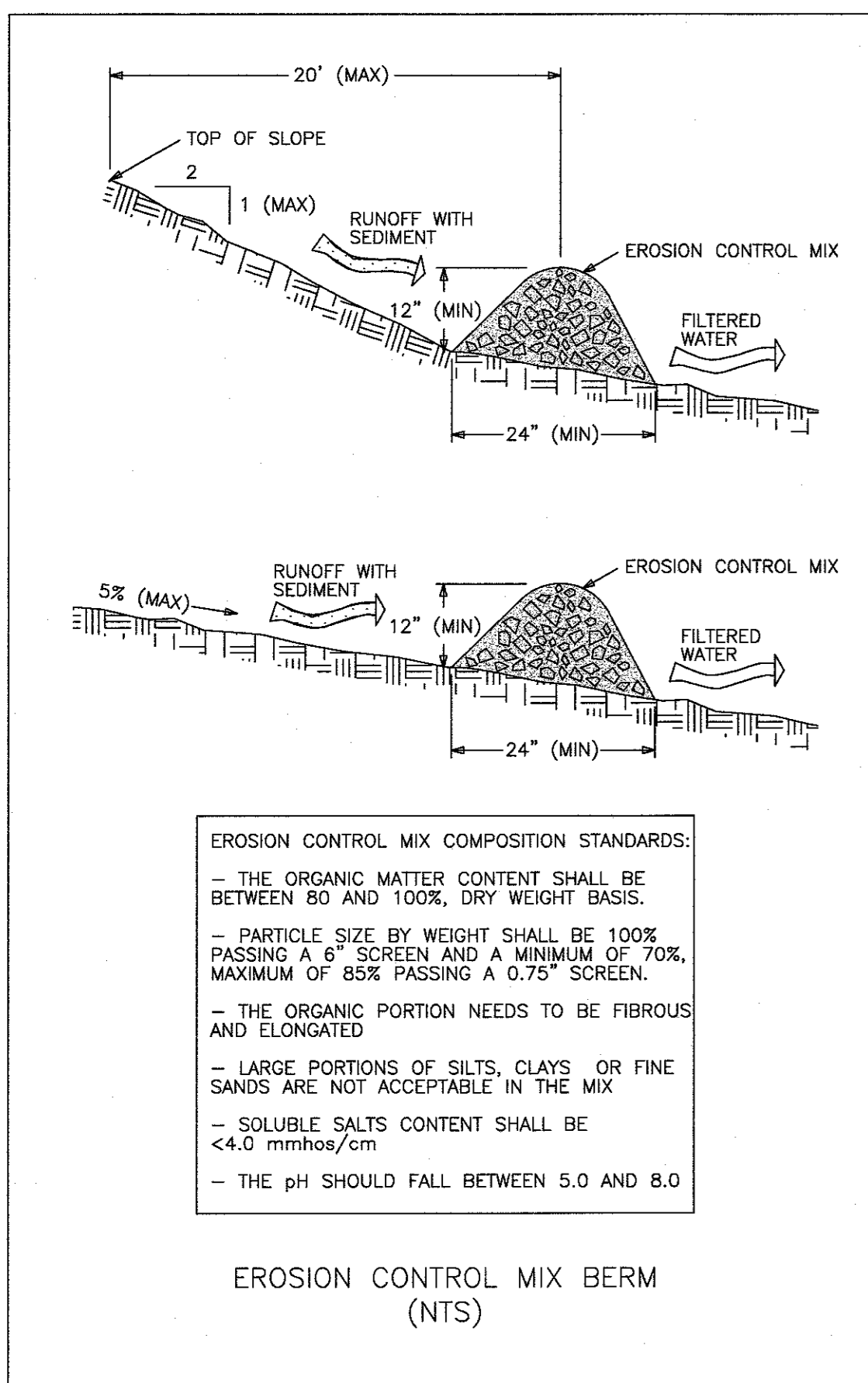
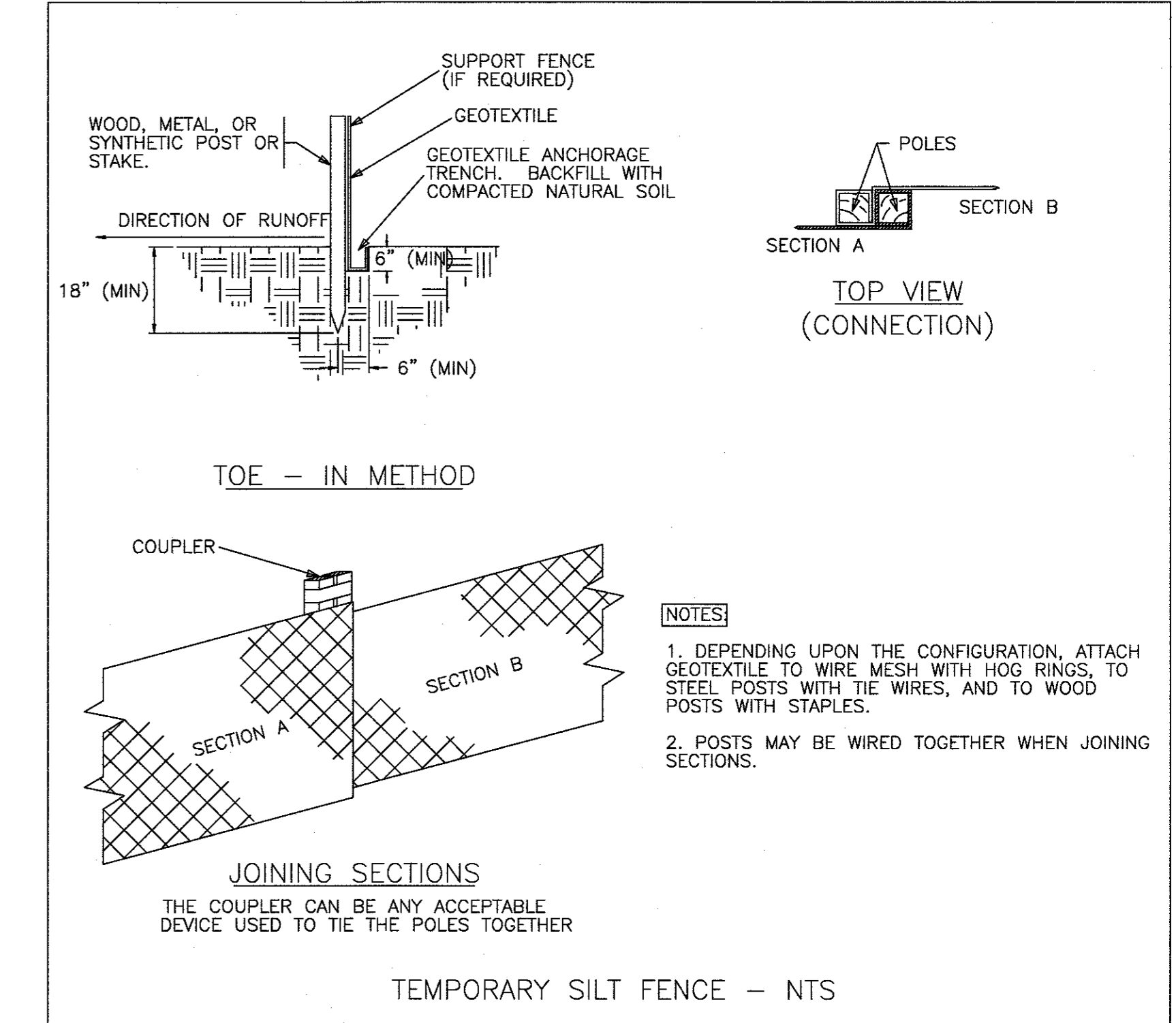
NOVEMBER 1 - APRIL 15

- AN AREA SHALL BE CONSIDERED STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED WITH HAY AT A RATE OF 100 LB/1000 S.F. OR DORMANT SEEDED, MULCHED AND ADEQUATELY ANCHORED BY AN APPROVED ANCHORING TECHNIQUE. IN ALL CASES, MULCH SHALL BE APPLIED SO THAT THE SOIL SURFACE IS NOT VISIBLE THROUGH THE MULCH.
- FROM OCTOBER 15 TO APRIL 1, LOAM AND SEED WILL NOT BE REQUIRED. DURING PERIODS OF TEMPERATURES ABOVE FREEZING, DISTURBED AREAS SHALL BE FINE GRADED AND PROTECTED WITH MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL PERMANENT SEEDING CAN BE APPLIED. AFTER NOVEMBER 1, DISTURBED AREAS MAY BE LOAMED, FINE GRADED AND DORMANT SEEDED AT A RATE 200-300% HIGHER THAN THE SPECIFIED PERMANENT SEEDING RATE. IF CONSTRUCTION CONTINUES DURING FREEZING WEATHER, DISTURBED AREAS SHALL BE GRADED BEFORE FREEZING AND TEMPORARILY STABILIZED WITH MULCH. DISTURBED AREAS SHALL NOT BE LEFT OVER THE WINTER OR FOR ANY OTHER EXTENDED PERIOD OF TIME UNLESS STABILIZED WITH MULCH.
- FROM NOVEMBER 1 TO APRIL 15 ALL MULCH SHALL BE ANCHORED BY EITHER PEG LINE, MULCH NETTING, ASPHALT EMULSION CHEMICAL, TRACK OR WOOD CELLULOSE FIBER. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH SLOPES GREATER THAN 3%, SLOPES EXPOSED TO DIRECT WINDS AND FOR SLOPES GREATER THAN 8%. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL AREAS WITH SLOPES GREATER THAN 15%. AFTER OCTOBER 1, THE SAME APPLIES TO ALL SLOPES GREATER THAN 8%.
- SNOW SHALL BE REMOVED FROM AREAS OF SEEDING AND MULCHING PRIOR TO PLACEMENT.
- FOR WINTER STABILIZATION, HAY MULCH SHALL BE APPLIED AT TWICE THE STANDARD TEMPORARY STABILIZATION RATE. AT THE END OF EACH CONSTRUCTION DAY, AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE SHALL BE STABILIZED. MULCH SHALL NOT BE SPREAD ON TOP OF SNOW.
- ALL AREAS WITHIN 75 FEET OF A PROTECTED NATURAL RESOURCE SHALL BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIERS.
- ALL VEGETATED DITCH LINES THAT HAVE NOT BEEN STABILIZED BY NOVEMBER 1, OR WILL BE WORKED DURING THE WINTER CONSTRUCTION PERIOD, SHALL BE STABILIZED WITH AN APPROPRIATE STONE LINING BACKED BY AN APPROPRIATE GRAVEL BED OR GEOTEXTILE UNLESS SPECIFICALLY RELEASED FROM THIS STANDARD BY THE MDEP.
- MULCH NETTING SHALL BE USED TO ANCHOR MULCH ON ALL SLOPES GREATER THAN 8% UNLESS EROSION CONTROL BLANKETS OR EROSION CONTROL MIX IS BEING USED ON SUCH SLOPES.



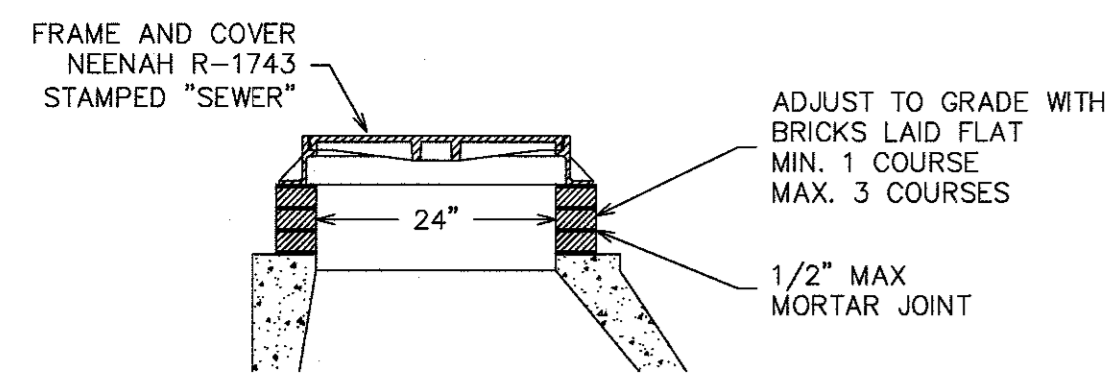
E&S INSPECTION/MAINTENANCE DURING CONSTRUCTION

- INSPECTION AND CORRECTIVE ACTION.** 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. A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING THE STANDARDS AND CONDITIONS IN THE PERMIT, SHALL CONDUCT THE INSPECTIONS.
- MAINTENANCE.** 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 ACTION 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 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.

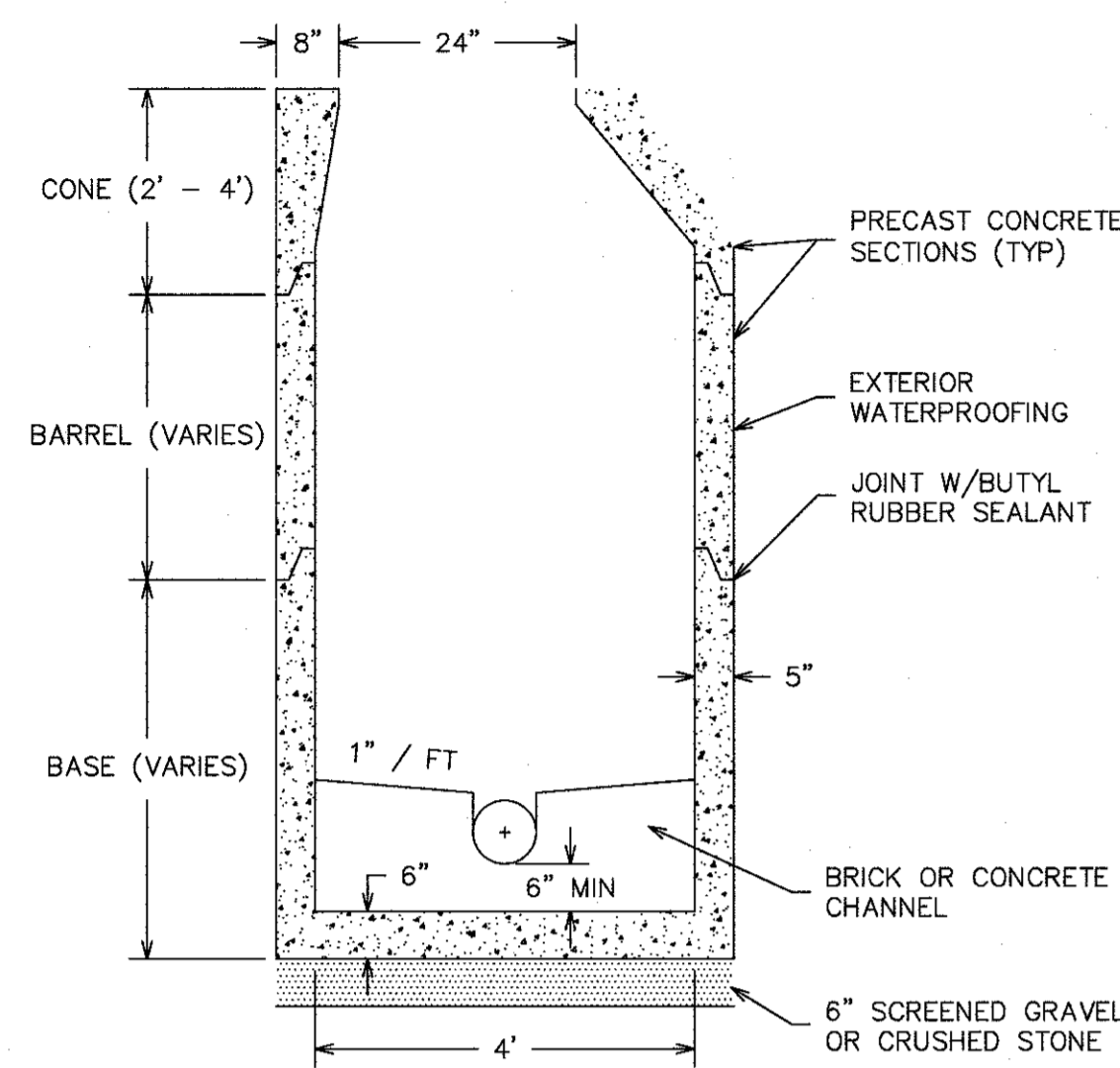


5.1	SITE DETAILS THE HOMESTEAD 459 U.S. ROUTE 1, KITTERY, MAINE	
	FOR: LANDMARK HILL, LLC. 79 CONGRESS STREET PORTSMOUTH, NH 03801	
		ATTAR ENGINEERING, INC. CIVIL • STRUCTURAL • MARINE 1284 STATE ROAD - ELIOT, MAINE 03903 PHONE: (207)439-6023 FAX: (207)439-2128
SCALE: AS SHOWN	APPROVED BY: 	DRAWN BY: MJS
DATE: 1/18/2018		REVISION DATE: 8:01/24/2019
JOB NO: C052-18	FILE: THE HOMESTEAD DET.DWG	SHEET: 5.1

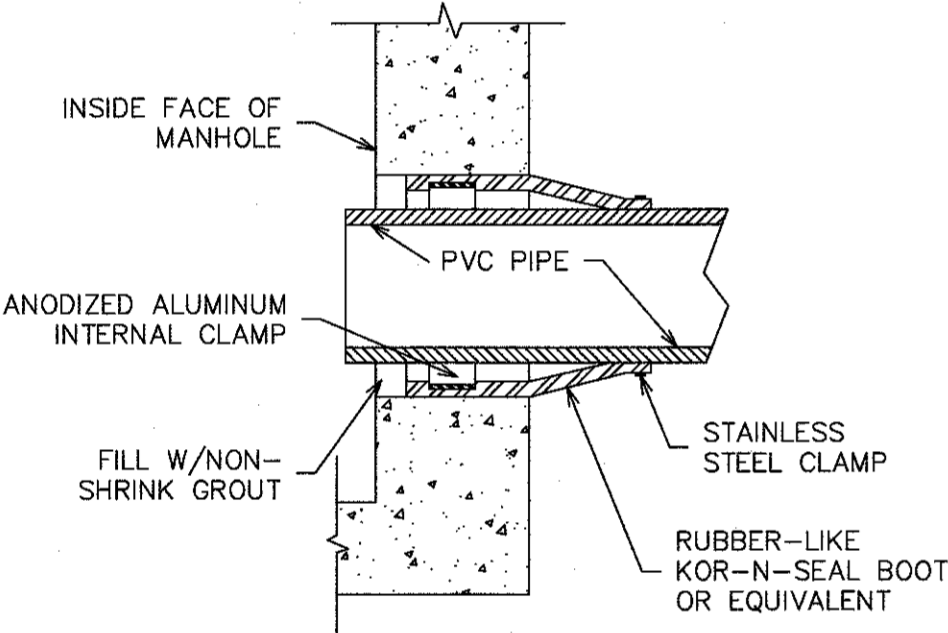
NO.	DESCRIPTION	DATE
B	FINAL PLAN SUBMISSION	01/24/2019
A	MDEP SUBMISSION	01/23/2019
	REVISIONS	



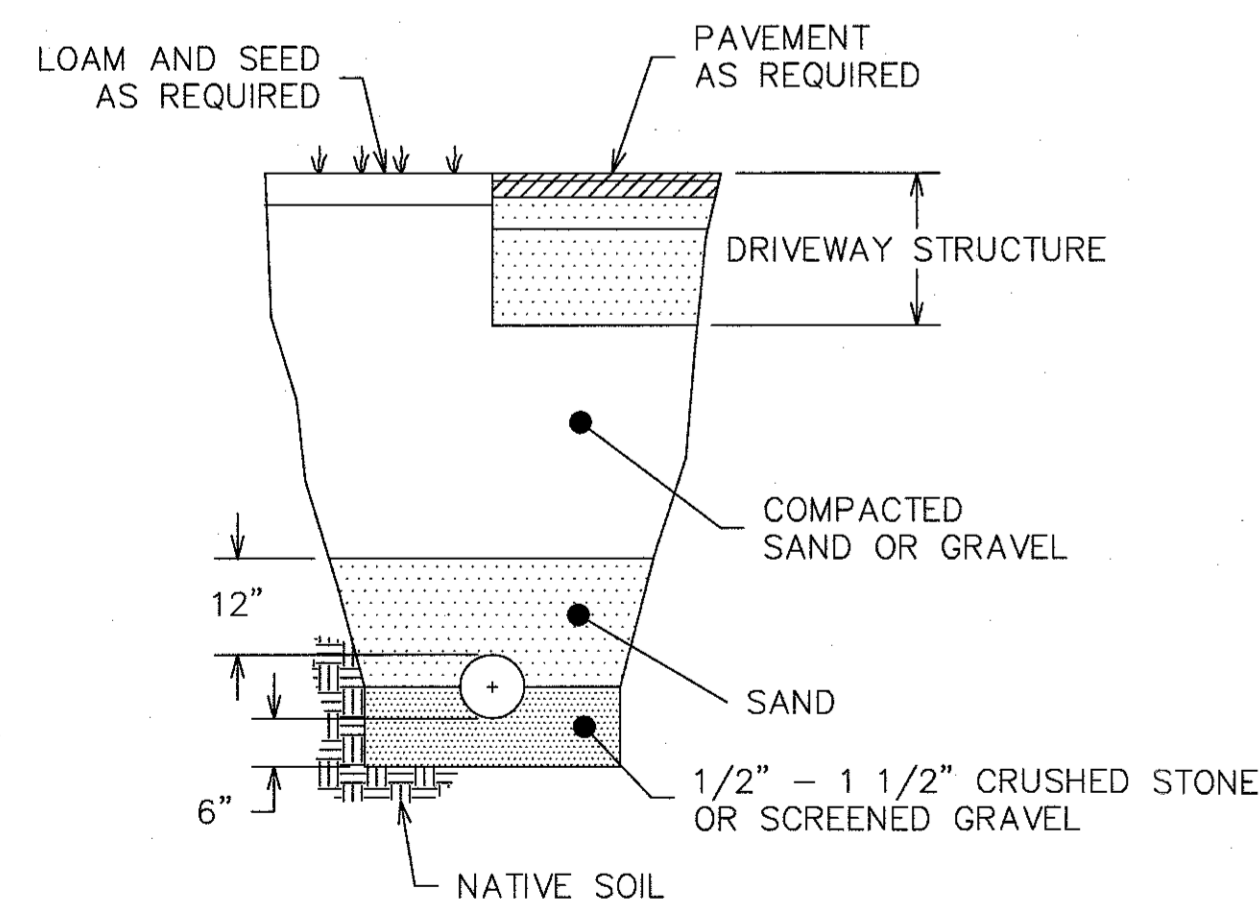
STANDARD COVER AND FRAME
SCALE: NTS



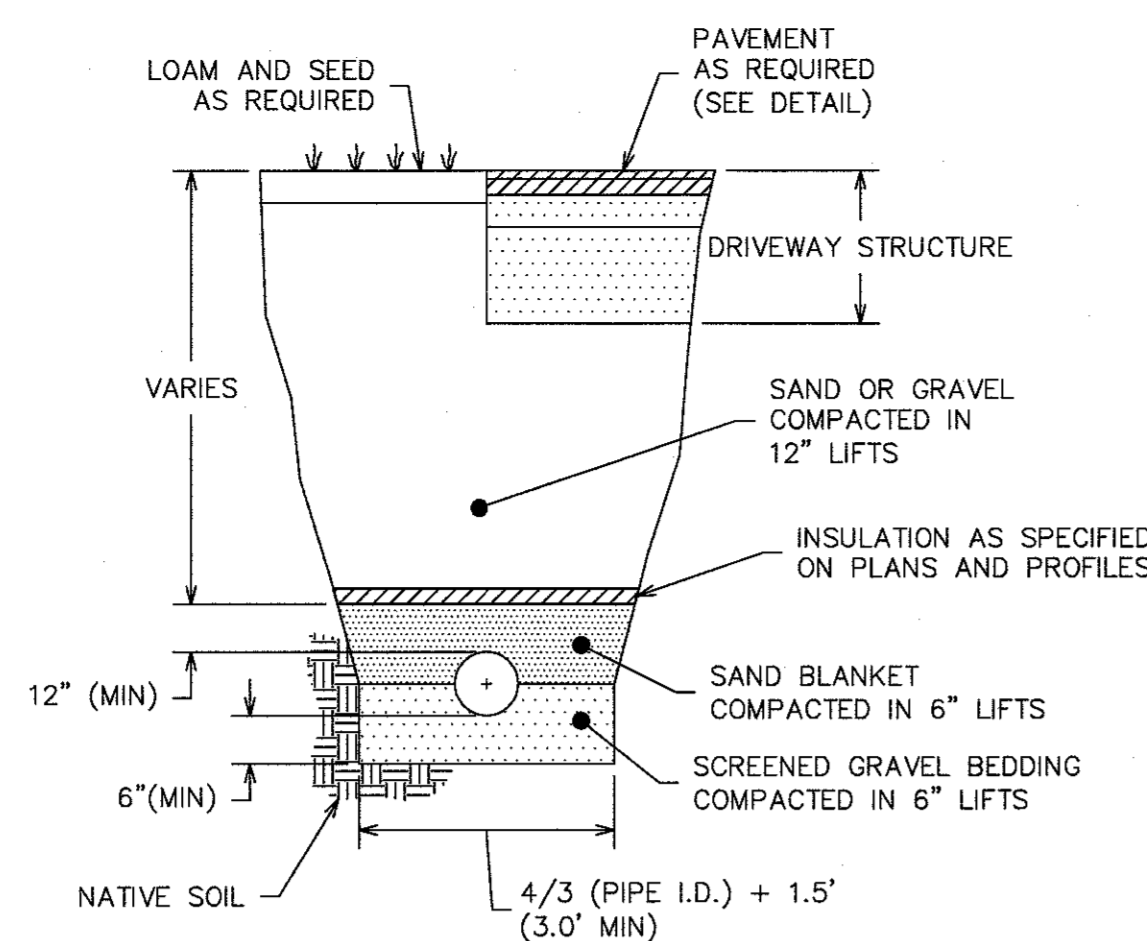
TYPICAL SANITARY MANHOLE
SCALE: NTS



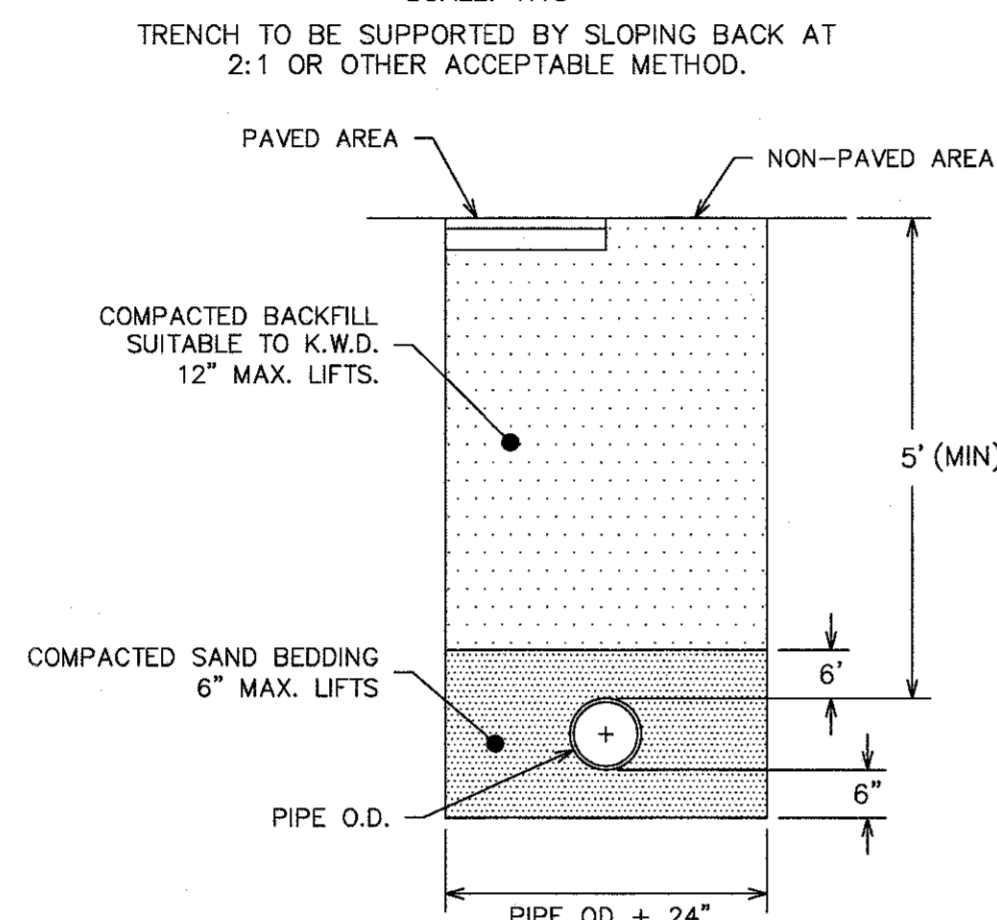
TYPICAL BOOT GASKET
SCALE: NTS



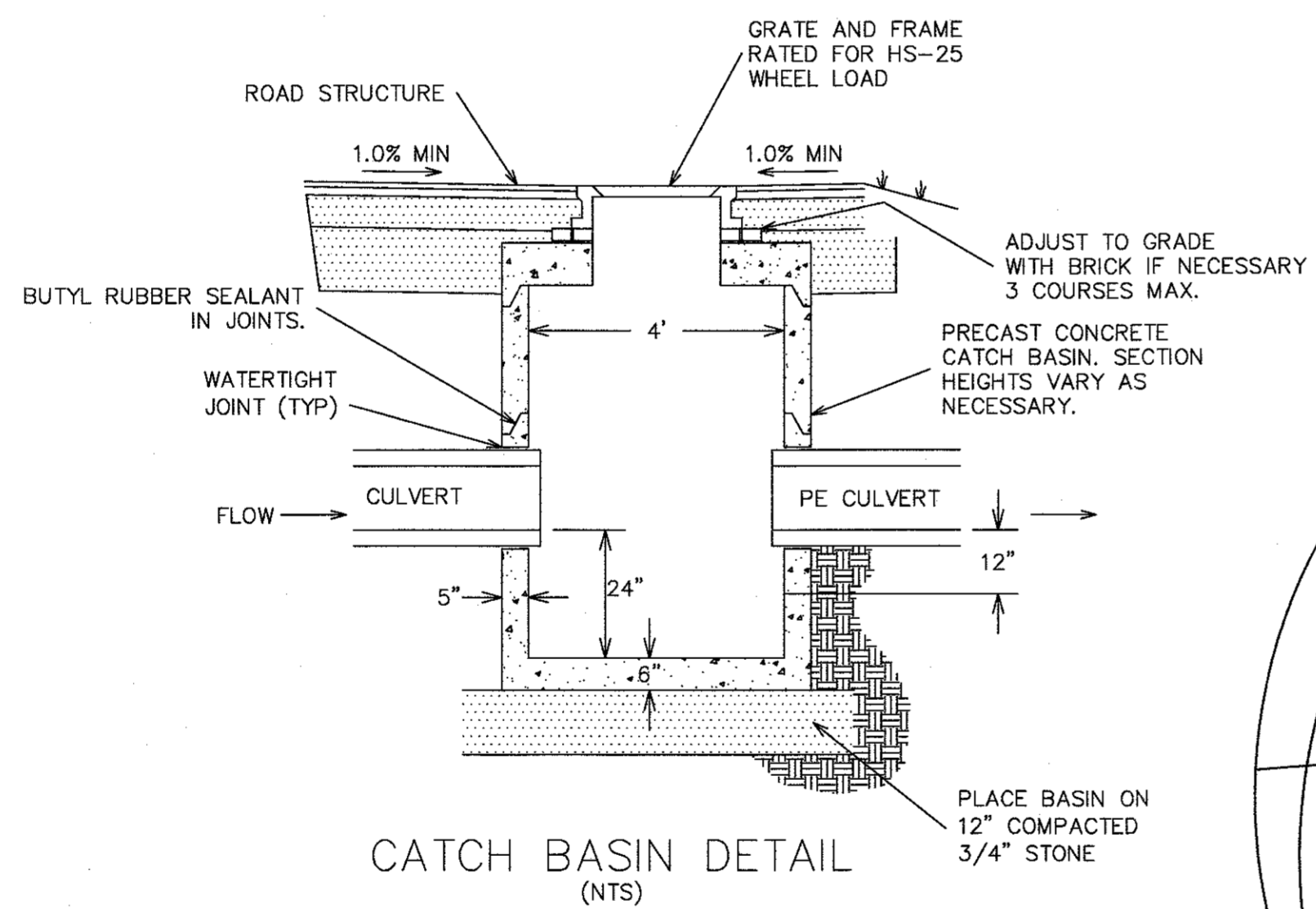
DRAINAGE PIPE TRENCH DETAIL
SCALE: NTS
TRENCH TO BE SUPPORTED BY SLOPING BACK AT 2:1 OR OTHER ACCEPTABLE METHOD.



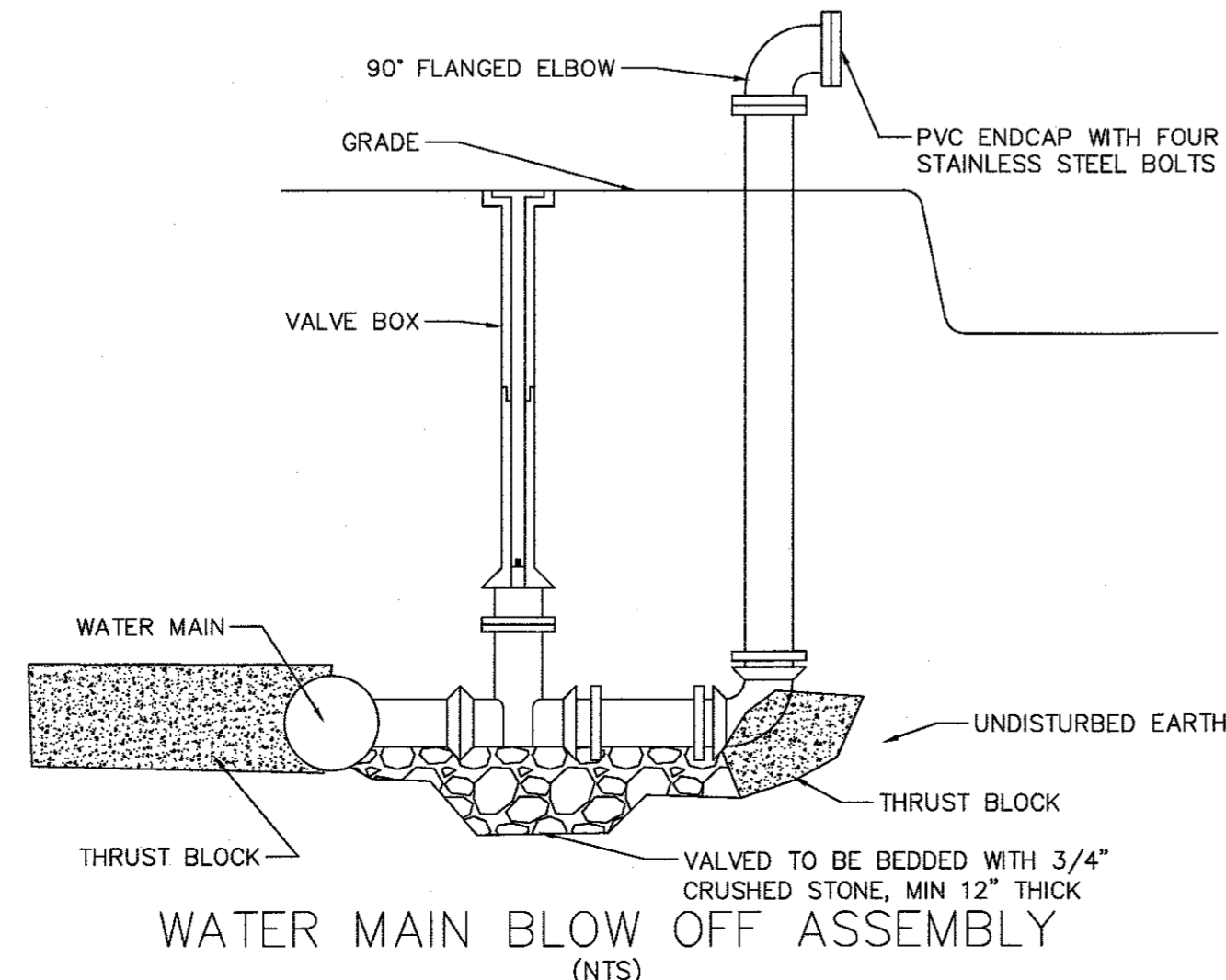
SEWER PIPE TRENCH DETAIL
SCALE: NTS



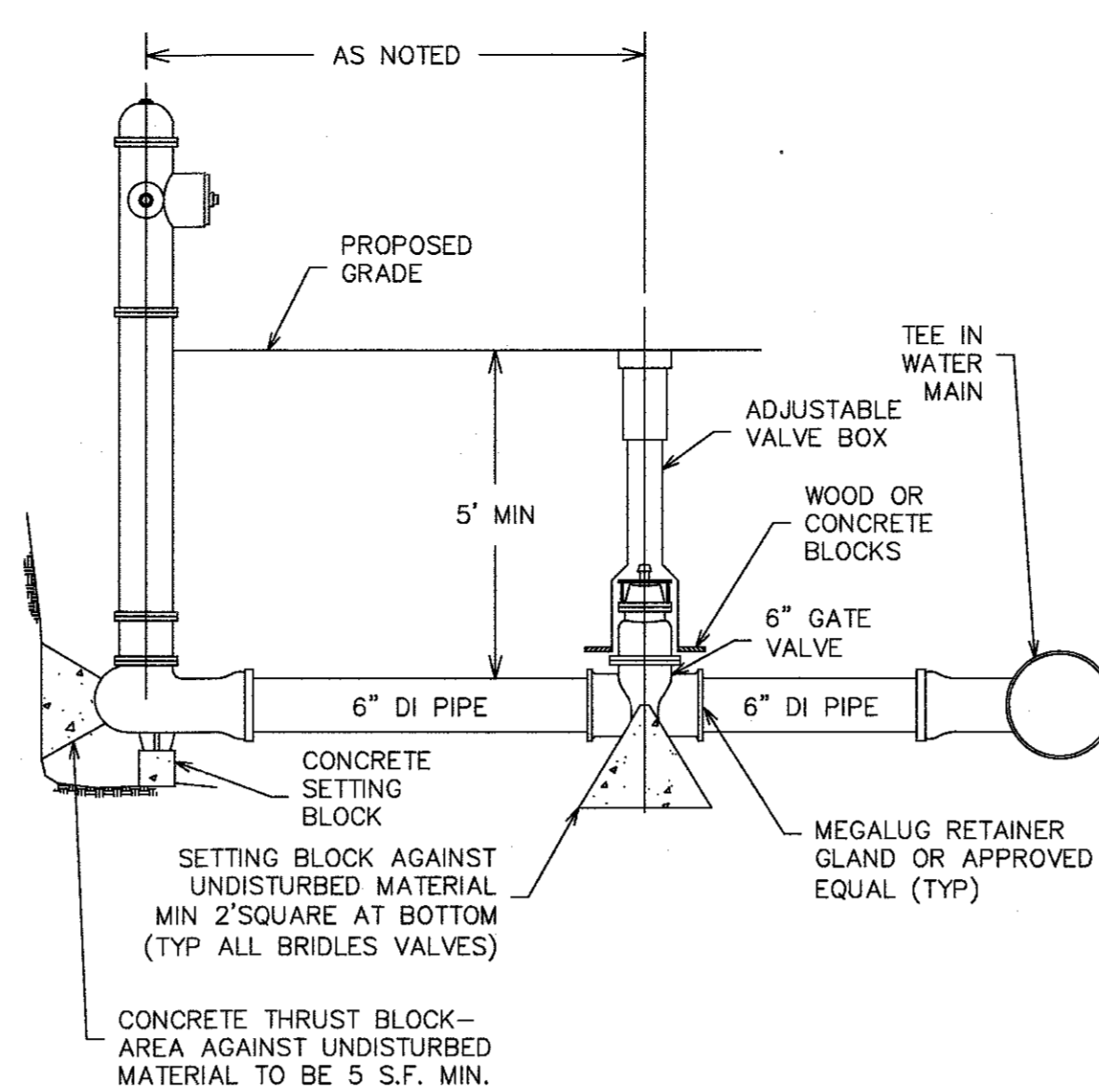
WATER LINE TRENCH DETAIL
(NTS)



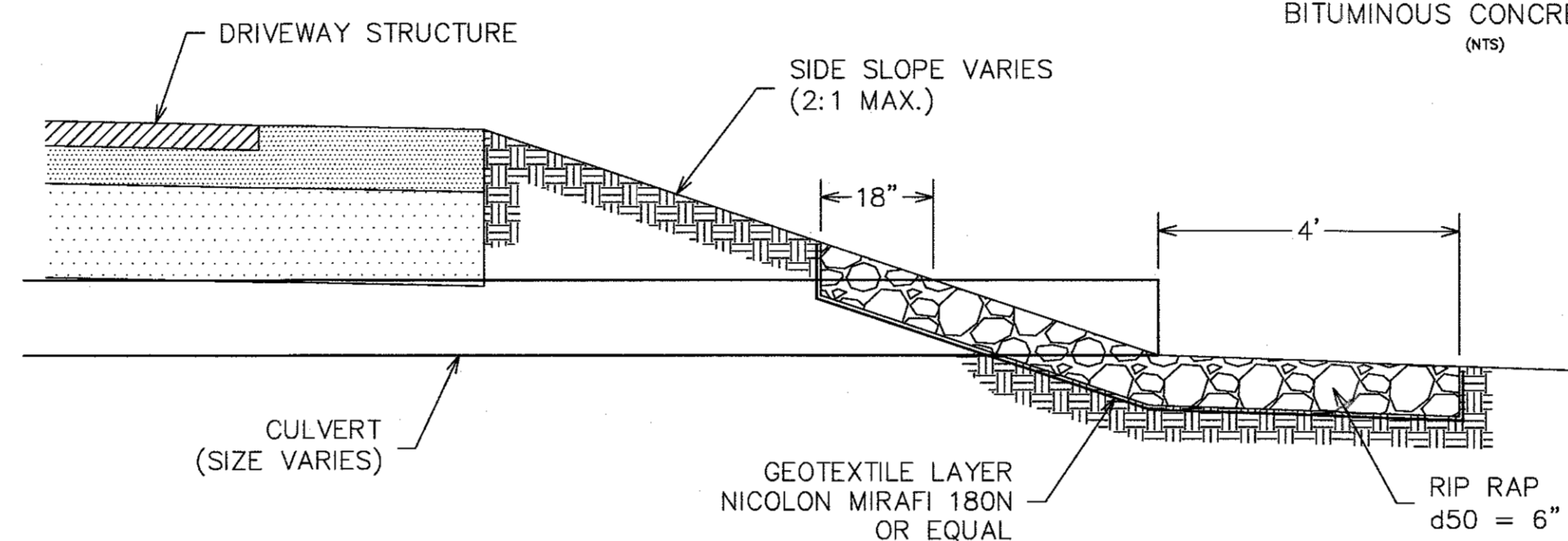
CATCH BASIN DETAIL
(NTS)



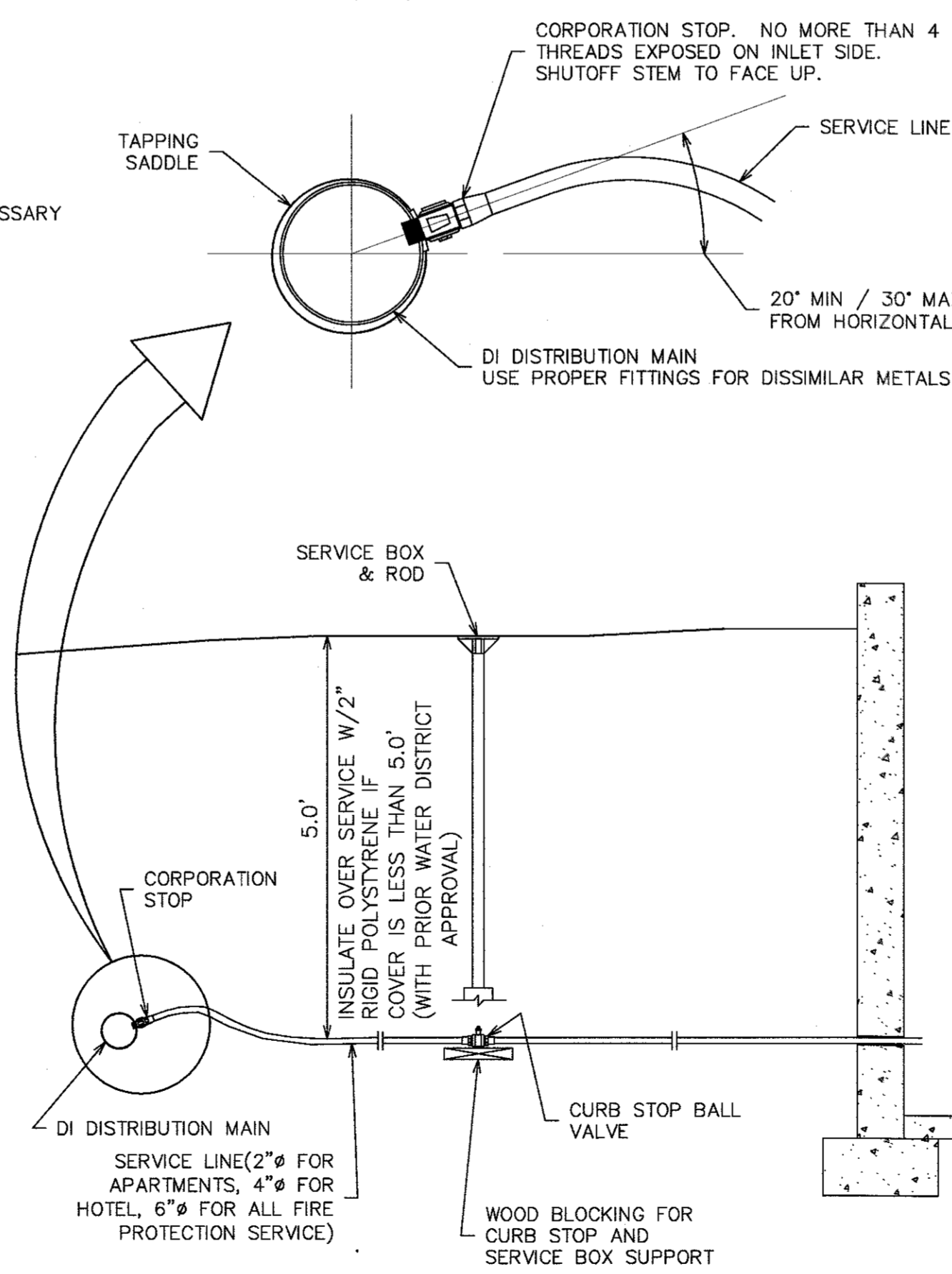
WATER MAIN BLOW OFF ASSEMBLY
(NTS)



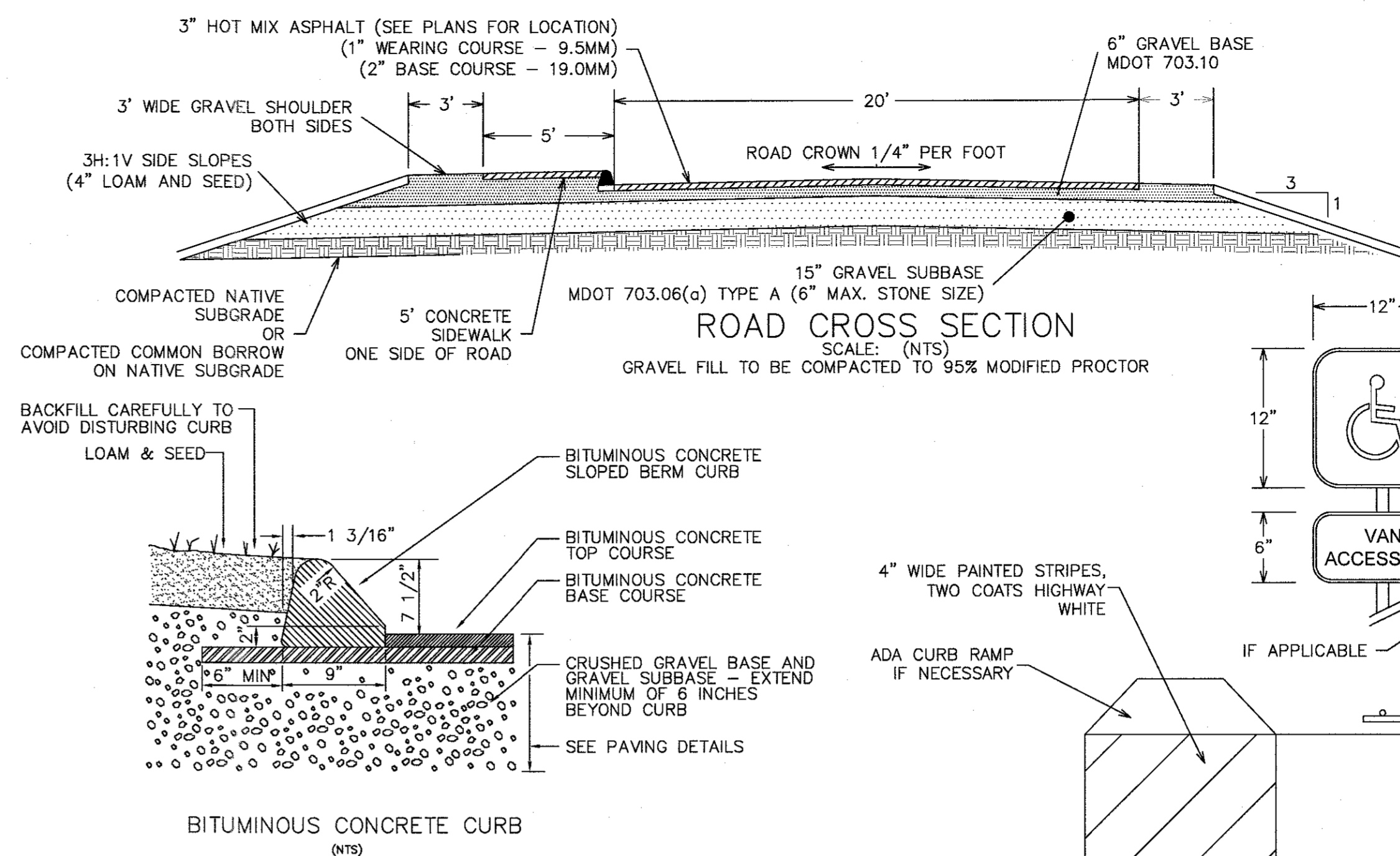
HYDRANT & VALVE DETAIL
NTS



CULVERT INLET/OUTLET PROTECTION DETAIL
(NTS)

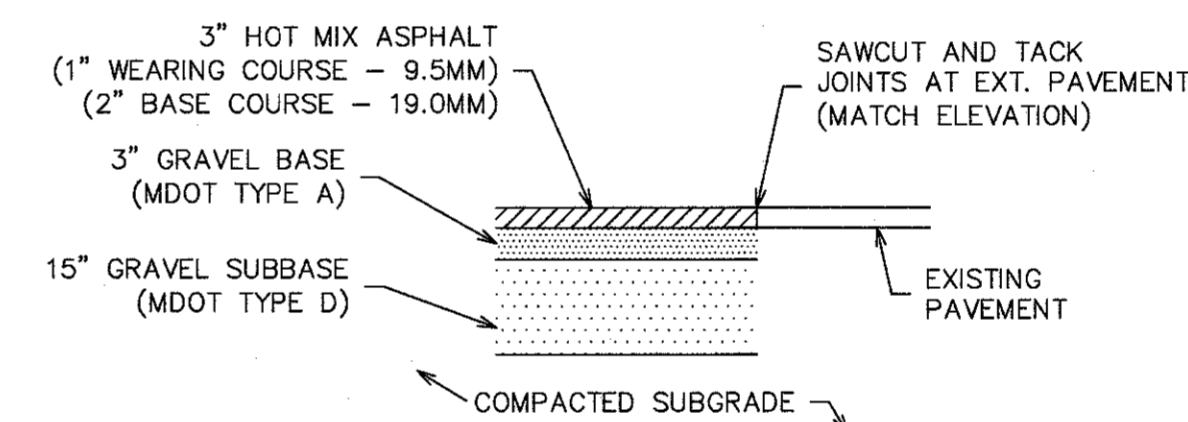


WATER SERVICE DETAIL
(NTS)



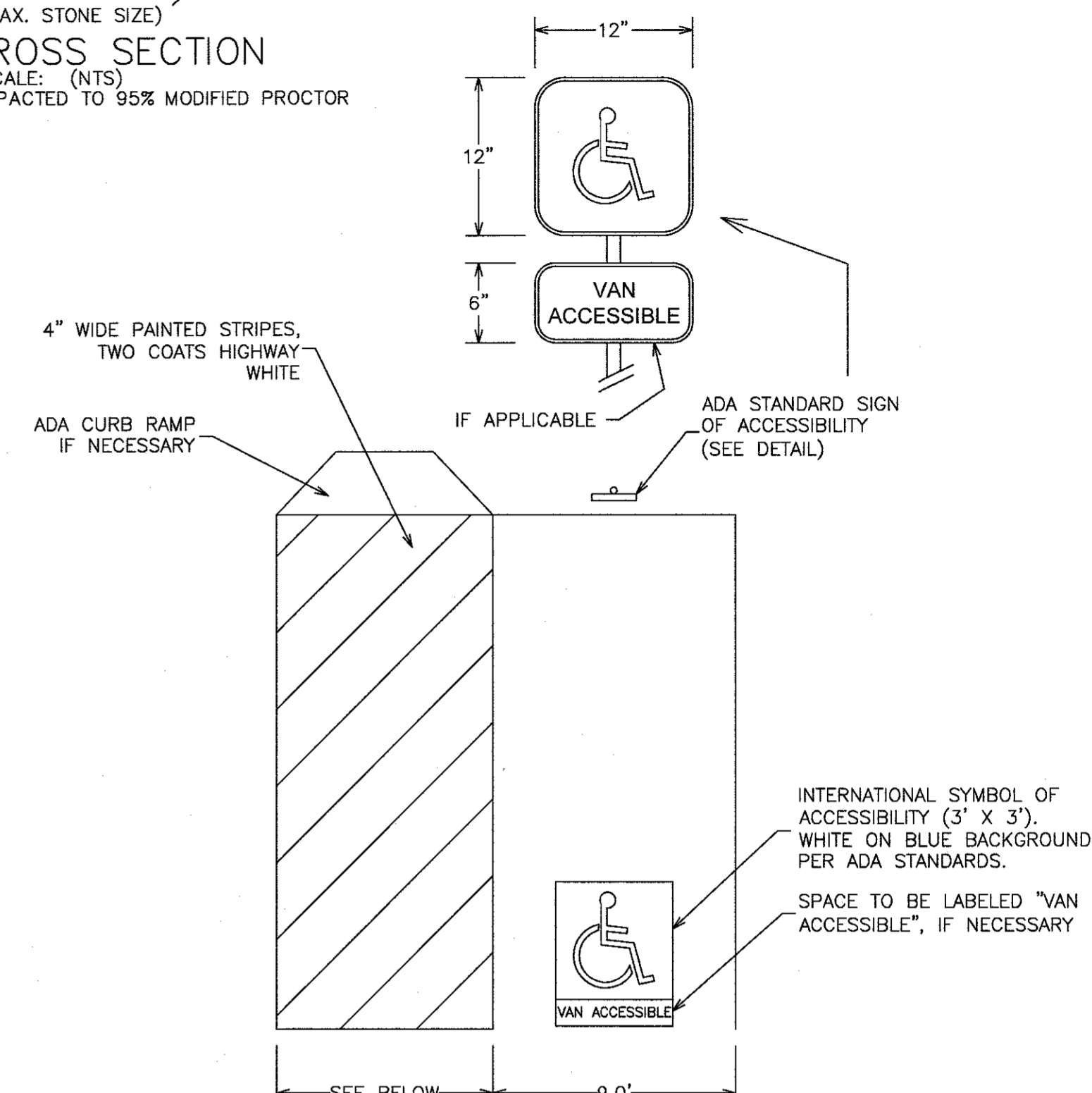
ROAD CROSS SECTION
SCALE: (NTS)

BITUMINOUS CONCRETE CURB
(NTS)

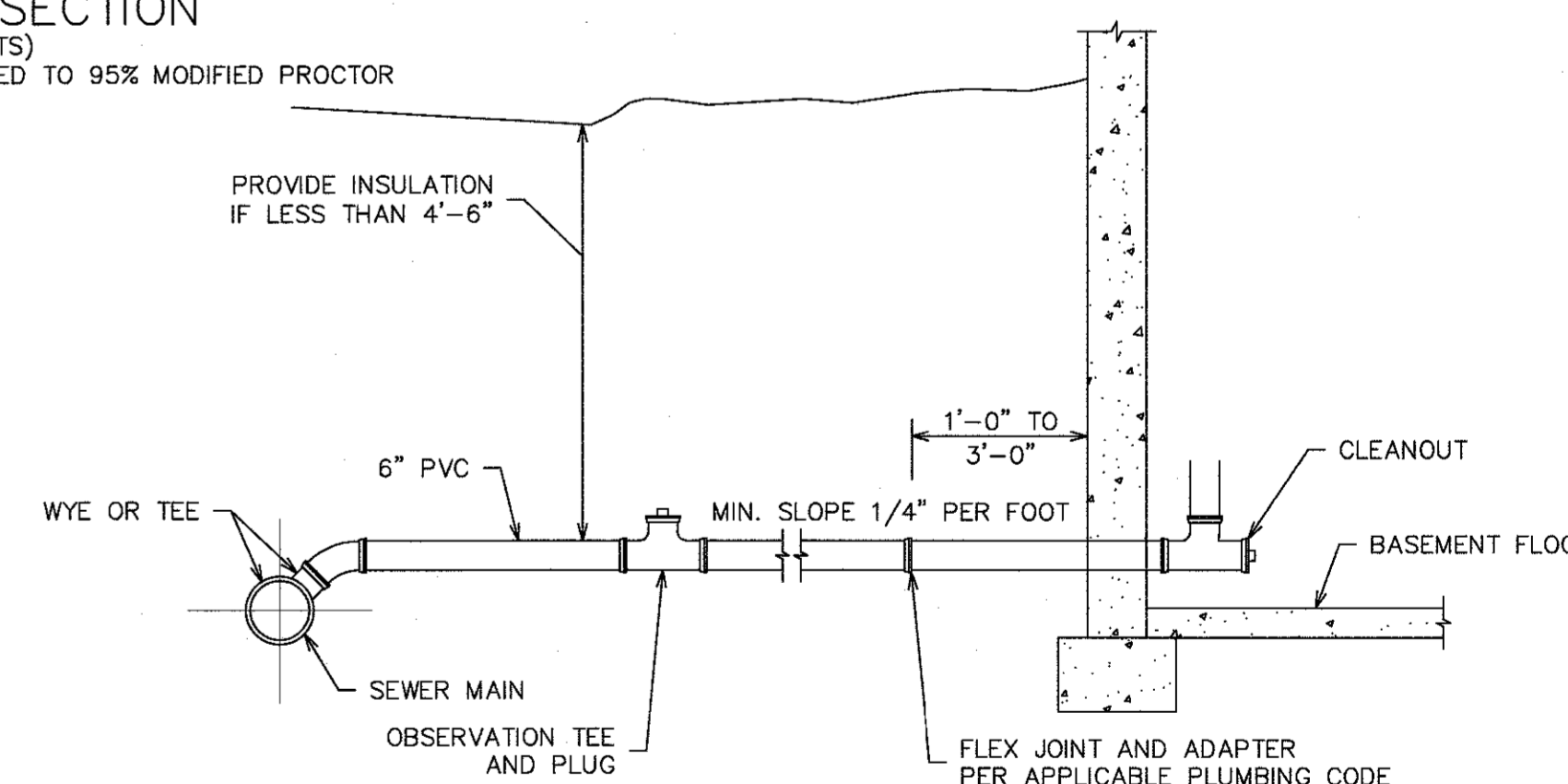


ASPHALT PARKING CROSS SECTION
(NTS)

ACCESSIBLE PARKING SPACE DETAIL
ISLE SHALL BE 5' WIDE FOR AUTOMOBILES OR 8' WIDE FOR VANS (NTS)



TYPICAL SERVICE CONNECTION AND LATERAL DETAIL
SCALE: NTS
NOTE: SEWER MAY BE LOCATED BENEATH BASEMENT FLOOR



TYPICAL SERVICE CONNECTION AND LATERAL DETAIL
SCALE: NTS
NOTE: SEWER MAY BE LOCATED BENEATH BASEMENT FLOOR

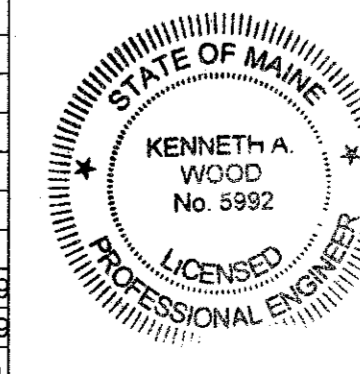
5.2 SITE DETAILS
THE HOMESTEAD
459 U.S. ROUTE 1, KITTERY, MAINE

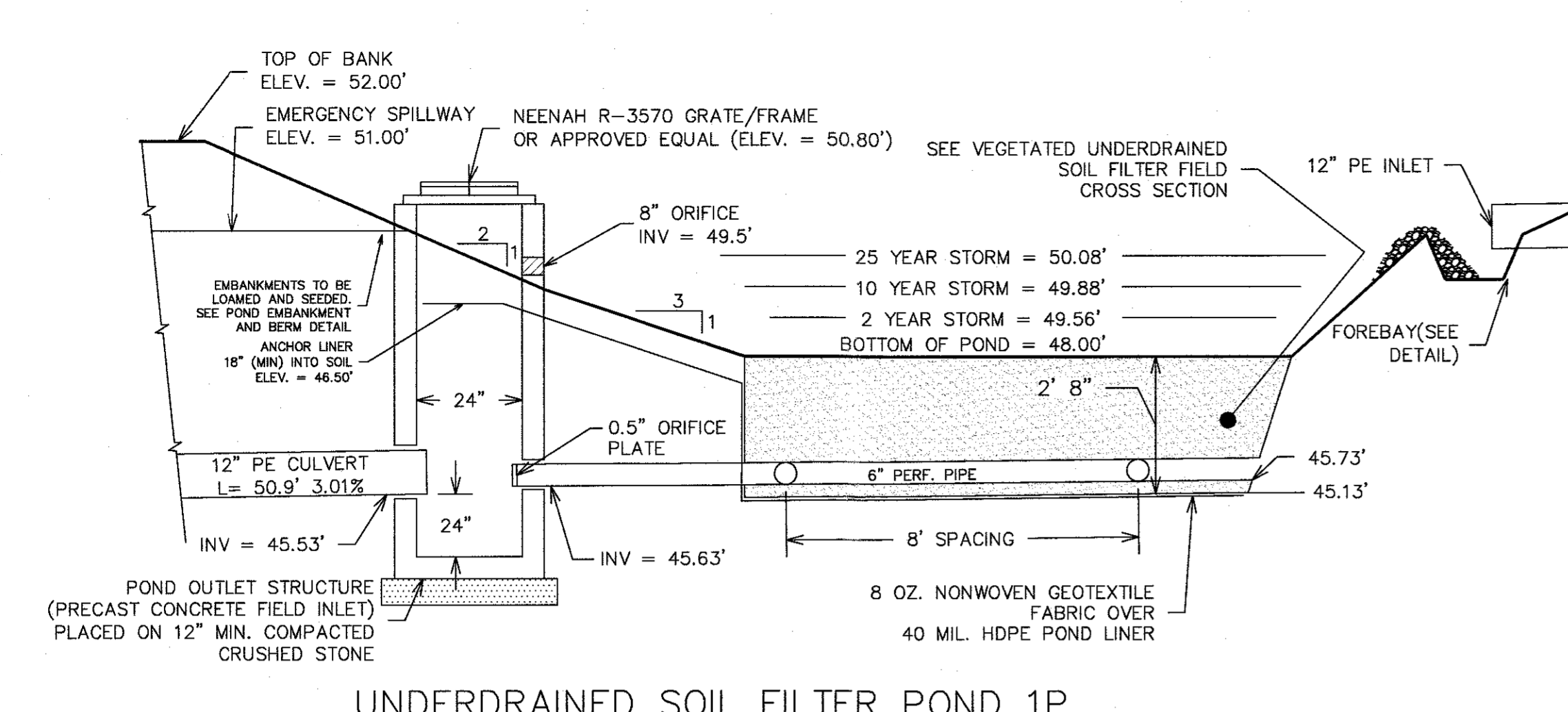
FOR: LANDMARK HILL, LLC.
79 CONGRESS STREET
PORTSMOUTH, NH 03801

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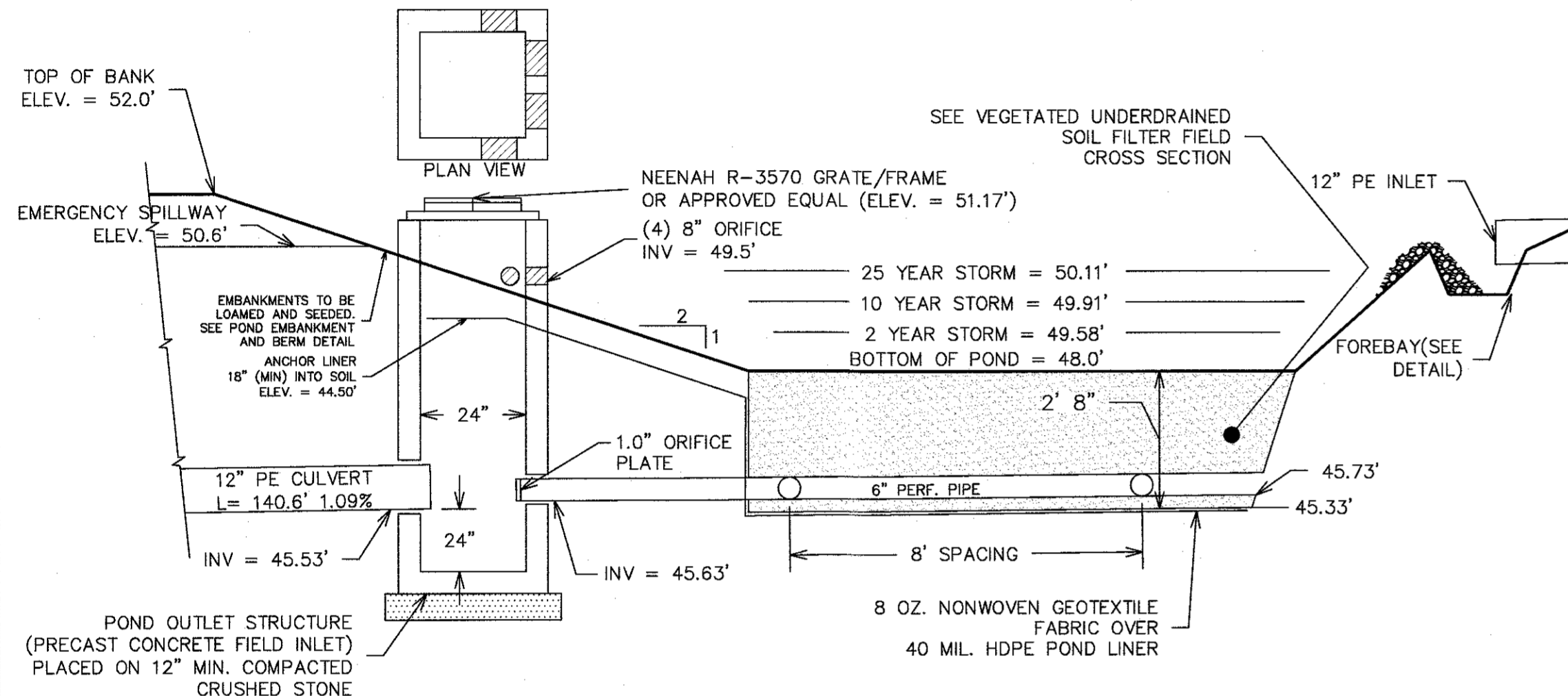
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DATE: 1/18/2018		REVISION DATE: C: 01/24/2019
JOB NO: C052-18	FILE: THE HOMESTEAD DET/DWG	SHEET: 5.2

NO.	DESCRIPTION	DATE
C	FINAL PLAN SUBMISSION	01/24/2019
B	MDEP SUBMISSION	01/23/2019
A	PRELIMINARY PLAN REVISION	4/19/2018
	REVISIONS	

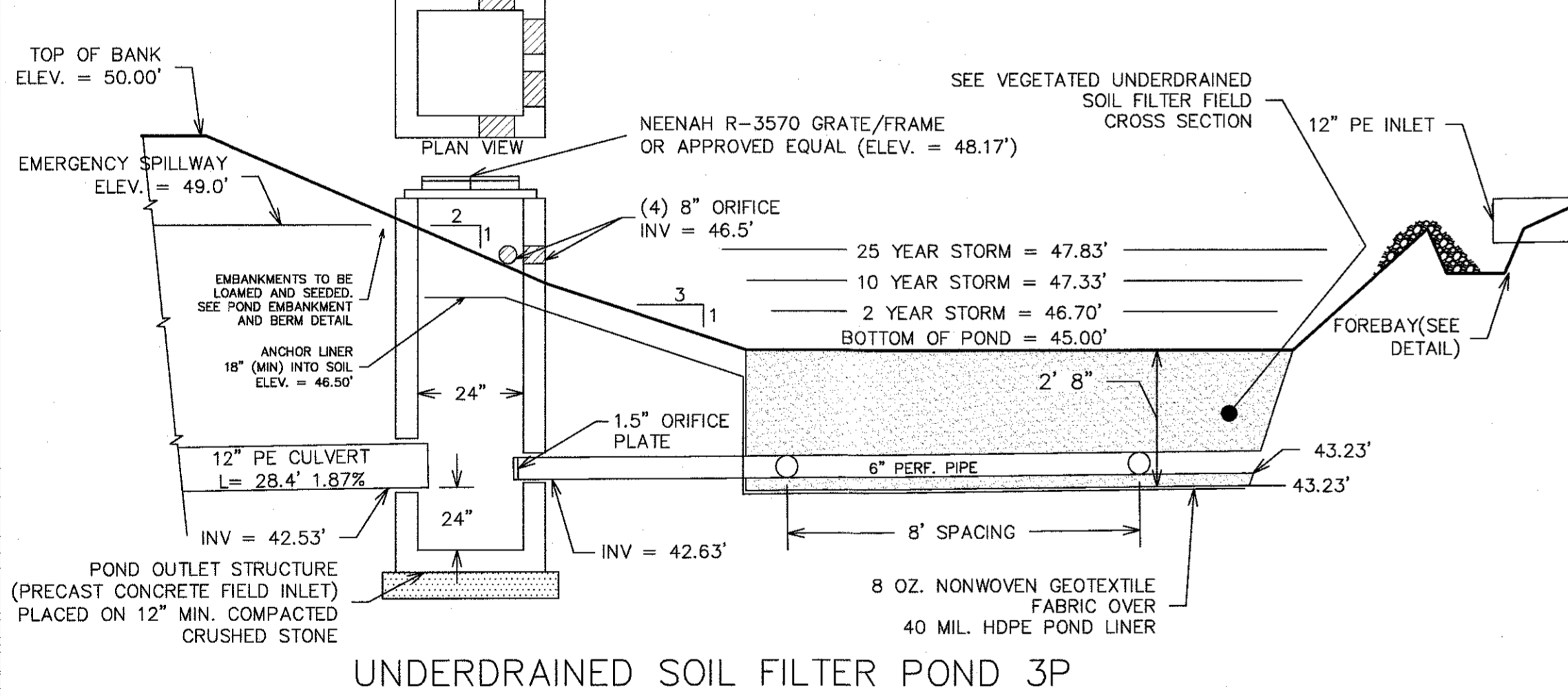




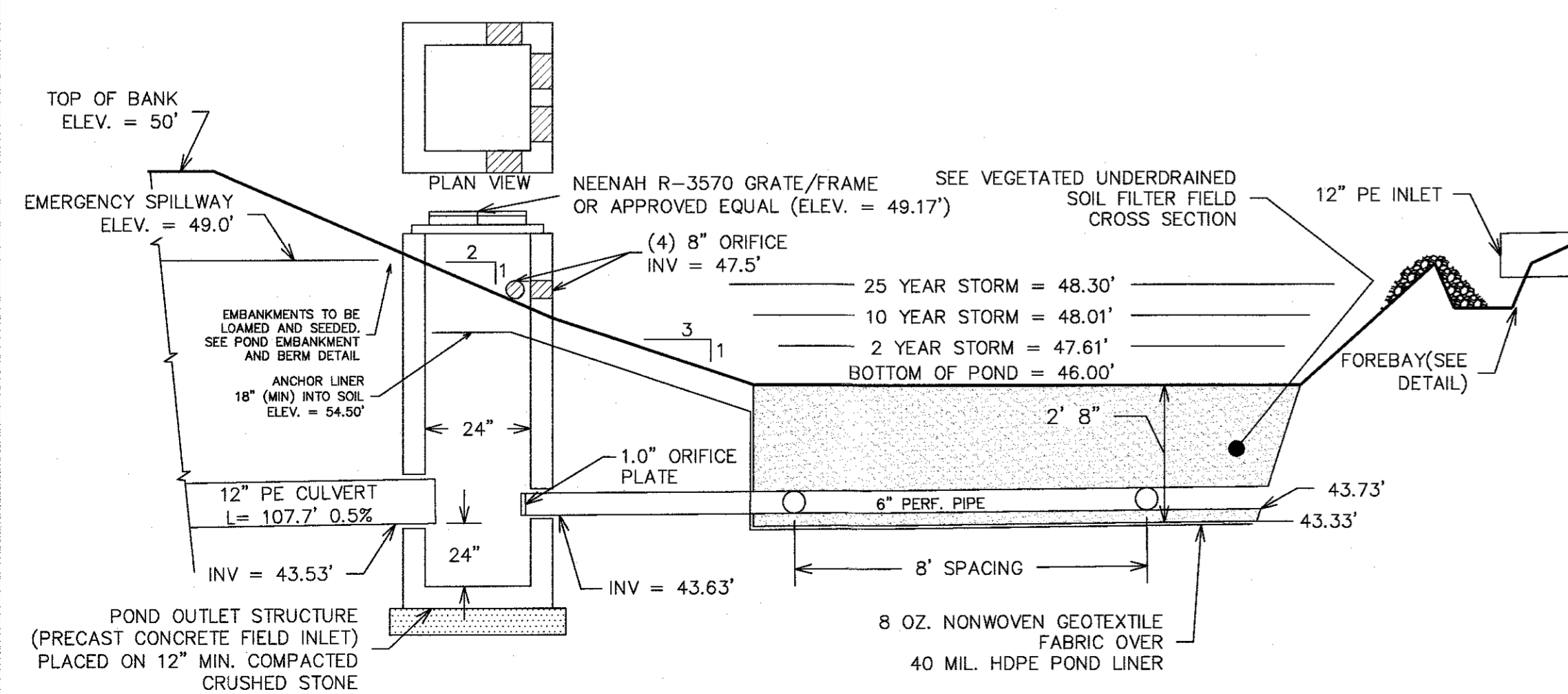
UNDERDRAINED SOIL FILTER POND 1P



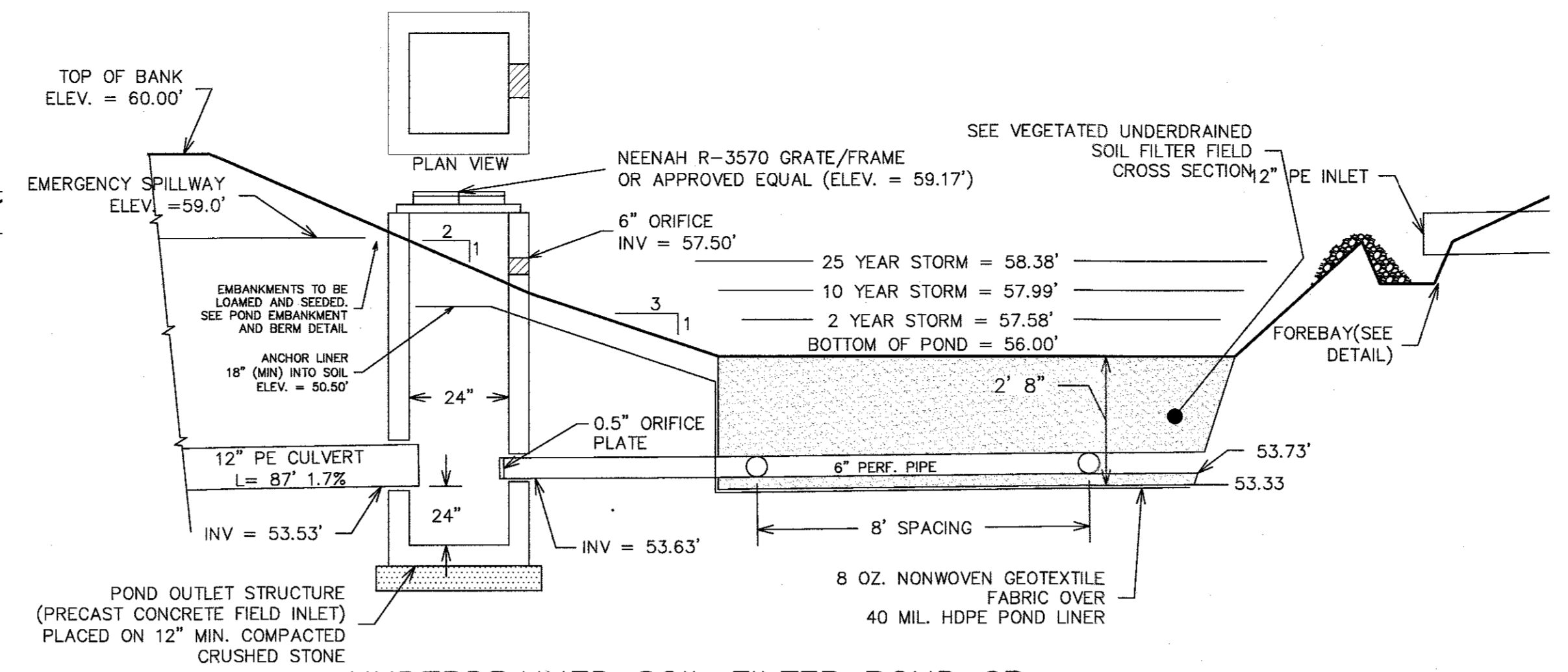
UNDERDRAINED SOIL FILTER POND 2P



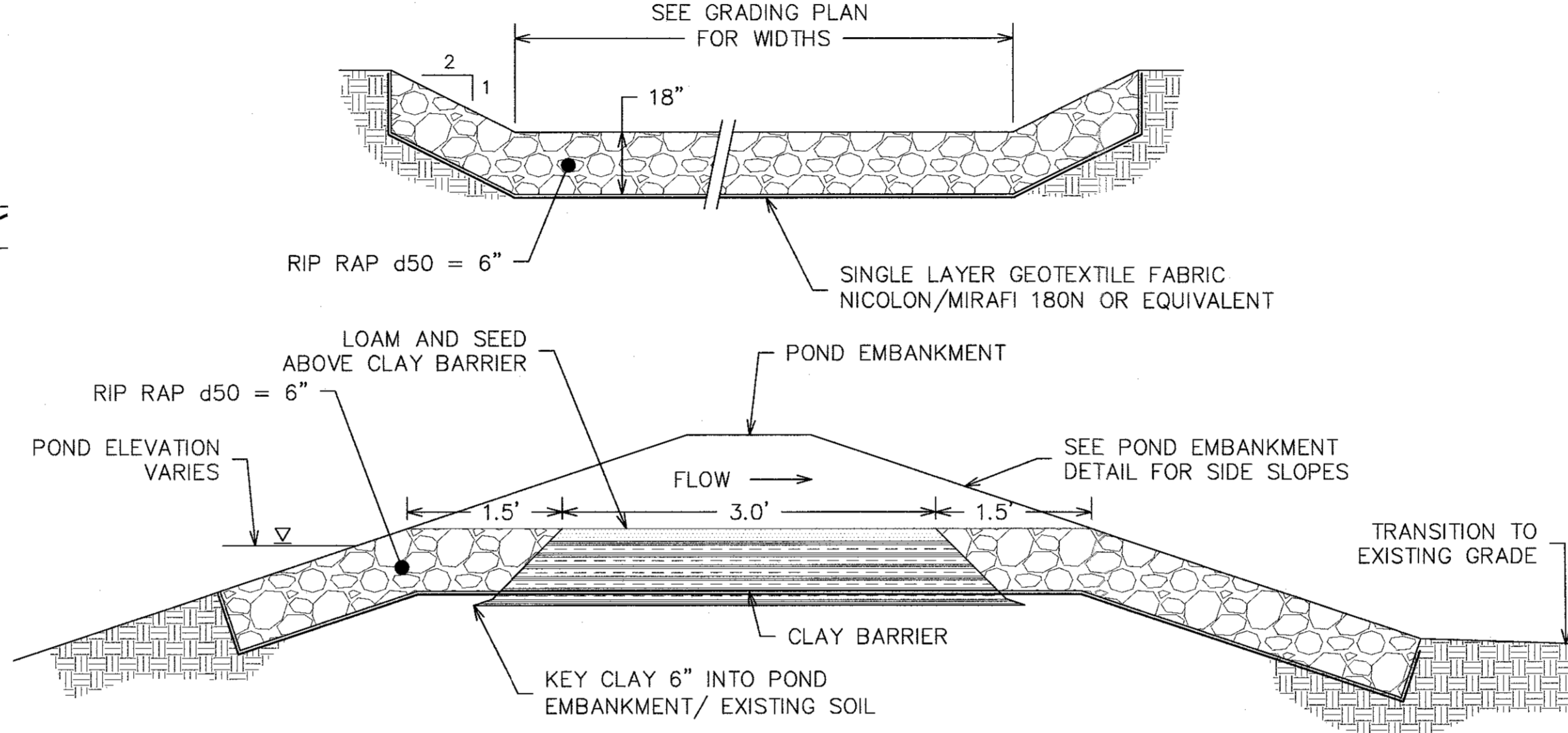
UNDERDRAINED SOIL FILTER POND 3P



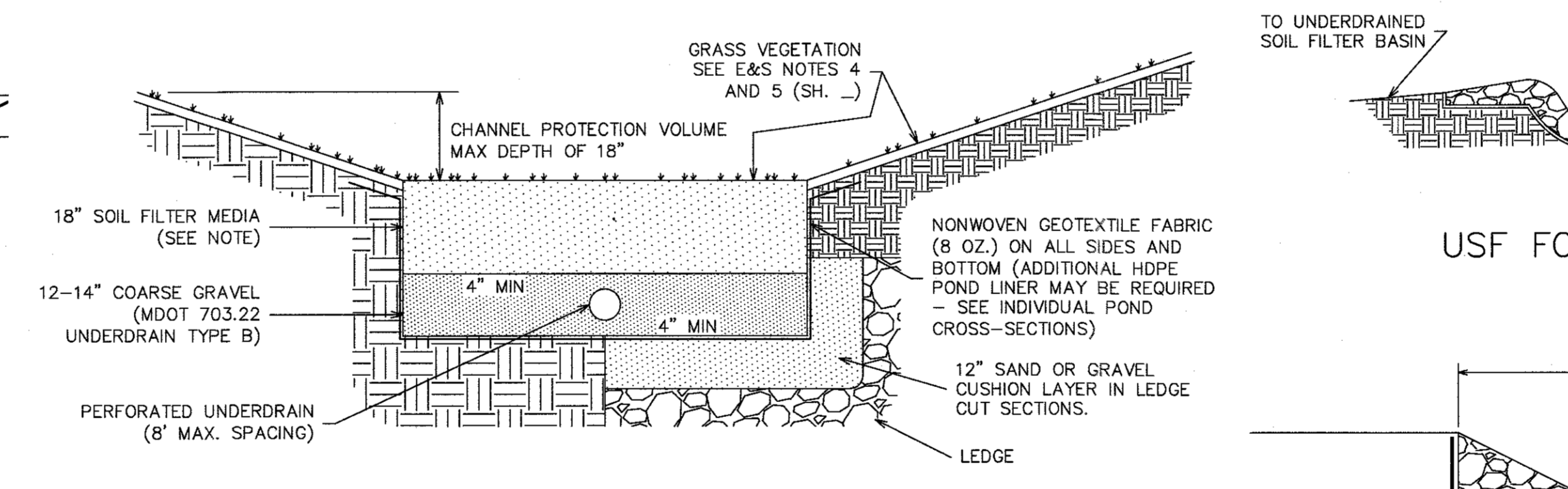
UNDERDRAINED SOIL FILTER POND 4P



UNDERDRAINED SOIL FILTER POND 6P



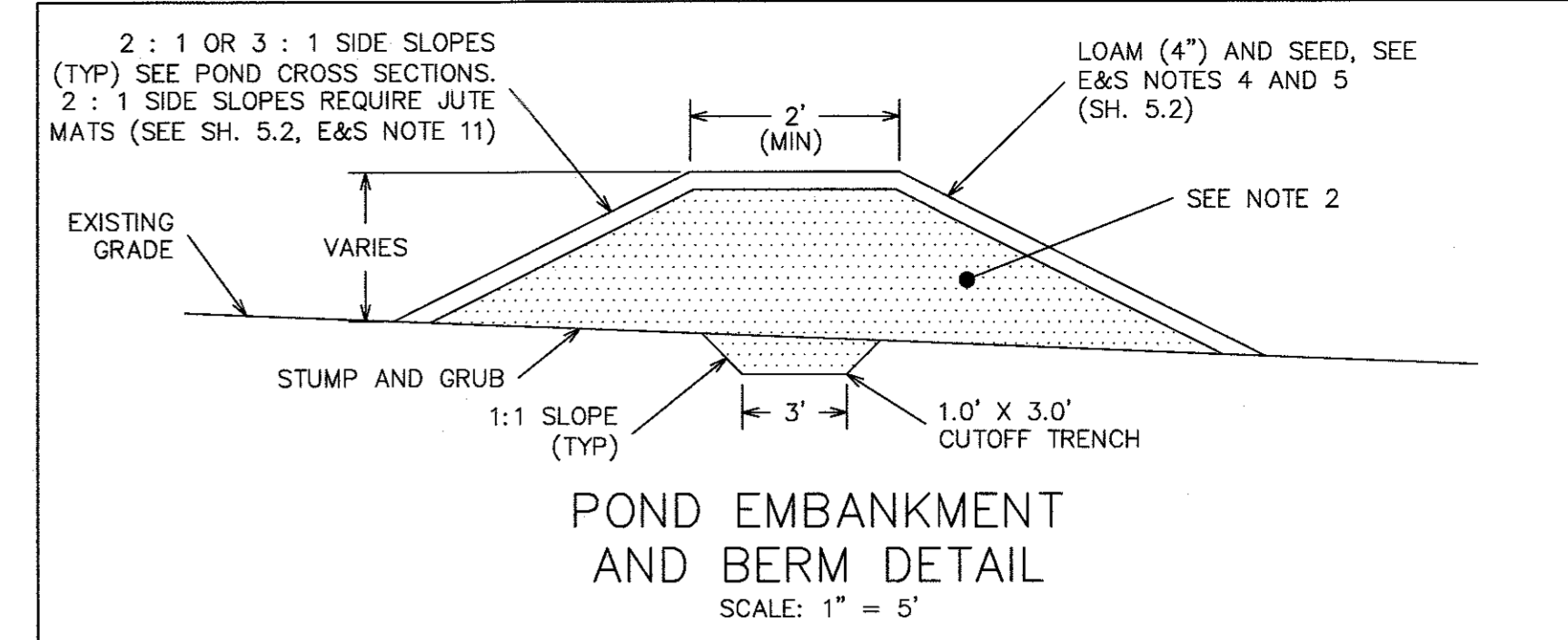
EMERGENCY SPILLWAY DETAIL



VEGETATED UNDERDRAINED SOIL FILTER FIELD CROSS SECTION

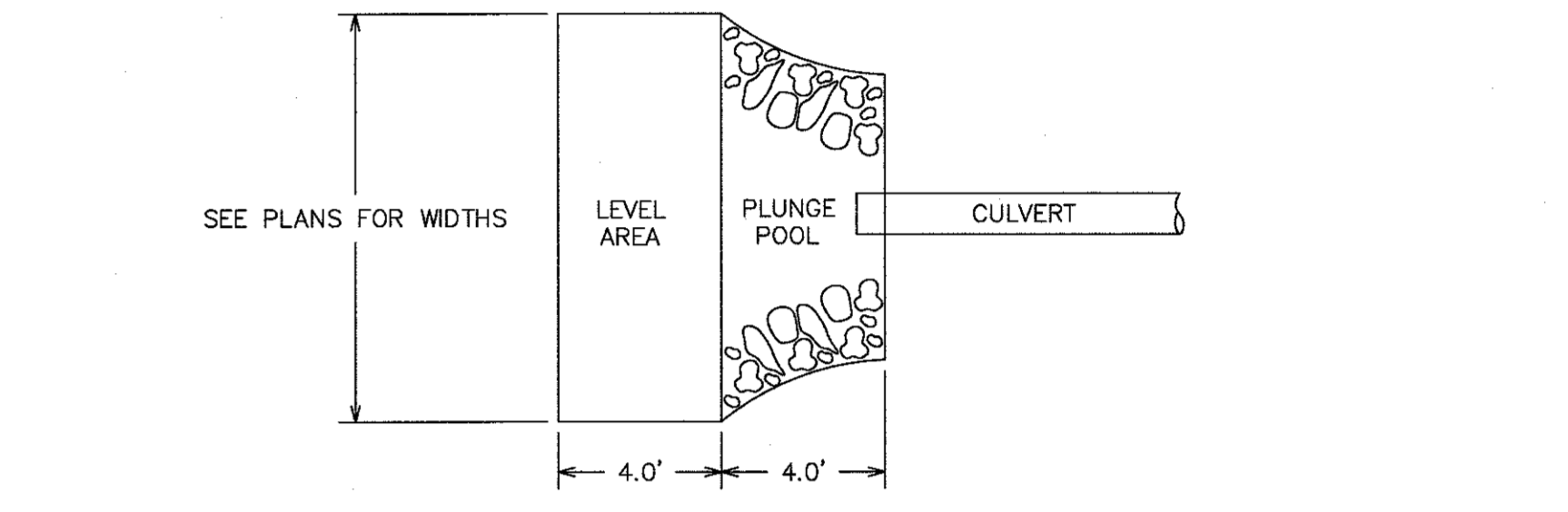
SOIL FILTER MEDIA NOTE:
 THE SOIL FILTER MEDIA SHALL CONSIST OF A SILTY SAND OR SOIL MIXTURE COMBINED WITH 20% - 25% FINE SHREDDED BARK OR WOOD FIBER MULCH. THE MIXTURE MUST HAVE NO LESS THAN 8% PASSING THE 200 SIEVE, AND A CLAY CONTENT OF LESS THAN 2%. PRIOR TO CONSTRUCTION, THE CONTRACTOR MUST CHECK WITH THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION FOR UPDATED SOIL FILTER MEDIA SPECIFICATIONS.

CONSTRUCTION OVERSIGHT REQUIRED:
 INSPECTION OF THE FILTER BASIN SHALL BE PROVIDED FOR EACH PHASE OF CONSTRUCTION BY THE DESIGN ENGINEER WITH REQUIRED REPORTING TO THE DEP. AT A MINIMUM, INSPECTIONS WILL OCCUR:
 - AFTER PRELIMINARY CONSTRUCTION OF THE FILTER GRADES AND ONCE THE UNDERDRAIN PIPES ARE INSTALLED BUT NOT BACKFILLED;
 - AFTER THE DRAINAGE LAYER IS CONSTRUCTED AND PRIOR TO THE INSTALLATION OF THE FILTER MEDIA;
 - AFTER THE FILTER MEDIA HAS BEEN INSTALLED AND SEEDING;
 - AFTER ONE YEAR TO INSPECT HEALTH OF THE VEGETATION AND MAKE CORRECTIONS; AND
 - ALL MATERIAL USED FOR THE CONSTRUCTION OF THE FILTER BASIN WILL BE APPROVED BY THE DESIGN ENGINEER AFTER TESTS BY A CERTIFIED LABORATORY SHOW THAT THEY ARE PASSING DEP SPECIFICATIONS.
 - CONTRACTOR SHALL COORDINATE INSPECTION SCHEDULE WITH INSPECTING ENGINEER PRIOR TO CONSTRUCTION.
 - HEAVY VEHICLES AND EQUIPMENT ARE PROHIBITED FROM DRIVING OVER ANY INFILTRATION BASIN.
 - NO SNOW SHALL BE STORED WITHIN THE AREA OF ANY UNDERDRAINED SOIL FILTER.

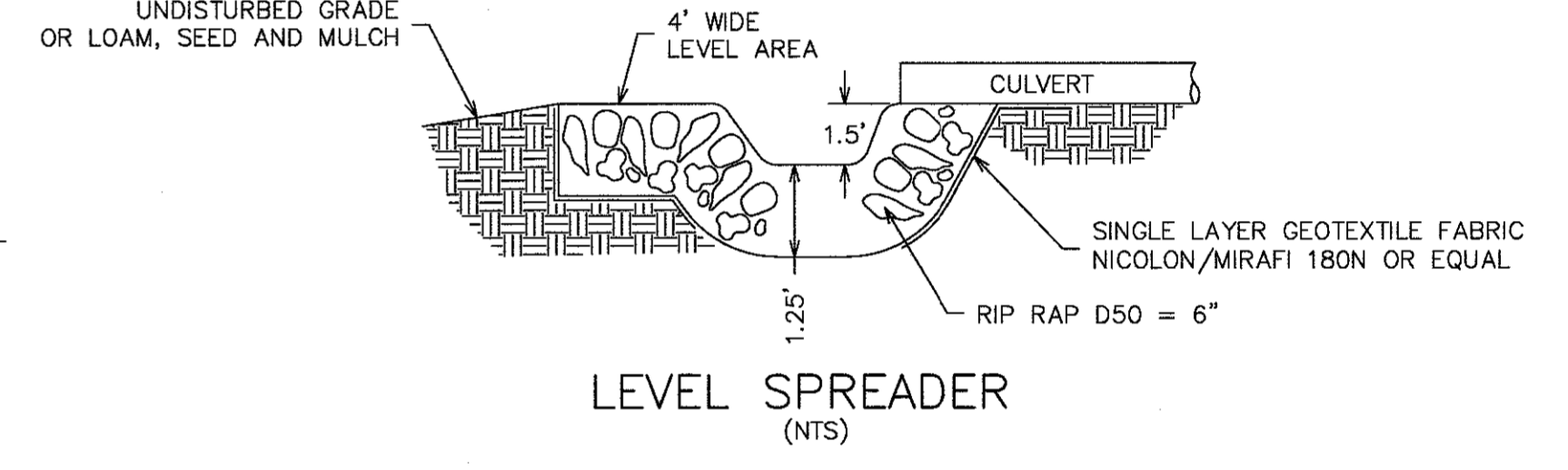


EMBANKMENT CONSTRUCTION NOTES

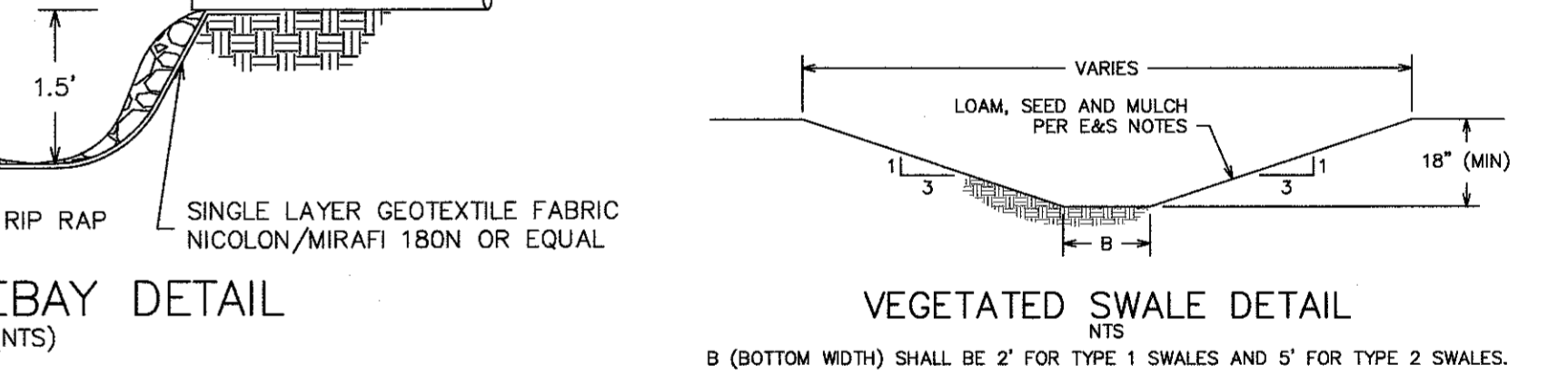
1. ALL ORGANIC MATERIAL, STUMPS, ROCKS AND BOULDERS SHALL BE REMOVED TO A MINIMUM DEPTH OF 24" BELOW SUBGRADE OF THE BASIN EMBANKMENT. ALL EXCAVATIONS BELOW THE BASIN EMBANKMENT SHALL HAVE A MINIMUM SLOPE OF 1H : 1V.
2. ALL BASIN EMBANKMENT FILL MATERIAL SHALL BE WELL GRADED BORROW WITH A MINIMUM OF 20% FINES CONTENT. EMBANKMENT FILL SHALL BE PLACED IN 12" (MAX.) LIFTS AND BE COMPACTED TO 95% MODIFIED PROCTOR. A CUTOFF TRENCH SHALL BE EXCAVATED AS SHOWN PRIOR TO CONSTRUCTION OF EMBANKMENT.
3. DETENTION BASIN AND ALL EXCAVATIONS SHALL BE KEPT FREE OF WATER DURING CONSTRUCTION.



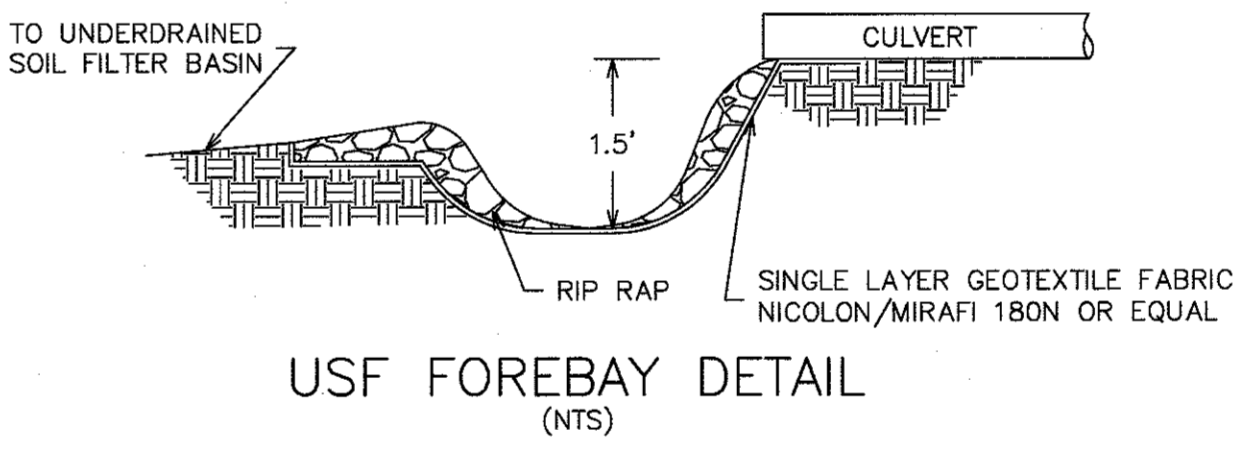
LEVEL SPREADER (NTS)



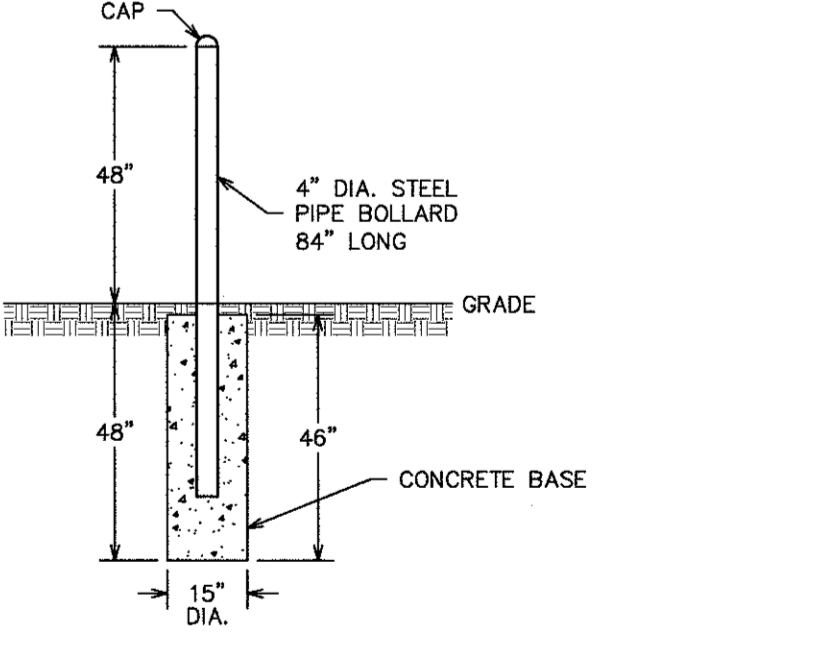
USF FOREBAY DETAIL (NTS)



VEGETATED SWALE DETAIL (NTS)



RIP RAP SWALE DETAIL (NTS)



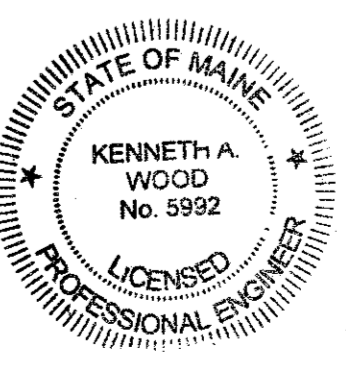
PROTECTIVE BOLLARD DETAIL (NTS)

5.3

SITE DETAILS
 THE HOMESTEAD
 459 U.S. ROUTE 1, KITTERY, MAINE

FOR: LANDMARK HILL, LLC.
 79 CONGRESS STREET
 PORTSMOUTH, NH 03801

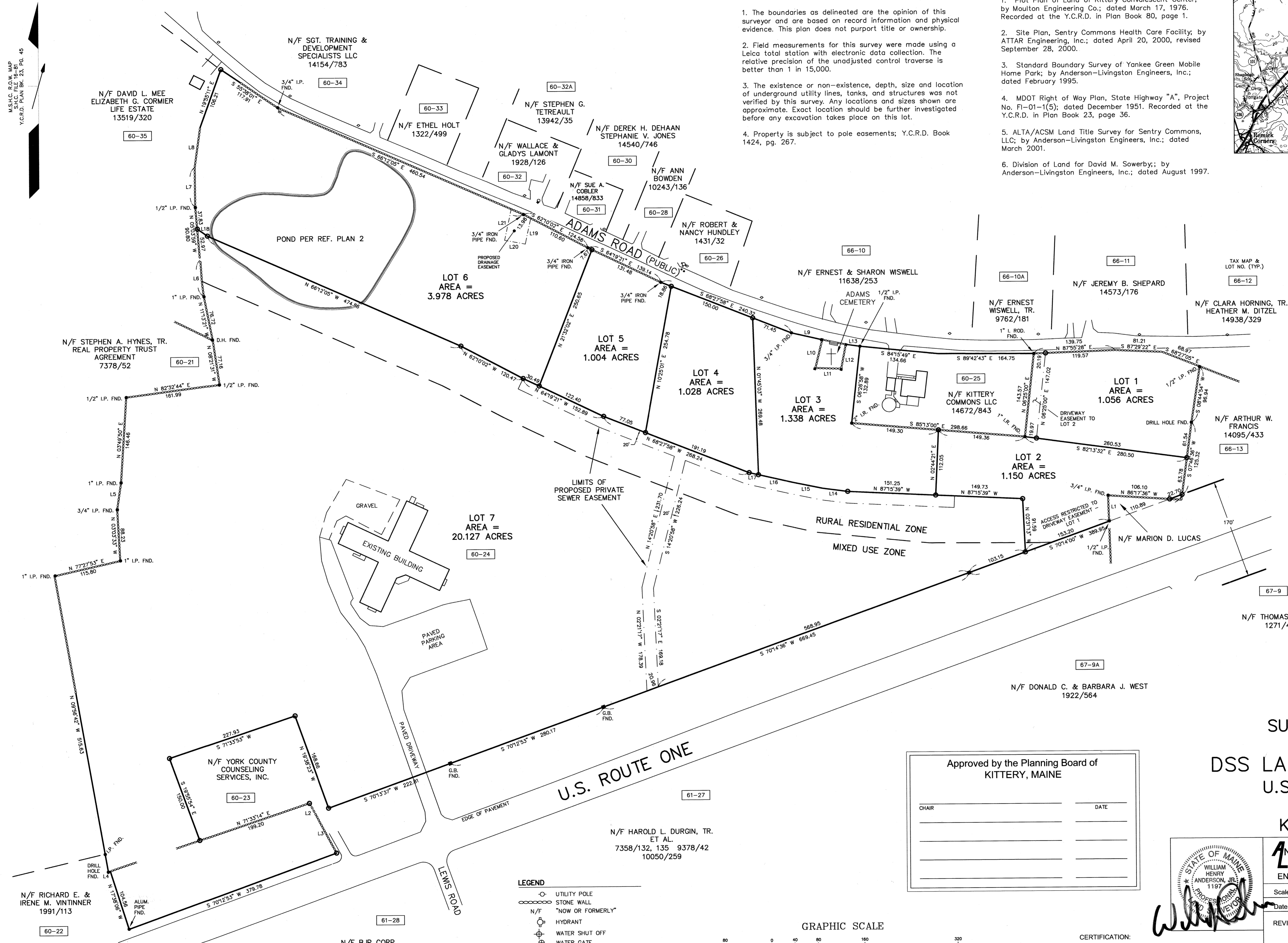
ATTAR ENGINEERING, INC.
 CIVIL • STRUCTURAL • MARINE
 1284 STATE ROAD - ELIOT, MAINE 03903
 PHONE: (207)439-6023 FAX: (207)439-2128



SCALE: AS SHOWN
 DATE: 1/18/2018
 JOB NO: C052-18
 APPROVED BY: [Signature]
 DRAWN BY: BRN
 REVISION DATE: 1/01/24/2019
 SHEET: 5.3

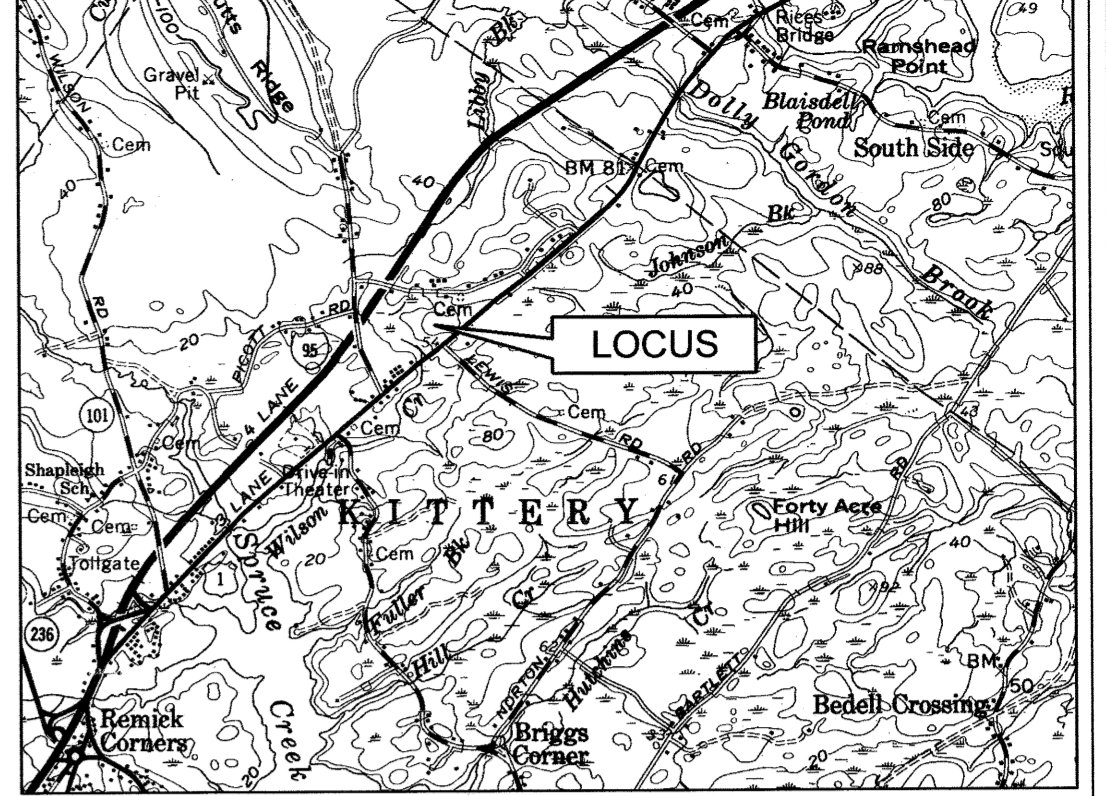
NO.	DESCRIPTION	DATE
I	FINAL PLAN SUBMISSION	01/24/2019
H	MDEP SUBMISSION	01/23/2019
G	PRELIMINARY PLAN SUBMISSION	9/20/2018
F	PRELIMINARY PLAN REVISION	5/08/2018
E	SW REVISION	4/20/2018
D	PRELIMINARY PLAN REVISION	4/19/2018
C	SW PLAN REVISION	4/16/2018
B	PRELIMINARY PLAN REVISION	3/27/2018
A	PRELIMINARY PLAN REVISION	1/18/2018

M.S.A.C. R.O.W. MAP
Y.C.R.D. PLAN BK. 23, PG. 49



- NOTES:**
- The boundaries as delineated are the opinion of this surveyor and are based on record information and physical evidence. This plan does not purport title or ownership.
 - Field measurements for this survey were made using a Leica total station with electronic data collection. The relative precision of the unadjusted control traverse is better than 1 in 15,000.
 - The existence or non-existence, depth, size and location of underground utility lines, tanks, and structures was not verified by this survey. Any locations and sizes shown are approximate. Exact location should be further investigated before any excavation takes place on this lot.
 - Property is subject to pole easements; Y.C.R.D. Book 1424, pg. 267.

- REFERENCE PLANS:**
- Plot Plan of Land of Kittery Convalescent Center; by Moulton Engineering Co.; dated March 17, 1976. Recorded at the Y.C.R.D. in Plan Book 80, page 1.
 - Site Plan, Sentry Commons Health Care Facility; by ATTAR Engineering, Inc.; dated April 20, 2000, revised September 28, 2000.
 - Standard Boundary Survey of Yankee Green Mobile Home Park; by Anderson-Livingston Engineers, Inc.; dated February 1995.
 - MDOT Right of Way Plan, State Highway "A", Project No. FI-01-1(5); dated December 1951. Recorded at the Y.C.R.D. in Plan Book 23, page 36.
 - ALTA/ACSM Land Title Survey for Sentry Commons, LLC; by Anderson-Livingston Engineers, Inc.; dated March 2001.
 - Division of Land for David M. Sowerby; by Anderson-Livingston Engineers, Inc.; dated August 1997.



BEARING TABLE

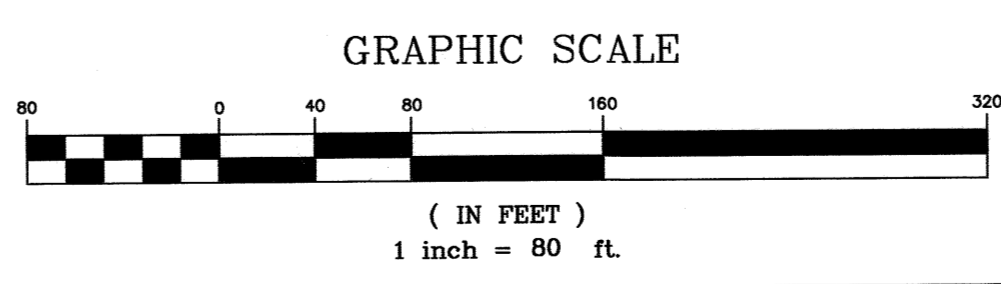
LINE	BEARING	DIST
L1	S 01°57'16" E	44.39
L2	S 28°20'00" E	19.58
L3	S 28°07'30" E	77.88
L4	S 81°12'20" W	3.43
L5	N 08°34'48" E	46.62
L6	N 05°11'57" W	63.24
L7	N 00°21'24" W	68.54
L8	N 08°09'53" E	66.69
L9	S 77°06'20" E	54.19
L10	S 13°48'22" W	50.12
L11	S 88°11'01" E	44.40
L12	N 11°00'33" E	42.51
L13	S 82°23'52" E	24.39
L14	N 82°23'52" W	43.83
L15	N 78°21'23" W	52.97
L16	N 77°06'20" W	59.39
L17	N 77°06'20" W	16.40
L18	N 55°38'01" W	21.06
L19	S 12°14'31" W	45.25
L20	N 79°30'24" W	36.02
L21	N 12°14'31" E	54.72

- REFERENCE DEEDS:**
- David M. Sowerby and Suzanne Sowerby to DSS Land Holdings, LLC; dated March 28, 1996. Recorded at the Y.C.R.D. in Book 7784, page 66.
 - Arnold F. & Jean S. Dickinson to Sentry Commons, LLC; dated July 28, 2000. Recorded at the Y.C.R.D. in Book 10147, page 184.
 - Marion D. Lucas to the State of Maine; dated April 24, 1952. Recorded at the Y.C.R.D. in Book 1205, page 527.
 - Rose E. Adams to the State of Maine; dated March 13, 1952. Recorded at the Y.C.R.D. in Book 1204, page 324.

**SUBDIVISION PLAN
FOR
DSS LAND HOLDINGS, LLC
U.S. ROUTE ONE &
ADAMS ROAD
KITTERY, MAINE**

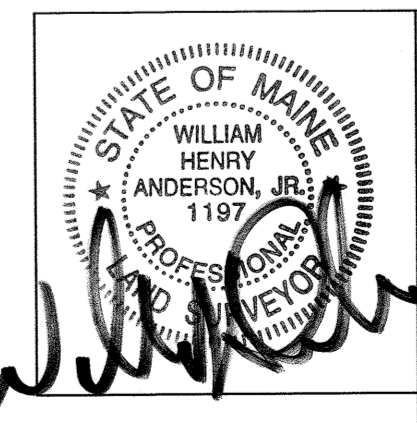
Approved by the Planning Board of
KITTERY, MAINE

CHAIR	DATE



- LEGEND**
- UTILITY POLE
 - STONE WALL
 - N/F "NOW OR FORMERLY"
 - ⊕ HYDRANT
 - ⊕ WATER SHUT OFF
 - ⊕ WATER GATE
 - MONUMENT TO BE SET
 - GRANITE BOUND FOUND

CERTIFICATION:
This survey conforms to the Maine Board of Licensure for Professional Land Surveyors Chapter 90 Standards of Practice, effective April 1, 2001 except as noted on this plan.



ANDERSON LIVINGSTON ENGINEERS, INC.
Suite 401 Cottage Place
433 II U.S. Route One
York, Maine 03909

Scale: 1 in = 80 ft.
Date: September 14, 2007

OWNER:
DSS Land Holdings, LLC
P.O. Box 242
York, ME 03909

REVISIONS:

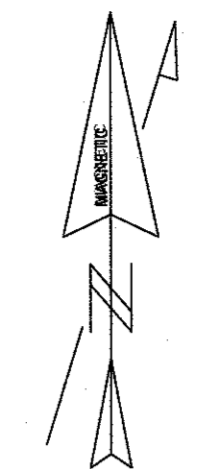
Sheet 1 of 1

FILE NO: 4872.004
PLAN NO: 1516.070901

RESIDENTIAL RURAL DISTRICT
MIXED USE DISTRICT

ADAMS ROAD

U.S. ROUTE 1



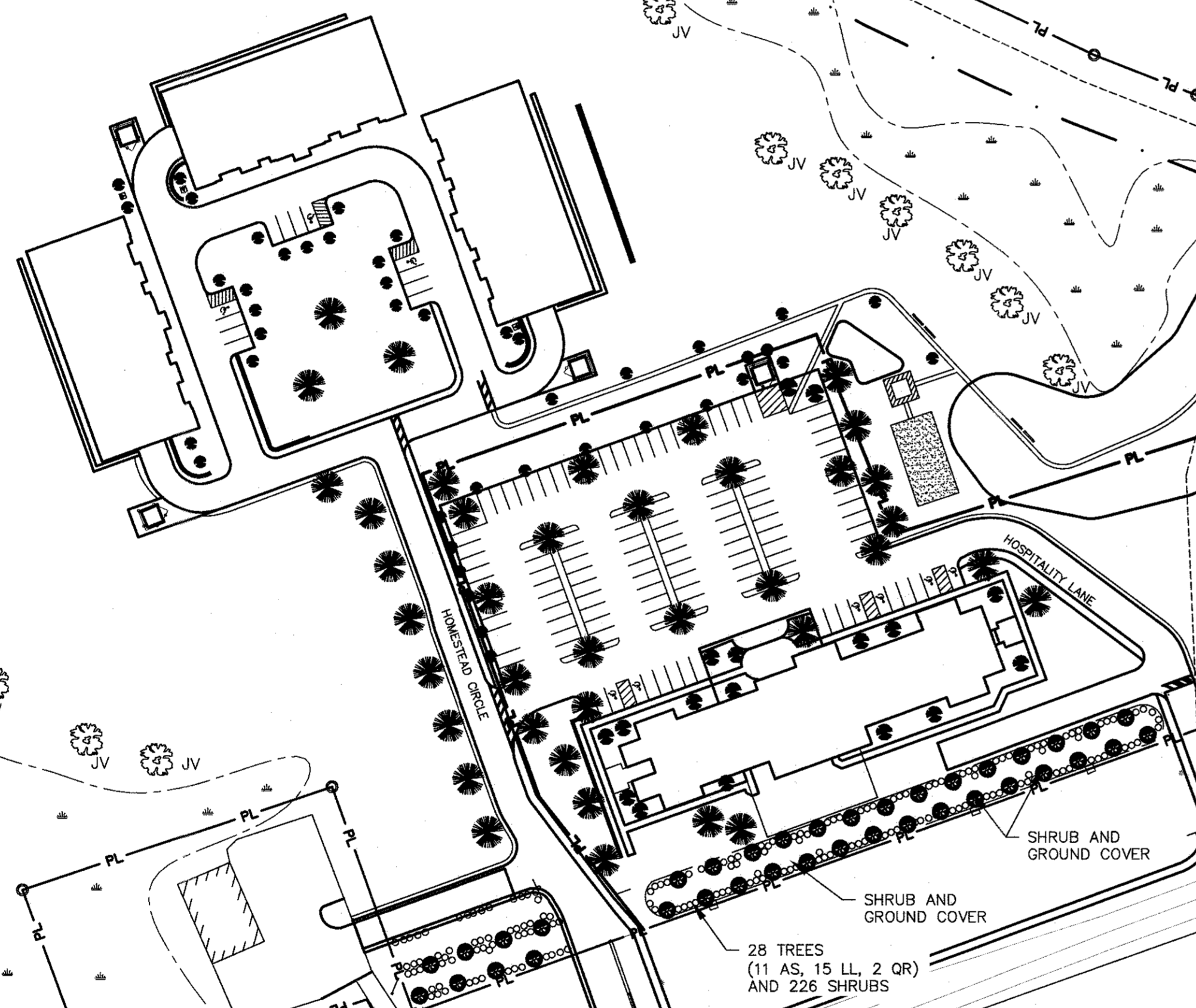
LANDSCAPING NOTES

- 1) THE CONTRACTOR SHALL FOLLOW BEST MANAGEMENT PRACTICES DURING CONSTRUCTION AND SHALL TAKE ALL MEANS NECESSARY TO STABILIZE AND PROTECT THE SITE FROM EROSION.
- 2) EROSION CONTROL SHALL BE IN PLACE PRIOR TO CONSTRUCTION.
- 3) EROSION CONTROL TO CONSIST OF HAY BALES AND EROSION CONTROL FABRIC SHALL BE STAKED IN PLACE BETWEEN THE WORK AND WATER BODIES, WETLANDS AND/OR DRAINAGE WAYS PRIOR TO ANY CONSTRUCTION.
- 4) THE CONTRACTOR SHALL VERIFY LAYOUT AND GRADES AND INFORM THE LANDSCAPE ARCHITECT OR CLIENT'S REPRESENTATIVE OF ANY DISCREPANCIES OR CHANGES IN LAYOUT AND/OR GRADE RELATIONSHIPS PRIOR TO CONSTRUCTION.
- 5) THE CONTRACTOR SHALL VERIFY EXACT LOCATION AND ELEVATION OF ALL UTILITIES WITH RESPECTIVE UTILITY OWNERS PRIOR TO CONSTRUCTION. CALL DIGSAFE AT 1-888-344-7233.
- 6) THE CONTRACTOR SHALL GUARANTEE ALL PLANTS FOR NOT LESS THAN TWO YEARS FROM THE TIME OF ACCEPTANCE.
- 7) ALL LANDSCAPING SHALL BE PROVIDED WITH EITHER OF THE FOLLOWING:
 - 7)1) AN UNDERGROUND SPRINKLER SYSTEM
 - 7)2) AN OUTSIDE HOSE ATTACHMENT WITHIN 150 FEET
- 8) TREES, GROUND COVER, AND SHRUB BEDS SHALL BE MULCHED TO A DEPTH OF 2" WITH ONE-YEAR-OLD, WELL-COMPOSTED, SHREDDED NATIVE BARK NOT LONGER THAN 4" IN LENGTH AND 1/2" IN WIDTH, FREE OF WOODCHIPS AND SAW DUST. MULCH FOR FERNS AND HERBACEOUS PERENNIALS SHALL BE NO LONGER THAN 1" IN LENGTH. TREES IN LAWN AREAS SHALL BE MULCHED IN A 5' DIAMETER MIN. SAUCER.
- 9) ALL DISTURBED AREAS WILL BE DRESSED WITH 4" OF TOPSOIL AND PLANTED AS NOTED ON THE PLANS OR SEEDED EXCEPT PLANT BEDS. PLANT BEDS SHALL BE PREPARED TO A DEPTH OF 12" WITH 75% LOAM AND 25% COMPOST.
- 10) NUMBER OF TREES AND PLANTS REQUIRED AT FRONTAGE:

	TREES	PLANTS
REQUIRED	60	375
PROPOSED	66	410
- 11) NUMBER OF TREES AND PLANTS REQUIRED AT PARKING:

	TREES
REQUIRED	1 PER 8 SPACES (13)
PROPOSED	38
- 12) LANDSCAPED BUFFER TREES TO BE PLANTED AT 25' CL SPACING.

STREAM PROTECTION DISTRICT
(SHORELAND OVERLAY)



18 TREES PLANTED
(10 AS, 4 LL, 4 QR).
EXISTING VEGETATION
TO REMAIN

8 TREES PLANTED
(4 AS, 2 LL, 2 QR).
EXISTING VEGETATION
TO REMAIN

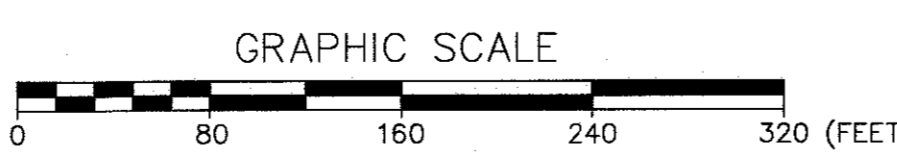
4 TREES
(2 AS, 1 LL, 1 QR)
AND 39 SHRUBS

28 TREES
(11 AS, 15 LL, 2 QR)
AND 226 SHRUBS

8 TREES
(4 AS, 2 LL, 2 QR)
AND 145 SHRUBS

PLANT LIST

TREES	SMYBOL	BOTANICAL NAME	COMMON NAME	QUANTITY	SIZE
AS		ACER SACCHARUM 'BONFIRE'	BONFIRE SUGAR MAPLE	31	2.5-3" CAL
LL		LARIX LARICINA	AMERICAN LARCH	24	2.5-3" CAL
F		FRAXINUS PENNSYLVANICA 'PATMORE'	PATMORE GREEN ASH	3	2.5-3" CAL
G		GLEDITSIA TRIANCANTHOS 'INERMIS' 'HALKA'	HALKA THORNLESS HONEYLOCUST	0	2.5-3" CAL
LPT		PLATANUS X ACERIFOLIA 'BLOODGOOD'	BLOODGOOD LONDON PLANETREE	6	2.5-3" CAL
JV		JUNIPERUS VIRGINIANA	RED CEDAR	15	8-10' HT BB
PYA		PYRUS CALLERYANA 'ARISTOCRAT'	ARISTOCRAT FLOWERING PEAR	0	2.5-3" CAL
QR		QUERCUS RUBRA	RED OAK	24	2.5-3" CAL
SFT		SMALL FLOWERING TREE		0	2.5-3" CAL

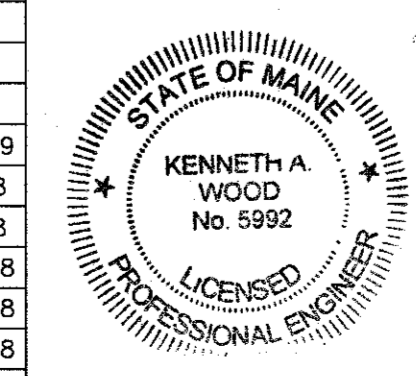


LEGEND			
NEW SETBACK	—	UNDER GROUND UTILITIES	UGU
DESIGNATED OPEN SPACE	▨	SEWER MANHOLE	⊙
PROPERTY LINE	—	EXISTING WATER LINE	EW
EXISTING CONTOUR	---XXX---	EXISTING SEWER LINE	ES
PROPOSED CONTOUR	---XXX---	UTILITY POLE	⊙
PROPOSED WATER LINE	—W—	IRON PIN	○
PROPOSED SEWER LINE	—S—	STONE MONUMENT	⊠
		DRAINAGE STRUCTURE	⊙
		WATER VALVE	⊕
		WATER SHUT OFF	⊖
		HYDRANT	⊗

6.2

LANDSCAPING PLAN
THE HOMESTEAD
459 US ROUTE 1 KITTEERY, MAINE

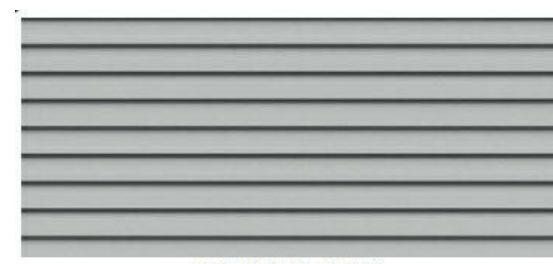
NO.	DESCRIPTION	DATE
H	FINAL PLAN SUBMISSION	01/24/2019
G	PRELIMINARY PLAN REVISION	5/08/2018
F	PRELIMINARY PLAN REVISION	4/19/2018
D	PRELIMINARY PLAN REVISION	03/27/2018
C	SW POND ADJUSTMENT	02/08/2018
B	SW POND ADJUSTMENT	02/06/2018
A	PRELIMINARY PLAN REVISION	1/18/2018



FOR: LANDMARK HILL, LLC
79 CONGRESS ST
PORTSMOUTH, NH 03801

ATTAR ENGINEERING, INC.
CIVIL • STRUCTURAL • MARINE
1284 STATE ROAD - ELIOT, MAINE 03903
PHONE: (207)439-6023 FAX: (207)439-2128

SCALE: 1" = 80'
DATE: 02/08/2018
JOB NO: C052-18 FILE: THE HOMESTEAD BASE SHEET 6.2



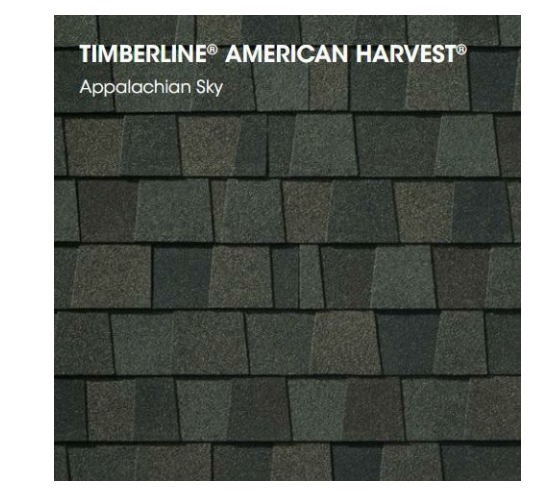
STERLING GRAY
SIDING COLOR



DARK GRAY
SHINGLE SIDING



BOARD AND BATTEN



ROOF SHINGLE COLOR



STONE VENEER COLOR

OTHER EXTERIOR FINISHES:
WINDOWS - ALSIDES WHITE VINYL WINDOWS.
EXTERIOR DOORS - FIBERGLASS EXTERIOR DOORS
FIBERGLASS EXTERIOR FRENCH DOORS

CERTAINTED MAINSTREET VINYL SIDING
Double 4" Woodgrain Clapboard
Natural woodgrain or brushed appearance
Patented STUDDfinder™ is designed for accurate and secure installation RigidForm™ 160 technology has been tested to withstand wind load pressures up to 160 mph DuraLock™ post-formed lock design 9/16" panel projection
.042" thickness
Virtually maintenance free, never needs painting
Class 1(A) fire rating
Lifetime limited warranty

CERTAINTED CEDAR IMPRESSIONS STRAIGHT EDGE PERFECTION SHINGLE VINYL SIDING
5" STRAIGHT EDGE SAWMILL SHINGLES
.042" thickness
Virtually maintenance free, never needs painting
Class 1(A) fire rating
Lifetime limited warranty

CERTAINTED - BOARD & BATTEN - SINGLE 1" & 2"

Timberline® Roofing Shingles
GAF Timberline™ Lifetime Architectural Roofing Shingles

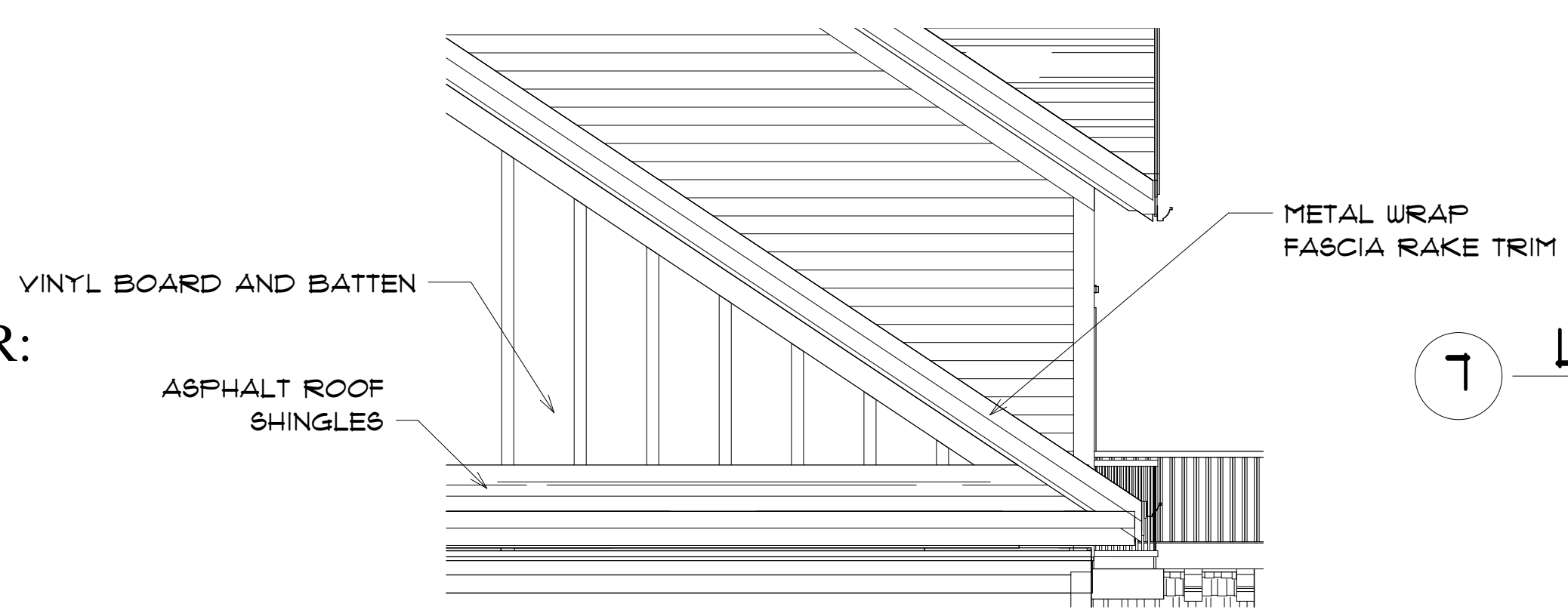
GAF

Boston Blend™ Ledgesstone Thin Veneer consists of a wide range of colors including gray, white, tan, pink, and black. The Ledgesstone pattern of stone veneer consists of thin strips of natural stone. Sold as individual stones not stone panels. Weathered colors and/or inside grain colors. Suitable for putting stone on a wood structure. STONEYARD™ - LITTLETON, MA. Assembled joints. Weight is less than 14 lbs per square foot which allows the product to be used in construction applications without a load bearing support.

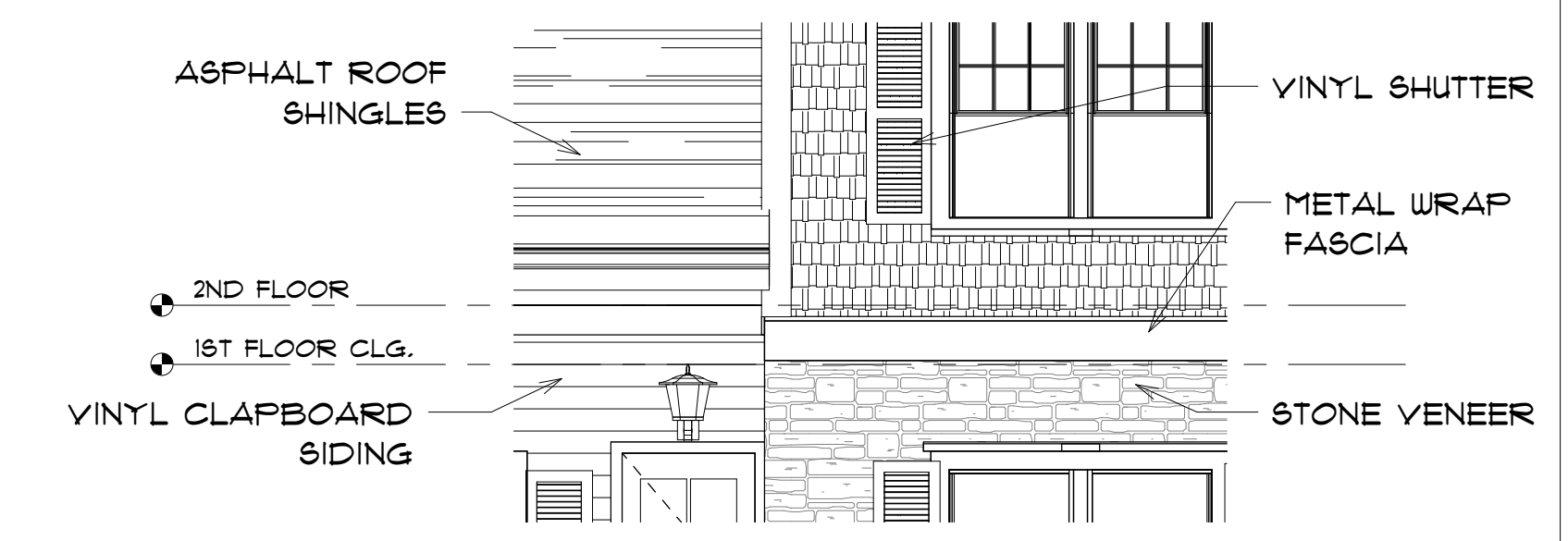
3 FINISH BOARD
1/4" = 1'-0"

SWATCHES FOR COLOR
REFERENCE ONLY: REFER TO
TO MATERIAL DESCRIPTION

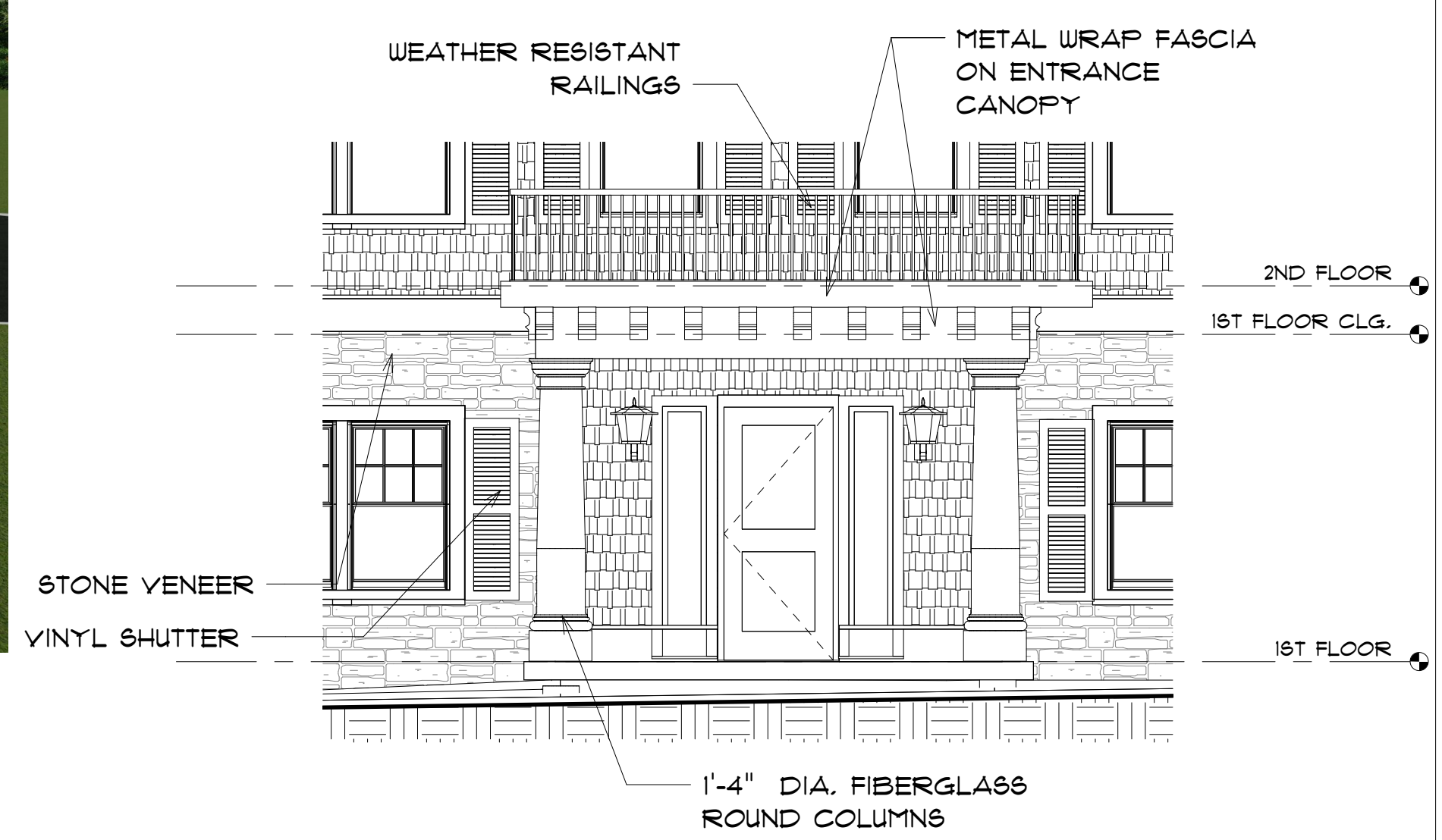
PROPOSED 12 UNIT MULTI-FAMILY FOR:
HOMESTEAD, LLC
495 US ROUTE 1
KITTERY, ME
JANUARY 21, 2019



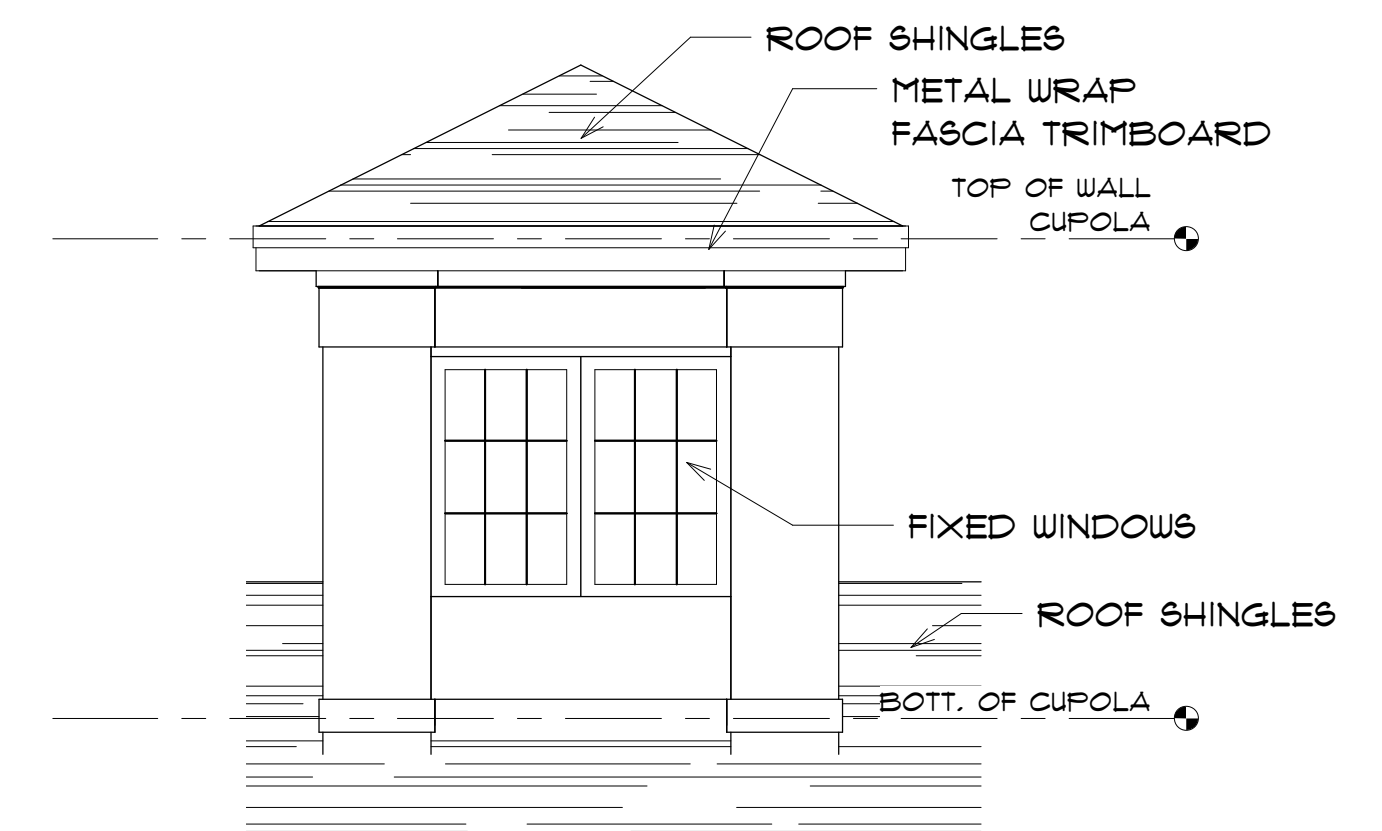
7 LEFT ELEVATION - Callout 1
1/4" = 1'-0"



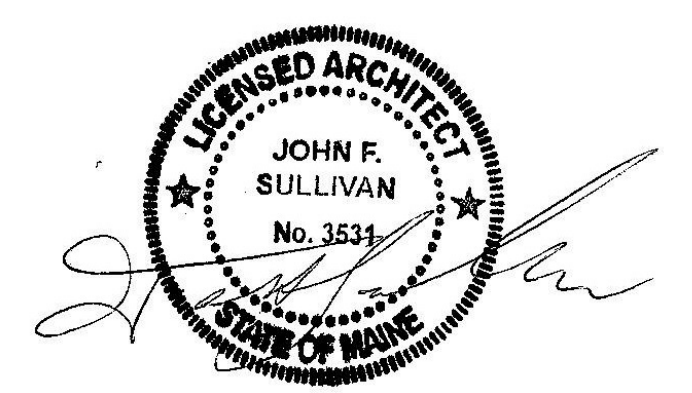
4 DETAIL - TRIM BOARD
1/4" = 1'-0"



5 ENTRANCE CANOPY
1/4" = 1'-0"



6 DETAIL - TRIM BOARD.
1/4" = 1'-0"



DESIGNED BY:
GAVIN AND SULLIVAN ARCHITECTS, INC.

128 WARREN STREET
LOWELL, MA 01852



1 FRONT ELEVATION.
3/32" = 1'-0"



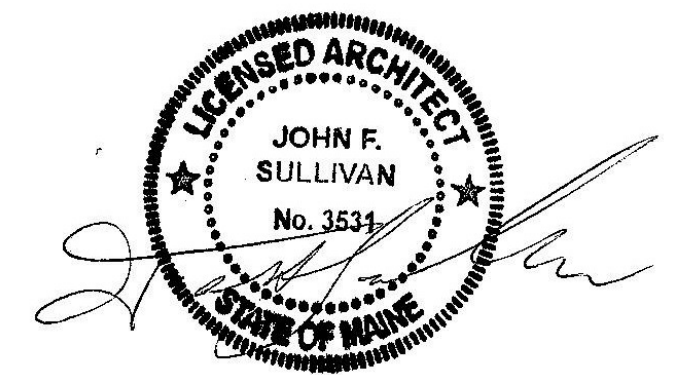
2 LEFT ELEVATION .
3/32" = 1'-0"



3 RIGHT ELEVATION.
3/32" = 1'-0"



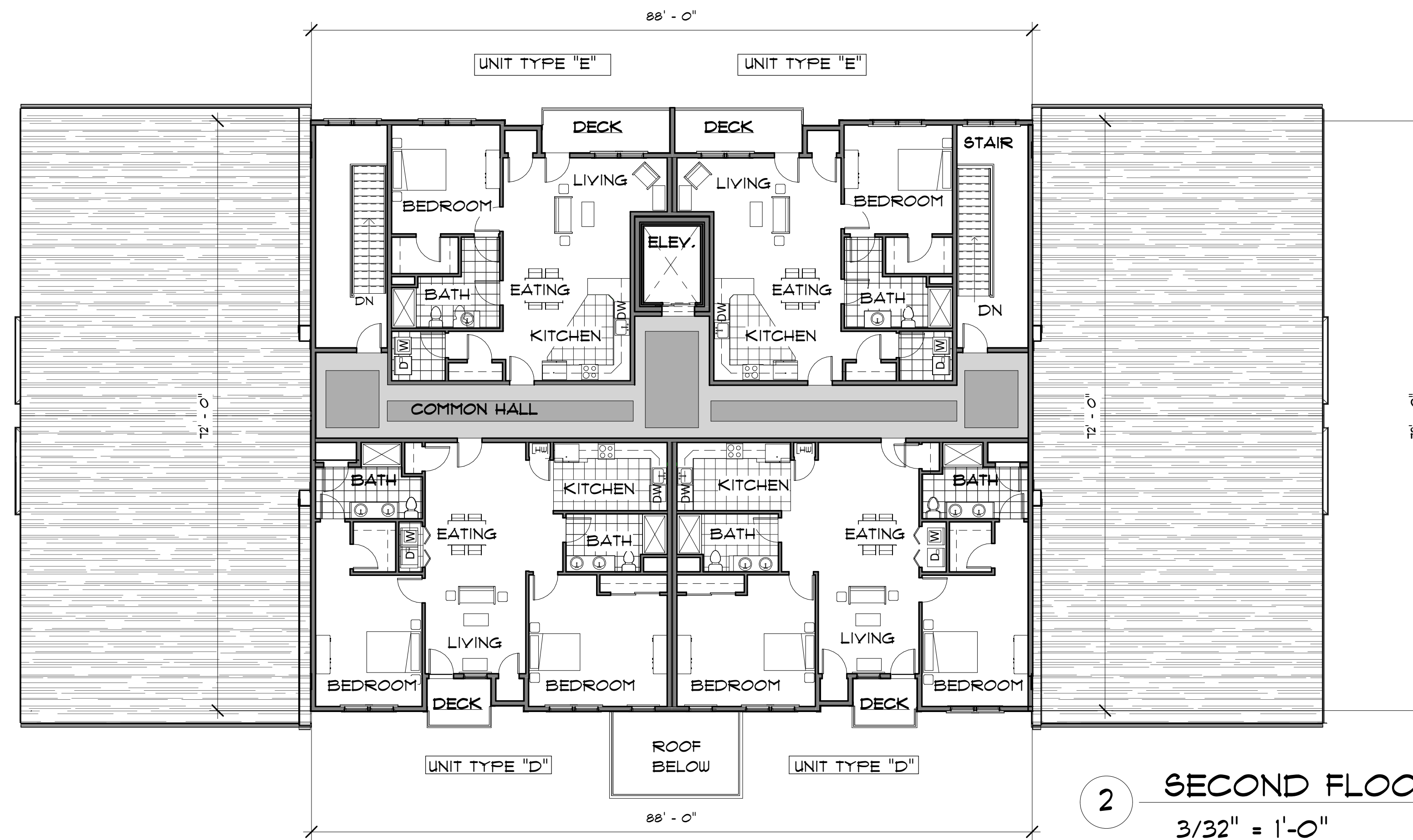
4 REAR ELEVATION.
3/32" = 1'-0"



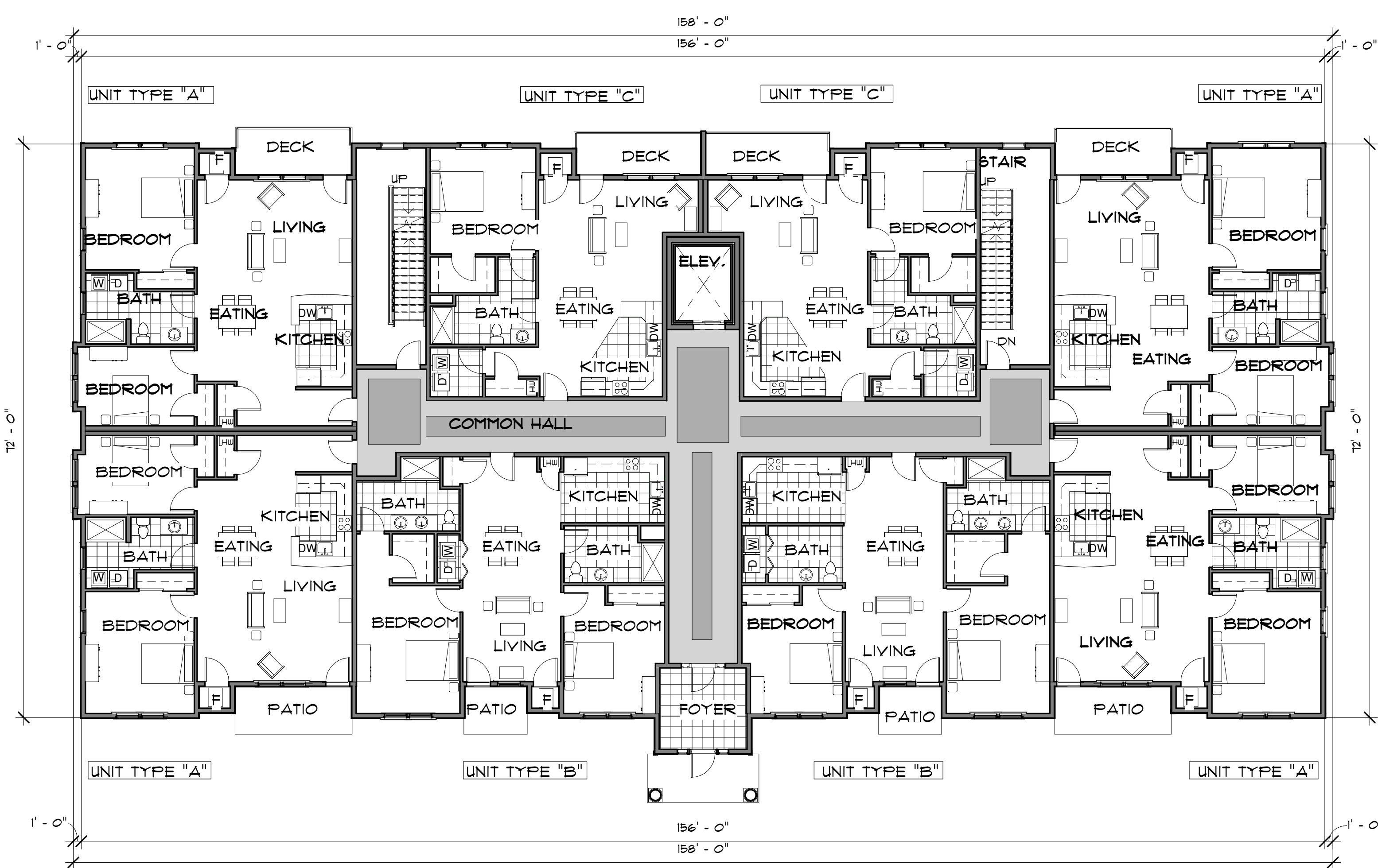
PROPOSED 12 UNIT MULTI-FAMILY FOR:
HOMESTEAD, LLC
495 US ROUTE 1
KITTERY, ME
JANUARY 21, 2019

DESIGNED BY:
GAVIN AND SULLIVAN ARCHITECTS, INC.

128 WARREN STREET
LOWELL, MA 01852

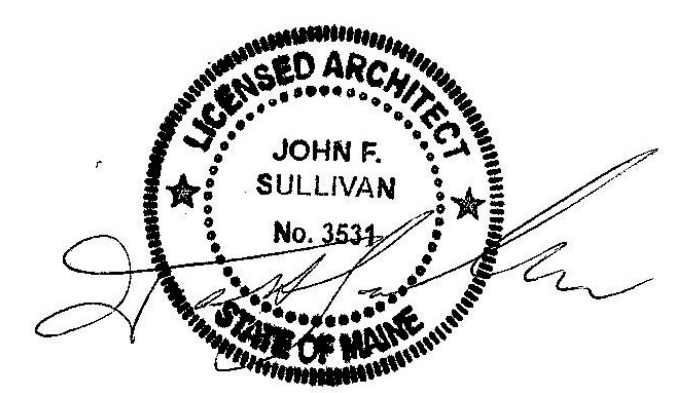


2 SECOND FLOOR PLAN.
3/32" = 1'-0"



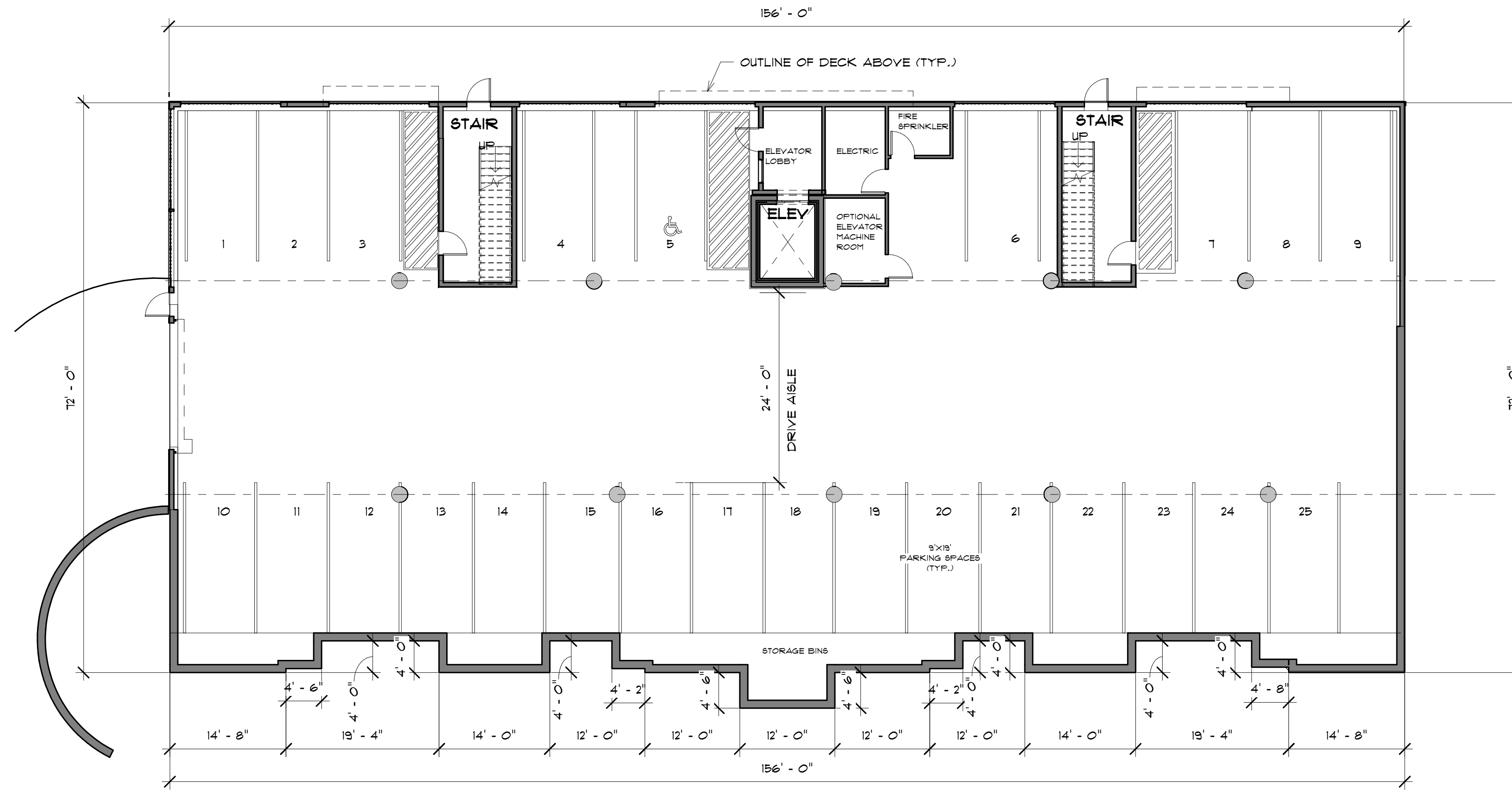
1 FIRST FLOOR PLAN.
3/32" = 1'-0"

FLOOR PLAN SQUARE FOOTAGE BREAKDOWN	
GARAGE FLOOR	14,235 +/- SQ.FT.
1ST FLOOR	14,235 +/- SQ.FT.
2ND FLOOR	6,121 +/- SQ.FT.
TOTAL AREA	34,591 +/- SQ.FT.
UNIT SQUARE FOOTAGE BREAKDOWN	
UNIT TYPE "A"	1,180 +/- SQ.FT.
UNIT TYPE "B"	1,239 +/- SQ.FT.
UNIT TYPE "C"	940 +/- SQ.FT.
UNIT TYPE "D"	1,392 +/- SQ.FT.
UNIT TYPE "E"	966 +/- SQ.FT.



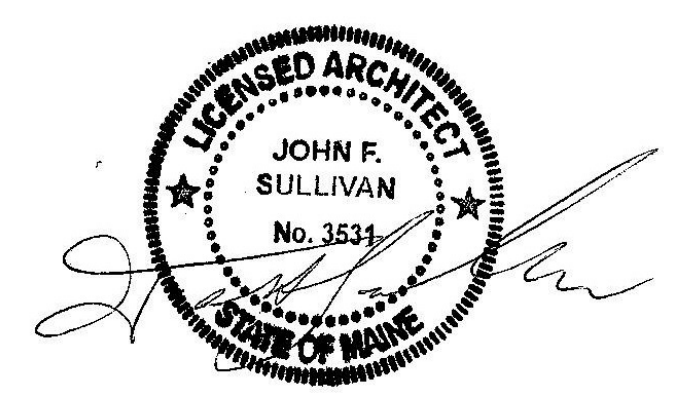
PROPOSED 12 UNIT MULTI-FAMILY FOR:
HOMESTEAD, LLC
 495 US ROUTE 1
 KITTERY, ME
 JANUARY 21, 2019

DESIGNED BY:
GAVIN AND SULLIVAN ARCHITECTS, INC.
 128 WARREN STREET
 LOWELL, MA 01852

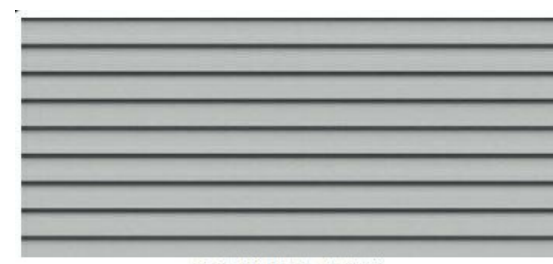


1 GARAGE FLOOR.
 3/32" = 1'-0"

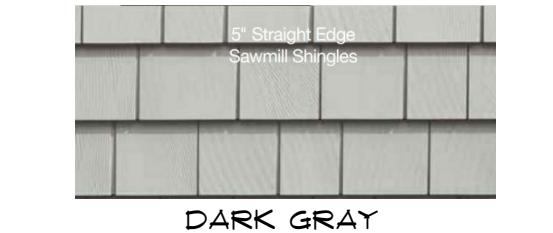
PROPOSED 12 UNIT MULTI-FAMILY FOR:
HOMESTEAD, LLC
 495 US ROUTE 1
 KITTERY, ME
 JANUARY 21, 2019



DESIGNED BY:
GAVIN AND SULLIVAN ARCHITECTS, INC.
 128 WARREN STREET
 LOWELL, MA 01852



STERLING GRAY
SIDING COLOR



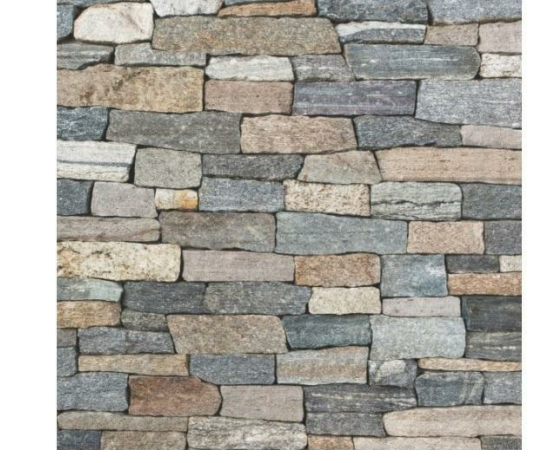
DARK GRAY
SHINGLE SIDING



BOARD AND BATTEN



ROOF SHINGLE COLOR



STONE VENEER COLOR

OTHER EXTERIOR FINISHES:
WINDOWS - ALSIDES WHITE VINYL WINDOWS.
EXTERIOR DOORS - FIBERGLASS EXTERIOR DOORS
FIBERGLASS EXTERIOR FRENCH DOORS

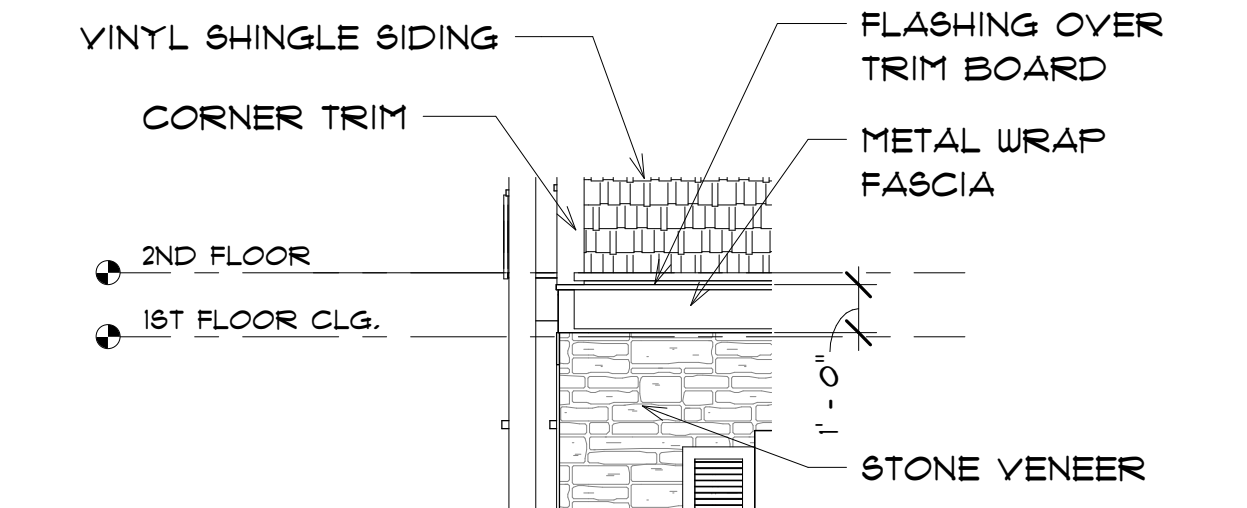
CERTAINTED MAINSTREET VINYL SIDING
Double 4" Woodgrain Clapboard
Natural woodgrain or brushed appearance
Patented 6TUDFinder™ is designed for accurate and secure installation RigidForm™ 160 technology has been tested to withstand wind load pressures up to 160 mph DuraLock™ post-formed lock design 9/16" panel projection
.042" thickness
Virtually maintenance free, never needs painting
Class 1(A) fire rating
Lifetime limited warranty

CERTAINTED CEDAR IMPRESSIONS STRAIGHT EDGE PERFECTION SHINGLE VINYL SIDING
5" STRAIGHT EDGE SAWMILL SHINGLES
.042" thickness
Virtually maintenance free, never needs painting
Class 1(A) fire rating
Lifetime limited warranty

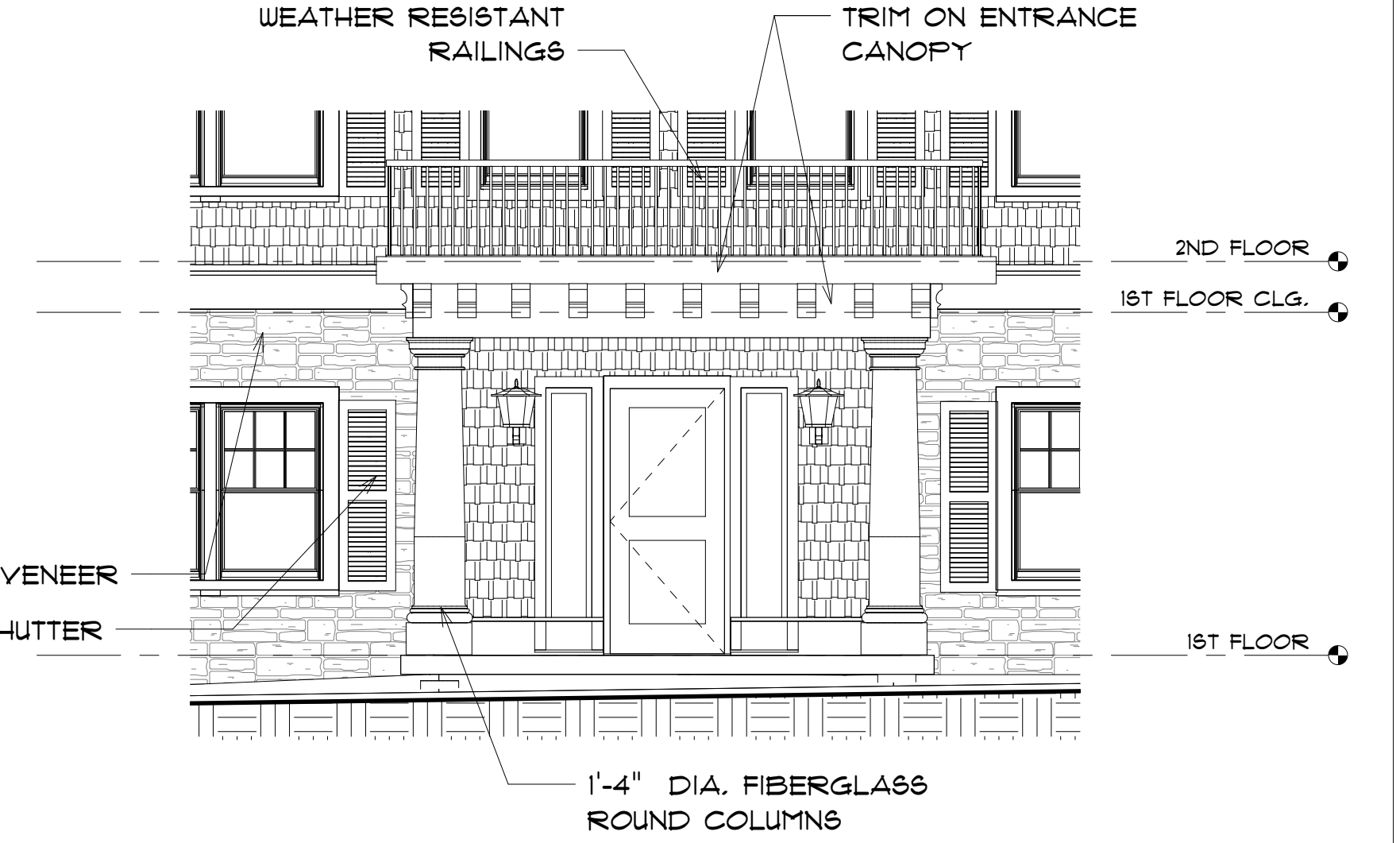
CERTAINTED - BOARD & BATTEN - SINGLE 1" & 2"

GAF
Timberline™ Roofing Shingles
GAF Timberline™ Lifetime Architectural Roofing Shingles

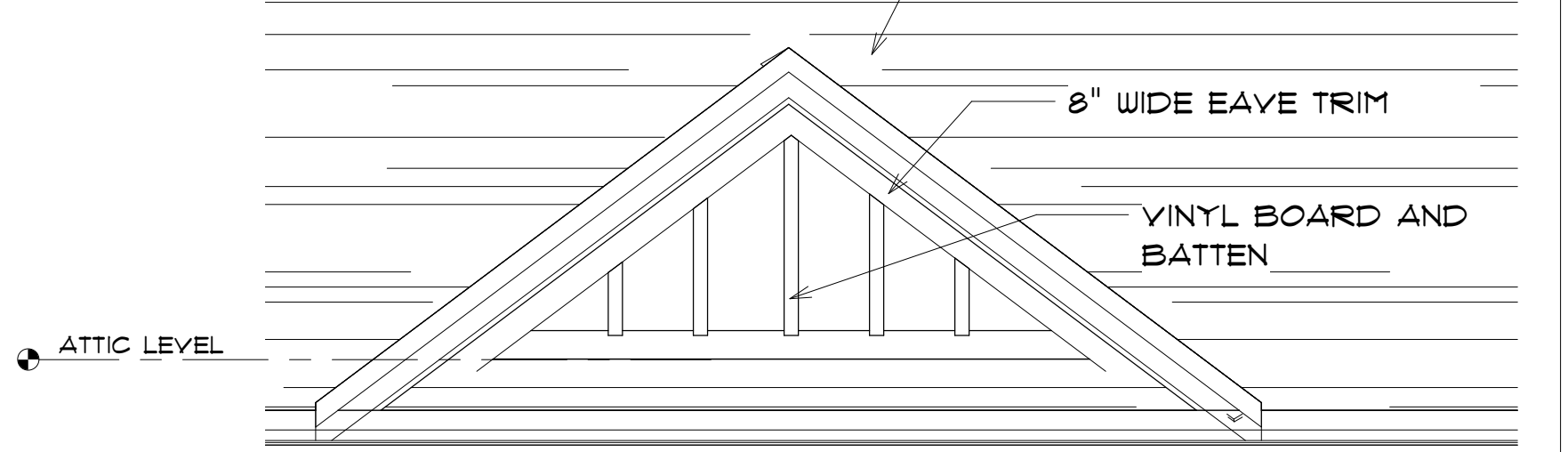
STONEYARD - LITTLETON, MA
Boston Blend LedgeStone™ Thin Veneer consists of a wide range of colors including gray, white, tan, pink, and black. The LedgeStone pattern of stone veneer consists of thin strips of natural stone. Sold as individual stones not stone panels. Weathered colors and/or inside grain colors. Suitable for putting stone on a wood structure. 1 inch thickness allows for recessed joints. Weight is less than 14 lbs per square foot which allows the product to be used in construction applications without a load bearing support.



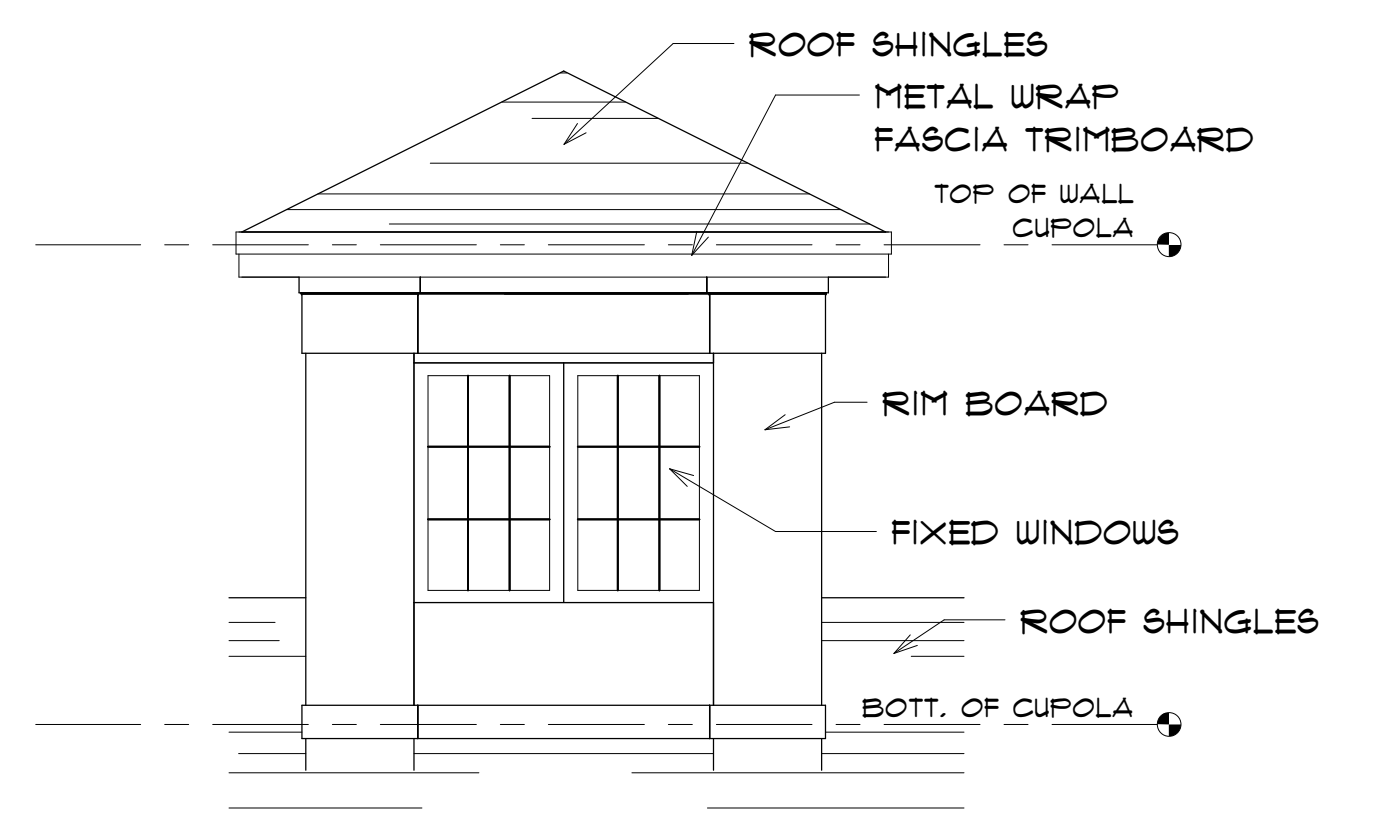
4 **DETAIL - TRIM BOARD**
1/4" = 1'-0"



5 **ENTRANCE CANOPY**
1/4" = 1'-0"

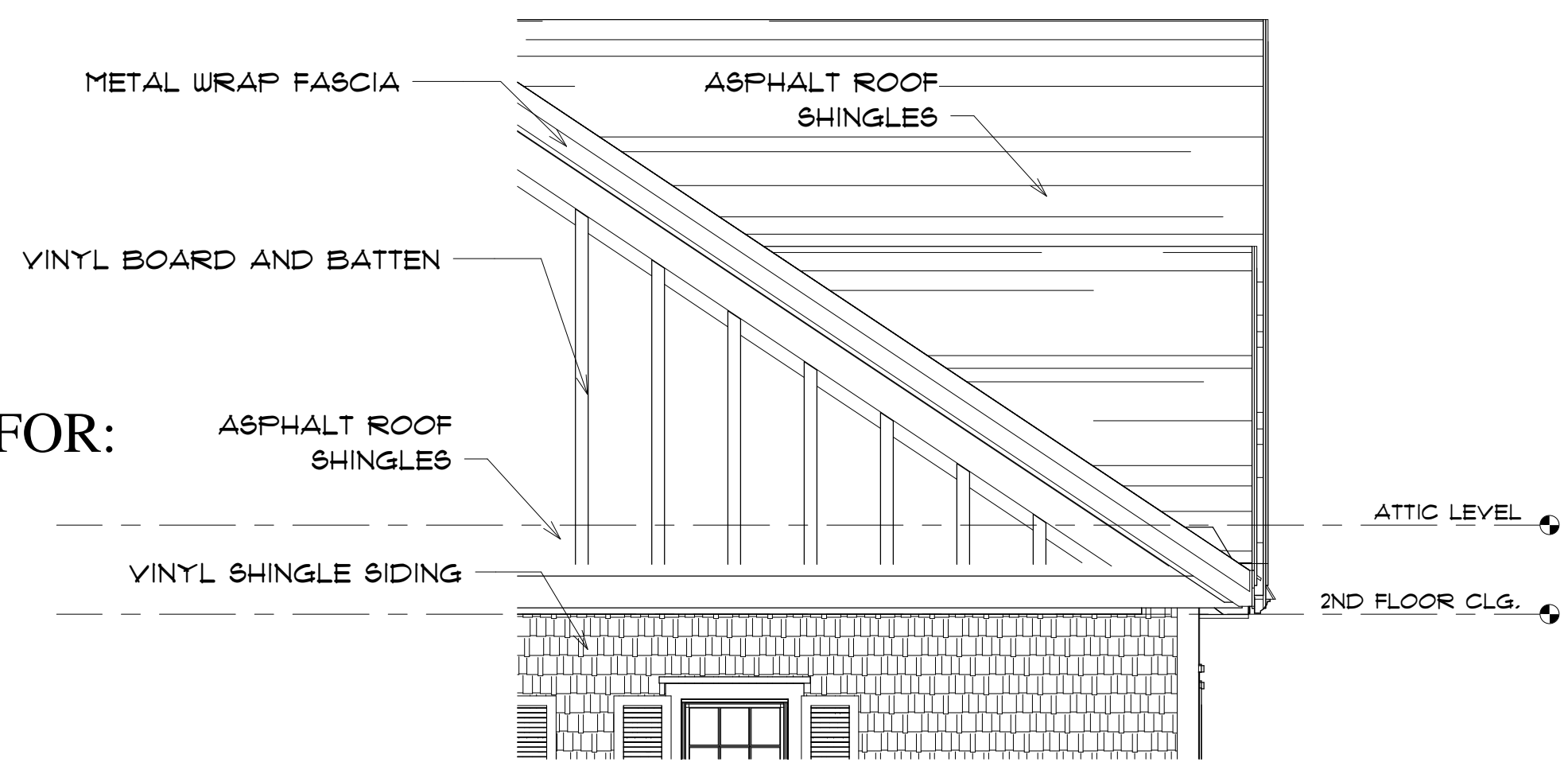


6 **GABLE DORMER DETAIL**
1/4" = 1'-0"



7 **DETAIL - TRIM BOARD.**
1/4" = 1'-0"

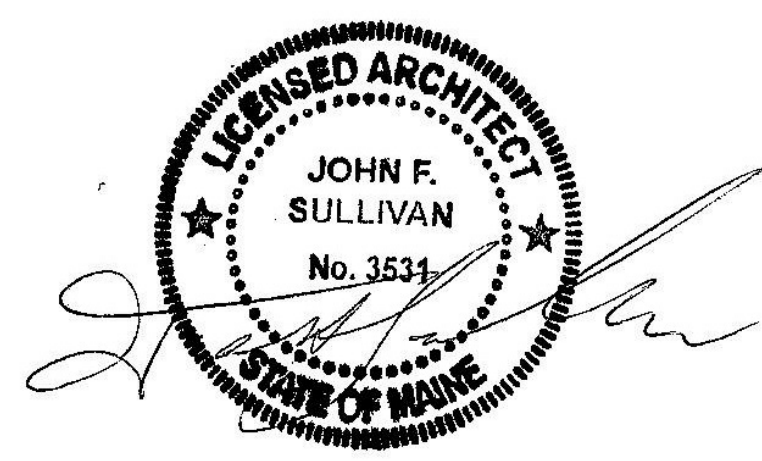
3 **FINISH BOARD**
1/4" = 1'-0"



8 **LEFT ELEVATION - Callout 1**
1/4" = 1'-0"

SWATCHES FOR COLOR
REFERENCE ONLY: REFER TO
TO MATERIAL DESCRIPTION

PROPOSED 16 UNIT MULTI-FAMILY FOR:
HOMESTEAD, LLC
495 US ROUTE 1
KITTEERY, ME
JANUARY 21, 2019

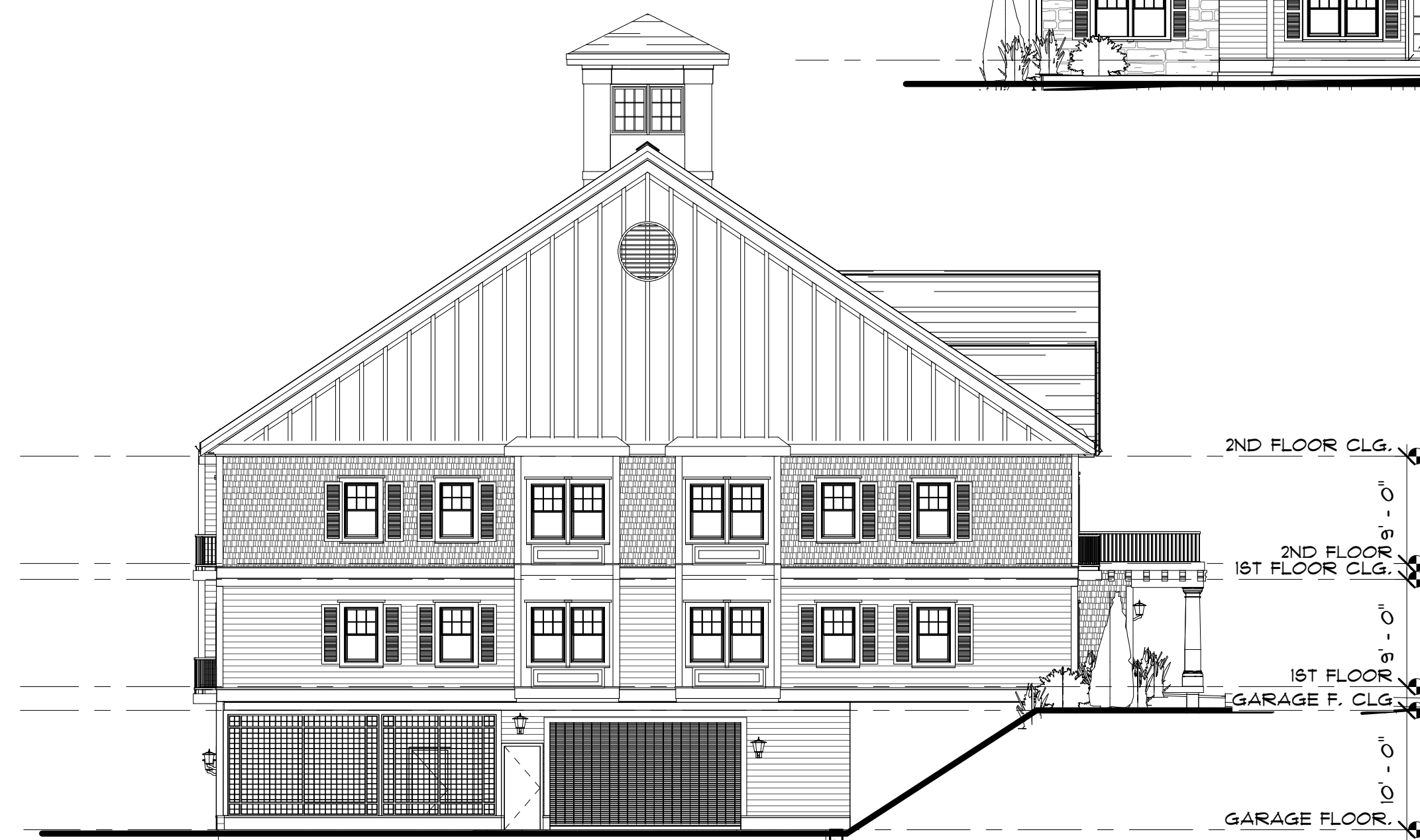


GAVIN AND SULLIVAN ARCHITECTS, INC.

DESIGNED BY:
128 WARREN STREET
LOWELL, MA 01852



1 FRONT ELEVATION.
3/32" = 1'-0"



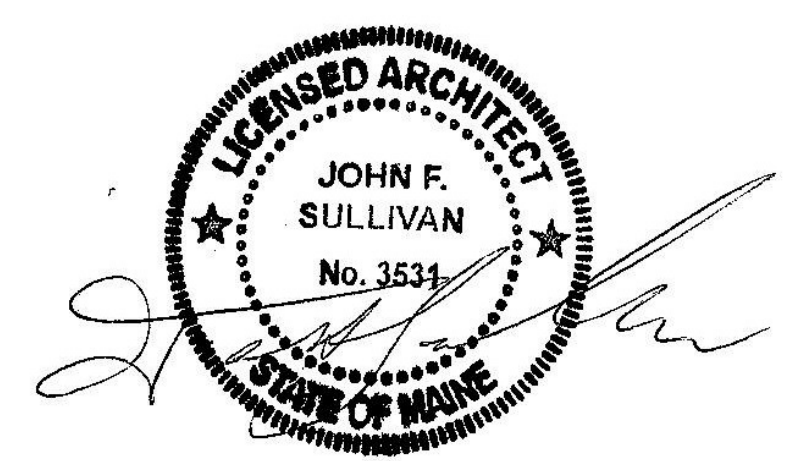
2 LEFT ELEVATION .
3/32" = 1'-0"



3 RIGHT ELEVATION.
3/32" = 1'-0"

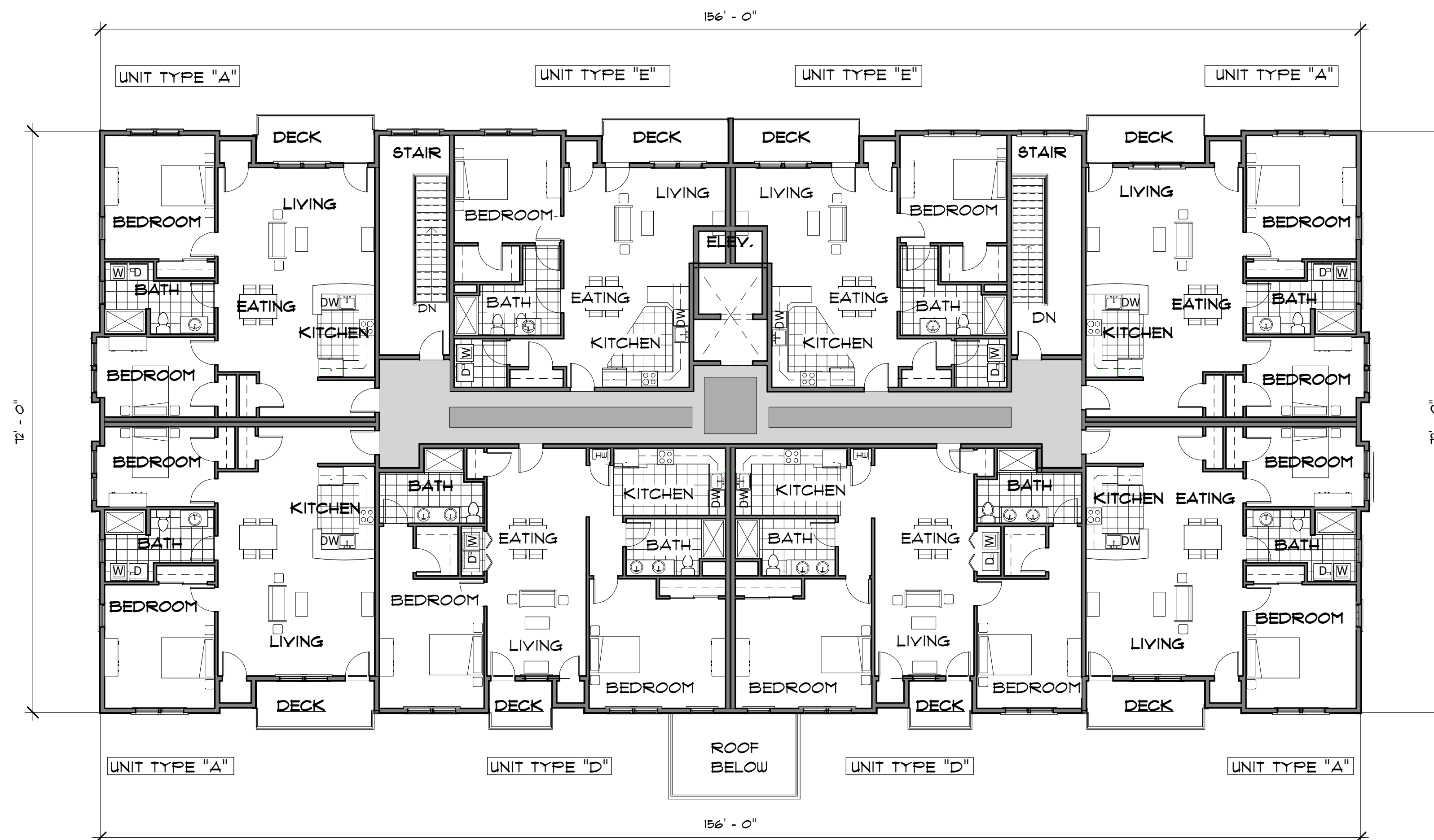


4 REAR ELEVATION.
3/32" = 1'-0"



PROPOSED 16 UNIT MULTI-FAMILY FOR:
HOMESTEAD, LLC
495 US ROUTE 1
KITTERY, ME
JANUARY 21, 2019

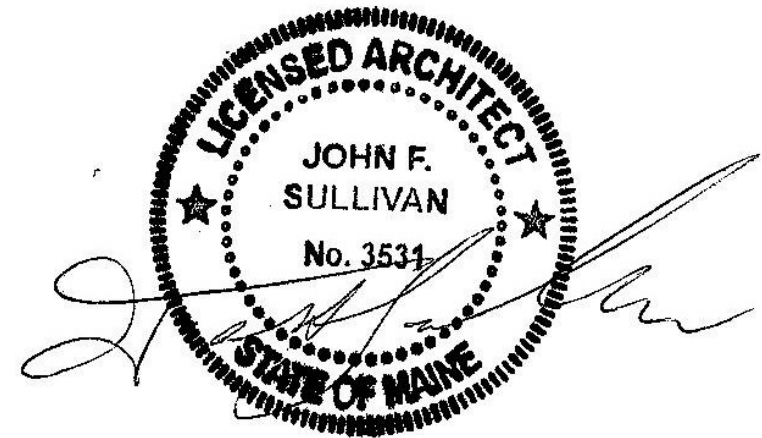
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2 SECOND FLOOR PLAN.
3/32" = 1'-0"



1 FIRST FLOOR PLAN.
3/32" = 1'-0"



FLOOR PLAN SQUARE FOOTAGE BREAKDOWN

GARAGE FLOOR 14,235 + SQ.FT.
 1ST FLOOR 14,235 + SQ.FT.
 2ND FLOOR 14,235 + SQ.FT.

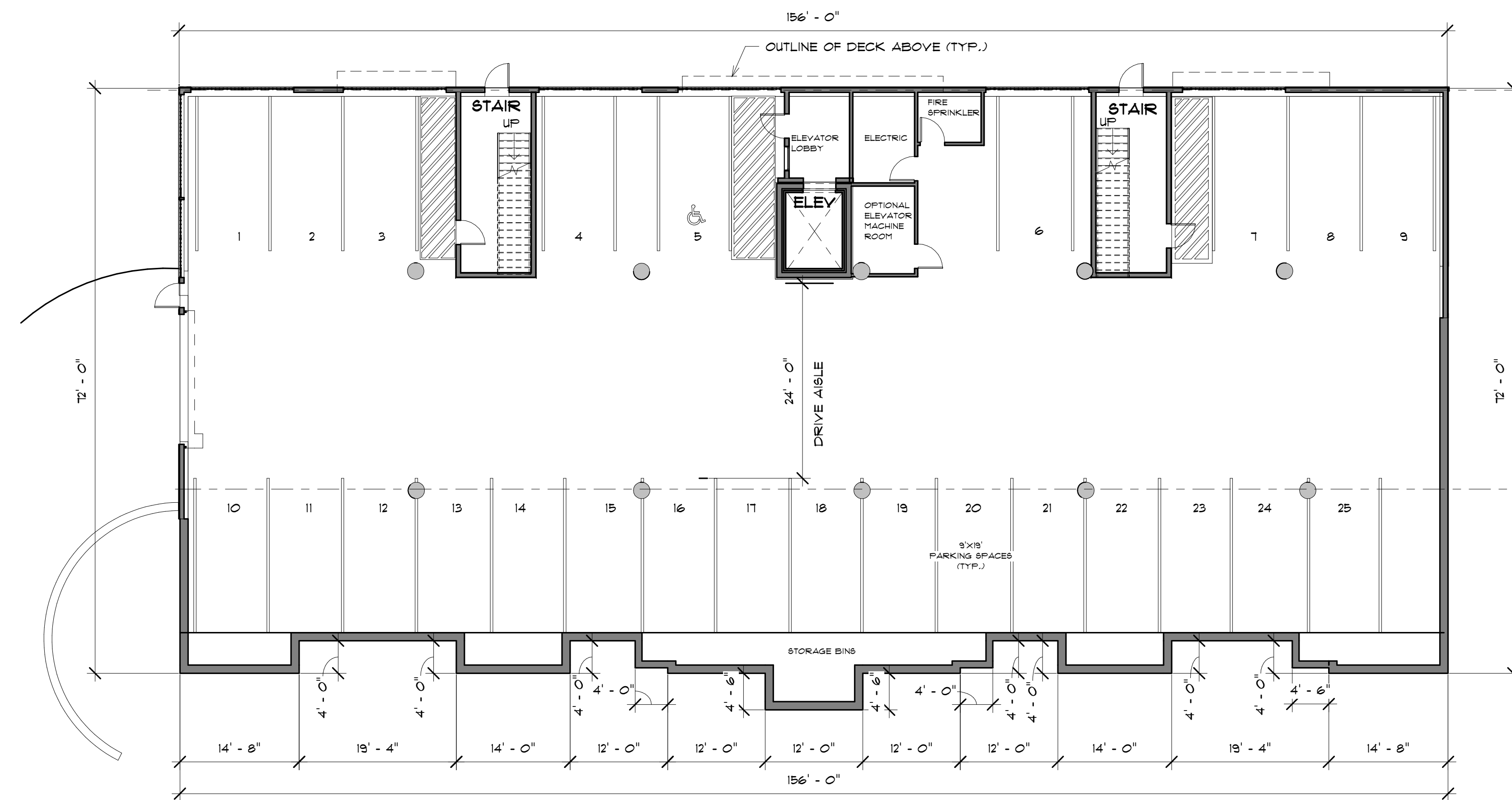
TOTAL AREA 42,705 + SQ.FT.

UNIT SQUARE FOOTAGE BREAKDOWN

UNIT TYPE "A" - 1,180 + SQ.FT.
 UNIT TYPE "B" - 1,239 + SQ.FT.
 UNIT TYPE "B1" - 1,022 + SQ.FT.
 UNIT TYPE "C" - 965 + SQ.FT.
 UNIT TYPE "D" - 1,392 + SQ.FT.
 UNIT TYPE "E" - 966 + SQ.FT.

PROPOSED 16 UNIT MULTI-FAMILY FOR:
HOMESTEAD, LLC
 495 US ROUTE 1
 KITTERY, ME
 JANUARY 21, 2019

DESIGNED BY:
GAVIN AND SULLIVAN ARCHITECTS, INC.
 128 WARREN STREET
 LOWELL, MA 01852



1 GARAGE FLOOR.
 $\frac{3}{32}'' = 1'-0''$

PROPOSED 16 UNIT MULTI-FAMILY FOR:
HOMESTEAD, LLC
 495 US ROUTE 1
 KITTERY, ME
 JANUARY 21, 2019

DESIGNED BY:
GAVIN AND SULLIVAN ARCHITECTS, INC.
 128 WARREN STREET
 LOWELL, MA 01852



ATTAR

ENGINEERING, INC

CIVIL • STRUCTURAL • MARINE

THE HOMESTEAD – MIXED USE DEVELOPMENT U.S. ROUTE 1, KITTERY, MAINE STORMWATER MANAGEMENT STUDY

Project No.: C052-18

January 24, 2018

◆ Scope

This stormwater management plan has been prepared for The Homestead, a proposed Mixed-Use development, located on U.S. Route 1, Kittery, Maine. The entire parcel contains approximately 20 acres; the development will include residential units (elderly and single-family units) and a 4 story hotel. The project requires a Site Location of Development permit amendment from the Maine Department of Environmental Protection (MDEP) and must meet the Stormwater Management requirements for the Town of Kittery. The project will create approximately 8.9 acres of developed area and approximately 3.9 acres of impervious area.

◆ Site and Watershed Description

The project site is located in the Libby Brook and Johnson Brook watershed. Libby Brook is tributary to York River and ultimately, the Atlantic Ocean. Johnson Brook is tributary to Dolly Gordon Brook, York River and ultimately, the Atlantic Ocean. The York River and portions of Libby Brook and Dolly Gordon Brook are tidal. A 7½ minute series U.S.G.S. map of the project area is attached.

The existing site is developed with a 14,000 S.F. structure (abandoned nursing home) and associated driveways and parking. The remainder of the lot contains woodlands and wetlands.

As mentioned above, the site is located in the watershed of Libby Brook and Johnson Brook; approximately 75% of the site drains toward Libby Brook, which is located on the Northwest side of Interstate Route 95. Johnson Brook is located on the southeast side of U.S. Route 1. On-site runoff sheet flows across upland areas and several wooded wetlands prior to discharge toward the brooks. The Northwest portion of the site contains a portion of a small pond with associated wetlands. The topography of the site is gently rolling with several steeper slopes. The majority of grades on-site are from near level to 8%; some areas contain slopes ranging to 15%. A small portion of this site to the Southwest is subject to flooding. The 100 year flood zone, as determined by the Federal Emergency Management Agency (FEMA), is within the wetlands shown on the Site Plan. No development is proposed within the 100 year flood zone.

◆ Soils/Hydrologic Soil Groups

Soil types and their respective Hydrologic Soil Groups (HSG) were determined from a Class A High Intensity Soil Survey (HISS) prepared by Michael Cuomo, CSS, SE for this development. On site soil types consist of Biddeford Mucky Peat (Bm), Biddeford-Scantic (Bs), Dixfield (Dx), Elmwood (Em), Scantic (Sc), Lyman-Turbridge (LT), Swanton (Sw) and Westbury (Ws) soils. The Scantic, Biddeford, and Biddeford - Scantic soils are hydric, or wetland soils. Hydrologic Soil Groups (HSG's) range from "C" to "D" for these soil types. Off-site soil types and their HSG's were determined from the Soil Survey of York County, Maine.

◆ **Methodology**

The stormwater quantity analysis will be conducted using the HydroCAD Stormwater Modeling System by Applied Microcomputer Systems. The analysis determines the “Existing Condition” and “Developed Condition” stormwater flows. Both cases are analyzed for the 2, 10 and 25-year, 24-hour frequency storm events. The Existing Condition analyzes the site as it currently exists and the Developed Condition models the site with the proposed improvements described above.

◆ **Water Quantity Analysis**

Existing Condition

The site was divided into three subcatchments (SC) for the Existing Condition analysis. SC 1 is tributary to a wetland and property line at the west side of the site (Analysis Point 1). SC 2 is tributary to a wetland and existing pond at the north part of the site (Analysis Point 2). SC 2 also includes off-site areas that were part of a 2008 subdivision which created residential lots along Adams Road. This area is assumed to be undeveloped for the Existing Condition analysis. SC 3 is tributary to a wetland on the Southeast part of the site, adjacent to Route 1 (Analysis Point 3).

AP's 1 and 2 are tributary to Libby Brook. AP 3 flow to Johnson Brook.

The AP's were selected to provide convenient points to compare Existing Condition flows to Developed Condition flows.

Developed Condition

The Developed Condition analysis consists of 34 subcatchments. Other features such as ponds and reaches were added to account for on-site routing and detention of stormwater. Five underdrained soil filter ponds (USF's) are proposed to provide both stormwater detention and treatment. Calculations are provided to show the required Channel Protection Volume (CPV) and area for each USF. All Developed Condition flows were routed to the Analysis Points described above.

Changes in Stormwater Flows

Tables showing Existing Condition peak flows, Developed Condition peak flows and the change in peak flow from Existing Condition to Developed Condition are presented on a separate page.

The analysis indicates a decrease in peak flow at all analysis points (AP's 1-3) for all storm events (2, 10 and 25-year).

Runoff from the USF ponds will be routed through outlet structures, pipes and level spreaders prior to discharge to undisturbed, on-site areas.

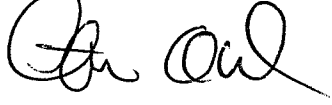
◆ **Water Quality**

In accordance with the MDEP *Chapter 500* General Standards, runoff from developed areas on the site will receive treatment in USF ponds prior to being discharged into on-site wetlands. Approximately 95.8% of the impervious area and 89.4% of the developed area will be treated, exceeding the MDEP General Standards requirements of 95% and 80%, respectively. Treatment calculations and USF sizing calculations are included in this report.

◆ **Summary**

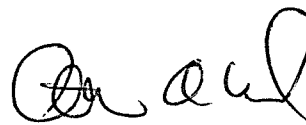
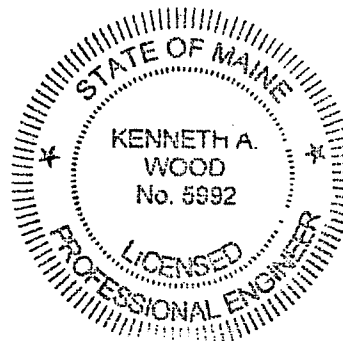
The use of USF ponds to attenuate peak flows will result in no increase in peak runoff quantity from the proposed development. No adverse effects are anticipated on any downstream properties or drainage structures for the analyzed storm events. Runoff quality is addressed by the use of Underdrained Soil Filter Ponds.

Sincerely;

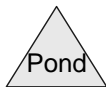
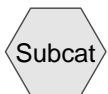
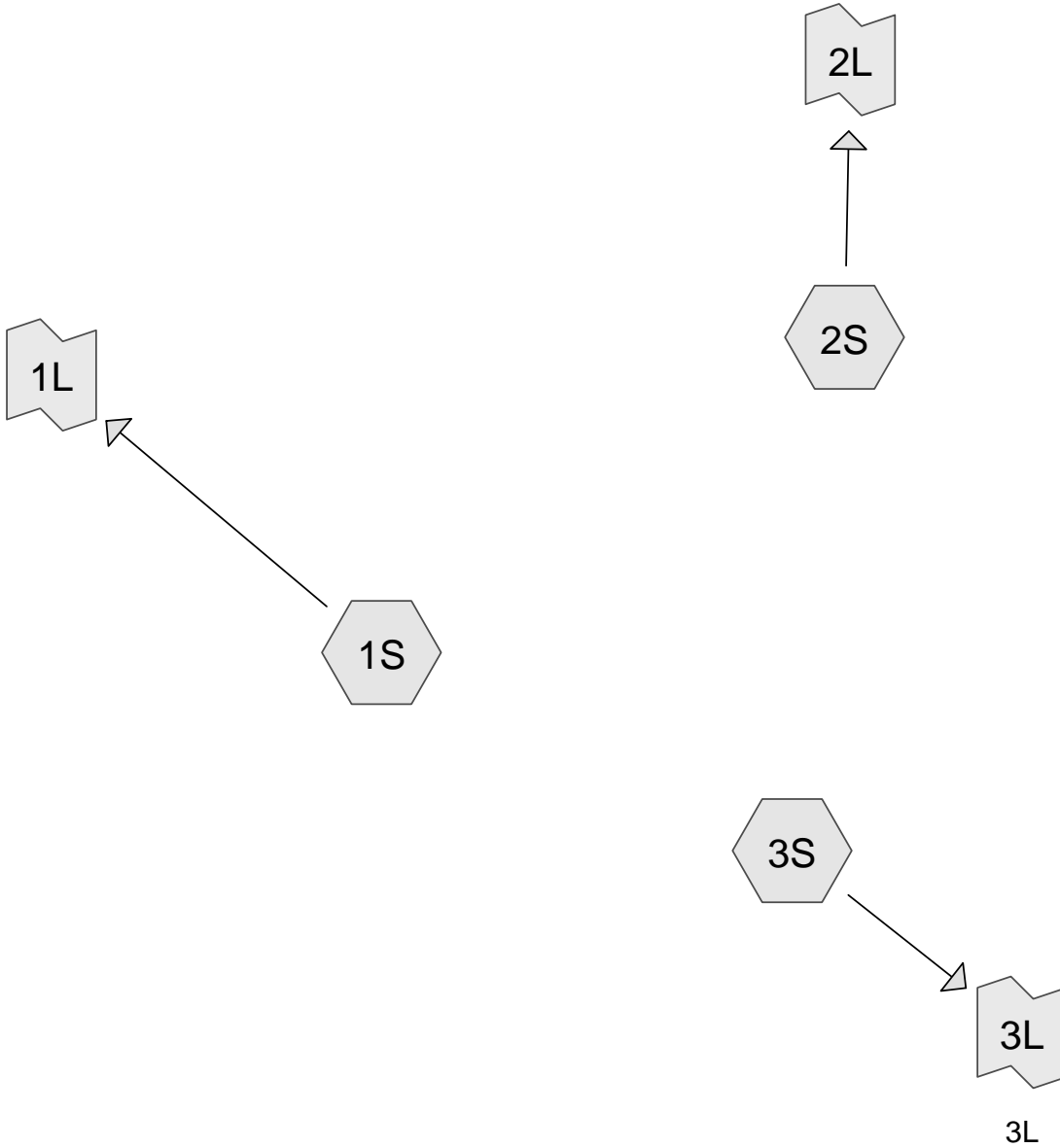


Kenneth A. Wood, P.E.
President

C052-18 SW Landmark_20180328.doc



EXISTING CONDITION CALCULATIONS



The Homestead EXT

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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
13.004	70	Woods, Good, HSG C (1S, 2S, 3S)
16.909	77	Woods, Good, HSG D (1S, 2S, 3S)
2.920	98	Paved parking & roofs (1S, 2S, 3S)
32.833	76	TOTAL AREA

The Homestead EXT

Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Prepared by Hewlett-Packard Company

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Page 3

Time span=1.00-20.00 hrs, dt=0.01 hrs, 1901 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S:

Runoff Area=772,874 sf 11.41% Impervious Runoff Depth>3.71"
Flow Length=1,580' Tc=36.4 min CN=77 Runoff=43.10 cfs 5.490 af

Subcatchment 2S:

Runoff Area=434,052 sf 5.33% Impervious Runoff Depth>3.50"
Flow Length=931' Tc=41.7 min CN=75 Runoff=21.43 cfs 2.909 af

Subcatchment 3S:

Runoff Area=223,297 sf 7.12% Impervious Runoff Depth>3.74"
Flow Length=629' Tc=11.2 min CN=77 Runoff=20.26 cfs 1.599 af

Link 1L:

Inflow=43.10 cfs 5.490 af
Primary=43.10 cfs 5.490 af

Link 2L:

Inflow=21.43 cfs 2.909 af
Primary=21.43 cfs 2.909 af

Link 3L: 3L

Inflow=20.26 cfs 1.599 af
Primary=20.26 cfs 1.599 af

Total Runoff Area = 32.833 ac Runoff Volume = 9.998 af Average Runoff Depth = 3.65"
91.11% Pervious = 29.914 ac 8.89% Impervious = 2.920 ac

The Homestead EXT

Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Prepared by Hewlett-Packard Company

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Summary for Subcatchment 1S:

Runoff = 43.10 cfs @ 12.50 hrs, Volume= 5.490 af, Depth> 3.71"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
88,161	98	Paved parking & roofs
316,563	70	Woods, Good, HSG C
368,150	77	Woods, Good, HSG D
772,874	77	Weighted Average
684,713		88.59% Pervious Area
88,161		11.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	50	0.0200	0.07		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.00"
4.7	257	0.0330	0.91		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	32	0.0310	3.92	2.74	Pipe Channel, Culvert 12.0" Round w/ 2.0" inside fill Area= 0.7 sf Perim= 3.0' r= 0.23' n= 0.025 Corrugated metal
2.6	145	0.0340	0.92		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	18	0.0310	3.92	2.74	Pipe Channel, Culvert 12.0" Round w/ 2.0" inside fill Area= 0.7 sf Perim= 3.0' r= 0.23' n= 0.025 Corrugated metal
15.9	1,038	0.0150	1.09	119.37	Trap/Vee/Rect Channel Flow, Wetland Bot.W=90.00' D=1.00' Z= 20.0' /' Top.W=130.00' n= 0.150
0.3	40	0.0050	1.97	1.38	Pipe Channel, 12.0" Round w/ 2.0" inside fill Area= 0.7 sf Perim= 3.0' r= 0.23' n= 0.020 Corrugated PE, corrugated interior
36.4	1,580	Total			

Summary for Subcatchment 2S:

Runoff = 21.43 cfs @ 12.56 hrs, Volume= 2.909 af, Depth> 3.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
23,128	98	Paved parking & roofs
194,475	70	Woods, Good, HSG C
216,449	77	Woods, Good, HSG D
434,052	75	Weighted Average
410,924		94.67% Pervious Area
23,128		5.33% Impervious Area

The Homestead EXT

Type III 24-hr 25 YEAR STORM Rainfall=6.60"

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Page 5

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.7	74	0.0230	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.00"
6.1	326	0.0320	0.89		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
6.9	531	0.0260	1.28	63.79	Trap/Vee/Rect Channel Flow, Wetland Bot.W=30.00' D=1.00' Z= 20.0 '/' Top.W=70.00' n= 0.150
41.7	931	Total			

Summary for Subcatchment 3S:

Runoff = 20.26 cfs @ 12.16 hrs, Volume= 1.599 af, Depth> 3.74"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
15,896	98	Paved parking & roofs
* 151,978	77	Woods, Good, HSG D
55,423	70	Woods, Good, HSG C
223,297	77	Weighted Average
207,401		92.88% Pervious Area
15,896		7.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	27	0.0200	1.03		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"
2.2	153	0.0536	1.16		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
8.6	449	0.0110	0.87	56.45	Trap/Vee/Rect Channel Flow, Wetland Bot.W=45.00' D=1.00' Z= 20.0 '/' Top.W=85.00' n= 0.150
11.2	629	Total			

Summary for Link 1L:

Inflow Area = 17.743 ac, 11.41% Impervious, Inflow Depth > 3.71" for 25 YEAR STORM event
Inflow = 43.10 cfs @ 12.50 hrs, Volume= 5.490 af
Primary = 43.10 cfs @ 12.50 hrs, Volume= 5.490 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-20.00 hrs, dt= 0.01 hrs

The Homestead EXT

Type III 24-hr 25 YEAR STORM Rainfall=6.60"

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Page 6

Summary for Link 2L:

Inflow Area = 9.964 ac, 5.33% Impervious, Inflow Depth > 3.50" for 25 YEAR STORM event
Inflow = 21.43 cfs @ 12.56 hrs, Volume= 2.909 af
Primary = 21.43 cfs @ 12.56 hrs, Volume= 2.909 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-20.00 hrs, dt= 0.01 hrs

Summary for Link 3L: 3L

Inflow Area = 5.126 ac, 7.12% Impervious, Inflow Depth > 3.74" for 25 YEAR STORM event
Inflow = 20.26 cfs @ 12.16 hrs, Volume= 1.599 af
Primary = 20.26 cfs @ 12.16 hrs, Volume= 1.599 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-20.00 hrs, dt= 0.01 hrs

The Homestead EXT

Type III 24-hr 2 YEAR STORM Rainfall=3.33"

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Page 1

Time span=1.00-20.00 hrs, dt=0.01 hrs, 1901 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S:

Runoff Area=772,874 sf 11.41% Impervious Runoff Depth>1.18"
Flow Length=1,580' Tc=36.4 min CN=77 Runoff=13.65 cfs 1.751 af

Subcatchment 2S:

Runoff Area=434,052 sf 5.33% Impervious Runoff Depth>1.07"
Flow Length=931' Tc=41.7 min CN=75 Runoff=6.39 cfs 0.885 af

Subcatchment 3S:

Runoff Area=223,297 sf 7.12% Impervious Runoff Depth>1.20"
Flow Length=629' Tc=11.2 min CN=77 Runoff=6.43 cfs 0.511 af

Link 1L:

Inflow=13.65 cfs 1.751 af
Primary=13.65 cfs 1.751 af

Link 2L:

Inflow=6.39 cfs 0.885 af
Primary=6.39 cfs 0.885 af

Link 3L: 3L

Inflow=6.43 cfs 0.511 af
Primary=6.43 cfs 0.511 af

Total Runoff Area = 32.833 ac Runoff Volume = 3.148 af Average Runoff Depth = 1.15"
91.11% Pervious = 29.914 ac 8.89% Impervious = 2.920 ac

The Homestead EXT

Type III 24-hr 10 YEAR STORM Rainfall=5.34"

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Page 2

Time span=1.00-20.00 hrs, dt=0.01 hrs, 1901 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S:

Runoff Area=772,874 sf 11.41% Impervious Runoff Depth>2.68"
Flow Length=1,580' Tc=36.4 min CN=77 Runoff=31.29 cfs 3.965 af

Subcatchment 2S:

Runoff Area=434,052 sf 5.33% Impervious Runoff Depth>2.50"
Flow Length=931' Tc=41.7 min CN=75 Runoff=15.32 cfs 2.077 af

Subcatchment 3S:

Runoff Area=223,297 sf 7.12% Impervious Runoff Depth>2.71"
Flow Length=629' Tc=11.2 min CN=77 Runoff=14.73 cfs 1.156 af

Link 1L:

Inflow=31.29 cfs 3.965 af
Primary=31.29 cfs 3.965 af

Link 2L:

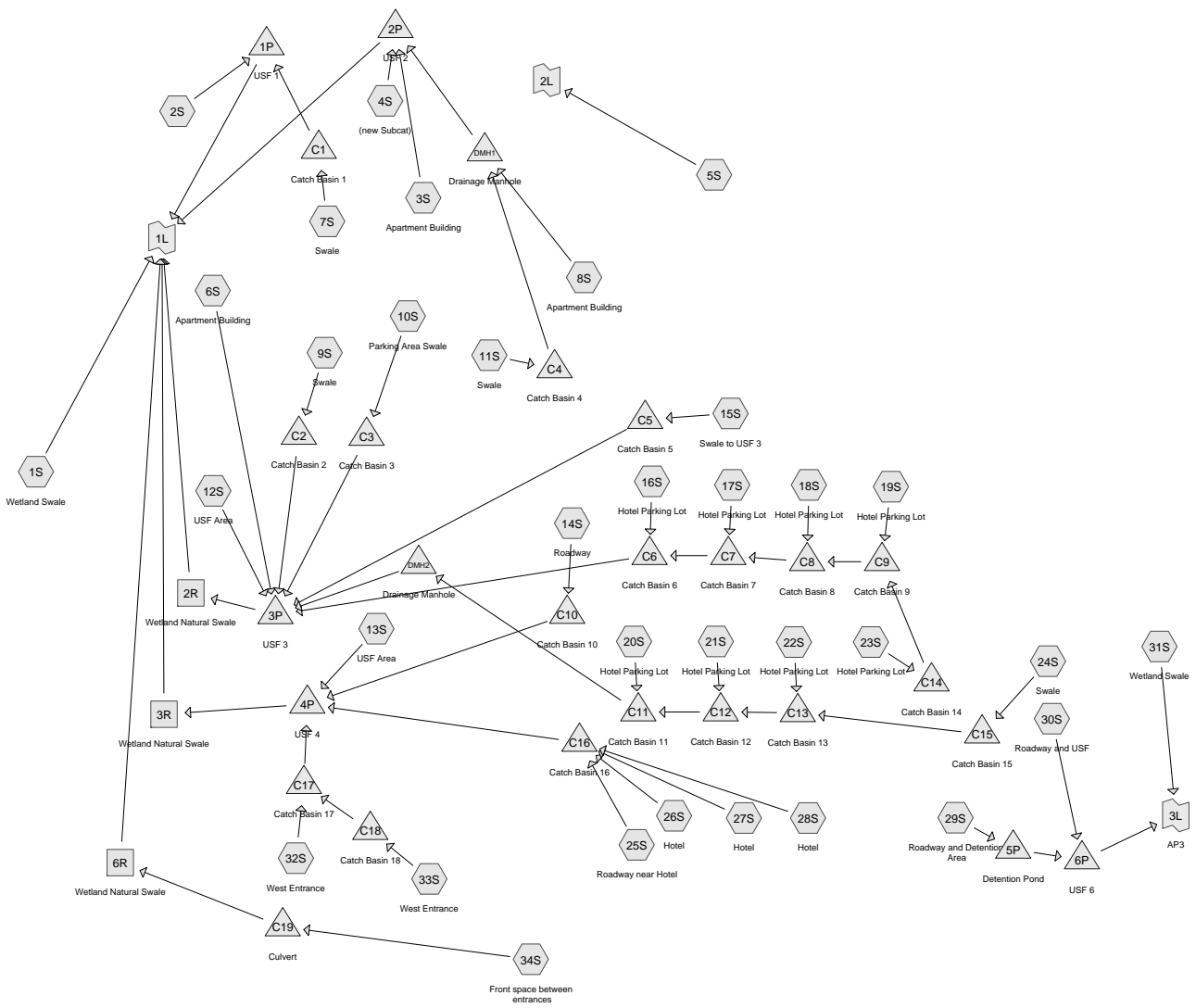
Inflow=15.32 cfs 2.077 af
Primary=15.32 cfs 2.077 af

Link 3L: 3L

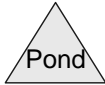
Inflow=14.73 cfs 1.156 af
Primary=14.73 cfs 1.156 af

Total Runoff Area = 32.833 ac Runoff Volume = 7.198 af Average Runoff Depth = 2.63"
91.11% Pervious = 29.914 ac 8.89% Impervious = 2.920 ac

DEVELOPED CONDITION CALCULATIONS



Reach



Routing Diagram for The Homestead PRP
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The Homestead PRP

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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
5.622	70	Woods, Good, HSG C (1S, 5S, 31S)
0.869	70	Woods, Good, HSG C, Landscaped Buffer (34S)
4.566	71	Meadow, non-grazed, HSG C (1S, 2S, 4S, 7S, 9S, 10S, 11S, 12S, 13S, 14S, 15S, 17S, 18S, 19S, 21S, 22S, 23S, 24S, 25S, 29S, 30S, 31S, 34S)
0.028	71	Parking Landscaping (16S, 20S)
16.066	77	Woods, Good, HSG D (1S, 5S, 31S)
0.391	78	Meadow, non-grazed, HSG D (5S, 32S, 33S)
0.009	98	3 Season Pavilion (24S)
0.788	98	Apartment (3S, 6S, 8S)
0.182	98	Apartment Driveway (7S, 9S, 11S)
0.126	98	Apartment Driveway and Walkways (2S, 4S)
0.126	98	Driveway (12S, 15S)
0.230	98	Driveway and Parking (10S)
0.513	98	Existing Impervious (1S)
0.578	98	Existing Road(Rt. 1) (31S, 34S)
0.365	98	Hotel (26S, 27S, 28S)
1.103	98	Hotel Parking Lot (16S, 17S, 18S, 19S, 20S, 21S, 22S, 23S)
0.361	98	Paved parking & roofs (5S)
0.044	98	Proposed Driveway (1S)
0.003	98	Retaining Wall (9S)
0.437	98	Road (13S, 14S, 30S, 32S, 33S)
0.081	98	Road and Drive (25S)
0.198	98	Road and Walkway (29S)
0.116	98	Road and sidewalk (34S)
0.072	98	Walkway (12S, 25S)
32.876	78	TOTAL AREA

The Homestead PRP

Type III 24-hr 25 YEAR STORM Rainfall=6.60"

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Page 3

Time span=5.00-48.00 hrs, dt=0.05 hrs, 861 points
 Runoff by SCS TR-20 method, UH=SCS
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Wetland Swale	Runoff Area=468,593 sf 5.19% Impervious Runoff Depth=4.01" Flow Length=1,580' Tc=36.4 min CN=77 Runoff=26.06 cfs 3.593 af
Subcatchment 2S:	Runoff Area=12,291 sf 24.24% Impervious Runoff Depth=4.11" Flow Length=128' Tc=4.4 min CN=78 Runoff=1.40 cfs 0.097 af
Subcatchment 3S: Apartment Building	Runoff Area=11,448 sf 100.00% Impervious Runoff Depth>6.16" Tc=0.0 min CN=98 Runoff=1.95 cfs 0.135 af
Subcatchment 4S: (new Subcat)	Runoff Area=32,721 sf 7.69% Impervious Runoff Depth=3.59" Flow Length=351' Tc=6.2 min CN=73 Runoff=3.09 cfs 0.225 af
Subcatchment 5S:	Runoff Area=361,071 sf 4.35% Impervious Runoff Depth=3.80" Flow Length=931' Tc=41.7 min CN=75 Runoff=17.79 cfs 2.624 af
Subcatchment 6S: Apartment Building	Runoff Area=11,448 sf 100.00% Impervious Runoff Depth>6.16" Tc=0.0 min CN=98 Runoff=1.95 cfs 0.135 af
Subcatchment 7S: Swale	Runoff Area=6,860 sf 57.10% Impervious Runoff Depth>4.98" Flow Length=154' Tc=1.8 min CN=86 Runoff=0.97 cfs 0.065 af
Subcatchment 8S: Apartment Building	Runoff Area=11,448 sf 100.00% Impervious Runoff Depth>6.16" Tc=0.0 min CN=98 Runoff=1.95 cfs 0.135 af
Subcatchment 9S: Swale	Runoff Area=4,162 sf 50.79% Impervious Runoff Depth>4.87" Flow Length=96' Tc=4.3 min CN=85 Runoff=0.55 cfs 0.039 af
Subcatchment 10S: Parking Area Swale	Runoff Area=28,957 sf 34.60% Impervious Runoff Depth=4.33" Flow Length=213' Tc=12.1 min CN=80 Runoff=2.73 cfs 0.240 af
Subcatchment 11S: Swale	Runoff Area=3,650 sf 55.23% Impervious Runoff Depth>4.98" Flow Length=81' Tc=0.8 min CN=86 Runoff=0.53 cfs 0.035 af
Subcatchment 12S: USF Area	Runoff Area=33,422 sf 11.84% Impervious Runoff Depth=3.70" Flow Length=112' Tc=5.5 min CN=74 Runoff=3.29 cfs 0.236 af
Subcatchment 13S: USF Area	Runoff Area=20,150 sf 22.94% Impervious Runoff Depth=4.01" Flow Length=118' Tc=1.2 min CN=77 Runoff=2.39 cfs 0.155 af
Subcatchment 14S: Roadway	Runoff Area=4,099 sf 77.24% Impervious Runoff Depth>5.62" Flow Length=135' Slope=0.0200 '/' Tc=2.3 min CN=92 Runoff=0.63 cfs 0.044 af
Subcatchment 15S: Swale to USF 3	Runoff Area=16,643 sf 12.61% Impervious Runoff Depth=3.70" Flow Length=273' Tc=14.0 min CN=74 Runoff=1.28 cfs 0.118 af
Subcatchment 16S: Hotel Parking Lot	Runoff Area=4,641 sf 81.77% Impervious Runoff Depth>5.73" Flow Length=50' Slope=0.0205 '/' Tc=0.7 min CN=93 Runoff=0.75 cfs 0.051 af

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Page 4

Subcatchment 17S: Hotel Parking Lot	Runoff Area=4,781 sf 90.86% Impervious Runoff Depth>6.01" Flow Length=50' Slope=0.0140 '/ Tc=0.8 min CN=96 Runoff=0.79 cfs 0.055 af
Subcatchment 18S: Hotel Parking Lot	Runoff Area=4,903 sf 90.70% Impervious Runoff Depth>5.92" Flow Length=50' Slope=0.0140 '/ Tc=0.8 min CN=95 Runoff=0.81 cfs 0.056 af
Subcatchment 19S: Hotel Parking Lot	Runoff Area=5,929 sf 84.87% Impervious Runoff Depth>5.82" Flow Length=50' Slope=0.0120 '/ Tc=0.9 min CN=94 Runoff=0.96 cfs 0.066 af
Subcatchment 20S: Hotel Parking Lot	Runoff Area=5,452 sf 92.79% Impervious Runoff Depth>6.01" Flow Length=50' Slope=0.0205 '/ Tc=0.7 min CN=96 Runoff=0.91 cfs 0.063 af
Subcatchment 21S: Hotel Parking Lot	Runoff Area=8,457 sf 84.71% Impervious Runoff Depth>5.82" Flow Length=50' Slope=0.0140 '/ Tc=0.8 min CN=94 Runoff=1.38 cfs 0.094 af
Subcatchment 22S: Hotel Parking Lot	Runoff Area=7,891 sf 87.75% Impervious Runoff Depth>5.92" Flow Length=50' Slope=0.0140 '/ Tc=0.8 min CN=95 Runoff=1.30 cfs 0.089 af
Subcatchment 23S: Hotel Parking Lot	Runoff Area=12,880 sf 87.49% Impervious Runoff Depth>5.92" Flow Length=113' Slope=0.0120 '/ Tc=1.4 min CN=95 Runoff=2.06 cfs 0.146 af
Subcatchment 24S: Swale	Runoff Area=14,883 sf 2.69% Impervious Runoff Depth=3.49" Flow Length=156' Tc=12.2 min CN=72 Runoff=1.13 cfs 0.099 af
Subcatchment 25S: Roadway near Hotel	Runoff Area=16,320 sf 37.39% Impervious Runoff Depth=4.43" Flow Length=248' Tc=3.0 min CN=81 Runoff=2.09 cfs 0.138 af
Subcatchment 26S: Hotel	Runoff Area=4,672 sf 100.00% Impervious Runoff Depth>6.16" Tc=0.0 min CN=98 Runoff=0.79 cfs 0.055 af
Subcatchment 27S: Hotel	Runoff Area=6,181 sf 100.00% Impervious Runoff Depth>6.16" Tc=0.0 min CN=98 Runoff=1.05 cfs 0.073 af
Subcatchment 28S: Hotel	Runoff Area=5,042 sf 100.00% Impervious Runoff Depth>6.16" Tc=0.0 min CN=98 Runoff=0.86 cfs 0.059 af
Subcatchment 29S: Roadway and	Runoff Area=18,463 sf 46.81% Impervious Runoff Depth=4.76" Flow Length=109' Tc=2.2 min CN=84 Runoff=2.53 cfs 0.168 af
Subcatchment 30S: Roadway and USF	Runoff Area=14,515 sf 33.01% Impervious Runoff Depth=4.33" Flow Length=71' Tc=3.7 min CN=80 Runoff=1.78 cfs 0.120 af
Subcatchment 31S: Wetland Swale	Runoff Area=193,489 sf 6.94% Impervious Runoff Depth=4.11" Flow Length=615' Tc=9.9 min CN=78 Runoff=18.49 cfs 1.523 af
Subcatchment 32S: West Entrance	Runoff Area=10,256 sf 42.33% Impervious Runoff Depth>4.98" Tc=0.0 min CN=86 Runoff=1.53 cfs 0.098 af
Subcatchment 33S: West Entrance	Runoff Area=4,059 sf 52.35% Impervious Runoff Depth>5.20" Flow Length=68' Tc=0.8 min CN=88 Runoff=0.61 cfs 0.040 af
Subcatchment 34S: Front space between	Runoff Area=62,288 sf 26.96% Impervious Runoff Depth=4.11" Flow Length=361' Tc=18.7 min CN=78 Runoff=4.76 cfs 0.490 af

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Page 5

Reach 2R: Wetland Natural Swale	Avg. Flow Depth=0.17' Max Vel=0.32 fps Inflow=6.81 cfs 1.410 af n=0.150 L=700.0' S=0.0114 '/ Capacity=104.19 cfs Outflow=5.03 cfs 1.382 af
Reach 3R: Wetland Natural Swale	Avg. Flow Depth=0.10' Max Vel=0.20 fps Inflow=4.64 cfs 0.605 af n=0.150 L=850.0' S=0.0094 '/ Capacity=94.55 cfs Outflow=1.73 cfs 0.582 af
Reach 6R: Wetland Natural Swale	Avg. Flow Depth=0.08' Max Vel=0.23 fps Inflow=4.71 cfs 0.490 af n=0.150 L=1,128.0' S=0.0160 '/ Capacity=123.12 cfs Outflow=1.72 cfs 0.490 af
Pond 1P: USF 1	Peak Elev=50.14' Storage=2,705 cf Inflow=2.33 cfs 0.162 af Outflow=0.95 cfs 0.149 af
Pond 2P: USF 2	Peak Elev=50.11' Storage=8,490 cf Inflow=6.40 cfs 0.531 af Outflow=3.56 cfs 0.500 af
Pond 3P: USF 3	Peak Elev=47.82' Storage=25,273 cf Inflow=16.33 cfs 1.486 af Outflow=6.81 cfs 1.410 af
Pond 4P: USF 4	Peak Elev=48.30' Storage=10,749 cf Inflow=9.55 cfs 0.662 af Outflow=4.64 cfs 0.605 af
Pond 5P: Detention Pond	Peak Elev=59.85' Storage=1,999 cf Inflow=2.53 cfs 0.168 af 12.0" Round Culvert n=0.013 L=70.0' S=0.0057 '/ Outflow=1.70 cfs 0.147 af
Pond 6P: USF 6	Peak Elev=58.38' Storage=5,011 cf Inflow=3.36 cfs 0.268 af Outflow=0.77 cfs 0.230 af
Pond C1: Catch Basin 1	Peak Elev=52.51' Storage=7 cf Inflow=0.97 cfs 0.065 af 12.0" Round Culvert n=0.020 L=63.0' S=0.0317 '/ Outflow=0.97 cfs 0.065 af
Pond C10: Catch Basin 10	Peak Elev=51.03' Storage=0 cf Inflow=0.63 cfs 0.044 af 12.0" Round Culvert n=0.020 L=50.0' S=0.0100 '/ Outflow=0.63 cfs 0.044 af
Pond C11: Catch Basin 11	Peak Elev=54.81' Storage=30 cf Inflow=4.09 cfs 0.346 af 12.0" Round Culvert n=0.020 L=127.0' S=0.0252 '/ Outflow=4.04 cfs 0.345 af
Pond C12: Catch Basin 12	Peak Elev=55.40' Storage=18 cf Inflow=3.21 cfs 0.283 af 12.0" Round Culvert n=0.020 L=73.0' S=0.0192 '/ Outflow=3.19 cfs 0.283 af
Pond C13: Catch Basin 13	Peak Elev=55.90' Storage=5 cf Inflow=1.85 cfs 0.189 af 12.0" Round Culvert n=0.020 L=70.0' S=0.0100 '/ Outflow=1.81 cfs 0.189 af
Pond C14: Catch Basin 14	Peak Elev=58.35' Storage=11 cf Inflow=2.06 cfs 0.146 af 12.0" Round Culvert n=0.020 L=70.0' S=0.0114 '/ Outflow=2.05 cfs 0.146 af
Pond C15: Catch Basin 15	Peak Elev=57.35' Storage=11 cf Inflow=1.13 cfs 0.099 af 12.0" Round Culvert n=0.020 L=150.0' S=0.0107 '/ Outflow=1.13 cfs 0.099 af
Pond C16: Catch Basin 16	Peak Elev=51.82' Storage=11 cf Inflow=4.47 cfs 0.326 af 14.0" Round Culvert n=0.020 L=60.0' S=0.0250 '/ Outflow=4.45 cfs 0.326 af

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Page 6

Pond C17: Catch Basin 17	Peak Elev=52.01' Storage=2 cf Inflow=2.14 cfs 0.137 af 12.0" Round Culvert n=0.020 L=60.0' S=0.0050 '/' Outflow=2.14 cfs 0.137 af
Pond C18: Catch Basin 18	Peak Elev=51.39' Storage=31 cf Inflow=0.61 cfs 0.040 af 12.0" Round Culvert n=0.013 L=140.0' S=0.0171 '/' Outflow=0.61 cfs 0.040 af
Pond C19: Culvert	Peak Elev=53.64' Storage=329 cf Inflow=4.76 cfs 0.490 af 15.0" Round Culvert n=0.020 L=60.0' S=0.0333 '/' Outflow=4.71 cfs 0.490 af
Pond C2: Catch Basin 2	Peak Elev=48.63' Storage=8 cf Inflow=0.55 cfs 0.039 af 12.0" Round Culvert n=0.020 L=60.0' S=0.0117 '/' Outflow=0.55 cfs 0.039 af
Pond C3: Catch Basin 3	Peak Elev=52.02' Storage=13 cf Inflow=2.73 cfs 0.240 af 12.0" Round Culvert n=0.020 L=80.0' S=0.0250 '/' Outflow=2.73 cfs 0.240 af
Pond C4: Catch Basin 4	Peak Elev=52.05' Storage=1 cf Inflow=0.53 cfs 0.035 af 12.0" Round Culvert n=0.020 L=206.0' S=0.0053 '/' Outflow=0.53 cfs 0.035 af
Pond C5: Catch Basin 5	Peak Elev=51.48' Storage=167 cf Inflow=1.28 cfs 0.118 af 12.0" Round Culvert n=0.020 L=150.0' S=0.0120 '/' Outflow=1.27 cfs 0.117 af
Pond C6: Catch Basin 6	Peak Elev=56.60' Storage=73 cf Inflow=5.18 cfs 0.374 af 12.0" Round Culvert n=0.020 L=140.0' S=0.0200 '/' Outflow=5.06 cfs 0.374 af
Pond C7: Catch Basin 7	Peak Elev=58.26' Storage=42 cf Inflow=4.50 cfs 0.323 af 12.0" Round Culvert n=0.020 L=60.0' S=0.0100 '/' Outflow=4.48 cfs 0.323 af
Pond C8: Catch Basin 8	Peak Elev=58.06' Storage=27 cf Inflow=3.76 cfs 0.267 af 12.0" Round Culvert n=0.020 L=60.0' S=0.0100 '/' Outflow=3.72 cfs 0.268 af
Pond C9: Catch Basin 9	Peak Elev=58.33' Storage=30 cf Inflow=3.01 cfs 0.212 af 12.0" Round Culvert n=0.020 L=80.0' S=0.0100 '/' Outflow=2.98 cfs 0.212 af
Pond DMH1: Drainage Manhole	Peak Elev=52.06' Storage=14 cf Inflow=2.48 cfs 0.170 af 12.0" Round Culvert n=0.020 L=92.0' S=0.0054 '/' Outflow=2.45 cfs 0.171 af
Pond DMH2: Drainage Manhole	Peak Elev=52.52' Storage=39 cf Inflow=4.04 cfs 0.345 af 12.0" Round Culvert n=0.020 L=70.0' S=0.0086 '/' Outflow=4.03 cfs 0.345 af
Link 1L:	Inflow=29.53 cfs 6.696 af Primary=29.53 cfs 6.696 af
Link 2L:	Inflow=17.79 cfs 2.624 af Primary=17.79 cfs 2.624 af
Link 3L: AP3	Inflow=18.89 cfs 1.753 af Primary=18.89 cfs 1.753 af

Total Runoff Area = 32.876 ac Runoff Volume = 11.358 af Average Runoff Depth = 4.15"
83.78% Pervious = 27.543 ac 16.22% Impervious = 5.333 ac

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Type III 24-hr 25 YEAR STORM Rainfall=6.60"

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Page 7

Summary for Subcatchment 1S: Wetland Swale

Runoff = 26.06 cfs @ 12.50 hrs, Volume= 3.593 af, Depth= 4.01"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
* 22,366	98	Existing Impervious
85,732	70	Woods, Good, HSG C
344,894	77	Woods, Good, HSG D
* 1,933	98	Proposed Driveway
13,668	71	Meadow, non-grazed, HSG C
468,593	77	Weighted Average
444,294		94.81% Pervious Area
24,299		5.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	50	0.0200	0.07		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.00"
4.7	257	0.0330	0.91		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	32	0.0310	3.92	2.74	Pipe Channel, Culvert 12.0" Round w/ 2.0" inside fill Area= 0.7 sf Perim= 3.0' r= 0.23' n= 0.025 Corrugated metal
2.6	145	0.0340	0.92		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	18	0.0310	3.92	2.74	Pipe Channel, Culvert 12.0" Round w/ 2.0" inside fill Area= 0.7 sf Perim= 3.0' r= 0.23' n= 0.025 Corrugated metal
15.9	1,038	0.0150	1.09	119.37	Trap/Vee/Rect Channel Flow, Wetland Bot.W=90.00' D=1.00' Z= 20.0 '/' Top.W=130.00' n= 0.150
0.3	40	0.0050	1.97	1.38	Pipe Channel, 12.0" Round w/ 2.0" inside fill Area= 0.7 sf Perim= 3.0' r= 0.23' n= 0.020 Corrugated PE, corrugated interior
36.4	1,580	Total			

Summary for Subcatchment 2S:

Runoff = 1.40 cfs @ 12.07 hrs, Volume= 0.097 af, Depth= 4.11"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

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Page 8

Area (sf)	CN	Description
* 2,979	98	Apartment Driveway and Walkways
9,312	71	Meadow, non-grazed, HSG C
12,291	78	Weighted Average
9,312		75.76% Pervious Area
2,979		24.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	31	0.0280	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.00"
0.9	97	0.0620	1.74		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
4.4	128	Total			

Summary for Subcatchment 3S: Apartment Building

Runoff = 1.95 cfs @ 12.00 hrs, Volume= 0.135 af, Depth> 6.16"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
* 11,448	98	Apartment
11,448		100.00% Impervious Area

Summary for Subcatchment 4S: (new Subcat)

Runoff = 3.09 cfs @ 12.10 hrs, Volume= 0.225 af, Depth= 3.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
* 2,515	98	Apartment Driveway and Walkways
30,206	71	Meadow, non-grazed, HSG C
32,721	73	Weighted Average
30,206		92.31% Pervious Area
2,515		7.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	30	0.0200	1.05		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"
5.7	321	0.0180	0.94		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
6.2	351	Total			

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Type III 24-hr 25 YEAR STORM Rainfall=6.60"

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Page 9

Summary for Subcatchment 5S:

Runoff = 17.79 cfs @ 12.57 hrs, Volume= 2.624 af, Depth= 3.80"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
15,705	98	Paved parking & roofs
134,762	70	Woods, Good, HSG C
201,401	77	Woods, Good, HSG D
9,203	78	Meadow, non-grazed, HSG D
361,071	75	Weighted Average
345,366		95.65% Pervious Area
15,705		4.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.7	74	0.0230	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.00"
6.1	326	0.0320	0.89		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
6.9	531	0.0260	1.28	63.79	Trap/Vee/Rect Channel Flow, Wetland Bot.W=30.00' D=1.00' Z= 20.0 '/' Top.W=70.00' n= 0.150
41.7	931	Total			

Summary for Subcatchment 6S: Apartment Building

Runoff = 1.95 cfs @ 12.00 hrs, Volume= 0.135 af, Depth> 6.16"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
* 11,448	98	Apartment
11,448		100.00% Impervious Area

Summary for Subcatchment 7S: Swale

Runoff = 0.97 cfs @ 12.03 hrs, Volume= 0.065 af, Depth> 4.98"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

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Page 10

Area (sf)	CN	Description
* 3,917	98	Apartment Driveway
2,943	71	Meadow, non-grazed, HSG C
6,860	86	Weighted Average
2,943		42.90% Pervious Area
3,917		57.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0120	0.95		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"
0.9	104	0.0740	1.90		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.8	154	Total			

Summary for Subcatchment 8S: Apartment Building

Runoff = 1.95 cfs @ 12.00 hrs, Volume= 0.135 af, Depth> 6.16"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
* 11,448	98	Apartment
11,448		100.00% Impervious Area

Summary for Subcatchment 9S: Swale

Runoff = 0.55 cfs @ 12.06 hrs, Volume= 0.039 af, Depth> 4.87"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
* 1,980	98	Apartment Driveway
2,048	71	Meadow, non-grazed, HSG C
* 134	98	Retaining Wall
4,162	85	Weighted Average
2,048		49.21% Pervious Area
2,114		50.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	20	0.0110	0.09		Sheet Flow, Grass: Short n= 0.150 P2= 3.00"
0.8	76	0.0580	1.69		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
4.3	96	Total			

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Type III 24-hr 25 YEAR STORM Rainfall=6.60"

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Page 11

Summary for Subcatchment 10S: Parking Area Swale

Runoff = 2.73 cfs @ 12.17 hrs, Volume= 0.240 af, Depth= 4.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
* 10,018	98	Driveway and Parking
18,939	71	Meadow, non-grazed, HSG C
28,957	80	Weighted Average
18,939		65.40% Pervious Area
10,018		34.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.4	50	0.0120	0.08		Sheet Flow, Grass: Dense n= 0.240 P2= 3.00"
1.7	163	0.0550	1.64		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
12.1	213	Total			

Summary for Subcatchment 11S: Swale

Runoff = 0.53 cfs @ 12.01 hrs, Volume= 0.035 af, Depth> 4.98"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
* 2,016	98	Apartment Driveway
1,634	71	Meadow, non-grazed, HSG C
3,650	86	Weighted Average
1,634		44.77% Pervious Area
2,016		55.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	20	0.0450	1.34		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"
0.6	61	0.0650	1.78		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.8	81	Total			

Summary for Subcatchment 12S: USF Area

Runoff = 3.29 cfs @ 12.09 hrs, Volume= 0.236 af, Depth= 3.70"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

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Page 12

	Area (sf)	CN	Description
*	3,393	98	Driveway
	29,465	71	Meadow, non-grazed, HSG C
*	564	98	Walkway
	33,422	74	Weighted Average
	29,465		88.16% Pervious Area
	3,957		11.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.9	50	0.0800	0.17		Sheet Flow, Grass: Dense n= 0.240 P2= 3.00"
0.6	62	0.0650	1.78		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.5	112	Total			

Summary for Subcatchment 13S: USF Area

Runoff = 2.39 cfs @ 12.02 hrs, Volume= 0.155 af, Depth= 4.01"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

	Area (sf)	CN	Description
*	4,623	98	Road
	15,527	71	Meadow, non-grazed, HSG C
	20,150	77	Weighted Average
	15,527		77.06% Pervious Area
	4,623		22.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	50	0.0690	1.90		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"
0.8	68	0.0370	1.35		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.2	118	Total			

Summary for Subcatchment 14S: Roadway

Runoff = 0.63 cfs @ 12.04 hrs, Volume= 0.044 af, Depth> 5.62"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

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Page 13

Area (sf)	CN	Description
* 3,166	98	Road
933	71	Meadow, non-grazed, HSG C
4,099	92	Weighted Average
933		22.76% Pervious Area
3,166		77.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	25	0.0200	1.01		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"
1.9	110	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.3	135	Total			

Summary for Subcatchment 15S: Swale to USF 3

Runoff = 1.28 cfs @ 12.20 hrs, Volume= 0.118 af, Depth= 3.70"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
* 2,098	98	Driveway
14,545	71	Meadow, non-grazed, HSG C
16,643	74	Weighted Average
14,545		87.39% Pervious Area
2,098		12.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0300	0.08		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.00"
3.2	223	0.0270	1.15		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.0	273	Total			

Summary for Subcatchment 16S: Hotel Parking Lot

Runoff = 0.75 cfs @ 12.01 hrs, Volume= 0.051 af, Depth> 5.73"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
* 3,795	98	Hotel Parking Lot
* 846	71	Parking Landscaping
4,641	93	Weighted Average
846		18.23% Pervious Area
3,795		81.77% Impervious Area

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Page 14

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0205	1.17		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"

Summary for Subcatchment 17S: Hotel Parking Lot

Runoff = 0.79 cfs @ 12.01 hrs, Volume= 0.055 af, Depth> 6.01"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
* 4,344	98	Hotel Parking Lot
437	71	Meadow, non-grazed, HSG C
4,781	96	Weighted Average
437		9.14% Pervious Area
4,344		90.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	50	0.0140	1.01		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"

Summary for Subcatchment 18S: Hotel Parking Lot

Runoff = 0.81 cfs @ 12.01 hrs, Volume= 0.056 af, Depth> 5.92"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
* 4,447	98	Hotel Parking Lot
456	71	Meadow, non-grazed, HSG C
4,903	95	Weighted Average
456		9.30% Pervious Area
4,447		90.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	50	0.0140	1.01		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"

Summary for Subcatchment 19S: Hotel Parking Lot

Runoff = 0.96 cfs @ 12.01 hrs, Volume= 0.066 af, Depth> 5.82"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

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Page 15

	Area (sf)	CN	Description
*	5,032	98	Hotel Parking Lot
	897	71	Meadow, non-grazed, HSG C
	5,929	94	Weighted Average
	897		15.13% Pervious Area
	5,032		84.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0120	0.95		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"

Summary for Subcatchment 20S: Hotel Parking Lot

Runoff = 0.91 cfs @ 12.01 hrs, Volume= 0.063 af, Depth> 6.01"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

	Area (sf)	CN	Description
*	5,059	98	Hotel Parking Lot
*	393	71	Parking Landscaping
	5,452	96	Weighted Average
	393		7.21% Pervious Area
	5,059		92.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0205	1.17		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"

Summary for Subcatchment 21S: Hotel Parking Lot

Runoff = 1.38 cfs @ 12.01 hrs, Volume= 0.094 af, Depth> 5.82"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

	Area (sf)	CN	Description
*	7,164	98	Hotel Parking Lot
	1,293	71	Meadow, non-grazed, HSG C
	8,457	94	Weighted Average
	1,293		15.29% Pervious Area
	7,164		84.71% Impervious Area

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Page 16

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	50	0.0140	1.01		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"

Summary for Subcatchment 22S: Hotel Parking Lot

Runoff = 1.30 cfs @ 12.01 hrs, Volume= 0.089 af, Depth> 5.92"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
* 6,924	98	Hotel Parking Lot
967	71	Meadow, non-grazed, HSG C
7,891	95	Weighted Average
967		12.25% Pervious Area
6,924		87.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	50	0.0140	1.01		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"

Summary for Subcatchment 23S: Hotel Parking Lot

Runoff = 2.06 cfs @ 12.02 hrs, Volume= 0.146 af, Depth> 5.92"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
* 11,269	98	Hotel Parking Lot
1,611	71	Meadow, non-grazed, HSG C
12,880	95	Weighted Average
1,611		12.51% Pervious Area
11,269		87.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0120	0.95		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"
0.5	63	0.0120	2.22		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.4	113	Total			

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Page 17

Summary for Subcatchment 24S: Swale

Runoff = 1.13 cfs @ 12.17 hrs, Volume= 0.099 af, Depth= 3.49"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
14,483	71	Meadow, non-grazed, HSG C
* 400	98	3 Season Pavilion
14,883	72	Weighted Average
14,483		97.31% Pervious Area
400		2.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.0360	0.08		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.00"
2.1	106	0.0140	0.83		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
12.2	156	Total			

Summary for Subcatchment 25S: Roadway near Hotel

Runoff = 2.09 cfs @ 12.05 hrs, Volume= 0.138 af, Depth= 4.43"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
10,218	71	Meadow, non-grazed, HSG C
* 3,547	98	Road and Drive
* 2,555	98	Walkway
16,320	81	Weighted Average
10,218		62.61% Pervious Area
6,102		37.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	41	0.0140	0.97		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"
0.9	68	0.0320	1.25		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.1	46	0.0870	5.99		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.3	93	0.0300	1.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.0	248	Total			

Summary for Subcatchment 26S: Hotel

Runoff = 0.79 cfs @ 12.00 hrs, Volume= 0.055 af, Depth> 6.16"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
* 4,672	98	Hotel
4,672		100.00% Impervious Area

Summary for Subcatchment 27S: Hotel

Runoff = 1.05 cfs @ 12.00 hrs, Volume= 0.073 af, Depth> 6.16"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
* 6,181	98	Hotel
6,181		100.00% Impervious Area

Summary for Subcatchment 28S: Hotel

Runoff = 0.86 cfs @ 12.00 hrs, Volume= 0.059 af, Depth> 6.16"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
* 5,042	98	Hotel
5,042		100.00% Impervious Area

Summary for Subcatchment 29S: Roadway and Detention Area

Runoff = 2.53 cfs @ 12.04 hrs, Volume= 0.168 af, Depth= 4.76"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
* 8,643	98	Road and Walkway
9,820	71	Meadow, non-grazed, HSG C
18,463	84	Weighted Average
9,820		53.19% Pervious Area
8,643		46.81% Impervious Area

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Page 19

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	41	0.0140	0.97		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"
1.5	68	0.0120	0.77		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.2	109	Total			

Summary for Subcatchment 30S: Roadway and USF

Runoff = 1.78 cfs @ 12.06 hrs, Volume= 0.120 af, Depth= 4.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
* 4,791	98	Road
9,724	71	Meadow, non-grazed, HSG C
14,515	80	Weighted Average
9,724		66.99% Pervious Area
4,791		33.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	40	0.1250	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.00"
0.3	31	0.0770	1.94		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.7	71	Total			

Summary for Subcatchment 31S: Wetland Swale

Runoff = 18.49 cfs @ 12.14 hrs, Volume= 1.523 af, Depth= 4.11"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
24,403	70	Woods, Good, HSG C
153,530	77	Woods, Good, HSG D
* 13,423	98	Existing Road(Rt. 1)
2,133	71	Meadow, non-grazed, HSG C
193,489	78	Weighted Average
180,066		93.06% Pervious Area
13,423		6.94% Impervious Area

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Page 20

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	33	0.0200	1.07		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"
2.8	100	0.0570	0.60		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
6.6	482	0.0110	1.21	24.24	Trap/Vee/Rect Channel Flow, Bot.W=40.00' D=0.50' Z= 0.2 '/' Top.W=40.20' n= 0.080 Earth, long dense weeds
9.9	615	Total			

Summary for Subcatchment 32S: West Entrance

Runoff = 1.53 cfs @ 12.00 hrs, Volume= 0.098 af, Depth> 4.98"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
* 4,341	98	Road
5,915	78	Meadow, non-grazed, HSG D
10,256	86	Weighted Average
5,915		57.67% Pervious Area
4,341		42.33% Impervious Area

Summary for Subcatchment 33S: West Entrance

Runoff = 0.61 cfs @ 12.01 hrs, Volume= 0.040 af, Depth> 5.20"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
* 2,125	98	Road
1,934	78	Meadow, non-grazed, HSG D
4,059	88	Weighted Average
1,934		47.65% Pervious Area
2,125		52.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	50	0.0350	1.45		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"
0.2	18	0.0340	1.29		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.8	68	Total			

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Type III 24-hr 25 YEAR STORM Rainfall=6.60"

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Page 21

Summary for Subcatchment 34S: Front space between entrances

Runoff = 4.76 cfs @ 12.26 hrs, Volume= 0.490 af, Depth= 4.11"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.60"

Area (sf)	CN	Description
* 5,054	98	Road and sidewalk
* 11,739	98	Existing Road(Rt. 1)
7,637	71	Meadow, non-grazed, HSG C
* 37,858	70	Woods, Good, HSG C, Landscaped Buffer
62,288	78	Weighted Average
45,495		73.04% Pervious Area
16,793		26.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	50	0.0200	0.07		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.00"
6.0	311	0.0300	0.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
18.7	361	Total			

Summary for Reach 2R: Wetland Natural Swale

Inflow Area = 3.775 ac, 47.47% Impervious, Inflow Depth > 4.48" for 25 YEAR STORM event
Inflow = 6.81 cfs @ 12.38 hrs, Volume= 1.410 af
Outflow = 5.03 cfs @ 13.50 hrs, Volume= 1.382 af, Atten= 26%, Lag= 67.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.32 fps, Min. Travel Time= 36.8 min
Avg. Velocity = 0.09 fps, Avg. Travel Time= 122.9 min

Peak Storage= 11,108 cf @ 12.89 hrs
Average Depth at Peak Storage= 0.17'
Bank-Full Depth= 1.00' Flow Area= 110.0 sf, Capacity= 104.19 cfs

90.00' x 1.00' deep channel, n= 0.150
Side Slope Z-value= 20.0 '/' Top Width= 130.00'
Length= 700.0' Slope= 0.0114 '/'
Inlet Invert= 40.00', Outlet Invert= 32.00'



Summary for Reach 3R: Wetland Natural Swale

Inflow Area = 1.625 ac, 51.22% Impervious, Inflow Depth > 4.47" for 25 YEAR STORM event
Inflow = 4.64 cfs @ 12.15 hrs, Volume= 0.605 af
Outflow = 1.73 cfs @ 13.90 hrs, Volume= 0.582 af, Atten= 63%, Lag= 105.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.20 fps, Min. Travel Time= 71.6 min
Avg. Velocity = 0.07 fps, Avg. Travel Time= 212.4 min

Peak Storage= 7,432 cf @ 12.71 hrs
Average Depth at Peak Storage= 0.10'
Bank-Full Depth= 1.00' Flow Area= 110.0 sf, Capacity= 94.55 cfs

90.00' x 1.00' deep channel, n= 0.150
Side Slope Z-value= 20.0 '/' Top Width= 130.00'
Length= 850.0' Slope= 0.0094 '/'
Inlet Invert= 40.00', Outlet Invert= 32.00'



Summary for Reach 6R: Wetland Natural Swale

Inflow Area = 1.430 ac, 26.96% Impervious, Inflow Depth = 4.11" for 25 YEAR STORM event
Inflow = 4.71 cfs @ 12.28 hrs, Volume= 0.490 af
Outflow = 1.72 cfs @ 14.06 hrs, Volume= 0.490 af, Atten= 64%, Lag= 106.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.23 fps, Min. Travel Time= 81.2 min
Avg. Velocity = 0.08 fps, Avg. Travel Time= 238.5 min

Peak Storage= 8,360 cf @ 12.71 hrs
Average Depth at Peak Storage= 0.08'
Bank-Full Depth= 1.00' Flow Area= 110.0 sf, Capacity= 123.12 cfs

90.00' x 1.00' deep channel, n= 0.150
Side Slope Z-value= 20.0 '/' Top Width= 130.00'
Length= 1,128.0' Slope= 0.0160 '/'
Inlet Invert= 50.00', Outlet Invert= 32.00'



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Page 23

Summary for Pond 1P: USF 1

Inflow Area = 0.440 ac, 36.01% Impervious, Inflow Depth > 4.42" for 25 YEAR STORM event
 Inflow = 2.33 cfs @ 12.05 hrs, Volume= 0.162 af
 Outflow = 0.95 cfs @ 12.26 hrs, Volume= 0.149 af, Atten= 59%, Lag= 12.4 min
 Primary = 0.95 cfs @ 12.26 hrs, Volume= 0.149 af

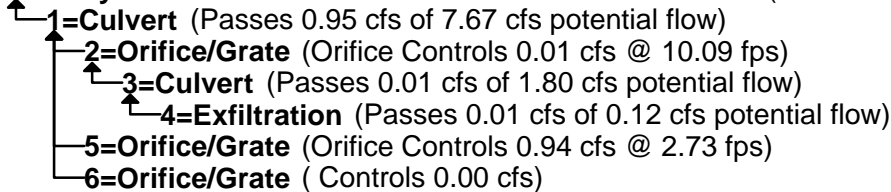
Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 50.14' @ 12.26 hrs Surf.Area= 2,126 sf Storage= 2,705 cf
 Flood Elev= 60.00' Surf.Area= 2,471 sf Storage= 6,975 cf

Plug-Flow detention time= 308.3 min calculated for 0.149 af (92% of inflow)
 Center-of-Mass det. time= 267.4 min (1,071.9 - 804.5)

Volume	Invert	Avail.Storage	Storage Description
#1	48.00'	6,975 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
48.00	717	0	0
49.50	1,341	1,544	1,544
50.00	2,100	860	2,404
52.00	2,471	4,571	6,975

Device	Routing	Invert	Outlet Devices
#1	Primary	45.53'	12.0" Round Culvert L= 50.9' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.53' / 44.00' S= 0.0301 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	45.73'	0.5" Vert. Orifice/Grate C= 0.600
#3	Device 2	45.73'	6.0" Round Culvert L= 20.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.73' / 45.63' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#4	Device 3	48.00'	2.400 in/hr Exfiltration over Surface area
#5	Device 1	49.50'	8.0" Vert. Orifice/Grate C= 0.600
#6	Device 1	51.17'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.95 cfs @ 12.26 hrs HW=50.14' (Free Discharge)



Summary for Pond 2P: USF 2

Inflow Area = 1.361 ac, 46.28% Impervious, Inflow Depth > 4.68" for 25 YEAR STORM event
 Inflow = 6.40 cfs @ 12.02 hrs, Volume= 0.531 af
 Outflow = 3.56 cfs @ 12.20 hrs, Volume= 0.500 af, Atten= 44%, Lag= 10.7 min
 Primary = 3.56 cfs @ 12.20 hrs, Volume= 0.500 af

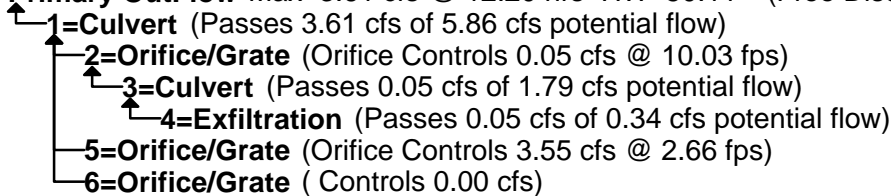
Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 50.11' @ 12.20 hrs Surf.Area= 6,077 sf Storage= 8,490 cf
 Flood Elev= 60.00' Surf.Area= 7,097 sf Storage= 14,356 cf

Plug-Flow detention time= 335.4 min calculated for 0.499 af (94% of inflow)
 Center-of-Mass det. time= 304.3 min (1,092.7 - 788.4)

Volume	Invert	Avail.Storage	Storage Description
#1	48.00'	14,356 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
48.00	2,909	0	0
49.50	4,162	5,303	5,303
50.00	5,952	2,529	7,832
51.00	7,097	6,525	14,356

Device	Routing	Invert	Outlet Devices
#1	Primary	45.53'	12.0" Round Culvert L= 140.7' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.53' / 44.00' S= 0.0109 1' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	45.73'	1.0" Vert. Orifice/Grate C= 0.600
#3	Device 2	45.73'	6.0" Round Culvert L= 20.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.73' / 45.63' S= 0.0050 1' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#4	Device 3	48.00'	2.400 in/hr Exfiltration over Surface area
#5	Device 1	49.50'	8.0" Vert. Orifice/Grate X 4.00 C= 0.600
#6	Device 1	51.17'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.61 cfs @ 12.20 hrs HW=50.11' (Free Discharge)



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Page 25

Summary for Pond 3P: USF 3

Inflow Area = 3.775 ac, 47.47% Impervious, Inflow Depth > 4.72" for 25 YEAR STORM event
 Inflow = 16.33 cfs @ 12.05 hrs, Volume= 1.486 af
 Outflow = 6.81 cfs @ 12.38 hrs, Volume= 1.410 af, Atten= 58%, Lag= 20.1 min
 Primary = 6.81 cfs @ 12.38 hrs, Volume= 1.410 af

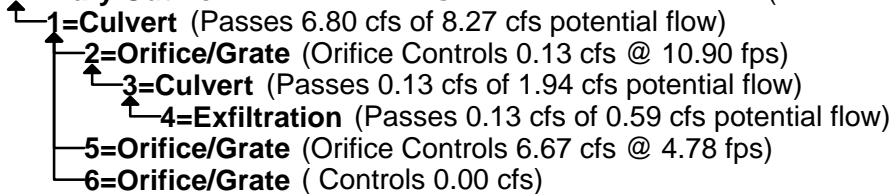
Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 47.82' @ 12.38 hrs Surf.Area= 10,597 sf Storage= 25,273 cf
 Flood Elev= 49.00' Surf.Area= 10,731 sf Storage= 27,206 cf

Plug-Flow detention time= 288.5 min calculated for 1.410 af (95% of inflow)
 Center-of-Mass det. time= 259.8 min (1,053.4 - 793.7)

Volume	Invert	Avail.Storage	Storage Description
#1	45.00'	27,206 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
45.00	6,043	0	0
46.00	8,685	7,364	7,364
46.50	9,622	4,577	11,941
48.00	10,731	15,265	27,206

Device	Routing	Invert	Outlet Devices
#1	Primary	42.53'	12.0" Round Culvert L= 28.4' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.53' / 42.00' S= 0.0187 1' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	42.63'	1.5" Vert. Orifice/Grate C= 0.600
#3	Device 2	42.73'	6.0" Round Culvert L= 20.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.73' / 42.63' S= 0.0050 1' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#4	Device 3	45.00'	2.400 in/hr Exfiltration over Surface area
#5	Device 1	46.50'	8.0" Vert. Orifice/Grate X 4.00 C= 0.600
#6	Device 1	48.17'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=6.80 cfs @ 12.38 hrs HW=47.82' (Free Discharge)



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Page 26

Summary for Pond 4P: USF 4

Inflow Area = 1.625 ac, 51.22% Impervious, Inflow Depth > 4.89" for 25 YEAR STORM event
 Inflow = 9.55 cfs @ 12.02 hrs, Volume= 0.662 af
 Outflow = 4.64 cfs @ 12.15 hrs, Volume= 0.605 af, Atten= 51%, Lag= 8.0 min
 Primary = 4.64 cfs @ 12.15 hrs, Volume= 0.605 af

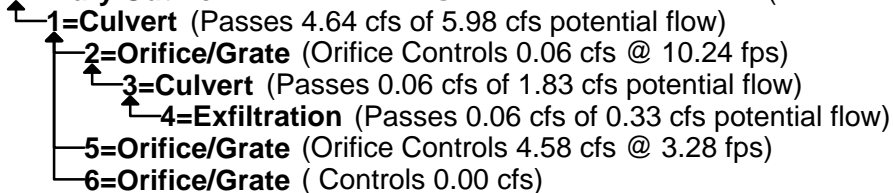
Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.30' @ 12.15 hrs Surf.Area= 5,974 sf Storage= 10,749 cf
 Flood Elev= 50.00' Surf.Area= 8,599 sf Storage= 23,152 cf

Plug-Flow detention time= 309.1 min calculated for 0.605 af (91% of inflow)
 Center-of-Mass det. time= 265.4 min (1,053.1 - 787.8)

Volume	Invert	Avail.Storage	Storage Description
#1	46.00'	41,986 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
46.00	3,544	0	0
47.50	5,001	6,409	6,409
48.00	5,515	2,629	9,038
50.00	8,599	14,114	23,152
52.00	10,235	18,834	41,986

Device	Routing	Invert	Outlet Devices
#1	Primary	43.53'	12.0" Round Culvert L= 107.7' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.53' / 42.90' S= 0.0058 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	43.73'	1.0" Vert. Orifice/Grate C= 0.600
#3	Device 2	43.73'	6.0" Round Culvert L= 20.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.73' / 43.63' S= 0.0050 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#4	Device 3	46.00'	2.400 in/hr Exfiltration over Surface area
#5	Device 1	47.50'	8.0" Vert. Orifice/Grate X 4.00 C= 0.600
#6	Device 1	49.17'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.64 cfs @ 12.15 hrs HW=48.30' (Free Discharge)



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Page 27

Summary for Pond 5P: Detention Pond

Inflow Area = 0.424 ac, 46.81% Impervious, Inflow Depth = 4.76" for 25 YEAR STORM event
 Inflow = 2.53 cfs @ 12.04 hrs, Volume= 0.168 af
 Outflow = 1.70 cfs @ 12.11 hrs, Volume= 0.147 af, Atten= 33%, Lag= 4.4 min
 Primary = 1.70 cfs @ 12.11 hrs, Volume= 0.147 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 59.85' @ 12.11 hrs Surf.Area= 1,495 sf Storage= 1,999 cf
 Flood Elev= 60.00' Surf.Area= 1,566 sf Storage= 2,235 cf

Plug-Flow detention time= 110.6 min calculated for 0.147 af (88% of inflow)
 Center-of-Mass det. time= 56.0 min (852.5 - 796.4)

Volume	Invert	Avail.Storage	Storage Description
#1	58.00'	4,061 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
58.00	695	0	0
59.00	1,104	900	900
60.00	1,566	1,335	2,235
61.00	2,087	1,827	4,061

Device	Routing	Invert	Outlet Devices
#1	Primary	59.00'	12.0" Round Culvert L= 70.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 59.00' / 58.60' S= 0.0057 ' S= 0.0057 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.68 cfs @ 12.11 hrs HW=59.84' (Free Discharge)
 ↑1=Culvert (Barrel Controls 1.68 cfs @ 3.23 fps)

Summary for Pond 6P: USF 6

Inflow Area = 0.757 ac, 40.74% Impervious, Inflow Depth = 4.24" for 25 YEAR STORM event
 Inflow = 3.36 cfs @ 12.07 hrs, Volume= 0.268 af
 Outflow = 0.77 cfs @ 12.59 hrs, Volume= 0.230 af, Atten= 77%, Lag= 31.1 min
 Primary = 0.77 cfs @ 12.59 hrs, Volume= 0.230 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 58.38' @ 12.59 hrs Surf.Area= 3,517 sf Storage= 5,011 cf
 Flood Elev= 60.00' Surf.Area= 5,910 sf Storage= 12,634 cf

Plug-Flow detention time= 274.8 min calculated for 0.230 af (86% of inflow)
 Center-of-Mass det. time= 209.8 min (1,042.4 - 832.6)

Volume	Invert	Avail.Storage	Storage Description
#1	56.00'	12,634 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

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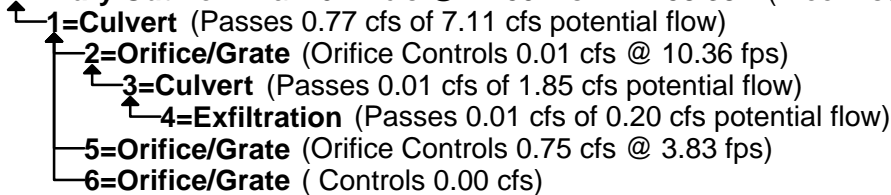
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Page 28

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.00	1,126	0	0
57.50	2,191	2,488	2,488
58.00	2,951	1,286	3,773
60.00	5,910	8,861	12,634

Device	Routing	Invert	Outlet Devices
#1	Primary	53.53'	12.0" Round Culvert L= 87.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 53.53' / 52.00' S= 0.0176 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	53.73'	0.5" Vert. Orifice/Grate C= 0.600
#3	Device 2	53.73'	6.0" Round Culvert L= 20.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 53.73' / 53.63' S= 0.0050 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#4	Device 3	56.00'	2.400 in/hr Exfiltration over Surface area
#5	Device 1	57.50'	6.0" Vert. Orifice/Grate C= 0.600
#6	Device 1	59.17'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.77 cfs @ 12.59 hrs HW=58.38' (Free Discharge)



Summary for Pond C1: Catch Basin 1

Inflow Area = 0.157 ac, 57.10% Impervious, Inflow Depth > 4.98" for 25 YEAR STORM event
 Inflow = 0.97 cfs @ 12.03 hrs, Volume= 0.065 af
 Outflow = 0.97 cfs @ 12.03 hrs, Volume= 0.065 af, Atten= 0%, Lag= 0.1 min
 Primary = 0.97 cfs @ 12.03 hrs, Volume= 0.065 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 52.51' @ 12.03 hrs Surf.Area= 13 sf Storage= 7 cf
 Flood Elev= 57.00' Surf.Area= 13 sf Storage= 39 cf

Plug-Flow detention time= 0.4 min calculated for 0.065 af (100% of inflow)
 Center-of-Mass det. time= 0.4 min (790.9 - 790.5)

Volume	Invert	Avail.Storage	Storage Description
#1	52.00'	39 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
52.00	13	0	0
55.00	13	39	39

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Page 29

Device	Routing	Invert	Outlet Devices
#1	Primary	52.00'	12.0" Round Culvert L= 63.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 52.00' / 50.00' S= 0.0317 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.93 cfs @ 12.03 hrs HW=52.50' (Free Discharge)↑**1=Culvert** (Inlet Controls 0.93 cfs @ 2.40 fps)**Summary for Pond C10: Catch Basin 10**

Inflow Area = 0.094 ac, 77.24% Impervious, Inflow Depth > 5.62" for 25 YEAR STORM event
 Inflow = 0.63 cfs @ 12.04 hrs, Volume= 0.044 af
 Outflow = 0.63 cfs @ 12.04 hrs, Volume= 0.044 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.63 cfs @ 12.04 hrs, Volume= 0.044 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 51.03' @ 12.04 hrs Surf.Area= 13 sf Storage= 0 cf
 Flood Elev= 54.00' Surf.Area= 13 sf Storage= 39 cf

Plug-Flow detention time= 0.0 min calculated for 0.044 af (100% of inflow)
 Center-of-Mass det. time= 0.0 min (774.2 - 774.2)

Volume	Invert	Avail.Storage	Storage Description
#1	51.00'	39 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
51.00	13	0	0
54.00	13	39	39

Device	Routing	Invert	Outlet Devices
#1	Primary	50.50'	12.0" Round Culvert L= 50.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 50.50' / 50.00' S= 0.0100 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.72 cfs @ 12.04 hrs HW=51.03' (Free Discharge)↑**1=Culvert** (Barrel Controls 0.72 cfs @ 2.49 fps)**Summary for Pond C11: Catch Basin 11**

Inflow Area = 0.842 ac, 53.29% Impervious, Inflow Depth > 4.92" for 25 YEAR STORM event
 Inflow = 4.09 cfs @ 12.02 hrs, Volume= 0.346 af
 Outflow = 4.04 cfs @ 12.02 hrs, Volume= 0.345 af, Atten= 1%, Lag= 0.4 min
 Primary = 4.04 cfs @ 12.02 hrs, Volume= 0.345 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 54.81' @ 12.02 hrs Surf.Area= 13 sf Storage= 30 cf
 Flood Elev= 55.80' Surf.Area= 13 sf Storage= 39 cf

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Page 30

Plug-Flow detention time= 0.5 min calculated for 0.345 af (100% of inflow)

Center-of-Mass det. time= 0.3 min (785.6 - 785.4)

Volume	Invert	Avail.Storage	Storage Description
#1	52.50'	39 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
52.50	13	0	0
55.50	13	39	39

Device	Routing	Invert	Outlet Devices
#1	Primary	52.70'	12.0" Round Culvert L= 127.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 52.70' / 49.50' S= 0.0252 '/ Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.89 cfs @ 12.02 hrs HW=54.67' (Free Discharge)↑**1=Culvert** (Barrel Controls 3.89 cfs @ 4.96 fps)**Summary for Pond C12: Catch Basin 12**

Inflow Area = 0.717 ac, 46.39% Impervious, Inflow Depth > 4.74" for 25 YEAR STORM event
 Inflow = 3.21 cfs @ 12.02 hrs, Volume= 0.283 af
 Outflow = 3.19 cfs @ 12.02 hrs, Volume= 0.283 af, Atten= 0%, Lag= 0.1 min
 Primary = 3.19 cfs @ 12.02 hrs, Volume= 0.283 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs

Peak Elev= 55.40' @ 12.02 hrs Surf.Area= 13 sf Storage= 18 cf

Flood Elev= 57.30' Surf.Area= 13 sf Storage= 39 cf

Plug-Flow detention time= 0.6 min calculated for 0.282 af (100% of inflow)

Center-of-Mass det. time= 0.3 min (790.6 - 790.3)

Volume	Invert	Avail.Storage	Storage Description
#1	54.00'	39 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
54.00	13	0	0
57.00	13	39	39

Device	Routing	Invert	Outlet Devices
#1	Primary	54.20'	12.0" Round Culvert L= 73.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 54.20' / 52.80' S= 0.0192 '/ Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.07 cfs @ 12.02 hrs HW=55.36' (Free Discharge)↑**1=Culvert** (Inlet Controls 3.07 cfs @ 3.91 fps)

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Page 31

Summary for Pond C13: Catch Basin 13

Inflow Area = 0.523 ac, 32.16% Impervious, Inflow Depth > 4.33" for 25 YEAR STORM event
 Inflow = 1.85 cfs @ 12.02 hrs, Volume= 0.189 af
 Outflow = 1.81 cfs @ 12.03 hrs, Volume= 0.189 af, Atten= 2%, Lag= 0.3 min
 Primary = 1.81 cfs @ 12.03 hrs, Volume= 0.189 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 55.90' @ 12.03 hrs Surf.Area= 13 sf Storage= 5 cf
 Flood Elev= 58.00' Surf.Area= 13 sf Storage= 33 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.0 min (801.8 - 801.8)

Volume	Invert	Avail.Storage	Storage Description
#1	55.50'	33 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
55.50	13	0	0
58.00	13	33	33

Device	Routing	Invert	Outlet Devices
#1	Primary	55.00'	12.0" Round Culvert L= 70.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 55.00' / 54.30' S= 0.0100 ' S= 0.0100 ' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.79 cfs @ 12.03 hrs HW=55.89' (Free Discharge)
 ↑1=Culvert (Barrel Controls 1.79 cfs @ 3.21 fps)

Summary for Pond C14: Catch Basin 14

Inflow Area = 0.296 ac, 87.49% Impervious, Inflow Depth > 5.92" for 25 YEAR STORM event
 Inflow = 2.06 cfs @ 12.02 hrs, Volume= 0.146 af
 Outflow = 2.05 cfs @ 12.02 hrs, Volume= 0.146 af, Atten= 0%, Lag= 0.1 min
 Primary = 2.05 cfs @ 12.02 hrs, Volume= 0.146 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 58.35' @ 12.02 hrs Surf.Area= 13 sf Storage= 11 cf
 Flood Elev= 60.40' Surf.Area= 13 sf Storage= 33 cf

Plug-Flow detention time= 0.2 min calculated for 0.146 af (100% of inflow)
 Center-of-Mass det. time= 0.1 min (765.1 - 765.0)

Volume	Invert	Avail.Storage	Storage Description
#1	57.50'	33 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

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Page 32

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
57.50	13	0	0
60.00	13	33	33

Device	Routing	Invert	Outlet Devices
#1	Primary	57.40'	12.0" Round Culvert L= 70.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 57.40' / 56.60' S= 0.0114 '/ Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.96 cfs @ 12.02 hrs HW=58.32' (Free Discharge)
 ↑1=Culvert (Barrel Controls 1.96 cfs @ 3.41 fps)

Summary for Pond C15: Catch Basin 15

Inflow Area = 0.342 ac, 2.69% Impervious, Inflow Depth = 3.49" for 25 YEAR STORM event
 Inflow = 1.13 cfs @ 12.17 hrs, Volume= 0.099 af
 Outflow = 1.13 cfs @ 12.17 hrs, Volume= 0.099 af, Atten= 0%, Lag= 0.1 min
 Primary = 1.13 cfs @ 12.17 hrs, Volume= 0.099 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 57.35' @ 12.17 hrs Surf.Area= 13 sf Storage= 11 cf
 Flood Elev= 59.80' Surf.Area= 13 sf Storage= 39 cf

Plug-Flow detention time= 1.0 min calculated for 0.099 af (100% of inflow)
 Center-of-Mass det. time= 0.6 min (835.4 - 834.8)

Volume	Invert	Avail.Storage	Storage Description
#1	56.50'	39 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.50	13	0	0
59.50	13	39	39

Device	Routing	Invert	Outlet Devices
#1	Primary	56.70'	12.0" Round Culvert L= 150.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 56.70' / 55.10' S= 0.0107 '/ Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.11 cfs @ 12.17 hrs HW=57.34' (Free Discharge)
 ↑1=Culvert (Barrel Controls 1.11 cfs @ 2.96 fps)

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Page 33

Summary for Pond C16: Catch Basin 16

Inflow Area = 0.740 ac, 68.28% Impervious, Inflow Depth > 5.28" for 25 YEAR STORM event
 Inflow = 4.47 cfs @ 12.02 hrs, Volume= 0.326 af
 Outflow = 4.45 cfs @ 12.02 hrs, Volume= 0.326 af, Atten= 0%, Lag= 0.1 min
 Primary = 4.45 cfs @ 12.02 hrs, Volume= 0.326 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 51.82' @ 12.02 hrs Surf.Area= 13 sf Storage= 11 cf
 Flood Elev= 53.50' Surf.Area= 13 sf Storage= 33 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.0 min (776.9 - 776.9)

Volume	Invert	Avail.Storage	Storage Description
#1	51.00'	33 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
51.00	13	0	0
53.50	13	33	33

Device	Routing	Invert	Outlet Devices
#1	Primary	50.50'	14.0" Round Culvert L= 60.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 50.50' / 49.00' S= 0.0250 ' S= 0.0250 ' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 1.07 sf

Primary OutFlow Max=4.28 cfs @ 12.02 hrs HW=51.77' (Free Discharge)
 ↑1=Culvert (Inlet Controls 4.28 cfs @ 4.00 fps)

Summary for Pond C17: Catch Basin 17

Inflow Area = 0.329 ac, 45.17% Impervious, Inflow Depth > 5.02" for 25 YEAR STORM event
 Inflow = 2.14 cfs @ 12.00 hrs, Volume= 0.137 af
 Outflow = 2.14 cfs @ 12.00 hrs, Volume= 0.137 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.14 cfs @ 12.00 hrs, Volume= 0.137 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 52.01' @ 12.00 hrs Surf.Area= 200 sf Storage= 2 cf
 Flood Elev= 52.00' Surf.Area= 200 sf Storage= 0 cf

Plug-Flow detention time= 0.0 min calculated for 0.137 af (100% of inflow)
 Center-of-Mass det. time= 0.0 min (789.4 - 789.3)

Volume	Invert	Avail.Storage	Storage Description
#1	52.00'	400 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

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Page 34

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
52.00	200	0	0
54.00	200	400	400

Device	Routing	Invert	Outlet Devices
#1	Primary	49.00'	12.0" Round Culvert L= 60.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 49.00' / 48.70' S= 0.0050 '/ Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.80 cfs @ 12.00 hrs HW=52.01' (Free Discharge)

↑1=Culvert (Barrel Controls 3.80 cfs @ 4.84 fps)

Summary for Pond C18: Catch Basin 18

Inflow Area = 0.093 ac, 52.35% Impervious, Inflow Depth > 5.20" for 25 YEAR STORM event
 Inflow = 0.61 cfs @ 12.01 hrs, Volume= 0.040 af
 Outflow = 0.61 cfs @ 12.01 hrs, Volume= 0.040 af, Atten= 0%, Lag= 0.1 min
 Primary = 0.61 cfs @ 12.01 hrs, Volume= 0.040 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 51.39' @ 12.01 hrs Surf.Area= 13 sf Storage= 31 cf
 Flood Elev= 55.50' Surf.Area= 13 sf Storage= 39 cf

Plug-Flow detention time= 15.7 min calculated for 0.040 af (99% of inflow)
 Center-of-Mass det. time= 6.4 min (790.5 - 784.1)

Volume	Invert	Avail.Storage	Storage Description
#1	49.00'	39 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
49.00	13	0	0
52.00	13	39	39

Device	Routing	Invert	Outlet Devices
#1	Primary	51.00'	12.0" Round Culvert L= 140.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.00' / 48.60' S= 0.0171 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.59 cfs @ 12.01 hrs HW=51.38' (Free Discharge)

↑1=Culvert (Inlet Controls 0.59 cfs @ 2.11 fps)

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Page 35

Summary for Pond C19: Culvert

Inflow Area = 1.430 ac, 26.96% Impervious, Inflow Depth = 4.11" for 25 YEAR STORM event
 Inflow = 4.76 cfs @ 12.26 hrs, Volume= 0.490 af
 Outflow = 4.71 cfs @ 12.28 hrs, Volume= 0.490 af, Atten= 1%, Lag= 1.4 min
 Primary = 4.71 cfs @ 12.28 hrs, Volume= 0.490 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 53.64' @ 12.28 hrs Surf.Area= 200 sf Storage= 329 cf
 Flood Elev= 54.00' Surf.Area= 200 sf Storage= 400 cf

Plug-Flow detention time= 2.5 min calculated for 0.490 af (100% of inflow)
 Center-of-Mass det. time= 2.5 min (829.4 - 826.9)

Volume	Invert	Avail.Storage	Storage Description
#1	52.00'	400 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
52.00	200	0	0
54.00	200	400	400

Device	Routing	Invert	Outlet Devices
#1	Primary	52.00'	15.0" Round Culvert L= 60.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 52.00' / 50.00' S= 0.0333 ' S= 0.0333 ' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.67 cfs @ 12.28 hrs HW=53.63' (Free Discharge)
 ↑1=Culvert (Inlet Controls 4.67 cfs @ 3.81 fps)

Summary for Pond C2: Catch Basin 2

Inflow Area = 0.096 ac, 50.79% Impervious, Inflow Depth > 4.87" for 25 YEAR STORM event
 Inflow = 0.55 cfs @ 12.06 hrs, Volume= 0.039 af
 Outflow = 0.55 cfs @ 12.06 hrs, Volume= 0.039 af, Atten= 0%, Lag= 0.1 min
 Primary = 0.55 cfs @ 12.06 hrs, Volume= 0.039 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.63' @ 12.07 hrs Surf.Area= 13 sf Storage= 8 cf
 Flood Elev= 51.90' Surf.Area= 13 sf Storage= 39 cf

Plug-Flow detention time= 2.4 min calculated for 0.039 af (100% of inflow)
 Center-of-Mass det. time= 1.3 min (796.9 - 795.6)

Volume	Invert	Avail.Storage	Storage Description
#1	48.00'	39 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

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Page 36

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
48.00	13	0	0
51.00	13	39	39

Device	Routing	Invert	Outlet Devices
#1	Primary	48.20'	12.0" Round Culvert L= 60.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.20' / 47.50' S= 0.0117 '/ Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.53 cfs @ 12.06 hrs HW=48.62' (Free Discharge)
 ↑1=Culvert (Barrel Controls 0.53 cfs @ 2.48 fps)

Summary for Pond C3: Catch Basin 3

Inflow Area = 0.665 ac, 34.60% Impervious, Inflow Depth = 4.33" for 25 YEAR STORM event
 Inflow = 2.73 cfs @ 12.17 hrs, Volume= 0.240 af
 Outflow = 2.73 cfs @ 12.17 hrs, Volume= 0.240 af, Atten= 0%, Lag= 0.1 min
 Primary = 2.73 cfs @ 12.17 hrs, Volume= 0.240 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 52.02' @ 12.17 hrs Surf.Area= 13 sf Storage= 13 cf
 Flood Elev= 53.80' Surf.Area= 13 sf Storage= 36 cf

Plug-Flow detention time= 0.2 min calculated for 0.239 af (100% of inflow)
 Center-of-Mass det. time= 0.2 min (816.2 - 816.0)

Volume	Invert	Avail.Storage	Storage Description
#1	51.00'	52 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
51.00	13	0	0
55.00	13	52	52

Device	Routing	Invert	Outlet Devices
#1	Primary	51.00'	12.0" Round Culvert L= 80.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.00' / 49.00' S= 0.0250 '/ Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.68 cfs @ 12.17 hrs HW=52.00' (Free Discharge)
 ↑1=Culvert (Inlet Controls 2.68 cfs @ 3.41 fps)

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Page 37

Summary for Pond C4: Catch Basin 4

Inflow Area = 0.084 ac, 55.23% Impervious, Inflow Depth > 4.98" for 25 YEAR STORM event
 Inflow = 0.53 cfs @ 12.01 hrs, Volume= 0.035 af
 Outflow = 0.53 cfs @ 12.01 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.53 cfs @ 12.01 hrs, Volume= 0.035 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 52.05' @ 12.01 hrs Surf.Area= 13 sf Storage= 1 cf
 Flood Elev= 57.90' Surf.Area= 13 sf Storage= 75 cf

Plug-Flow detention time= 0.0 min calculated for 0.035 af (100% of inflow)
 Center-of-Mass det. time= 0.0 min (789.6 - 789.6)

Volume	Invert	Avail.Storage	Storage Description
#1	52.00'	75 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
52.00	13	0	0
57.80	13	75	75

Device	Routing	Invert	Outlet Devices
#1	Primary	51.50'	12.0" Round Culvert L= 206.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.50' / 50.40' S= 0.0053 ' S= 0.0053 ' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.61 cfs @ 12.01 hrs HW=52.05' (Free Discharge)
 ↑1=Culvert (Barrel Controls 0.61 cfs @ 2.00 fps)

Summary for Pond C5: Catch Basin 5

Inflow Area = 0.382 ac, 12.61% Impervious, Inflow Depth = 3.70" for 25 YEAR STORM event
 Inflow = 1.28 cfs @ 12.20 hrs, Volume= 0.118 af
 Outflow = 1.27 cfs @ 12.21 hrs, Volume= 0.117 af, Atten= 1%, Lag= 1.0 min
 Primary = 1.27 cfs @ 12.21 hrs, Volume= 0.117 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 51.48' @ 12.21 hrs Surf.Area= 177 sf Storage= 167 cf
 Flood Elev= 53.90' Surf.Area= 200 sf Storage= 453 cf

Plug-Flow detention time= 13.7 min calculated for 0.117 af (99% of inflow)
 Center-of-Mass det. time= 7.2 min (839.2 - 831.9)

Volume	Invert	Avail.Storage	Storage Description
#1	50.50'	453 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

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Page 38

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
50.50	162	0	0
53.00	200	453	453

Device	Routing	Invert	Outlet Devices
#1	Primary	50.80'	12.0" Round Culvert L= 150.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 50.80' / 49.00' S= 0.0120 '/ Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.26 cfs @ 12.21 hrs HW=51.48' (Free Discharge)
 ↑1=Culvert (Inlet Controls 1.26 cfs @ 2.21 fps)

Summary for Pond C6: Catch Basin 6

Inflow Area = 0.761 ac, 87.18% Impervious, Inflow Depth > 5.89" for 25 YEAR STORM event
 Inflow = 5.18 cfs @ 12.02 hrs, Volume= 0.374 af
 Outflow = 5.06 cfs @ 12.03 hrs, Volume= 0.374 af, Atten= 2%, Lag= 0.6 min
 Primary = 5.06 cfs @ 12.03 hrs, Volume= 0.374 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 56.60' @ 12.03 hrs Surf.Area= 13 sf Storage= 73 cf
 Flood Elev= 58.50' Surf.Area= 13 sf Storage= 91 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.0 min (766.1 - 766.1)

Volume	Invert	Avail.Storage	Storage Description
#1	51.00'	91 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
51.00	13	0	0
58.00	13	91	91

Device	Routing	Invert	Outlet Devices
#1	Primary	50.80'	12.0" Round Culvert L= 140.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 50.80' / 48.00' S= 0.0200 '/ Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=4.87 cfs @ 12.03 hrs HW=56.10' (Free Discharge)
 ↑1=Culvert (Barrel Controls 4.87 cfs @ 6.20 fps)

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Page 39

Summary for Pond C7: Catch Basin 7

Inflow Area = 0.654 ac, 88.06% Impervious, Inflow Depth > 5.92" for 25 YEAR STORM event
 Inflow = 4.50 cfs @ 12.02 hrs, Volume= 0.323 af
 Outflow = 4.48 cfs @ 12.03 hrs, Volume= 0.323 af, Atten= 0%, Lag= 0.4 min
 Primary = 4.48 cfs @ 12.03 hrs, Volume= 0.323 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 58.26' @ 12.03 hrs Surf.Area= 13 sf Storage= 42 cf
 Flood Elev= 59.40' Surf.Area= 13 sf Storage= 46 cf

Plug-Flow detention time= 0.2 min calculated for 0.323 af (100% of inflow)
 Center-of-Mass det. time= 0.2 min (765.4 - 765.3)

Volume	Invert	Avail.Storage	Storage Description
#1	55.00'	46 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
55.00	13	0	0
58.50	13	46	46

Device	Routing	Invert	Outlet Devices
#1	Primary	54.90'	12.0" Round Culvert L= 60.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 54.90' / 54.30' S= 0.0100 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=4.29 cfs @ 12.03 hrs HW=58.06' (Free Discharge)
 ↑1=Culvert (Barrel Controls 4.29 cfs @ 5.46 fps)

Summary for Pond C8: Catch Basin 8

Inflow Area = 0.544 ac, 87.50% Impervious, Inflow Depth > 5.89" for 25 YEAR STORM event
 Inflow = 3.76 cfs @ 12.02 hrs, Volume= 0.267 af
 Outflow = 3.72 cfs @ 12.02 hrs, Volume= 0.268 af, Atten= 1%, Lag= 0.1 min
 Primary = 3.72 cfs @ 12.02 hrs, Volume= 0.268 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 58.06' @ 12.02 hrs Surf.Area= 13 sf Storage= 27 cf
 Flood Elev= 59.80' Surf.Area= 13 sf Storage= 39 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.0 min (766.0 - 766.0)

Volume	Invert	Avail.Storage	Storage Description
#1	56.00'	39 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

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Page 40

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.00	13	0	0
59.00	13	39	39

Device	Routing	Invert	Outlet Devices
#1	Primary	55.60'	12.0" Round Culvert L= 60.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 55.60' / 55.00' S= 0.0100 '/ Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.56 cfs @ 12.02 hrs HW=57.91' (Free Discharge)
 ↑1=Culvert (Barrel Controls 3.56 cfs @ 4.54 fps)

Summary for Pond C9: Catch Basin 9

Inflow Area = 0.432 ac, 86.67% Impervious, Inflow Depth > 5.89" for 25 YEAR STORM event
 Inflow = 3.01 cfs @ 12.02 hrs, Volume= 0.212 af
 Outflow = 2.98 cfs @ 12.03 hrs, Volume= 0.212 af, Atten= 1%, Lag= 0.4 min
 Primary = 2.98 cfs @ 12.03 hrs, Volume= 0.212 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 58.33' @ 12.03 hrs Surf.Area= 13 sf Storage= 30 cf
 Flood Elev= 60.70' Surf.Area= 13 sf Storage= 52 cf

Plug-Flow detention time= 1.4 min calculated for 0.212 af (100% of inflow)
 Center-of-Mass det. time= 0.6 min (766.4 - 765.8)

Volume	Invert	Avail.Storage	Storage Description
#1	56.00'	52 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.00	13	0	0
60.00	13	52	52

Device	Routing	Invert	Outlet Devices
#1	Primary	56.50'	12.0" Round Culvert L= 80.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 56.50' / 55.70' S= 0.0100 '/ Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.85 cfs @ 12.03 hrs HW=58.22' (Free Discharge)
 ↑1=Culvert (Barrel Controls 2.85 cfs @ 3.63 fps)

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Page 41

Summary for Pond DMH1: Drainage Manhole

Inflow Area = 0.347 ac, 89.18% Impervious, Inflow Depth > 5.87" for 25 YEAR STORM event
 Inflow = 2.48 cfs @ 12.00 hrs, Volume= 0.170 af
 Outflow = 2.45 cfs @ 12.00 hrs, Volume= 0.171 af, Atten= 1%, Lag= 0.1 min
 Primary = 2.45 cfs @ 12.00 hrs, Volume= 0.171 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 52.06' @ 12.00 hrs Surf.Area= 13 sf Storage= 14 cf
 Flood Elev= 55.00' Surf.Area= 13 sf Storage= 52 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.3 min (763.2 - 762.9)

Volume	Invert	Avail.Storage	Storage Description
#1	51.00'	52 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
51.00	13	0	0
55.00	13	52	52

Device	Routing	Invert	Outlet Devices
#1	Primary	50.30'	12.0" Round Culvert L= 92.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 50.30' / 49.80' S= 0.0054 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.40 cfs @ 12.00 hrs HW=52.01' (Free Discharge)
 ↑1=Culvert (Barrel Controls 2.40 cfs @ 3.06 fps)

Summary for Pond DMH2: Drainage Manhole

Inflow Area = 0.842 ac, 53.29% Impervious, Inflow Depth > 4.92" for 25 YEAR STORM event
 Inflow = 4.04 cfs @ 12.02 hrs, Volume= 0.345 af
 Outflow = 4.03 cfs @ 12.03 hrs, Volume= 0.345 af, Atten= 0%, Lag= 0.3 min
 Primary = 4.03 cfs @ 12.03 hrs, Volume= 0.345 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 52.52' @ 12.03 hrs Surf.Area= 13 sf Storage= 39 cf
 Flood Elev= 54.00' Surf.Area= 13 sf Storage= 39 cf

Plug-Flow detention time= 0.7 min calculated for 0.345 af (100% of inflow)
 Center-of-Mass det. time= 0.4 min (786.1 - 785.6)

Volume	Invert	Avail.Storage	Storage Description
#1	49.00'	39 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

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Page 42

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
49.00	13	0	0
52.00	13	39	39

Device	Routing	Invert	Outlet Devices
#1	Primary	49.40'	12.0" Round Culvert L= 70.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.40' / 48.80' S= 0.0086 '/ Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.90 cfs @ 12.03 hrs HW=52.36' (Free Discharge)

↑**1=Culvert** (Barrel Controls 3.90 cfs @ 4.96 fps)

Summary for Link 1L:

Inflow Area = 19.388 ac, 22.47% Impervious, Inflow Depth > 4.14" for 25 YEAR STORM event
 Inflow = 29.53 cfs @ 12.48 hrs, Volume= 6.696 af
 Primary = 29.53 cfs @ 12.48 hrs, Volume= 6.696 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs

Summary for Link 2L:

Inflow Area = 8.289 ac, 4.35% Impervious, Inflow Depth = 3.80" for 25 YEAR STORM event
 Inflow = 17.79 cfs @ 12.57 hrs, Volume= 2.624 af
 Primary = 17.79 cfs @ 12.57 hrs, Volume= 2.624 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs

Summary for Link 3L: AP3

Inflow Area = 5.199 ac, 11.86% Impervious, Inflow Depth > 4.05" for 25 YEAR STORM event
 Inflow = 18.89 cfs @ 12.14 hrs, Volume= 1.753 af
 Primary = 18.89 cfs @ 12.14 hrs, Volume= 1.753 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs

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Type III 24-hr 2 YEAR STORM Rainfall=3.33"

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Page 1

Time span=5.00-48.00 hrs, dt=0.05 hrs, 861 points
 Runoff by SCS TR-20 method, UH=SCS
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Wetland Swale	Runoff Area=468,593 sf 5.19% Impervious Runoff Depth=1.31" Flow Length=1,580' Tc=36.4 min CN=77 Runoff=8.27 cfs 1.170 af
Subcatchment 2S:	Runoff Area=12,291 sf 24.24% Impervious Runoff Depth=1.37" Flow Length=128' Tc=4.4 min CN=78 Runoff=0.46 cfs 0.032 af
Subcatchment 3S: Apartment Building	Runoff Area=11,448 sf 100.00% Impervious Runoff Depth>3.04" Tc=0.0 min CN=98 Runoff=0.97 cfs 0.066 af
Subcatchment 4S: (new Subcat)	Runoff Area=32,721 sf 7.69% Impervious Runoff Depth=1.07" Flow Length=351' Tc=6.2 min CN=73 Runoff=0.87 cfs 0.067 af
Subcatchment 5S:	Runoff Area=361,071 sf 4.35% Impervious Runoff Depth=1.18" Flow Length=931' Tc=41.7 min CN=75 Runoff=5.31 cfs 0.817 af
Subcatchment 6S: Apartment Building	Runoff Area=11,448 sf 100.00% Impervious Runoff Depth>3.04" Tc=0.0 min CN=98 Runoff=0.97 cfs 0.066 af
Subcatchment 7S: Swale	Runoff Area=6,860 sf 57.10% Impervious Runoff Depth=1.95" Flow Length=154' Tc=1.8 min CN=86 Runoff=0.39 cfs 0.026 af
Subcatchment 8S: Apartment Building	Runoff Area=11,448 sf 100.00% Impervious Runoff Depth>3.04" Tc=0.0 min CN=98 Runoff=0.97 cfs 0.066 af
Subcatchment 9S: Swale	Runoff Area=4,162 sf 50.79% Impervious Runoff Depth=1.87" Flow Length=96' Tc=4.3 min CN=85 Runoff=0.22 cfs 0.015 af
Subcatchment 10S: Parking Area Swale	Runoff Area=28,957 sf 34.60% Impervious Runoff Depth=1.50" Flow Length=213' Tc=12.1 min CN=80 Runoff=0.94 cfs 0.083 af
Subcatchment 11S: Swale	Runoff Area=3,650 sf 55.23% Impervious Runoff Depth=1.95" Flow Length=81' Tc=0.8 min CN=86 Runoff=0.21 cfs 0.014 af
Subcatchment 12S: USF Area	Runoff Area=33,422 sf 11.84% Impervious Runoff Depth=1.12" Flow Length=112' Tc=5.5 min CN=74 Runoff=0.96 cfs 0.072 af
Subcatchment 13S: USF Area	Runoff Area=20,150 sf 22.94% Impervious Runoff Depth=1.31" Flow Length=118' Tc=1.2 min CN=77 Runoff=0.76 cfs 0.050 af
Subcatchment 14S: Roadway	Runoff Area=4,099 sf 77.24% Impervious Runoff Depth>2.47" Flow Length=135' Slope=0.0200 '/' Tc=2.3 min CN=92 Runoff=0.29 cfs 0.019 af
Subcatchment 15S: Swale to USF 3	Runoff Area=16,643 sf 12.61% Impervious Runoff Depth=1.12" Flow Length=273' Tc=14.0 min CN=74 Runoff=0.37 cfs 0.036 af
Subcatchment 16S: Hotel Parking Lot	Runoff Area=4,641 sf 81.77% Impervious Runoff Depth>2.57" Flow Length=50' Slope=0.0205 '/' Tc=0.7 min CN=93 Runoff=0.35 cfs 0.023 af

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Page 2

Subcatchment 17S: Hotel Parking Lot	Runoff Area=4,781 sf 90.86% Impervious Runoff Depth>2.86" Flow Length=50' Slope=0.0140 '/ Tc=0.8 min CN=96 Runoff=0.39 cfs 0.026 af
Subcatchment 18S: Hotel Parking Lot	Runoff Area=4,903 sf 90.70% Impervious Runoff Depth>2.76" Flow Length=50' Slope=0.0140 '/ Tc=0.8 min CN=95 Runoff=0.39 cfs 0.026 af
Subcatchment 19S: Hotel Parking Lot	Runoff Area=5,929 sf 84.87% Impervious Runoff Depth>2.67" Flow Length=50' Slope=0.0120 '/ Tc=0.9 min CN=94 Runoff=0.46 cfs 0.030 af
Subcatchment 20S: Hotel Parking Lot	Runoff Area=5,452 sf 92.79% Impervious Runoff Depth>2.86" Flow Length=50' Slope=0.0205 '/ Tc=0.7 min CN=96 Runoff=0.44 cfs 0.030 af
Subcatchment 21S: Hotel Parking Lot	Runoff Area=8,457 sf 84.71% Impervious Runoff Depth>2.67" Flow Length=50' Slope=0.0140 '/ Tc=0.8 min CN=94 Runoff=0.65 cfs 0.043 af
Subcatchment 22S: Hotel Parking Lot	Runoff Area=7,891 sf 87.75% Impervious Runoff Depth>2.76" Flow Length=50' Slope=0.0140 '/ Tc=0.8 min CN=95 Runoff=0.62 cfs 0.042 af
Subcatchment 23S: Hotel Parking Lot	Runoff Area=12,880 sf 87.49% Impervious Runoff Depth>2.76" Flow Length=113' Slope=0.0120 '/ Tc=1.4 min CN=95 Runoff=0.99 cfs 0.068 af
Subcatchment 24S: Swale	Runoff Area=14,883 sf 2.69% Impervious Runoff Depth=1.01" Flow Length=156' Tc=12.2 min CN=72 Runoff=0.30 cfs 0.029 af
Subcatchment 25S: Roadway near Hotel	Runoff Area=16,320 sf 37.39% Impervious Runoff Depth=1.57" Flow Length=248' Tc=3.0 min CN=81 Runoff=0.75 cfs 0.049 af
Subcatchment 26S: Hotel	Runoff Area=4,672 sf 100.00% Impervious Runoff Depth>3.04" Tc=0.0 min CN=98 Runoff=0.40 cfs 0.027 af
Subcatchment 27S: Hotel	Runoff Area=6,181 sf 100.00% Impervious Runoff Depth>3.04" Tc=0.0 min CN=98 Runoff=0.53 cfs 0.036 af
Subcatchment 28S: Hotel	Runoff Area=5,042 sf 100.00% Impervious Runoff Depth>3.04" Tc=0.0 min CN=98 Runoff=0.43 cfs 0.029 af
Subcatchment 29S: Roadway and	Runoff Area=18,463 sf 46.81% Impervious Runoff Depth=1.79" Flow Length=109' Tc=2.2 min CN=84 Runoff=0.98 cfs 0.063 af
Subcatchment 30S: Roadway and USF	Runoff Area=14,515 sf 33.01% Impervious Runoff Depth=1.50" Flow Length=71' Tc=3.7 min CN=80 Runoff=0.62 cfs 0.042 af
Subcatchment 31S: Wetland Swale	Runoff Area=193,489 sf 6.94% Impervious Runoff Depth=1.37" Flow Length=615' Tc=9.9 min CN=78 Runoff=6.06 cfs 0.507 af
Subcatchment 32S: West Entrance	Runoff Area=10,256 sf 42.33% Impervious Runoff Depth=1.95" Tc=0.0 min CN=86 Runoff=0.62 cfs 0.038 af
Subcatchment 33S: West Entrance	Runoff Area=4,059 sf 52.35% Impervious Runoff Depth=2.11" Flow Length=68' Tc=0.8 min CN=88 Runoff=0.26 cfs 0.016 af
Subcatchment 34S: Front space between	Runoff Area=62,288 sf 26.96% Impervious Runoff Depth=1.37" Flow Length=361' Tc=18.7 min CN=78 Runoff=1.55 cfs 0.163 af

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Page 3

Reach 2R: Wetland Natural Swale	Avg. Flow Depth=0.04'	Max Vel=0.13 fps	Inflow=0.64 cfs	0.522 af
	n=0.150 L=700.0'	S=0.0114 '/'	Capacity=104.19 cfs	Outflow=0.49 cfs 0.486 af
Reach 3R: Wetland Natural Swale	Avg. Flow Depth=0.02'	Max Vel=0.07 fps	Inflow=0.22 cfs	0.213 af
	n=0.150 L=850.0'	S=0.0094 '/'	Capacity=94.55 cfs	Outflow=0.14 cfs 0.182 af
Reach 6R: Wetland Natural Swale	Avg. Flow Depth=0.03'	Max Vel=0.12 fps	Inflow=1.55 cfs	0.163 af
	n=0.150 L=1,128.0'	S=0.0160 '/'	Capacity=123.12 cfs	Outflow=0.32 cfs 0.163 af
Pond 1P: USF 1	Peak Elev=49.58'	Storage=1,651 cf	Inflow=0.83 cfs	0.058 af
			Outflow=0.04 cfs	0.046 af
Pond 2P: USF 2	Peak Elev=49.58'	Storage=5,631 cf	Inflow=2.62 cfs	0.211 af
			Outflow=0.16 cfs	0.185 af
Pond 3P: USF 3	Peak Elev=46.70'	Storage=13,840 cf	Inflow=6.60 cfs	0.587 af
			Outflow=0.64 cfs	0.522 af
Pond 4P: USF 4	Peak Elev=47.61'	Storage=6,958 cf	Inflow=3.84 cfs	0.265 af
			Outflow=0.22 cfs	0.213 af
Pond 5P: Detention Pond	Peak Elev=59.29'	Storage=1,237 cf	Inflow=0.98 cfs	0.063 af
	12.0" Round Culvert n=0.013 L=70.0'	S=0.0057 '/'	Outflow=0.26 cfs	0.043 af
Pond 6P: USF 6	Peak Elev=57.58'	Storage=2,662 cf	Inflow=0.62 cfs	0.084 af
			Outflow=0.03 cfs	0.048 af
Pond C1: Catch Basin 1	Peak Elev=52.31'	Storage=4 cf	Inflow=0.39 cfs	0.026 af
	12.0" Round Culvert n=0.020 L=63.0'	S=0.0317 '/'	Outflow=0.39 cfs	0.026 af
Pond C10: Catch Basin 10	Peak Elev=51.01'	Storage=0 cf	Inflow=0.29 cfs	0.019 af
	12.0" Round Culvert n=0.020 L=50.0'	S=0.0100 '/'	Outflow=0.29 cfs	0.019 af
Pond C11: Catch Basin 11	Peak Elev=53.44'	Storage=12 cf	Inflow=1.83 cfs	0.143 af
	12.0" Round Culvert n=0.020 L=127.0'	S=0.0252 '/'	Outflow=1.83 cfs	0.143 af
Pond C12: Catch Basin 12	Peak Elev=54.84'	Storage=11 cf	Inflow=1.39 cfs	0.114 af
	12.0" Round Culvert n=0.020 L=73.0'	S=0.0192 '/'	Outflow=1.39 cfs	0.113 af
Pond C13: Catch Basin 13	Peak Elev=55.52'	Storage=0 cf	Inflow=0.74 cfs	0.070 af
	12.0" Round Culvert n=0.020 L=70.0'	S=0.0100 '/'	Outflow=0.74 cfs	0.070 af
Pond C14: Catch Basin 14	Peak Elev=58.00'	Storage=6 cf	Inflow=0.99 cfs	0.068 af
	12.0" Round Culvert n=0.020 L=70.0'	S=0.0114 '/'	Outflow=0.99 cfs	0.068 af
Pond C15: Catch Basin 15	Peak Elev=57.02'	Storage=7 cf	Inflow=0.30 cfs	0.029 af
	12.0" Round Culvert n=0.020 L=150.0'	S=0.0107 '/'	Outflow=0.30 cfs	0.029 af
Pond C16: Catch Basin 16	Peak Elev=51.21'	Storage=3 cf	Inflow=1.95 cfs	0.141 af
	14.0" Round Culvert n=0.020 L=60.0'	S=0.0250 '/'	Outflow=1.95 cfs	0.141 af

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Page 4

Pond C17: Catch Basin 17	Peak Elev=52.00' Storage=1 cf Inflow=0.87 cfs 0.054 af 12.0" Round Culvert n=0.020 L=60.0' S=0.0050 '/' Outflow=0.87 cfs 0.054 af
Pond C18: Catch Basin 18	Peak Elev=51.25' Storage=29 cf Inflow=0.26 cfs 0.016 af 12.0" Round Culvert n=0.013 L=140.0' S=0.0171 '/' Outflow=0.26 cfs 0.016 af
Pond C19: Culvert	Peak Elev=52.69' Storage=138 cf Inflow=1.55 cfs 0.163 af 15.0" Round Culvert n=0.020 L=60.0' S=0.0333 '/' Outflow=1.55 cfs 0.163 af
Pond C2: Catch Basin 2	Peak Elev=48.47' Storage=6 cf Inflow=0.22 cfs 0.015 af 12.0" Round Culvert n=0.020 L=60.0' S=0.0117 '/' Outflow=0.22 cfs 0.015 af
Pond C3: Catch Basin 3	Peak Elev=51.50' Storage=6 cf Inflow=0.94 cfs 0.083 af 12.0" Round Culvert n=0.020 L=80.0' S=0.0250 '/' Outflow=0.94 cfs 0.083 af
Pond C4: Catch Basin 4	Peak Elev=52.02' Storage=0 cf Inflow=0.21 cfs 0.014 af 12.0" Round Culvert n=0.020 L=206.0' S=0.0053 '/' Outflow=0.21 cfs 0.014 af
Pond C5: Catch Basin 5	Peak Elev=51.14' Storage=107 cf Inflow=0.37 cfs 0.036 af 12.0" Round Culvert n=0.020 L=150.0' S=0.0120 '/' Outflow=0.36 cfs 0.035 af
Pond C6: Catch Basin 6	Peak Elev=51.74' Storage=10 cf Inflow=2.54 cfs 0.173 af 12.0" Round Culvert n=0.020 L=140.0' S=0.0200 '/' Outflow=2.53 cfs 0.173 af
Pond C7: Catch Basin 7	Peak Elev=55.93' Storage=12 cf Inflow=2.20 cfs 0.150 af 12.0" Round Culvert n=0.020 L=60.0' S=0.0100 '/' Outflow=2.20 cfs 0.150 af
Pond C8: Catch Basin 8	Peak Elev=56.50' Storage=6 cf Inflow=1.82 cfs 0.124 af 12.0" Round Culvert n=0.020 L=60.0' S=0.0100 '/' Outflow=1.82 cfs 0.124 af
Pond C9: Catch Basin 9	Peak Elev=57.27' Storage=17 cf Inflow=1.44 cfs 0.098 af 12.0" Round Culvert n=0.020 L=80.0' S=0.0100 '/' Outflow=1.44 cfs 0.098 af
Pond DMH1: Drainage Manhole	Peak Elev=51.08' Storage=1 cf Inflow=1.18 cfs 0.080 af 12.0" Round Culvert n=0.020 L=92.0' S=0.0054 '/' Outflow=1.17 cfs 0.078 af
Pond DMH2: Drainage Manhole	Peak Elev=50.34' Storage=17 cf Inflow=1.83 cfs 0.143 af 12.0" Round Culvert n=0.020 L=70.0' S=0.0086 '/' Outflow=1.82 cfs 0.143 af
Link 1L:	Inflow=8.41 cfs 2.233 af Primary=8.41 cfs 2.233 af
Link 2L:	Inflow=5.31 cfs 0.817 af Primary=5.31 cfs 0.817 af
Link 3L: AP3	Inflow=6.08 cfs 0.555 af Primary=6.08 cfs 0.555 af

Total Runoff Area = 32.876 ac Runoff Volume = 3.888 af Average Runoff Depth = 1.42"
83.78% Pervious = 27.543 ac 16.22% Impervious = 5.333 ac

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Page 5

Time span=5.00-48.00 hrs, dt=0.05 hrs, 861 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Wetland Swale	Runoff Area=468,593 sf 5.19% Impervious Runoff Depth=2.91" Flow Length=1,580' Tc=36.4 min CN=77 Runoff=18.93 cfs 2.609 af
Subcatchment 2S:	Runoff Area=12,291 sf 24.24% Impervious Runoff Depth=3.00" Flow Length=128' Tc=4.4 min CN=78 Runoff=1.02 cfs 0.071 af
Subcatchment 3S: Apartment Building	Runoff Area=11,448 sf 100.00% Impervious Runoff Depth>4.96" Tc=0.0 min CN=98 Runoff=1.57 cfs 0.109 af
Subcatchment 4S: (new Subcat)	Runoff Area=32,721 sf 7.69% Impervious Runoff Depth=2.55" Flow Length=351' Tc=6.2 min CN=73 Runoff=2.18 cfs 0.160 af
Subcatchment 5S:	Runoff Area=361,071 sf 4.35% Impervious Runoff Depth=2.73" Flow Length=931' Tc=41.7 min CN=75 Runoff=12.72 cfs 1.884 af
Subcatchment 6S: Apartment Building	Runoff Area=11,448 sf 100.00% Impervious Runoff Depth>4.96" Tc=0.0 min CN=98 Runoff=1.57 cfs 0.109 af
Subcatchment 7S: Swale	Runoff Area=6,860 sf 57.10% Impervious Runoff Depth=3.79" Flow Length=154' Tc=1.8 min CN=86 Runoff=0.75 cfs 0.050 af
Subcatchment 8S: Apartment Building	Runoff Area=11,448 sf 100.00% Impervious Runoff Depth>4.96" Tc=0.0 min CN=98 Runoff=1.57 cfs 0.109 af
Subcatchment 9S: Swale	Runoff Area=4,162 sf 50.79% Impervious Runoff Depth=3.68" Flow Length=96' Tc=4.3 min CN=85 Runoff=0.42 cfs 0.029 af
Subcatchment 10S: Parking Area Swale	Runoff Area=28,957 sf 34.60% Impervious Runoff Depth=3.19" Flow Length=213' Tc=12.1 min CN=80 Runoff=2.02 cfs 0.177 af
Subcatchment 11S: Swale	Runoff Area=3,650 sf 55.23% Impervious Runoff Depth=3.79" Flow Length=81' Tc=0.8 min CN=86 Runoff=0.41 cfs 0.026 af
Subcatchment 12S: USF Area	Runoff Area=33,422 sf 11.84% Impervious Runoff Depth=2.64" Flow Length=112' Tc=5.5 min CN=74 Runoff=2.35 cfs 0.169 af
Subcatchment 13S: USF Area	Runoff Area=20,150 sf 22.94% Impervious Runoff Depth=2.91" Flow Length=118' Tc=1.2 min CN=77 Runoff=1.74 cfs 0.112 af
Subcatchment 14S: Roadway	Runoff Area=4,099 sf 77.24% Impervious Runoff Depth>4.41" Flow Length=135' Slope=0.0200 '/' Tc=2.3 min CN=92 Runoff=0.50 cfs 0.035 af
Subcatchment 15S: Swale to USF 3	Runoff Area=16,643 sf 12.61% Impervious Runoff Depth=2.64" Flow Length=273' Tc=14.0 min CN=74 Runoff=0.91 cfs 0.084 af
Subcatchment 16S: Hotel Parking Lot	Runoff Area=4,641 sf 81.77% Impervious Runoff Depth>4.51" Flow Length=50' Slope=0.0205 '/' Tc=0.7 min CN=93 Runoff=0.60 cfs 0.040 af

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Page 6

Subcatchment 17S: Hotel Parking Lot	Runoff Area=4,781 sf 90.86% Impervious Runoff Depth>4.80" Flow Length=50' Slope=0.0140 '/ Tc=0.8 min CN=96 Runoff=0.64 cfs 0.044 af
Subcatchment 18S: Hotel Parking Lot	Runoff Area=4,903 sf 90.70% Impervious Runoff Depth>4.70" Flow Length=50' Slope=0.0140 '/ Tc=0.8 min CN=95 Runoff=0.65 cfs 0.044 af
Subcatchment 19S: Hotel Parking Lot	Runoff Area=5,929 sf 84.87% Impervious Runoff Depth>4.61" Flow Length=50' Slope=0.0120 '/ Tc=0.9 min CN=94 Runoff=0.77 cfs 0.052 af
Subcatchment 20S: Hotel Parking Lot	Runoff Area=5,452 sf 92.79% Impervious Runoff Depth>4.80" Flow Length=50' Slope=0.0205 '/ Tc=0.7 min CN=96 Runoff=0.73 cfs 0.050 af
Subcatchment 21S: Hotel Parking Lot	Runoff Area=8,457 sf 84.71% Impervious Runoff Depth>4.61" Flow Length=50' Slope=0.0140 '/ Tc=0.8 min CN=94 Runoff=1.10 cfs 0.075 af
Subcatchment 22S: Hotel Parking Lot	Runoff Area=7,891 sf 87.75% Impervious Runoff Depth>4.70" Flow Length=50' Slope=0.0140 '/ Tc=0.8 min CN=95 Runoff=1.04 cfs 0.071 af
Subcatchment 23S: Hotel Parking Lot	Runoff Area=12,880 sf 87.49% Impervious Runoff Depth>4.70" Flow Length=113' Slope=0.0120 '/ Tc=1.4 min CN=95 Runoff=1.65 cfs 0.116 af
Subcatchment 24S: Swale	Runoff Area=14,883 sf 2.69% Impervious Runoff Depth=2.46" Flow Length=156' Tc=12.2 min CN=72 Runoff=0.79 cfs 0.070 af
Subcatchment 25S: Roadway near Hotel	Runoff Area=16,320 sf 37.39% Impervious Runoff Depth=3.29" Flow Length=248' Tc=3.0 min CN=81 Runoff=1.56 cfs 0.103 af
Subcatchment 26S: Hotel	Runoff Area=4,672 sf 100.00% Impervious Runoff Depth>4.96" Tc=0.0 min CN=98 Runoff=0.64 cfs 0.044 af
Subcatchment 27S: Hotel	Runoff Area=6,181 sf 100.00% Impervious Runoff Depth>4.96" Tc=0.0 min CN=98 Runoff=0.85 cfs 0.059 af
Subcatchment 28S: Hotel	Runoff Area=5,042 sf 100.00% Impervious Runoff Depth>4.96" Tc=0.0 min CN=98 Runoff=0.69 cfs 0.048 af
Subcatchment 29S: Roadway and	Runoff Area=18,463 sf 46.81% Impervious Runoff Depth=3.58" Flow Length=109' Tc=2.2 min CN=84 Runoff=1.93 cfs 0.127 af
Subcatchment 30S: Roadway and USF	Runoff Area=14,515 sf 33.01% Impervious Runoff Depth=3.19" Flow Length=71' Tc=3.7 min CN=80 Runoff=1.32 cfs 0.089 af
Subcatchment 31S: Wetland Swale	Runoff Area=193,489 sf 6.94% Impervious Runoff Depth=3.00" Flow Length=615' Tc=9.9 min CN=78 Runoff=13.54 cfs 1.111 af
Subcatchment 32S: West Entrance	Runoff Area=10,256 sf 42.33% Impervious Runoff Depth=3.79" Tc=0.0 min CN=86 Runoff=1.18 cfs 0.074 af
Subcatchment 33S: West Entrance	Runoff Area=4,059 sf 52.35% Impervious Runoff Depth>3.99" Flow Length=68' Tc=0.8 min CN=88 Runoff=0.48 cfs 0.031 af
Subcatchment 34S: Front space between	Runoff Area=62,288 sf 26.96% Impervious Runoff Depth=3.00" Flow Length=361' Tc=18.7 min CN=78 Runoff=3.48 cfs 0.358 af

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Page 7

Reach 2R: Wetland Natural Swale	Avg. Flow Depth=0.13' Max Vel=0.26 fps Inflow=4.83 cfs 1.051 af n=0.150 L=700.0' S=0.0114 '/ Capacity=104.19 cfs Outflow=3.06 cfs 1.022 af
Reach 3R: Wetland Natural Swale	Avg. Flow Depth=0.06' Max Vel=0.15 fps Inflow=2.81 cfs 0.449 af n=0.150 L=850.0' S=0.0094 '/ Capacity=94.55 cfs Outflow=0.87 cfs 0.425 af
Reach 6R: Wetland Natural Swale	Avg. Flow Depth=0.06' Max Vel=0.19 fps Inflow=3.46 cfs 0.358 af n=0.150 L=1,128.0' S=0.0160 '/ Capacity=123.12 cfs Outflow=1.08 cfs 0.357 af
Pond 1P: USF 1	Peak Elev=49.92' Storage=2,243 cf Inflow=1.74 cfs 0.120 af Outflow=0.53 cfs 0.108 af
Pond 2P: USF 2	Peak Elev=49.91' Storage=7,316 cf Inflow=4.88 cfs 0.402 af Outflow=2.03 cfs 0.372 af
Pond 3P: USF 3	Peak Elev=47.32' Storage=20,105 cf Inflow=12.46 cfs 1.125 af Outflow=4.83 cfs 1.051 af
Pond 4P: USF 4	Peak Elev=48.01' Storage=9,072 cf Inflow=7.32 cfs 0.505 af Outflow=2.81 cfs 0.449 af
Pond 5P: Detention Pond	Peak Elev=59.68' Storage=1,762 cf Inflow=1.93 cfs 0.127 af 12.0" Round Culvert n=0.013 L=70.0' S=0.0057 '/ Outflow=1.22 cfs 0.106 af
Pond 6P: USF 6	Peak Elev=57.99' Storage=3,730 cf Inflow=2.38 cfs 0.195 af Outflow=0.47 cfs 0.158 af
Pond C1: Catch Basin 1	Peak Elev=52.44' Storage=6 cf Inflow=0.75 cfs 0.050 af 12.0" Round Culvert n=0.020 L=63.0' S=0.0317 '/ Outflow=0.75 cfs 0.050 af
Pond C10: Catch Basin 10	Peak Elev=51.02' Storage=0 cf Inflow=0.50 cfs 0.035 af 12.0" Round Culvert n=0.020 L=50.0' S=0.0100 '/ Outflow=0.50 cfs 0.035 af
Pond C11: Catch Basin 11	Peak Elev=53.91' Storage=18 cf Inflow=3.21 cfs 0.266 af 12.0" Round Culvert n=0.020 L=127.0' S=0.0252 '/ Outflow=3.20 cfs 0.266 af
Pond C12: Catch Basin 12	Peak Elev=55.13' Storage=15 cf Inflow=2.49 cfs 0.216 af 12.0" Round Culvert n=0.020 L=73.0' S=0.0192 '/ Outflow=2.49 cfs 0.216 af
Pond C13: Catch Basin 13	Peak Elev=55.76' Storage=3 cf Inflow=1.41 cfs 0.141 af 12.0" Round Culvert n=0.020 L=70.0' S=0.0100 '/ Outflow=1.40 cfs 0.141 af
Pond C14: Catch Basin 14	Peak Elev=58.21' Storage=9 cf Inflow=1.65 cfs 0.116 af 12.0" Round Culvert n=0.020 L=70.0' S=0.0114 '/ Outflow=1.65 cfs 0.116 af
Pond C15: Catch Basin 15	Peak Elev=57.23' Storage=10 cf Inflow=0.79 cfs 0.070 af 12.0" Round Culvert n=0.020 L=150.0' S=0.0107 '/ Outflow=0.79 cfs 0.070 af
Pond C16: Catch Basin 16	Peak Elev=51.54' Storage=7 cf Inflow=3.49 cfs 0.253 af 14.0" Round Culvert n=0.020 L=60.0' S=0.0250 '/ Outflow=3.48 cfs 0.253 af

The Homestead PRP

Type III 24-hr 10 YEAR STORM Rainfall=5.34"

Prepared by Hewlett-Packard Company

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Page 8

Pond C17: Catch Basin 17	Peak Elev=52.01' Storage=2 cf Inflow=1.65 cfs 0.105 af 12.0" Round Culvert n=0.020 L=60.0' S=0.0050 '/' Outflow=1.65 cfs 0.105 af
Pond C18: Catch Basin 18	Peak Elev=51.34' Storage=30 cf Inflow=0.48 cfs 0.031 af 12.0" Round Culvert n=0.013 L=140.0' S=0.0171 '/' Outflow=0.48 cfs 0.030 af
Pond C19: Culvert	Peak Elev=53.17' Storage=233 cf Inflow=3.48 cfs 0.358 af 15.0" Round Culvert n=0.020 L=60.0' S=0.0333 '/' Outflow=3.46 cfs 0.358 af
Pond C2: Catch Basin 2	Peak Elev=48.58' Storage=7 cf Inflow=0.42 cfs 0.029 af 12.0" Round Culvert n=0.020 L=60.0' S=0.0117 '/' Outflow=0.42 cfs 0.029 af
Pond C3: Catch Basin 3	Peak Elev=51.79' Storage=10 cf Inflow=2.02 cfs 0.177 af 12.0" Round Culvert n=0.020 L=80.0' S=0.0250 '/' Outflow=2.02 cfs 0.177 af
Pond C4: Catch Basin 4	Peak Elev=52.04' Storage=0 cf Inflow=0.41 cfs 0.026 af 12.0" Round Culvert n=0.020 L=206.0' S=0.0053 '/' Outflow=0.41 cfs 0.026 af
Pond C5: Catch Basin 5	Peak Elev=51.36' Storage=145 cf Inflow=0.91 cfs 0.084 af 12.0" Round Culvert n=0.020 L=150.0' S=0.0120 '/' Outflow=0.90 cfs 0.083 af
Pond C6: Catch Basin 6	Peak Elev=53.72' Storage=35 cf Inflow=4.12 cfs 0.295 af 12.0" Round Culvert n=0.020 L=140.0' S=0.0200 '/' Outflow=4.05 cfs 0.293 af
Pond C7: Catch Basin 7	Peak Elev=57.18' Storage=28 cf Inflow=3.58 cfs 0.255 af 12.0" Round Culvert n=0.020 L=60.0' S=0.0100 '/' Outflow=3.57 cfs 0.255 af
Pond C8: Catch Basin 8	Peak Elev=57.29' Storage=17 cf Inflow=3.04 cfs 0.212 af 12.0" Round Culvert n=0.020 L=60.0' S=0.0100 '/' Outflow=2.95 cfs 0.211 af
Pond C9: Catch Basin 9	Peak Elev=57.62' Storage=21 cf Inflow=2.41 cfs 0.168 af 12.0" Round Culvert n=0.020 L=80.0' S=0.0100 '/' Outflow=2.40 cfs 0.168 af
Pond DMH1: Drainage Manhole	Peak Elev=51.44' Storage=6 cf Inflow=1.98 cfs 0.135 af 12.0" Round Culvert n=0.020 L=92.0' S=0.0054 '/' Outflow=1.95 cfs 0.133 af
Pond DMH2: Drainage Manhole	Peak Elev=51.47' Storage=32 cf Inflow=3.20 cfs 0.266 af 12.0" Round Culvert n=0.020 L=70.0' S=0.0086 '/' Outflow=3.15 cfs 0.265 af
Link 1L:	Inflow=21.17 cfs 4.892 af Primary=21.17 cfs 4.892 af
Link 2L:	Inflow=12.72 cfs 1.884 af Primary=12.72 cfs 1.884 af
Link 3L: AP3	Inflow=13.55 cfs 1.269 af Primary=13.55 cfs 1.269 af

Total Runoff Area = 32.876 ac Runoff Volume = 8.335 af Average Runoff Depth = 3.04"
83.78% Pervious = 27.543 ac 16.22% Impervious = 5.333 ac

BMP CALCULATIONS

TABLE 1 - QUANTITY CALCULATIONS

STORM EVENT

		<u>2</u>	<u>10</u>	<u>25</u>
EXISTING	AP 1	13.65	31.29	43.10
	AP 2	6.39	15.32	21.43
	AP 3	6.43	14.73	20.26
DEVELOPED	AP 1	8.41	21.17	29.53
	AP 2	5.31	12.72	17.79
	AP 3	6.08	13.55	18.89
CHANGE	AP 1	-5.24	-10.12	-13.57
	AP 2	-1.08	-2.60	-3.64
	AP 3	-0.35	-1.18	-1.37
	TOTAL	-6.67	-13.90	-18.58

POND SIZING CALCULATIONS

AREA	IMP. (ft ²)	LA. (ft ²)	RA. (ft ²)	BMP	CPV (ft ³)	P. POOL (ft ³)	CHECK
Pond 1							
2S	2,979	9,312			559		
7S	3,917	2,943			425		
Total	6,896	12,255	0	0	983		
				5% Impervious + 2% Landscaped Area =	590		
				5% Impervious + 2% Remaining Area =	590		
				Provided CPV =	1,544		OK
				Provided Area =	717		OK
Pond 2							
4S	2,515	30,206			1,216		
3S	11,448	0			954		
8S	11,448	0			954		
11S	2,016	1,634			222		
Total	27,427	31,840	0	0	3,347		
				5% Impervious + 2% Landscaped Area =	2,008		
				5% Impervious + 2% Remaining Area =	2,008		
				Provided CPV =	5,303		OK
				Provided Area =	2909		OK
Pond 3							
				Soil Filter			
6S	11,448	0			954	N/A	
9S	2,114	2,048			244		
10S	10,018	2,943			933		
12S	3,957	29,465			1,312		
15S	2,098	14,545			660		
16S	3,795	846			344		
17S	4,344	437			377		
18S	4,447	456			386		
19S	5,032	897			449		
20S	5,059	393			435		
21S	7,164	1,293			640		
22S	6,924	967			609		
23S	11,269	1,611			993		
24S	400	14,483			516		
Total	78,069	70,384	0		8,852	N/A	0.00
				5% Impervious + 2% Landscaped Area =	5,311		
				5% Impervious + 2% Remaining Area =			
				Provided CPV =	11,941		OK
				Provided Area =	6,043		OK
Pond 4							
				Soil Filter			
13S	4,623	15,527			903		
14S	3,166	933			295		
25S	6,102	10,218			849		
26S	4,672	0			389		
27S	6,181	0			515		
28S	5,402	0			450		
32S	2,125	1,934			242		
33S	4,341	5,915			559		
Total	36,612	34,527			4,202	N/A	
				5% Impervious + 2% Landscaped Area =	2,521		
				5% Impervious + 2% Remaining Area =			
				Provided CPV =	6,409		OK
				Provided Area =	3,544		OK
Pond 6							
				Soil Filter			
29S	8,643	9,820			1,048		
30S	4,791	9,724			723		
Total	13,434	19,544			1,771	N/A	0.00
				5% Impervious + 2% Landscaped Area =	1,063		
				5% Impervious + 2% Remaining Area =	1,063		
				Provided CPV =	2,488		OK
				Provided Area =	1,126		OK

TREATMENT CALCULATIONS

New Impervious Area to be Treated @95% 169,551 sf
 New Developed Area to be Treated @80% 388,075 sf

3.89 Acres
 8.91 Acres

AMENDED DEVELOPED CONDITIONS:

AREA	IMP. (ft ²)					LA. (ft ²)					DEV. (ft ²)				
	Ext.	Created Require to Treat	Total (Hydro CAD)	Treated	Not Treated	Ext. (HCAD)	Created Require to Treat	Total (Hydro CAD)	Treated	Not Treated	Ext.	Created Require to Treat	Total (Hydro CAD)	Treated	Not Treated
1S		1,933		0	1,933		13,668		0	13,668	1,933	15,601	0	0	15,601
2S		2,979		2,979	0		9,312		9,312	0	2,979	12,291	0	12,291	0
3S		11,448		11,448	0		0		0	0	11,448	11,448	0	11,448	0
4S		2,515		2,515			30,206		30,206						
5S		0		0	0		9,203		0	9,203		9,203	0	0	9,203
6S		11,448		11,448	0		0		0	0		11,448	0	11,448	0
7S		3,917		3,917	0		2,943		2,943	0		6,860	0	6,860	0
8S		11,448		11,448	0		0		0	0		11,448	0	11,448	0
9S		2,114		2,114	0		2,048		2,048	0		4,162	0	4,162	0
10S		10,018		10,018	0		18,939		18,939	0		28,957		28,957	0
11S		2016		2016	0		1634		1634	0		3650		3650	0
12S		3957		3957	0		29465		29465	0		33422		33422	0
13S		4623		4623	0		15527		15527	0		20150		20150	0
14S		3166		3166	0		933		933	0		4099		4099	0
15S		2098		2098	0		14545		14545	0		16643		16643	0
16S		3795		3795	0		846		846	0		4641		4641	0
17S		4344		4344	0		437		437	0		4781		4781	0
18S		4447		4447	0		456		456	0		4903		4903	0
19S		5032		5032	0		897		897	0		5929		5929	0
20S		5059		5059	0		393		393	0		5452		5452	0
21S		7164		7164	0		1293		1293	0		8457		8457	0
22S		6924		6924	0		967		967	0		7891		7891	0
23S		11269		11269	0		1611		1611	0		12880		12880	0
24S		400		400	0		14483		14483	0		14883		14883	0
25S		6102		6102	0		10218		10218	0		16320		16320	0
26S		4672		4672	0		0		0	0		4672		4672	0
27S		6181		6181	0		0		0	0		6181		6181	0
28S		5402		5402	0		0		0	0		5402		5402	0
29S		8643		8643	0		9820		9820	0		18463		18463	0
30S		4791		4791	0		9724		9724	0		14515		14515	0
31S		0		0	0		2133		0	2133		2133		0	2133
32S		2125		2125	0		1934		1934	0		4059		4059	0
33S		4341		4341			5915		5915	0		10256		10256	
34S		5180		0	5180		8974		0	8974		14154		0	14154
TOTAL	0	169,551	0	162,438	7,113	0	218,524	0	184,546	33,978	0	388,075	0	346,984	41,091

NEW

AREA	IMP. (ft ²)	DEV (ft ²)
Total Area	162438	346984
Total Acres	3.73	7.97
% Treated=	95.8%	89.4%

OPERATION AND MAINTENANCE PROGRAM



**THE HOMESTEAD – MIXED-USE DEVELOPMENT
459 U.S. ROUTE 1
KITTERY, MAINE**

**OPERATION AND MAINTENANCE PROGRAM
STORMWATER MANAGEMENT BMP'S**

This project contains specific Best Management Practices (BMP's) for the conveyance, storage, and treatment of stormwater and the prevention of erosion. These BMP's consist of swales, underdrained soil filter ponds, catchbasins and culverts. All components should be inspected quarterly, and after every significant rain event of 1" in any 24-hour period. Additional inspection intervals are specified for certain BMP's, specifically, underdrained soil filters.

The party responsible for implementing this Operation and Maintenance Program (O & M Program) shall be the property owner or owner's representative.

Swales

All swales should be inspected for accumulation of debris, which could adversely affect the function of this BMP. These areas should also be maintained to have gradual slopes, which prevent channeling of stormwater and erosion of the bottom and sides of the swales.

Catch Basins

All catch basin grates, sumps, and inlets/outlets should be inspected for accumulation of debris, which could adversely affect the function of this BMP. Additionally, the basin inverts shall be inspected for clogging and material soundness. Sumps shall always be clear to a depth of 1' below the outlet invert. Inlet structures shall be inspected and cleaned of debris at least twice annually, once in the spring following snow melt and once in the autumn after leaf fall.

Culverts

Culvert inlets and outlets should be inspected for debris, which could clog the BMP. Additionally, the placement of rip-rap should be inspected to ensure that all areas remain smooth and no areas exhibit erosion in the form of rills or gullies.

Snow Removal

Snow shall be stockpiled only in the approved snow storage areas. Plowing of snow into wetland areas, detention ponds or grassed underdrained soil filters(GUSFs) is prohibited. Additionally, a mostly sand mix (reduced salt) shall be applied during winter months to prevent excessive salt from leaching into wetland areas. Excess sand shall be removed from the storage areas, all paved surfaces and adjacent areas each spring.

Grassed Underdrained Soil Filters

The grassed underdrained soil filter area is a very effective BMP, however, long term maintenance is essential to its operation. The soil filter should be inspected after every major storm event during the first year to ensure proper function and at least twice-annually, thereafter. The inspection should ensure that the filter drains within 24 - 48

hours. The top several inches of the filter should be replaced with fresh filter material, when water ponds for longer than 72 hours. Debris and sediment that builds up should be removed from the pre-treatment structure at least annually. Outlet structures shall be inspected and cleaned of debris at least twice annually, once in the spring following snow melt and once in the autumn after leaf fall. The height of grass shall be maintained at a maximum of 12"; mowing shall be limited to no more than two times during the growing season.

Seeding, Fertilizing and Mulching

All exposed soil materials and stockpiles must be either temporarily or permanently seeded, fertilized and mulched in accordance with plan specifications. This is one of the most important features of the Erosion Control Plan, which will provide both temporary and permanent stabilization. Eroded or damaged lawn areas must be repaired until a 75% effective growth of vegetation is established and permanently maintained.

Record Keeping (During Construction)

The construction inspector shall maintain documentation of all inspections as well as maintenance or corrective actions that were taken in response to the inspection. This documentation shall be maintained for at least three years after the site is permanently stabilized.

The scope of construction inspections shall include, but not be limited to, the inspection of the sediment and erosion control measures as well as material storage areas and all points at which vehicles access the site.

Record Keeping (Post Construction)

Routine maintenance and inspections will be accomplished by the future property owners of Lots 1 and 2 or a third party contracted by the respective owner. The inspector shall have knowledge of erosion and stormwater control, including the standards and conditions of the permit. All inspections accomplished in accordance with this program shall be documented on the attached Inspection & Maintenance Log. Copies of the Log shall be kept by the property owner or owner's representative, and be made available to the Department (Maine Department of Environmental Protection) or Town of Kittery, upon request.

All post-construction documentation, such as catch basin inspection and cleaning logs and GUSF inspection and maintenance records, shall be maintained for at least five years.

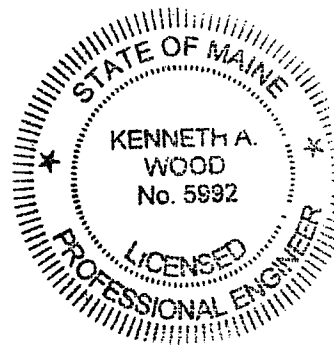
Additional responsibilities to include, on or by July 1 of each year, providing a completed and signed certification to the Code Enforcement Officer in a form provided by the Town, certifying that the person has inspected the stormwater management facilities and that they are adequately maintained and functioning as intended by the stormwater management plan, or that they require maintenance or repair, describing any required maintenance and any deficiencies found during inspection of the stormwater management facilities and, if the stormwater management facilities require maintenance or repair of deficiencies in order to function as intended by the approved stormwater management plan, the person must provide a record of the required maintenance or deficiency and corrective action(s) taken.

Re-certification (as noted in Appendix B. of Chapter 500 Stormwater Management)

Submit a certification of the following to the Department within three months of the expiration of each five-year interval from the date of issuance of the permit.

- (a) **Identification and repair of erosion problems.** All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.
- (b) **Inspection and repair of stormwater control system.** All aspects of the stormwater control system have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the system, or portions of the system.
- (c) **Maintenance.** The erosion and stormwater maintenance plan for the site is being implemented as written, or modifications to the plan have been submitted to and approved by the Department, and the maintenance log is being maintained.

Municipalities with separate storm sewer systems regulated under the Maine Pollutant Discharge Elimination System (MPDES) Program may report on all regulated systems under their control as part of their required annual reporting in lieu of separate certification of each system. Municipalities not regulated by the MPDES Program, but that are responsible for maintenance of permitted stormwater systems, may report on multiple stormwater systems in one report.



Kenneth A. Wood

GRASSED UNDERDRAINED SOIL FILTER INSPECTION FORM

Component No. Component Name	For Inspector		Result	For Maintenance Crew
	Inspection Item and Inspection Item No.			Preventative / Corrective Maintenance Actions
Pretreatment (Forebay)	1	Scouring or erosion is present at inlet structure and/or riprap apron	Y___ N___	Check the flow diversion device before the inlet pipe and whether the bypass flow channel is clogged Work Order # _____
	2	Clogged pipes or excessive sediment in the forebay	Y___ N___	Remove sediment or debris
	3	Damaged outlet structure (e.g., cracking, subsidence, spalling, erosion, or deterioration)	Y___ N___	Repair or replace the outlet structure Work Order # _____

	For Inspector		For Maintenance Crew
Component No. Component Name	Inspection Item and Inspection Item No.	Result	Preventative / Corrective Maintenance Actions
Note:			
Filter Area	1	<p>Standing water is present after the design drain time</p> <p>The observed drain time is approximately _____ hours.</p>	<p>Y__</p> <p>N__</p> <p>Recheck to determine if there is standing water after 72 hours</p> <p>If standing water is present longer than 5 days, report to mosquito commission.</p> <p>Remove any sediment buildup</p> <p>Replace the sand layer (volume of replacement sand is specified in the Basin Configuration Targets in the Basic Design Information Section of this Manual)</p> <p>Work Order # _____</p>
	2	Excessive sediment, silt, or trash accumulation on basin bed	<p>Y__</p> <p>N__</p> <p>Clean pretreatment system</p> <p>Remove silt, sediment, and trash</p>

	For Inspector		For Maintenance Crew
Component No. Component Name	Inspection Item and Inspection Item No.	Result	Preventative / Corrective Maintenance Actions
	3	Erosion or channelization is present	Y__ N__ Check whether the flow bypass or diversion device is clogged Re-grade the infiltration bed Work Order # _____
	4	Animal burrows/rodents are present	Y__ N__ Pest control Work Order # _____
	5	Uneven bed	Y__ N__ Use light equipment to resurface the bed Work Order # _____
	6	Evidence of sinkholes or subsidence	Y__ N__ Monitor for sinkhole development
Note:			
Underdrain	1	Standing water is present after the design drain time	Y__ N__ Check whether the outlet is clogged Check whether the underdrain pipes are clogged or damaged Ventilate the underdrain pipes Work Order# _____
	2	Gravel present in the discharge pipe or outfall of the sand filter	Y__ N__ Check whether the filter fabric around the pipe is broken and repair if necessary Work Order# _____

	For Inspector		For Maintenance Crew
Component No. Component Name	Inspection Item and Inspection Item No.		Result Preventative / Corrective Maintenance Actions
	3	Continuous discharge of water from the outfall when it has not rained within the past 72 hours and the bed is completely dry	Y__ N__ Check whether the seasonal high water table is above the bottom of the sand filter A retrofit may be required if the system is intercepting groundwater Work Order# _____
Note:			
Vegetation	1	Large spot(s) showing bare soil	Y__ N__ Vegetative cover must be maintained at 85%. Revegetate the entire basin if 50% or more vegetation has been lost Check Landscaping plan for guidance (if available) Work Order # _____

	For Inspector		For Maintenance Crew
Component No. Component Name	Inspection Item and Inspection Item No.	Result	Preventative / Corrective Maintenance Actions
	2	Overgrown vegetation	Y__ N__ Mow/trim the vegetation Work Order # _____
	3	Tree growth in the basin	Y__ N__ Clear, trim, or prune the trees according to the original Vegetation or Landscaping Plan Inspect to determine if the tree roots caused any structural damage Work Order # _____
Note:			

	For Inspector		For Maintenance Crew
Component No. Component Name	Inspection Item and Inspection Item No.	Result	Preventative / Corrective Maintenance Actions
Basin Embankment and Side Slopes	1	Signs of erosion, soil slide or bulges, seeps and wet spots, loss of vegetation, or erosion on the basin slope	<p>Y__</p> <p>N__</p> <p>Check for excessive overland runoff flow through the embankment.</p> <p>Check for any sink hole development</p> <p>Direct the overland runoff to the forebay or pretreatment area</p> <p>Restabilize the bank</p> <p>Work Order # _____</p>
	1	Trash or debris accumulation more than 20%	<p>Y__</p> <p>N__</p> <p>Clean and remove</p> <p>Determine source of trash and address to reduce future maintenance costs or basin failure</p>
Outlet	2	Trash rack is damaged or rusted greater than 50%	<p>Y__</p> <p>N__</p> <p>Repair or replace trash rack</p> <p>Work Order # _____</p>
	2	Trash rack is bent, loose, or missing parts	<p>Y__</p> <p>N__</p> <p>Work Order # _____</p>
	3	Outlet components (e.g., orifice plates or weir plate) skewed, misaligned, or missing	<p>Y__</p> <p>N__</p> <p>Repair or replace component</p> <p>Work Order # _____</p>
	4	Discharge pipe apron is eroded or scoured	<p>Y__</p> <p>N__</p> <p>Restabilize the discharge riprap apron</p> <p>Work Order # _____</p>
	5	Standing water is present in the outlet structure longer than 72 hours	<p>Y__</p> <p>N__</p> <p>Pump out the standing water</p> <p>Work Order # _____</p>

Component No. Component Name	For Inspector		For Maintenance Crew
	Inspection Item and Inspection Item No.	Result	Preventative / Corrective Maintenance Actions
Note:			
Emergency Spillway	1	Trees or excessive vegetation present	Y__ N__ Remove trees and roots, and restore berms if necessary Work Order #_____
	2	Damaged structure	Y__ N__ Repair Work Order #_____
Miscellaneous (if applicable)	1	Fence: broken or eroded parts	Y__ N__ Repair or replace Work Order #_____
	2	Gate: missing gate or lock	Y__ N__ Repair or replace Work Order #_____
	3	Sign/plate: tiled, missing, or faded	Y__ N__ Repair or replace Work Order #_____
	4	Excessive or overgrown vegetation blocking access to the basin	Y__ N__ Clear, trim, or prune the vegetation to allow access for inspection and maintenance Work Order #_____

	For Inspector		For Maintenance Crew
Component No. Component Name	Inspection Item and Inspection Item No.	Result	Preventative / Corrective Maintenance Actions
Note:			

Follow Up Items (Component No. / Inspection Item No.):

Inspector Name

Signature

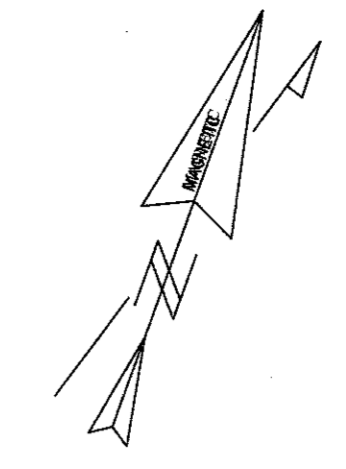
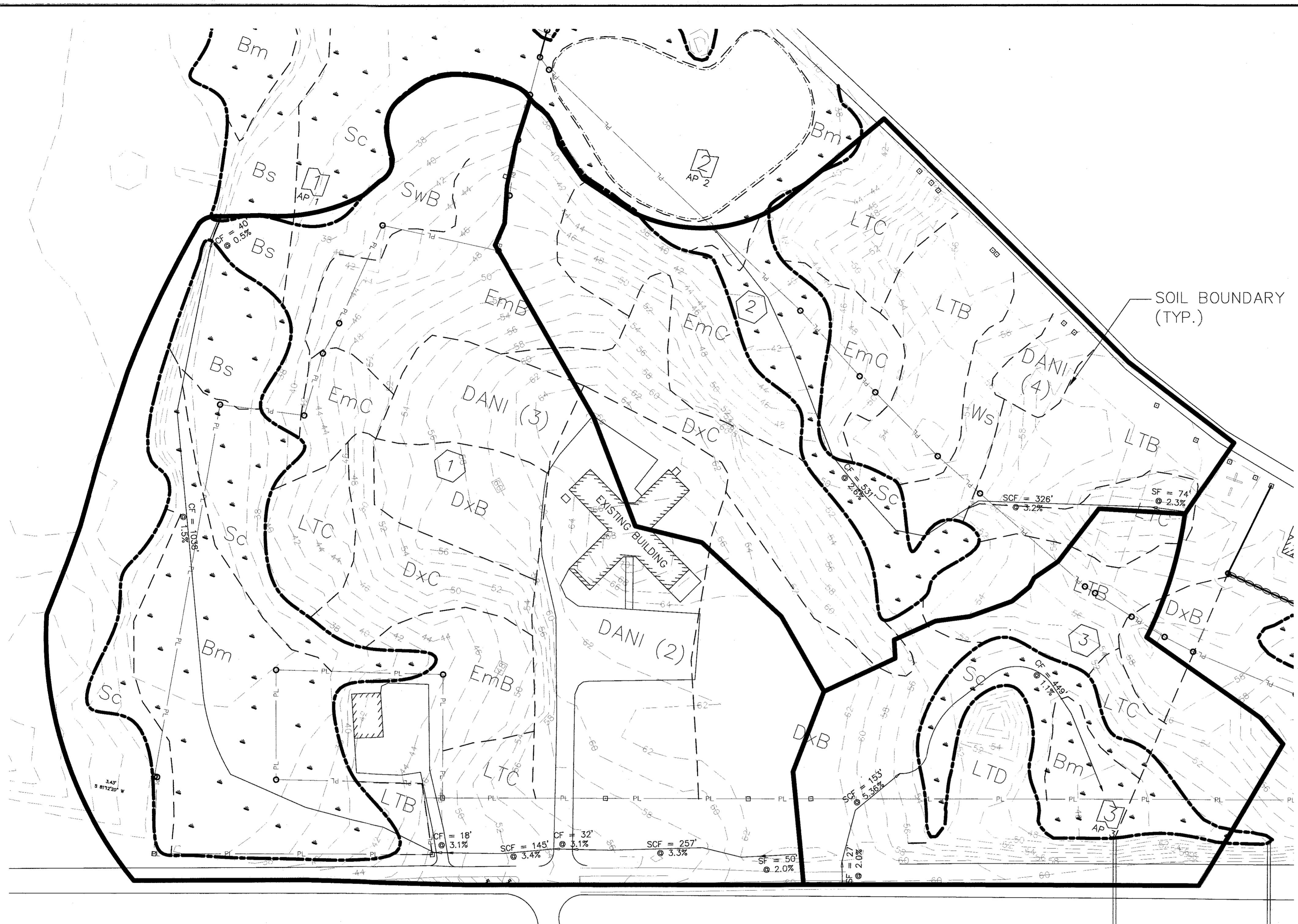
Date

Inspector: _____

Date: _____

CATCH BASIN INSPECTION FORM

Catch Basin I.D.		Final Discharge from Structure? Yes <input type="checkbox"/> No <input type="checkbox"/>	
		If Yes, Discharge to Outfall No: _	
Catch Basin Label:	Stencil <input type="checkbox"/>	Ground Inset <input type="checkbox"/>	Sign <input type="checkbox"/> None <input type="checkbox"/> Other_
Basin Material:	Concrete <input type="checkbox"/> Corrugated metal <input type="checkbox"/> Stone <input type="checkbox"/> Brick <input type="checkbox"/> Other: <input type="checkbox"/>	Catch Basin Condition:	Good <input type="checkbox"/> Poor <input type="checkbox"/> Fair <input type="checkbox"/> Crumbling <input type="checkbox"/>
Pipe Material:	Concrete <input type="checkbox"/> HDPE <input type="checkbox"/> PVC <input type="checkbox"/> Clay Tile <input type="checkbox"/> Other: <input type="checkbox"/>	Pipe Measurements:	Inlet Dia. (in): d= _ Outlet Dia. (in): D= _
Required Maintenance/ Problems (check all that apply):			
<input type="checkbox"/> Tree Work Required <input type="checkbox"/> New Grate is Required <input type="checkbox"/> Pipe is Blocked <input type="checkbox"/> Frame Maintenance is Required <input type="checkbox"/> Remove Accumulated Sediment <input type="checkbox"/> Pipe Maintenance is Required <input type="checkbox"/> Basin Undermined or Bypassed		<input type="checkbox"/> Cannot Remove Cover <input type="checkbox"/> Ditch Work <input type="checkbox"/> Corrosion at Structure <input type="checkbox"/> Erosion Around Structure <input type="checkbox"/> Remove Trash & Debris <input type="checkbox"/> Need Cement Around Grate Other: _ _	
Catch Basin Grate Type :	Sediment Buildup Depth :	Description of Flow:	Street Name/ Structure Location:
Bar: <input type="checkbox"/> Cascade: <input type="checkbox"/> Other:_	0-6 (in): - 6-12(in): - 12-18 (in): - 18-24 (in): - 24 + (in): -	Heavy <input type="checkbox"/> Moderate <input type="checkbox"/> Slight <input type="checkbox"/> Trickling <input type="checkbox"/>	
Properly Aligned: Yes <input type="checkbox"/> No <input type="checkbox"/>			
*If the outlet is submerged check yes and indicate approximate height of water above the outlet invert. h above invert (in):_		Yes <input type="checkbox"/>	No <input type="checkbox"/>
<input type="checkbox"/> Flow <input type="checkbox"/> Standing Water (check one or both)	Observations: Color: _____ Odor: _____	Circle those present:	
Weather Conditions :	Dry > 24 hours <input type="checkbox"/> Wet <input type="checkbox"/>	Foam	Oil Sheen
Sample of Screenings Collected for Analysis? Yes <input type="checkbox"/> No <input type="checkbox"/>		Sanitary Waste	Bacterial Sheen
Comments:		Orange Staining	Floatables
		Excessive sediment	Pet Waste
		Other:_	Optical Enhancers



LEGEND	
WETLAND/SOIL BNDY.	UPLAND WETLANDS
EXT. CONTOUR	---XXX---
PRP. CONTOUR	---XXX---
SUBCATCHMENT BNDY.	---
SOIL TYPE BOUNDARY	---
Tc PATH	FLOW TYPE/LENGTH

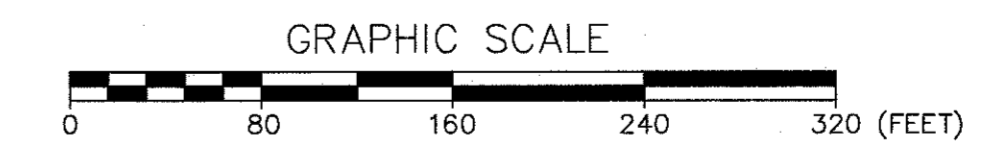
FLOW TYPES
 SF - SHEET FLOW
 SCF - SHALLOW CONCENTRATED FLOW
 CF - CHANNEL FLOW

- 1 SUBCATCHMENT
- 1R REACH
- 1 POND
- 1 ANALYSIS POINT

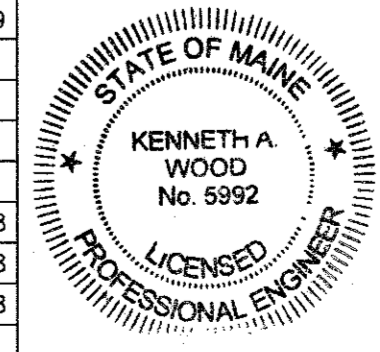
NOTE: ON-SITE SOILS INFORMATION IS TAKEN FROM CLASS A HIGH INTENSITY SOIL SURVEY PREPARED BY MICHAEL GUGMO, ME CSS #211 (SOIL REPORT DATED OCTOBER 2016). ELSEWHERE, SOILS INFORMATION IS TAKEN FROM THE YORK COUNTY SOIL SURVEY.

SYMBOL	SOIL SERIES	HYDROLOGIC SOIL GROUP
Bm	BIDDEFORD MUCKY PEAT*	D
BS	BIDDEFORD-SCANTIC COMPLEX, FILLED AND DITCHED*	D
DANI	DEVELOPED AREA NOT INVESTIGATED	N/A
Dx	DIXFIELD FINE SANDY LOAM	C
Em	ELMWOOD VERY FINE SANDY LOAM	C
LT	LYMAN-TUNBRIDGE COMPLEX	C/D
Sc	SCANTIC SILT LOAM*	D
Sw	SWANTON VERY FINE SANDY LOAM	C/D
Ws	WESTBURY FINE SANDY LOAM	C

* WETLAND SOILS



NO.	DESCRIPTION	DATE
J	FINAL PLAN SUBMISSION	01/24/2019
I	MDEP SUBMISSION	01/23/2019
H	PRELIMINARY PLAN SUBMISSION	9/20/2018
G	SW REVISION	4/20/2018
F	PRELIMINARY PLAN REVISION	4/19/2018
E	SW PLAN REVISION	4/16/2018
D	PRELIMINARY PLAN REVISION	03/27/2018
C	SW POND ADJUSTMENT	02/08/2018
B	SW POND ADJUSTMENT	02/06/2018
A	PRELIMINARY PLAN REVISION	1/18/2018
NO.	DESCRIPTION	DATE



7.1 STORMWATER: EXISTING CONDITIONS
 THE HOMESTEAD
 459 US ROUTE 1 KITTERY, MAINE

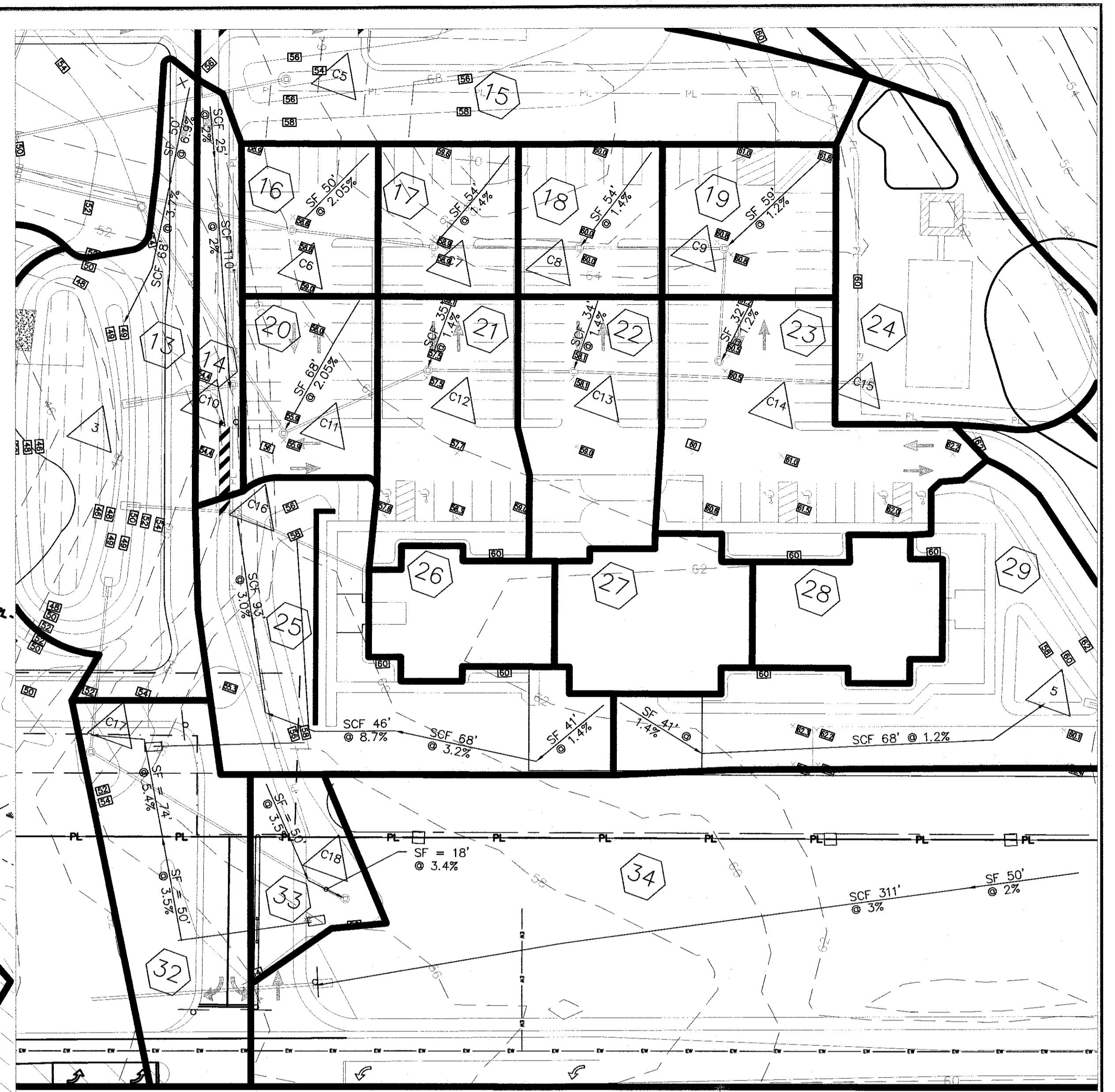
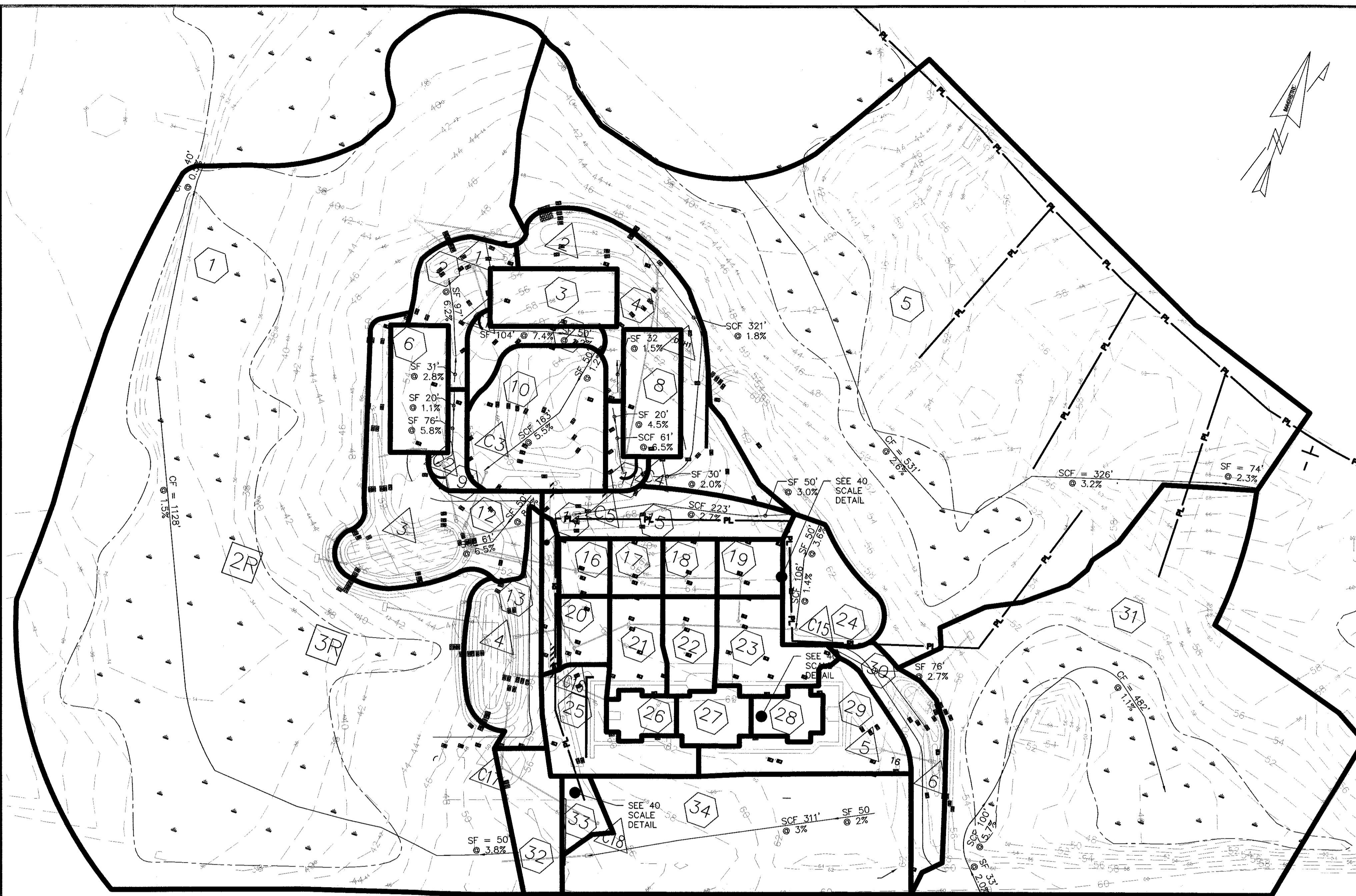
FOR: LANDMARK HILL, LLC
 79 CONGRESS ST
 PORTSMOUTH, NH 03801

ATTAR ENGINEERING, INC.
 CIVIL • STRUCTURAL • MARINE
 1284 STATE ROAD - ELIOT, MAINE 03903
 PHONE: (207)439-6023 FAX: (207)439-2128

SCALE: 1" = 80'
 DATE: 02/08/2018
 JOB NO: C052-18

APPROVED BY: *[Signature]*
 FILE: THE HOMESTEAD BASE

DRAWN BY: BRN
 REVISION : DATE
 J: 01/24/2019
 SHEET 7.1



STORMWATER SUBCATCHMENTS DETAIL
40 SCALE

POND SIZING CALCULATIONS

AREA	IMP. (ft²)	LA. (ft²)	RA. (ft²)	BMP	CPV (ft³)	P. POOL (ft³)	CHECK
Pond 1							
2S	2,979	9,312			559		
7S	3,917	2,943			425		
Total	6,896	12,255	0		983		
5% Impervious + 2% Landscaped Area = 590							
5% Impervious + 2% Remaining Area = 1,544							
Provided CPV = 717							
OK							
Pond 2							
4S	2,515	30,206			1,216		
3S	11,448	0			954		
8S	11,448	0			954		
11S	2,016	1,834			222		
Total	27,427	31,840	0		3,347		
5% Impervious + 2% Landscaped Area = 2,008							
5% Impervious + 2% Remaining Area = 2,008							
Provided CPV = 5,303							
Provided Area = 2909							
OK							
Pond 3							
Soil Filter							
6S	11,448	0			954	N/A	
9S	2,114	2,048			244		
10S	10,018	2,943			933		
12S	3,957	29,486			1,312		
15S	2,088	14,545			890		
16S	3,795	846			344		
17S	4,344	437			377		
18S	4,407	456			389		
19S	5,032	897			449		
20S	5,069	908			435		
21S	7,164	1,296			640		
22S	6,924	967			609		
23S	11,289	1,611			993		
24S	400	14,483			516		
Total	78,069	70,384	0		8,852	N/A	0.00
5% Impervious + 2% Landscaped Area = 5,311							
5% Impervious + 2% Remaining Area = 11,941							
Provided CPV = 6,043							
Provided Area = 6,043							
OK							
Pond 4							
Soil Filter							
13S	4,623	15,527			993		
14S	3,166	935			295		
25S	6,102	10,218			849		
26S	4,672	0			389		
27S	6,181	0			515		
28S	5,402	0			450		
32S	2,125	1,324			242		
33S	4,341	5,915			559		
Total	36,612	34,527	0		4,202	N/A	
5% Impervious + 2% Landscaped Area = 2,521							
5% Impervious + 2% Remaining Area = 6,409							
Provided CPV = 3,544							
Provided Area = 3,544							
OK							
Pond 6							
Soil Filter							
29S	8,643	9,820			1,048		
30S	4,791	9,724			723		
Total	13,434	19,544	0		1,771	N/A	0.00
5% Impervious + 2% Landscaped Area = 1,083							
5% Impervious + 2% Remaining Area = 1,083							
Provided CPV = 2,488							
Provided Area = 1,126							
OK							

TABLE 1 - QUANTITY CALCULATIONS

EXISTING	STORM EVENT		
	2	10	25
AP 1	13.65	31.29	43.10
AP 2	6.39	15.32	21.43
AP 3	6.43	14.73	20.26
DEVELOPED			
AP 1	8.41	21.17	29.53
AP 2	5.31	12.72	17.79
AP 3	6.08	13.55	18.89
CHANGE			
AP 1	-5.24	-10.12	-13.57
AP 2	-1.08	-2.60	-3.64
AP 3	-0.35	-1.18	-1.37
TOTAL	-6.67	-13.90	-18.58

TREATMENT CALCULATIONS

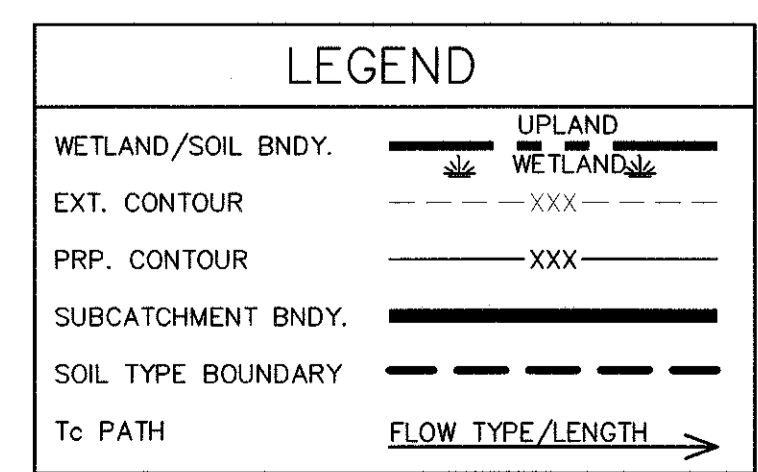
New Impervious Area to be Treated @95% 169,551 sf
New Developed Area to be Treated @90% 388,075 sf

3.89 Acres
8.91 Acres

AREA	AMENDED DEVELOPED CONDITIONS				EXISTING				NEW			
	Ext.	Created	Total	% Treated	Ext.	Created	Total	% Treated	Ext.	Created	Total	% Treated
1R	1,933	0	1,933	0	13,888	0	13,888	0	13,888	1,933	15,821	13.8%
2S	2,979	2,979	5,958	100%	9,312	9,312	18,624	100%	12,291	12,291	24,582	100%
3S	11,448	11,448	22,896	100%	0	0	0	0	11,448	11,448	22,896	100%
4S	2,515	2,515	5,030	100%	30,206	30,206	60,412	100%	11,448	11,448	22,896	100%
5S	0	0	0	0	9,203	0	9,203	0	9,203	0	9,203	0%
6S	11,448	11,448	22,896	100%	11,448	0	11,448	0	11,448	0	11,448	0%
7S	3,917	3,917	7,834	100%	2,843	2,843	5,686	100%	6,860	0	6,860	0%
8S	11,448	11,448	22,896	100%	0	0	0	0	11,448	0	11,448	0%
9S	2,114	2,114	4,228	100%	2,148	2,148	4,296	100%	4,162	0	4,162	0%
10S	10,018	10,018	20,036	100%	18,939	0	18,939	0	28,957	0	28,957	0%
11S	2,016	2,016	4,032	100%	1,634	1,634	3,268	100%	3,850	0	3,850	0%
12S	3,957	3,957	7,914	100%	2,945	2,945	5,890	100%	3,242	0	3,242	0%
13S	4,623	4,623	9,246	100%	15,527	15,527	31,054	100%	20,150	0	20,150	0%
14S	3,166	3,166	6,332	100%	933	933	1,866	100%	4,099	0	4,099	0%
15S	2,088	2,088	4,176	100%	14,545	0	14,545	0	16,633	0	16,633	0%
16S	3,795	3,795	7,590	100%	846	846	1,692	100%	4,841	0	4,841	0%
17S	4,344	4,344	8,688	100%	437	437	874	100%	4,791	0	4,791	0%
18S	4,407	4,407	8,814	100%	456	456	912	100%	4,903	0	4,903	0%
19S	5,032	5,032	10,064	100%	897	897	1,794	100%	5,929	0	5,929	0%
20S	5,069	5,069	10,138	100%	393	393	786	100%	5,452	0	5,452	0%
21S	7,164	7,164	14,328	100%	1,293	1,293	2,586	100%	8,457	0	8,457	0%
22S	6,924	6,924	13,848	100%	967	967	1,934	100%	7,991	0	7,991	0%
23S	11,289	11,289	22,578	100%	1,611	1,611	3,222	100%	12,969	0	12,969	0%
24S	400	400	800	100%	14,483	14,483	28,966	100%	14,883	0	14,883	0%
25S	6,102	6,102	12,204	100%	10,218	10,218	20,436	100%	15,200	0	15,200	0%
26S	4,672	4,672	9,344	100%	0	0	0	0	4,672	0	4,672	0%
27S	6,181	6,181	12,362	100%	0	0	0	0	6,181	0	6,181	0%
28S	5,402	5,402	10,804	100%	0	0	0	0	5,402	0	5,402	0%
29S	8,643	8,643	17,286	100%	9,820	9,820	19,640	100%	14,643	0	14,643	0%
30S	4,791	4,791	9,582	100%	9,724	9,724	19,448	100%	14,515	0	14,515	0%
31S	0	0	0	0	2,133	2,133	4,266	100%	0	2,133	4,266	50%
32S	2,125	2,125	4,250	100%	1,634	1,634	3,268	100%	4,059	0	4,059	0%
33S	4,341	4,341	8,682	100%	5,915	5,915	11,830	100%	10,296	0	10,296	0%
34S	9,300	9,300	18,600	100%	6,874	6,874	13,748	100%	14,154	0	14,154	0%
TOTAL	0	169,551	169,551	100%	0	162,438	162,438	100%	218,524	0	218,524	0%

NEW

AREA	IMP. (ft²)	DEV. (ft²)
Total Area	169,551	349,044
Total Acres	3.73	7.97
% Treated*	95.8%	88.4%



SYMBOL SOIL SERIES HYDROLOGIC SOIL GROUP

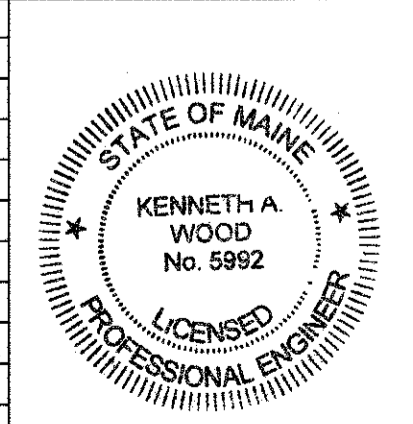
Bm	BIDDEFORD MUCKY PEAT*	D
BS	BIDDEFORD-SCANTIC COMPLEX, FILLED AND DITCHED*	D
DANI	DEVELOPED AREA NOT INVESTIGATED	N/A
Dx	DIXFIELD FINE SANDY LOAM	C
Em	ELMWOOD VERY FINE SANDY LOAM	C
LT	LYMAN-TUNBRIDGE COMPLEX	C/D
Sc	SCANTIC SILT LOAM*	D
Sw	SWANTON VERY FINE SANDY LOAM	C/D
Ws	WESTBURY FINE SANDY LOAM	C

* WETLAND SOILS

GRAPHIC SCALE
0 80 160 240 320 (FEET)

7.2 STORMWATER: PROPOSED CONDITIONS
459 US ROUTE 1 KITTEERY, MAINE

NO.	DESCRIPTION	DATE
K	FINAL PLAN SUBMISSION	01/24/2019
J	MDEP SUBMISSION	01/23/2019
I	PRELIMINARY PLAN SUBMISSION	9/20/2018
H	PRELIMINARY PLAN REVISION	5/08/2018
G	SW REVISION	4/20/2018
F	PRELIMINARY PLAN REVISION	4/19/2018
E	SW PLAN REVISION	4/16/2018
D	PRELIMINARY PLAN REVISION	03/27/2018
C	SW POND ADJUSTMENT	02/08/2018
B	SW POND ADJUSTMENT	02/06/2018
A	PRELIMINARY PLAN REVISION	1/18/2018



FOR: LANDMARK HILL, LLC
79 CONGRESS ST
PORTSMOUTH, NH 03801

ATTAR ENGINEERING, INC.
CIVIL • STRUCTURAL • MARINE
1284 STATE ROAD - ELIOT, MAINE 03903
PHONE: (207)439-6023 FAX: (207)439-2128

SCALE: 1" = 80'
DATE: 02/08/2018
JOB NO: C052-18 FILE: THE HOMESTEAD BASE

APPROVED BY: *[Signature]*
DRAWN BY: BRN
REVISION : DATE
K: 01/24/2019
SHEET 7.2