

Town of Kittery Planning Board Meeting October 11, 2018

459 U.S. Route One – Site and Subdivision Preliminary Plan Review

Accept or deny application. Schedule public hearing 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 16 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	
YES	Preliminary Plan Review Completeness/Acceptance	August 9, 2018	PENDING
YES	Public Hearing		
YES	Preliminary Plan Approval		
YES	Final Plan Review and Decision		
<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 16.4.4.13 - Grading/Construction Final Plan Required. - Grading or construction of roads, grading of land or lots, or construction of buildings is prohibited until the original copy of the approved final plan endorsed has been duly recorded in the York County registry of deeds when applicable.</p>			

Background

This is now a preliminary master site development plan review 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 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. The applicant is proposing a 112-room hotel in one building to be located near the front of the property and three residential buildings in the rear. One building will offer two floors of age-restricted housing plus ground floor parking and the other two buildings will contain age-restricted housing on one floor, and general housing on the top floor again with ground floor parking.

The property is proposed to be subdivided into two separate properties. Lot 1 will have 546,360 sq. ft. of lot area and 380 feet of street frontage and will contain the residential units. Lot 2 will have 330,015 sq. ft. of lot area and 1275 feet of street frontage. To divide the lot into two does not require Planning Board approval. The proposed uses will remain unchanged and the proposal can be treated as a Master Site Development Plan review. In line with the subdivision, the applicant has revised the site design, primarily for the residential parcel and the tie in to the hotel parcel. Instead of a roundabout design and a gazebo the centerpiece it will be greenspace with some visitor parking spaces along three sides. There is also minor redesign of the stormwater ponds and the addition of a fourth pond on the east side of the hotel.

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.

Staff Review

It appears that the applicant has now submitted a complete preliminary master site plan development application but the Board may still want to continue the discussion regarding the elderly housing component.

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. The revised plans do not indicate whether that is being proposed or not.
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.

Mixed-Use Requirements

5. Note 7 demonstrates that the smallest use in terms of floor area, single-family dwelling units, exceeds the 10% minimum requirement per 16.3.2.13.D.4.
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.

50-foot MU Zone Boundary Extension

7. 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

8. The Open Space requirements appear to have been met in a similar way as the previously approved preliminary plan.
9. 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.
10. 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.
11. 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 applicable wording for the plans and for the HOA documents.
12. 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.
13. 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

14. Daily traffic counts are shown in Note 13. 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.
15. 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.
16. 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.
17. 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.
18. 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

19. Per Section 10.8.9.4.G *Parking Standards*, landscaping is required for the hotel parking area since it contains well over 10 spaces. One tree is required for every parking space. There are 14 trees shown in the parking area which meets the requirements (115 parking spaces / 8 spaces = 14 trees).
20. 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.
21. The landscaping requires a 30-foot landscaped buffer strip per 16.3.2.13 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.

Stormwater Management

22. 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.

23. It should be noted that there are now four (4) stormwater ponds instead of three (3) proposed.

Recommendation

Preliminary Plan review begins the formal permitting process for a site plan / subdivision. The application appears sufficient to schedule a public hearing. In addition, as part of this step, the Board will decide by vote whether the design of this master site development plan aligns with Special Exception criteria and the definition of Special Exception in 16.2

Move to accept/deny the preliminary master site development plan dated 9/20/2018 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 as complete.

Or

Move to continue the preliminary master site development plan dated 9/20/2018 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.

And

Move to schedule a public hearing on {date} for the preliminary master site development plan dated 9/20/2018 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 as complete.

Move to schedule a site walk on {date} for the preliminary master site development plan dated 9/20/2018 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 as complete.



ATTAR

ENGINEERING, INC

CIVIL • STRUCTURAL • MARINE

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

September 20, 2018
Project No.: C052-18

**Re: 459 US Route 1 - Kittery
Preliminary 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. We received Preliminary Plan approval on May 10, 2018; that plan proposed a Mixed-Use development consisting of 26 elderly residential units, 16 single family residential units on the upper floors of 2 buildings containing 2 commercial spaces and a parking garage.

Since preliminary approval the developer, Michael Brigham, has been approached by a hotel developer who's enthusiastic about the opportunities and location of this parcel. The attached plan provides the conceptual details for 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.

After receiving review comments from Staff and the Planning Board at their meeting on July 12, 2018 additional changes have been made to the plans. These changes are discussed below:

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.

As noted in the most recent Staff Review the amount of proposed parking and trips per day require that a Traffic Impact Analysis be completed. This is provided as part of this Preliminary Plan Submission.

Although the entrances have not changed since the initial submission we respectfully request a waiver of 16.8.4.2.F to allow the entrances to be less than 1000 feet apart. The proposed entrances are approximately 400 feet apart and the Maine Department of Transportation has issued an entrance permit for the Sowerby Project.

As noted in the Staff Review as well as during the Planning Board Meeting a mixture of evergreen and deciduous trees will be provided as part of the overall landscaping plan in order to avoid any blight on specific trees from damaging the overall landscape. The species will be detailed as part of the Preliminary Plan Submission.

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".

Kenneth A. Wood, P.E.
President

cc: Landmark Hill, LLC

C052-18 Kittery Site App Cover-ConceptPlan.doc

Traffic Impact Study
Proposed Hotel & Residential Apartments
Route 1, Kittery, Maine

September 2018

Prepared for:

Landmark Hill, LLC.
79 Congress Street
Portsmouth, NH 03801

Prepared by:

**Maine
Traffic
Resources**

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Introduction

The purpose of this study is to assess the traffic impacts of the proposed Homestead Subdivision in Kittery, Maine. The proposed subdivision will provide for a 112-room hotel and forty-four (44) residential apartments in three separate apartment buildings. Thirty-two (32) of the apartments will be limited to senior residents, reducing traffic flows. The site is located on the westerly side of Route 1, and opposite and north of Lewis Road. The site location is shown on the map in Figure 1.

The site is located in an area where the speed limit on Route 1 transitions from 35 mph south of Lewis Road to 50 mph north of Lewis Road. Given that the speed limit change from 35 mph to 50 mph occurs at Lewis Road, the Town of Kittery should consider asking MaineDOT, in the future, to extend the 35 mph zone somewhat further north to encompass the northerly site drive after the development is occupied and driveway movements and activity increase.

A traffic movement permit (TMP) was previously issued by the Maine Department of Transportation (MaineDOT) for a larger commercial development on this site. A copy of that TMP is included in the appendix of this report for informational purposes. That commercial development was permitted for 619 PM peak hour trips in 2008.

Construction of the hotel and first apartment building is expected to begin in 2018 as soon as permit are issued with occupancy planned for 2019. An additional apartment building would be built each year resulting in planned full occupancy sometime in 2021. Hence, 2021 was utilized as the study year for traffic analysis purposes to allow for completion and full occupancy of all residential apartments and the hotel.

Traffic Volumes

Turning movement counts were conducted at the intersection of Route 1 and Lewis Road to determine existing traffic volumes and area traffic patterns during the weekday AM and PM peak hour periods. Traffic counts were also conducted at the intersection of Cutts Road to determine the impact further off-site. The counts were performed as follows:

<u>Intersection</u>	<u>Count Period</u>	<u>Date</u>	<u>Peak Hour</u>
Route 1 and Lewis Road	7:00 – 9:00 AM	8/21/18	8:00 – 9:00
Route 1 and Lewis Road	3:00 – 6:00 PM	8/21/18	3:15 – 4:15
Route 1 and Cutts Road	7:00 – 9:00 AM	8/23/18	8:00 – 9:00
Route 1 and Cutts Road	3:00 – 6:00 PM	8/22/18	3:00 – 4:00

The AM peak hour occurred from 8:00 – 9:00 AM while the PM peak hour occurred between 3:00 and 4:15 PM, dependent upon intersection. The count records are included in the appendix of this report. Since the counts were conducted under peak summer conditions, no factoring was required to obtain 30th highest hour volumes, which are used for traffic analysis purposes. These 30th highest hour volumes generally occur during peak hours in July and August in Maine. These existing 2018 volumes are shown in Figure 2.

Existing average annual daily traffic (AADT) data for the area was obtained from "Traffic Volume Counts, 2017, 2014, 2009 and 2006 Annual Reports", published by MaineDOT. This data is summarized below:

<u>Location</u>	Average Annual Daily Traffic					
	<u>2004</u>	<u>2005</u>	<u>2007</u>	<u>2010</u>	<u>2013</u>	<u>2016</u>
Route 1, NE/O Haley Road	---	11,430	11,550	12,330	10,940	10,260
Route 1, SW/O Beech Ridge Road (York)	---	9,910	10,050	11,450	9,370	9,490
Lewis Road, E/O Route 1	790	---	---	---	1,450	1,340

As seen above, traffic volumes on Route 1 in the vicinity of the site have decreased over the long term period from 2004 to 2016. They have also decreased or remained steady in the most recent short term period from 2013 to 2016. Lewis Road volumes grew steadily from 2004 to 2013, most likely due to new development during that time period. Volumes decreased slightly on Lewis Road from 2013 to 2016. Based upon this historical traffic data, the 2018 volumes were increased by ½ % annually to obtain base 2021 volumes.

The Town of Kittery Planner was contacted to determine if there are any other proposed or approved developments that are expected to significantly impact traffic volumes in the study area. The Town Planner did not identify any approved yet unbuilt developments in the area that would need to be considered in the traffic analysis. Hence, the projected 2021 no-build volumes, based upon annual traffic growth of ½ % annually, are shown in Figure 3.

Trip Generation

The number of trips to be generated by the currently proposed development was estimated using the newest Institute of Transportation Engineers (ITE) "Trip Generation, 10th Edition" report. Land use code (LUC) 310 – Hotel was used on the basis of 112 occupied rooms. LUC 220 – Multi-Family (low rise) apartment was used on the basis of 12 dwelling units. Lastly, both LUC 251- Senior Adult Housing – Detached and 252 – Senior Adult Housing – Attached were utilized. The higher of each rate was used since studies by MTR has shown senior Maine rates to be more in line with the higher senior housing rates. The overall trip generation results are summarized in the following table:

<u>Time Period</u>	ITE Trip Generation (one-way trip-ends)			
	<u>Hotel</u>	<u>Apts.</u>	<u>Sr. Apts.</u>	<u>Total</u>
Weekday	1,370	88	136	1,594
AM Peak Hour – Adjacent Street	70	6	8	84
Entering	41	1	3	45
Exiting	29	5	5	39
AM Peak Hour – Generator	73	7	11	91
Entering	40	2	5	47
Exiting	33	5	6	44
PM Peak Hour – Adjacent Street	82	7	10	99
Entering	40	4	6	50
Exiting	42	3	4	49
PM Peak Hour - Generator	82	8	12	102
Entering	47	5	7	59
Exiting	35	3	5	43
Saturday Peak Hour	97	8	11	116
Entering	54	4	7	65
Exiting	43	4	4	51

As seen above, the Homestead subdivision is expected to generate 91 one-way trips during their AM peak hour, 102 during their PM peak hour and 116 during their Saturday peak hour. It is important to point out that this is significantly fewer trips than the TMP was issued for. That permit was issued for 619 PM peak hour trips in contrast to the 102 trips to be generated by the current development proposal. Based upon that, the current proposal for a hotel and residential apartments will only generate only 16 % of the traffic previously approved for this parcel. Given the reduced trip generation and overall change in development plans, an application for a formal Traffic Movement Permit Modification will be filed with MaineDOT.

Both the weekday AM and PM peak hours were selected as analysis periods. The trip assignments, based upon the recorded travel patterns during both the AM and PM counts, demonstrate that the majority of trips are destined to and from the south. The trips were assigned to the site drives based the recorded traffic patterns, building locations and typical duel driveway patterns, as shown in Figure 4. All of the trips are assumed to be primary, or new trips, with no pass-by trips, since they are home based or hotel trips.

Based upon the trip assignments, the study area for capacity analysis purposes extends only from the facility through the site drive intersections. Given the resulting trip assignments, this level of new traffic is not expected to have significant impacts off-site on traffic operations. Generally, a project will not have any significant impact unless it generates in excess of 35 new lane hour trips. As shown in the trip assignment diagram,

this development will result in a maximum of 28 new lane hour trips on Route 1. The projected 2021 build volumes, with the hotel and apartments fully occupied, are shown in Figure 5.

Auxiliary Turn Lane Analysis

Left-turn warrant analysis was performed for Route 1 at the site drive for both the AM and PM peak hours to determine if a formal left turn lane would be required on Route 1 to serve traffic turning left into the Homestead Subdivision and since one is shown on the site plan. The left-turn warrant was performed according to the procedures in the MaineDOT “Highway Design Guide” for 50 mph roadways since Route 1 transitions to 50 mph just north of the site drive. The warrant chart is included in the appendix of this report.

The results show that a left-turn lane is not warranted by the AM peak hour volumes but will be by the PM peak hour volumes to store traffic turning into the hotel and apartment units. Route 1 in this area has already been widened to provide a southbound left-turn lane into Lewis Road. It is understood that the applicant will restripe the striped median on Route 1 to provide a left turn lane to store traffic entering the site opposite Lewis Road. Based upon the projected volumes, this left turn lane should provide a minimum of 50 feet of left-turn storage with appropriate transition tapers. Given that Route 1 is a state highway, approvals will need to be obtained from MaineDOT for the restriping effort.

Traffic Analysis

Traffic operations are evaluated in terms of level of service (LOS). Level of service is a qualitative measure that describes operations by letter designation. The levels range from A - very little delay to F - extreme delays. Level of service "D" is generally considered acceptable in urban locations while LOS "E" is generally considered the capacity of a facility and the minimum tolerable level. The level of service for unsignalized intersections is based upon average control delay per vehicle for each minor, opposed movement, as defined in the following table excerpted from the 2010 "Highway Capacity Manual":

Unsignalized Intersection Level of Service

<u>LOS</u>	<u>Delay Range</u>
A	<= 10.0 seconds
B	> 10.0 and <= 15.0
C	> 15.0 and <= 25.0
D	> 25.0 and <= 35.0
E	> 35.0 and <= 50.0
F	> 50.0

Unsignalized Intersection Analysis

The level of service was calculated for the unsignalized study area intersections using Synchro 9 and SimTraffic, the average of five (5) simulation runs. The analysis assumed a 50’ long left-turn lane northbound on Route 1 to store traffic entering the site, as previously discussed. The results for existing 2018 and projected 2021 conditions for the AM and PM peak hour analysis periods are included in the appendix and are shown in the following tables with the level of service followed by the delay, in seconds:

Route 1, Lewis Road and Site Drive			
AM Peak Hour Level of Service			
<u>Approach</u>	2018 <u>Existing</u>	2021 <u>No-Build</u>	2021 <u>Build</u>
Eastbound Site Drive	---	---	A (5.0)
Westbound Lewis Road	A (6.6)	A (6.8)	A (6.9)
Northbound Route 1	A (0.9)	A (0.9)	A (1.2)
Southbound Route 1	A (1.7)	A (1.7)	A (1.7)
PM Peak Hour Level of Service			
<u>Approach</u>	2018 <u>Existing</u>	2021 <u>No-Build</u>	2021 <u>Build</u>
Eastbound Site Drive	---	---	A (7.5)
Westbound Lewis Road	B (12.3)	B (12.0)	C (15.3)
Northbound Route 1	A (1.4)	A (1.5)	A (1.6)
Southbound Route 1	A (1.9)	A (2.0)	A (2.0)

As seen above, Lewis Road currently operates at LOS “A” during the AM peak hour and at LOS “B” during the PM peak hour. The levels are projected to remain the same under 2021 no build volumes. The LOS for Lewis Road will decrease from a “B” to a “C” with the addition of the opposing site drive volumes during the PM peak hour but this is still an acceptable LOS. The addition of opposing drive volumes will not impact the LOS for Lewis Road during the AM peak hour. This demonstrates that the proposed Homestead subdivision will have no significant impact off site on Lewis Road operations and even lesser impacts on Route 1 operations shown by the minimal increases in average delays.

Route 1 and Cutts Road			
AM Peak Hour Level of Service			
<u>Approach</u>	<u>2018 Existing</u>	<u>2023 No-Build</u>	<u>2023 Build</u>
Eastbound Cutts Road	A (6.1)	A (6.3)	A (6.1)
Northbound Route 1	A (0.5)	A (0.5)	A (0.4)
Southbound Route 1	A (0.5)	A (0.5)	A (0.5)

PM Peak Hour Level of Service			
<u>Approach</u>	<u>2018 Existing</u>	<u>2023 No-Build</u>	<u>2023 Build</u>
Eastbound Cutts Road	B (14.5)	B (15.0)	C (15.2)
Northbound Route 1	A (1.2)	A (1.3)	A (1.2)
Southbound Route 1	A (1.0)	A (1.0)	A (1.0)

Similarly, the intersection of Cutts Road operates at LOS “A” during the AM peak hour and at LOS “B” during the PM peak hour. The projected 2021 build levels of service remain the same during the AM peak hour. The LOS for Cutts Road will drop from “B” to “C” with the Homestead Subdivision fully occupied during the PM peak hour but this is due to a minimal 0.2 second increase in delay. This again demonstrates that the proposed Homestead Subdivision will have no significant impact off-site on traffic operations and that Route 1 has adequate capacity to accept the additional trips.

Safety Analysis

Accident Review

The Maine Department of Transportation uses two criteria to determine high crash locations (HCLs). The first is the critical rate factor (CRF), which is a measure of the accident rate. A CRF greater than one indicates a location which has a higher than expected accident rate. The expected rate is calculated as a statewide average of similar facilities.

The second criterion, which must also be met, is based upon the number of accidents that occur at a particular location. Eight or more accidents must also occur over the three-year study period for the location to be considered a high crash location. Accident data for Route 1 in the vicinity of the site, from Haley Road northerly to the York town line, was obtained from MaineDOT and is included in the appendix. The CRF and number of accidents are summarized by location for the most recent three-year period, 2015 to 2017, are summarized in the following table:

<u>Route 1 Location Description</u>	<u># of Acc.</u>	<u>CRF</u>
Between Haley Road and Cutts Road	5	0.46
Between Cutts Road and Lewis Road	3	0.22
Intersection of Lewis Road	1	0.21
Between Lewis Road and Access Road	2	0.17
Intersection of Access Road	3	0.76
Between Access Road and Idlewood Lane	2	0.24
Between Idlewood Lane and York town line	10	0.94

As seen above, there are no high crash locations within the vicinity of the proposed development. The segment of Route 1 between Idlewood Lane and the York town line is approaching the criteria, however, with a CRF of 0.94 and 10 accidents over the three-year study period. As a result, the individual accident reports were obtained from MaineDOT and MTR prepared a collision diagram for this 0.34 mile stretch of Route 1. The diagram is included in the appendix of this report. It is evaluated below to determine if there are any accident patterns or trends, which might indicate a correctable safety deficiency:

Route 1 between Idlewood Lane and York Town Line

There were four accidents in 2015, four in 2016 and two in 2017. Three of the collisions were single vehicle deer hits. Two angle collisions occurred when left turning vehicles failed to yield to oncoming motorcycles. Another angle collision occurred when a passenger vehicle turning left into a drive failed to yield to an oncoming motorist. The last two accidents were single vehicle loss of control type accidents. There is no pattern of accidents that would indicate a particular roadway deficiency. Hence, no safety improvements are necessary.

Driveway Sight Distance

One of the most important safety factors to consider for a project is sight distance from the access drives. This sight distance is measured ten feet back from the edge of travel way at a driver's eye height of 3.5 feet to an object height of 4.25 feet. Maine Traffic Resources recommends a minimum sight distance of 500' feet for the higher 50 mile per hour speed limit on Route 1. The Kittery ordinance requires the same 500' of sight distance for 50 mph roadways.

Sight distance was measured in the field by Attar Engineering, Inc. The sight distances are shown on their Site and Subdivision Plan, 1.2, dated revision 7/19/2018. The plan shows that the sight distances exceed 800' in both directions from both site drives. Hence, there are no sight distance concerns.

SUMMARY

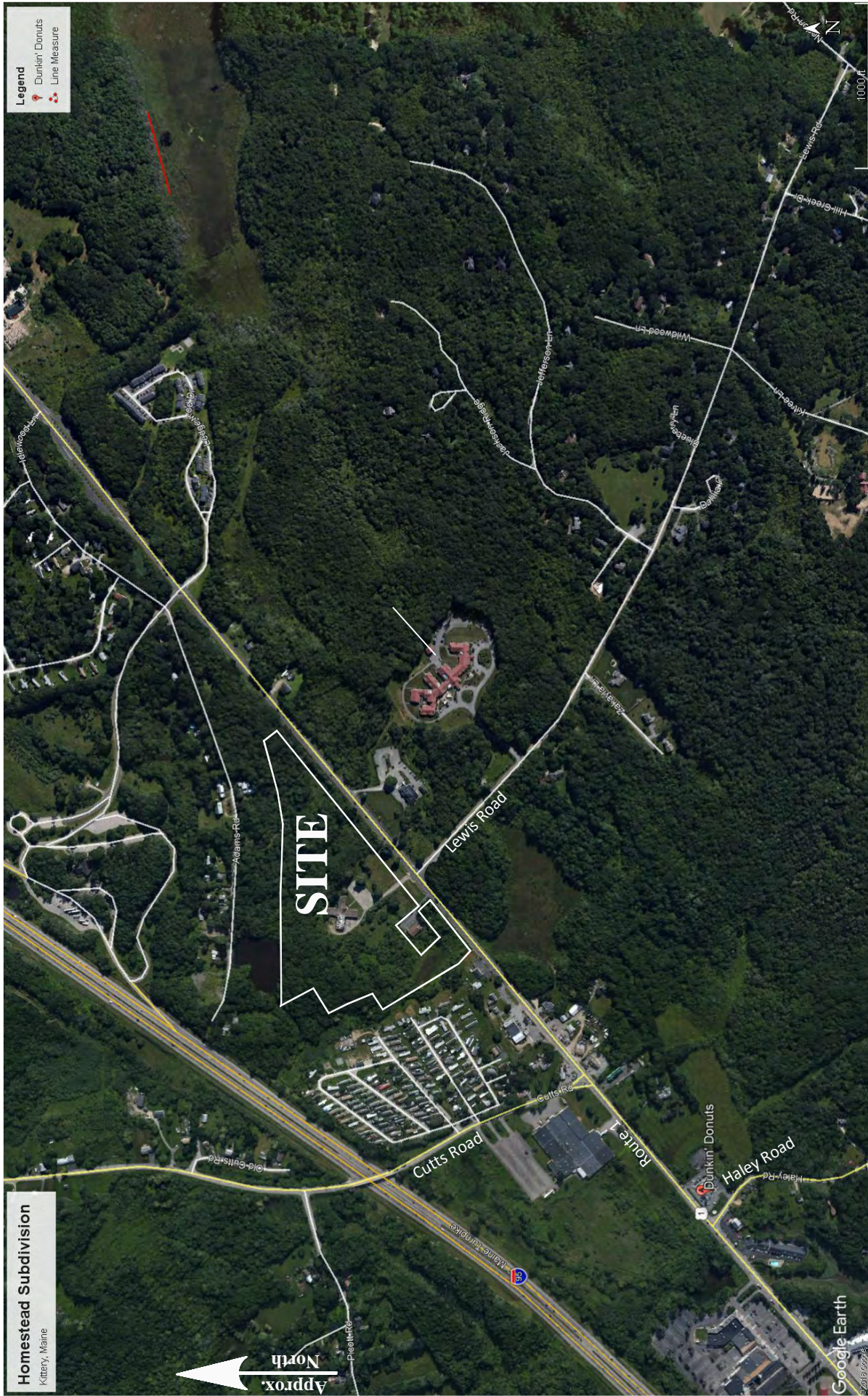
To summarize, the proposed Homestead Subdivision, providing for a 112- room hotel and 44 residential apartments, some of which will be restricted to seniors, is expected to generate 91 one-way trips during the weekday AM peak hour, 102 during the PM peak hour and 116 during the PM peak hour. This traffic is only 16 % of the traffic previously approved for this parcel by the existing TMP. Given the reduced trip generation and change in development plans, an application for a formal Traffic Movement Permit Modification will be filed with MaineDOT.

The left-turn lane warrant analysis showed that a left-turn lane is warranted on Route to store traffic turning into the site opposite Lewis Road during the PM peak hour period. Based upon the projected volumes, this left-turn lane should provide a minimum of 50 feet of left-turn storage with appropriate transition tapers. Approval for restriping of Route 1 to provide for this lane will need to be obtained from MaineDOT since Route 1 is a state highway.



In terms of capacity, SimTraffic analysis did not identify any capacity concerns and it demonstrated that Route 1 has the capacity to accommodate the additional trips. The analyses showed that all approaches at both the Lewis Road and Cutts Road intersections will operate at LOS "C" or better during both the AM and PM peak hour volumes under full build volumes in 2021.

In terms of safety, there are no high crash locations within the vicinity of the Homestead Subdivision. The Route 1 link extending from Idlewood Lane northerly to the York town line is approaching the high crash criteria. A collision diagram was prepared and evaluated for this stretch of Route 1. It did not identify any accident patterns or trends, which could indicate a potential safety deficiency.

Sight distance from both site drives was measured by Attar Engineering, Inc. and was found to exceed 800' in both directions. Hence, there are no sight distance concerns. Also for safety reasons, given that the current speed limit change from 35 mph to 50 mph occurs at Lewis Road, the Town of Kittery should consider asking MaineDOT to extend the 35 mph zone further north to encompass the northerly site drive after the development is occupied and driveway movements increase. However, given that there is more than adequate sight distance for the higher speeds it is not necessary.



Homestead Subdivision
Kittery, Maine

Legend
 Dunkin' Donuts
 Line Measure

Approx. North

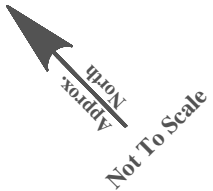
Google Earth

25 Vine Street
Gardiner, ME
04345
tel: (207) 582-5252
fax: (207) 582-1677

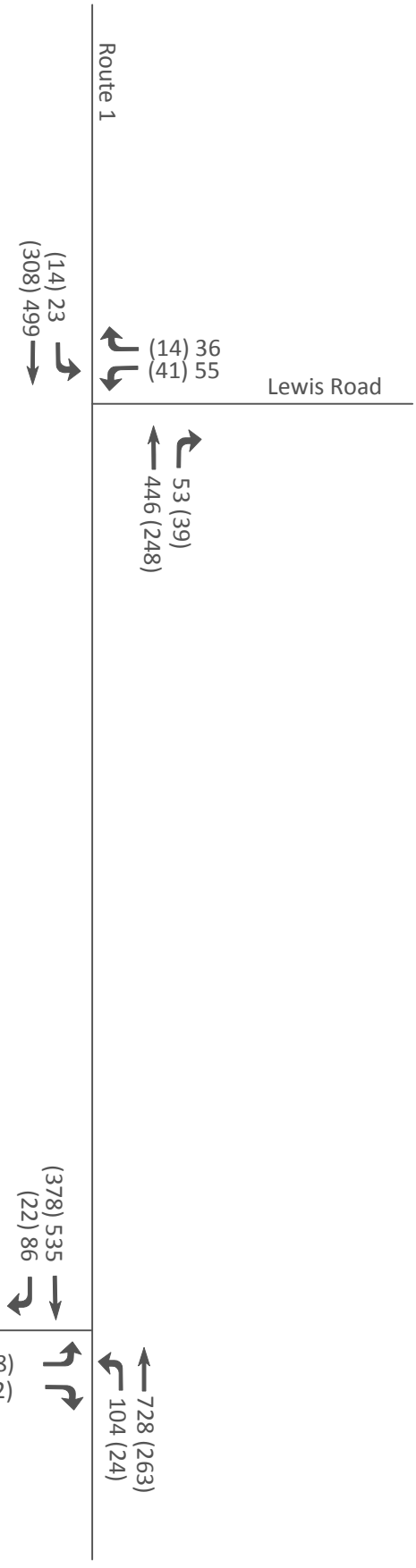
**Maine
Traffic
Resources**

Figure 1

**Site Location Map
Homestead Subdivision
Kittery, Maine**

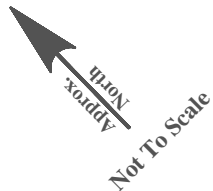


SITE

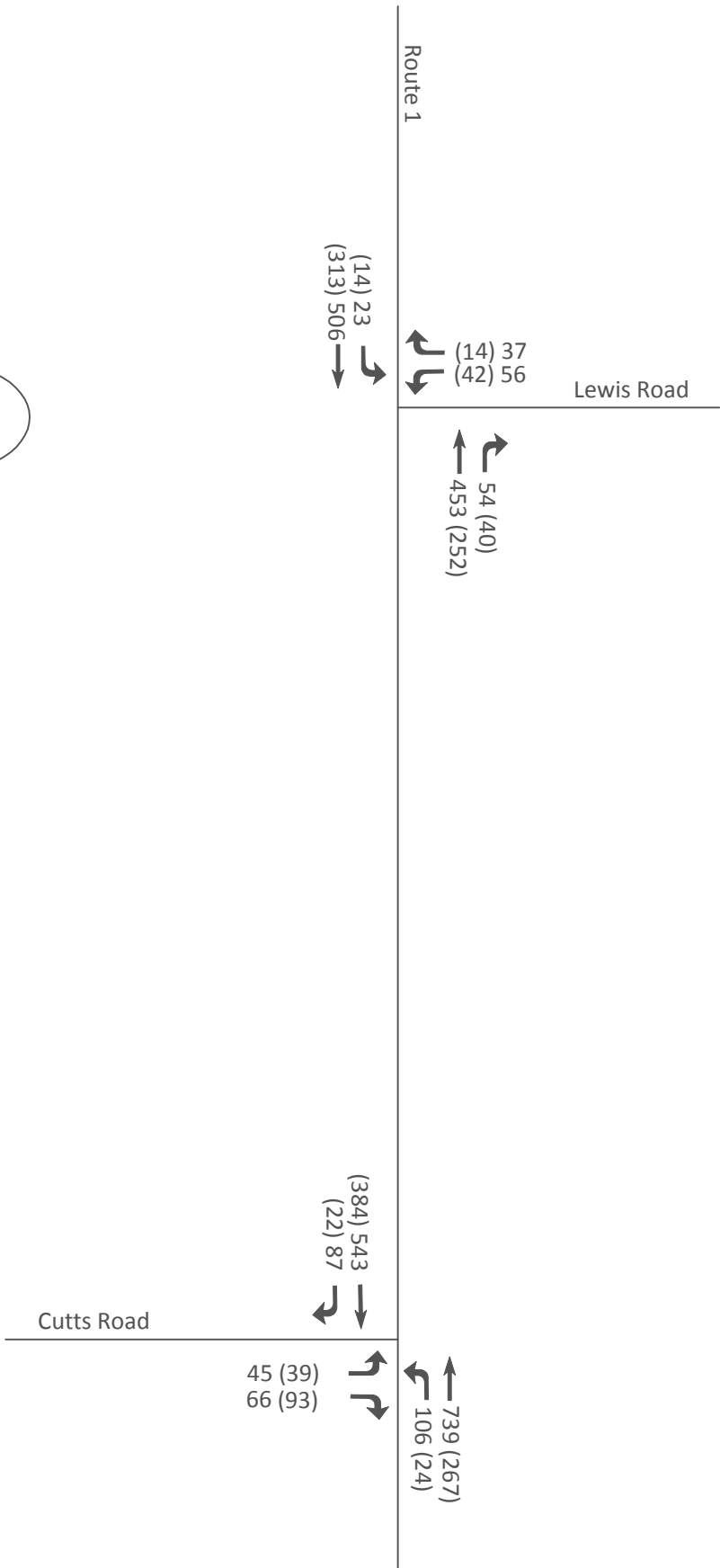


() AM Peak Hour
 _ PM Peak Hour

Figure 2
Existing 2018 Volumes
Homestead Subdivision
Kittery, Maine



SITE



() AM Peak Hour
 _ PM Peak Hour

Figure 3

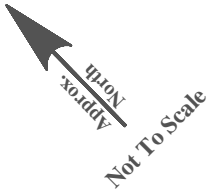
Projected 2021 No Build Volumes

Homestead Subdivision

Kittery, Maine

**Maine
Traffic
Resources**

25 Vine Street
 Gardiner, ME
 04345
 tel: (207) 582-5252
 fax: (207) 582-1677



SITE

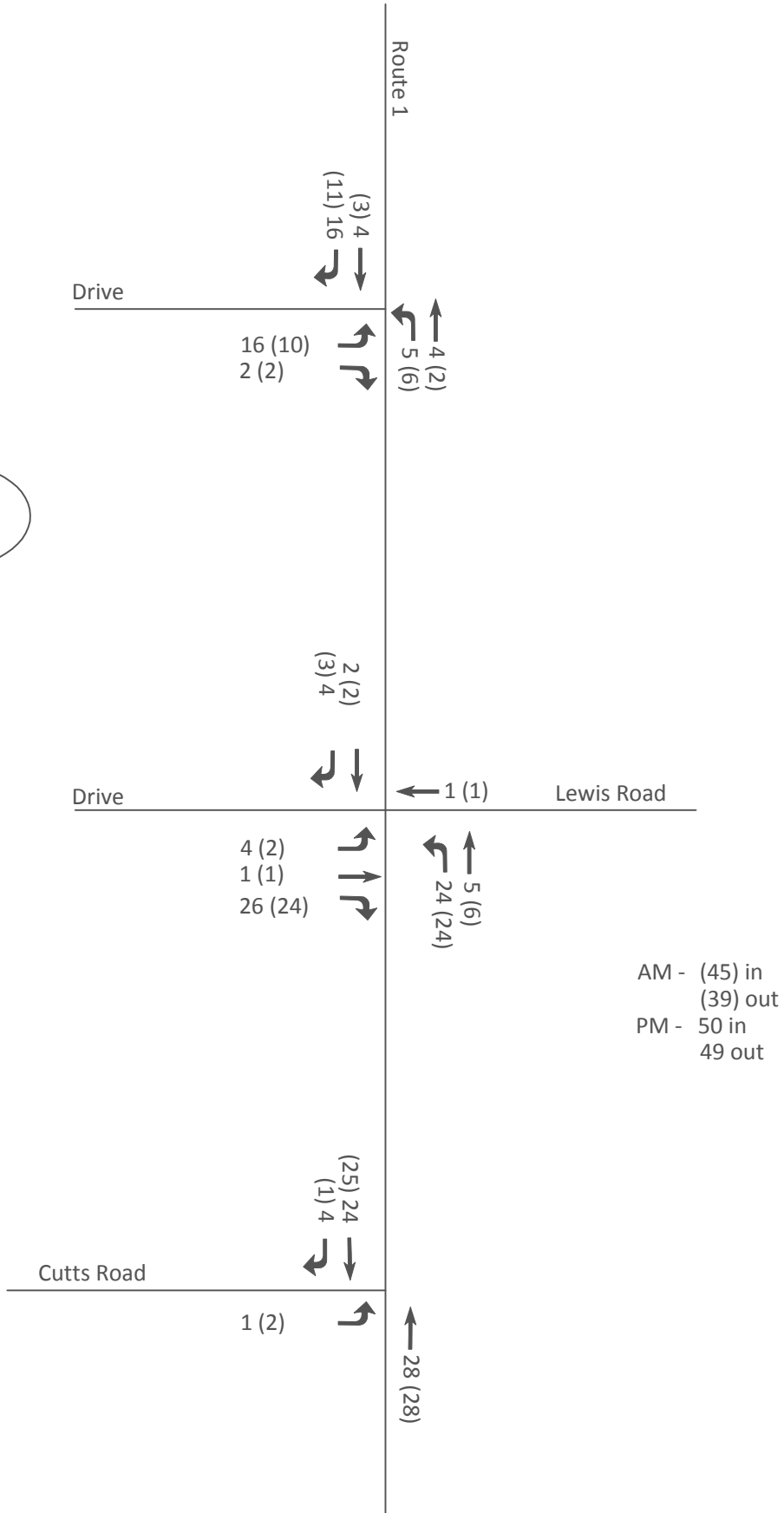


Figure 4

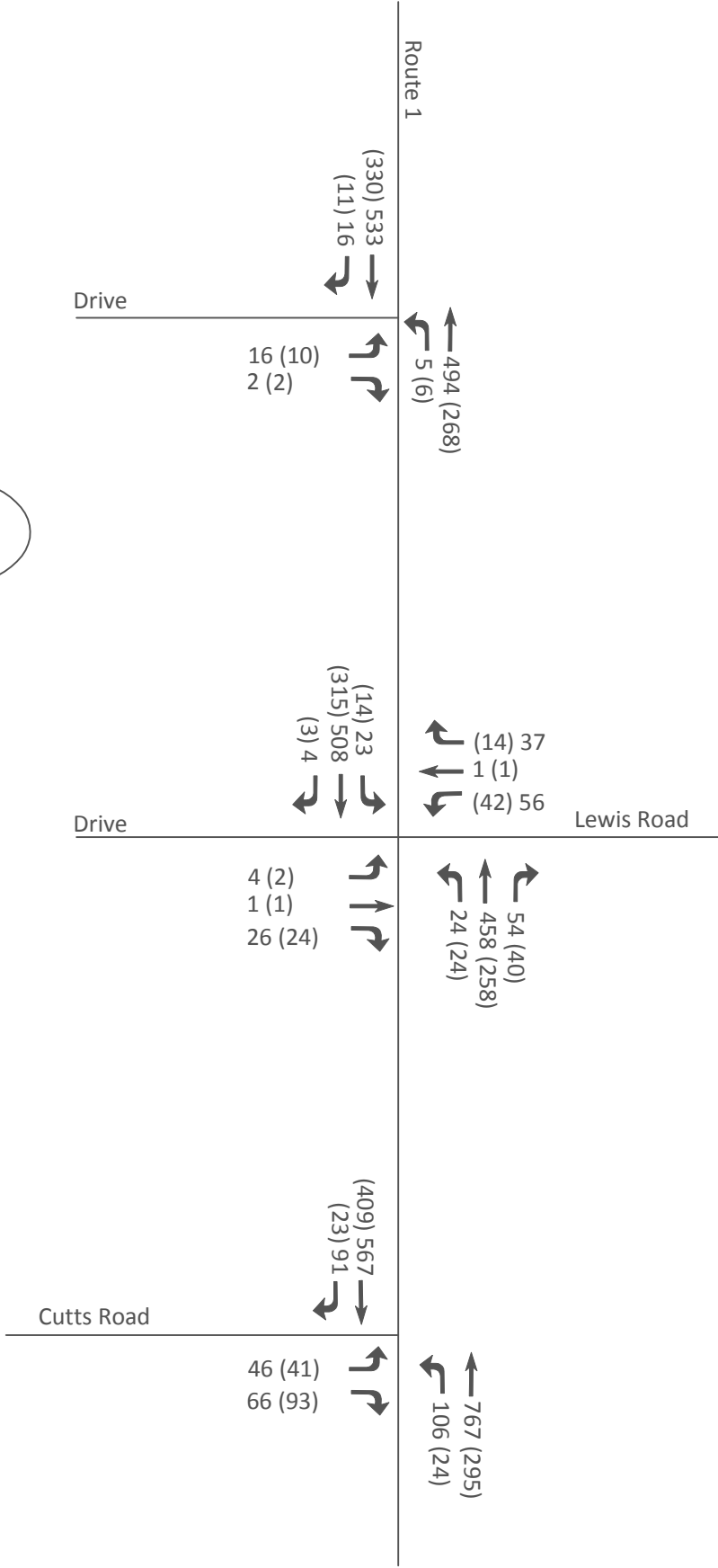
Trip Assignments
Homestead Subdivision
Kittery, Maine

Maine Traffic Resources

25 Vine Street
 Gardiner, ME
 04345
 tel: (207) 582-5252
 fax: (207) 582-1677



SITE



() AM Peak Hour
 _ PM Peak Hour

Figure 5
Projected 2021 Build Volumes
Homestead Subdivision
Kittery, Maine

APPENDIX

Existing Traffic Movement Permit

Turning Movement Counts

Left-Turn Lane Warrant

Capacity Analysis

Accident Data

Collision Diagram



STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
 16 STATE HOUSE STATION
 AUGUSTA, MAINE
 04333-0016

JOHN ELIAS BALDACCI
 GOVERNOR

DAVID A. COLE
 COMMISSIONER

Applicant: DSS Land Holdings LLC
 Project Location: US Route 1 directly across from Lewis Road, Kittery, Maine
 Tax Map #60, Lot # 24, 24A
 Project: Sowerby Mixed Use Development
 Identification #: Reg. 01-00108-A-N
 Permit Category: 200 Plus PCE
 Traffic Engineer: Eaton Traffic Engineering
 Attn: William C. Eaton, PE
 67E Winter Street
 Topsham, ME 04086

Pursuant to the provision of 23 M.R.S.A. § 704-A and Chapter 305 of the MaineDOT's Regulations, the Maine Department of Transportation has considered the application of DSS Land Holdings LLC with supportive data, agency review and other related materials on file.

PROJECT DESCRIPTION

The applicant proposes to construct: a 7,500 sf convenience store, 2,500 sf fast food restaurant, 10,000 sf restaurant, 100 room hotel, and 30,000 sf of commercial space. The project is estimated to generate 619 total trips in the weekday PM peak hour. The proposed access to the site is on Route 1 aligned across from Lewis Road. The project is expected to be completed by 2009.

Findings

Based on a review of the files and related information, MaineDOT approves the Traffic Movement Permit Application of DSS Land Holdings LLC subject to the following conditions:

MITIGATION

The mitigation is intended to describe that conceptually shown on the following plan provided by Attar Engineering, Inc.:

1. "Site & Subdivision Plan", Sheet 1 of 14, last revised 9/14/07

And the following plan provided by Anderson Livingston Engineers, Inc.:

2. "Subdivision Plan", Sheet 1 of 1, last revised 9/14/07

If the descriptions contained herein conflict with the plans, these descriptions shall take precedence over the plans. Not all of the mitigation discussed herein maybe shown on those or any plan. The following mitigation shall be constructed or implemented to MaineDOT's satisfaction prior to the opening of the facility, unless otherwise approved by MaineDOT.



PRINTED ON RECYCLED PAPER

On-Site Mitigation

The site will be serviced via a single ingress and two egress (separate left and right out) lanes separated by a 4 foot wide raised island 100 feet in length on the south end of the parcel and a 16 foot wide right in only access on the north end of the parcel. The access shall be placed directly across from Lewis Road. The applicant shall construct a cross connection to the parcel currently owned by York County Counseling Services. If York County Counseling Services decides not to connect, the Department will need to see a written document indicating such.

Off-Site Mitigation

The applicant shall construct a center left turn lane on Route 1. The lane shall be fully shadowed on both ends with a stamped pavement island. The left turn lane shall be 11 foot wide minimum and shall be 100 feet in length (with appropriate taper for the posted speed) heading into the development and a short 25 foot long width (with appropriate taper for the posted speed) for turning into Lewis Road.

Overall Requirements

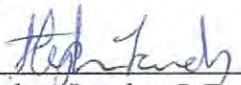
- A. Provide all necessary auxiliary signs, striping and pavement markings to implement the improvements described herein according to MaineDOT and/or National standards.

- B. All plantings and signs (existing and/or proposed; permanent and/or temporary) shall be placed and maintained such that they do not block available sight distances and do not violate the State's "Installations and Obstructions" law. No signage, plantings or structures shall be allowed within the "clear zone" if they constitute a deadly fixed object as determined by MaineDOT. All signs shall meet MRSA Title 23, Chapter 21, Section 1914: "On-Premise Signs".

- C. If any of the supporting data or representations for which this permit is based changes in any way or is found to be incorrect / inaccurate, the applicant shall request in writing from MaineDOT a decision of what impacts those changes will have on the permit. The applicant will then be required to submit those changes for review and approval and additional mitigation as a result of those changes may be required at the expense of the applicant.

- D. Because the proposed project affects the State Highway and drainage systems and requires improvement to that system, the applicant must obtain approval of the design plans and coordinate work through MaineDOT's State Traffic Engineer or Assistant State Traffic Engineer, who can be reached at (207) 624-3620 in Augusta.

By:



Stephen Landry, P.E.
Assistant State Traffic Engineer

Date: 4/03/08

Maine Traffic Resources

25 Vine Street

Gardiner, Maine 04345

www.mainetrafficresources.com

Title: Route 1 & Lewis Road

Town: Kittery

Counter: JAM

Weather: Sunny

File Name : KitteryLewisRd2018AM

Site Code : 12344441

Start Date : 8/21/2018

Page No : 1

Groups Printed- Passenger Vehicles - Light Trucks - Heavy Trucks

Start Time	Route 1 From North					Lewis Road From East					Route 1 From South					From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	64	1	0	65	4	0	11	1	16	4	34	0	0	38	0	0	0	1	1	120
07:15 AM	0	65	1	0	66	3	0	14	0	17	3	44	0	0	47	0	0	0	0	0	130
07:30 AM	0	82	1	0	83	2	0	13	0	15	4	49	0	0	53	0	0	0	1	1	152
07:45 AM	0	82	3	0	85	7	0	10	0	17	9	41	0	0	50	0	0	0	0	0	152
Total	0	293	6	0	299	16	0	48	1	65	20	168	0	0	188	0	0	0	2	2	554
08:00 AM	0	81	8	0	89	3	0	8	0	11	7	57	0	0	64	0	0	0	0	0	164
08:15 AM	0	70	2	0	72	6	0	17	0	23	10	59	0	0	69	0	0	0	0	0	164
08:30 AM	0	74	1	0	75	2	0	10	0	12	10	77	0	0	87	0	0	0	0	0	174
08:45 AM	0	83	3	0	86	3	0	6	0	9	12	55	0	0	67	0	0	0	0	0	162
Total	0	308	14	0	322	14	0	41	0	55	39	248	0	0	287	0	0	0	0	0	664

Maine Traffic Resources

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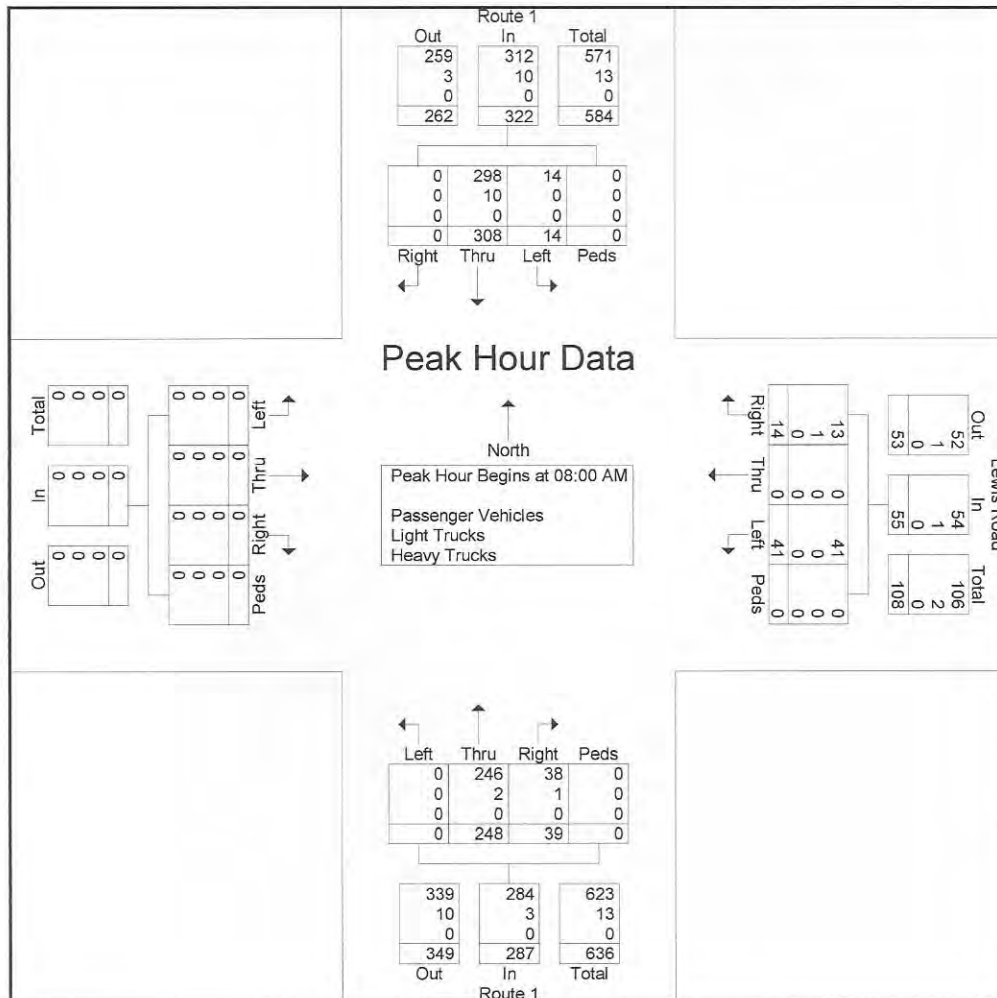
File Name : KitteryLewisRd2018AM

Site Code : 12344441

Start Date : 8/21/2018

Page No : 3

Start Time	Route 1 From North					Lewis Road From East					Route 1 From South					From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	81	8	0	89	3	0	8	0	11	7	57	0	0	64	0	0	0	0	0	164
08:15 AM	0	70	2	0	72	6	0	17	0	23	10	59	0	0	69	0	0	0	0	0	164
08:30 AM	0	74	1	0	75	2	0	10	0	12	10	77	0	0	87	0	0	0	0	0	174
08:45 AM	0	83	3	0	86	3	0	6	0	9	12	55	0	0	67	0	0	0	0	0	162
Total Volume	0	308	14	0	322	14	0	41	0	55	39	248	0	0	287	0	0	0	0	0	664
% App. Total	0	95.7	4.3	0		25.5	0	74.5	0		13.6	86.4	0	0		0	0	0	0		
PHF	.000	.928	.438	.000	.904	.583	.000	.603	.000	.598	.813	.805	.000	.000	.825	.000	.000	.000	.000	.000	.954
Passenger Vehicles	0	298	14	0	312	13	0	41	0	54	38	246	0	0	284	0	0	0	0	0	650
% Passenger Vehicles	0	96.8	100	0	96.9	92.9	0	100	0	98.2	97.4	99.2	0	0	99.0	0	0	0	0	0	97.9
Light Trucks	0	10	0	0	10	1	0	0	0	1	1	2	0	0	3	0	0	0	0	0	14
% Light Trucks	0	3.2	0	0	3.1	7.1	0	0	0	1.8	2.6	0.8	0	0	1.0	0	0	0	0	0	2.1
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Maine Traffic Resources

25 Vine Street

Gardiner, Maine 04345

www.mainetrafficresources.com

Title: Route 1 & Cutts Road
 Town: Kittery
 Counter: JAM
 Weather: Sun/Clouds

File Name : KitteryCuttsRd2018AM
 Site Code : 44441237
 Start Date : 8/23/2018
 Page No : 1

Groups Printed- Passenger Vehicles - Light Trucks - Heavy Trucks

Start Time	Route 1 From North					From East					Route 1 From South					Cutts Road From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	5	49	0	0	54	0	0	0	0	0	0	33	2	0	35	22	0	4	0	26	115
07:15 AM	7	65	0	0	72	0	0	0	1	1	0	62	8	0	70	23	0	3	0	26	169
07:30 AM	7	89	0	0	96	0	0	0	1	1	0	56	10	0	66	28	0	13	1	42	205
07:45 AM	5	63	0	0	68	0	0	0	2	2	0	47	13	0	60	24	0	12	1	37	167
Total	24	266	0	0	290	0	0	0	4	4	0	198	33	0	231	97	0	32	2	131	656
08:00 AM	6	83	0	0	89	0	0	0	0	0	0	56	5	0	61	23	0	11	0	34	184
08:15 AM	5	87	0	0	92	0	0	0	1	1	0	80	5	0	85	26	0	11	0	37	215
08:30 AM	7	108	0	0	115	0	0	0	0	0	0	63	6	0	69	21	0	5	0	26	210
08:45 AM	4	100	0	0	104	0	0	0	1	1	0	64	8	0	72	22	0	11	0	33	210
Total	22	378	0	0	400	0	0	0	2	2	0	263	24	0	287	92	0	38	0	130	819
Grand Total	46	644	0	0	690	0	0	0	6	6	0	461	57	0	518	189	0	70	2	261	1475
Apprch %	6.7	93.3	0	0		0	0	0	100		0	89	11	0		72.4	0	26.8	0.8		
Total %	3.1	43.7	0	0	46.8	0	0	0	0.4	0.4	0	31.3	3.9	0	35.1	12.8	0	4.7	0.1	17.7	
Passenger Vehicles	43	644	0	0	687	0	0	0	6	6	0	433	54	0	487	184	0	68	2	254	1434
% Passenger Vehicles	93.5	100	0	0	99.6	0	0	0	100	100	0	93.9	94.7	0	94	97.4	0	97.1	100	97.3	97.2
Light Trucks	2	0	0	0	2	0	0	0	0	0	0	23	3	0	26	5	0	1	0	6	34
% Light Trucks	4.3	0	0	0	0.3	0	0	0	0	0	0	5	5.3	0	5	2.6	0	1.4	0	2.3	2.3
Heavy Trucks	1	0	0	0	1	0	0	0	0	0	0	5	0	0	5	0	0	1	0	1	7
% Heavy Trucks	2.2	0	0	0	0.1	0	0	0	0	0	0	1.1	0	0	1	0	0	1.4	0	0.4	0.5

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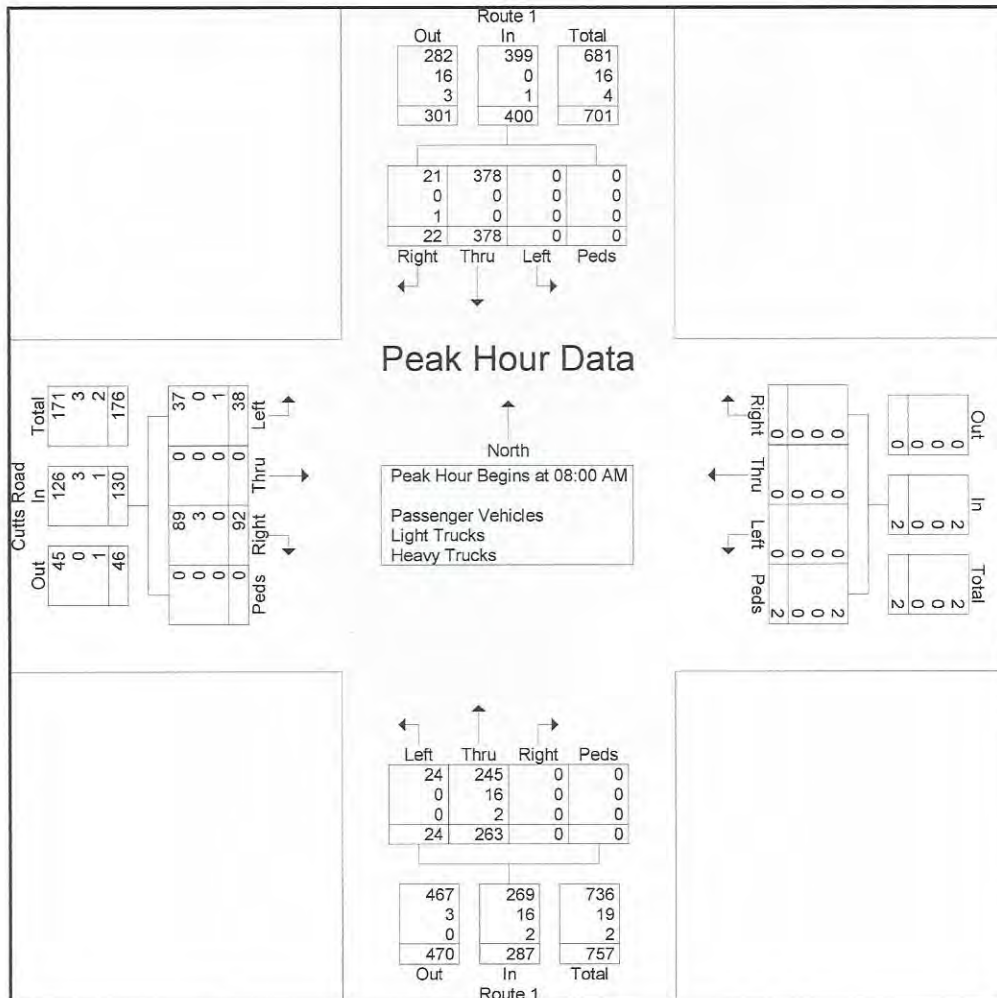
File Name : KitteryCuttsRd2018AM

Site Code : 44441237

Start Date : 8/23/2018

Page No : 3

Start Time	Route 1 From North					From East					Route 1 From South					Cutts Road From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	6	83	0	0	89	0	0	0	0	0	0	56	5	0	61	23	0	11	0	34	184
08:15 AM	5	87	0	0	92	0	0	0	1	1	0	80	5	0	85	26	0	11	0	37	215
08:30 AM	7	108	0	0	115	0	0	0	0	0	0	63	6	0	69	21	0	5	0	26	210
08:45 AM	4	100	0	0	104	0	0	0	1	1	0	64	8	0	72	22	0	11	0	33	210
Total Volume	22	378	0	0	400	0	0	0	2	2	0	263	24	0	287	92	0	38	0	130	819
% App. Total	5.5	94.5	0	0		0	0	0	100		0	91.6	8.4	0		70.8	0	29.2	0		
PHF	.786	.875	.000	.000	.870	.000	.000	.000	.500	.500	.000	.822	.750	.000	.844	.885	.000	.864	.000	.878	.952
Passenger Vehicles	21	378	0	0	399	0	0	0	2	2	0	245	24	0	269	89	0	37	0	126	796
% Passenger Vehicles	95.5	100	0	0	99.8	0	0	0	100	100	0	93.2	100	0	93.7	96.7	0	97.4	0	96.9	97.2
Light Trucks	0	0	0	0	0	0	0	0	0	0	0	16	0	0	16	3	0	0	0	3	19
% Light Trucks	0	0	0	0	0	0	0	0	0	0	0	6.1	0	0	5.6	3.3	0	0	0	2.3	2.3
Heavy Trucks	1	0	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	4
% Heavy Trucks	4.5	0	0	0	0.3	0	0	0	0	0	0	0.8	0	0	0.7	0	0	2.6	0	0.8	0.5



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Gardiner, Maine 04345

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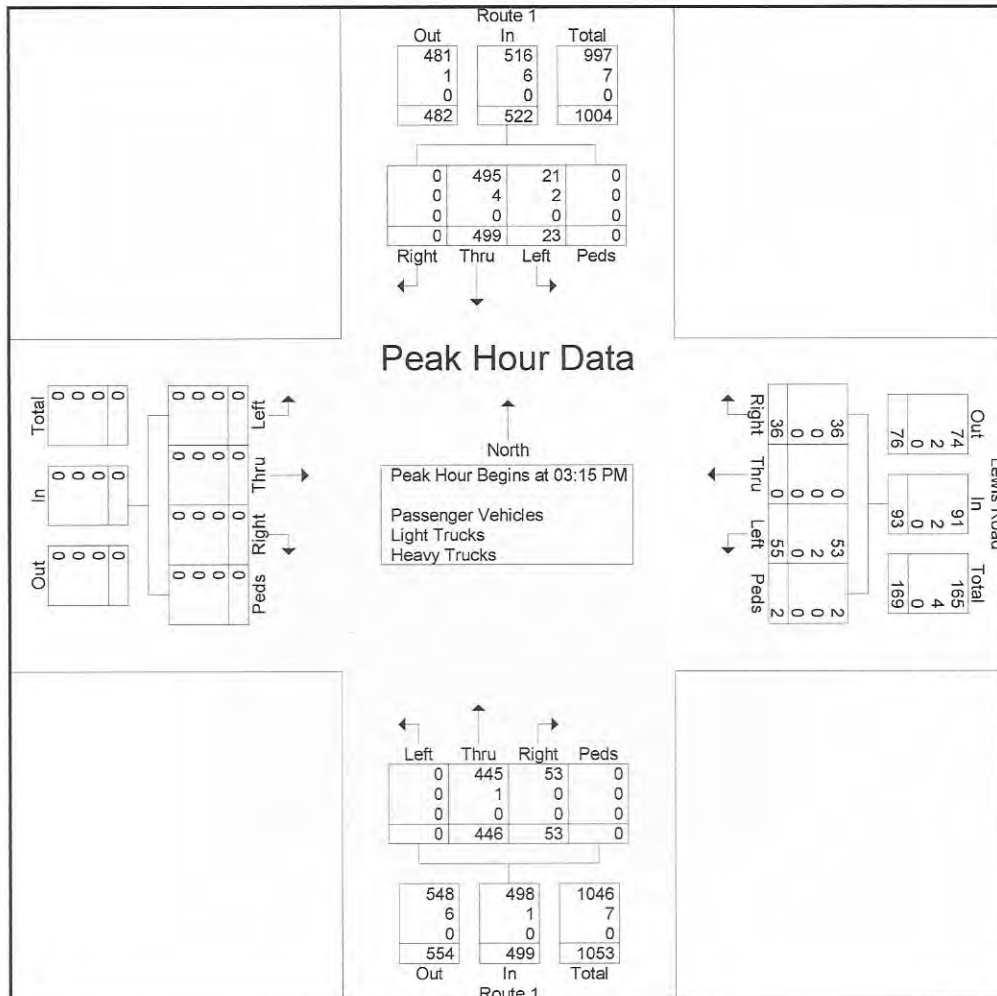
File Name : KitteryLewisRD2018PM

Site Code : 44441235

Start Date : 8/21/2018

Page No : 3

Start Time	Route 1 From North					Lewis Road From East					Route 1 From South					From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:15 PM																					
03:15 PM	0	124	4	0	128	11	0	11	1	23	9	123	0	0	132	0	0	0	0	0	283
03:30 PM	0	126	6	0	132	8	0	14	0	22	13	101	0	0	114	0	0	0	0	0	268
03:45 PM	0	121	9	0	130	10	0	13	0	23	15	105	0	0	120	0	0	0	0	0	273
04:00 PM	0	128	4	0	132	7	0	17	1	25	16	117	0	0	133	0	0	0	0	0	290
Total Volume	0	499	23	0	522	36	0	55	2	93	53	446	0	0	499	0	0	0	0	0	1114
% App. Total	0	95.6	4.4	0		38.7	0	59.1	2.2		10.6	89.4	0	0		0	0	0	0	0	
PHF	.000	.975	.639	.000	.989	.818	.000	.809	.500	.930	.828	.907	.000	.000	.938	.000	.000	.000	.000	.000	.960
Passenger Vehicles	0	495	21	0	516	36	0	53	2	91	53	445	0	0	498	0	0	0	0	0	1105
% Passenger Vehicles	0	99.2	91.3	0	98.9	100	0	96.4	100	97.8	100	99.8	0	0	99.8	0	0	0	0	0	99.2
Light Trucks	0	4	2	0	6	0	0	2	0	2	0	1	0	0	1	0	0	0	0	0	9
% Light Trucks	0	0.8	8.7	0	1.1	0	0	3.6	0	2.2	0	0.2	0	0	0.2	0	0	0	0	0	0.8
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Maine Traffic Resources

25 Vine Street

Gardiner, Maine 04345

www.mainetrafficresources.com

Title: Route 1 & Cutts Road

Town: Kittery

Counter: JAM

Weather: Sun/clouds

File Name : KitteryCuttsRoad2018PM

Site Code : 44441236

Start Date : 8/22/2018

Page No : 1

Groups Printed- Passenger Vehicles - Light Trucks - Heavy Trucks

Start Time	Route 1 From North					From East					Route 1 From South					Cutts Road From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
03:00 PM	21	156	0	0	177	0	0	0	1	1	0	198	29	0	227	17	0	13	2	32	437
03:15 PM	20	144	0	0	164	0	0	0	0	0	0	196	20	1	217	12	0	5	1	18	399
03:30 PM	28	118	0	0	146	0	0	0	1	1	0	193	28	0	221	14	0	13	0	27	395
03:45 PM	17	117	0	0	134	0	0	0	0	0	0	141	27	0	168	22	0	13	0	35	337
Total	86	535	0	0	621	0	0	0	2	2	0	728	104	1	833	65	0	44	3	112	1568
04:00 PM	20	127	0	0	147	0	0	0	0	0	0	132	26	0	158	15	0	8	0	23	328
04:15 PM	18	137	0	0	155	0	0	0	0	0	0	159	22	0	181	13	0	7	0	20	356
04:30 PM	24	138	0	0	162	0	0	0	0	0	0	134	22	0	156	8	0	9	1	18	336
04:45 PM	17	117	0	0	134	0	0	0	1	1	0	162	24	0	186	14	0	13	1	28	349
Total	79	519	0	0	598	0	0	0	1	1	0	587	94	0	681	50	0	37	2	89	1369
05:00 PM	21	115	0	1	137	0	0	0	1	1	0	146	23	0	169	10	0	10	0	20	327
05:15 PM	21	127	0	0	148	0	0	0	0	0	0	149	29	0	178	13	0	16	0	29	355
05:30 PM	16	110	0	0	126	0	0	0	0	0	0	128	22	0	150	16	0	6	1	23	299
05:45 PM	13	89	0	0	102	0	0	0	0	0	0	121	17	0	138	15	0	6	0	21	261
Total	71	441	0	1	513	0	0	0	1	1	0	544	91	0	635	54	0	38	1	93	1242

Maine Traffic Resources

25 Vine Street

Gardiner, Maine 04345

www.mainetrafficresources.com

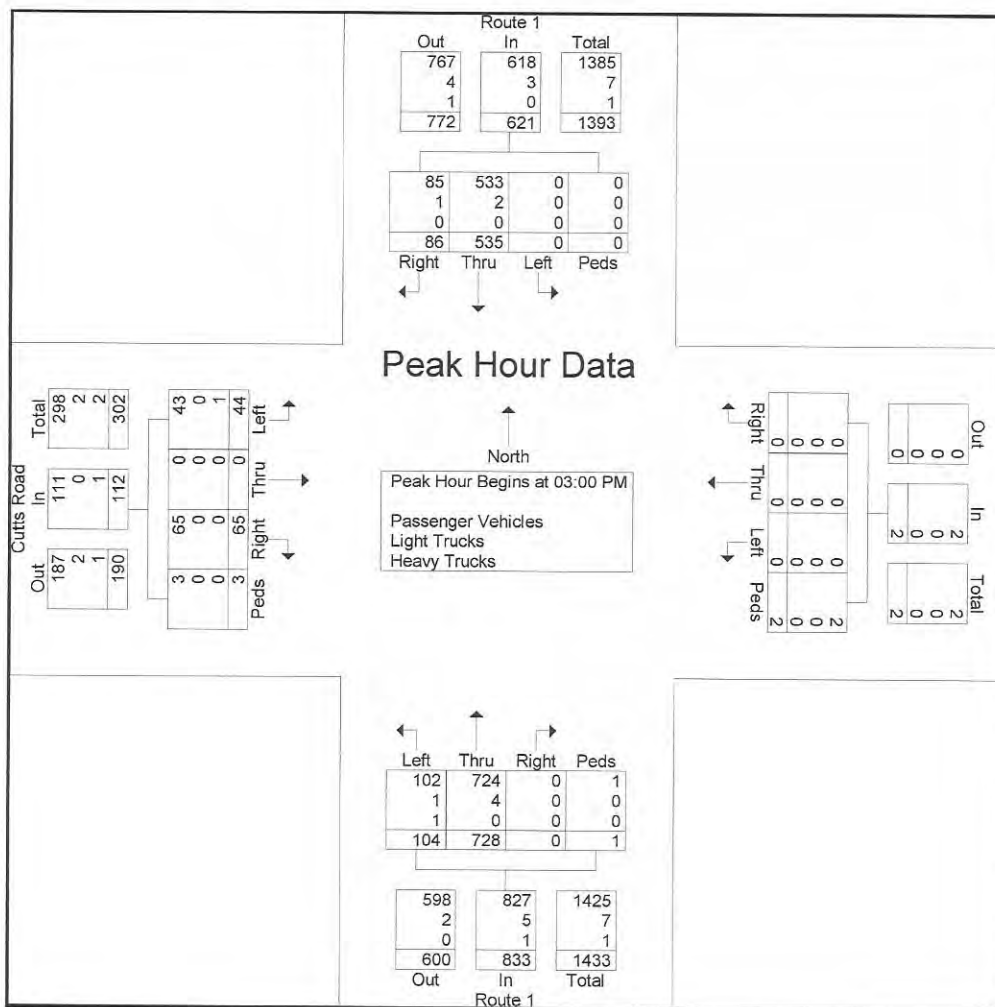
File Name : KitteryCuttsRoad2018PM

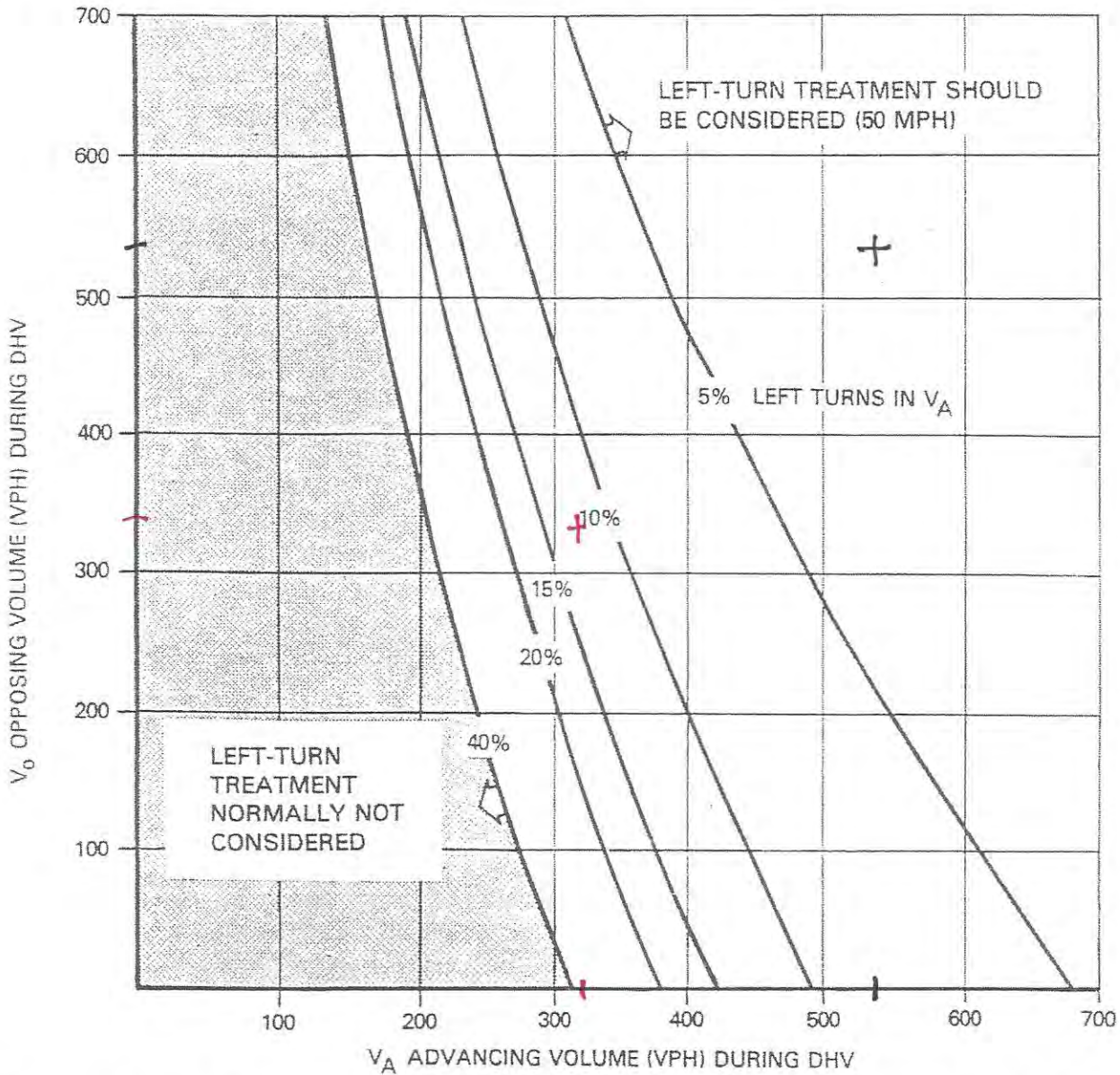
Site Code : 44441236

Start Date : 8/22/2018

Page No : 3

Start Time	Route 1 From North					From East					Route 1 From South					Cutts Road From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	21	156	0	0	177	0	0	0	1	1	0	198	29	0	227	17	0	13	2	32	437
03:15 PM	20	144	0	0	164	0	0	0	0	0	0	196	20	1	217	12	0	5	1	18	399
03:30 PM	28	118	0	0	146	0	0	0	1	1	0	193	28	0	221	14	0	13	0	27	395
03:45 PM	17	117	0	0	134	0	0	0	0	0	0	141	27	0	168	22	0	13	0	35	337
Total Volume	86	535	0	0	621	0	0	0	2	2	0	728	104	1	833	65	0	44	3	112	1568
% App. Total	13.8	86.2	0	0		0	0	0	100		0	87.4	12.5	0.1		58	0	39.3	2.7		
PHF	.768	.857	.000	.000	.877	.000	.000	.000	.500	.500	.000	.919	.897	.250	.917	.739	.000	.846	.375	.800	.897
Passenger Vehicles	85	533	0	0	618	0	0	0	2	2	0	724	102	1	827	65	0	43	3	111	1558
% Passenger Vehicles	98.8	99.6	0	0	99.5	0	0	0	100	100	0	99.5	98.1	100	99.3	100	0	97.7	100	99.1	99.4
Light Trucks	1	2	0	0	3	0	0	0	0	0	0	4	1	0	5	0	0	0	0	0	8
% Light Trucks	1.2	0.4	0	0	0.5	0	0	0	0	0	0	0.5	1.0	0	0.6	0	0	0	0	0	0.5
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	2
% Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	1.0	0	0.1	0	0	2.3	0	0.9	0.1





Instructions:

1. The family of curves represent the percent of left turns in the advancing volume (V_A). The designer should locate the curve for the actual percentage of left turns. When this is not an even increment of 5, the designer should estimate where the curve lies.
2. Read V_A and V_O into the chart and locate the intersection of the two volumes.
3. Note the location of the point in #2 relative to the line in #1. If the point is to the right of the line, then a left-turn lane is warranted. If the point is to the left of the line, then a left-turn lane is not warranted based on traffic volumes.

**VOLUME WARRANTS FOR LEFT-TURN LANES
AT UNSIGNALIZED INTERSECTIONS ON 2-LANE HIGHWAYS
(50 mph)**











Figure 8-18

AM
ADV VOLUME
= 322
L = 24
% L = 7.70
OPP VOL = 332
WARRANT AT
127.
NO

PM
ADV VOL =
536
L = 24
% L = 4.570
OPP VOL =
535
WARRANT AT
370
YES

Kittery - Homestead Subdivision
2018 Existing AM

9/5/2018













						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	41	14	248	39	14	308
Future Volume (vph)	41	14	248	39	14	308
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	125	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.966		0.982			
Flt Protected	0.964				0.950	
Satd. Flow (prot)	1752	0	1847	0	1787	1881
Flt Permitted	0.964				0.950	
Satd. Flow (perm)	1752	0	1847	0	1787	1881
Link Speed (mph)	30		35			50
Link Distance (ft)	600		858			242
Travel Time (s)	13.6		16.7			3.3
Peak Hour Factor	0.60	0.60	0.83	0.83	0.90	0.90
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	68	23	299	47	16	342
Shared Lane Traffic (%)						
Lane Group Flow (vph)	91	0	346	0	16	342
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
 Control Type: Unsignalized
 Intersection Capacity Utilization 26.2% ICU Level of Service A
 Analysis Period (min) 15

Kittery - Homestead Subdivision
2018 Existing AM

9/5/2018

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	38	92	24	263	378	22
Future Volume (vph)	38	92	24	263	378	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100	0	160			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.993	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1787	1599	1770	1863	1868	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1787	1599	1770	1863	1868	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	634			244	183	
Travel Time (s)	14.4			5.5	4.2	
Peak Hour Factor	0.88	0.88	0.84	0.84	0.87	0.97
Heavy Vehicles (%)	1%	1%	2%	2%	1%	1%
Adj. Flow (vph)	43	105	29	313	434	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	43	105	29	313	457	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 33.6% ICU Level of Service A

Analysis Period (min) 15

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:57	7:57	7:57	7:57	7:57	7:57
End Time	9:00	9:00	9:00	9:00	9:00	9:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	840	840	842	848	826	840
Vehs Exited	840	842	849	849	825	840
Starting Vehs	9	12	12	14	13	10
Ending Vehs	9	10	5	13	14	8
Travel Distance (mi)	324	315	325	326	311	320
Travel Time (hr)	11.9	11.6	12.0	12.0	11.5	11.8
Total Delay (hr)	1.0	1.0	1.1	1.1	0.9	1.0
Total Stops	193	198	205	204	184	198
Fuel Used (gal)	10.9	10.7	11.1	10.9	10.2	10.8

Interval #0 Information Seeding

Start Time 7:57
 End Time 8:00
 Total Time (min) 3

Volumes adjusted by Growth Factors.
 No data recorded this interval.

Interval #1 Information Recording

Start Time 8:00
 End Time 9:00
 Total Time (min) 60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	840	840	842	848	826	840
Vehs Exited	840	842	849	849	825	840
Starting Vehs	9	12	12	14	13	10
Ending Vehs	9	10	5	13	14	8
Travel Distance (mi)	324	315	325	326	311	320
Travel Time (hr)	11.9	11.6	12.0	12.0	11.5	11.8
Total Delay (hr)	1.0	1.0	1.1	1.1	0.9	1.0
Total Stops	193	198	205	204	184	198
Fuel Used (gal)	10.9	10.7	11.1	10.9	10.2	10.8

3: Route 1 & Lewis Rd Performance by approach

Approach	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.0	0.5	0.2
Total Delay (hr)	0.1	0.1	0.2	0.3
Total Del/Veh (s)	6.6	0.9	1.7	1.8
Stop Delay (hr)	0.1	0.0	0.0	0.1
Stop Del/Veh (s)	5.1	0.0	0.0	0.4

8: Route 1 & Cutts Road Performance by approach

Approach	EB	NB	SB	All
Denied Delay (hr)	0.0	0.1	0.0	0.1
Denied Del/Veh (s)	1.3	0.6	0.0	0.5
Total Delay (hr)	0.2	0.0	0.1	0.3
Total Del/Veh (s)	6.1	0.5	0.5	1.4
Stop Delay (hr)	0.2	0.0	0.0	0.2
Stop Del/Veh (s)	4.9	0.1	0.0	0.8

Total Network Performance

Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.6
Total Delay (hr)	0.9
Total Del/Veh (s)	3.7
Stop Delay (hr)	0.3
Stop Del/Veh (s)	1.3

Intersection: 3: Route 1 & Lewis Rd

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	54	31
Average Queue (ft)	28	4
95th Queue (ft)	49	20
Link Distance (ft)	566	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		125
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Route 1 & Cutts Road











Movement	EB	EB	NB	SB
Directions Served	L	R	L	TR
Maximum Queue (ft)	47	72	31	18
Average Queue (ft)	24	35	8	1
95th Queue (ft)	48	58	30	8
Link Distance (ft)		600		120
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	100		160	
Storage Blk Time (%)		0		
Queuing Penalty (veh)		0		

Network Summary

Network wide Queuing Penalty: 0

Kittery - Homestead Subdivision
2018 Existing PM Peak

9/5/2018













						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	55	36	446	53	23	499
Future Volume (vph)	55	36	446	53	23	499
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	125	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.946		0.986			
Fl _t Protected	0.971				0.950	
Satd. Flow (prot)	1728	0	1855	0	1787	1881
Fl _t Permitted	0.971				0.950	
Satd. Flow (perm)	1728	0	1855	0	1787	1881
Link Speed (mph)	30		35			50
Link Distance (ft)	600		858			242
Travel Time (s)	13.6		16.7			3.3
Peak Hour Factor	0.93	0.93	0.94	0.94	0.99	0.99
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	59	39	474	56	23	504
Shared Lane Traffic (%)						
Lane Group Flow (vph)	98	0	530	0	23	504
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
 Control Type: Unsignalized
 Intersection Capacity Utilization 38.6% ICU Level of Service A
 Analysis Period (min) 15

Kittery - Homestead Subdivision
2018 Existing PM Peak

9/5/2018

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	44	65	104	728	535	86
Future Volume (vph)	44	65	104	728	535	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100	0	160			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.981	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1787	1599	1787	1881	1845	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1787	1599	1787	1881	1845	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	634			244	183	
Travel Time (s)	14.4			5.5	4.2	
Peak Hour Factor	0.80	0.80	0.92	0.92	0.88	0.88
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	55	81	113	791	608	98
Shared Lane Traffic (%)						
Lane Group Flow (vph)	55	81	113	791	706	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized
 Intersection Capacity Utilization 52.5% ICU Level of Service A
 Analysis Period (min) 15

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	2:57	2:57	2:57	2:57	2:57	2:57
End Time	4:00	4:00	4:00	4:00	4:00	4:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	1621	1675	1617	1575	1600	1617
Vehs Exited	1616	1670	1611	1569	1605	1615
Starting Vehs	21	19	18	16	30	21
Ending Vehs	26	24	24	22	25	23
Travel Distance (mi)	614	630	612	590	608	611
Travel Time (hr)	23.4	24.2	23.5	22.4	23.5	23.4
Total Delay (hr)	2.9	3.0	3.1	2.7	3.1	3.0
Total Stops	287	295	285	298	276	289
Fuel Used (gal)	20.7	21.3	20.8	19.9	20.6	20.7

Interval #0 Information Seeding

Start Time 2:57
End Time 3:00
Total Time (min) 3

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time 3:00
End Time 4:00
Total Time (min) 60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	1621	1675	1617	1575	1600	1617
Vehs Exited	1616	1670	1611	1569	1605	1615
Starting Vehs	21	19	18	16	30	21
Ending Vehs	26	24	24	22	25	23
Travel Distance (mi)	614	630	612	590	608	611
Travel Time (hr)	23.4	24.2	23.5	22.4	23.5	23.4
Total Delay (hr)	2.9	3.0	3.1	2.7	3.1	3.0
Total Stops	287	295	285	298	276	289
Fuel Used (gal)	20.7	21.3	20.8	19.9	20.6	20.7

3: Route 1 & Lewis Rd Performance by approach

Approach	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.1	0.1
Denied Del/Veh (s)	0.2	0.0	0.6	0.2
Total Delay (hr)	0.3	0.3	0.3	0.9
Total Del/Veh (s)	12.3	1.4	1.9	2.4
Stop Delay (hr)	0.3	0.0	0.0	0.3
Stop Del/Veh (s)	10.6	0.0	0.1	0.8

8: Route 1 & Cutts Road Performance by approach

Approach	EB	NB	SB	All
Denied Delay (hr)	0.1	0.3	0.0	0.3
Denied Del/Veh (s)	1.7	1.2	0.1	0.8
Total Delay (hr)	0.5	0.3	0.2	0.9
Total Del/Veh (s)	14.5	1.2	1.0	2.1
Stop Delay (hr)	0.4	0.1	0.0	0.5
Stop Del/Veh (s)	13.4	0.5	0.0	1.2

Total Network Performance

Denied Delay (hr)	0.4
Denied Del/Veh (s)	1.0
Total Delay (hr)	2.5
Total Del/Veh (s)	5.5
Stop Delay (hr)	0.9
Stop Del/Veh (s)	2.0

Intersection: 3: Route 1 & Lewis Rd

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	103	36
Average Queue (ft)	43	10
95th Queue (ft)	80	34
Link Distance (ft)	566	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		125
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Route 1 & Cutts Road











Movement	EB	EB	NB	SB
Directions Served	L	R	L	TR
Maximum Queue (ft)	80	61	68	46
Average Queue (ft)	32	31	32	6
95th Queue (ft)	64	53	62	29
Link Distance (ft)		600		120
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	100		160	
Storage Blk Time (%)	0			
Queuing Penalty (veh)	0			

Network Summary

Network wide Queuing Penalty: 0

Kittery - Homestead Subdivision
2021 No Build AM

9/5/2018












						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	42	14	252	40	14	313
Future Volume (vph)	42	14	252	40	14	313
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	125	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.967		0.982			
Flt Protected	0.964				0.950	
Satd. Flow (prot)	1754	0	1847	0	1787	1881
Flt Permitted	0.964				0.950	
Satd. Flow (perm)	1754	0	1847	0	1787	1881
Link Speed (mph)	30		35			50
Link Distance (ft)	600		858			242
Travel Time (s)	13.6		16.7			3.3
Peak Hour Factor	0.60	0.60	0.83	0.83	0.90	0.90
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	70	23	304	48	16	348
Shared Lane Traffic (%)						
Lane Group Flow (vph)	93	0	352	0	16	348
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
 Control Type: Unsignalized
 Intersection Capacity Utilization 26.5% ICU Level of Service A
 Analysis Period (min) 15

Kittery - Homestead Subdivision
2021 No Build AM

9/5/2018

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	39	93	24	267	384	22
Future Volume (vph)	39	93	24	267	384	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100	0	160			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.850			0.993	
Fl _t Protected	0.950		0.950			
Satd. Flow (prot)	1787	1599	1770	1863	1868	0
Fl _t Permitted	0.950		0.950			
Satd. Flow (perm)	1787	1599	1770	1863	1868	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	634			244	183	
Travel Time (s)	14.4			5.5	4.2	
Peak Hour Factor	0.88	0.88	0.84	0.84	0.87	0.97
Heavy Vehicles (%)	1%	1%	2%	2%	1%	1%
Adj. Flow (vph)	44	106	29	318	441	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	44	106	29	318	464	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized
 Intersection Capacity Utilization 34.0% ICU Level of Service A
 Analysis Period (min) 15

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:57	7:57	7:57	7:57	7:57	7:57
End Time	9:00	9:00	9:00	9:00	9:00	9:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	859	885	849	862	831	857
Vehs Exited	862	881	853	862	830	857
Starting Vehs	14	10	10	14	13	11
Ending Vehs	11	14	6	14	14	10
Travel Distance (mi)	330	335	328	332	312	328
Travel Time (hr)	12.2	12.3	12.1	12.3	11.5	12.1
Total Delay (hr)	1.1	1.1	1.1	1.1	0.9	1.1
Total Stops	200	211	211	208	190	203
Fuel Used (gal)	11.1	11.2	11.1	11.1	10.3	11.0

Interval #0 Information Seeding

Start Time	7:57
End Time	8:00
Total Time (min)	3

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time	8:00
End Time	9:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	859	885	849	862	831	857
Vehs Exited	862	881	853	862	830	857
Starting Vehs	14	10	10	14	13	11
Ending Vehs	11	14	6	14	14	10
Travel Distance (mi)	330	335	328	332	312	328
Travel Time (hr)	12.2	12.3	12.1	12.3	11.5	12.1
Total Delay (hr)	1.1	1.1	1.1	1.1	0.9	1.1
Total Stops	200	211	211	208	190	203
Fuel Used (gal)	11.1	11.2	11.1	11.1	10.3	11.0

3: Route 1 & Lewis Rd Performance by approach

Approach	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.0	0.5	0.2
Total Delay (hr)	0.1	0.1	0.2	0.3
Total Del/Veh (s)	6.8	0.9	1.7	1.8
Stop Delay (hr)	0.1	0.0	0.0	0.1
Stop Del/Veh (s)	5.2	0.0	0.0	0.4

8: Route 1 & Cutts Road Performance by approach

Approach	EB	NB	SB	All
Denied Delay (hr)	0.0	0.1	0.0	0.1
Denied Del/Veh (s)	1.4	0.6	0.0	0.5
Total Delay (hr)	0.2	0.0	0.1	0.3
Total Del/Veh (s)	6.3	0.5	0.5	1.5
Stop Delay (hr)	0.2	0.0	0.0	0.2
Stop Del/Veh (s)	5.1	0.2	0.0	0.9

Total Network Performance

Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.6
Total Delay (hr)	0.9
Total Del/Veh (s)	3.8
Stop Delay (hr)	0.3
Stop Del/Veh (s)	1.3

Intersection: 3: Route 1 & Lewis Rd

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	54	31
Average Queue (ft)	29	4
95th Queue (ft)	49	21
Link Distance (ft)	566	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		125
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Route 1 & Cutts Road











Movement	EB	EB	NB	SB
Directions Served	L	R	L	TR
Maximum Queue (ft)	55	80	31	13
Average Queue (ft)	24	36	9	0
95th Queue (ft)	49	59	33	7
Link Distance (ft)		600		120
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	100		160	
Storage Blk Time (%)		0		
Queuing Penalty (veh)		0		

Network Summary

Network wide Queuing Penalty: 0

Kittery - Homestead Subdivision
2021 No Build PM Peak

9/5/2018












						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	56	37	453	54	23	506
Future Volume (vph)	56	37	453	54	23	506
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	125	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.946		0.986			
Fl _t Protected	0.971				0.950	
Satd. Flow (prot)	1728	0	1855	0	1787	1881
Fl _t Permitted	0.971				0.950	
Satd. Flow (perm)	1728	0	1855	0	1787	1881
Link Speed (mph)	30		35			50
Link Distance (ft)	600		858			242
Travel Time (s)	13.6		16.7			3.3
Peak Hour Factor	0.93	0.93	0.94	0.94	0.99	0.99
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	60	40	482	57	23	511
Shared Lane Traffic (%)						
Lane Group Flow (vph)	100	0	539	0	23	511
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
 Control Type: Unsignalized
 Intersection Capacity Utilization 39.2% ICU Level of Service A
 Analysis Period (min) 15

Kittery - Homestead Subdivision
2021 No Build PM Peak

9/5/2018

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	45	66	106	739	543	87
Future Volume (vph)	45	66	106	739	543	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100	0	160			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.981	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1787	1599	1787	1881	1845	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1787	1599	1787	1881	1845	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	634			244	183	
Travel Time (s)	14.4			5.5	4.2	
Peak Hour Factor	0.80	0.80	0.92	0.92	0.88	0.88
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	56	83	115	803	617	99
Shared Lane Traffic (%)						
Lane Group Flow (vph)	56	83	115	803	716	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized
 Intersection Capacity Utilization 53.1% ICU Level of Service A
 Analysis Period (min) 15

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	2:57	2:57	2:57	2:57	2:57	2:57
End Time	4:00	4:00	4:00	4:00	4:00	4:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	1679	1712	1646	1622	1619	1655
Vehs Exited	1681	1704	1641	1617	1621	1653
Starting Vehs	27	19	18	15	28	18
Ending Vehs	25	27	23	20	26	24
Travel Distance (mi)	636	643	624	607	613	625
Travel Time (hr)	24.3	24.8	24.1	23.2	23.6	24.0
Total Delay (hr)	3.0	3.1	3.3	2.9	3.1	3.1
Total Stops	298	310	292	302	273	294
Fuel Used (gal)	21.5	21.9	21.3	20.5	20.8	21.2

Interval #0 Information Seeding

Start Time 2:57
End Time 3:00
Total Time (min) 3

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time 3:00
End Time 4:00
Total Time (min) 60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	1679	1712	1646	1622	1619	1655
Vehs Exited	1681	1704	1641	1617	1621	1653
Starting Vehs	27	19	18	15	28	18
Ending Vehs	25	27	23	20	26	24
Travel Distance (mi)	636	643	624	607	613	625
Travel Time (hr)	24.3	24.8	24.1	23.2	23.6	24.0
Total Delay (hr)	3.0	3.1	3.3	2.9	3.1	3.1
Total Stops	298	310	292	302	273	294
Fuel Used (gal)	21.5	21.9	21.3	20.5	20.8	21.2

3: Route 1 & Lewis Rd Performance by approach

Approach	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.1	0.1
Denied Del/Veh (s)	0.2	0.0	0.6	0.2
Total Delay (hr)	0.3	0.3	0.3	0.9
Total Del/Veh (s)	12.0	1.5	2.0	2.4
Stop Delay (hr)	0.3	0.0	0.0	0.3
Stop Del/Veh (s)	10.3	0.0	0.1	0.8

8: Route 1 & Cutts Road Performance by approach

Approach	EB	NB	SB	All
Denied Delay (hr)	0.1	0.3	0.0	0.4
Denied Del/Veh (s)	1.7	1.3	0.1	0.8
Total Delay (hr)	0.5	0.3	0.2	0.9
Total Del/Veh (s)	15.0	1.3	1.0	2.1
Stop Delay (hr)	0.4	0.1	0.0	0.6
Stop Del/Veh (s)	13.9	0.6	0.0	1.3

Total Network Performance

Denied Delay (hr)	0.5
Denied Del/Veh (s)	1.0
Total Delay (hr)	2.6
Total Del/Veh (s)	5.7
Stop Delay (hr)	0.9
Stop Del/Veh (s)	2.0

Intersection: 3: Route 1 & Lewis Rd

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	94	40
Average Queue (ft)	43	11
95th Queue (ft)	75	36
Link Distance (ft)	566	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		125
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Route 1 & Cutts Road




















Movement	EB	EB	NB	SB
Directions Served	L	R	L	TR
Maximum Queue (ft)	83	61	74	47
Average Queue (ft)	33	32	33	7
95th Queue (ft)	66	53	65	30
Link Distance (ft)		600		120
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	100		160	
Storage Blk Time (%)	0			
Queuing Penalty (veh)	0			

Network Summary

Network wide Queuing Penalty: 0

Kittery - Homestead Subdivision
2021 Build AM

9/5/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	1	24	42	1	14	24	258	40	14	315	3
Future Volume (vph)	2	1	24	42	1	14	24	258	40	14	315	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		75	0		0	50		0	125		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.967			0.980			0.999	
Flt Protected		0.968			0.964		0.950			0.950		
Satd. Flow (prot)	0	1803	1583	0	1753	0	1770	1844	0	1787	1879	0
Flt Permitted		0.968			0.964		0.950			0.950		
Satd. Flow (perm)	0	1803	1583	0	1753	0	1770	1844	0	1787	1879	0
Link Speed (mph)		30			30			35			50	
Link Distance (ft)		318			600			858			242	
Travel Time (s)		7.2			13.6			16.7			3.3	
Peak Hour Factor	0.92	0.92	0.92	0.60	0.92	0.60	0.92	0.83	0.83	0.90	0.90	0.92
Heavy Vehicles (%)	2%	2%	2%	1%	2%	1%	2%	1%	1%	1%	1%	2%
Adj. Flow (vph)	2	1	26	70	1	23	26	311	48	16	350	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	26	0	94	0	26	359	0	16	353	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized
 Intersection Capacity Utilization 36.5% ICU Level of Service A
 Analysis Period (min) 15

Kittery - Homestead Subdivision
2021 Build AM

9/5/2018



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	41	93	24	295	409	23
Future Volume (vph)	41	93	24	295	409	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100	0	160			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frnt		0.850			0.993	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1787	1599	1770	1863	1868	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1787	1599	1770	1863	1868	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	634			244	183	
Travel Time (s)	14.4			5.5	4.2	
Peak Hour Factor	0.88	0.88	0.84	0.84	0.87	0.97
Heavy Vehicles (%)	1%	1%	2%	2%	1%	1%
Adj. Flow (vph)	47	106	29	351	470	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	106	29	351	494	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized
 Intersection Capacity Utilization 35.3% ICU Level of Service A
 Analysis Period (min) 15

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:57	7:57	7:57	7:57	7:57	7:57
End Time	9:00	9:00	9:00	9:00	9:00	9:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	849	920	903	925	907	903
Vehs Exited	845	924	918	932	910	905
Starting Vehs	10	13	23	18	16	17
Ending Vehs	14	9	8	11	13	10
Travel Distance (mi)	329	355	353	355	354	349
Travel Time (hr)	12.1	13.2	13.2	13.4	13.3	13.0
Total Delay (hr)	1.0	1.2	1.2	1.3	1.2	1.2
Total Stops	209	235	238	243	241	235
Fuel Used (gal)	11.0	12.0	12.0	12.1	12.0	11.8

Interval #0 Information Seeding

Start Time 7:57
End Time 8:00
Total Time (min) 3

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time 8:00
End Time 9:00
Total Time (min) 60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	849	920	903	925	907	903
Vehs Exited	845	924	918	932	910	905
Starting Vehs	10	13	23	18	16	17
Ending Vehs	14	9	8	11	13	10
Travel Distance (mi)	329	355	353	355	354	349
Travel Time (hr)	12.1	13.2	13.2	13.4	13.3	13.0
Total Delay (hr)	1.0	1.2	1.2	1.3	1.2	1.2
Total Stops	209	235	238	243	241	235
Fuel Used (gal)	11.0	12.0	12.0	12.1	12.0	11.8

3: Route 1 & Lewis Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	3.5	0.1	0.0	0.4	0.3
Total Delay (hr)	0.0	0.1	0.1	0.2	0.4
Total Del/Veh (s)	5.0	6.9	1.2	1.7	2.0
Stop Delay (hr)	0.0	0.1	0.0	0.0	0.1
Stop Del/Veh (s)	4.6	5.2	0.1	0.0	0.6

8: Route 1 & Cutts Road Performance by approach

Approach	EB	NB	SB	All
Denied Delay (hr)	0.1	0.0	0.0	0.1
Denied Del/Veh (s)	1.4	0.6	0.0	0.4
Total Delay (hr)	0.2	0.0	0.1	0.3
Total Del/Veh (s)	6.1	0.4	0.5	1.4
Stop Delay (hr)	0.2	0.0	0.0	0.2
Stop Del/Veh (s)	4.9	0.1	0.0	0.8

Total Network Performance

Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.7
Total Delay (hr)	1.0
Total Del/Veh (s)	4.0
Stop Delay (hr)	0.4
Stop Del/Veh (s)	1.4

Intersection: 3: Route 1 & Lewis Rd

Movement	EB	EB	WB	NB	SB
Directions Served	LT	R	LTR	L	L
Maximum Queue (ft)	29	38	53	23	31
Average Queue (ft)	3	15	28	4	2
95th Queue (ft)	18	41	51	17	16
Link Distance (ft)	280		566		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		75		50	125
Storage Blk Time (%)		0			
Queuing Penalty (veh)		0			

Intersection: 8: Route 1 & Cutts Road

Movement	EB	EB	NB	SB
Directions Served	L	R	L	TR
Maximum Queue (ft)	52	72	38	31
Average Queue (ft)	24	35	8	2
95th Queue (ft)	48	57	30	17
Link Distance (ft)		600		120
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	100		160	
Storage Blk Time (%)		0		
Queuing Penalty (veh)		0		

Network Summary

Network wide Queuing Penalty: 0

Kittery - Homestead Subdivision
2021 Build PM Peak

9/5/2018












Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	1	26	56	1	37	24	458	54	23	508	4
Future Volume (vph)	4	1	26	56	1	37	24	458	54	23	508	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		75	0		0	50		0	125		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.947			0.984			0.999	
Flt Protected		0.962			0.971		0.950			0.950		
Satd. Flow (prot)	0	1792	1583	0	1730	0	1770	1851	0	1787	1879	0
Flt Permitted		0.962			0.971		0.950			0.950		
Satd. Flow (perm)	0	1792	1583	0	1730	0	1770	1851	0	1787	1879	0
Link Speed (mph)		30			30			35			50	
Link Distance (ft)		278			600			858			242	
Travel Time (s)		6.3			13.6			16.7			3.3	
Peak Hour Factor	0.92	0.92	0.92	0.93	0.92	0.93	0.92	0.94	0.94	0.99	0.99	0.92
Heavy Vehicles (%)	2%	2%	2%	1%	2%	1%	2%	1%	1%	1%	1%	2%
Adj. Flow (vph)	4	1	28	60	1	40	26	487	57	23	513	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	5	28	0	101	0	26	544	0	23	517	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized
 Intersection Capacity Utilization 46.1% ICU Level of Service A
 Analysis Period (min) 15

Kittery - Homestead Subdivision
2021 Build PM Peak

9/5/2018

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	46	66	106	767	567	91
Future Volume (vph)	46	66	106	767	567	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100	0	160			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.981	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1787	1599	1787	1881	1845	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1787	1599	1787	1881	1845	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	634			244	183	
Travel Time (s)	14.4			5.5	4.2	
Peak Hour Factor	0.80	0.80	0.92	0.92	0.88	0.88
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	58	83	115	834	644	103
Shared Lane Traffic (%)						
Lane Group Flow (vph)	58	83	115	834	747	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized
 Intersection Capacity Utilization 54.6% ICU Level of Service A
 Analysis Period (min) 15

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	2:57	2:57	2:57	2:57	2:57	2:57
End Time	4:00	4:00	4:00	4:00	4:00	4:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	1725	1730	1646	1702	1619	1684
Vehs Exited	1721	1738	1649	1710	1616	1686
Starting Vehs	21	21	24	34	23	23
Ending Vehs	25	13	21	26	26	20
Travel Distance (mi)	649	664	623	650	625	642
Travel Time (hr)	25.1	26.0	24.0	25.2	24.2	24.9
Total Delay (hr)	3.3	3.6	3.2	3.4	3.2	3.3
Total Stops	324	357	328	320	307	326
Fuel Used (gal)	22.2	22.7	21.2	22.3	21.2	21.9

Interval #0 Information Seeding

Start Time 2:57
End Time 3:00
Total Time (min) 3

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time 3:00
End Time 4:00
Total Time (min) 60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	1725	1730	1646	1702	1619	1684
Vehs Exited	1721	1738	1649	1710	1616	1686
Starting Vehs	21	21	24	34	23	23
Ending Vehs	25	13	21	26	26	20
Travel Distance (mi)	649	664	623	650	625	642
Travel Time (hr)	25.1	26.0	24.0	25.2	24.2	24.9
Total Delay (hr)	3.3	3.6	3.2	3.4	3.2	3.3
Total Stops	324	357	328	320	307	326
Fuel Used (gal)	22.2	22.7	21.2	22.3	21.2	21.9

3: Route 1 & Lewis Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.1
Denied Del/Veh (s)	3.7	0.2	0.0	0.5	0.3
Total Delay (hr)	0.1	0.4	0.4	0.3	1.1
Total Del/Veh (s)	7.5	15.3	1.6	2.0	2.7
Stop Delay (hr)	0.1	0.3	0.0	0.0	0.4
Stop Del/Veh (s)	7.0	13.5	0.1	0.1	1.1

8: Route 1 & Cutts Road Performance by approach

Approach	EB	NB	SB	All
Denied Delay (hr)	0.1	0.3	0.0	0.4
Denied Del/Veh (s)	1.8	1.2	0.1	0.8
Total Delay (hr)	0.5	0.3	0.2	0.9
Total Del/Veh (s)	15.2	1.2	1.0	2.1
Stop Delay (hr)	0.4	0.1	0.0	0.6
Stop Del/Veh (s)	14.0	0.5	0.0	1.3

Total Network Performance

Denied Delay (hr)	0.5
Denied Del/Veh (s)	1.0
Total Delay (hr)	2.9
Total Del/Veh (s)	6.0
Stop Delay (hr)	1.1
Stop Del/Veh (s)	2.2

Intersection: 3: Route 1 & Lewis Rd

Movement	EB	EB	WB	NB	SB
Directions Served	LT	R	LTR	L	L
Maximum Queue (ft)	30	54	103	32	48
Average Queue (ft)	3	18	45	8	8
95th Queue (ft)	18	47	78	26	33
Link Distance (ft)	241		566		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		75		50	125
Storage Blk Time (%)		0		0	
Queuing Penalty (veh)		0		0	

Intersection: 8: Route 1 & Cutts Road

Movement	EB	EB	NB	SB
Directions Served	L	R	L	TR
Maximum Queue (ft)	84	69	83	43
Average Queue (ft)	32	30	34	6
95th Queue (ft)	68	56	66	28
Link Distance (ft)		600		120
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	100		160	
Storage Blk Time (%)	0			
Queuing Penalty (veh)	0			

Network Summary

Network wide Queuing Penalty: 1

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

Crash Summary I Section Detail Crash Summary II 1320 Public 1320 Private 1320 Summary

REPORT DESCRIPTION

Kittery
Rte. 1 from Haley Rd. to York TL

REPORT PARAMETERS

Year 2015, Start Month 1 through Year 2017 End Month: 12

Route: 0001X

Start Node: 56533

End Node: 56537

Start Offset: 0

End Offset: 0

Exclude First Node

Exclude Last Node

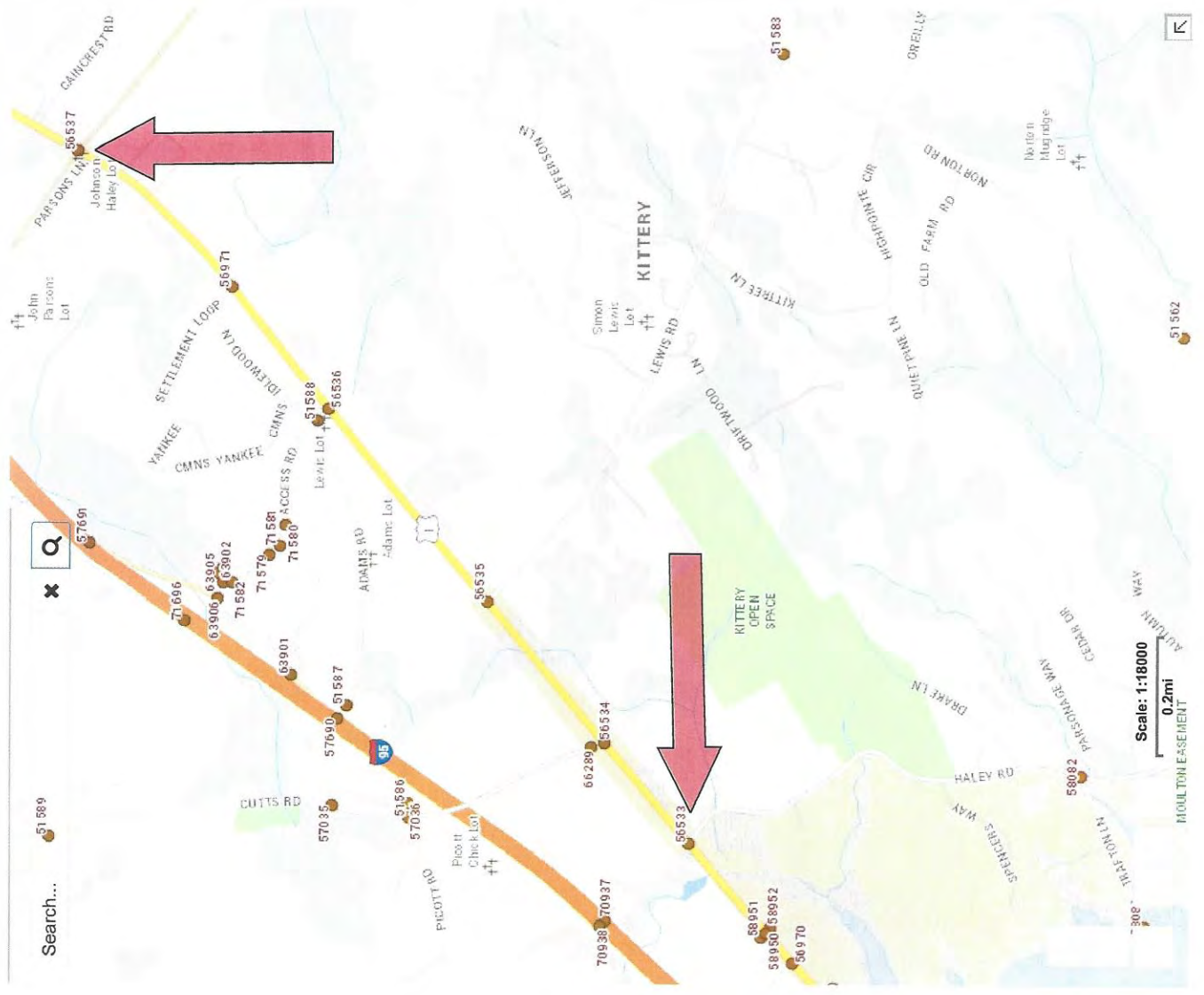
Maine Department Of Transportation - Traffic Engineering, Crash Records Section
Crash Summary I

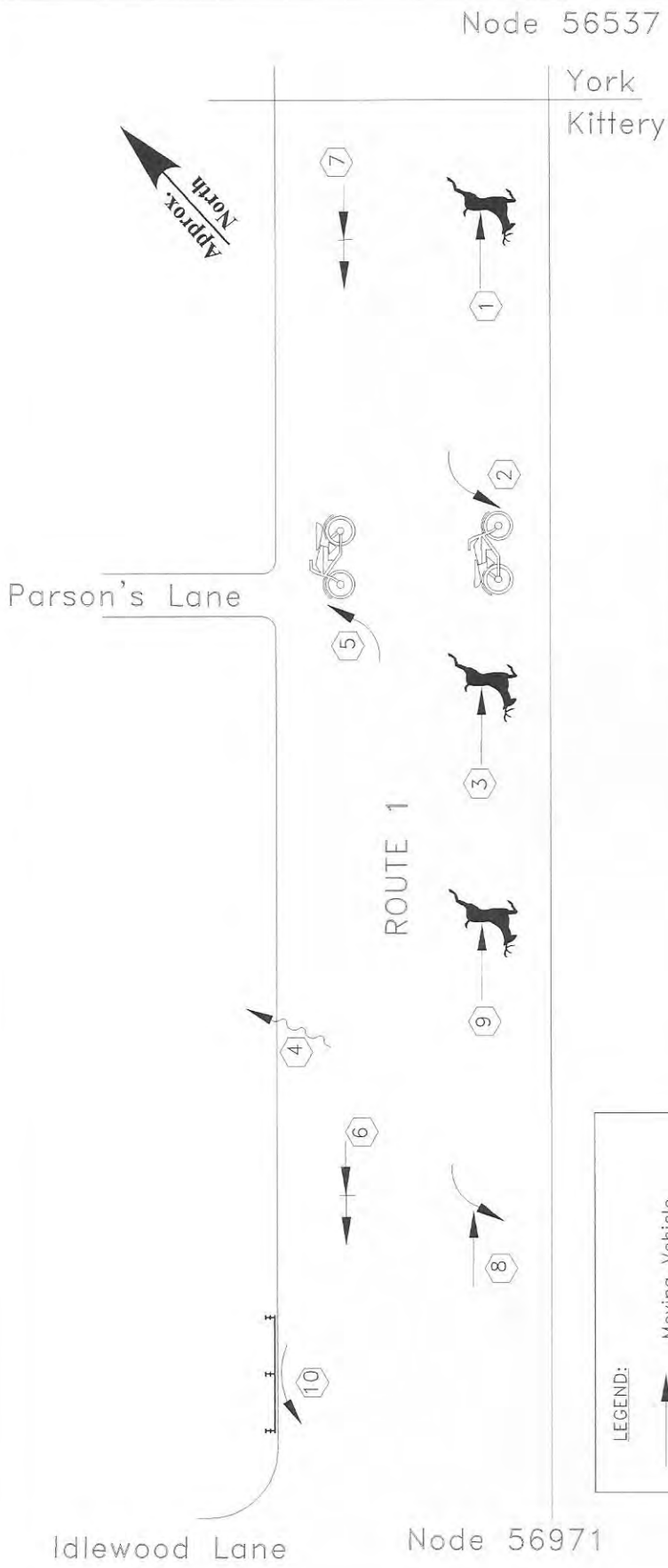
Node	Route - MP	Node Description	U/R	Nodes										CRF	
				Total Crashes	K	A	B	C	PD	Injury	Percent Annual M	Crash Rate	Critical Rate		
56536	0001X - 4.07	Int of ACCESS RD, US 1	1	3	0	0	0	1	2	33.3	3.812	0.26	0.34	0.00	0.76
56537	0001X - 4.66	TL - Kittery, York	2	0	0	0	0	0	0	0.0	1.799	0.00	0.51	0.00	
56535	0001X - 3.66	Int of LEWIS RD, US 1	2	1	0	0	0	1	0	100.0	3.732	0.09	0.42	0.00	0.21
56533	0001X - 3.14	Int of HALEY RD, US 1	9	0	0	0	0	0	0	0.0	4.529	0.00	1.30	0.00	
56534	0001X - 3.36	Int of CUTTS RD US 1	2	0	0	0	0	0	0	0.0	4.062	0.00	0.41	0.00	
56971	0001X - 4.32	Int of IDLEWOOD LN US 1	1	0	0	0	0	0	0	0.0	3.617	0.00	0.34	0.00	
Study Years: 3.00				NODE TOTALS:	4	0	0	0	2	2	50.0	21.551	0.06	0.43	0.15

Crash Summary I

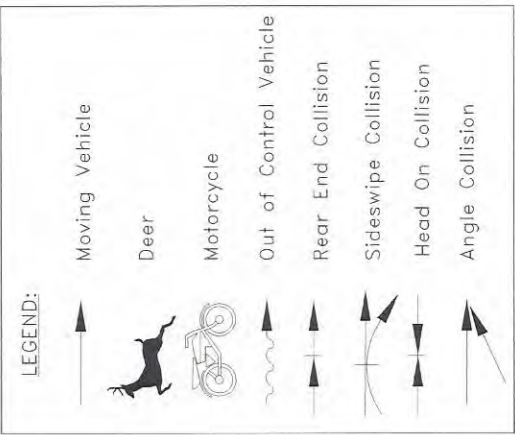
Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section U/R Length	Total Crashes	K	A	B	C	PD	Injury	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
56533	56534	3114218	0 - 0.22	0001X - 3.14 US 1	0.22	5	0	0	0	1	4	20.0	0.00832	200.28	439.56	0.00	0.46
		Int of HALEY RD, US 1													Statewide Crash Rate: 218.56		
56534	56535	238064	0 - 0.30	0001X - 3.36 US 1	0.30	3	0	0	0	0	3	0.0	0.01085	92.18	414.30	0.00	0.22
		Int of CUTTS RD US 1													Statewide Crash Rate: 218.56		
56535	56536	3114220	0 - 0.41	0001X - 3.66 US 1	0.41	2	0	0	0	0	2	0.0	0.01375	48.47	283.69	0.00	0.17
		Int of LEWIS RD, US 1													Statewide Crash Rate: 143.76		
56536	56971	3129581	0 - 0.25	0001X - 4.07 US 1	0.25	2	0	0	0	0	2	0.0	0.00885	75.34	314.49	0.00	0.24
		Int of ACCESS RD, US 1													Statewide Crash Rate: 143.76		
56537	56971	3114221	0 - 0.34	0001X - 4.32 US 1	0.34	10	0	2	1	2	5	50.0	0.01223	272.52	291.37	0.00	0.99
		TL - Kittery, York													Statewide Crash Rate: 143.76		
Study Years: 3.00					Section Totals:	1.52	22	0	2	1	3	16	27.3	0.05400	135.79	250.75	0.54
Grand Totals:					1.52	26	0	2	1	5	18	30.8	0.05400	160.48	324.90	0.49	





CRF = 0.94



#	DATE	TIME	CONTRIBUTING FACTOR	MDOT REPORT #
1	4/25/2015	21:35	Deer Hit	15-13302
2	7/4/2015	1:08	Failure To Yield to Motorcycle	15-19638
3	9/28/2015	1:13	Deer Hit	15-43384
4	12/8/2015	16:08	Single vehicle loss of control - driver ill	15-51386
5	5/9/2016	21:17	Failure To Yield to Motorcycle	16-13657
6	6/29/2016	11:56	Rear-end	16-27268
7	9/23/2016	15:51	Rear-end	16-27383
8	10/3/2016	9:51	Left turn Failure To Yield	16-28266
9	2/21/2017	17:54	Deer Hit	17-7753
10	9/1/2017	14:35	Single vehicle struck guardrail	17-26681

Kittery, Maine
Collision Diagram: 2015-2017
MDOT Link # 56971 - # 56537

Maine Traffic Resources
 25 Vine Street
 Gardiner, ME 04345
 tel: (207) 582-5252
 fax: (207) 582-1677



ATTAR

ENGINEERING, INC

CIVIL • STRUCTURAL • MARINE

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

Project No.: C052-18

September 20, 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 8.2 acres of developed area and approximately 3.8 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 32 subcatchments. Other features such as ponds and reaches were added to account for on-site routing and detention of stormwater. Four 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 95.4% of the impervious area and 86.0% 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.

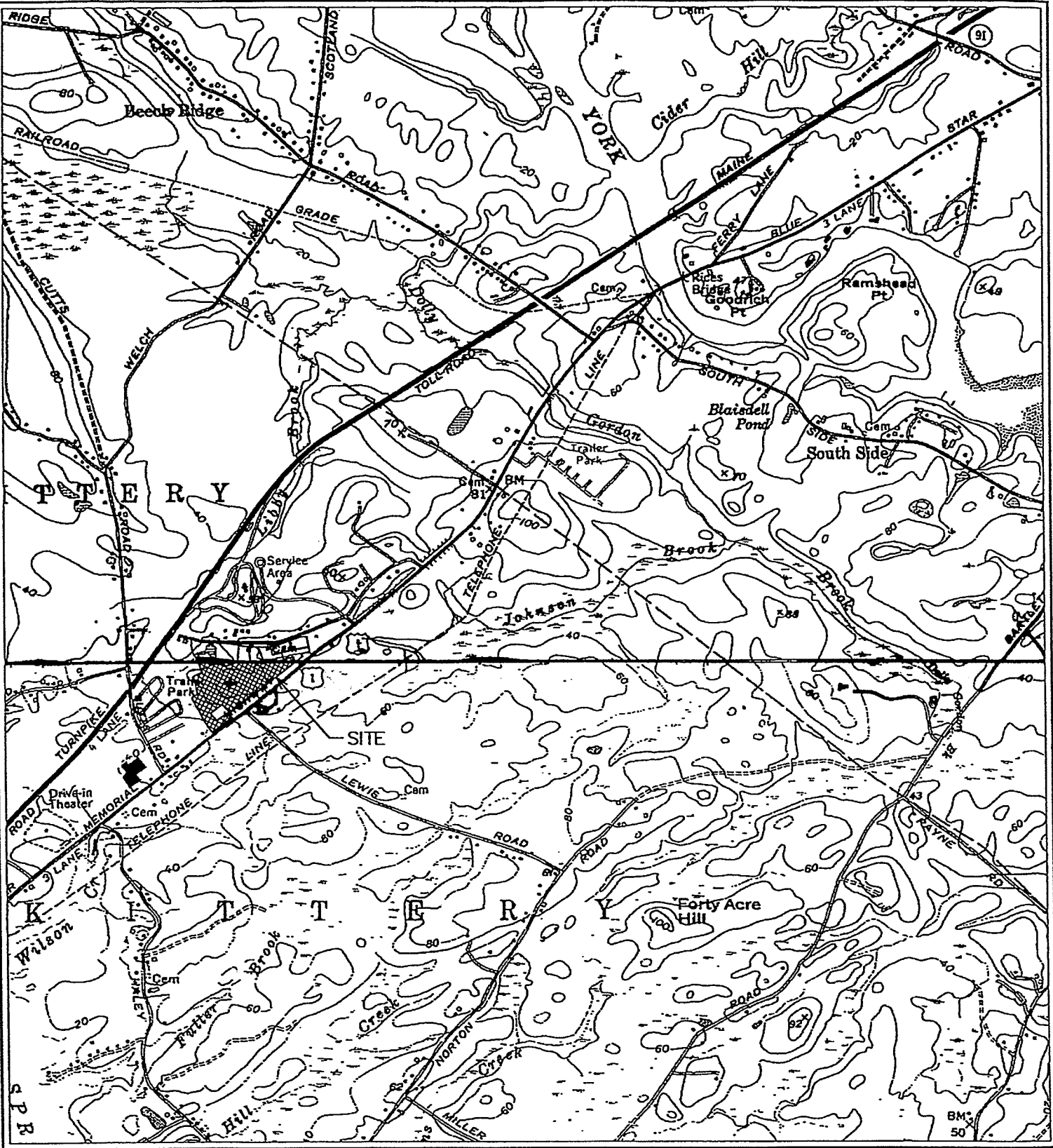
◆ **Summary**

The use of USF ponds to attenuate peak flows will result in no significant 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



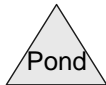
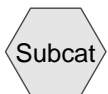
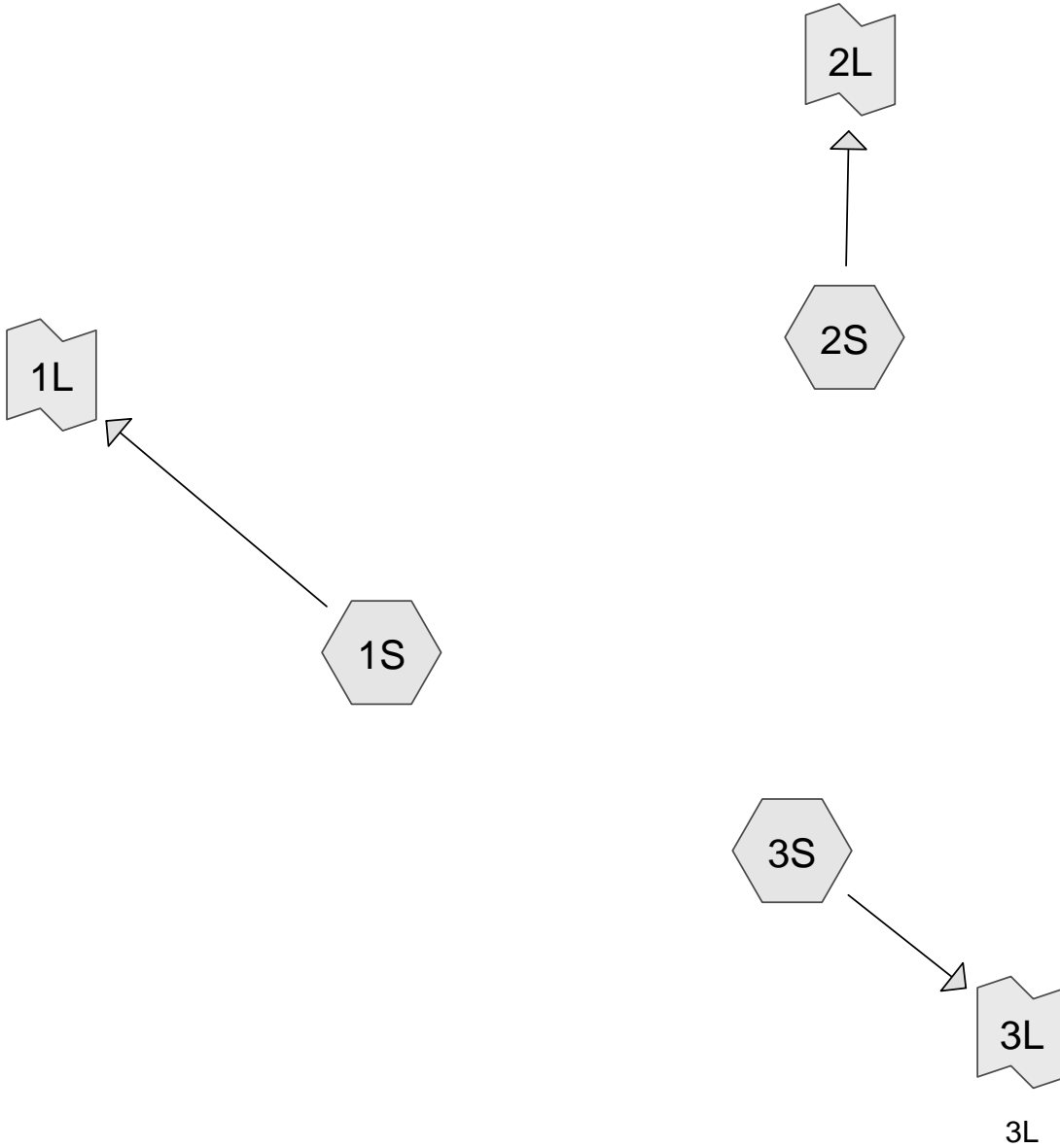
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LOCATION MAP

THE HOMESTEAD
USGS 7.5 MINUTE SERIES
YORK HARBOR AND KITTERY QUADRANGLE
SCALE: 1" = 2,000'

EXISTING CONDITION CALCULATIONS



The Homestead EXT

Prepared by Hewlett-Packard Company

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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=6.20"

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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>3.38"
Flow Length=1,580' Tc=36.4 min CN=77 Runoff=39.31 cfs 4.998 af

Subcatchment 2S:

Runoff Area=434,052 sf 5.33% Impervious Runoff Depth>3.18"
Flow Length=931' Tc=41.7 min CN=75 Runoff=19.46 cfs 2.640 af

Subcatchment 3S:

Runoff Area=223,297 sf 7.12% Impervious Runoff Depth>3.41"
Flow Length=629' Tc=11.2 min CN=77 Runoff=18.49 cfs 1.456 af

Link 1L:

Inflow=39.31 cfs 4.998 af
Primary=39.31 cfs 4.998 af

Link 2L:

Inflow=19.46 cfs 2.640 af
Primary=19.46 cfs 2.640 af

Link 3L: 3L

Inflow=18.49 cfs 1.456 af
Primary=18.49 cfs 1.456 af

Total Runoff Area = 32.833 ac Runoff Volume = 9.095 af Average Runoff Depth = 3.32"
91.11% Pervious = 29.914 ac 8.89% Impervious = 2.920 ac

The Homestead EXT

Prepared by Hewlett-Packard Company

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Type III 24-hr 25 YEAR STORM Rainfall=6.20"

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Page 4

Summary for Subcatchment 1S:

Runoff = 39.31 cfs @ 12.50 hrs, Volume= 4.998 af, Depth> 3.38"

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=6.20"

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 = 19.46 cfs @ 12.56 hrs, Volume= 2.640 af, Depth> 3.18"

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=6.20"

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=6.20"

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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 = 18.49 cfs @ 12.16 hrs, Volume= 1.456 af, Depth> 3.41"

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=6.20"

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 > 3.38" for 25 YEAR STORM event
Inflow = 39.31 cfs @ 12.50 hrs, Volume= 4.998 af
Primary = 39.31 cfs @ 12.50 hrs, Volume= 4.998 af, Atten= 0%, Lag= 0.0 min

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

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Page 6

Summary for Link 2L:

Inflow Area = 9.964 ac, 5.33% Impervious, Inflow Depth > 3.18" for 25 YEAR STORM event
Inflow = 19.46 cfs @ 12.56 hrs, Volume= 2.640 af
Primary = 19.46 cfs @ 12.56 hrs, Volume= 2.640 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 > 3.41" for 25 YEAR STORM event
Inflow = 18.49 cfs @ 12.16 hrs, Volume= 1.456 af
Primary = 18.49 cfs @ 12.16 hrs, Volume= 1.456 af, Atten= 0%, Lag= 0.0 min

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

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Type III 24-hr 2 YEAR STORM Rainfall=3.30"

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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>1.16"
Flow Length=1,580' Tc=36.4 min CN=77 Runoff=13.41 cfs 1.722 af

Subcatchment 2S:

Runoff Area=434,052 sf 5.33% Impervious Runoff Depth>1.05"
Flow Length=931' Tc=41.7 min CN=75 Runoff=6.27 cfs 0.869 af

Subcatchment 3S:

Runoff Area=223,297 sf 7.12% Impervious Runoff Depth>1.18"
Flow Length=629' Tc=11.2 min CN=77 Runoff=6.32 cfs 0.503 af

Link 1L:

Inflow=13.41 cfs 1.722 af
Primary=13.41 cfs 1.722 af

Link 2L:

Inflow=6.27 cfs 0.869 af
Primary=6.27 cfs 0.869 af

Link 3L: 3L

Inflow=6.32 cfs 0.503 af
Primary=6.32 cfs 0.503 af

Total Runoff Area = 32.833 ac Runoff Volume = 3.093 af Average Runoff Depth = 1.13"
91.11% Pervious = 29.914 ac 8.89% Impervious = 2.920 ac

The Homestead EXT*Type III 24-hr 10 YEAR STORM Rainfall=4.90"*

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Page 2

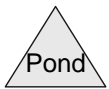
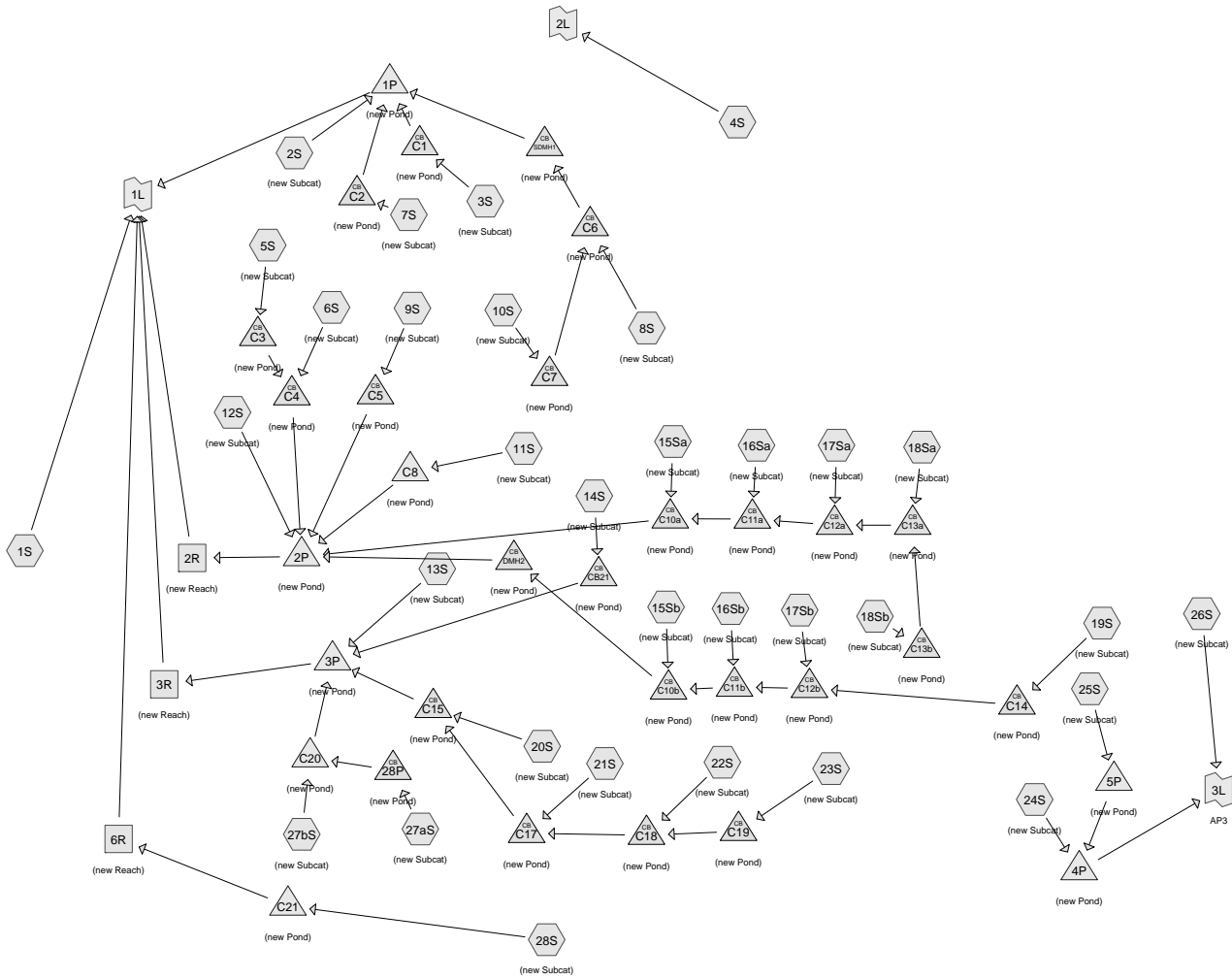
Time span=1.00-20.00 hrs, dt=0.01 hrs, 1901 points

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>2.33"
Flow Length=1,580' Tc=36.4 min CN=77 Runoff=27.26 cfs 3.452 af**Subcatchment 2S:**Runoff Area=434,052 sf 5.33% Impervious Runoff Depth>2.17"
Flow Length=931' Tc=41.7 min CN=75 Runoff=13.25 cfs 1.799 af**Subcatchment 3S:**Runoff Area=223,297 sf 7.12% Impervious Runoff Depth>2.36"
Flow Length=629' Tc=11.2 min CN=77 Runoff=12.83 cfs 1.007 af**Link 1L:**Inflow=27.26 cfs 3.452 af
Primary=27.26 cfs 3.452 af**Link 2L:**Inflow=13.25 cfs 1.799 af
Primary=13.25 cfs 1.799 af**Link 3L: 3L**Inflow=12.83 cfs 1.007 af
Primary=12.83 cfs 1.007 af**Total Runoff Area = 32.833 ac Runoff Volume = 6.258 af Average Runoff Depth = 2.29"**
91.11% Pervious = 29.914 ac 8.89% Impervious = 2.920 ac

DEVELOPED CONDITION CALCULATIONS



Routing Diagram for 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, 4S, 26S)
0.869	70	Woods, Good, HSG C, Landscaped Buffer (28S)
4.093	71	Meadow, non-grazed, HSG C (2S, 6S, 7S, 9S, 10S, 11S, 12S, 13S, 14S, 16Sa, 16Sb, 17Sa, 17Sb, 18Sa, 18Sb, 19S, 20S, 24S, 25S, 26S, 28S)
0.028	71	Parking Landscaping (15Sa, 15Sb)
16.066	77	Woods, Good, HSG D (1S, 4S, 26S)
0.224	78	Meadow, non-grazed, HSG D (4S, 27aS, 27bS)
0.009	98	3 Season Pavilion (19S)
0.774	98	Apartment (3S, 5S, 8S)
0.262	98	Apartment Driveway (2S, 6S, 7S, 10S)
0.125	98	Driveway (11S, 12S)
0.283	98	Driveway and Parking (9S)
0.513	98	Existing Impervious (1S)
0.578	98	Existing Road(Rt. 1) (26S, 28S)
0.365	98	Hotel (21S, 22S, 23S)
1.103	98	Hotel Parking Lot (15Sa, 15Sb, 16Sa, 16Sb, 17Sa, 17Sb, 18Sa, 18Sb)
0.361	98	Paved parking & roofs (4S)
0.044	98	Proposed Driveway (1S)
0.437	98	Road (13S, 14S, 25S, 27aS, 27bS)
0.081	98	Road and Drive (20S)
0.124	98	Road and Walkway (24S)
0.119	98	Road and sidewalk (28S)
0.059	98	Walkway (20S)
32.139	78	TOTAL AREA

The Homestead PRP

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Type III 24-hr 25 YEAR STORM Rainfall=6.20"

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Page 3

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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=454,925 sf 5.34% Impervious Runoff Depth>3.38"
Flow Length=1,580' Tc=36.4 min CN=77 Runoff=23.08 cfs 2.943 af

Subcatchment 2S: (new Subcat) Runoff Area=27,112 sf 9.08% Impervious Runoff Depth>3.03"
Flow Length=174' Tc=1.5 min CN=73 Runoff=2.60 cfs 0.157 af

Subcatchment 3S: (new Subcat) Runoff Area=11,232 sf 100.00% Impervious Runoff Depth>5.51"
Flow Length=110' Slope=0.0200 '/ Tc=1.0 min CN=98 Runoff=1.75 cfs 0.118 af

Subcatchment 4S: Runoff Area=353,765 sf 4.44% Impervious Runoff Depth>3.18"
Flow Length=931' Tc=41.7 min CN=75 Runoff=15.84 cfs 2.153 af

Subcatchment 5S: (new Subcat) Runoff Area=11,232 sf 100.00% Impervious Runoff Depth>5.51"
Flow Length=110' Slope=0.0200 '/ Tc=1.0 min CN=98 Runoff=1.75 cfs 0.118 af

Subcatchment 6S: (new Subcat) Runoff Area=5,303 sf 58.08% Impervious Runoff Depth>4.45"
Flow Length=130' Tc=7.8 min CN=87 Runoff=0.61 cfs 0.045 af

Subcatchment 7S: (new Subcat) Runoff Area=4,957 sf 64.60% Impervious Runoff Depth>4.56"
Flow Length=135' Tc=1.6 min CN=88 Runoff=0.67 cfs 0.043 af

Subcatchment 8S: (new Subcat) Runoff Area=11,232 sf 100.00% Impervious Runoff Depth>5.51"
Flow Length=118' Slope=0.0200 '/ Tc=1.0 min CN=98 Runoff=1.75 cfs 0.118 af

Subcatchment 9S: (new Subcat) Runoff Area=35,236 sf 34.99% Impervious Runoff Depth>3.71"
Flow Length=213' Tc=12.3 min CN=80 Runoff=3.03 cfs 0.250 af

Subcatchment 10S: (new Subcat) Runoff Area=4,855 sf 55.35% Impervious Runoff Depth>4.35"
Flow Length=112' Tc=1.1 min CN=86 Runoff=0.65 cfs 0.040 af

Subcatchment 11S: (new Subcat) Runoff Area=29,673 sf 8.41% Impervious Runoff Depth>3.01"
Flow Length=263' Tc=19.7 min CN=73 Runoff=1.76 cfs 0.171 af

Subcatchment 12S: (new Subcat) Runoff Area=23,728 sf 12.37% Impervious Runoff Depth>3.12"
Flow Length=112' Tc=5.7 min CN=74 Runoff=2.11 cfs 0.142 af

Subcatchment 13S: (new Subcat) Runoff Area=20,150 sf 22.94% Impervious Runoff Depth>3.42"
Flow Length=118' Tc=1.2 min CN=77 Runoff=2.18 cfs 0.132 af

Subcatchment 14S: (new Subcat) Runoff Area=4,099 sf 77.24% Impervious Runoff Depth>4.97"
Flow Length=135' Slope=0.0200 '/ Tc=2.3 min CN=92 Runoff=0.59 cfs 0.039 af

Subcatchment 15Sa: (new Subcat) Runoff Area=4,641 sf 81.77% Impervious Runoff Depth>5.08"
Flow Length=50' Slope=0.0205 '/ Tc=0.7 min CN=93 Runoff=0.70 cfs 0.045 af

Subcatchment 15Sb: (new Subcat) Runoff Area=5,452 sf 92.79% Impervious Runoff Depth>5.36"
Flow Length=50' Slope=0.0205 '/ Tc=0.7 min CN=96 Runoff=0.85 cfs 0.056 af

The Homestead PRP

Type III 24-hr 25 YEAR STORM Rainfall=6.20"

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Page 4

Subcatchment 16Sa: (new Subcat)	Runoff Area=4,781 sf 90.86% Impervious Runoff Depth>5.36" Flow Length=50' Slope=0.0140 '/ Tc=0.8 min CN=96 Runoff=0.74 cfs 0.049 af
Subcatchment 16Sb: (new Subcat)	Runoff Area=8,457 sf 84.71% Impervious Runoff Depth>5.17" Flow Length=50' Slope=0.0140 '/ Tc=0.8 min CN=94 Runoff=1.29 cfs 0.084 af
Subcatchment 17Sa: (new Subcat)	Runoff Area=4,903 sf 90.70% Impervious Runoff Depth>5.27" Flow Length=50' Slope=0.0140 '/ Tc=0.8 min CN=95 Runoff=0.75 cfs 0.049 af
Subcatchment 17Sb: (new Subcat)	Runoff Area=7,891 sf 87.75% Impervious Runoff Depth>5.27" Flow Length=50' Slope=0.0140 '/ Tc=0.8 min CN=95 Runoff=1.21 cfs 0.080 af
Subcatchment 18Sa: (new Subcat)	Runoff Area=5,929 sf 84.87% Impervious Runoff Depth>5.17" Flow Length=50' Slope=0.0120 '/ Tc=0.9 min CN=94 Runoff=0.90 cfs 0.059 af
Subcatchment 18Sb: (new Subcat)	Runoff Area=12,880 sf 87.49% Impervious Runoff Depth>5.27" Flow Length=113' Slope=0.0120 '/ Tc=1.4 min CN=95 Runoff=1.93 cfs 0.130 af
Subcatchment 19S: (new Subcat)	Runoff Area=14,883 sf 2.69% Impervious Runoff Depth>2.93" Flow Length=156' Tc=12.2 min CN=72 Runoff=1.02 cfs 0.083 af
Subcatchment 20S: (new Subcat)	Runoff Area=16,320 sf 37.39% Impervious Runoff Depth>3.82" Flow Length=248' Tc=3.0 min CN=81 Runoff=1.92 cfs 0.119 af
Subcatchment 21S: (new Subcat)	Runoff Area=4,672 sf 100.00% Impervious Runoff Depth>5.51" Flow Length=25' Slope=0.0200 '/ Tc=0.4 min CN=98 Runoff=0.74 cfs 0.049 af
Subcatchment 22S: (new Subcat)	Runoff Area=6,181 sf 100.00% Impervious Runoff Depth>5.51" Flow Length=45' Slope=0.0200 '/ Tc=0.7 min CN=98 Runoff=0.97 cfs 0.065 af
Subcatchment 23S: (new Subcat)	Runoff Area=5,042 sf 100.00% Impervious Runoff Depth>5.51" Flow Length=26' Slope=0.0200 '/ Tc=0.4 min CN=98 Runoff=0.80 cfs 0.053 af
Subcatchment 24S: (new Subcat)	Runoff Area=16,999 sf 31.84% Impervious Runoff Depth>3.72" Flow Length=109' Tc=2.2 min CN=80 Runoff=1.97 cfs 0.121 af
Subcatchment 25S: (new Subcat)	Runoff Area=12,823 sf 37.36% Impervious Runoff Depth>3.82" Flow Length=71' Tc=3.7 min CN=81 Runoff=1.48 cfs 0.094 af
Subcatchment 26S: (new Subcat)	Runoff Area=192,577 sf 6.97% Impervious Runoff Depth>3.51" Flow Length=615' Tc=9.9 min CN=78 Runoff=16.82 cfs 1.293 af
Subcatchment 27aS: (new Subcat)	Runoff Area=4,059 sf 52.35% Impervious Runoff Depth>4.56" Flow Length=68' Tc=0.8 min CN=88 Runoff=0.57 cfs 0.035 af
Subcatchment 27bS: (new Subcat)	Runoff Area=10,256 sf 42.33% Impervious Runoff Depth>4.35" Tc=0.0 min CN=86 Runoff=1.42 cfs 0.085 af
Subcatchment 28S: (new Subcat)	Runoff Area=63,751 sf 26.54% Impervious Runoff Depth>3.50" Flow Length=361' Tc=18.7 min CN=78 Runoff=4.45 cfs 0.427 af
Reach 2R: (new Reach)	Avg. Flow Depth=0.17' Max Vel=0.32 fps Inflow=6.75 cfs 1.132 af n=0.150 L=700.0' S=0.0114 '/ Capacity=104.19 cfs Outflow=4.96 cfs 1.051 af

The Homestead PRP

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Page 5

Reach 3R: (new Reach)	Avg. Flow Depth=0.05' Max Vel=0.19 fps Inflow=1.32 cfs 0.433 af n=0.150 L=850.0' S=0.0212 '/ Capacity=141.83 cfs Outflow=0.80 cfs 0.341 af
Reach 6R: (new Reach)	Avg. Flow Depth=0.08' Max Vel=0.22 fps Inflow=4.41 cfs 0.426 af n=0.150 L=1,128.0' S=0.0160 '/ Capacity=123.12 cfs Outflow=1.56 cfs 0.359 af
Pond 1P: (new Pond)	Peak Elev=49.77' Storage=9,276 cf Inflow=7.37 cfs 0.478 af Outflow=1.07 cfs 0.362 af
Pond 2P: (new Pond)	Peak Elev=48.71' Storage=20,417 cf Inflow=14.67 cfs 1.361 af Outflow=6.75 cfs 1.132 af
Pond 3P: (new Pond)	Peak Elev=49.76' Storage=11,346 cf Inflow=8.87 cfs 0.579 af Outflow=1.32 cfs 0.433 af
Pond 4P: (new Pond)	Peak Elev=58.03' Storage=2,754 cf Inflow=2.77 cfs 0.210 af Outflow=1.58 cfs 0.170 af
Pond 5P: (new Pond)	Peak Elev=58.80' Storage=788 cf Inflow=1.48 cfs 0.094 af 12.0" Round Culvert n=0.013 L=70.0' S=0.0171 '/ Outflow=1.03 cfs 0.089 af
Pond 28P: (new Pond)	Peak Elev=51.38' Inflow=0.57 cfs 0.035 af 12.0" Round Culvert n=0.013 L=140.0' S=0.0171 '/ Outflow=0.57 cfs 0.035 af
Pond C1: (new Pond)	Peak Elev=51.75' Inflow=1.75 cfs 0.118 af 12.0" Round Culvert n=0.020 L=53.0' S=0.0189 '/ Outflow=1.75 cfs 0.118 af
Pond C10a: (new Pond)	Peak Elev=56.51' Inflow=5.02 cfs 0.332 af 12.0" Round Culvert n=0.020 L=140.0' S=0.0200 '/ Outflow=5.02 cfs 0.332 af
Pond C10b: (new Pond)	Peak Elev=54.22' Inflow=3.83 cfs 0.303 af 12.0" Round Culvert n=0.020 L=127.0' S=0.0315 '/ Outflow=3.83 cfs 0.303 af
Pond C11a: (new Pond)	Peak Elev=58.07' Inflow=4.32 cfs 0.287 af 12.0" Round Culvert n=0.020 L=60.0' S=0.0100 '/ Outflow=4.32 cfs 0.287 af
Pond C11b: (new Pond)	Peak Elev=55.32' Inflow=2.99 cfs 0.247 af 12.0" Round Culvert n=0.020 L=73.0' S=0.0192 '/ Outflow=2.99 cfs 0.247 af
Pond C12a: (new Pond)	Peak Elev=57.91' Inflow=3.58 cfs 0.238 af 12.0" Round Culvert n=0.020 L=60.0' S=0.0100 '/ Outflow=3.58 cfs 0.238 af
Pond C12b: (new Pond)	Peak Elev=55.86' Inflow=1.71 cfs 0.163 af 12.0" Round Culvert n=0.020 L=70.0' S=0.0100 '/ Outflow=1.71 cfs 0.163 af
Pond C13a: (new Pond)	Peak Elev=58.17' Inflow=2.83 cfs 0.189 af 12.0" Round Culvert n=0.020 L=80.0' S=0.0100 '/ Outflow=2.83 cfs 0.189 af
Pond C13b: (new Pond)	Peak Elev=58.30' Inflow=1.93 cfs 0.130 af 12.0" Round Culvert n=0.020 L=70.0' S=0.0114 '/ Outflow=1.93 cfs 0.130 af

The Homestead PRP

Type III 24-hr 25 YEAR STORM Rainfall=6.20"

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Page 6

Pond C14: (new Pond)	Peak Elev=57.31'	Inflow=1.02 cfs	0.083 af
12.0" Round Culvert	n=0.020	L=150.0'	S=0.0107 '/ Outflow=1.02 cfs 0.083 af
Pond C15: (new Pond)	Peak Elev=53.59'	Inflow=4.18 cfs	0.287 af
12.0" Round Culvert	n=0.020	L=60.0'	S=0.0083 '/ Outflow=4.18 cfs 0.287 af
Pond C17: (new Pond)	Peak Elev=52.94'	Inflow=2.52 cfs	0.168 af
12.0" Round Culvert	n=0.020	L=80.0'	S=0.0187 '/ Outflow=2.52 cfs 0.168 af
Pond C18: (new Pond)	Peak Elev=54.38'	Inflow=1.77 cfs	0.118 af
12.0" Round Culvert	n=0.020	L=140.0'	S=0.0100 '/ Outflow=1.77 cfs 0.118 af
Pond C19: (new Pond)	Peak Elev=55.05'	Inflow=0.80 cfs	0.053 af
12.0" Round Culvert	n=0.020	L=90.0'	S=0.0100 '/ Outflow=0.80 cfs 0.053 af
Pond C2: (new Pond)	Peak Elev=52.41'	Inflow=0.67 cfs	0.043 af
12.0" Round Culvert	n=0.020	L=63.0'	S=0.0317 '/ Outflow=0.67 cfs 0.043 af
Pond C20: (new Pond)	Peak Elev=52.01'	Storage=2 cf	Inflow=1.99 cfs 0.121 af
12.0" Round Culvert	n=0.020	L=60.0'	S=0.0083 '/ Outflow=1.99 cfs 0.121 af
Pond C21: (new Pond)	Peak Elev=53.52'	Storage=304 cf	Inflow=4.45 cfs 0.427 af
15.0" Round Culvert	n=0.020	L=60.0'	S=0.0333 '/ Outflow=4.41 cfs 0.426 af
Pond C3: (new Pond)	Peak Elev=49.68'	Inflow=1.75 cfs	0.118 af
12.0" Round Culvert	n=0.020	L=50.0'	S=0.0100 '/ Outflow=1.75 cfs 0.118 af
Pond C4: (new Pond)	Peak Elev=49.17'	Inflow=2.13 cfs	0.164 af
12.0" Round Culvert	n=0.020	L=60.0'	S=0.0117 '/ Outflow=2.13 cfs 0.164 af
Pond C5: (new Pond)	Peak Elev=52.14'	Inflow=3.03 cfs	0.250 af
12.0" Round Culvert	n=0.020	L=80.0'	S=0.0250 '/ Outflow=3.03 cfs 0.250 af
Pond C6: (new Pond)	Peak Elev=51.92'	Inflow=2.40 cfs	0.159 af
12.0" Round Culvert	n=0.020	L=100.0'	S=0.0100 '/ Outflow=2.40 cfs 0.159 af
Pond C7: (new Pond)	Peak Elev=54.41'	Inflow=0.65 cfs	0.040 af
12.0" Round Culvert	n=0.020	L=140.0'	S=0.0221 '/ Outflow=0.65 cfs 0.040 af
Pond C8: (new Pond)	Peak Elev=54.01'	Storage=2 cf	Inflow=1.76 cfs 0.171 af
12.0" Round Culvert	n=0.020	L=150.0'	S=0.0120 '/ Outflow=1.75 cfs 0.171 af
Pond CB21: (new Pond)	Peak Elev=50.97'	Inflow=0.59 cfs	0.039 af
12.0" Round Culvert	n=0.020	L=50.0'	S=0.0100 '/ Outflow=0.59 cfs 0.039 af
Pond DMH2: (new Pond)	Peak Elev=51.46'	Inflow=3.83 cfs	0.303 af
12.0" Round Culvert	n=0.020	L=70.0'	S=0.0086 '/ Outflow=3.83 cfs 0.303 af
Pond SDMH1: (new Pond)	Peak Elev=50.79'	Inflow=2.40 cfs	0.159 af
12.0" Round Culvert	n=0.020	L=65.0'	S=0.0108 '/ Outflow=2.40 cfs 0.159 af
Link 1L:		Inflow=24.78 cfs	5.056 af
		Primary=24.78 cfs	5.056 af

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Type III 24-hr 25 YEAR STORM Rainfall=6.20"

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Page 7

Link 2L:

Inflow=15.84 cfs 2.153 af
Primary=15.84 cfs 2.153 af

Link 3L: AP3

Inflow=18.16 cfs 1.464 af
Primary=18.16 cfs 1.464 af

Total Runoff Area = 32.139 ac Runoff Volume = 9.449 af Average Runoff Depth = 3.53"
83.71% Pervious = 26.903 ac 16.29% Impervious = 5.237 ac

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Page 8

Summary for Subcatchment 1S:

Runoff = 23.08 cfs @ 12.50 hrs, Volume= 2.943 af, Depth> 3.38"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

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
454,925	77	Weighted Average
430,626		94.66% Pervious Area
24,299		5.34% 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: (new Subcat)

Runoff = 2.60 cfs @ 12.03 hrs, Volume= 0.157 af, Depth> 3.03"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

Area (sf)	CN	Description
* 2,463	98	Apartment Driveway
24,649	71	Meadow, non-grazed, HSG C
27,112	73	Weighted Average
24,649		90.92% Pervious Area
2,463		9.08% Impervious Area

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Type III 24-hr 25 YEAR STORM Rainfall=6.20"

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Page 9

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.97		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"
1.2	154	0.1000	2.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.5	174	Total			

Summary for Subcatchment 3S: (new Subcat)

Runoff = 1.75 cfs @ 12.01 hrs, Volume= 0.118 af, Depth> 5.51"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

Area (sf)	CN	Description
* 11,232	98	Apartment
11,232		100.00% 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"
0.5	80	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.0	110	Total			

Summary for Subcatchment 4S:

Runoff = 15.84 cfs @ 12.57 hrs, Volume= 2.153 af, Depth> 3.18"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

Area (sf)	CN	Description
15,705	98	Paved parking & roofs
134,762	70	Woods, Good, HSG C
201,401	77	Woods, Good, HSG D
1,897	78	Meadow, non-grazed, HSG D
353,765	75	Weighted Average
338,060		95.56% Pervious Area
15,705		4.44% Impervious Area

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Page 10

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 5S: (new Subcat)

Runoff = 1.75 cfs @ 12.01 hrs, Volume= 0.118 af, Depth> 5.51"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

Area (sf)	CN	Description
* 11,232	98	Apartment
11,232		100.00% 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"
0.5	80	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.0	110	Total			

Summary for Subcatchment 6S: (new Subcat)

Runoff = 0.61 cfs @ 12.11 hrs, Volume= 0.045 af, Depth> 4.45"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

Area (sf)	CN	Description
* 3,080	98	Apartment Driveway
2,223	71	Meadow, non-grazed, HSG C
5,303	87	Weighted Average
2,223		41.92% Pervious Area
3,080		58.08% Impervious Area

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Type III 24-hr 25 YEAR STORM Rainfall=6.20"

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Page 11

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	50	0.0120	0.12		Sheet Flow, Grass: Short n= 0.150 P2= 3.00"
0.7	80	0.0660	1.80		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
7.8	130	Total			

Summary for Subcatchment 7S: (new Subcat)

Runoff = 0.67 cfs @ 12.03 hrs, Volume= 0.043 af, Depth> 4.56"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

Area (sf)	CN	Description
* 3,202	98	Apartment Driveway
1,755	71	Meadow, non-grazed, HSG C
4,957	88	Weighted Average
1,755		35.40% Pervious Area
3,202		64.60% 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"
0.7	85	0.0740	1.90		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.6	135	Total			

Summary for Subcatchment 8S: (new Subcat)

Runoff = 1.75 cfs @ 12.01 hrs, Volume= 0.118 af, Depth> 5.51"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

Area (sf)	CN	Description
* 11,232	98	Apartment
11,232		100.00% 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"
0.5	88	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.0	118	Total			

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Page 12

Summary for Subcatchment 9S: (new Subcat)

Runoff = 3.03 cfs @ 12.17 hrs, Volume= 0.250 af, Depth> 3.71"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

Area (sf)	CN	Description
* 12,329	98	Driveway and Parking
22,907	71	Meadow, non-grazed, HSG C
35,236	80	Weighted Average
22,907		65.01% Pervious Area
12,329		34.99% 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"
1.9	163	0.0420	1.43		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
12.3	213	Total			

Summary for Subcatchment 10S: (new Subcat)

Runoff = 0.65 cfs @ 12.02 hrs, Volume= 0.040 af, Depth> 4.35"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

Area (sf)	CN	Description
* 2,687	98	Apartment Driveway
2,168	71	Meadow, non-grazed, HSG C
4,855	86	Weighted Average
2,168		44.65% Pervious Area
2,687		55.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	50	0.0330	1.42		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"
0.5	62	0.0770	1.94		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.1	112	Total			

Summary for Subcatchment 11S: (new Subcat)

Runoff = 1.76 cfs @ 12.27 hrs, Volume= 0.171 af, Depth> 3.01"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

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Page 13

	Area (sf)	CN	Description
*	2,496	98	Driveway
	27,177	71	Meadow, non-grazed, HSG C
	29,673	73	Weighted Average
	27,177		91.59% Pervious Area
	2,496		8.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.6	50	0.0120	0.05		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.00"
4.1	213	0.0300	0.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
19.7	263	Total			

Summary for Subcatchment 12S: (new Subcat)

Runoff = 2.11 cfs @ 12.09 hrs, Volume= 0.142 af, Depth> 3.12"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

	Area (sf)	CN	Description
*	2,935	98	Driveway
	20,793	71	Meadow, non-grazed, HSG C
	23,728	74	Weighted Average
	20,793		87.63% Pervious Area
	2,935		12.37% 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"
0.8	62	0.0640	1.26		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
5.7	112	Total			

Summary for Subcatchment 13S: (new Subcat)

Runoff = 2.18 cfs @ 12.02 hrs, Volume= 0.132 af, Depth> 3.42"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

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Page 14

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: (new Subcat)

Runoff = 0.59 cfs @ 12.04 hrs, Volume= 0.039 af, Depth> 4.97"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

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 15Sa: (new Subcat)

Runoff = 0.70 cfs @ 12.01 hrs, Volume= 0.045 af, Depth> 5.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

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 15

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 15Sb: (new Subcat)

Runoff = 0.85 cfs @ 12.01 hrs, Volume= 0.056 af, Depth> 5.36"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

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 16Sa: (new Subcat)

Runoff = 0.74 cfs @ 12.01 hrs, Volume= 0.049 af, Depth> 5.36"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

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 16Sb: (new Subcat)

Runoff = 1.29 cfs @ 12.01 hrs, Volume= 0.084 af, Depth> 5.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

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Page 16

	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

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 17Sa: (new Subcat)

Runoff = 0.75 cfs @ 12.01 hrs, Volume= 0.049 af, Depth> 5.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

	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 17Sb: (new Subcat)

Runoff = 1.21 cfs @ 12.01 hrs, Volume= 0.080 af, Depth> 5.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

	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

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Page 17

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 18Sa: (new Subcat)

Runoff = 0.90 cfs @ 12.01 hrs, Volume= 0.059 af, Depth> 5.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

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 18Sb: (new Subcat)

Runoff = 1.93 cfs @ 12.02 hrs, Volume= 0.130 af, Depth> 5.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

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 18

Summary for Subcatchment 19S: (new Subcat)

Runoff = 1.02 cfs @ 12.17 hrs, Volume= 0.083 af, Depth> 2.93"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

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 20S: (new Subcat)

Runoff = 1.92 cfs @ 12.05 hrs, Volume= 0.119 af, Depth> 3.82"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

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			

The Homestead PRP

Type III 24-hr 25 YEAR STORM Rainfall=6.20"

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Page 19

Summary for Subcatchment 21S: (new Subcat)

Runoff = 0.74 cfs @ 12.00 hrs, Volume= 0.049 af, Depth> 5.51"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

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

Summary for Subcatchment 22S: (new Subcat)

Runoff = 0.97 cfs @ 12.01 hrs, Volume= 0.065 af, Depth> 5.51"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

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

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	45	0.0200	1.14		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"

Summary for Subcatchment 23S: (new Subcat)

Runoff = 0.80 cfs @ 12.00 hrs, Volume= 0.053 af, Depth> 5.51"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

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

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	26	0.0200	1.02		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"

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Page 20

Summary for Subcatchment 24S: (new Subcat)

Runoff = 1.97 cfs @ 12.04 hrs, Volume= 0.121 af, Depth> 3.72"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

Area (sf)	CN	Description
* 5,412	98	Road and Walkway
11,587	71	Meadow, non-grazed, HSG C
16,999	80	Weighted Average
11,587		68.16% Pervious Area
5,412		31.84% 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"
1.5	68	0.0120	0.77		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.2	109	Total			

Summary for Subcatchment 25S: (new Subcat)

Runoff = 1.48 cfs @ 12.06 hrs, Volume= 0.094 af, Depth> 3.82"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

Area (sf)	CN	Description
* 4,791	98	Road
8,032	71	Meadow, non-grazed, HSG C
12,823	81	Weighted Average
8,032		62.64% Pervious Area
4,791		37.36% 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 26S: (new Subcat)

Runoff = 16.82 cfs @ 12.14 hrs, Volume= 1.293 af, Depth> 3.51"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

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Page 21

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)
1,221	71	Meadow, non-grazed, HSG C
192,577	78	Weighted Average
179,154		93.03% Pervious Area
13,423		6.97% Impervious Area

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 27aS: (new Subcat)

Runoff = 0.57 cfs @ 12.01 hrs, Volume= 0.035 af, Depth> 4.56"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

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			

Summary for Subcatchment 27bS: (new Subcat)

Runoff = 1.42 cfs @ 12.00 hrs, Volume= 0.085 af, Depth> 4.35"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
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Page 22

	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 28S: (new Subcat)

Runoff = 4.45 cfs @ 12.26 hrs, Volume= 0.427 af, Depth> 3.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.20"

	Area (sf)	CN	Description
*	5,180	98	Road and sidewalk
*	11,739	98	Existing Road(Rt. 1)
	8,974	71	Meadow, non-grazed, HSG C
*	37,858	70	Woods, Good, HSG C, Landscaped Buffer
	63,751	78	Weighted Average
	46,832		73.46% Pervious Area
	16,919		26.54% 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: (new Reach)

Inflow Area = 4.017 ac, 46.01% Impervious, Inflow Depth > 3.38" for 25 YEAR STORM event

Inflow = 6.75 cfs @ 12.40 hrs, Volume= 1.132 af

Outflow = 4.96 cfs @ 13.47 hrs, Volume= 1.051 af, Atten= 26%, Lag= 64.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Max. Velocity= 0.32 fps, Min. Travel Time= 37.0 min

Avg. Velocity = 0.13 fps, Avg. Travel Time= 87.0 min

Peak Storage= 11,018 cf @ 12.85 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: (new Reach)

Inflow Area = 1.625 ac, 51.22% Impervious, Inflow Depth > 3.20" for 25 YEAR STORM event
 Inflow = 1.32 cfs @ 12.50 hrs, Volume= 0.433 af
 Outflow = 0.80 cfs @ 14.57 hrs, Volume= 0.341 af, Atten= 39%, Lag= 124.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 0.19 fps, Min. Travel Time= 75.6 min
 Avg. Velocity = 0.12 fps, Avg. Travel Time= 118.1 min

Peak Storage= 3,628 cf @ 13.31 hrs
 Average Depth at Peak Storage= 0.05'
 Bank-Full Depth= 1.00' Flow Area= 110.0 sf, Capacity= 141.83 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= 0.0212 '/'
 Inlet Invert= 50.00', Outlet Invert= 32.00'



Summary for Reach 6R: (new Reach)

Inflow Area = 1.464 ac, 26.54% Impervious, Inflow Depth > 3.49" for 25 YEAR STORM event
 Inflow = 4.41 cfs @ 12.28 hrs, Volume= 0.426 af
 Outflow = 1.56 cfs @ 14.12 hrs, Volume= 0.359 af, Atten= 65%, Lag= 110.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 0.22 fps, Min. Travel Time= 84.3 min
 Avg. Velocity = 0.11 fps, Avg. Travel Time= 167.8 min

Peak Storage= 7,871 cf @ 12.72 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 24



Summary for Pond 1P: (new Pond)

Inflow Area = 1.363 ac, 51.89% Impervious, Inflow Depth > 4.21" for 25 YEAR STORM event
 Inflow = 7.37 cfs @ 12.02 hrs, Volume= 0.478 af
 Outflow = 1.07 cfs @ 12.50 hrs, Volume= 0.362 af, Atten= 85%, Lag= 28.7 min
 Primary = 1.07 cfs @ 12.50 hrs, Volume= 0.362 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 49.77' @ 12.50 hrs Surf.Area= 6,231 sf Storage= 9,276 cf
 Flood Elev= 52.00' Surf.Area= 8,849 sf Storage= 26,054 cf

Plug-Flow detention time= 151.0 min calculated for 0.361 af (76% of inflow)
 Center-of-Mass det. time= 90.1 min (845.1 - 755.0)

Volume	Invert	Avail.Storage	Storage Description
#1	48.00'	46,903 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
48.00	4,233	0	0
49.50	5,916	7,612	7,612
50.00	6,491	3,102	10,714
52.00	8,849	15,340	26,054
54.00	12,000	20,849	46,903

Device	Routing	Invert	Outlet Devices
#1	Primary	45.53'	12.0" Round Culvert L= 40.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.53' / 44.00' S= 0.0383 ' S= 0.0383 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	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 ' S= 0.0050 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 2	48.00'	2.400 in/hr Exfiltration over Surface area
#4	Device 1	49.50'	8.0" Vert. Orifice/Grate X 3.00 C= 0.600
#5	Device 1	50.80'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.07 cfs @ 12.50 hrs HW=49.77' (Free Discharge)

- 1=Culvert (Passes 1.07 cfs of 7.32 cfs potential flow)
- 2=Culvert (Passes 0.35 cfs of 1.71 cfs potential flow)
- 3=Exfiltration (Exfiltration Controls 0.35 cfs)
- 4=Orifice/Grate (Orifice Controls 0.72 cfs @ 1.78 fps)
- 5=Orifice/Grate (Controls 0.00 cfs)

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Page 25

Summary for Pond 2P: (new Pond)

Inflow Area = 4.017 ac, 46.01% Impervious, Inflow Depth > 4.07" for 25 YEAR STORM event
 Inflow = 14.67 cfs @ 12.03 hrs, Volume= 1.361 af
 Outflow = 6.75 cfs @ 12.40 hrs, Volume= 1.132 af, Atten= 54%, Lag= 21.9 min
 Primary = 6.75 cfs @ 12.40 hrs, Volume= 1.132 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.71' @ 12.40 hrs Surf.Area= 9,078 sf Storage= 20,417 cf
 Flood Elev= 50.00' Surf.Area= 10,620 sf Storage= 33,111 cf

Plug-Flow detention time= 88.4 min calculated for 1.128 af (83% of inflow)
 Center-of-Mass det. time= 40.5 min (805.1 - 764.7)

Volume	Invert	Avail.Storage	Storage Description
#1	46.00'	33,111 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
46.00	6,059	0	0
47.50	7,663	10,292	10,292
48.00	8,227	3,973	14,264
50.00	10,620	18,847	33,111

Device	Routing	Invert	Outlet Devices
#1	Primary	43.53'	12.0" Round Culvert L= 110.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.53' / 42.00' S= 0.0139 1/8" Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	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 1/8" Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 2	46.00'	2.400 in/hr Exfiltration over Surface area
#4	Device 1	47.50'	8.0" Vert. Orifice/Grate X 4.00 C= 0.600
#5	Device 1	49.17'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=6.77 cfs @ 12.40 hrs HW=48.71' (Free Discharge)

- 1=Culvert (Barrel Controls 6.77 cfs @ 8.62 fps)
- 2=Culvert (Passes < 1.92 cfs potential flow)
- 3=Exfiltration (Passes < 0.50 cfs potential flow)
- 4=Orifice/Grate (Passes < 6.30 cfs potential flow)
- 5=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond 3P: (new Pond)

Inflow Area = 1.625 ac, 51.22% Impervious, Inflow Depth > 4.27" for 25 YEAR STORM event
 Inflow = 8.87 cfs @ 12.02 hrs, Volume= 0.579 af
 Outflow = 1.32 cfs @ 12.50 hrs, Volume= 0.433 af, Atten= 85%, Lag= 28.9 min
 Primary = 1.32 cfs @ 12.50 hrs, Volume= 0.433 af

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Page 26

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 49.76' @ 12.50 hrs Surf.Area= 7,358 sf Storage= 11,346 cf
 Flood Elev= 52.00' Surf.Area= 9,941 sf Storage= 30,666 cf

Plug-Flow detention time= 153.5 min calculated for 0.433 af (75% of inflow)
 Center-of-Mass det. time= 91.3 min (849.7 - 758.4)

Volume	Invert	Avail.Storage	Storage Description
#1	48.00'	50,607 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
48.00	5,516	0	0
49.50	7,069	9,439	9,439
50.00	7,615	3,671	13,110
52.00	9,941	17,556	30,666
54.00	10,000	19,941	50,607

Device	Routing	Invert	Outlet Devices
#1	Primary	45.53'	12.0" Round Culvert L= 70.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.53' / 44.00' S= 0.0219 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	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
#3	Device 2	48.00'	2.400 in/hr Exfiltration over Surface area
#4	Device 1	49.50'	8.0" Vert. Orifice/Grate X 4.00 C= 0.600
#5	Device 1	51.17'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.31 cfs @ 12.50 hrs HW=49.76' (Free Discharge)

- 1=Culvert (Passes 1.31 cfs of 7.15 cfs potential flow)
- 2=Culvert (Passes 0.41 cfs of 1.71 cfs potential flow)
- 3=Exfiltration (Exfiltration Controls 0.41 cfs)
- 4=Orifice/Grate (Orifice Controls 0.90 cfs @ 1.75 fps)
- 5=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond 4P: (new Pond)

Inflow Area = 0.685 ac, 34.21% Impervious, Inflow Depth > 3.67" for 25 YEAR STORM event
 Inflow = 2.77 cfs @ 12.05 hrs, Volume= 0.210 af
 Outflow = 1.58 cfs @ 12.25 hrs, Volume= 0.170 af, Atten= 43%, Lag= 12.1 min
 Primary = 1.58 cfs @ 12.25 hrs, Volume= 0.170 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 58.03' @ 12.25 hrs Surf.Area= 1,869 sf Storage= 2,754 cf
 Flood Elev= 60.00' Surf.Area= 2,734 sf Storage= 7,289 cf

Plug-Flow detention time= 89.6 min calculated for 0.170 af (81% of inflow)
 Center-of-Mass det. time= 39.6 min (825.7 - 786.1)

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Page 27

Volume	Invert	Avail.Storage	Storage Description
#1	56.00'	7,289 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.00	1,032	0	0
57.50	1,461	1,870	1,870
58.00	1,856	829	2,699
60.00	2,734	4,590	7,289

Device	Routing	Invert	Outlet Devices
#1	Primary	53.53'	12.0" Round Culvert L= 185.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 53.53' / 52.00' S= 0.0083 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	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
#3	Device 2	56.00'	2.400 in/hr Exfiltration over Surface area
#4	Device 1	57.50'	8.0" Vert. Orifice/Grate X 2.00 C= 0.600
#5	Device 1	59.17'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.57 cfs @ 12.25 hrs HW=58.03' (Free Discharge)

- 1=Culvert (Passes 1.57 cfs of 5.23 cfs potential flow)
- 2=Culvert (Passes 0.10 cfs of 1.77 cfs potential flow)
- 3=Exfiltration (Exfiltration Controls 0.10 cfs)
- 4=Orifice/Grate (Orifice Controls 1.47 cfs @ 2.48 fps)
- 5=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond 5P: (new Pond)

Inflow Area = 0.294 ac, 37.36% Impervious, Inflow Depth > 3.82" for 25 YEAR STORM event
 Inflow = 1.48 cfs @ 12.06 hrs, Volume= 0.094 af
 Outflow = 1.03 cfs @ 12.13 hrs, Volume= 0.089 af, Atten= 31%, Lag= 4.6 min
 Primary = 1.03 cfs @ 12.13 hrs, Volume= 0.089 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 58.80' @ 12.13 hrs Surf.Area= 1,252 sf Storage= 788 cf
 Flood Elev= 60.00' Surf.Area= 2,056 sf Storage= 2,770 cf

Plug-Flow detention time= 43.4 min calculated for 0.088 af (94% of inflow)
 Center-of-Mass det. time= 23.6 min (799.2 - 775.6)

Volume	Invert	Avail.Storage	Storage Description
#1	58.00'	2,770 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

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Page 28

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
58.00	714	0	0
60.00	2,056	2,770	2,770

Device	Routing	Invert	Outlet Devices
#1	Primary	58.20'	12.0" Round Culvert L= 70.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 58.20' / 57.00' S= 0.0171 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.02 cfs @ 12.13 hrs HW=58.80' (Free Discharge)↑**1=Culvert** (Inlet Controls 1.02 cfs @ 2.08 fps)**Summary for Pond 28P: (new Pond)**

Inflow Area = 0.093 ac, 52.35% Impervious, Inflow Depth > 4.56" for 25 YEAR STORM event
 Inflow = 0.57 cfs @ 12.01 hrs, Volume= 0.035 af
 Outflow = 0.57 cfs @ 12.01 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.57 cfs @ 12.01 hrs, Volume= 0.035 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 51.38' @ 12.01 hrs

Flood Elev= 55.50'

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=0.55 cfs @ 12.01 hrs HW=51.37' (Free Discharge)↑**1=Culvert** (Inlet Controls 0.55 cfs @ 2.07 fps)**Summary for Pond C1: (new Pond)**

Inflow Area = 0.258 ac, 100.00% Impervious, Inflow Depth > 5.51" for 25 YEAR STORM event
 Inflow = 1.75 cfs @ 12.01 hrs, Volume= 0.118 af
 Outflow = 1.75 cfs @ 12.01 hrs, Volume= 0.118 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.75 cfs @ 12.01 hrs, Volume= 0.118 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 51.75' @ 12.01 hrs

Flood Elev= 54.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	51.00'	12.0" Round Culvert L= 53.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.00' / 50.00' S= 0.0189 '/ Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.68 cfs @ 12.01 hrs HW=51.73' (Free Discharge)

↑1=Culvert (Barrel Controls 1.68 cfs @ 3.84 fps)

Summary for Pond C10a: (new Pond)

Inflow Area = 0.761 ac, 87.18% Impervious, Inflow Depth > 5.24" for 25 YEAR STORM event
 Inflow = 5.02 cfs @ 12.01 hrs, Volume= 0.332 af
 Outflow = 5.02 cfs @ 12.01 hrs, Volume= 0.332 af, Atten= 0%, Lag= 0.0 min
 Primary = 5.02 cfs @ 12.01 hrs, Volume= 0.332 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 56.51' @ 12.01 hrs
 Flood Elev= 58.50'

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=4.82 cfs @ 12.01 hrs HW=55.96' (Free Discharge)

↑1=Culvert (Barrel Controls 4.82 cfs @ 6.14 fps)

Summary for Pond C10b: (new Pond)

Inflow Area = 0.842 ac, 53.29% Impervious, Inflow Depth > 4.31" for 25 YEAR STORM event
 Inflow = 3.83 cfs @ 12.01 hrs, Volume= 0.303 af
 Outflow = 3.83 cfs @ 12.01 hrs, Volume= 0.303 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.83 cfs @ 12.01 hrs, Volume= 0.303 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 54.22' @ 12.01 hrs
 Flood Elev= 55.80'

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' / 48.70' S= 0.0315 '/ Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.69 cfs @ 12.01 hrs HW=54.15' (Free Discharge)

↑1=Culvert (Inlet Controls 3.69 cfs @ 4.70 fps)

Summary for Pond C11a: (new Pond)

Inflow Area = 0.654 ac, 88.06% Impervious, Inflow Depth > 5.26" for 25 YEAR STORM event
 Inflow = 4.32 cfs @ 12.01 hrs, Volume= 0.287 af
 Outflow = 4.32 cfs @ 12.01 hrs, Volume= 0.287 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.32 cfs @ 12.01 hrs, Volume= 0.287 af

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Type III 24-hr 25 YEAR STORM Rainfall=6.20"

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Page 30

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 58.07' @ 12.01 hrs

Flood Elev= 59.40'

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 1' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=4.14 cfs @ 12.01 hrs HW=57.87' (Free Discharge)

↑1=Culvert (Barrel Controls 4.14 cfs @ 5.27 fps)

Summary for Pond C11b: (new Pond)

Inflow Area = 0.717 ac, 46.39% Impervious, Inflow Depth > 4.13" for 25 YEAR STORM event
 Inflow = 2.99 cfs @ 12.02 hrs, Volume= 0.247 af
 Outflow = 2.99 cfs @ 12.02 hrs, Volume= 0.247 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.99 cfs @ 12.02 hrs, Volume= 0.247 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 55.32' @ 12.01 hrs

Flood Elev= 57.30'

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 1' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.87 cfs @ 12.02 hrs HW=55.28' (Free Discharge)

↑1=Culvert (Inlet Controls 2.87 cfs @ 3.66 fps)

Summary for Pond C12a: (new Pond)

Inflow Area = 0.544 ac, 87.50% Impervious, Inflow Depth > 5.25" for 25 YEAR STORM event
 Inflow = 3.58 cfs @ 12.01 hrs, Volume= 0.238 af
 Outflow = 3.58 cfs @ 12.01 hrs, Volume= 0.238 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.58 cfs @ 12.01 hrs, Volume= 0.238 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 57.91' @ 12.01 hrs

Flood Elev= 59.80'

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 1' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.43 cfs @ 12.01 hrs HW=57.76' (Free Discharge)

↑1=Culvert (Barrel Controls 3.43 cfs @ 4.36 fps)

Summary for Pond C12b: (new Pond)

Inflow Area = 0.523 ac, 32.16% Impervious, Inflow Depth > 3.74" for 25 YEAR STORM event
 Inflow = 1.71 cfs @ 12.02 hrs, Volume= 0.163 af
 Outflow = 1.71 cfs @ 12.02 hrs, Volume= 0.163 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.71 cfs @ 12.02 hrs, Volume= 0.163 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 55.86' @ 12.02 hrs
 Flood Elev= 58.00'

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 '/ Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.65 cfs @ 12.02 hrs HW=55.84' (Free Discharge)

↑1=Culvert (Barrel Controls 1.65 cfs @ 3.16 fps)

Summary for Pond C13a: (new Pond)

Inflow Area = 0.432 ac, 86.67% Impervious, Inflow Depth > 5.24" for 25 YEAR STORM event
 Inflow = 2.83 cfs @ 12.02 hrs, Volume= 0.189 af
 Outflow = 2.83 cfs @ 12.02 hrs, Volume= 0.189 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.83 cfs @ 12.02 hrs, Volume= 0.189 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 58.17' @ 12.01 hrs
 Flood Elev= 60.70'

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=2.70 cfs @ 12.02 hrs HW=58.07' (Free Discharge)

↑1=Culvert (Barrel Controls 2.70 cfs @ 3.44 fps)

Summary for Pond C13b: (new Pond)

Inflow Area = 0.296 ac, 87.49% Impervious, Inflow Depth > 5.27" for 25 YEAR STORM event
 Inflow = 1.93 cfs @ 12.02 hrs, Volume= 0.130 af
 Outflow = 1.93 cfs @ 12.02 hrs, Volume= 0.130 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.93 cfs @ 12.02 hrs, Volume= 0.130 af

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Page 32

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 58.30' @ 12.02 hrs

Flood Elev= 60.40'

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=1.84 cfs @ 12.02 hrs HW=58.28' (Free Discharge)

↑1=Culvert (Barrel Controls 1.84 cfs @ 3.37 fps)

Summary for Pond C14: (new Pond)

Inflow Area = 0.342 ac, 2.69% Impervious, Inflow Depth > 2.93" for 25 YEAR STORM event
 Inflow = 1.02 cfs @ 12.17 hrs, Volume= 0.083 af
 Outflow = 1.02 cfs @ 12.17 hrs, Volume= 0.083 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.02 cfs @ 12.17 hrs, Volume= 0.083 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 57.31' @ 12.17 hrs

Flood Elev= 59.80'

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=1.00 cfs @ 12.17 hrs HW=57.31' (Free Discharge)

↑1=Culvert (Barrel Controls 1.00 cfs @ 2.88 fps)

Summary for Pond C15: (new Pond)

Inflow Area = 0.740 ac, 68.28% Impervious, Inflow Depth > 4.66" for 25 YEAR STORM event
 Inflow = 4.18 cfs @ 12.02 hrs, Volume= 0.287 af
 Outflow = 4.18 cfs @ 12.02 hrs, Volume= 0.287 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.18 cfs @ 12.02 hrs, Volume= 0.287 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 53.59' @ 12.02 hrs

Flood Elev= 53.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	50.50'	12.0" Round Culvert L= 60.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 50.50' / 50.00' S= 0.0083 '/ Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=4.01 cfs @ 12.02 hrs HW=53.41' (Free Discharge)

↑**1=Culvert** (Barrel Controls 4.01 cfs @ 5.10 fps)

Summary for Pond C17: (new Pond)

Inflow Area = 0.365 ac, 100.00% Impervious, Inflow Depth > 5.51" for 25 YEAR STORM event
 Inflow = 2.52 cfs @ 12.01 hrs, Volume= 0.168 af
 Outflow = 2.52 cfs @ 12.01 hrs, Volume= 0.168 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.52 cfs @ 12.01 hrs, Volume= 0.168 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 52.94' @ 12.01 hrs
 Flood Elev= 55.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	52.00'	12.0" Round Culvert L= 80.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 52.00' / 50.50' S= 0.0187 '/ Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.46 cfs @ 12.01 hrs HW=52.93' (Free Discharge)

↑**1=Culvert** (Barrel Controls 2.46 cfs @ 4.22 fps)

Summary for Pond C18: (new Pond)

Inflow Area = 0.258 ac, 100.00% Impervious, Inflow Depth > 5.51" for 25 YEAR STORM event
 Inflow = 1.77 cfs @ 12.01 hrs, Volume= 0.118 af
 Outflow = 1.77 cfs @ 12.01 hrs, Volume= 0.118 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.77 cfs @ 12.01 hrs, Volume= 0.118 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 54.38' @ 12.01 hrs
 Flood Elev= 56.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	53.50'	12.0" Round Culvert L= 140.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 53.50' / 52.10' S= 0.0100 '/ Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.73 cfs @ 12.01 hrs HW=54.36' (Free Discharge)

↑**1=Culvert** (Barrel Controls 1.73 cfs @ 3.21 fps)

Summary for Pond C19: (new Pond)

Inflow Area = 0.116 ac, 100.00% Impervious, Inflow Depth > 5.51" for 25 YEAR STORM event
 Inflow = 0.80 cfs @ 12.00 hrs, Volume= 0.053 af
 Outflow = 0.80 cfs @ 12.00 hrs, Volume= 0.053 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.80 cfs @ 12.00 hrs, Volume= 0.053 af

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Page 34

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 55.05' @ 12.00 hrs

Flood Elev= 57.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	54.50'	12.0" Round Culvert L= 90.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 54.50' / 53.60' S= 0.0100 '/ Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.79 cfs @ 12.00 hrs HW=55.04' (Free Discharge)↑**1=Culvert** (Barrel Controls 0.79 cfs @ 2.63 fps)**Summary for Pond C2: (new Pond)**

Inflow Area = 0.114 ac, 64.60% Impervious, Inflow Depth > 4.56" for 25 YEAR STORM event
 Inflow = 0.67 cfs @ 12.03 hrs, Volume= 0.043 af
 Outflow = 0.67 cfs @ 12.03 hrs, Volume= 0.043 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.67 cfs @ 12.03 hrs, Volume= 0.043 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 52.41' @ 12.03 hrs

Flood Elev= 55.00'

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=0.64 cfs @ 12.03 hrs HW=52.40' (Free Discharge)↑**1=Culvert** (Inlet Controls 0.64 cfs @ 2.16 fps)**Summary for Pond C20: (new Pond)**

Inflow Area = 0.329 ac, 45.17% Impervious, Inflow Depth > 4.41" for 25 YEAR STORM event
 Inflow = 1.99 cfs @ 12.00 hrs, Volume= 0.121 af
 Outflow = 1.99 cfs @ 12.00 hrs, Volume= 0.121 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.99 cfs @ 12.00 hrs, Volume= 0.121 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 52.01' @ 12.00 hrs Surf.Area= 200 sf Storage= 2 cf

Flood Elev= 54.00' Surf.Area= 200 sf Storage= 400 cf

Plug-Flow detention time= 0.0 min calculated for 0.121 af (100% of inflow)

Center-of-Mass det. time= 0.0 min (759.5 - 759.5)

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

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Page 35

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	48.50'	12.0" Round Culvert L= 60.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 48.50' / 48.00' S= 0.0083 '/ Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=4.34 cfs @ 12.00 hrs HW=52.01' (Free Discharge)
 ↳1=Culvert (Barrel Controls 4.34 cfs @ 5.52 fps)

Summary for Pond C21: (new Pond)

Inflow Area = 1.464 ac, 26.54% Impervious, Inflow Depth > 3.50" for 25 YEAR STORM event
 Inflow = 4.45 cfs @ 12.26 hrs, Volume= 0.427 af
 Outflow = 4.41 cfs @ 12.28 hrs, Volume= 0.426 af, Atten= 1%, Lag= 1.3 min
 Primary = 4.41 cfs @ 12.28 hrs, Volume= 0.426 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 53.52' @ 12.28 hrs Surf.Area= 200 sf Storage= 304 cf
 Flood Elev= 54.00' Surf.Area= 200 sf Storage= 400 cf

Plug-Flow detention time= 2.3 min calculated for 0.426 af (100% of inflow)
 Center-of-Mass det. time= 1.6 min (795.3 - 793.8)

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 '/ Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.38 cfs @ 12.28 hrs HW=53.51' (Free Discharge)
 ↳1=Culvert (Inlet Controls 4.38 cfs @ 3.57 fps)

Summary for Pond C3: (new Pond)

Inflow Area = 0.258 ac, 100.00% Impervious, Inflow Depth > 5.51" for 25 YEAR STORM event
 Inflow = 1.75 cfs @ 12.01 hrs, Volume= 0.118 af
 Outflow = 1.75 cfs @ 12.01 hrs, Volume= 0.118 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.75 cfs @ 12.01 hrs, Volume= 0.118 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 49.68' @ 12.01 hrs
 Flood Elev= 51.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	48.80'	12.0" Round Culvert L= 50.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.80' / 48.30' S= 0.0100 '/ Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.68 cfs @ 12.01 hrs HW=49.65' (Free Discharge)
 ↑1=Culvert (Barrel Controls 1.68 cfs @ 3.16 fps)

Summary for Pond C4: (new Pond)

Inflow Area = 0.380 ac, 86.56% Impervious, Inflow Depth > 5.17" for 25 YEAR STORM event
 Inflow = 2.13 cfs @ 12.02 hrs, Volume= 0.164 af
 Outflow = 2.13 cfs @ 12.02 hrs, Volume= 0.164 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.13 cfs @ 12.02 hrs, Volume= 0.164 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 49.17' @ 12.02 hrs
 Flood Elev= 51.30'

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=2.05 cfs @ 12.02 hrs HW=49.14' (Free Discharge)
 ↑1=Culvert (Barrel Controls 2.05 cfs @ 3.46 fps)

Summary for Pond C5: (new Pond)

Inflow Area = 0.809 ac, 34.99% Impervious, Inflow Depth > 3.71" for 25 YEAR STORM event
 Inflow = 3.03 cfs @ 12.17 hrs, Volume= 0.250 af
 Outflow = 3.03 cfs @ 12.17 hrs, Volume= 0.250 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.03 cfs @ 12.17 hrs, Volume= 0.250 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 52.14' @ 12.17 hrs
 Flood Elev= 55.00'

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Page 37

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=2.97 cfs @ 12.17 hrs HW=52.12' (Free Discharge)↑**1=Culvert** (Inlet Controls 2.97 cfs @ 3.78 fps)**Summary for Pond C6: (new Pond)**

Inflow Area = 0.369 ac, 86.52% Impervious, Inflow Depth > 5.16" for 25 YEAR STORM event
 Inflow = 2.40 cfs @ 12.01 hrs, Volume= 0.159 af
 Outflow = 2.40 cfs @ 12.01 hrs, Volume= 0.159 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.40 cfs @ 12.01 hrs, Volume= 0.159 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 51.92' @ 12.01 hrs

Flood Elev= 53.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	50.80'	12.0" Round Culvert L= 100.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 50.80' / 49.80' S= 0.0100 '/ Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.30 cfs @ 12.01 hrs HW=51.88' (Free Discharge)↑**1=Culvert** (Barrel Controls 2.30 cfs @ 3.37 fps)**Summary for Pond C7: (new Pond)**

Inflow Area = 0.111 ac, 55.35% Impervious, Inflow Depth > 4.35" for 25 YEAR STORM event
 Inflow = 0.65 cfs @ 12.02 hrs, Volume= 0.040 af
 Outflow = 0.65 cfs @ 12.02 hrs, Volume= 0.040 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.65 cfs @ 12.02 hrs, Volume= 0.040 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 54.41' @ 12.02 hrs

Flood Elev= 57.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	54.00'	12.0" Round Culvert L= 140.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 54.00' / 50.90' S= 0.0221 '/ Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.62 cfs @ 12.02 hrs HW=54.40' (Free Discharge)↑**1=Culvert** (Inlet Controls 0.62 cfs @ 2.14 fps)

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Page 38

Summary for Pond C8: (new Pond)

Inflow Area = 0.681 ac, 8.41% Impervious, Inflow Depth > 3.01" for 25 YEAR STORM event
 Inflow = 1.76 cfs @ 12.27 hrs, Volume= 0.171 af
 Outflow = 1.75 cfs @ 12.28 hrs, Volume= 0.171 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.75 cfs @ 12.28 hrs, Volume= 0.171 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 54.01' @ 12.28 hrs Surf.Area= 162 sf Storage= 2 cf
 Flood Elev= 56.00' Surf.Area= 200 sf Storage= 362 cf

Plug-Flow detention time= 0.0 min calculated for 0.171 af (100% of inflow)
 Center-of-Mass det. time= 0.0 min (804.1 - 804.1)

Volume	Invert	Avail.Storage	Storage Description
#1	54.00'	362 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
54.00	162	0	0
56.00	200	362	362

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 1' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.49 cfs @ 12.28 hrs HW=54.01' (Free Discharge)
 ↑1=Culvert (Barrel Controls 3.49 cfs @ 4.45 fps)

Summary for Pond CB21: (new Pond)

Inflow Area = 0.094 ac, 77.24% Impervious, Inflow Depth > 4.97" for 25 YEAR STORM event
 Inflow = 0.59 cfs @ 12.04 hrs, Volume= 0.039 af
 Outflow = 0.59 cfs @ 12.04 hrs, Volume= 0.039 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.59 cfs @ 12.04 hrs, Volume= 0.039 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 50.97' @ 12.04 hrs
 Flood Elev= 54.00'

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 1' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.57 cfs @ 12.04 hrs HW=50.96' (Free Discharge)
 ↑1=Culvert (Barrel Controls 0.57 cfs @ 2.35 fps)

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Page 39

Summary for Pond DMH2: (new Pond)

Inflow Area = 0.842 ac, 53.29% Impervious, Inflow Depth > 4.31" for 25 YEAR STORM event
 Inflow = 3.83 cfs @ 12.01 hrs, Volume= 0.303 af
 Outflow = 3.83 cfs @ 12.01 hrs, Volume= 0.303 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.83 cfs @ 12.01 hrs, Volume= 0.303 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 51.46' @ 12.01 hrs
 Flood Elev= 54.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	48.60'	12.0" Round Culvert L= 70.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.60' / 48.00' S= 0.0086 '/ Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.69 cfs @ 12.01 hrs HW=51.30' (Free Discharge)
 ↑1=Culvert (Barrel Controls 3.69 cfs @ 4.70 fps)

Summary for Pond SDMH1: (new Pond)

Inflow Area = 0.369 ac, 86.52% Impervious, Inflow Depth > 5.16" for 25 YEAR STORM event
 Inflow = 2.40 cfs @ 12.01 hrs, Volume= 0.159 af
 Outflow = 2.40 cfs @ 12.01 hrs, Volume= 0.159 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.40 cfs @ 12.01 hrs, Volume= 0.159 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 50.79' @ 12.01 hrs
 Flood Elev= 55.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	49.70'	12.0" Round Culvert L= 65.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.70' / 49.00' S= 0.0108 '/ Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.30 cfs @ 12.01 hrs HW=50.76' (Free Discharge)
 ↑1=Culvert (Barrel Controls 2.30 cfs @ 3.45 fps)

Summary for Link 1L:

Inflow Area = 18.913 ac, 22.92% Impervious, Inflow Depth > 3.21" for 25 YEAR STORM event
 Inflow = 24.78 cfs @ 12.50 hrs, Volume= 5.056 af
 Primary = 24.78 cfs @ 12.50 hrs, Volume= 5.056 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link 2L:

Inflow Area = 8.121 ac, 4.44% Impervious, Inflow Depth > 3.18" for 25 YEAR STORM event
Inflow = 15.84 cfs @ 12.57 hrs, Volume= 2.153 af
Primary = 15.84 cfs @ 12.57 hrs, Volume= 2.153 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link 3L: AP3

Inflow Area = 5.106 ac, 10.62% Impervious, Inflow Depth > 3.44" for 25 YEAR STORM event
Inflow = 18.16 cfs @ 12.15 hrs, Volume= 1.464 af
Primary = 18.16 cfs @ 12.15 hrs, Volume= 1.464 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

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Page 1

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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=454,925 sf 5.34% Impervious Runoff Depth>1.16" Flow Length=1,580' Tc=36.4 min CN=77 Runoff=7.89 cfs 1.014 af
Subcatchment 2S: (new Subcat)	Runoff Area=27,112 sf 9.08% Impervious Runoff Depth>0.96" Flow Length=174' Tc=1.5 min CN=73 Runoff=0.80 cfs 0.050 af
Subcatchment 3S: (new Subcat)	Runoff Area=11,232 sf 100.00% Impervious Runoff Depth>2.87" Flow Length=110' Slope=0.0200 '/ Tc=1.0 min CN=98 Runoff=0.92 cfs 0.062 af
Subcatchment 4S:	Runoff Area=353,765 sf 4.44% Impervious Runoff Depth>1.05" Flow Length=931' Tc=41.7 min CN=75 Runoff=5.10 cfs 0.709 af
Subcatchment 5S: (new Subcat)	Runoff Area=11,232 sf 100.00% Impervious Runoff Depth>2.87" Flow Length=110' Slope=0.0200 '/ Tc=1.0 min CN=98 Runoff=0.92 cfs 0.062 af
Subcatchment 6S: (new Subcat)	Runoff Area=5,303 sf 58.08% Impervious Runoff Depth>1.87" Flow Length=130' Tc=7.8 min CN=87 Runoff=0.26 cfs 0.019 af
Subcatchment 7S: (new Subcat)	Runoff Area=4,957 sf 64.60% Impervious Runoff Depth>1.96" Flow Length=135' Tc=1.6 min CN=88 Runoff=0.30 cfs 0.019 af
Subcatchment 8S: (new Subcat)	Runoff Area=11,232 sf 100.00% Impervious Runoff Depth>2.87" Flow Length=118' Slope=0.0200 '/ Tc=1.0 min CN=98 Runoff=0.92 cfs 0.062 af
Subcatchment 9S: (new Subcat)	Runoff Area=35,236 sf 34.99% Impervious Runoff Depth>1.36" Flow Length=213' Tc=12.3 min CN=80 Runoff=1.11 cfs 0.092 af
Subcatchment 10S: (new Subcat)	Runoff Area=4,855 sf 55.35% Impervious Runoff Depth>1.80" Flow Length=112' Tc=1.1 min CN=86 Runoff=0.28 cfs 0.017 af
Subcatchment 11S: (new Subcat)	Runoff Area=29,673 sf 8.41% Impervious Runoff Depth>0.95" Flow Length=263' Tc=19.7 min CN=73 Runoff=0.53 cfs 0.054 af
Subcatchment 12S: (new Subcat)	Runoff Area=23,728 sf 12.37% Impervious Runoff Depth>1.01" Flow Length=112' Tc=5.7 min CN=74 Runoff=0.67 cfs 0.046 af
Subcatchment 13S: (new Subcat)	Runoff Area=20,150 sf 22.94% Impervious Runoff Depth>1.18" Flow Length=118' Tc=1.2 min CN=77 Runoff=0.75 cfs 0.046 af
Subcatchment 14S: (new Subcat)	Runoff Area=4,099 sf 77.24% Impervious Runoff Depth>2.31" Flow Length=135' Slope=0.0200 '/ Tc=2.3 min CN=92 Runoff=0.29 cfs 0.018 af
Subcatchment 15Sa: (new Subcat)	Runoff Area=4,641 sf 81.77% Impervious Runoff Depth>2.40" Flow Length=50' Slope=0.0205 '/ Tc=0.7 min CN=93 Runoff=0.35 cfs 0.021 af
Subcatchment 15Sb: (new Subcat)	Runoff Area=5,452 sf 92.79% Impervious Runoff Depth>2.69" Flow Length=50' Slope=0.0205 '/ Tc=0.7 min CN=96 Runoff=0.44 cfs 0.028 af

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Page 2

Subcatchment 16Sa: (new Subcat)	Runoff Area=4,781 sf 90.86% Impervious Runoff Depth>2.69" Flow Length=50' Slope=0.0140 '/ Tc=0.8 min CN=96 Runoff=0.38 cfs 0.025 af
Subcatchment 16Sb: (new Subcat)	Runoff Area=8,457 sf 84.71% Impervious Runoff Depth>2.50" Flow Length=50' Slope=0.0140 '/ Tc=0.8 min CN=94 Runoff=0.65 cfs 0.040 af
Subcatchment 17Sa: (new Subcat)	Runoff Area=4,903 sf 90.70% Impervious Runoff Depth>2.59" Flow Length=50' Slope=0.0140 '/ Tc=0.8 min CN=95 Runoff=0.38 cfs 0.024 af
Subcatchment 17Sb: (new Subcat)	Runoff Area=7,891 sf 87.75% Impervious Runoff Depth>2.59" Flow Length=50' Slope=0.0140 '/ Tc=0.8 min CN=95 Runoff=0.62 cfs 0.039 af
Subcatchment 18Sa: (new Subcat)	Runoff Area=5,929 sf 84.87% Impervious Runoff Depth>2.50" Flow Length=50' Slope=0.0120 '/ Tc=0.9 min CN=94 Runoff=0.45 cfs 0.028 af
Subcatchment 18Sb: (new Subcat)	Runoff Area=12,880 sf 87.49% Impervious Runoff Depth>2.59" Flow Length=113' Slope=0.0120 '/ Tc=1.4 min CN=95 Runoff=0.98 cfs 0.064 af
Subcatchment 19S: (new Subcat)	Runoff Area=14,883 sf 2.69% Impervious Runoff Depth>0.90" Flow Length=156' Tc=12.2 min CN=72 Runoff=0.30 cfs 0.026 af
Subcatchment 20S: (new Subcat)	Runoff Area=16,320 sf 37.39% Impervious Runoff Depth>1.44" Flow Length=248' Tc=3.0 min CN=81 Runoff=0.74 cfs 0.045 af
Subcatchment 21S: (new Subcat)	Runoff Area=4,672 sf 100.00% Impervious Runoff Depth>2.87" Flow Length=25' Slope=0.0200 '/ Tc=0.4 min CN=98 Runoff=0.39 cfs 0.026 af
Subcatchment 22S: (new Subcat)	Runoff Area=6,181 sf 100.00% Impervious Runoff Depth>2.87" Flow Length=45' Slope=0.0200 '/ Tc=0.7 min CN=98 Runoff=0.51 cfs 0.034 af
Subcatchment 23S: (new Subcat)	Runoff Area=5,042 sf 100.00% Impervious Runoff Depth>2.87" Flow Length=26' Slope=0.0200 '/ Tc=0.4 min CN=98 Runoff=0.42 cfs 0.028 af
Subcatchment 24S: (new Subcat)	Runoff Area=16,999 sf 31.84% Impervious Runoff Depth>1.37" Flow Length=109' Tc=2.2 min CN=80 Runoff=0.74 cfs 0.045 af
Subcatchment 25S: (new Subcat)	Runoff Area=12,823 sf 37.36% Impervious Runoff Depth>1.44" Flow Length=71' Tc=3.7 min CN=81 Runoff=0.57 cfs 0.035 af
Subcatchment 26S: (new Subcat)	Runoff Area=192,577 sf 6.97% Impervious Runoff Depth>1.24" Flow Length=615' Tc=9.9 min CN=78 Runoff=5.93 cfs 0.456 af
Subcatchment 27aS: (new Subcat)	Runoff Area=4,059 sf 52.35% Impervious Runoff Depth>1.96" Flow Length=68' Tc=0.8 min CN=88 Runoff=0.26 cfs 0.015 af
Subcatchment 27bS: (new Subcat)	Runoff Area=10,256 sf 42.33% Impervious Runoff Depth>1.80" Tc=0.0 min CN=86 Runoff=0.61 cfs 0.035 af
Subcatchment 28S: (new Subcat)	Runoff Area=63,751 sf 26.54% Impervious Runoff Depth>1.23" Flow Length=361' Tc=18.7 min CN=78 Runoff=1.56 cfs 0.151 af
Reach 2R: (new Reach)	Avg. Flow Depth=0.05' Max Vel=0.14 fps Inflow=0.76 cfs 0.404 af n=0.150 L=700.0' S=0.0114 '/ Capacity=104.19 cfs Outflow=0.62 cfs 0.301 af

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Page 3

Reach 3R: (new Reach)	Avg. Flow Depth=0.03' Max Vel=0.13 fps Inflow=0.35 cfs 0.245 af n=0.150 L=850.0' S=0.0212 '/ Capacity=141.83 cfs Outflow=0.33 cfs 0.167 af
Reach 6R: (new Reach)	Avg. Flow Depth=0.03' Max Vel=0.12 fps Inflow=1.56 cfs 0.150 af n=0.150 L=1,128.0' S=0.0160 '/ Capacity=123.12 cfs Outflow=0.32 cfs 0.097 af
Pond 1P: (new Pond)	Peak Elev=48.78' Storage=3,637 cf Inflow=3.18 cfs 0.208 af Outflow=0.28 cfs 0.207 af
Pond 2P: (new Pond)	Peak Elev=47.65' Storage=11,467 cf Inflow=6.56 cfs 0.568 af Outflow=0.76 cfs 0.404 af
Pond 3P: (new Pond)	Peak Elev=48.74' Storage=4,390 cf Inflow=3.81 cfs 0.246 af Outflow=0.35 cfs 0.245 af
Pond 4P: (new Pond)	Peak Elev=57.31' Storage=1,602 cf Inflow=0.91 cfs 0.075 af Outflow=0.08 cfs 0.054 af
Pond 5P: (new Pond)	Peak Elev=58.51' Storage=449 cf Inflow=0.57 cfs 0.035 af 12.0" Round Culvert n=0.013 L=70.0' S=0.0171 '/ Outflow=0.31 cfs 0.031 af
Pond 28P: (new Pond)	Peak Elev=51.25' Inflow=0.26 cfs 0.015 af 12.0" Round Culvert n=0.013 L=140.0' S=0.0171 '/ Outflow=0.26 cfs 0.015 af
Pond C1: (new Pond)	Peak Elev=51.51' Inflow=0.92 cfs 0.062 af 12.0" Round Culvert n=0.020 L=53.0' S=0.0189 '/ Outflow=0.92 cfs 0.062 af
Pond C10a: (new Pond)	Peak Elev=51.74' Inflow=2.54 cfs 0.163 af 12.0" Round Culvert n=0.020 L=140.0' S=0.0200 '/ Outflow=2.54 cfs 0.163 af
Pond C10b: (new Pond)	Peak Elev=53.44' Inflow=1.81 cfs 0.133 af 12.0" Round Culvert n=0.020 L=127.0' S=0.0315 '/ Outflow=1.81 cfs 0.133 af
Pond C11a: (new Pond)	Peak Elev=55.94' Inflow=2.20 cfs 0.141 af 12.0" Round Culvert n=0.020 L=60.0' S=0.0100 '/ Outflow=2.20 cfs 0.141 af
Pond C11b: (new Pond)	Peak Elev=54.83' Inflow=1.38 cfs 0.105 af 12.0" Round Culvert n=0.020 L=73.0' S=0.0192 '/ Outflow=1.38 cfs 0.105 af
Pond C12a: (new Pond)	Peak Elev=56.50' Inflow=1.81 cfs 0.117 af 12.0" Round Culvert n=0.020 L=60.0' S=0.0100 '/ Outflow=1.81 cfs 0.117 af
Pond C12b: (new Pond)	Peak Elev=55.52' Inflow=0.73 cfs 0.065 af 12.0" Round Culvert n=0.020 L=70.0' S=0.0100 '/ Outflow=0.73 cfs 0.065 af
Pond C13a: (new Pond)	Peak Elev=57.27' Inflow=1.43 cfs 0.092 af 12.0" Round Culvert n=0.020 L=80.0' S=0.0100 '/ Outflow=1.43 cfs 0.092 af
Pond C13b: (new Pond)	Peak Elev=58.00' Inflow=0.98 cfs 0.064 af 12.0" Round Culvert n=0.020 L=70.0' S=0.0114 '/ Outflow=0.98 cfs 0.064 af

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Page 4

Pond C14: (new Pond)	Peak Elev=57.02'	Inflow=0.30 cfs	0.026 af
12.0" Round Culvert	n=0.020	L=150.0'	S=0.0107 '/ Outflow=0.30 cfs 0.026 af
Pond C15: (new Pond)	Peak Elev=51.49'	Inflow=1.94 cfs	0.132 af
12.0" Round Culvert	n=0.020	L=60.0'	S=0.0083 '/ Outflow=1.94 cfs 0.132 af
Pond C17: (new Pond)	Peak Elev=52.62'	Inflow=1.33 cfs	0.087 af
12.0" Round Culvert	n=0.020	L=80.0'	S=0.0187 '/ Outflow=1.33 cfs 0.087 af
Pond C18: (new Pond)	Peak Elev=54.09'	Inflow=0.94 cfs	0.062 af
12.0" Round Culvert	n=0.020	L=140.0'	S=0.0100 '/ Outflow=0.94 cfs 0.062 af
Pond C19: (new Pond)	Peak Elev=54.89'	Inflow=0.42 cfs	0.028 af
12.0" Round Culvert	n=0.020	L=90.0'	S=0.0100 '/ Outflow=0.42 cfs 0.028 af
Pond C2: (new Pond)	Peak Elev=52.27'	Inflow=0.30 cfs	0.019 af
12.0" Round Culvert	n=0.020	L=63.0'	S=0.0317 '/ Outflow=0.30 cfs 0.019 af
Pond C20: (new Pond)	Peak Elev=52.00'	Storage=1 cf	Inflow=0.86 cfs 0.051 af
12.0" Round Culvert	n=0.020	L=60.0'	S=0.0083 '/ Outflow=0.86 cfs 0.051 af
Pond C21: (new Pond)	Peak Elev=52.69'	Storage=138 cf	Inflow=1.56 cfs 0.151 af
15.0" Round Culvert	n=0.020	L=60.0'	S=0.0333 '/ Outflow=1.56 cfs 0.150 af
Pond C3: (new Pond)	Peak Elev=49.39'	Inflow=0.92 cfs	0.062 af
12.0" Round Culvert	n=0.020	L=50.0'	S=0.0100 '/ Outflow=0.92 cfs 0.062 af
Pond C4: (new Pond)	Peak Elev=48.83'	Inflow=1.08 cfs	0.081 af
12.0" Round Culvert	n=0.020	L=60.0'	S=0.0117 '/ Outflow=1.08 cfs 0.081 af
Pond C5: (new Pond)	Peak Elev=51.55'	Inflow=1.11 cfs	0.092 af
12.0" Round Culvert	n=0.020	L=80.0'	S=0.0250 '/ Outflow=1.11 cfs 0.092 af
Pond C6: (new Pond)	Peak Elev=51.49'	Inflow=1.20 cfs	0.078 af
12.0" Round Culvert	n=0.020	L=100.0'	S=0.0100 '/ Outflow=1.20 cfs 0.078 af
Pond C7: (new Pond)	Peak Elev=54.26'	Inflow=0.28 cfs	0.017 af
12.0" Round Culvert	n=0.020	L=140.0'	S=0.0221 '/ Outflow=0.28 cfs 0.017 af
Pond C8: (new Pond)	Peak Elev=54.00'	Storage=0 cf	Inflow=0.53 cfs 0.054 af
12.0" Round Culvert	n=0.020	L=150.0'	S=0.0120 '/ Outflow=0.53 cfs 0.054 af
Pond CB21: (new Pond)	Peak Elev=50.82'	Inflow=0.29 cfs	0.018 af
12.0" Round Culvert	n=0.020	L=50.0'	S=0.0100 '/ Outflow=0.29 cfs 0.018 af
Pond DMH2: (new Pond)	Peak Elev=49.53'	Inflow=1.81 cfs	0.133 af
12.0" Round Culvert	n=0.020	L=70.0'	S=0.0086 '/ Outflow=1.81 cfs 0.133 af
Pond SDMH1: (new Pond)	Peak Elev=50.38'	Inflow=1.20 cfs	0.078 af
12.0" Round Culvert	n=0.020	L=65.0'	S=0.0108 '/ Outflow=1.20 cfs 0.078 af
Link 1L:		Inflow=8.39 cfs	1.786 af
		Primary=8.39 cfs	1.786 af

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Page 5

Link 2L:

Inflow=5.10 cfs 0.709 af
Primary=5.10 cfs 0.709 af

Link 3L: AP3

Inflow=6.00 cfs 0.510 af
Primary=6.00 cfs 0.510 af

Total Runoff Area = 32.139 ac Runoff Volume = 3.431 af Average Runoff Depth = 1.28"
83.71% Pervious = 26.903 ac 16.29% Impervious = 5.237 ac

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Page 6

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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=454,925 sf 5.34% Impervious Runoff Depth>2.34"
Flow Length=1,580' Tc=36.4 min CN=77 Runoff=16.01 cfs 2.033 af

Subcatchment 2S: (new Subcat) Runoff Area=27,112 sf 9.08% Impervious Runoff Depth>2.04"
Flow Length=174' Tc=1.5 min CN=73 Runoff=1.75 cfs 0.106 af

Subcatchment 3S: (new Subcat) Runoff Area=11,232 sf 100.00% Impervious Runoff Depth>4.33"
Flow Length=110' Slope=0.0200 '/ Tc=1.0 min CN=98 Runoff=1.38 cfs 0.093 af

Subcatchment 4S: Runoff Area=353,765 sf 4.44% Impervious Runoff Depth>2.17"
Flow Length=931' Tc=41.7 min CN=75 Runoff=10.79 cfs 1.467 af

Subcatchment 5S: (new Subcat) Runoff Area=11,232 sf 100.00% Impervious Runoff Depth>4.33"
Flow Length=110' Slope=0.0200 '/ Tc=1.0 min CN=98 Runoff=1.38 cfs 0.093 af

Subcatchment 6S: (new Subcat) Runoff Area=5,303 sf 58.08% Impervious Runoff Depth>3.27"
Flow Length=130' Tc=7.8 min CN=87 Runoff=0.45 cfs 0.033 af

Subcatchment 7S: (new Subcat) Runoff Area=4,957 sf 64.60% Impervious Runoff Depth>3.37"
Flow Length=135' Tc=1.6 min CN=88 Runoff=0.51 cfs 0.032 af

Subcatchment 8S: (new Subcat) Runoff Area=11,232 sf 100.00% Impervious Runoff Depth>4.33"
Flow Length=118' Slope=0.0200 '/ Tc=1.0 min CN=98 Runoff=1.38 cfs 0.093 af

Subcatchment 9S: (new Subcat) Runoff Area=35,236 sf 34.99% Impervious Runoff Depth>2.61"
Flow Length=213' Tc=12.3 min CN=80 Runoff=2.15 cfs 0.176 af

Subcatchment 10S: (new Subcat) Runoff Area=4,855 sf 55.35% Impervious Runoff Depth>3.18"
Flow Length=112' Tc=1.1 min CN=86 Runoff=0.48 cfs 0.030 af

Subcatchment 11S: (new Subcat) Runoff Area=29,673 sf 8.41% Impervious Runoff Depth>2.03"
Flow Length=263' Tc=19.7 min CN=73 Runoff=1.17 cfs 0.115 af

Subcatchment 12S: (new Subcat) Runoff Area=23,728 sf 12.37% Impervious Runoff Depth>2.12"
Flow Length=112' Tc=5.7 min CN=74 Runoff=1.43 cfs 0.096 af

Subcatchment 13S: (new Subcat) Runoff Area=20,150 sf 22.94% Impervious Runoff Depth>2.37"
Flow Length=118' Tc=1.2 min CN=77 Runoff=1.52 cfs 0.091 af

Subcatchment 14S: (new Subcat) Runoff Area=4,099 sf 77.24% Impervious Runoff Depth>3.78"
Flow Length=135' Slope=0.0200 '/ Tc=2.3 min CN=92 Runoff=0.46 cfs 0.030 af

Subcatchment 15Sa: (new Subcat) Runoff Area=4,641 sf 81.77% Impervious Runoff Depth>3.88"
Flow Length=50' Slope=0.0205 '/ Tc=0.7 min CN=93 Runoff=0.54 cfs 0.034 af

Subcatchment 15Sb: (new Subcat) Runoff Area=5,452 sf 92.79% Impervious Runoff Depth>4.16"
Flow Length=50' Slope=0.0205 '/ Tc=0.7 min CN=96 Runoff=0.67 cfs 0.043 af

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Type III 24-hr 10 YEAR STORM Rainfall=4.90"

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Page 7

Subcatchment 16Sa: (new Subcat)	Runoff Area=4,781 sf 90.86% Impervious Runoff Depth>4.16" Flow Length=50' Slope=0.0140 '/ Tc=0.8 min CN=96 Runoff=0.58 cfs 0.038 af
Subcatchment 16Sb: (new Subcat)	Runoff Area=8,457 sf 84.71% Impervious Runoff Depth>3.97" Flow Length=50' Slope=0.0140 '/ Tc=0.8 min CN=94 Runoff=1.00 cfs 0.064 af
Subcatchment 17Sa: (new Subcat)	Runoff Area=4,903 sf 90.70% Impervious Runoff Depth>4.07" Flow Length=50' Slope=0.0140 '/ Tc=0.8 min CN=95 Runoff=0.59 cfs 0.038 af
Subcatchment 17Sb: (new Subcat)	Runoff Area=7,891 sf 87.75% Impervious Runoff Depth>4.07" Flow Length=50' Slope=0.0140 '/ Tc=0.8 min CN=95 Runoff=0.95 cfs 0.061 af
Subcatchment 18Sa: (new Subcat)	Runoff Area=5,929 sf 84.87% Impervious Runoff Depth>3.97" Flow Length=50' Slope=0.0120 '/ Tc=0.9 min CN=94 Runoff=0.70 cfs 0.045 af
Subcatchment 18Sb: (new Subcat)	Runoff Area=12,880 sf 87.49% Impervious Runoff Depth>4.07" Flow Length=113' Slope=0.0120 '/ Tc=1.4 min CN=95 Runoff=1.51 cfs 0.100 af
Subcatchment 19S: (new Subcat)	Runoff Area=14,883 sf 2.69% Impervious Runoff Depth>1.95" Flow Length=156' Tc=12.2 min CN=72 Runoff=0.67 cfs 0.056 af
Subcatchment 20S: (new Subcat)	Runoff Area=16,320 sf 37.39% Impervious Runoff Depth>2.71" Flow Length=248' Tc=3.0 min CN=81 Runoff=1.38 cfs 0.085 af
Subcatchment 21S: (new Subcat)	Runoff Area=4,672 sf 100.00% Impervious Runoff Depth>4.33" Flow Length=25' Slope=0.0200 '/ Tc=0.4 min CN=98 Runoff=0.59 cfs 0.039 af
Subcatchment 22S: (new Subcat)	Runoff Area=6,181 sf 100.00% Impervious Runoff Depth>4.33" Flow Length=45' Slope=0.0200 '/ Tc=0.7 min CN=98 Runoff=0.77 cfs 0.051 af
Subcatchment 23S: (new Subcat)	Runoff Area=5,042 sf 100.00% Impervious Runoff Depth>4.33" Flow Length=26' Slope=0.0200 '/ Tc=0.4 min CN=98 Runoff=0.63 cfs 0.042 af
Subcatchment 24S: (new Subcat)	Runoff Area=16,999 sf 31.84% Impervious Runoff Depth>2.62" Flow Length=109' Tc=2.2 min CN=80 Runoff=1.41 cfs 0.085 af
Subcatchment 25S: (new Subcat)	Runoff Area=12,823 sf 37.36% Impervious Runoff Depth>2.71" Flow Length=71' Tc=3.7 min CN=81 Runoff=1.06 cfs 0.066 af
Subcatchment 26S: (new Subcat)	Runoff Area=192,577 sf 6.97% Impervious Runoff Depth>2.44" Flow Length=615' Tc=9.9 min CN=78 Runoff=11.79 cfs 0.900 af
Subcatchment 27aS: (new Subcat)	Runoff Area=4,059 sf 52.35% Impervious Runoff Depth>3.38" Flow Length=68' Tc=0.8 min CN=88 Runoff=0.43 cfs 0.026 af
Subcatchment 27bS: (new Subcat)	Runoff Area=10,256 sf 42.33% Impervious Runoff Depth>3.18" Tc=0.0 min CN=86 Runoff=1.05 cfs 0.062 af
Subcatchment 28S: (new Subcat)	Runoff Area=63,751 sf 26.54% Impervious Runoff Depth>2.44" Flow Length=361' Tc=18.7 min CN=78 Runoff=3.11 cfs 0.297 af
Reach 2R: (new Reach)	Avg. Flow Depth=0.12' Max Vel=0.25 fps Inflow=4.52 cfs 0.786 af n=0.150 L=700.0' S=0.0114 '/ Capacity=104.19 cfs Outflow=2.77 cfs 0.702 af

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Page 8

Reach 3R: (new Reach)	Avg. Flow Depth=0.03' Max Vel=0.14 fps Inflow=0.39 cfs 0.319 af n=0.150 L=850.0' S=0.0212 '/ Capacity=141.83 cfs Outflow=0.38 cfs 0.216 af
Reach 6R: (new Reach)	Avg. Flow Depth=0.06' Max Vel=0.18 fps Inflow=3.10 cfs 0.296 af n=0.150 L=1,128.0' S=0.0160 '/ Capacity=123.12 cfs Outflow=0.91 cfs 0.235 af
Pond 1P: (new Pond)	Peak Elev=49.45' Storage=7,323 cf Inflow=5.45 cfs 0.353 af Outflow=0.33 cfs 0.268 af
Pond 2P: (new Pond)	Peak Elev=48.20' Storage=15,906 cf Inflow=10.91 cfs 0.994 af Outflow=4.52 cfs 0.786 af
Pond 3P: (new Pond)	Peak Elev=49.44' Storage=8,996 cf Inflow=6.57 cfs 0.426 af Outflow=0.39 cfs 0.319 af
Pond 4P: (new Pond)	Peak Elev=57.83' Storage=2,388 cf Inflow=1.94 cfs 0.147 af Outflow=0.76 cfs 0.112 af
Pond 5P: (new Pond)	Peak Elev=58.69' Storage=650 cf Inflow=1.06 cfs 0.066 af 12.0" Round Culvert n=0.013 L=70.0' S=0.0171 '/ Outflow=0.71 cfs 0.062 af
Pond 28P: (new Pond)	Peak Elev=51.32' Inflow=0.43 cfs 0.026 af 12.0" Round Culvert n=0.013 L=140.0' S=0.0171 '/ Outflow=0.43 cfs 0.026 af
Pond C1: (new Pond)	Peak Elev=51.64' Inflow=1.38 cfs 0.093 af 12.0" Round Culvert n=0.020 L=53.0' S=0.0189 '/ Outflow=1.38 cfs 0.093 af
Pond C10a: (new Pond)	Peak Elev=53.49' Inflow=3.91 cfs 0.256 af 12.0" Round Culvert n=0.020 L=140.0' S=0.0200 '/ Outflow=3.91 cfs 0.256 af
Pond C10b: (new Pond)	Peak Elev=53.79' Inflow=2.92 cfs 0.225 af 12.0" Round Culvert n=0.020 L=127.0' S=0.0315 '/ Outflow=2.92 cfs 0.225 af
Pond C11a: (new Pond)	Peak Elev=57.00' Inflow=3.37 cfs 0.222 af 12.0" Round Culvert n=0.020 L=60.0' S=0.0100 '/ Outflow=3.37 cfs 0.222 af
Pond C11b: (new Pond)	Peak Elev=55.07' Inflow=2.26 cfs 0.181 af 12.0" Round Culvert n=0.020 L=73.0' S=0.0192 '/ Outflow=2.26 cfs 0.181 af
Pond C12a: (new Pond)	Peak Elev=57.14' Inflow=2.79 cfs 0.184 af 12.0" Round Culvert n=0.020 L=60.0' S=0.0100 '/ Outflow=2.79 cfs 0.184 af
Pond C12b: (new Pond)	Peak Elev=55.71' Inflow=1.26 cfs 0.117 af 12.0" Round Culvert n=0.020 L=70.0' S=0.0100 '/ Outflow=1.26 cfs 0.117 af
Pond C13a: (new Pond)	Peak Elev=57.54' Inflow=2.20 cfs 0.145 af 12.0" Round Culvert n=0.020 L=80.0' S=0.0100 '/ Outflow=2.20 cfs 0.145 af
Pond C13b: (new Pond)	Peak Elev=58.17' Inflow=1.51 cfs 0.100 af 12.0" Round Culvert n=0.020 L=70.0' S=0.0114 '/ Outflow=1.51 cfs 0.100 af

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Page 9

Pond C14: (new Pond)	Peak Elev=57.19' Inflow=0.67 cfs 0.056 af 12.0" Round Culvert n=0.020 L=150.0' S=0.0107 '/ Outflow=0.67 cfs 0.056 af
Pond C15: (new Pond)	Peak Elev=52.50' Inflow=3.17 cfs 0.216 af 12.0" Round Culvert n=0.020 L=60.0' S=0.0083 '/ Outflow=3.17 cfs 0.216 af
Pond C17: (new Pond)	Peak Elev=52.80' Inflow=1.98 cfs 0.132 af 12.0" Round Culvert n=0.020 L=80.0' S=0.0187 '/ Outflow=1.98 cfs 0.132 af
Pond C18: (new Pond)	Peak Elev=54.25' Inflow=1.40 cfs 0.093 af 12.0" Round Culvert n=0.020 L=140.0' S=0.0100 '/ Outflow=1.40 cfs 0.093 af
Pond C19: (new Pond)	Peak Elev=54.98' Inflow=0.63 cfs 0.042 af 12.0" Round Culvert n=0.020 L=90.0' S=0.0100 '/ Outflow=0.63 cfs 0.042 af
Pond C2: (new Pond)	Peak Elev=52.36' Inflow=0.51 cfs 0.032 af 12.0" Round Culvert n=0.020 L=63.0' S=0.0317 '/ Outflow=0.51 cfs 0.032 af
Pond C20: (new Pond)	Peak Elev=52.01' Storage=1 cf Inflow=1.48 cfs 0.089 af 12.0" Round Culvert n=0.020 L=60.0' S=0.0083 '/ Outflow=1.48 cfs 0.089 af
Pond C21: (new Pond)	Peak Elev=53.07' Storage=213 cf Inflow=3.11 cfs 0.297 af 15.0" Round Culvert n=0.020 L=60.0' S=0.0333 '/ Outflow=3.10 cfs 0.296 af
Pond C3: (new Pond)	Peak Elev=49.55' Inflow=1.38 cfs 0.093 af 12.0" Round Culvert n=0.020 L=50.0' S=0.0100 '/ Outflow=1.38 cfs 0.093 af
Pond C4: (new Pond)	Peak Elev=49.02' Inflow=1.66 cfs 0.126 af 12.0" Round Culvert n=0.020 L=60.0' S=0.0117 '/ Outflow=1.66 cfs 0.126 af
Pond C5: (new Pond)	Peak Elev=51.83' Inflow=2.15 cfs 0.176 af 12.0" Round Culvert n=0.020 L=80.0' S=0.0250 '/ Outflow=2.15 cfs 0.176 af
Pond C6: (new Pond)	Peak Elev=51.71' Inflow=1.86 cfs 0.123 af 12.0" Round Culvert n=0.020 L=100.0' S=0.0100 '/ Outflow=1.86 cfs 0.123 af
Pond C7: (new Pond)	Peak Elev=54.35' Inflow=0.48 cfs 0.030 af 12.0" Round Culvert n=0.020 L=140.0' S=0.0221 '/ Outflow=0.48 cfs 0.030 af
Pond C8: (new Pond)	Peak Elev=54.01' Storage=1 cf Inflow=1.17 cfs 0.115 af 12.0" Round Culvert n=0.020 L=150.0' S=0.0120 '/ Outflow=1.17 cfs 0.115 af
Pond CB21: (new Pond)	Peak Elev=50.91' Inflow=0.46 cfs 0.030 af 12.0" Round Culvert n=0.020 L=50.0' S=0.0100 '/ Outflow=0.46 cfs 0.030 af
Pond DMH2: (new Pond)	Peak Elev=50.43' Inflow=2.92 cfs 0.225 af 12.0" Round Culvert n=0.020 L=70.0' S=0.0086 '/ Outflow=2.92 cfs 0.225 af
Pond SDMH1: (new Pond)	Peak Elev=50.60' Inflow=1.86 cfs 0.123 af 12.0" Round Culvert n=0.020 L=65.0' S=0.0108 '/ Outflow=1.86 cfs 0.123 af
Link 1L:	Inflow=16.78 cfs 3.454 af Primary=16.78 cfs 3.454 af

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Page 10

Link 2L:

Inflow=10.79 cfs 1.467 af
Primary=10.79 cfs 1.467 af

Link 3L: AP3

Inflow=11.86 cfs 1.012 af
Primary=11.86 cfs 1.012 af

Total Runoff Area = 32.139 ac Runoff Volume = 6.622 af Average Runoff Depth = 2.47"
83.71% Pervious = 26.903 ac 16.29% Impervious = 5.237 ac

BMP CALCULATIONS

TABLE 1 - QUANTITY CALCULATIONS **STORM EVENT**

		<u>2</u>	<u>10</u>	<u>25</u>
EXISTING	AP 1	13.4	27.2	39.21
	AP 2	6.26	13.24	19.43
	AP 3	6.28	12.74	18.35

DEVELOPED	AP 1	8.36	16.76	24.77
	AP 2	5.10	10.79	15.84
	AP 3	6.00	11.86	18.16

CHANGE	AP 1	-5.04	-10.44	-14.44
	AP 2	-1.16	-2.45	-3.59
	AP 3	-0.28	-0.88	-0.19
	TOTAL	-6.48	-13.77	-18.22

POND SIZING CALCULATIONS

AREA	IMP. (ft ²)	LA. (ft ²)	RA. (ft ²)	BMP	CPV (ft ³)	P. POOL (ft ³)	CHECK
Pond 10				Soil Filter			
2S	2,463	24,649			1,027	N/A	
3S	11,232	0			936		
7S	3,202	1,755			325		
8S	11,232	0			936		
10S	2,687	2,168			296		
Total	30,816	28,572			3,520	N/A	
				5% Impervious + 2% Landscaped Area =	2,112		
				5% Impervious + 2% Remaining Area =	2,112		
				Provided CPV =	7,612		OK
				Provided Area =	4233		OK
Pond 20				Soil Filter			
5S	11,232	0			936	N/A	
6S	3,080	2,223			331		
9S	12,329	22,907			1,791		
11S	2,496	27,177			1,114		
12S	2,935	20,793			938		
15Sa	3,795	846			344		
15Sb	5,059	393			435		
16Sa	4,344	437			377		
16Sb	7,164	1,293			640		
17Sa	4,447	456			386		
17Sb	6,924	967			609		
18Sa	5,032	897			449		
18Sb	11,269	1,611			993		
19S	400	14,483			516		
Total	80,506	94,483	0		9,858	N/A	0.00
				5% Impervious + 2% Landscaped Area =	5,915		
				5% Impervious + 2% Remaining Area =			
				Provided CPV =	10,292		OK
				Provided Area =	6,059		OK
Pond 30				Soil Filter			
13S	4,623	15,527			903		
14S	3,166	933			295		
20S	6,102	10,218			849		
21S	4,672	0			389		
22S	6,181	0			515		
23S	5,402	0			450		
27Sa	2,125	1,934			242		
27Sb	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 =	9,439		OK
				Provided Area =	5,516		OK
Pond 40				Soil Filter			
24S	5,412	11,587			837		
25S	4,791	8,032			667		
Total	10,203	19,619			1,504	N/A	0.00
				5% Impervious + 2% Landscaped Area =	903		
				5% Impervious + 2% Remaining Area =	903		
				Provided CPV =	1,870		OK
				Provided Area =	1,032		OK

The Homestead - BMP Calculations

9/18/18

TREATMENT CALCULATIONS

New Impervious Area to be Treated @95% 165,250 sf
 New Developed Area to be Treated @80% 357,977 sf

3.79 Acres
 8.22 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		5,331		0	5,331	1,933	7,264	0	0	7,264
2S		2,463		2,463	0		24,649		24,649	0	2,463	27,112	0	27,112	0
3S		11,232		11,232	0		0		0	0	11,232	11,232	0	11,232	0
4S		0		0	0		0		0	0		0	0	0	0
5S		11,232		11,232	0		0		0	0		11,232	0	11,232	0
6S		3,080		3,080	0		2,223		2,223	0		5,303	0	5,303	0
7S		3,202		3,202	0		1,755		1,755	0		4,957	0	4,957	0
8S		11,232		11,232	0		0		0	0		11,232	0	11,232	0
9S		12,329		12,329	0		22,907		22,907	0		35,236	0	35,236	0
10S		2687		2687	0		2168		2168	0		4855	0	4855	0
11S		2496		2496	0		27177		27177	0		29673	0	29673	0
12S		2935		2935	0		20793		20793	0		23728	0	23728	0
13S		4623		4623	0		15527		15527	0		20150	0	20150	0
14S		3166		3166	0		933		933	0		4099	0	4099	0
15Sa		3795		3795	0		846		846	0		4641	0	4641	0
15Sb		5059		5059	0		393		393	0		5452	0	5452	0
16Sa		4344		4344	0		437		437	0		4781	0	4781	0
16Sb		7164		7164	0		1293		1293	0		8457	0	8457	0
17Sa		4447		4447	0		456		456	0		4903	0	4903	0
17Sb		6924		6924	0		967		967	0		7891	0	7891	0
18Sa		5032		5032	0		897		897	0		5929	0	5929	0
18Sb		11269		11269	0		1611		1611	0		12880	0	12880	0
19S		400		400	0		14483		14483	0		14883	0	14883	0
20S		6102		6102	0		10218		10218	0		16320	0	16320	0
21S		4672		4672	0		0		0	0		4672	0	4672	0
22S		6181		6181	0		0		0	0		6181	0	6181	0
23S		5402		5402	0		0		0	0		5402	0	5402	0
24S		5412		5412	0		11587		11587	0		16999	0	16999	0
25S		4791		4791	0		8032		8032	0		12823	0	12823	0
26S		0		0	0		1221		0	1221		1221	0	0	1221
27Sa		2125		2125	0		1934		1934	0		4059	0	4059	0
27Sb		4341		4341	0		5915		5915	0		10256	0	10256	0
28S		5180		0	5180		8974		0	8974		14154	0	0	14154
TOTAL	0	165,250	0	158,137	7,113	0	192,727	0	177,201	15,526	0	357,977	0	335,338	22,639

NEW

AREA	IMP. (ft ²)	DEV (ft ²)
Total Area	158137	335338
Total Acres	3.63	7.70
% Treated=	95.7%	93.7%

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 condominium association.

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 or detention ponds shall be avoided. 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.

Underdrained Soil Filters

The 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.

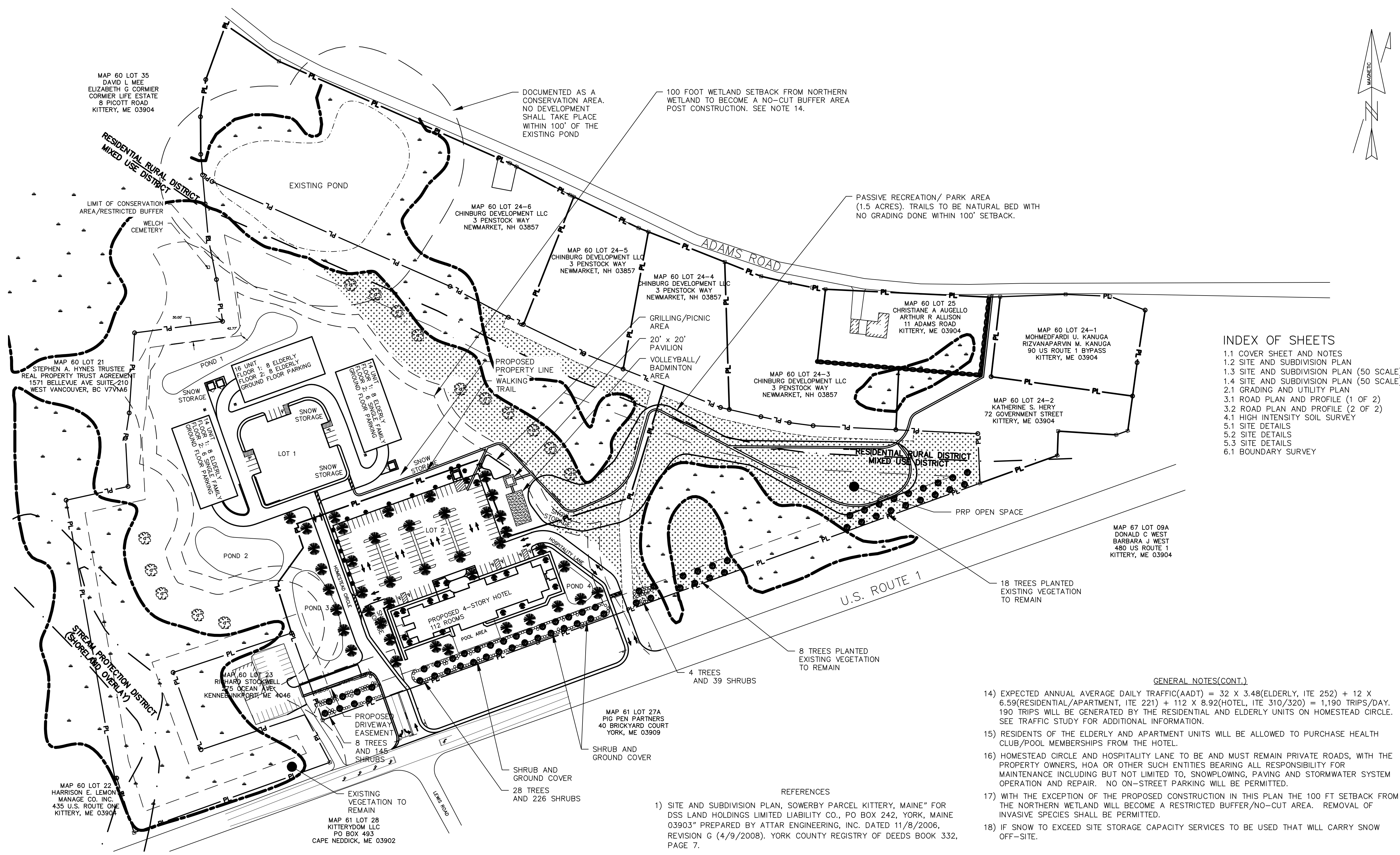
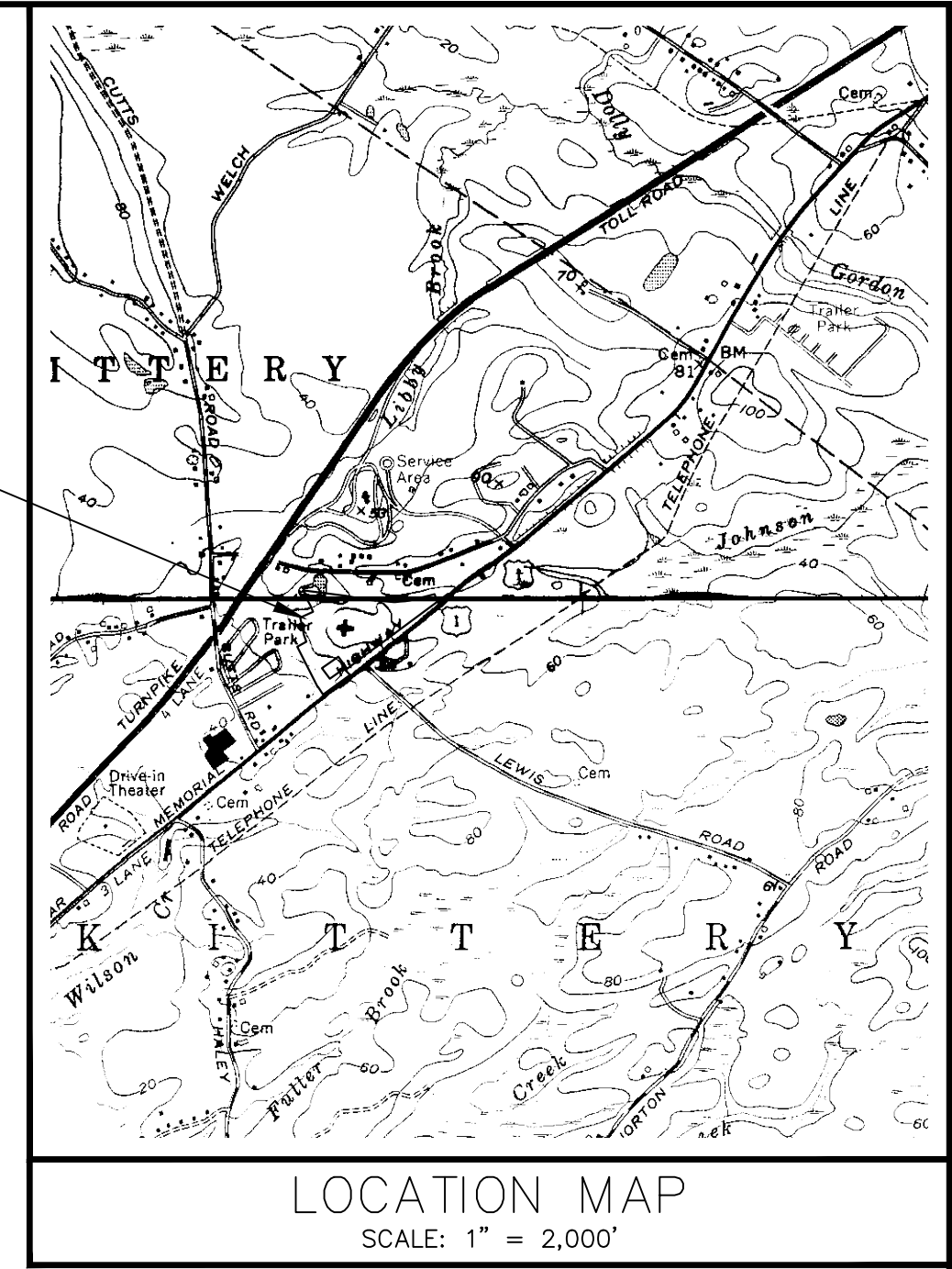
Record Keeping

Routine maintenance and inspections will be accomplished by the future property owner/developer [Michael Brigham, Landmark Hill, LLC; 79 Congress Street, Portsmouth, NH 03801, (603)-294-4000] until the condominium association had been formed and maintenance has been turned over to the association. At that time, routine maintenance and inspections will be the responsibility of the condominium association's maintenance staff or third party contracted by the property owner or condominium association. 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 condominium association, and be made available to the Department (Maine Department of Environmental Protection), upon request.

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.

THE HOMESTEAD SUBDIVISION

U.S. ROUTE 1, KITTERY, MAINE



- GENERAL NOTES**
- THIS PLAN PROVIDES DETAILS FOR A MIXED USE DEVELOPMENT AT 459 U.S. ROUTE 1 CONSISTING OF 32 SINGLE-FAMILY (ELDERLY) APARTMENTS AND 112 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 546,360 SF OF AREA AND 380' OF STREET FRONTAGE. LOT 2 HAS 330,015 SF OF AREA AND 1275' OF STREET FRONTAGE.
 - THIS SITE WAS PREVIOUSLY APPROVED AS THE SOWERBY MIXED-USE PROJECT IN 2008. SEE REF. 1.
 - 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.
 - 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'

PARKING IS CALCULATED AS FOLLOWS:

UNIT TYPE	NO. OF UNITS	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

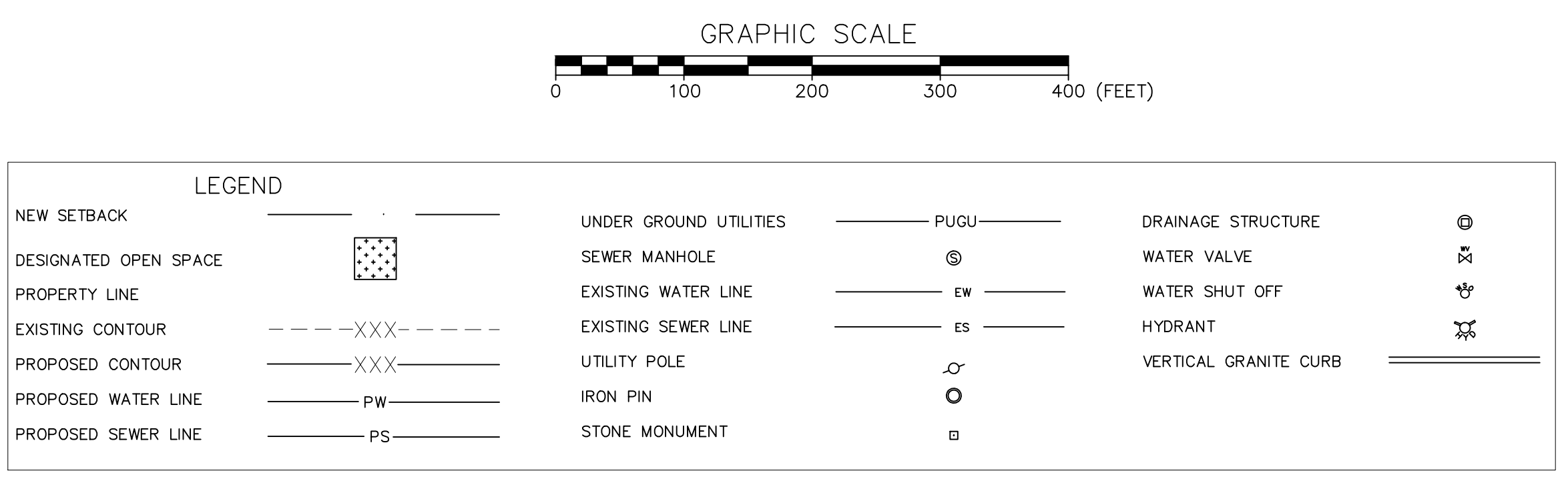
TOTAL PARCEL AREA	=	876,427.2 S.F.	=	20.12 AC.
LESS 50% OF WETLANDS SETBACK	=	137,495.6 S.F.	=	3.16 AC.
LESS UNSUITABLE SOILS*	=	200,630 S.F.	=	4.61 AC.
LESS RIGHTS OF WAY/EASEMENTS**	=	124,314 S.F.	=	2.85 AC.

NET RESIDENTIAL AREA = > 413,987.5 S.F. = 9.50 AC.
 *INCLUDES WETLANDS, POORLY DRAINED AND VERY POORLY DRAINED SOILS
 **INCLUDING TRAVELED WAYS AND PARKING
NET RESIDENTIAL DENSITY = 413,987.5 - (32 ELDR. X 10,000) - (12 SINGLE X 7,500) = 3987.5 => OK

- 7) MIXED-USE REQUIREMENT IS CALCULATED AS FOLLOWS:**
- | | | | | |
|---------------|---|------------------------|---|--|
| SINGLE-FAMILY | = | 11,232 S.F. X 2 FLOORS | = | 22,464 S.F. |
| ELDERLY | = | 11,232 S.F. X 4 FLOORS | = | 44,928 S.F. |
| HOTEL | = | 15,712 S.F. X 4 FLOORS | = | 62,848 S.F. |
| | | 22,464/130,240 | = | 17.2% WHICH IS GREATER THAN 10%(REQUIRED). |
- 8) 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. CUNEO, 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.**
- 9) TOTAL OPEN SPACE REQUIRED IS 35%, 25% OF OPEN SPACE MUST BE IN FRONT 50% OF THE PARCEL: 20.23 AC X 0.35 = 7.08 AC REQUIRED WITH 7.29 AC PROVIDED: 7.08 AC X 0.25 = 1.77 AC REQUIRED WITH 5.58 AC PROVIDED IN THE FRONT OF THE PARCEL.**
- 10) LANDSCAPING ALONG THE FRONTAGE OF US ROUTE 1 SHALL CONSIST OF A MIXTURE OF EVERGREEN AND DECIDUOUS TREES AND SHRUBS. TREES TO BE ON 25' C.L. SPACING AND A MIX OF 10 SHRUBS AND/OR FLOWERING PERENNIAL PLANT SPECIES FOR EVERY 40' OF FRONTAGE. 66 TOTAL TREES AND 410 SHRUBS TO BE PLANTED IN LANDSCAPED PLANTER STRIP ALONG STREET FRONTAGE. TREES TO BE A MINIMUM 2.5" CALIPER AND 12' HIGH AT TIME OF PLANTING.**
- 11) ALL BUILDINGS WILL BE SPRINKLED FOR FIRE PROTECTION.**
- 12) TOTAL AREA TO BE DISTURBED: 8.22 ACRES, TOTAL IMPERVIOUS AREA: 3.79 ACRES, TOTAL LOT STREET FRONTAGE 1655.7 FT.**
- 13) A 50' ZONE BOUNDARY EXTENSION IS REQUESTED FOR THE MIXED-USE BOUNDARY TO THE NORTH(SHOWN ON SITE PLAN).**

- 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)
 - 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(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. 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, HOA 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 RESTRICTED BUFFER/NO-CUT AREA. REMOVAL OF INVASIVE SPECIES SHALL BE PERMITTED.
 - 18) IF SNOW TO EXCEED SITE STORAGE CAPACITY SERVICES TO BE USED THAT WILL CARRY SNOW OFF-SITE.



TOWN OF KITTERY PLANNING BOARD

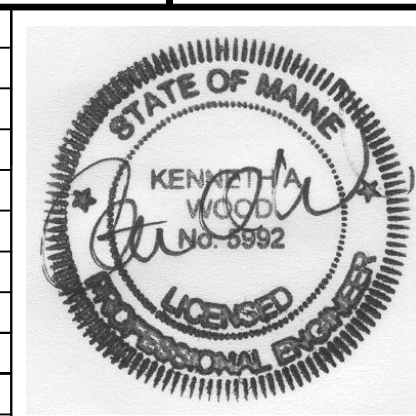
DATE _____

STATE OF MAINE
 YORK COUNTY ss. REGISTRY OF DEEDS
 RECEIVED _____ 20____
 AT _____ h. _____ m. _____ A.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
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



1.1

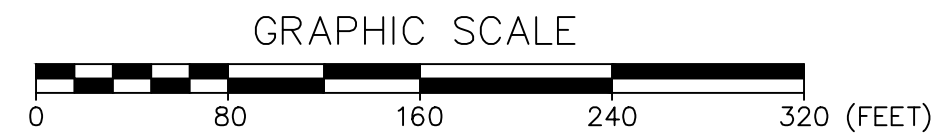
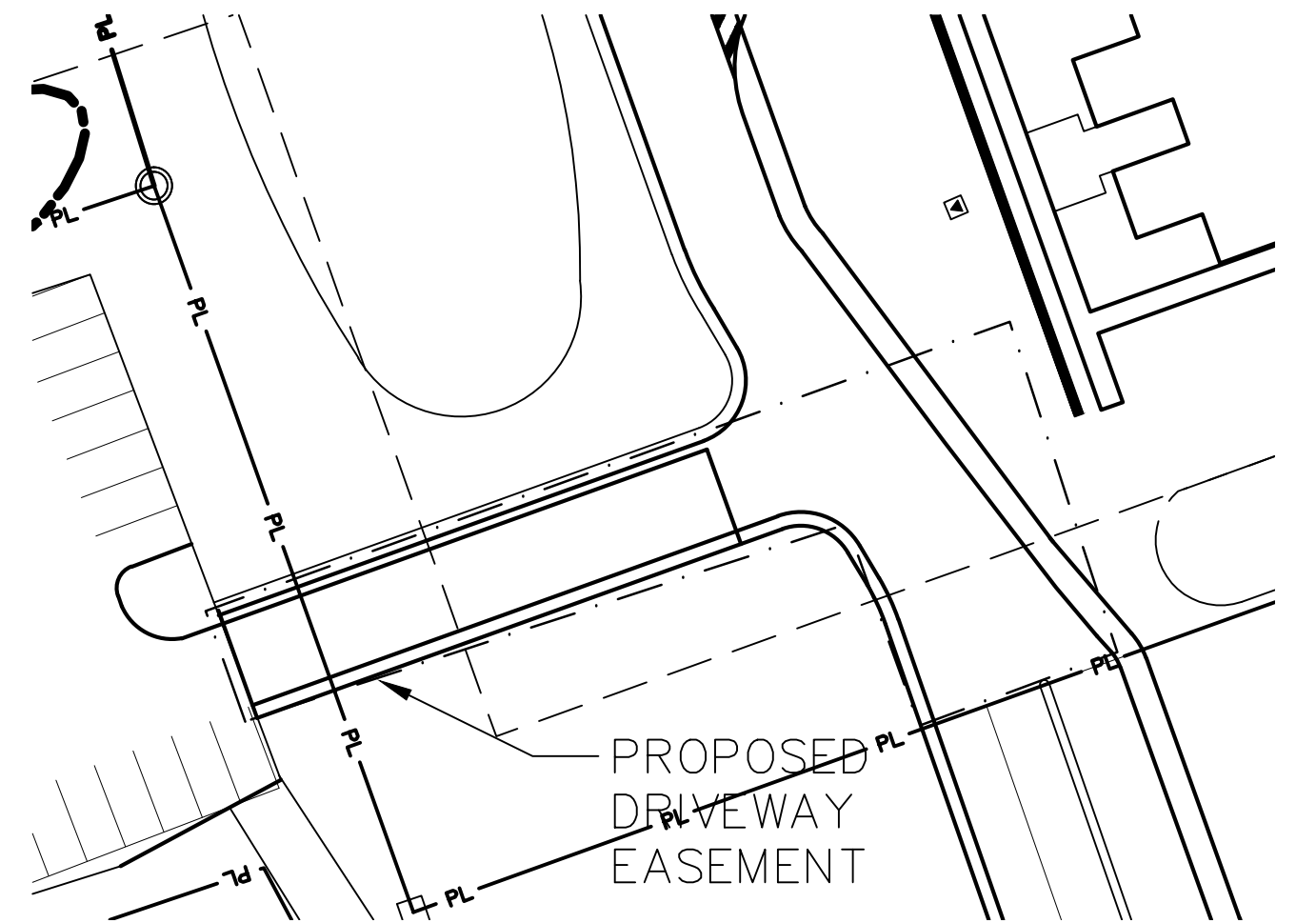
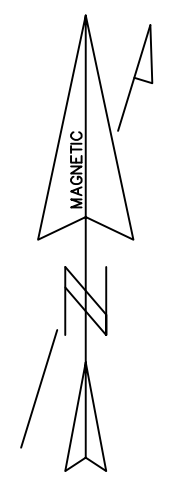
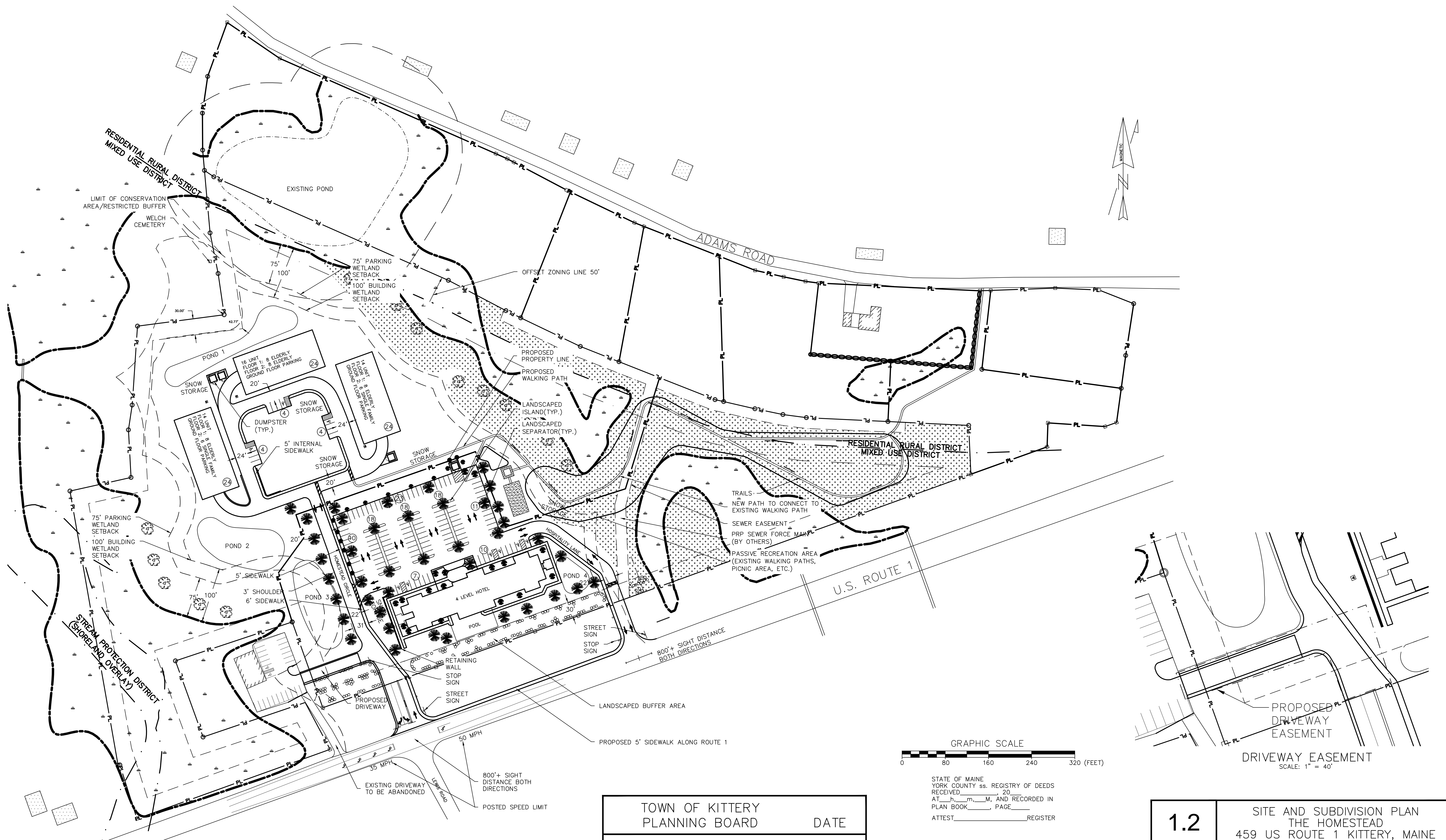
OVERALL SITE PLAN
 THE HOMESTEAD
 459 US ROUTE 1 KITTERY, MAINE

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

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

SCALE: 1" = 100'
 APPROVED BY: _____
 DATE: 02/08/2018
 DRAWN BY: BRN
 REVISION : DATE
 L: 9/20/2018

JOB NO: C052-18 FILE: THE HOMESTEAD BASE SHEET 1.1

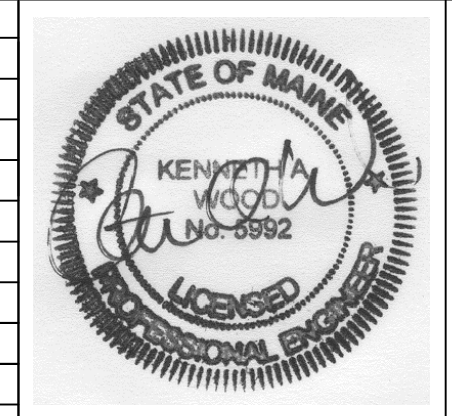


STATE OF MAINE
 YORK COUNTY ss. REGISTRY OF DEEDS
 RECEIVED _____ 20____
 AT _____ h. _____ m. _____ M. AND RECORDED IN
 PLAN BOOK _____, PAGE _____
 ATTEST _____ REGISTER

TOWN OF KITTERY PLANNING BOARD	DATE

LEGEND			
NEW SETBACK	—	UNDER GROUND UTILITIES	— PUGU —
DESIGNATED OPEN SPACE	[Stippled Area]	SEWER MANHOLE	⊙
PROPERTY LINE	— PL —	EXISTING WATER LINE	— EW —
EXISTING CONTOUR	--- XXX ---	EXISTING SEWER LINE	— ES —
PROPOSED CONTOUR	--- XXX ---	UTILITY POLE	⊙
PROPOSED WATER LINE	— PW —	IRON PIN	⊙
PROPOSED SEWER LINE	— PS —	STONE MONUMENT	⊙
		DRAINAGE STRUCTURE	⊙
		WATER VALVE	⊙
		WATER SHUT OFF	⊙
		HYDRANT	⊙
		VERTICAL GRANITE CURB	—

NO.	DESCRIPTION	DATE
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



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

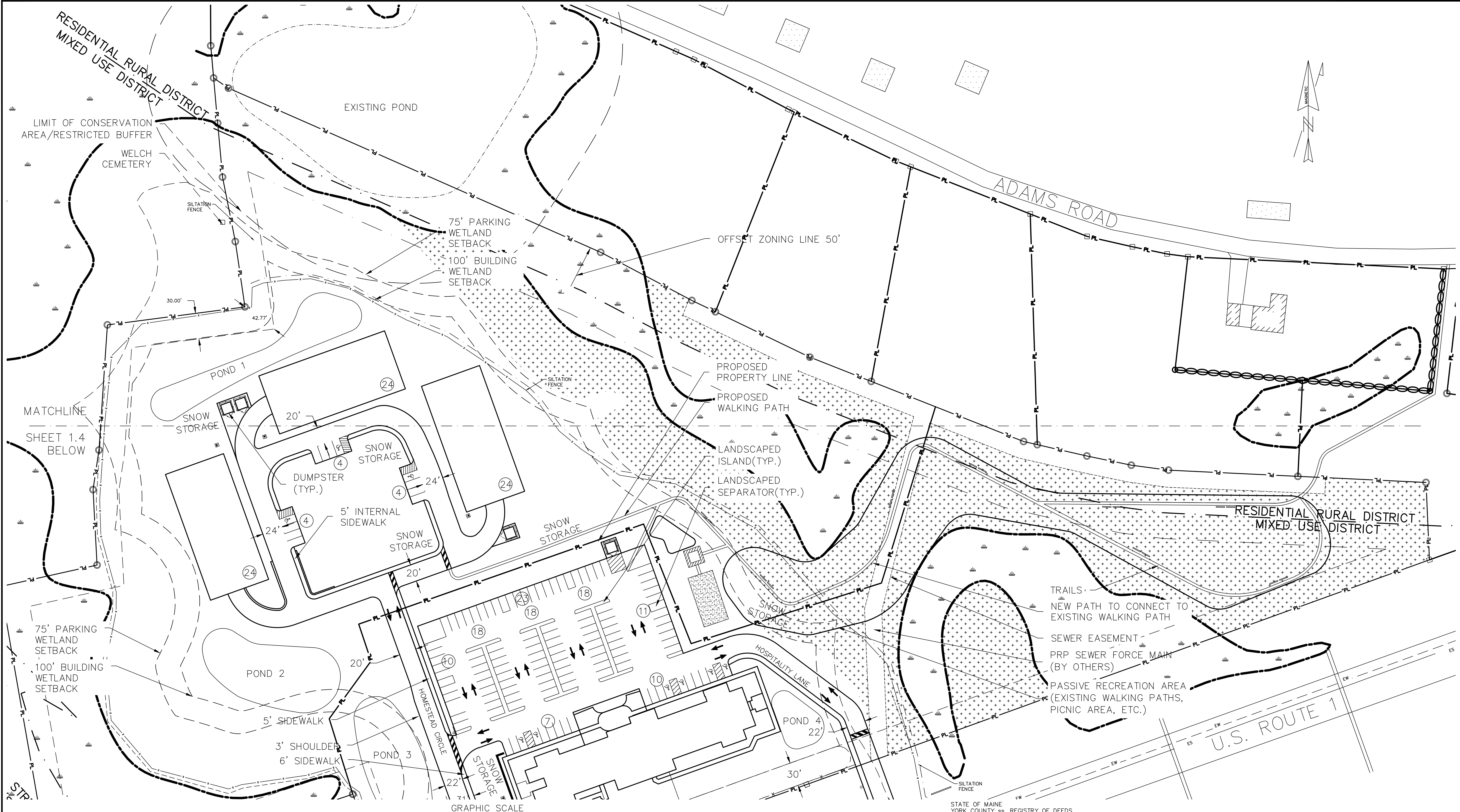
FOR: LANDMARK HILL, LLC
 79 CONGRESS ST
 PORTSMOUTH, NH 03801

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

APPROVED BY: _____
 DRAWN BY: BRN
 REVISION : DATE
 SHEET 1.2

JOB NO: C052-18 FILE: THE HOMESTEAD BASE
 TAX MAP 60, LOT 24



RESIDENTIAL RURAL DISTRICT
MIXED USE DISTRICT

LIMIT OF CONSERVATION
AREA/RESTRICTED BUFFER

WELCH
CEMETERY

EXISTING POND

75' PARKING
WETLAND
SETBACK
100' BUILDING
WETLAND
SETBACK

OFFSET ZONING LINE 50'

ADAMS ROAD

MATCHLINE
SHEET 1.4
BELOW

POND 1

SNOW
STORAGE

20'

SNOW
STORAGE

DUMPSTER
(TYP.)

24'

5' INTERNAL
SIDEWALK

SNOW
STORAGE

SNOW
STORAGE

75' PARKING
WETLAND
SETBACK
100' BUILDING
WETLAND
SETBACK

POND 2

5' SIDEWALK

3' SHOULDER
6' SIDEWALK

POND 3

HOMESTEAD
CIRCLE

SNOW
STORAGE

HOSPITALITY LANE

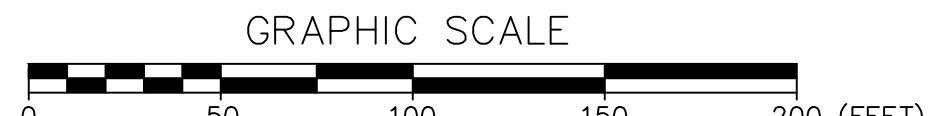
POND 4

22'

TRAILS
NEW PATH TO CONNECT TO
EXISTING WALKING PATH
SEWER EASEMENT
PRP SEWER FORCE MAIN
(BY OTHERS)
PASSIVE RECREATION AREA
(EXISTING WALKING PATHS,
PICNIC AREA, ETC.)

RESIDENTIAL RURAL DISTRICT
MIXED USE DISTRICT

U.S. ROUTE 1



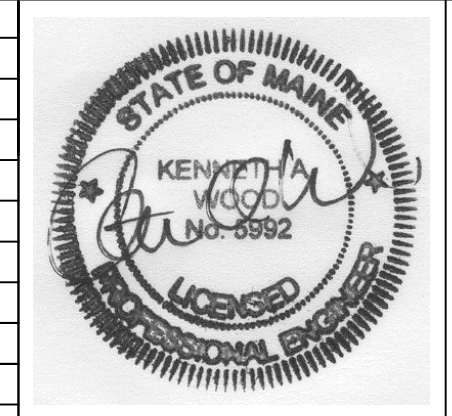
TOWN OF KITTERY PLANNING BOARD	DATE

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

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

LEGEND			
NEW SETBACK	---	UNDER GROUND UTILITIES	PUGU
DESIGNATED OPEN SPACE	[Stippled Box]	SEWER MANHOLE	⊙
PROPERTY LINE	---	EXISTING WATER LINE	EW
EXISTING CONTOUR	---XXX---	EXISTING SEWER LINE	ES
PROPOSED CONTOUR	---XXX---	UTILITY POLE	⊙
PROPOSED WATER LINE	PW	IRON PIN	○
PROPOSED SEWER LINE	PS	STONE MONUMENT	□
		DRAINAGE STRUCTURE	⊙
		WATER VALVE	⊕
		WATER SHUT OFF	⊖
		HYDRANT	⊕
		VERTICAL GRANITE CURB	⊕

NO.	DESCRIPTION	DATE
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



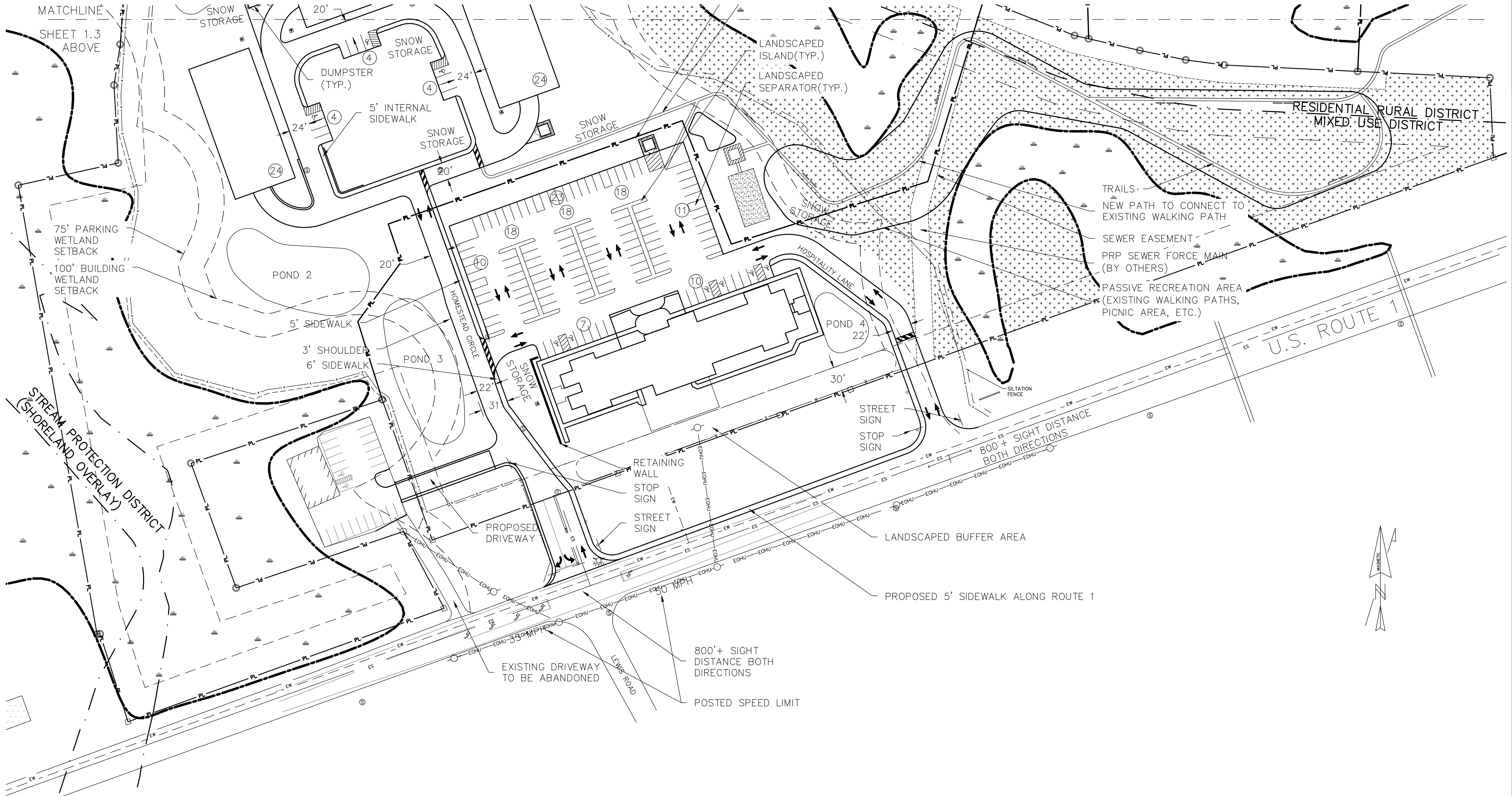
FOR: LANDMARK HILL, LLC
79 CONGRESS ST
PORTSMOUTH, NH 03801

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

SCALE: 1" = 50'
DATE: 02/08/2018

APPROVED BY: _____
DRAWN BY: BRN
REVISION : DATE
L:9/20/2018

JOB NO: C052-18 FILE: THE HOMESTEAD BASE SHEET 1.3



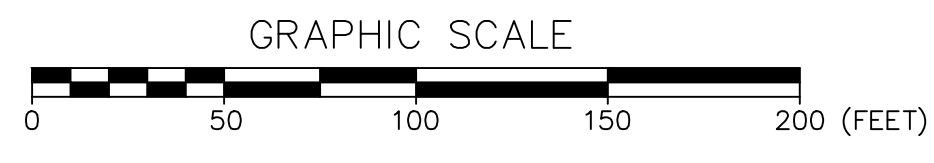
MATCHLINE
SHEET 1.3
ABOVE

RESIDENTIAL RURAL DISTRICT
MIXED USE DISTRICT

TRAILS
NEW PATH TO CONNECT TO
EXISTING WALKING PATH
SEWER EASEMENT
PRP SEWER FORCE MAIN
(BY OTHERS)
PASSIVE RECREATION AREA
(EXISTING WALKING PATHS,
PICNIC AREA, ETC.)

U.S. ROUTE 1

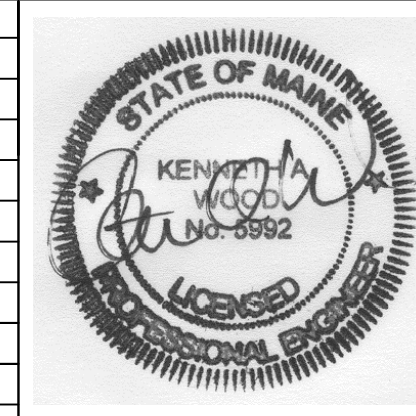
STREAM PROTECTION DISTRICT
(SHORELAND OVERLAY)



LEGEND			
NEW SETBACK	---	UNDER GROUND UTILITIES	---
DESIGNATED OPEN SPACE	[Stippled Box]	SEWER MANHOLE	⊙
PROPERTY LINE	---	EXISTING WATER LINE	EW
EXISTING CONTOUR	---XXX---	EXISTING SEWER LINE	ES
PROPOSED CONTOUR	---XXX---	UTILITY POLE	⊕
PROPOSED WATER LINE	PW	IRON PIN	○
PROPOSED SEWER LINE	PS	STONE MONUMENT	□
		DRAINAGE STRUCTURE	⊙
		WATER VALVE	⊕
		WATER SHUT OFF	⊕
		HYDRANT	⊕
		VERTICAL GRANITE CURB	⊕

TOWN OF KITTERY PLANNING BOARD	DATE

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



NO.	DESCRIPTION	DATE
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

1.4	SITE AND SUBDIVISION 50 SCALE 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" = 50'	DATE: 02/08/2018	APPROVED BY: BRN REVISION : DATE L:9/20/2018
JOB NO: C052-18	FILE: THE HOMESTEAD BASE	SHEET 1.4

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.

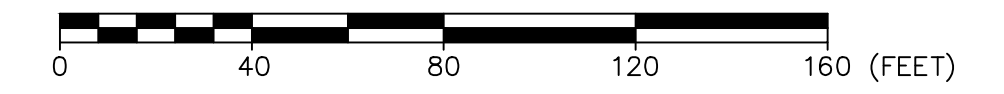
DRAINAGE STRUCTURE SCHEDULE

DESC	RIM ELEV	INV IN	INV OUT	PIPE SIZE(IN.)
CB 1	54.0	-	51.0	12
CB 2	55.0	-	52.0	12
CB 3	53.80	50.90	50.80	12
DMH 1	55.0	49.8	49.7	12
CB 4	51.8	-	48.8	12
CB 5	51.3	48.3	48.2	12
CB 6	55	-	51.0	12
CB 7	57.0	-	54.0	12
CB 8	53.5	-	50.8	12
CB 9	58.5	54.3	50.8	12
CB 10	59.4	55.0	54.9	12
CB 11	59.8	55.7	55.6	12
CB 12	60.7	56.6	56.5	12
CB 13	55.8	52.8	52.7	12
DMH 2	54.0	48.7	48.6	12
CB 14	57.3	54.3	54.2	12
CB 15	58.0	55.1	55.0	12
CB 16	60.4	-	57.4	12
CB 17	59.8	-	56.7	12
CB 18	53.5	50.6	50.5	12
CB 19	55.5	48.6	48.5	12
CB 20	55.5	-	51.0	12
DMH 3	59.9	57.0	52.2	12
CB 21	-	-	-	12

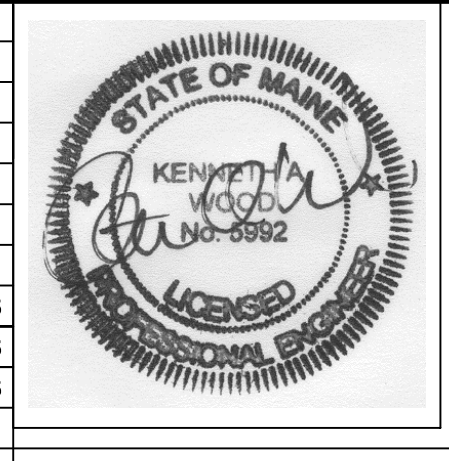
LEGEND

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

GRAPHIC SCALE



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



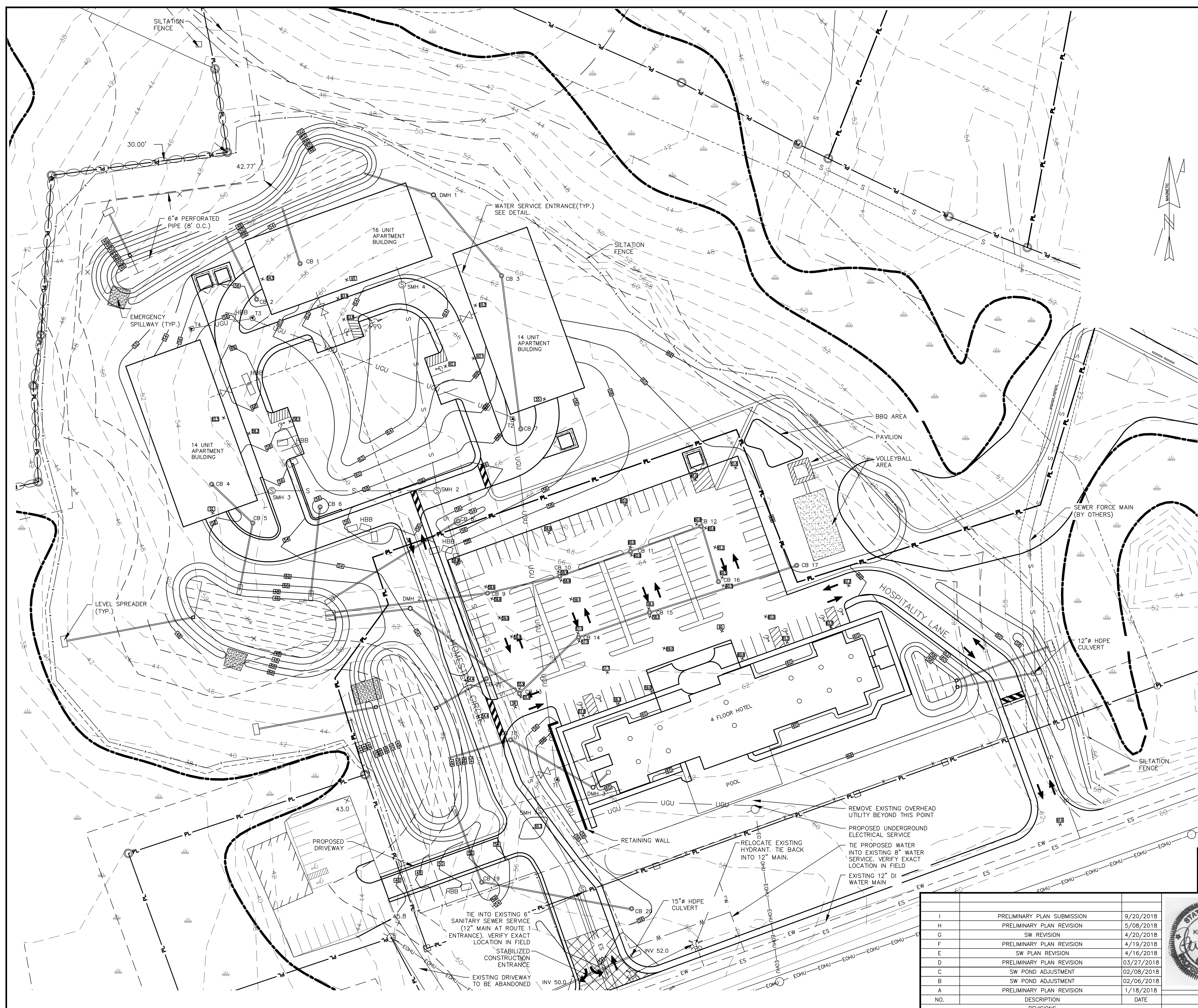
FOR: LANDMARK HILL, LLC
79 CONGRESS ST
PORTSMOUTH, NH 03801

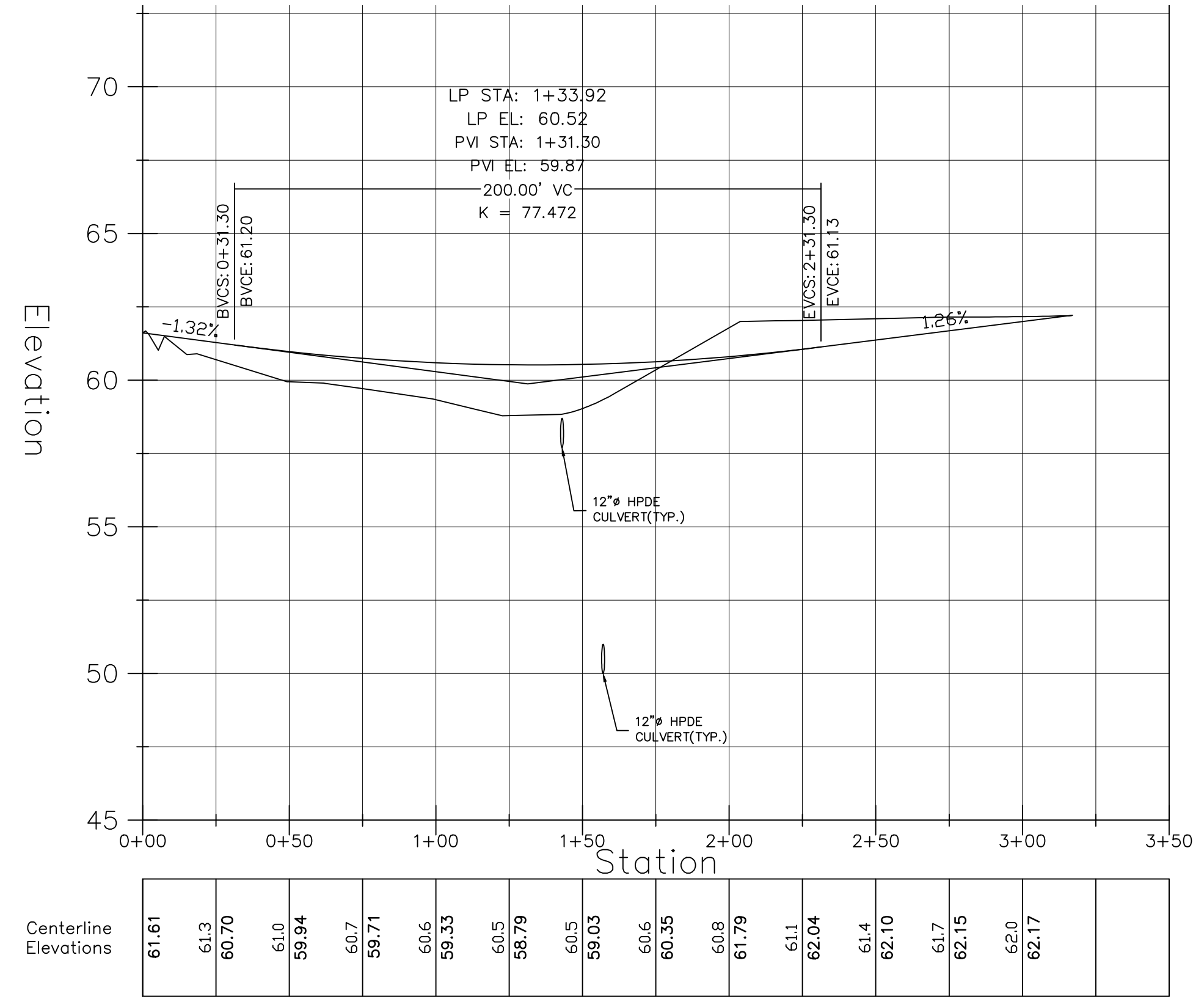
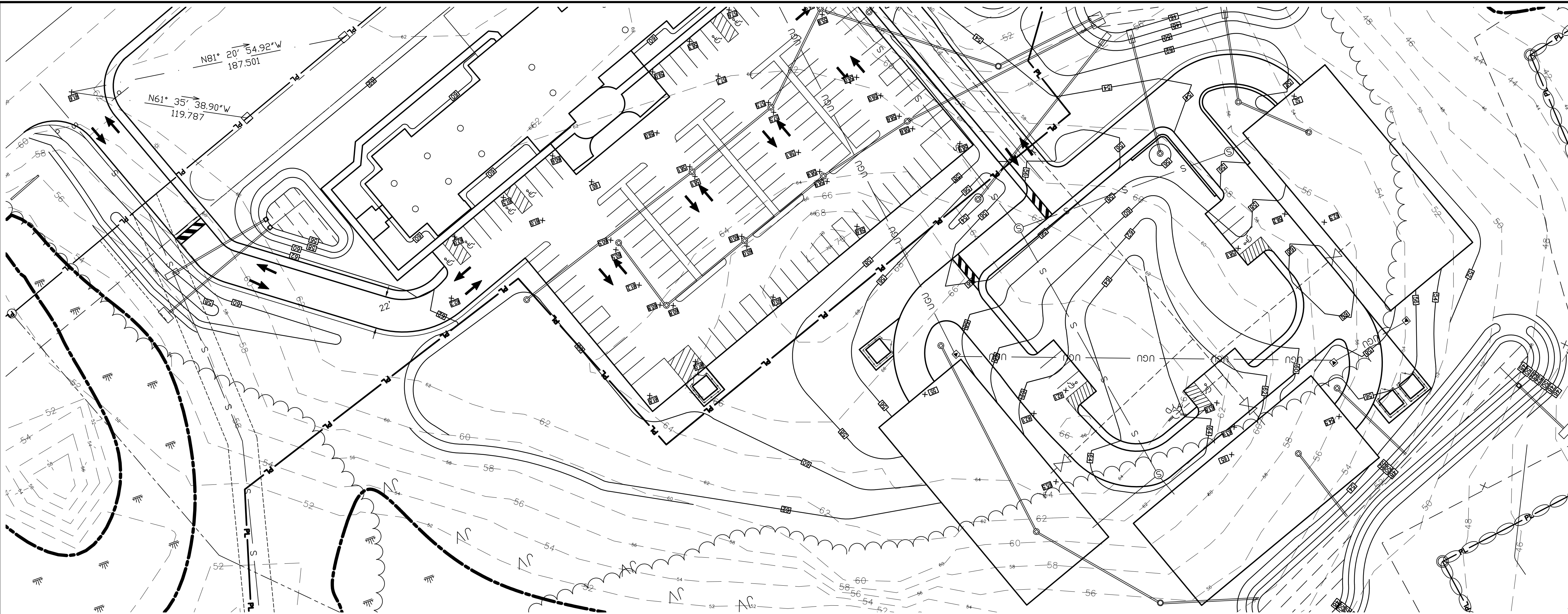
ATTAR ENGINEERING, INC.
CIVIL • STRUCTURAL • MARINE
1284 STATE ROAD - ELIOT, MAINE 03903
PHONE: (207)439-6023 FAX: (207)439-2128

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

APPROVED BY: [Signature]
DRAWN BY: BRN
REVISION: DATE
1:9/20/2018

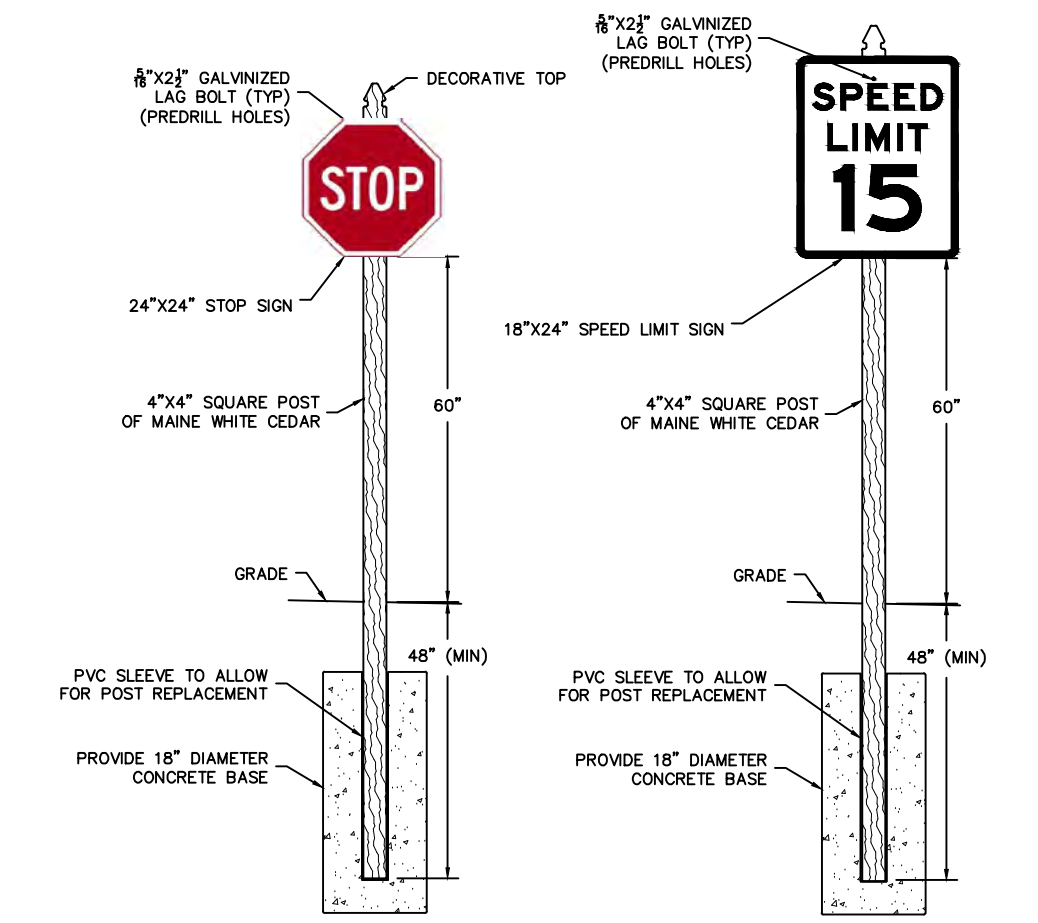
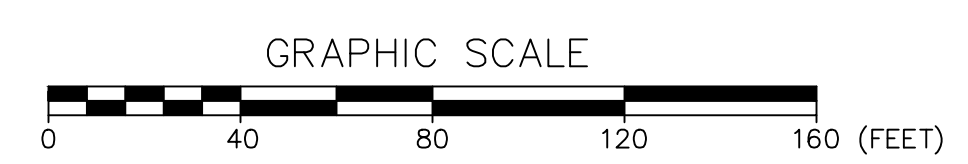
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H	PRELIMINARY PLAN REVISION	5/08/2018
G	SW REVISION	4/20/2018
F	PRELIMINARY PLAN REVISION	4/19/2018
E	SW PLAN REVISION	4/16/2018
D	PRELIMINARY PLAN REVISION	03/27/2018
C	SW POND ADJUSTMENT	02/08/2018
B	SW POND ADJUSTMENT	02/06/2018
A	PRELIMINARY PLAN REVISION	1/18/2018
NO.	DESCRIPTION	DATE





ROAD PROFILE - HOSPITALITY LANE

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



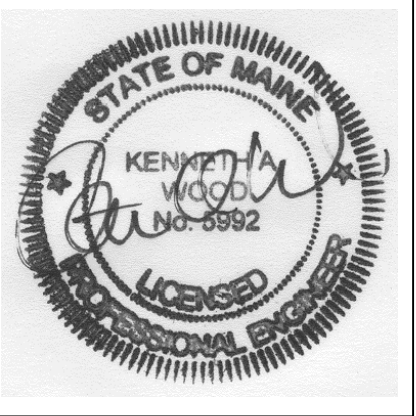
STREET SIGN DETAIL

SCALE: NTS
NOTE: ALL SIGNS TO BE ALUMINUM #3 REFLECTIVE SHEETING

- 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 KITTERY, MAINE

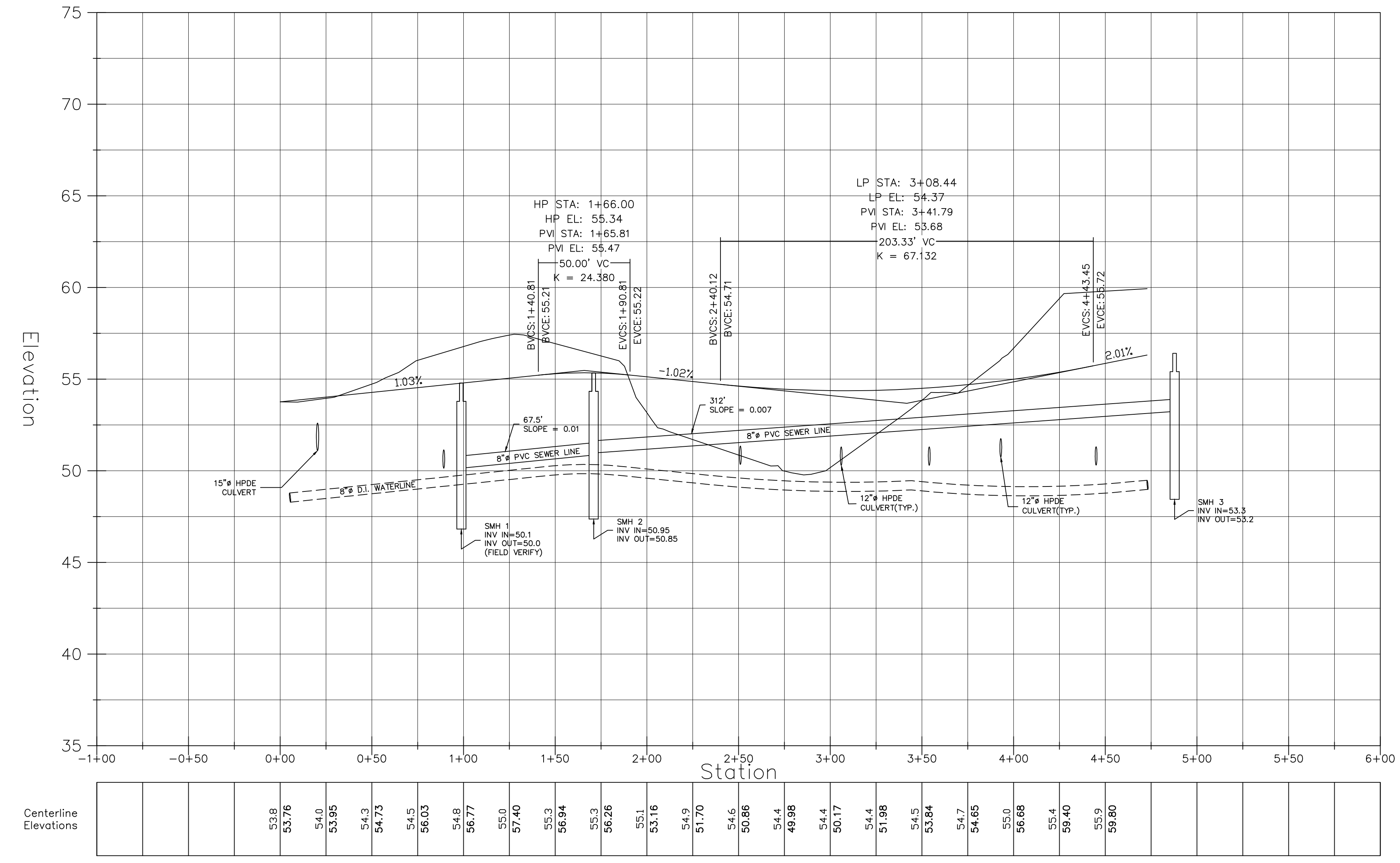
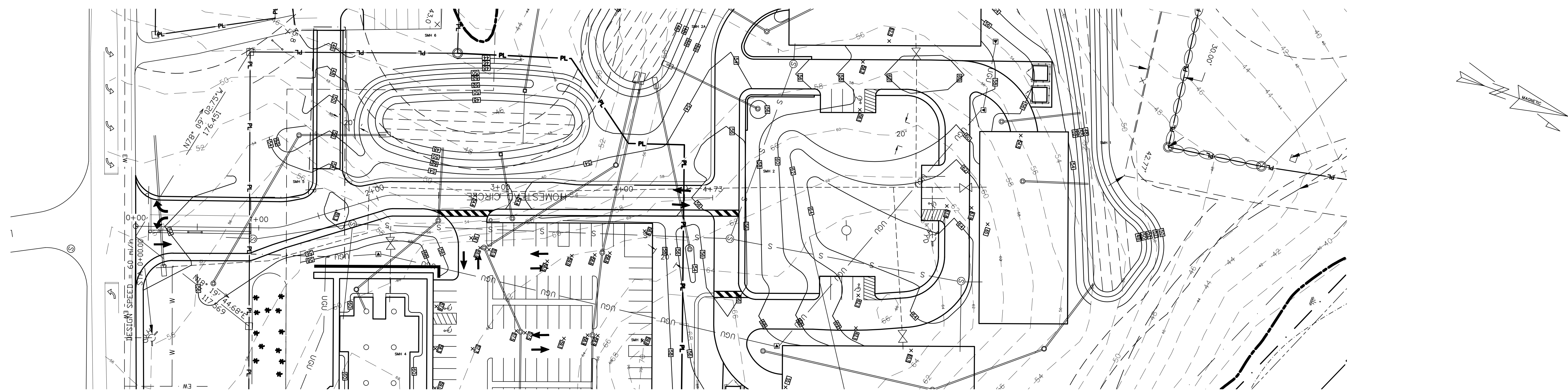
NO.	DESCRIPTION	DATE
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H	PRELIMINARY PLAN REVISION	5/08/2018
G	SW REVISION	4/20/2018
F	PRELIMINARY PLAN REVISION	4/19/2018
E	SW PLAN REVISION	4/16/2018
D	PRELIMINARY PLAN REVISION	03/27/2018
C	SW POND ADJUSTMENT	02/08/2018
B	SW POND ADJUSTMENT	02/06/2018
A	PRELIMINARY PLAN REVISION	1/18/2018
NO.	DESCRIPTION	DATE
	REVISIONS	



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

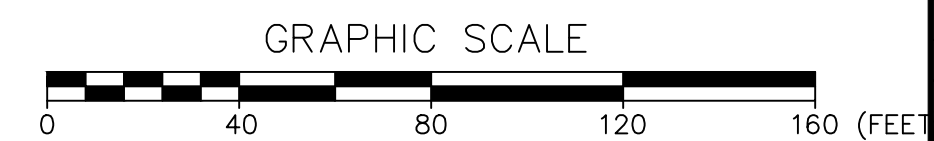
ATTAR ENGINEERING, INC.
CIVIL • STRUCTURAL • MARINE
1284 STATE ROAD - ELIOT, MAINE 03903
PHONE: (207)439-6023 FAX: (207)439-2128

SCALE: 1" = 40'	APPROVED BY:	DRAWN BY: BRN
DATE: 02/08/2018		REVISION : DATE 1:09/20/2018
JOB NO: C052-18	FILE: THE HOMESTEAD BASE	SHEET 3.1



ROAD PROFILE - HOMESTEAD CIRCLE

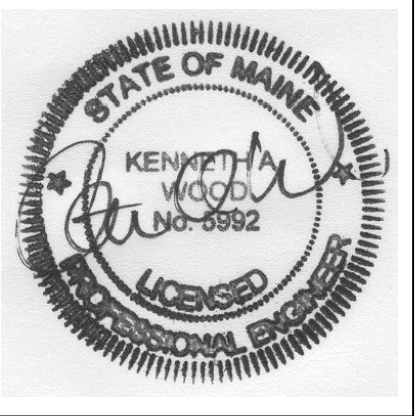
H. SCALE: 1" = 40'
 V. SCALE: 1" = 4'



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

3.2 ROAD PLAN AND PROFILE
 THE HOMESTEAD
 459 US ROUTE 1 KITTERY, MAINE

NO.	DESCRIPTION	DATE
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



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

ATTAR ENGINEERING, INC.
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SCALE: 1" = 40'
 DATE: 02/08/2018
 JOB NO: C052-18 FILE: THE HOMESTEAD BASE

APPROVED BY: [Signature]
 DRAWN BY: BRN
 REVISION : DATE
 H: 09/20/2018
 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	⊕

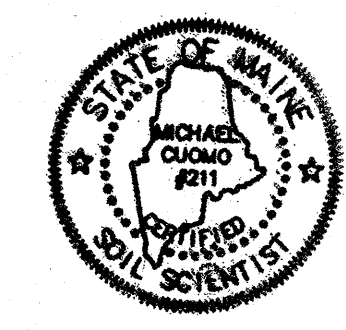
SLOPE LEGEND

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

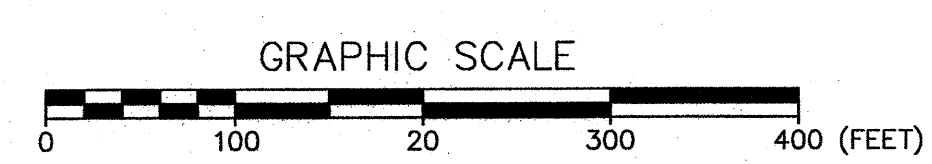
GENERAL NOTES

- 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.



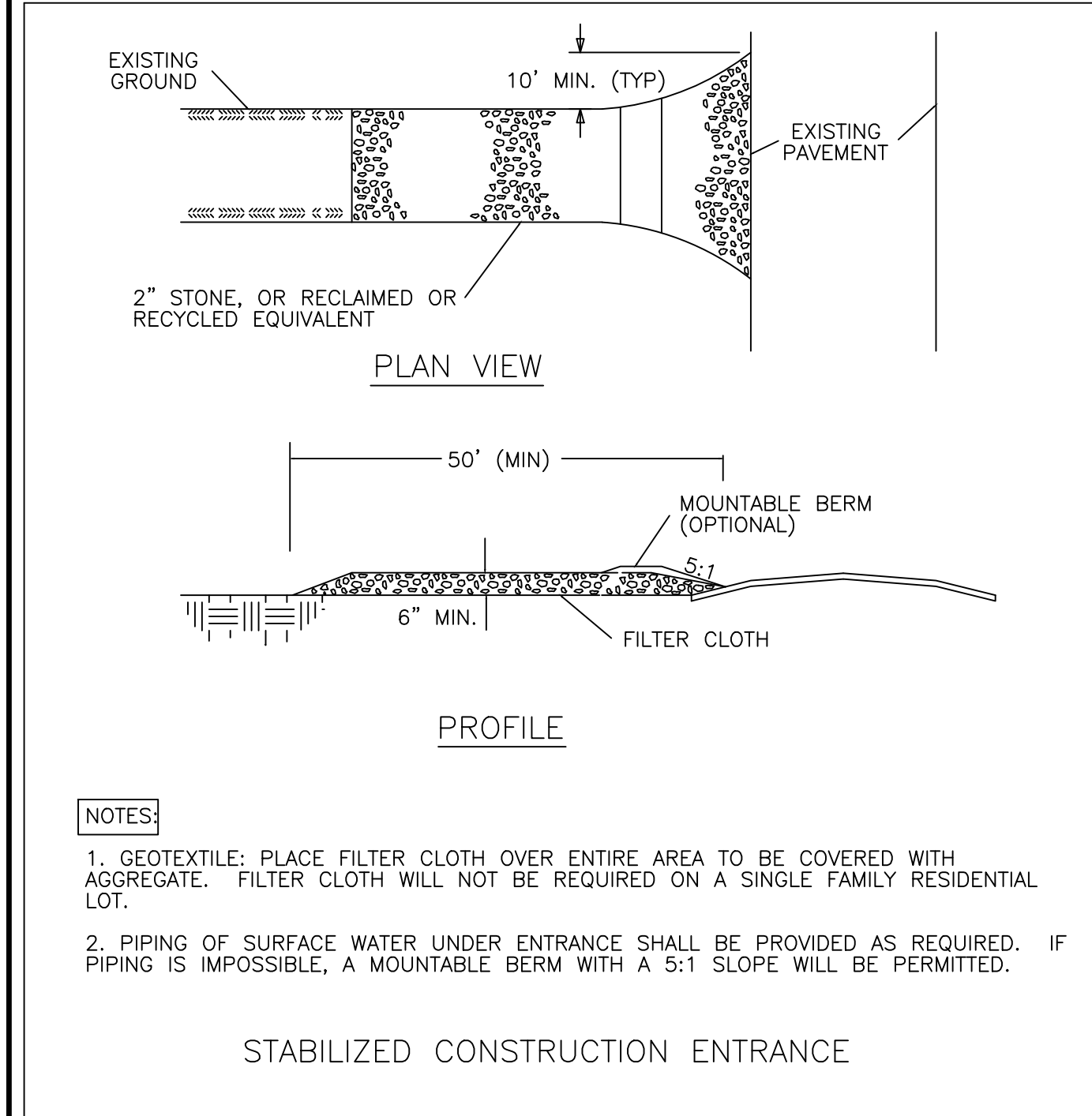
4.1 HIGH INTENSITY SOIL SURVEY
 THE HOMESTEAD
 459 US ROUTE 1 KITTERY, MAINE

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

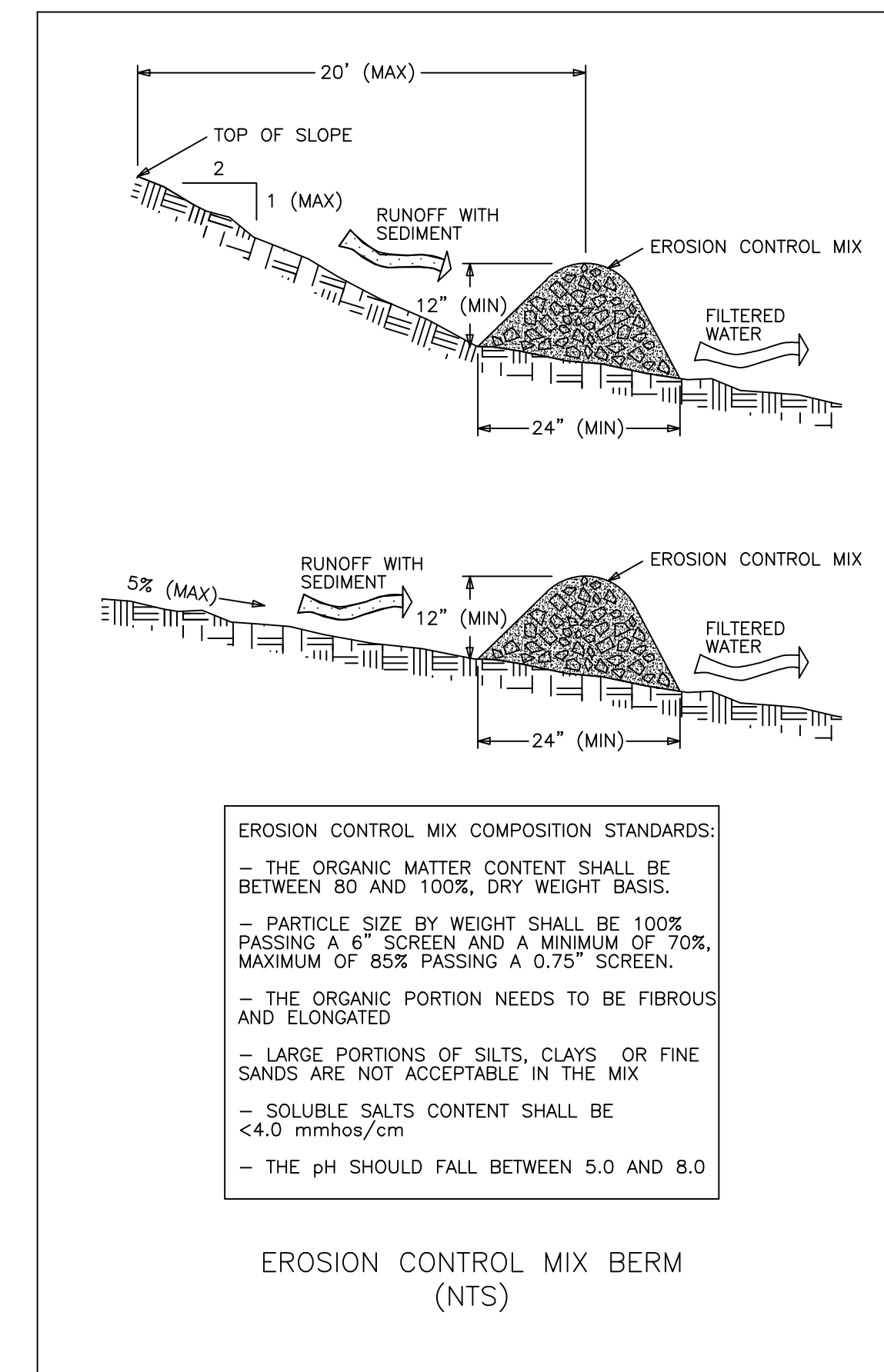
EROSION & SEDIMENTATION CONTROL NOTES

- 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 SEEDDED WITH THE FOLLOWING MIXTURE: 20 LB/ACRE CREEPING RED FESCUE, 2 LB/ACRE REDTOP AND 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 SEEDDED WITH THE FOLLOWING MIXTURE: 20 LB/ACRE CREEPING RED FESCUE, 8 LB/ACRE BIRDSFOOT TREFLOIL 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 DOWNGRADIANT 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.



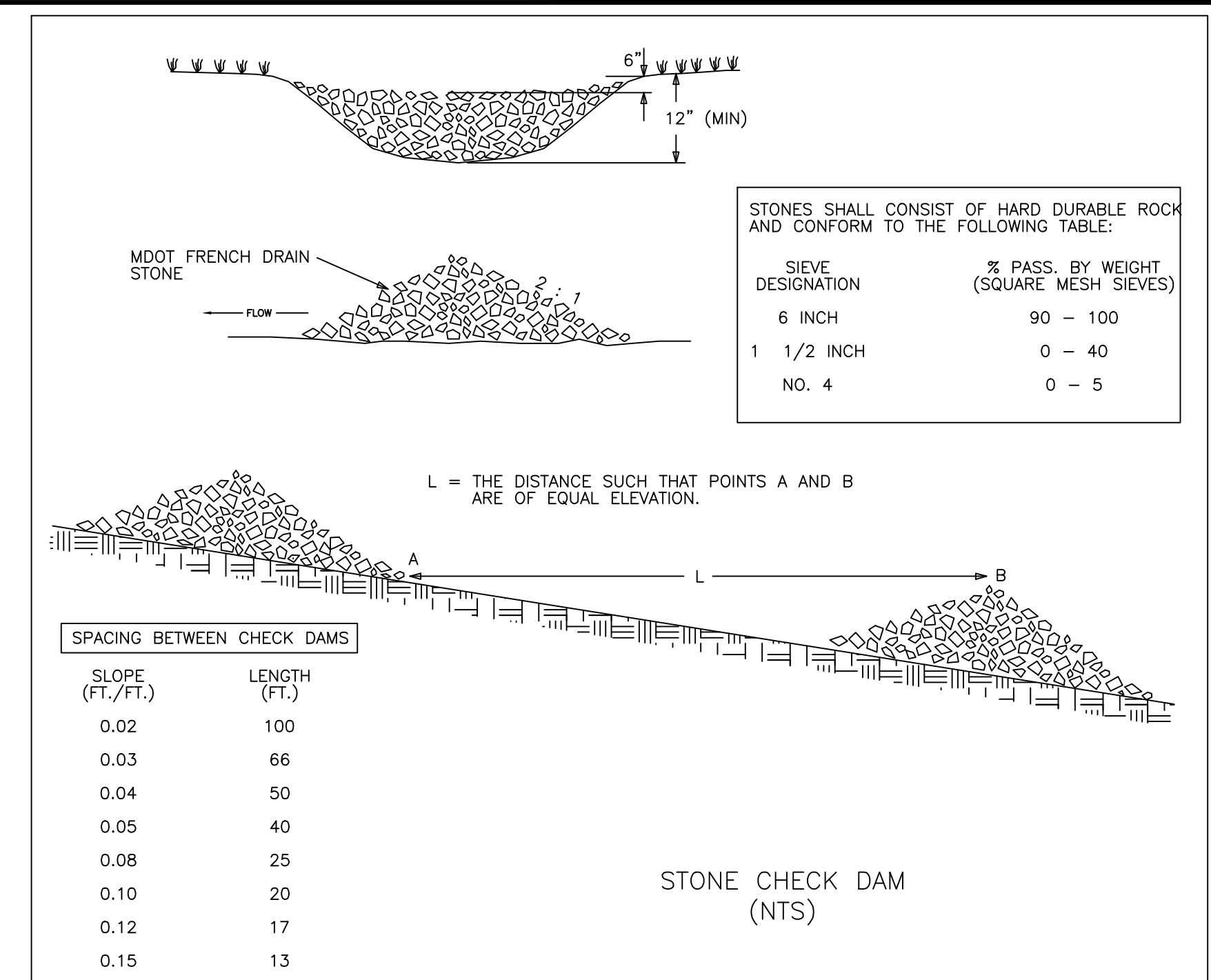
EROSION & SED. CONTROL NOTES (CONT.)

- 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 DOWNGRADIANT EDGE OF ANY AREA TO BE DISTURBED AND ADJACENT TO ANY DRAINAGE CHANNELS WITHIN THE DISTURBED AREA. SEDIMENT BARRIERS SHOULD BE INSTALLED DOWNGRADIANT 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 SEEDER 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 RESTABILIZED IF GERMINATION IS SPARSE, PLANT COVERAGE IS SPOTTY, OR TOPSOIL EROSION IS EVIDENT. ONE OR MORE OF THE FOLLOWING MAY APPLY TO A PARTICULAR SITE.
- FOR SEEDER 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.



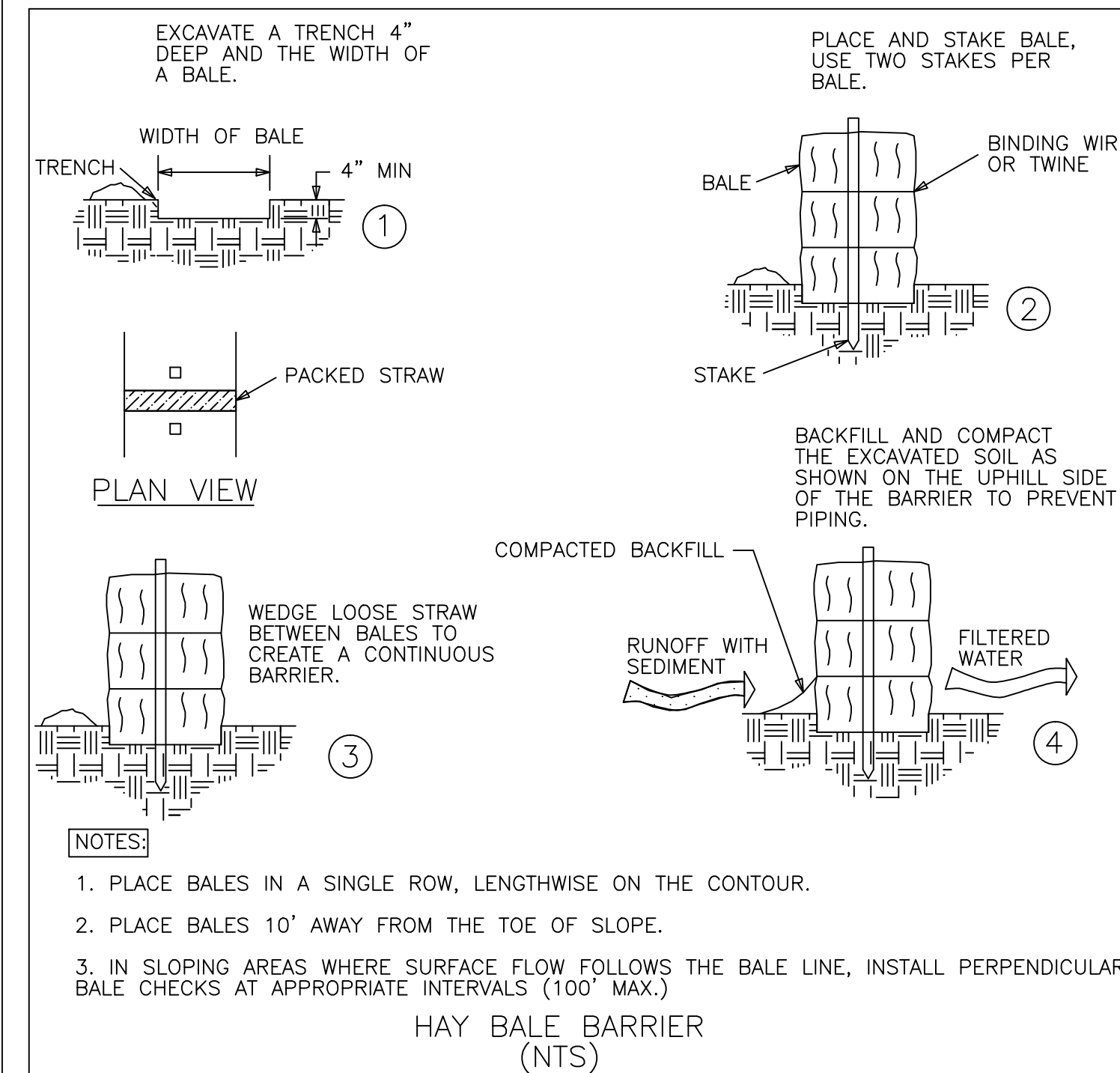
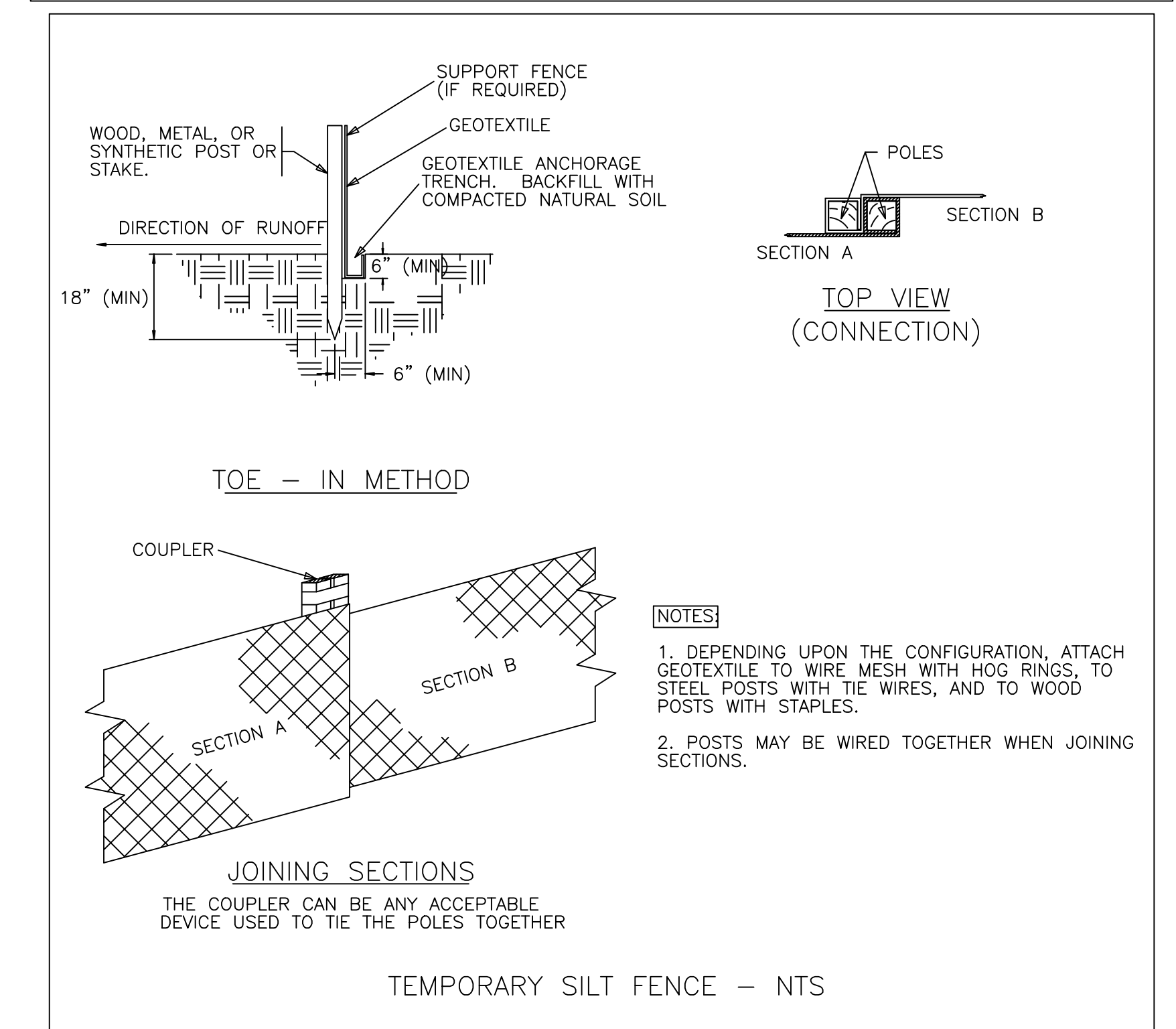
WINTER CONSTRUCTION NOTES

- 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 SEEDER, 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 SEEDER AND MULCHED UNTIL PERMANENT SEEDING CAN BE APPLIED. AFTER NOVEMBER 1, DISTURBED AREAS MAY BE LOAMED, FINE GRADED AND DORMANT SEEDER 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

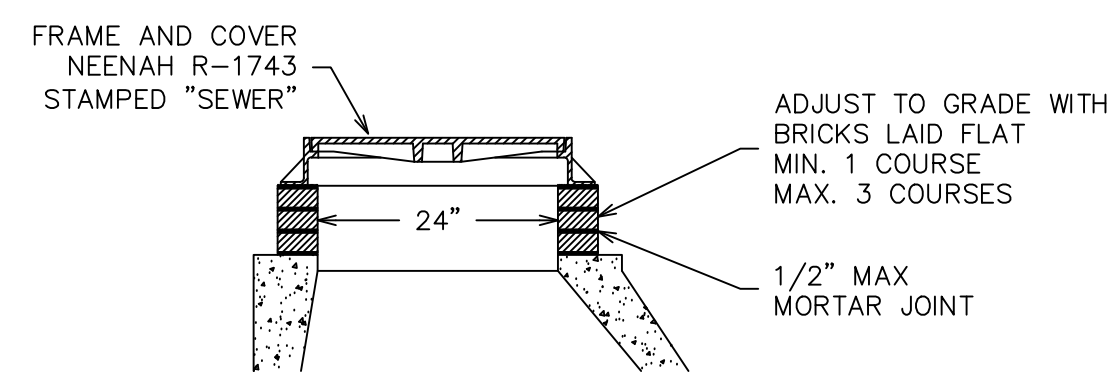
SCALE: AS SHOWN
DATE: 1/18/2018

APPROVED BY: [Signature]

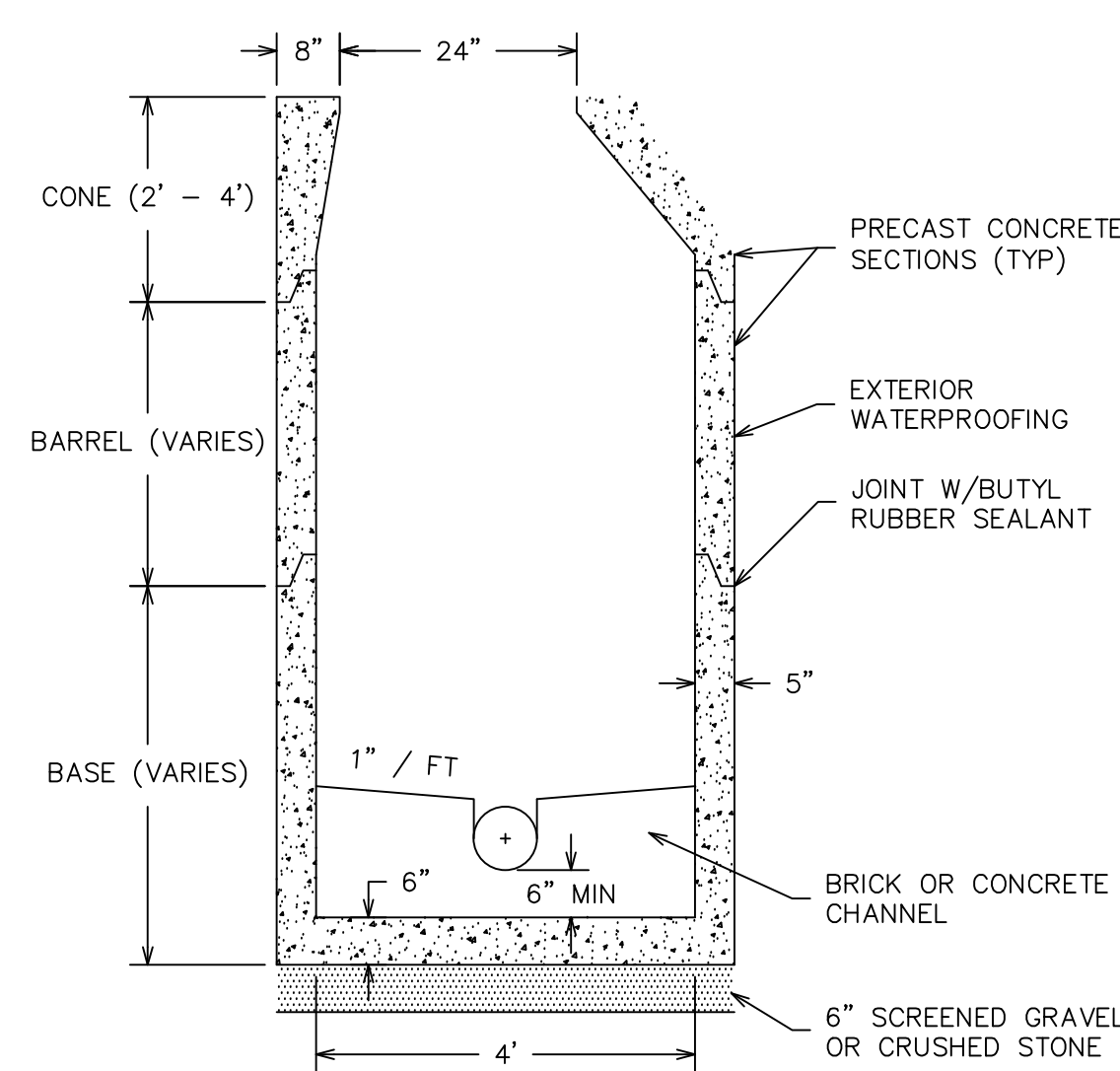
DRAWN BY: MJS
REVISION DATE: - : -

NO. DESCRIPTION DATE

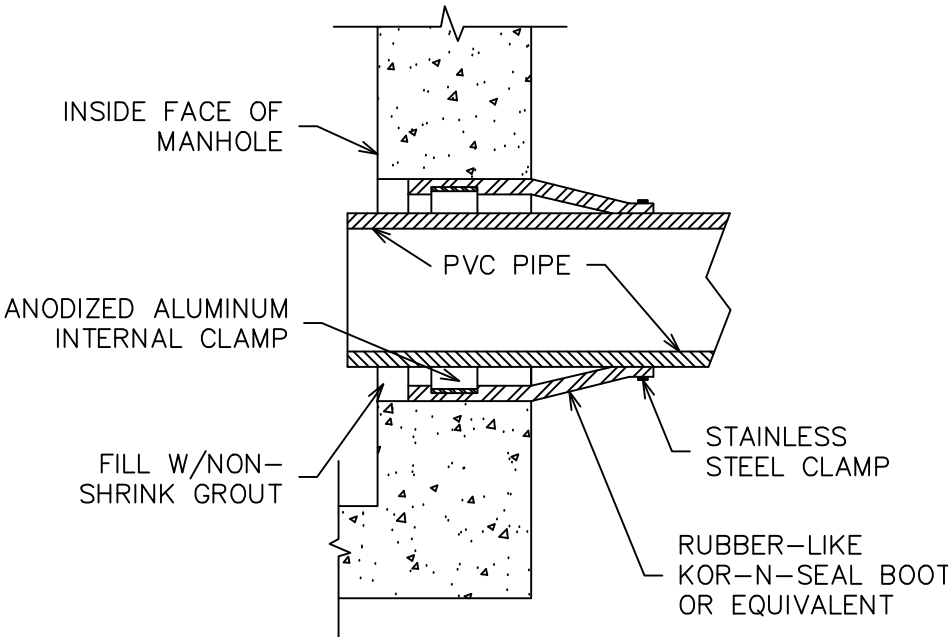
JOB NO: C052-18 FILE: THE HOMESTEAD DET.DWG SHEET: 5.1



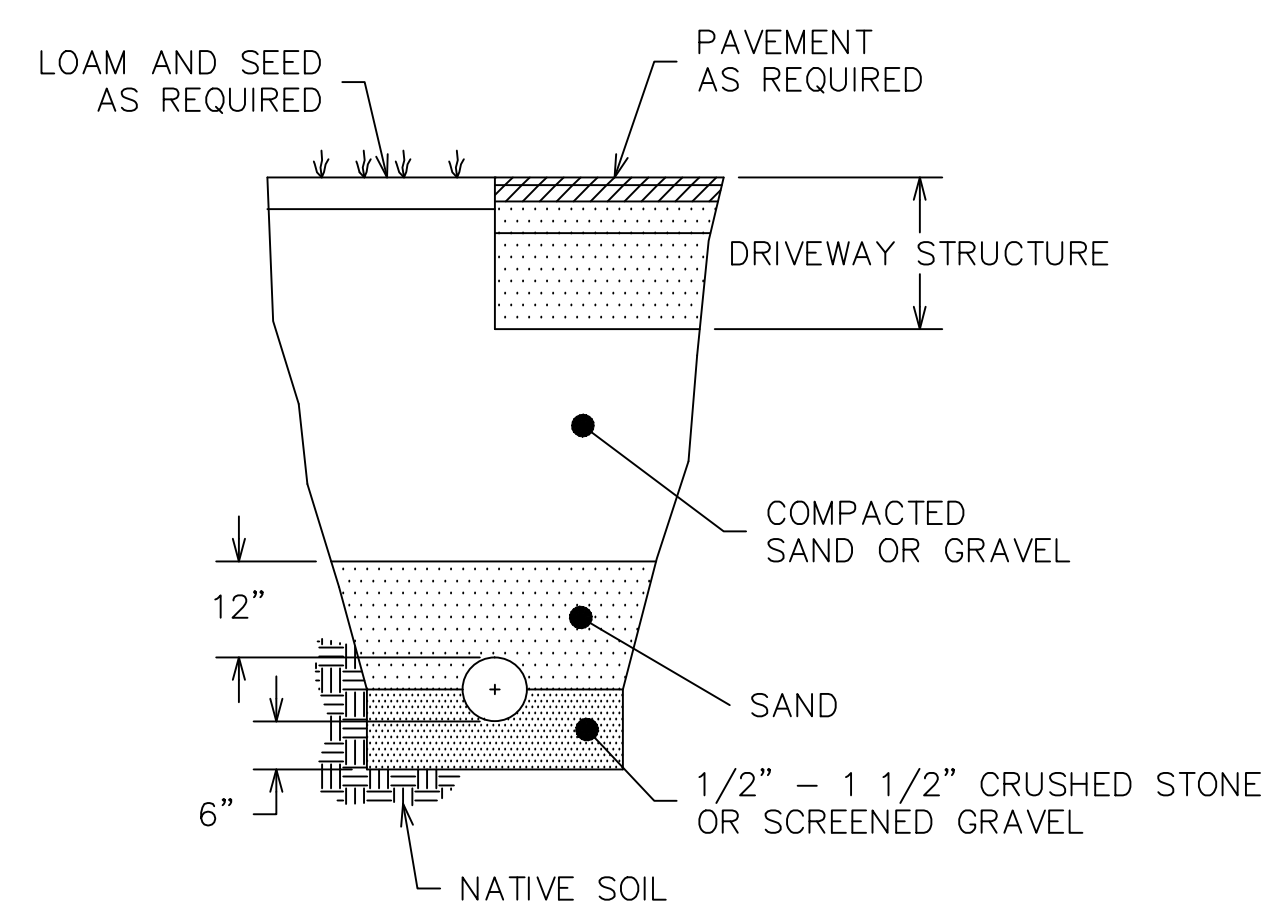
STANDARD COVER AND FRAME
SCALE: NTS



TYPICAL SANITARY MANHOLE
SCALE: NTS

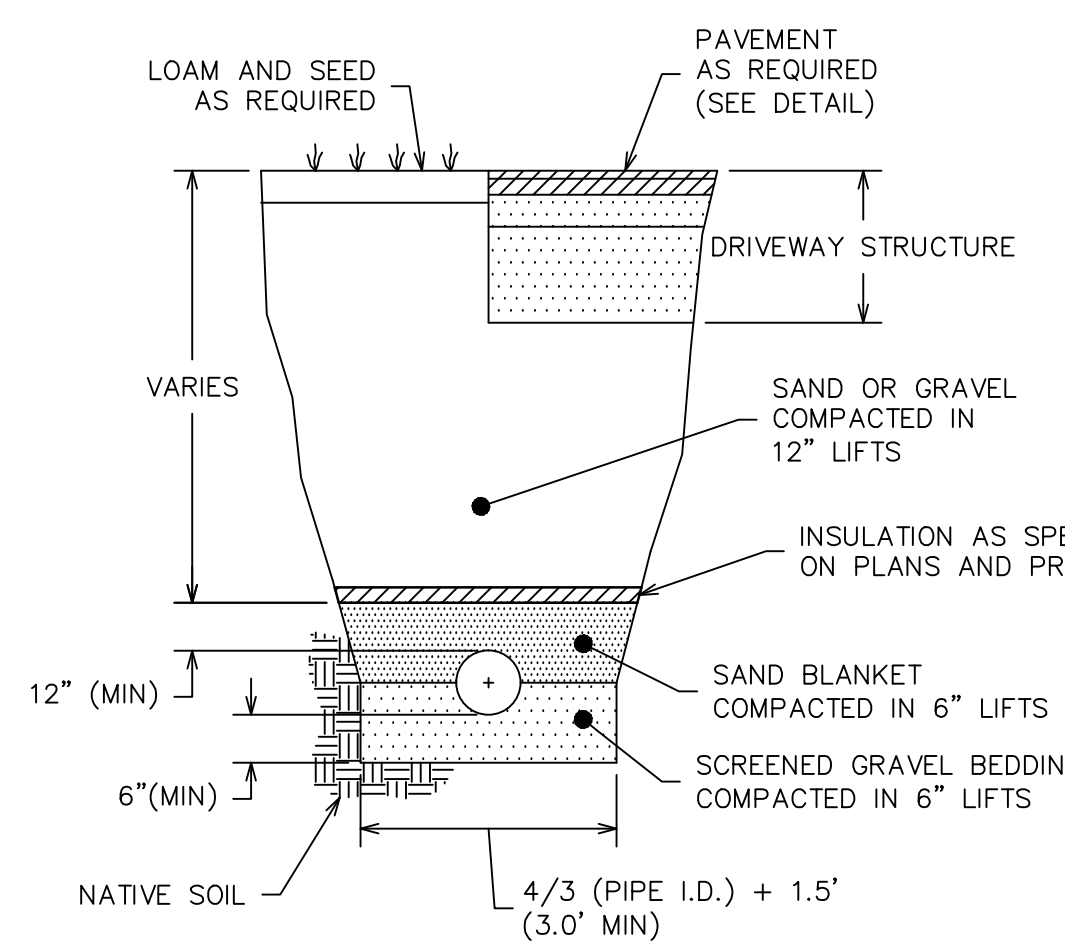


TYPICAL BOOT GASKET
SCALE: NTS



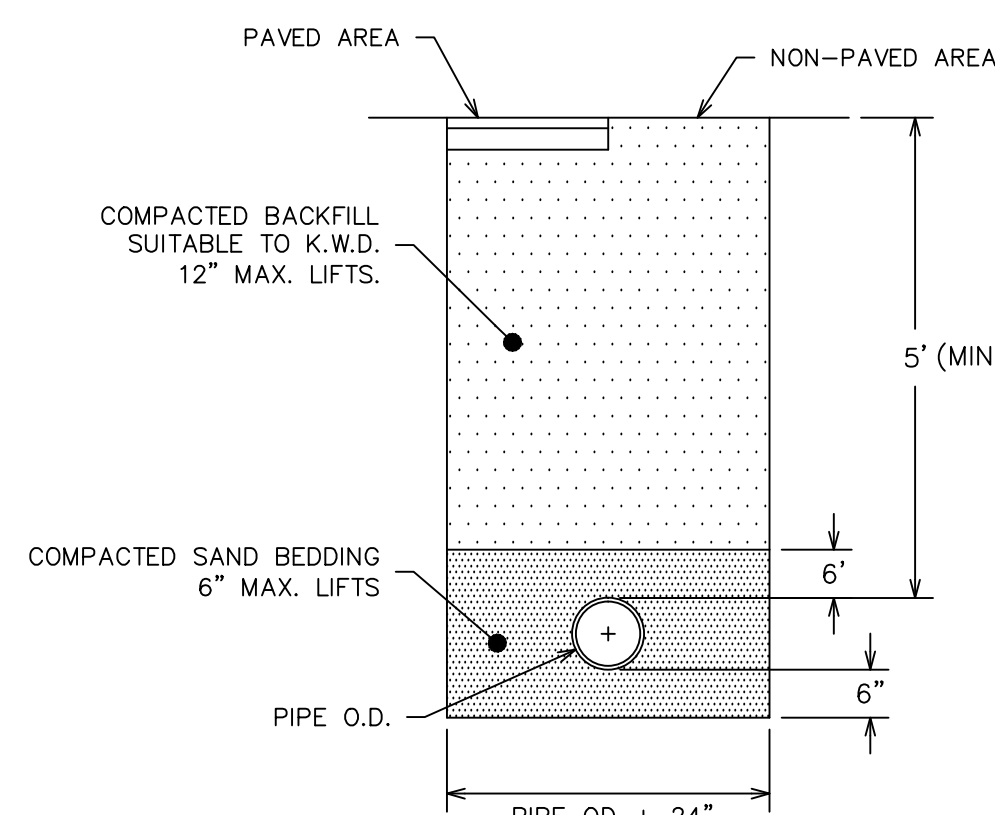
DRAINAGE PIPE TRENCH DETAIL
SCALE: NTS

TRENCH TO BE SUPPORTED BY SLOPING BACK AT 2:1 OR OTHER ACCEPTABLE METHOD.

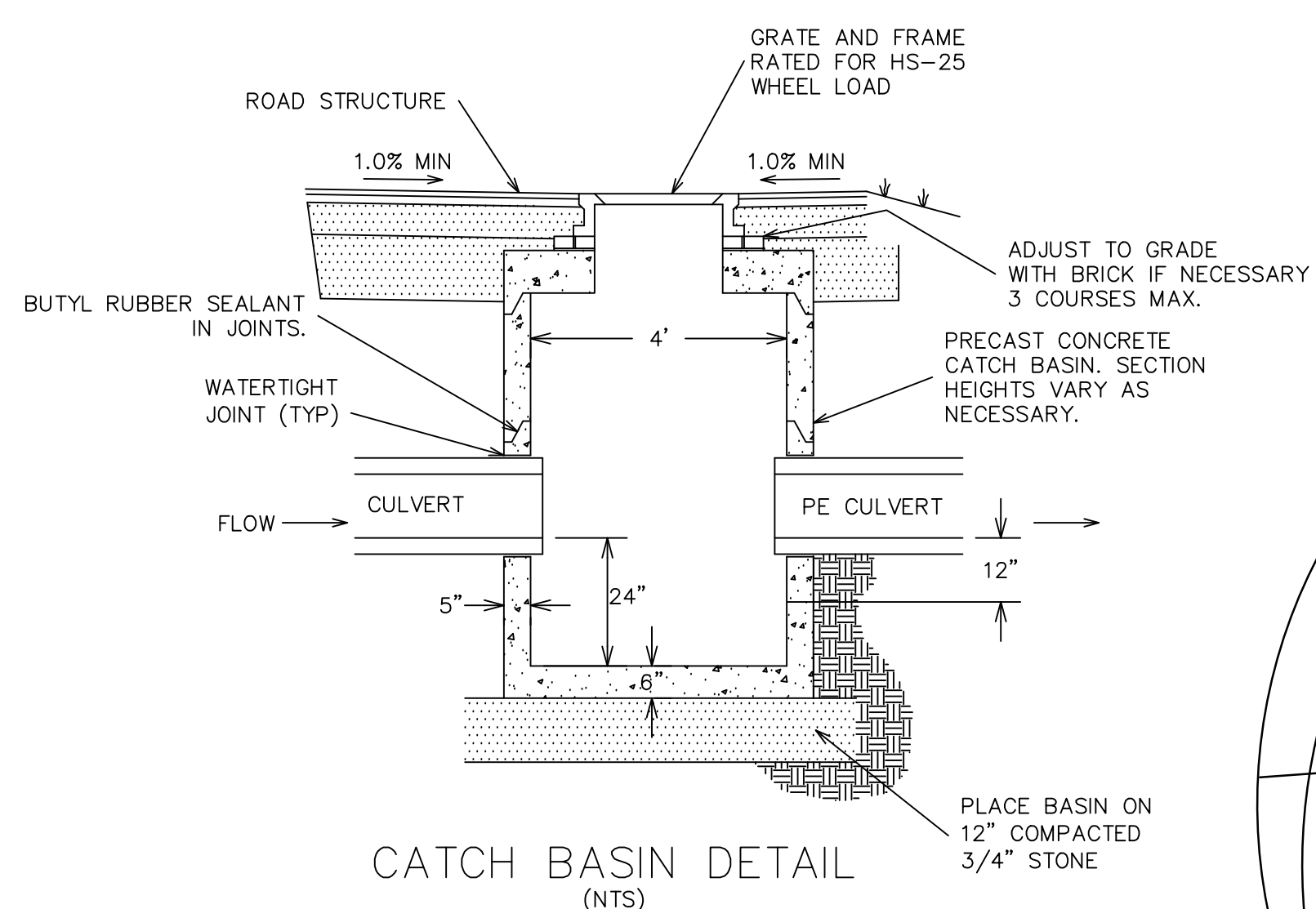


SEWER PIPE TRENCH DETAIL
SCALE: NTS

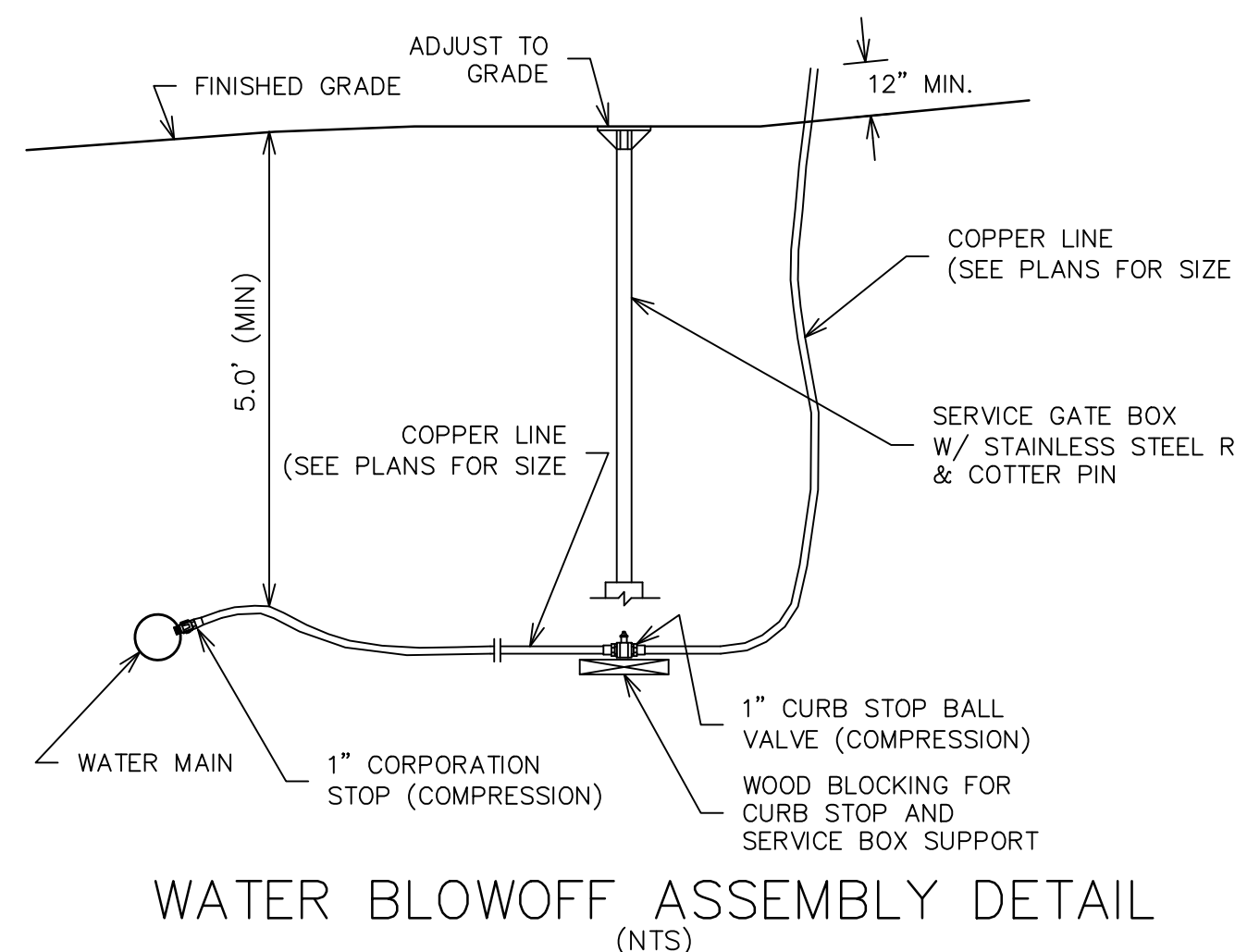
TRENCH TO BE SUPPORTED BY SLOPING BACK AT 2:1 OR OTHER ACCEPTABLE METHOD.



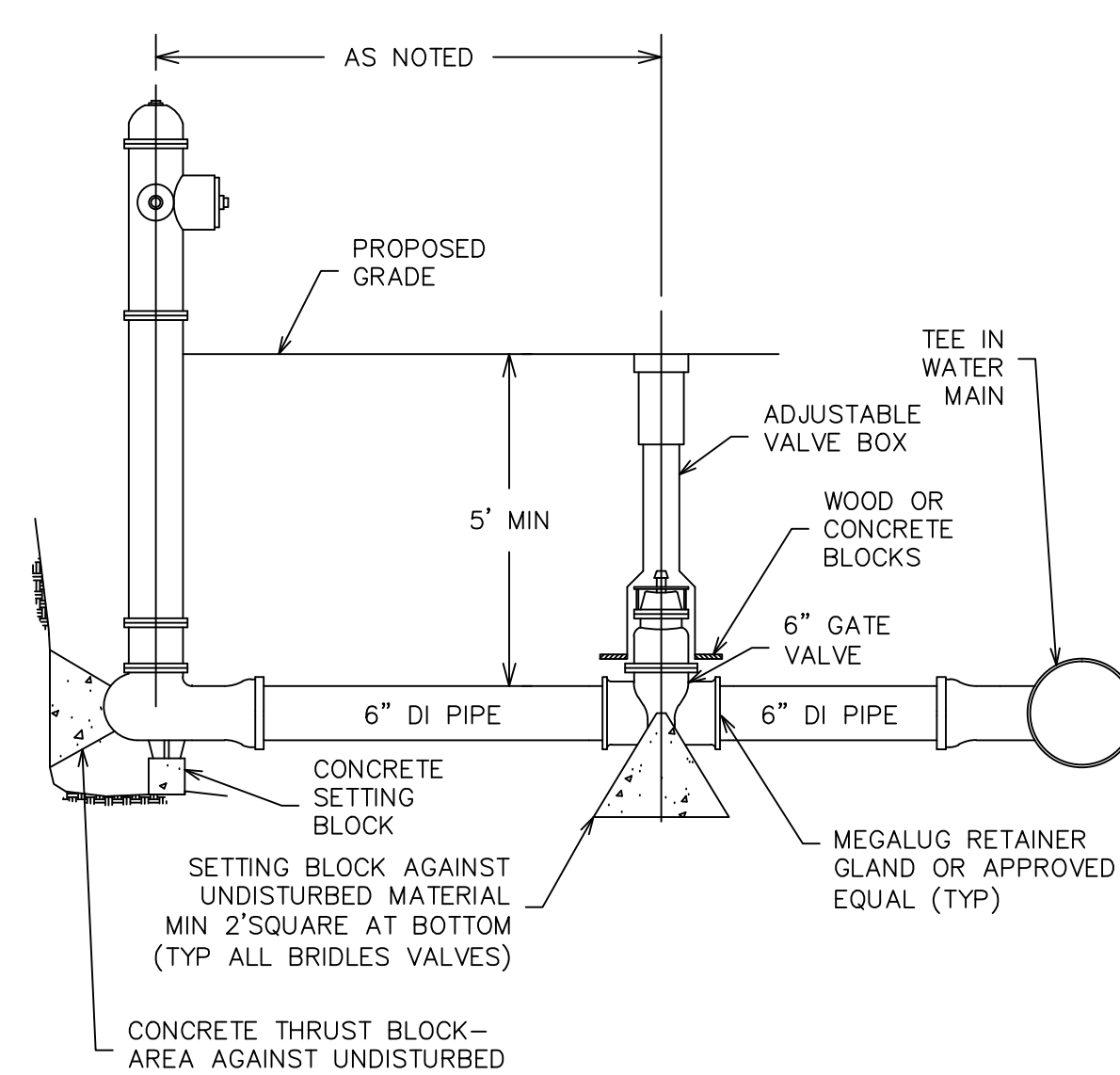
WATER LINE TRENCH DETAIL
(NTS)



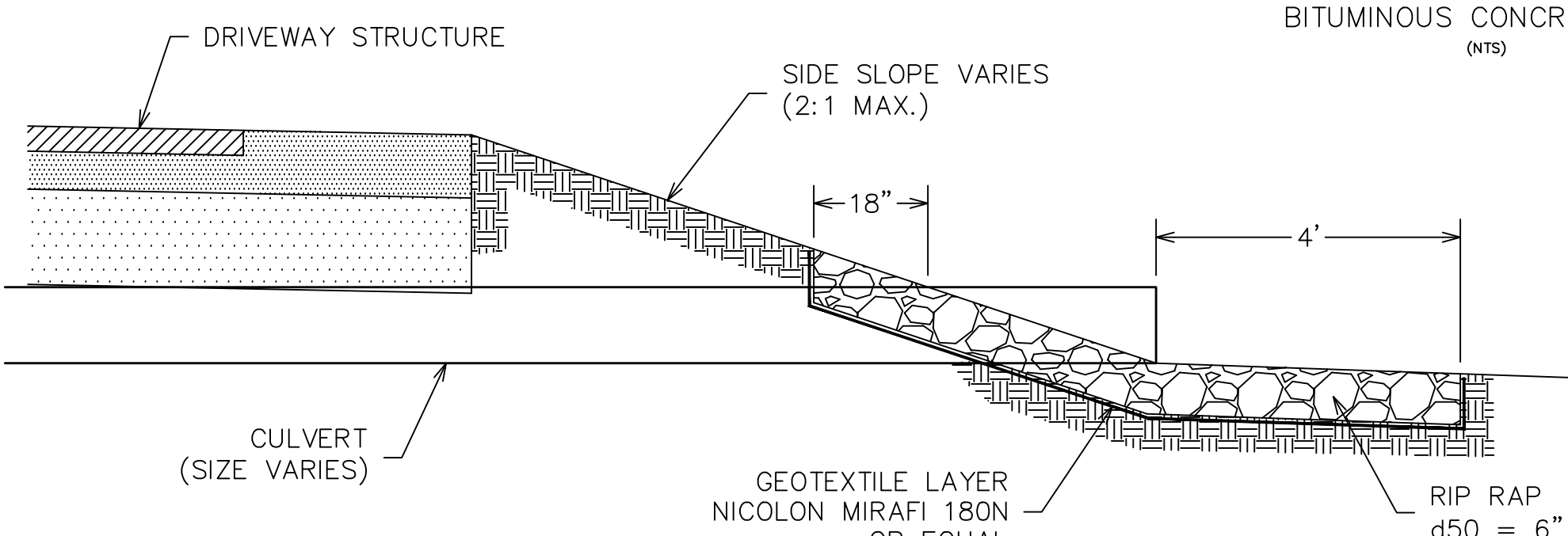
CATCH BASIN DETAIL
(NTS)



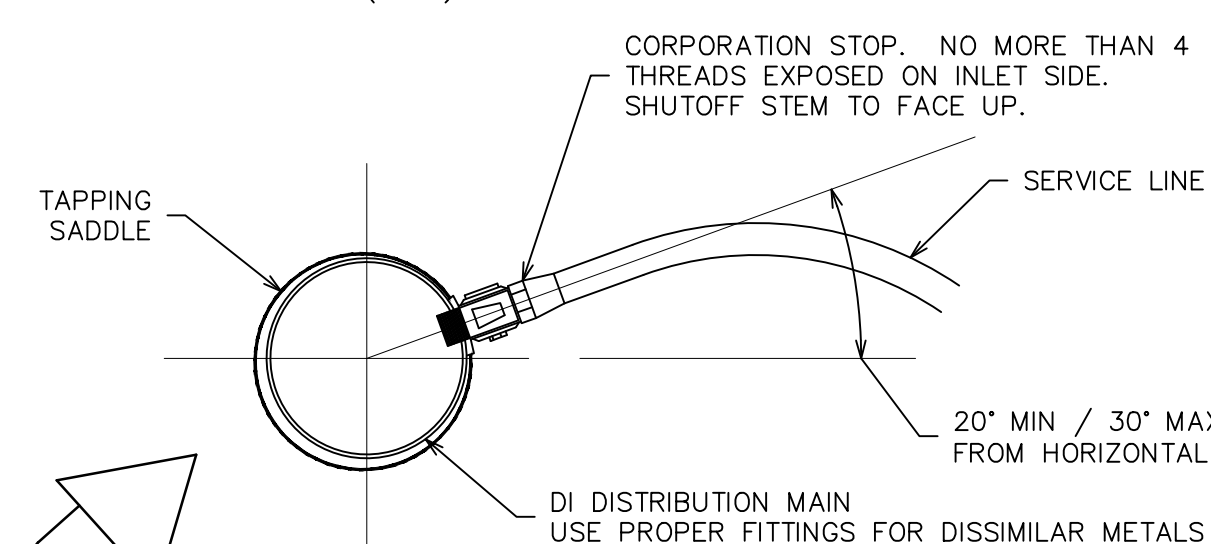
WATER BLOWOFF ASSEMBLY DETAIL
(NTS)



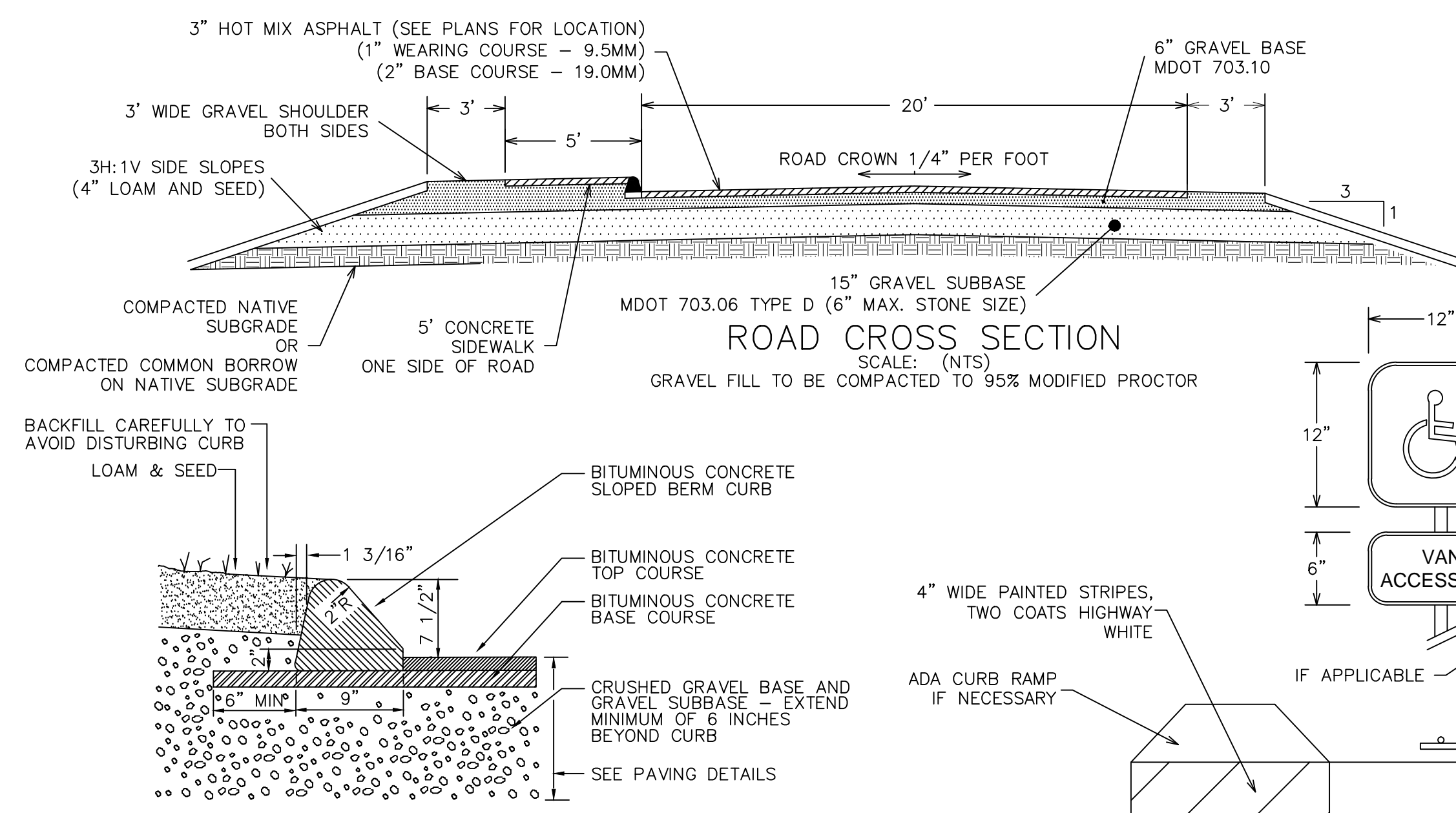
HYDRANT & VALVE DETAIL
NTS



CULVERT INLET/OUTLET PROTECTION DETAIL
(NTS)

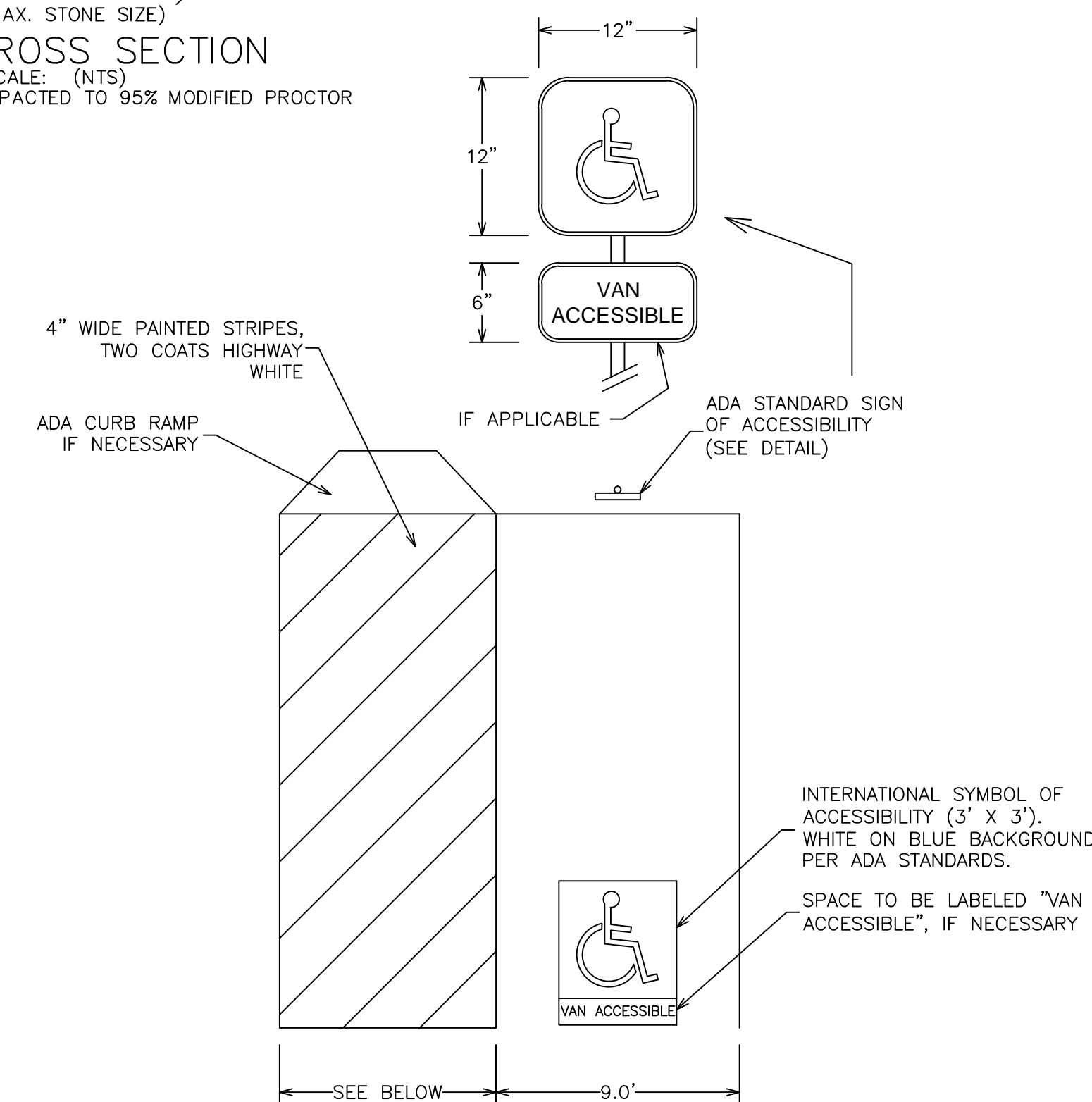


WATER SERVICE DETAIL
(NTS)



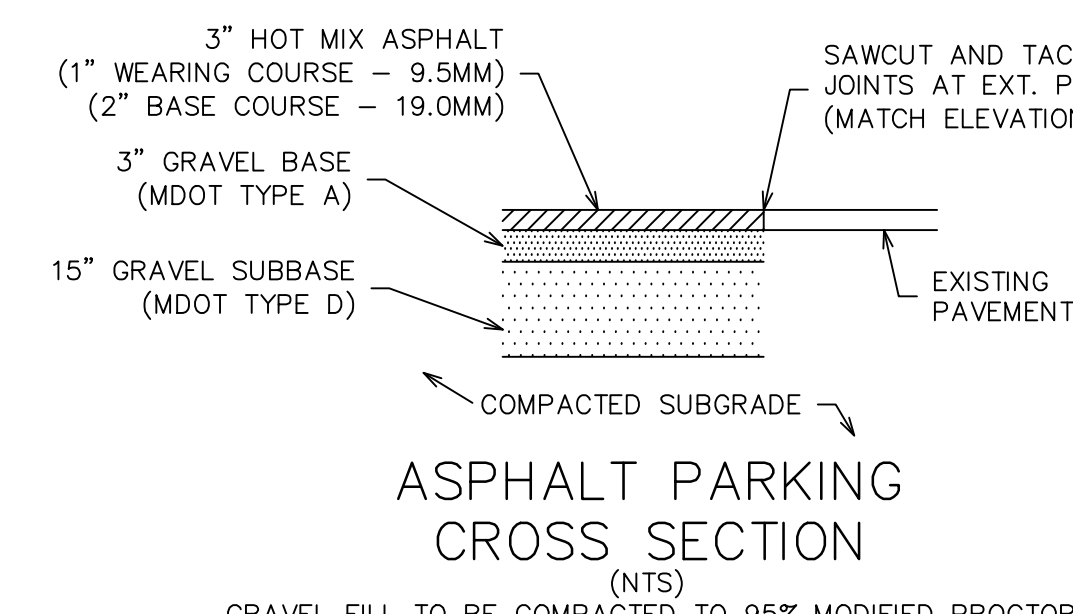
ROAD CROSS SECTION
SCALE: (NTS)

BITUMINOUS CONCRETE CURB
(NTS)



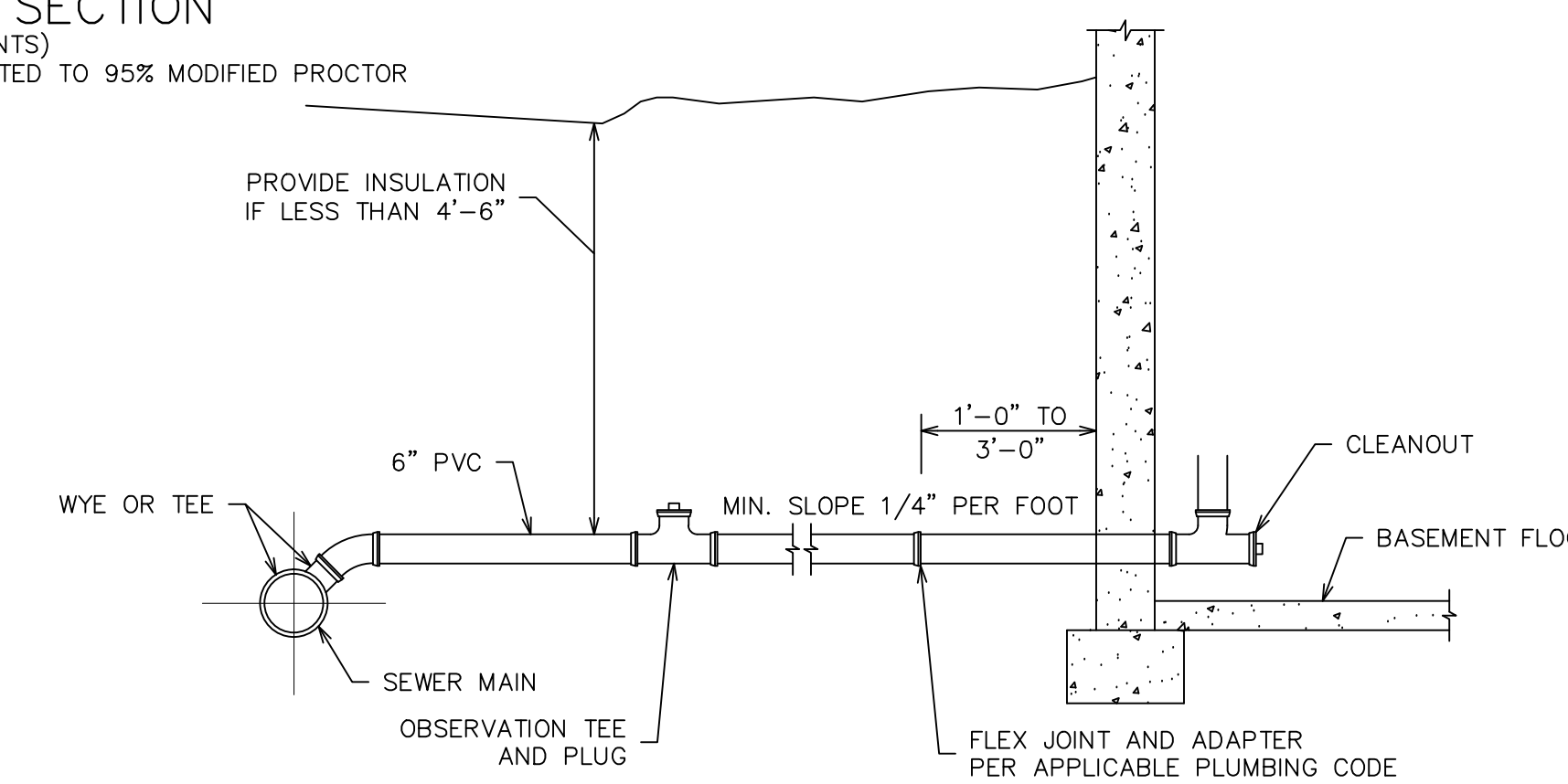
ACCESSIBLE PARKING SPACE DETAIL
(NTS)

ISLE SHALL BE 5' WIDE FOR AUTOMOBILES OR 8' WIDE FOR VANS



ASPHALT PARKING CROSS SECTION
(NTS)

GRAVEL FILL TO BE COMPACTED TO 95% MODIFIED PROCTOR



TYPICAL SERVICE CONNECTION AND HOUSE LATERAL DETAIL
SCALE: NTS

NOTE: HOUSE SEWER MAY BE LOCATED BENEATH BASEMENT FLOOR

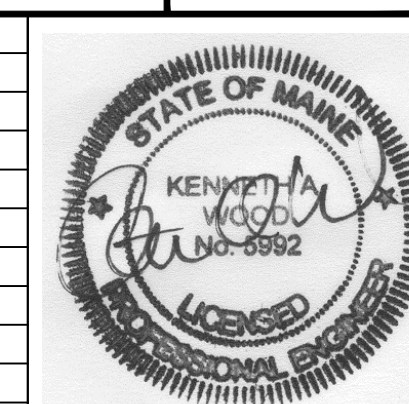
5.2

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

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

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

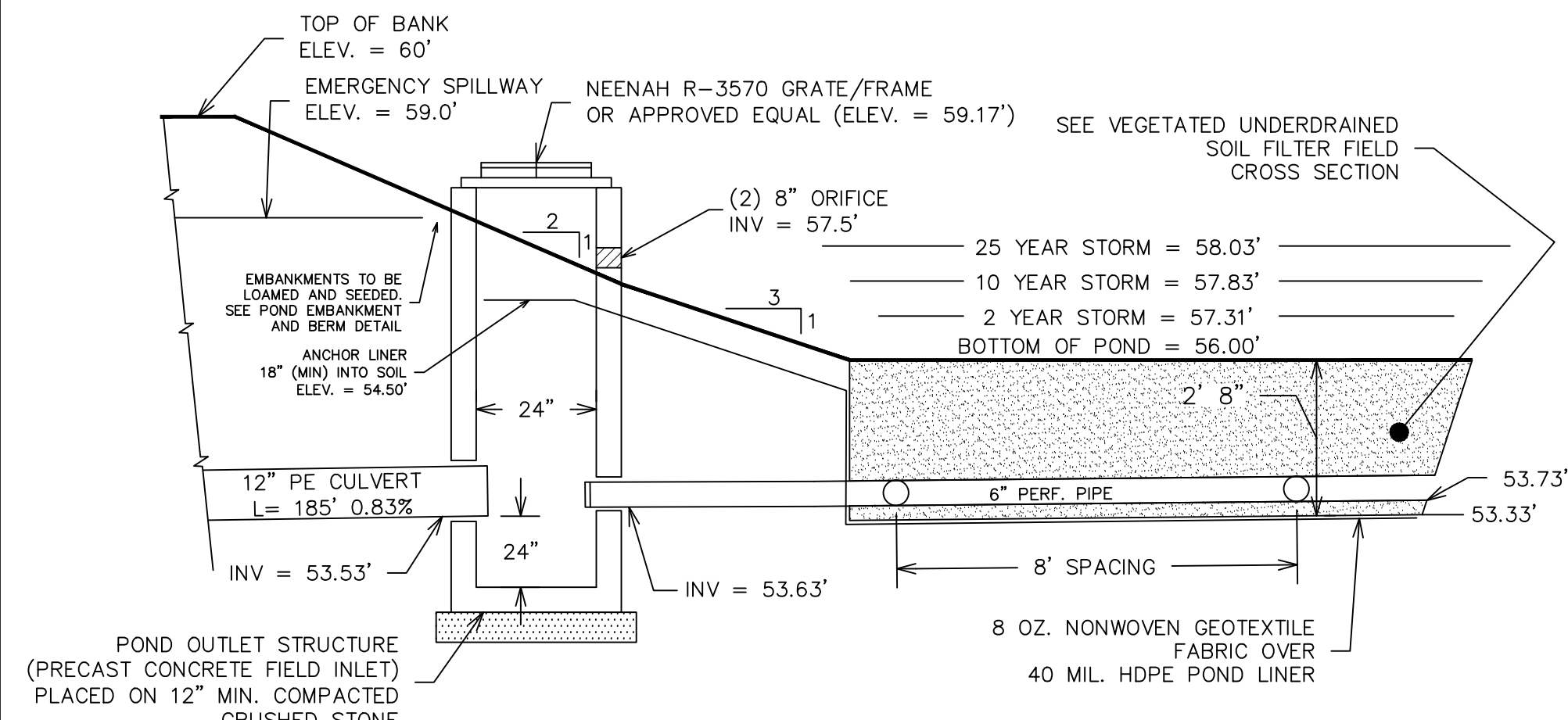
REVISION DATE:

JOB NO: C052-18

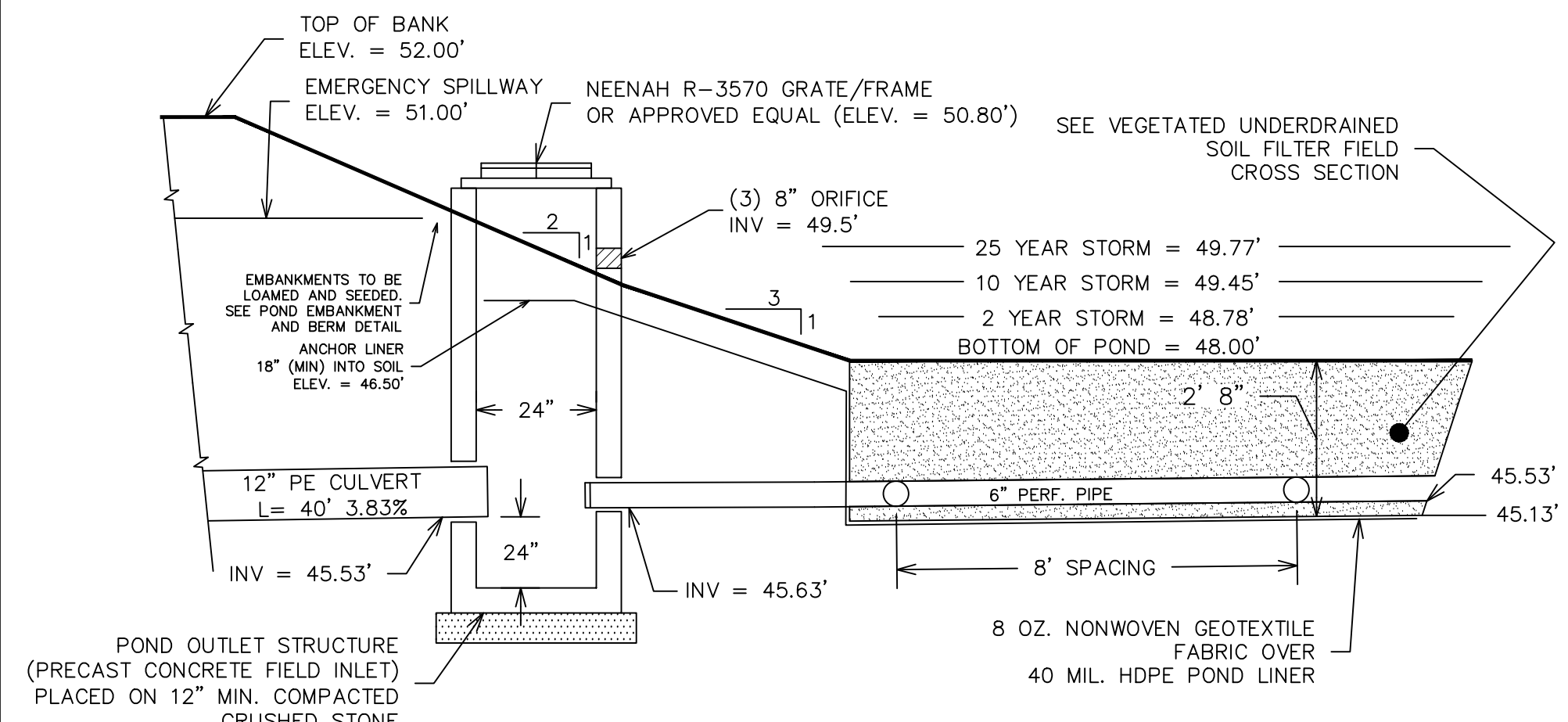
FILE: THE HOMESTEAD DET.DWG

SHEET: 5.2

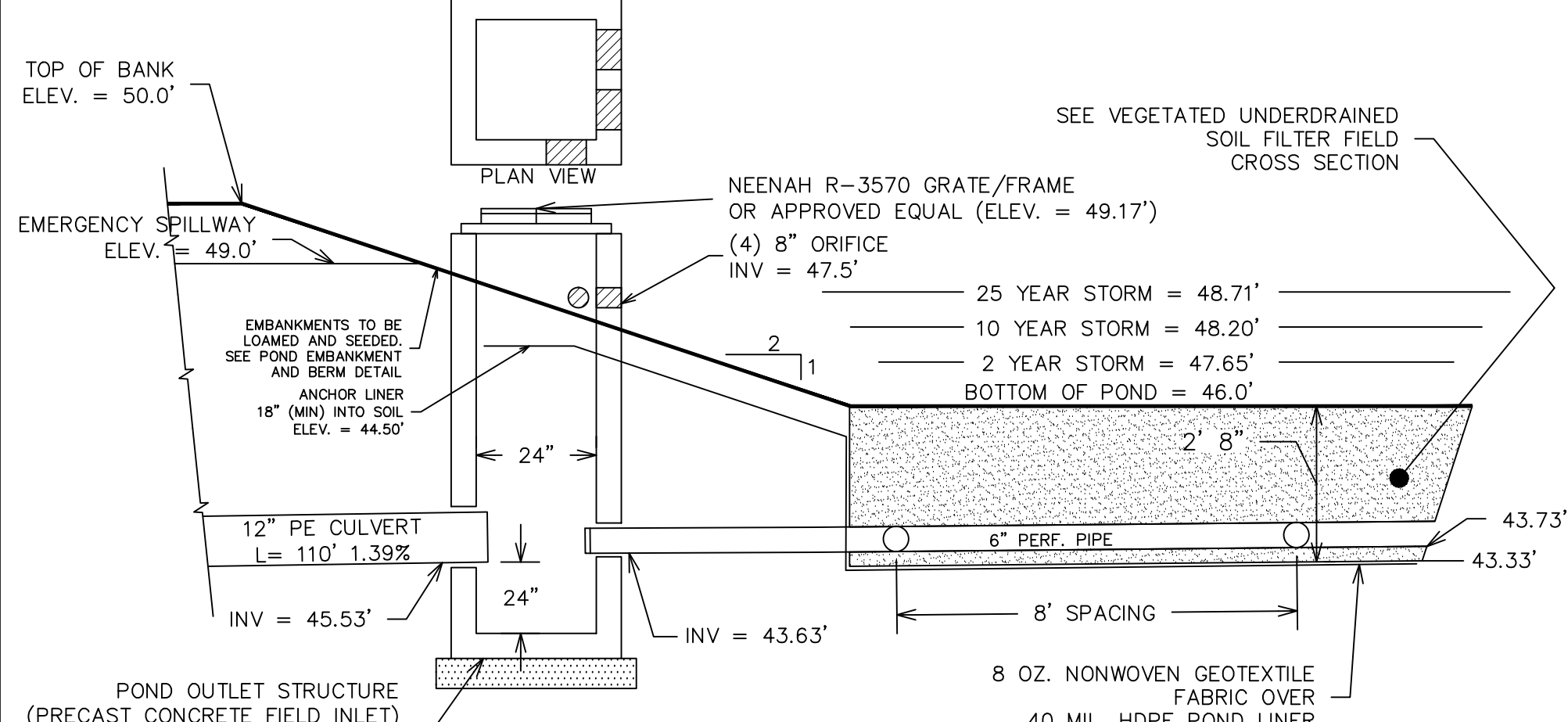
NO.	DESCRIPTION	DATE
A	PRELIMINARY PLAN REVISION	4/19/2018
	REVISIONS	



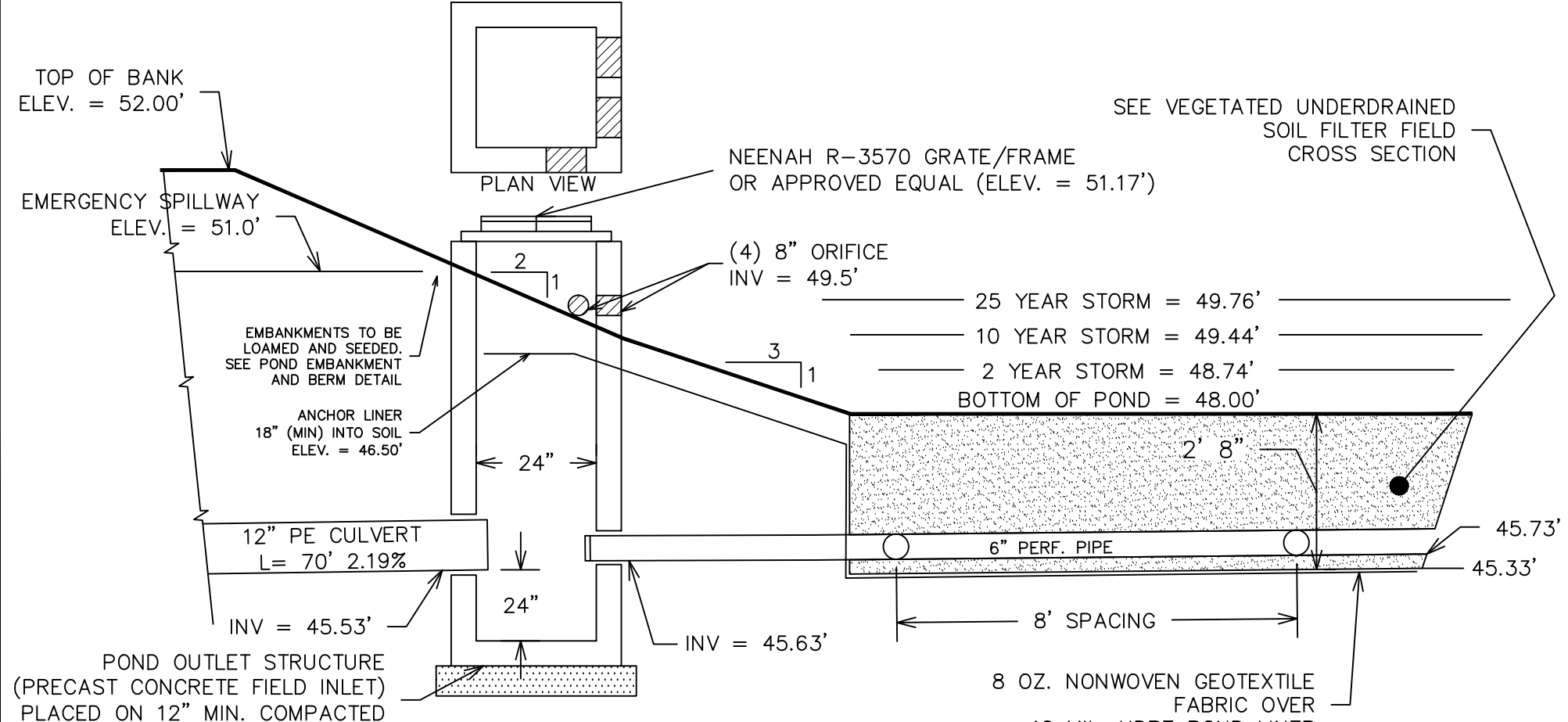
UNDERDRAINED SOIL FILTER POND 4P



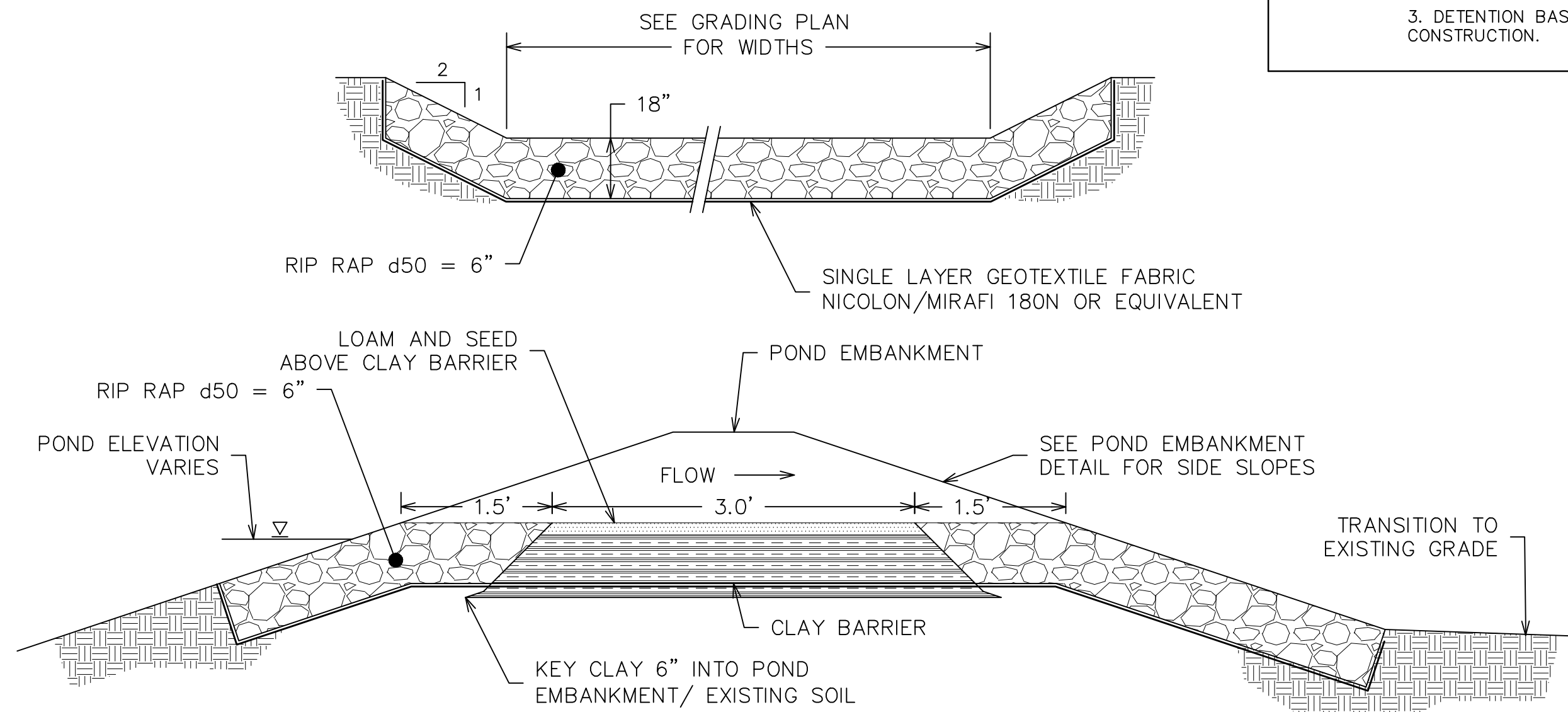
UNDERDRAINED SOIL FILTER POND 1P



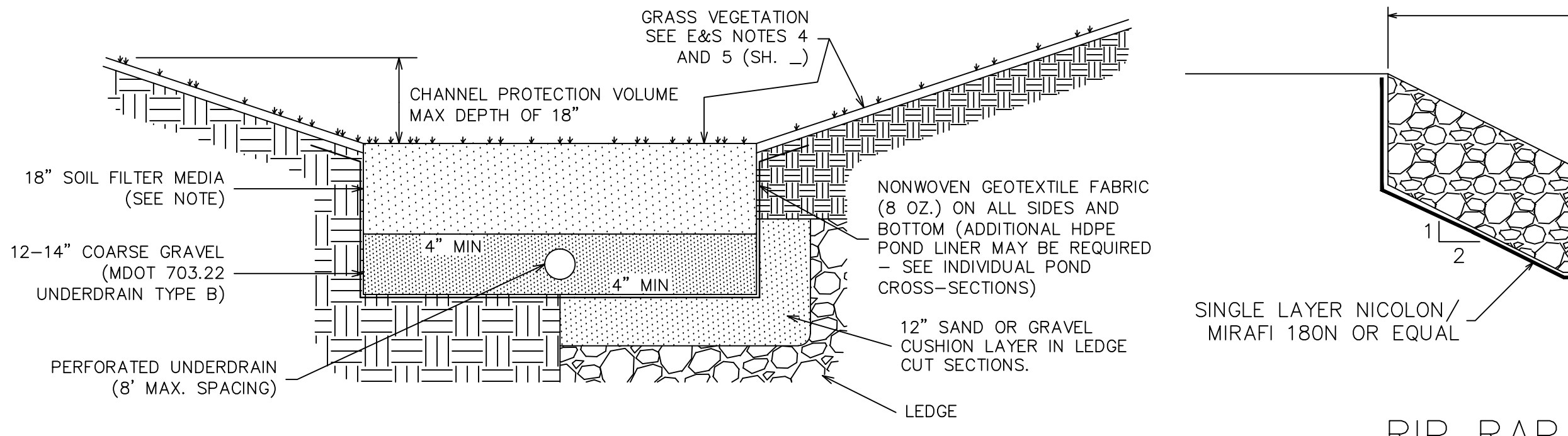
UNDERDRAINED SOIL FILTER POND 2P



UNDERDRAINED SOIL FILTER POND 3P



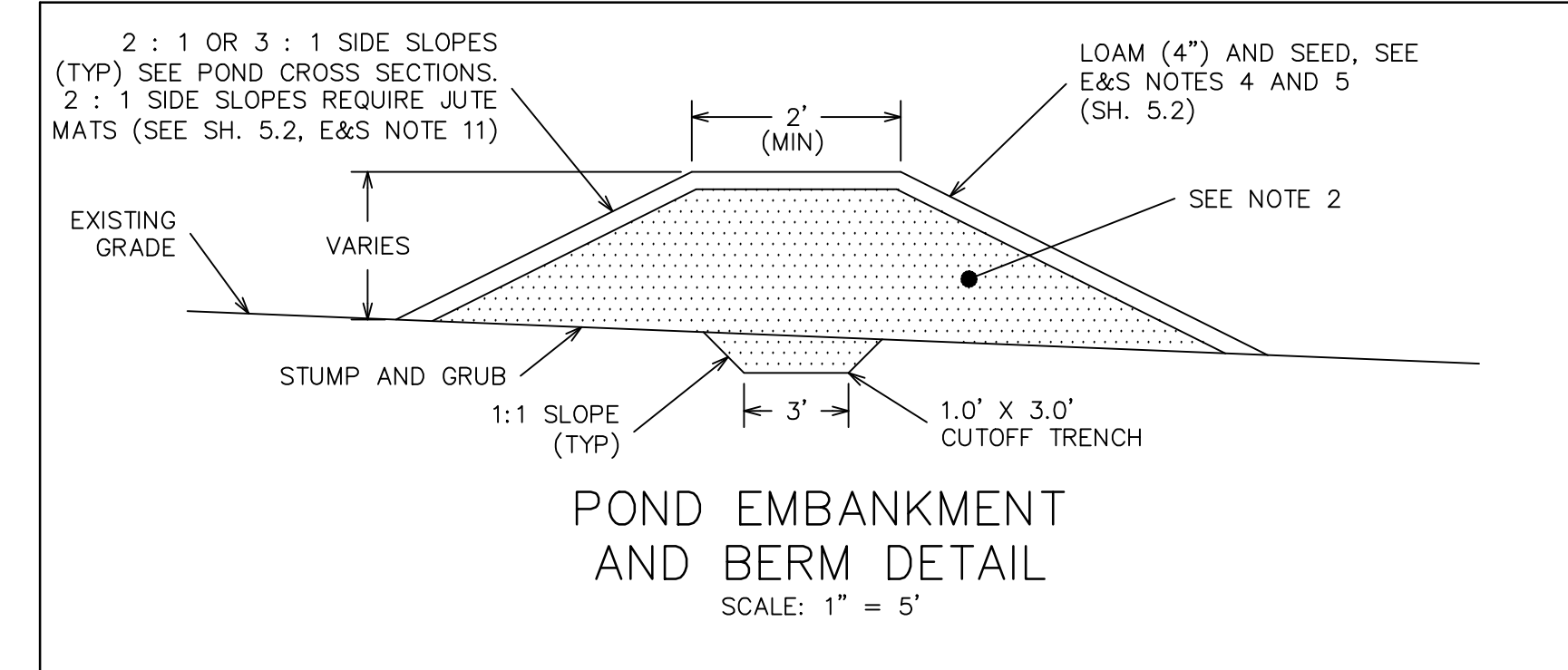
EMERGENCY SPILLWAY DETAIL



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 SEEDDED;
 - 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.

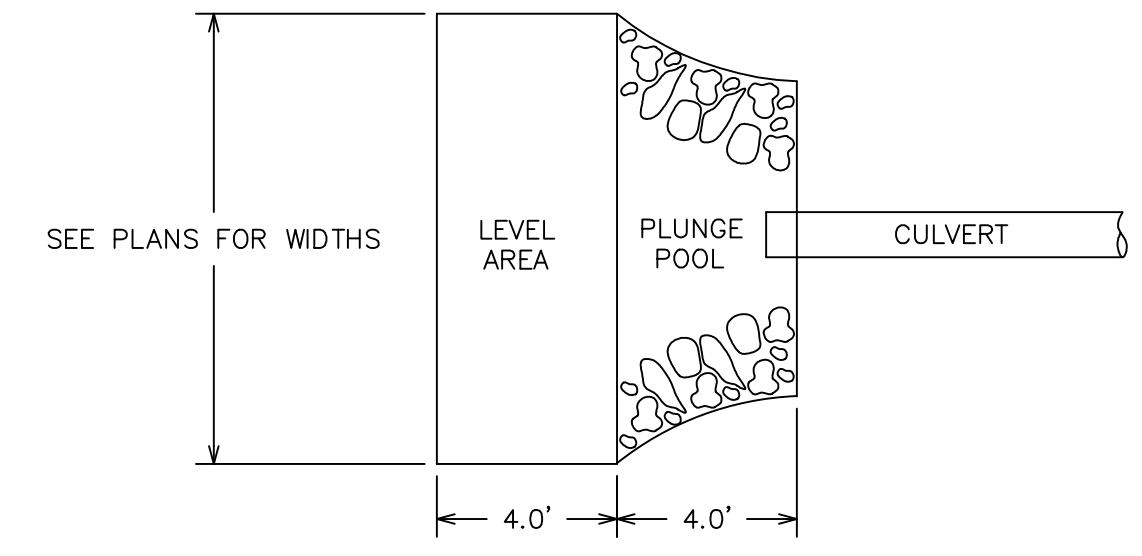


POND EMBANKMENT AND BERM DETAIL

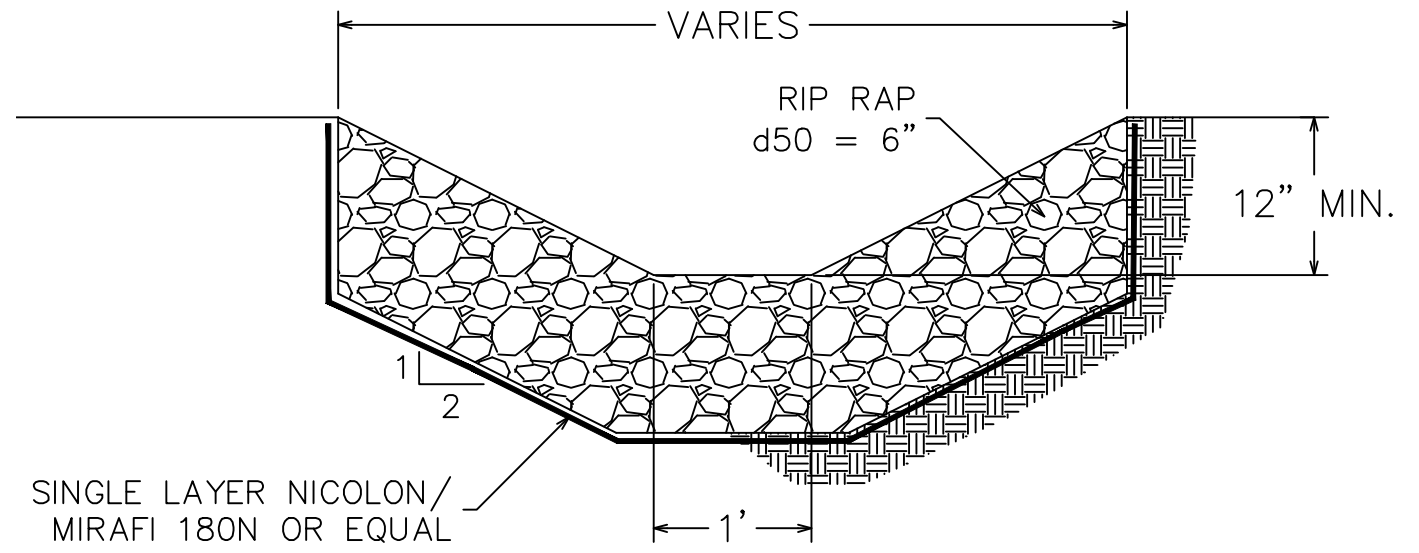
SCALE: 1" = 5'

EMBANKMENT CONSTRUCTION NOTES

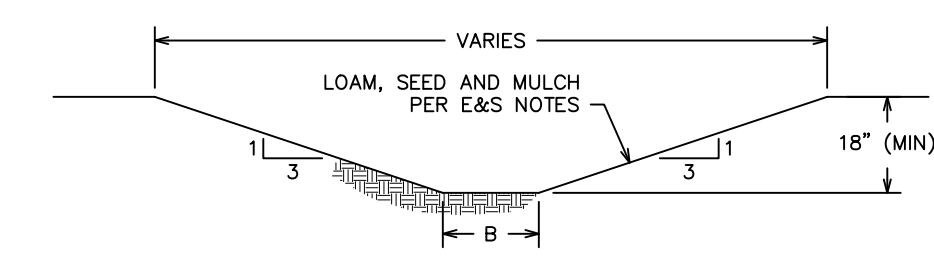
1. ALL ORGANIC MATERIAL, STUMPS, ROCKS AND BOULDERS SHALL BE REMOVED TO A MINIMUM DEPTH OF 24" BELOW SUBGRADE OF THE BASIN EMBANKMENT. ALL EXCAVATIONS BELOW THE BASIN EMBANKMENT SHALL HAVE A MINIMUM SLOPE OF 1H : 1V.
2. ALL BASIN EMBANKMENT FILL MATERIAL SHALL BE WELL GRADED BORROW WITH A MINIMUM OF 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.



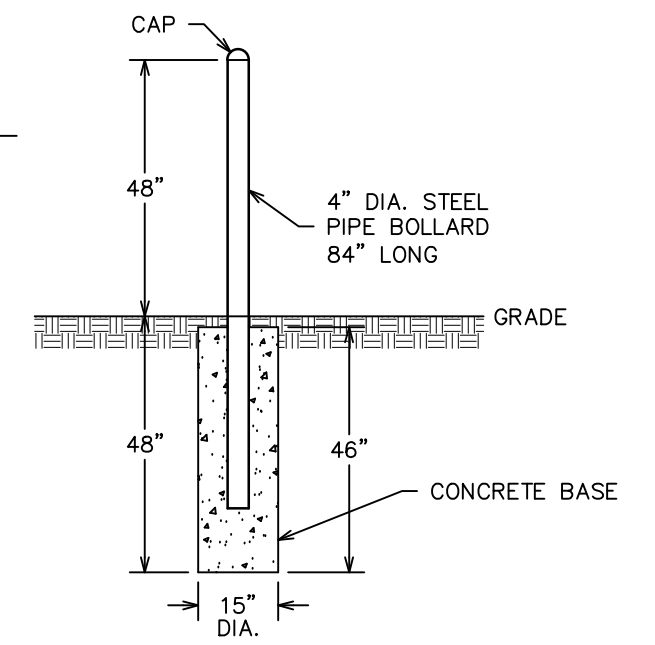
LEVEL SPREADER (NTS)



RIP RAP SWALE DETAIL (NTS)



VEGETATED SWALE DETAIL (NTS)

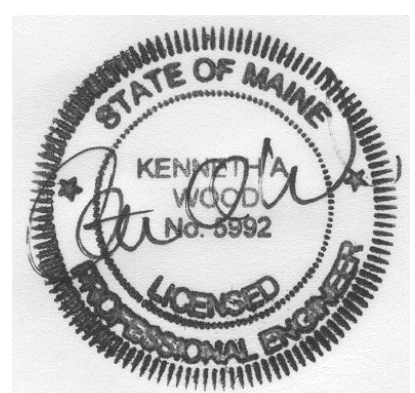


PROTECTIVE BOLLARD DETAIL (NTS)

5.3

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

NO.	DESCRIPTION	DATE
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
NO.	DESCRIPTION	DATE

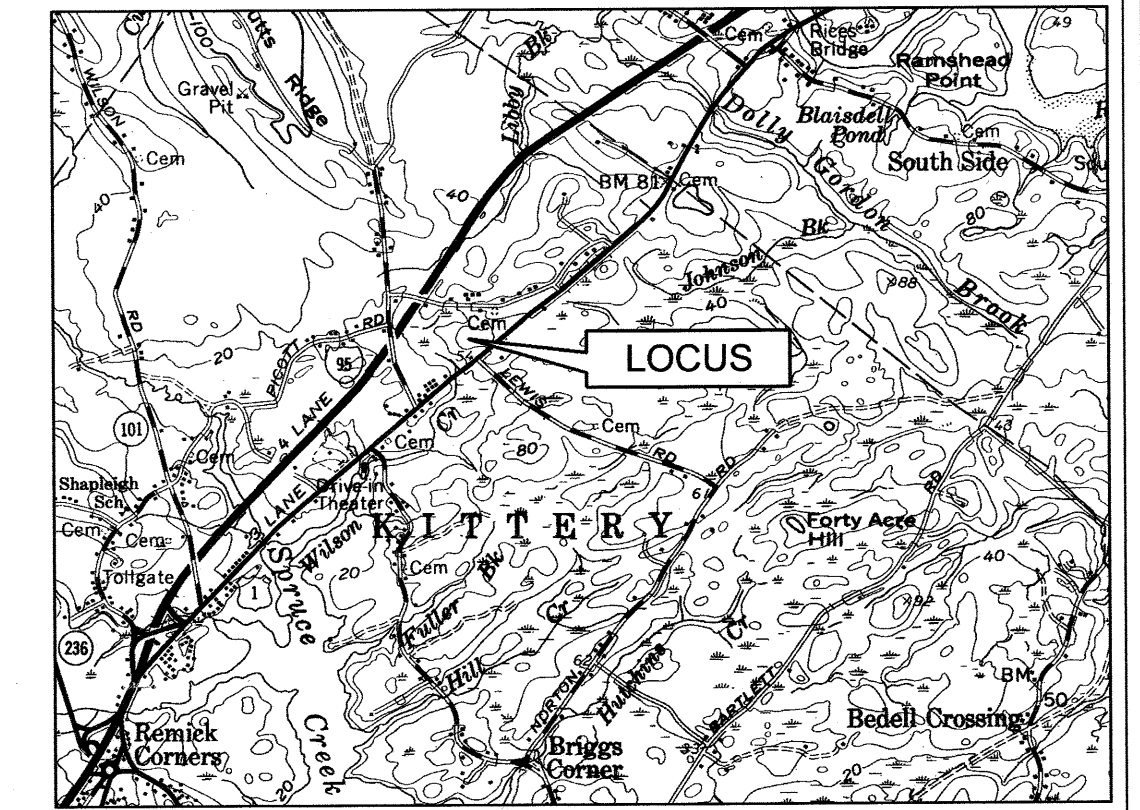


FOR: LANDMARK HILL, LLC.
 79 CONGRESS STREET
 PORTSMOUTH, NH 03801

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: BRN
DATE: 1/18/2018		REVISION DATE: G: 9/20/2018
JOB NO: C052-18	FILE: THE HOMESTEAD DET.DWG	SHEET: 5.3

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



VICINITY MAP

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.

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°05'53" E	66.69
L9	S 77°06'20" W	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

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

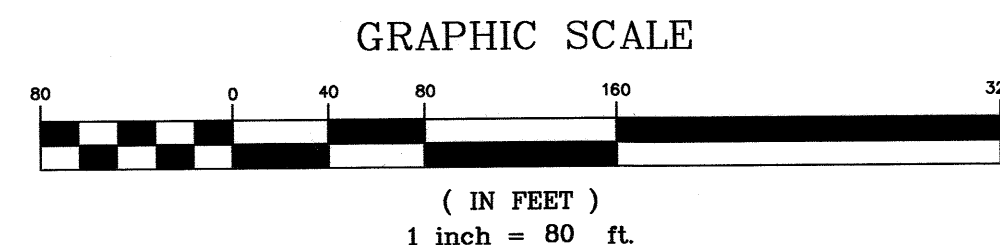
OWNER:
DSS Land Holdings, LLC
P.O. Box 242
York, ME 03909

REVISIONS:

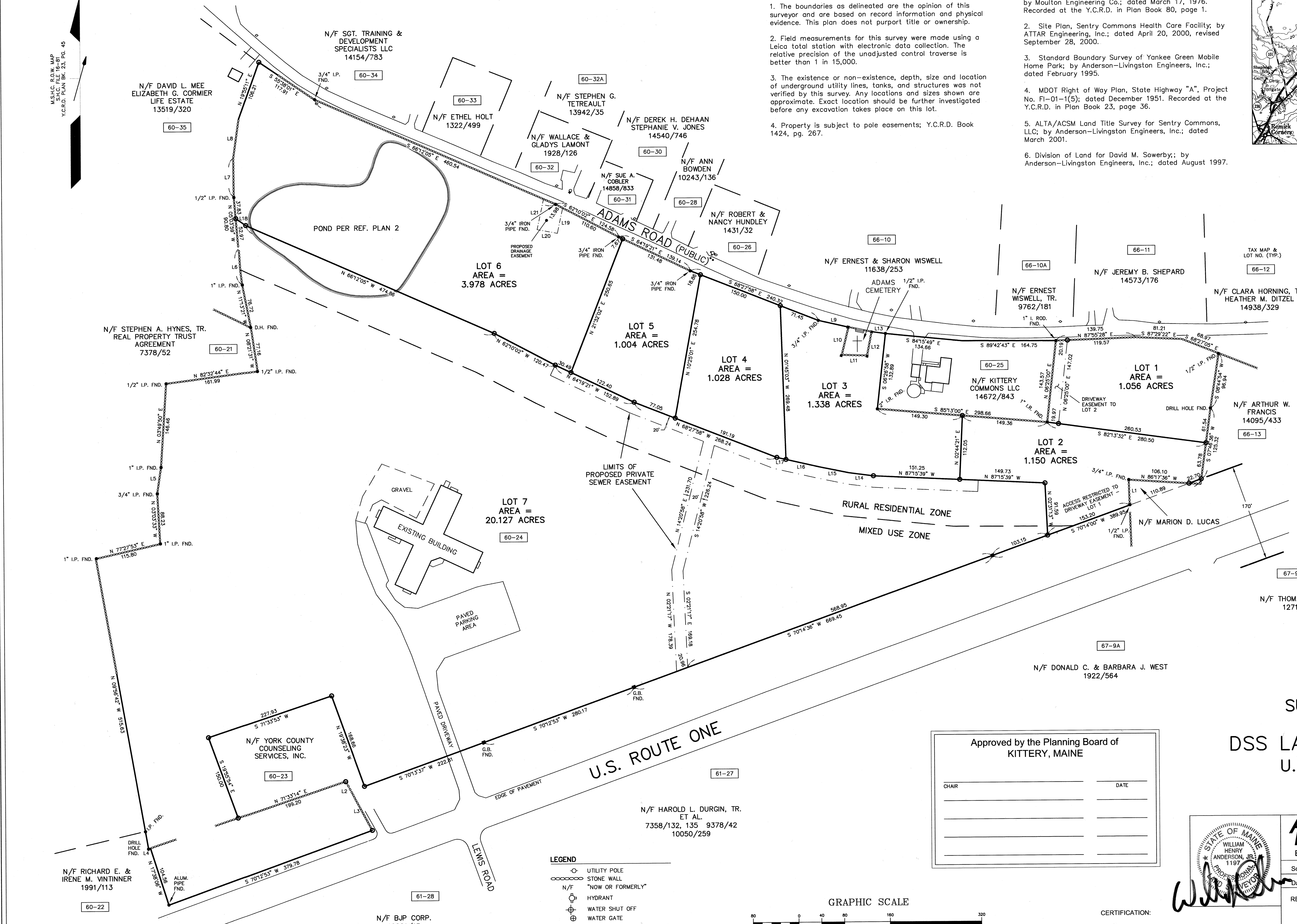
Sheet 1 of 1

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



FILE NO: 4872.004
PLAN NO: 1516.070901



14 UNIT BUILDING
 8 ELDERLY AND 6 SINGLE FAMILY
 24 ENCLOSED PARKING SPACES, 1 HANDICAP

AO	Presentation	PROJECT: 18-000 DATE: 9/4/2018	SCALE: AS NOTED DRAWN BY: AS		PROPOSED 14 DWELLING UNIT PLAN FOR: David Trainor Exit ROUTE 1 Kittery, ME 03884	DESIGNED BY: GAYIN & SULLIVAN ARCHITECTS, INC. 128 WARREN STREET, LOVELL, MA.
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16 ELDERLY UNITS
 24 ENCLOSED PARKING SPACES, 1 HANDICAP

AO

Presentation

PROJECT: 18-000
 DATE: 9/4/2018

SCALE AS NOTED
 DRAIN BY AS



PROPOSED 16 DWELLING UNIT PLAN FOR:
 David Trahan
 549 ROUTE 1
 Kittery, ME 03854

DESIGNED BY:
GAYIN & SULLIVAN ARCHITECTS, INC.
 128 WARREN STREET LOWELL, MA.



2 REAR PERSPECTIVE GREY
NO SCALE



1 FRONT PERSPECTIVE GREY
NO SCALE

These design guidelines and all materials, products, systems and construction methods are subject to change without notice. The design is the property of the architect and shall remain the property of the architect. All content shall be used only as indicated by the architect and shall not be used for any other purpose without the architect's consent.

TOWNEPLACE SUITES by MARRIOTT
Marriott International Inc.
1290 TownePlace Drive
Baltimore, MD 21217
(410) 955-3500

TOWNEPLACE SUITES MARRIOTT

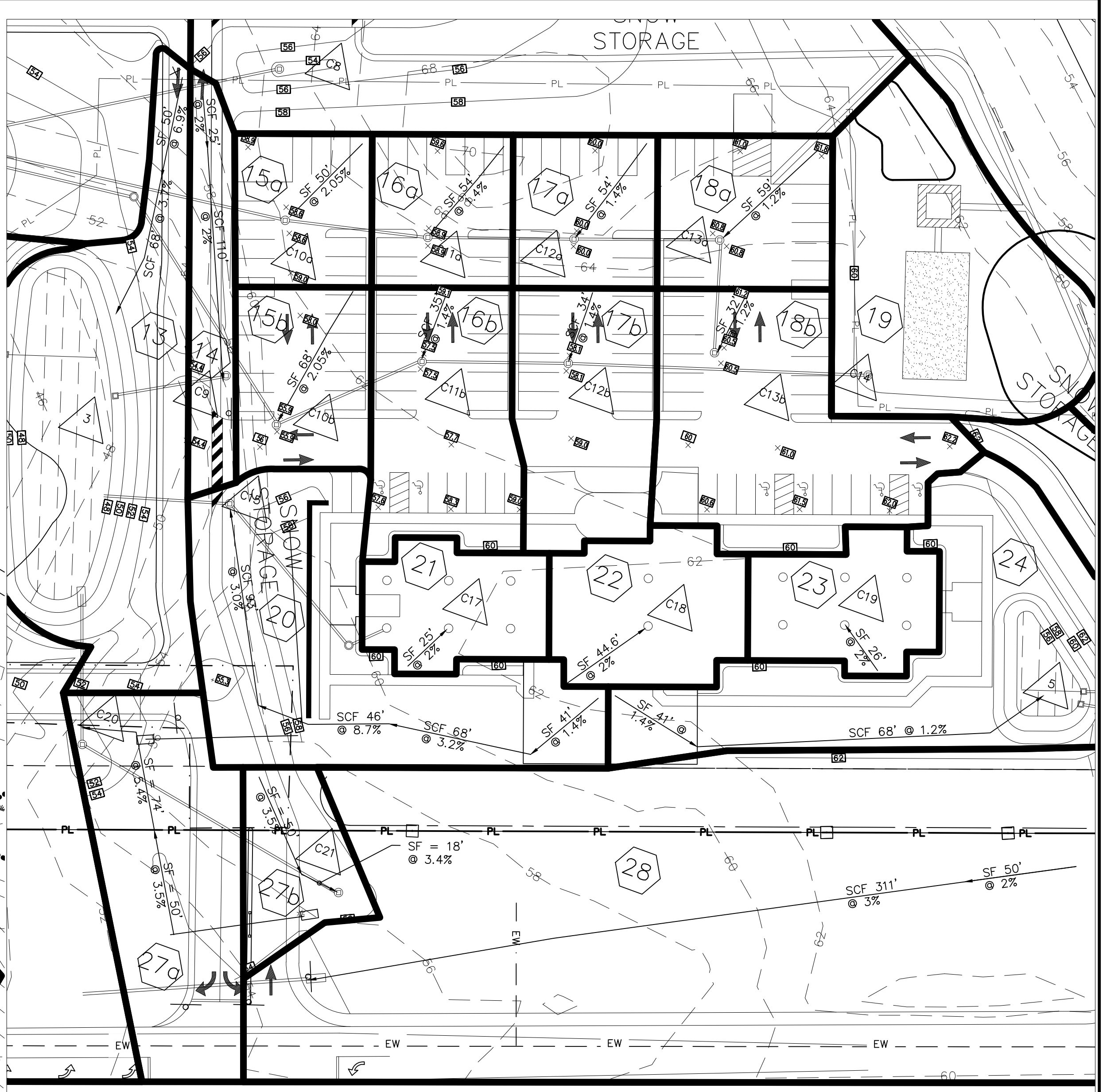
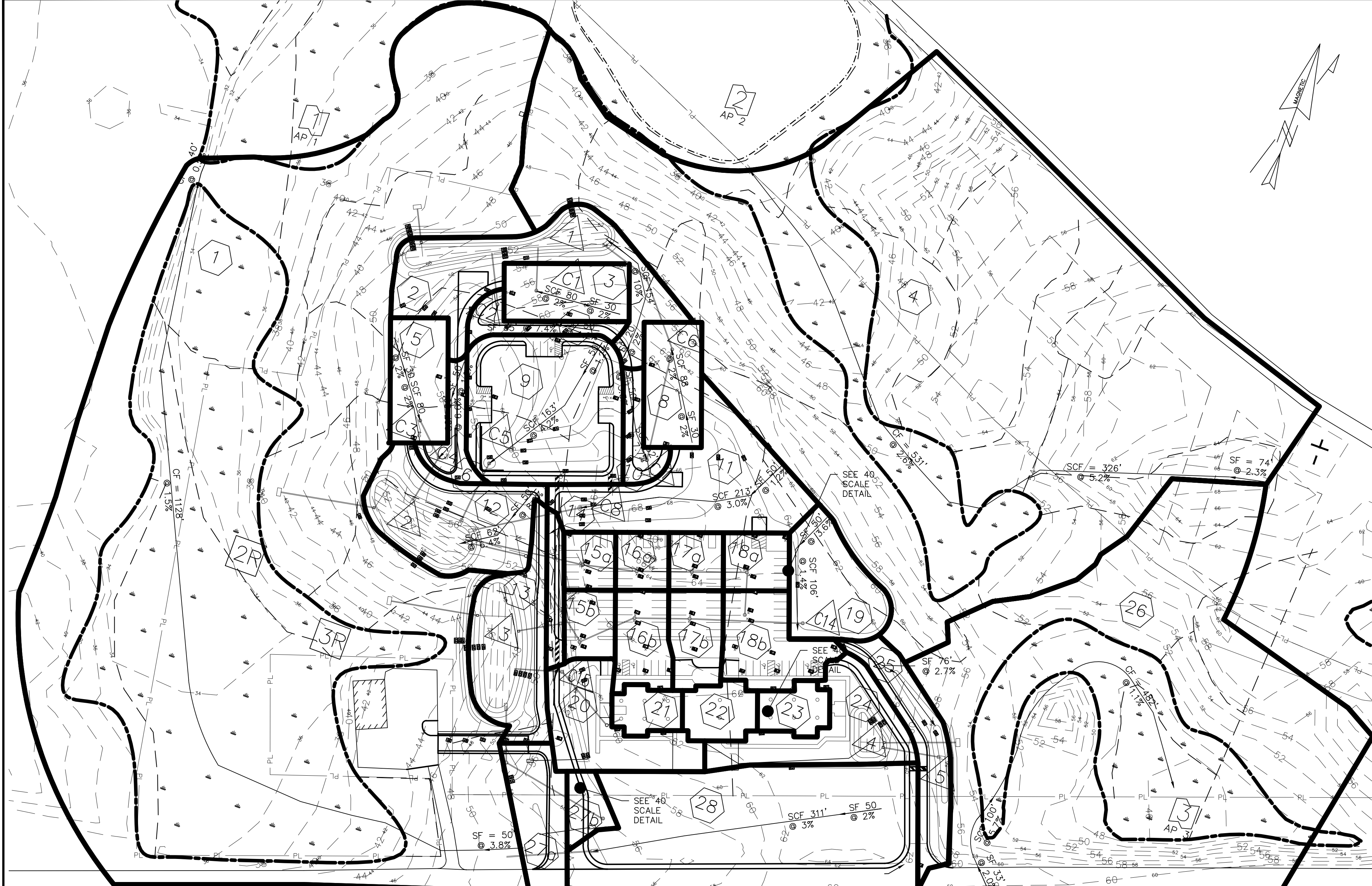
DESIGN GUIDELINE DRAWINGS
 ISSUE DATE: 12.15.15
 REVISION DATE: 04.21.17
 GENERATION: 4
 DESIGNER: TownePlace 2.0

EXTERIOR PERSPECTIVE

210

NOT FOR CONSTRUCTION

FILE NAME: 06-F04-210-007 Perspective



STORMWATER SUBCATCHMENTS DETAIL
40 SCALE

The Homestead - BMP Calculations

POND SIZING CALCULATIONS					
AREA	IMP. (ft ²)	LA. (ft ²)	RA. (ft ²)	BMP	CPV (ft ³) P. POOL (ft ³) CHECK
Pond 10					
2B	2,483	24,849		Soil Filter	1,027 N/A
3S	11,232	0			936
7S	3,202	1,756			325
8S	11,232	0			936
10S	2,687	2,168			296
Total	30,816	28,572			3,520 N/A
5% Impervious + 2% Landscaped Area = 2,112					
5% Impervious + 2% Remaining Area = 2,112					
Provided CPV = 7,812 OK					
Provided Area = 4233 OK					
Pond 20					
6S	11,232	0		Soil Filter	936 N/A
9S	3,980	2,223			331
9S	12,329	22,907			1,791
11S	2,498	27,177			1,114
12S	2,935	20,793			936
15Sa	3,795	846			344
15Sb	5,059	393			435
16Sa	4,344	437			377
16Sb	7,164	1,293			640
17Sa	4,447	456			386
17Sb	6,524	907			602
18Sa	5,032	897			449
18Sb	11,269	1,811			993
19S	400	14,853			516
Total	80,506	94,483	0		9,858 N/A 0.00
5% Impervious + 2% Landscaped Area = 5,915					
5% Impervious + 2% Remaining Area = 10,292					
Provided CPV = 16,209 OK					
Provided Area = 6,209 OK					
Pond 30					
13S	4,623	15,527		Soil Filter	903 N/A
14S	3,186	833			295
20S	6,102	10,216			849
21S	4,672	0			389
22S	6,181	0			915
23S	5,402	0			550
27Sa	2,125	1,834			242
27Sb	4,341	5,915			559
Total	36,612	34,527	0		4,202 N/A 0.00
5% Impervious + 2% Landscaped Area = 2,521					
5% Impervious + 2% Remaining Area = 9,439					
Provided CPV = 5,516 OK					
Pond 40					
24S	5,412	11,587		Soil Filter	837 N/A
25S	4,791	8,032			667
Total	10,203	19,619	1,504		1,504 N/A 0.00
5% Impervious + 2% Landscaped Area = 903					
5% Impervious + 2% Remaining Area = 903					
Provided CPV = 1,870 OK					

TABLE 1 - QUANTITY CALCULATIONS

EXISTING	STORM EVENT		
	2	10	25
AP 1	13.4	27.2	39.21
AP 2	6.26	13.24	19.43
AP 3	6.28	12.74	18.35
DEVELOPED			
AP 1	8.39	16.78	24.78
AP 2	5.10	10.79	15.84
AP 3	6.00	11.86	18.16
CHANGE			
AP 1	-5.01	-10.42	-14.43
AP 2	-1.16	-2.45	-3.59
AP 3	-0.28	-0.88	-0.19
TOTAL	-6.45	-13.75	-18.21

TREATMENT CALCULATIONS

New Impervious Area to be Treated @95% 165,250 sf
New Developed Area to be Treated @80% 357,977 sf

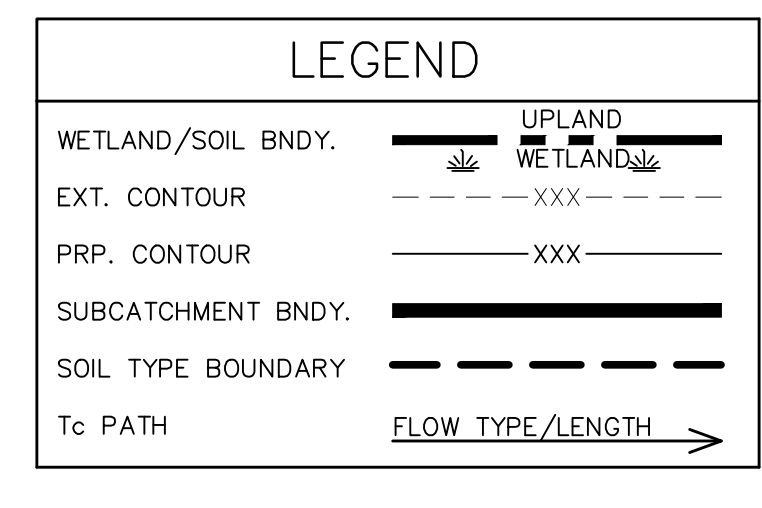
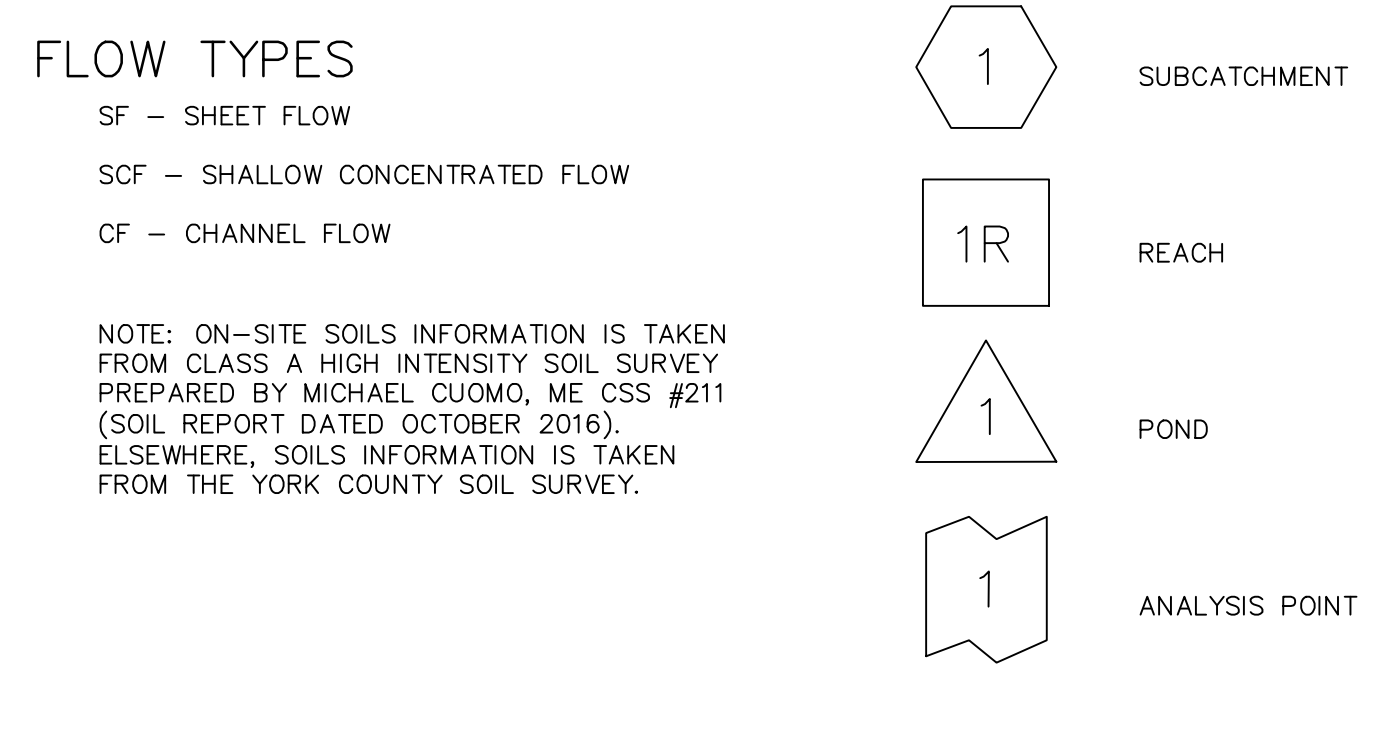
3.79 Acres
8.22 Acres

AMENDED DEVELOPED CONDITIONS:

AREA	IMP. (ft ²)				LA. (ft ²)				DEV. (ft ²)				
	Ext.	Created	Total	Not Treated	Ext.	Created	Total	Not Treated	Ext.	Created	Total	Not Treated	
1S	1,933	0	1,933	0	5,331	0	5,331	1,933	7,264	0	7,264	0	
2S	2,483	2,483	0	24,649	24,649	0	2,483	27,132	0	27,132	0	27,132	
3S	11,232	11,232	0	0	0	11,232	0	11,232	0	11,232	0	11,232	
4S	0	0	0	0	0	0	0	0	0	0	0	0	
5S	11,232	11,232	0	0	0	0	11,232	11,232	0	11,232	0	11,232	
6S	3,080	3,080	0	2,223	2,223	0	3,903	5,303	0	5,303	0	5,303	
7S	3,202	3,202	0	1,756	1,756	0	4,957	4,957	0	4,957	0	4,957	
8S	11,232	11,232	0	0	0	11,232	0	11,232	0	11,232	0	11,232	
9S	12,329	12,329	0	22,907	22,907	0	35,236	35,236	0	35,236	0	35,236	
10S	2,687	2,687	0	2,168	2,168	0	4,855	4,855	0	4,855	0	4,855	
11S	2,498	2,498	0	27,177	27,177	0	29,673	29,673	0	29,673	0	29,673	
12S	2,935	2,935	0	20,793	20,793	0	23,728	23,728	0	23,728	0	23,728	
13S	4,623	4,623	0	15,527	15,527	0	20,150	20,150	0	20,150	0	20,150	
14S	3,186	3,186	0	833	833	0	4,099	4,099	0	4,099	0	4,099	
15Sa	3,795	3,795	0	846	846	0	4,641	4,641	0	4,641	0	4,641	
15Sb	5,059	5,059	0	393	393	0	5,452	5,452	0	5,452	0	5,452	
16Sa	4,344	4,344	0	437	437	0	4,781	4,781	0	4,781	0	4,781	
16Sb	7,164	7,164	0	1,293	1,293	0	8,457	8,457	0	8,457	0	8,457	
17Sa	4,447	4,447	0	456	456	0	4,903	4,903	0	4,903	0	4,903	
17Sb	6,524	6,524	0	907	907	0	7,431	7,431	0	7,431	0	7,431	
18Sa	5,032	5,032	0	897	897	0	5,929	5,929	0	5,929	0	5,929	
18Sb	11,269	11,269	0	1,811	1,811	0	12,880	12,880	0	12,880	0	12,880	
19S	400	400	0	14,853	14,853	0	15,253	15,253	0	15,253	0	15,253	
20S	6,102	6,102	0	10,216	10,216	0	16,320	16,320	0	16,320	0	16,320	
21S	4,672	4,672	0	4,672	4,672	0	4,672	4,672	0	4,672	0	4,672	
22S	6,181	6,181	0	0	0	6,181	0	6,181	0	6,181	0	6,181	
23S	5,402	5,402	0	0	0	5,402	0	5,402	0	5,402	0	5,402	
24S	5,412	5,412	0	11,587	11,587	0	16,999	16,999	0	16,999	0	16,999	
25S	4,791	4,791	0	8,032	8,032	0	12,823	12,823	0	12,823	0	12,823	
26S	0	0	0	1,221	1,221	0	1,221	1,221	0	1,221	0	1,221	
27Sa	2,125	2,125	0	1,834	1,834	0	4,059	4,059	0	4,059	0	4,059	
27Sb	4,341	4,341	0	5,915	5,915	0	10,256	10,256	0	10,256	0	10,256	
28S	5180	0	5180	0	8974	0	8974	0	14154	0	14154	0	
TOTAL	0	165,250	0	158,137	7,113	0	192,727	0	177,201	15,526	0	337,977	0

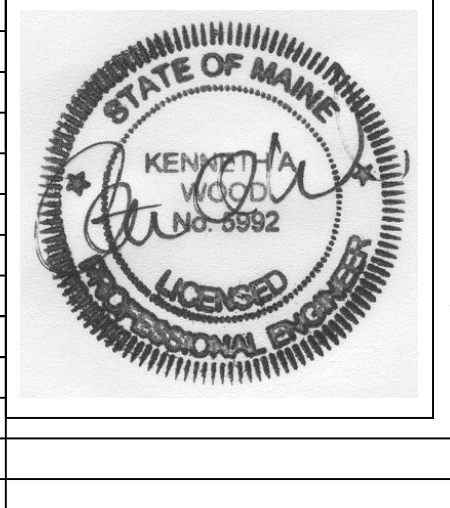
NEW

AREA	IMP. (ft ²)	DEV (ft ²)
Total Area	166,137	335,338
Total Acres	3.83	7.70
% Treated	95.7%	93.7%



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

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

APPROVED BY: [Signature]
DRAWN BY: BRN
REVISION: DATE 1:9/20/2018
SHEET 7.2