Town of Kittery
Planning Board Meeting
October 26, 2023

ITEM 2—17 and 25 US Route 236—Major Site Plan — Preliminary Review
Action: accept site plan as complete. Schedule site walk/public hearing. Geoff Aleva, on behalf of owner/applicant 25 & 17 Route 236 LLC, is proposing to develop a 35-unit rooming house and associated parking shared with an existing 7-unit apartment on the properties of 25 and 17 Route 236, Tax Map 21 Lot 20 & Map 20 Lot 12, in the Route 236 Commercial (C-2) Zone.

PROCESS SUMMARY

REQ'D	ACTION	COMMENTS	STATUS
NO	Sketch Plan Acceptance/Approval	8/10/23	Accepted
YES	Planning board determination of completeness	Scheduled for 10/26/23	Pending
NO	Site Visit		TBD
YES	Public Hearing	Required for Preliminary Site Plan or Subdivision Approval	TBD
YES	Preliminary Plan Approval		TBD
YES	Final Plan Review and Decision		TBD
Applicant: Prior to the signing of the approved Plan any **Conditions of Approval related to the Findings of Fact along with waivers and variances (by the BOA) must be placed on the Final Plan and, when applicable, recorded at the York County Registry of Deeds. PLACE THE MAP AND LOT NUMBER IN 1/4" HIGH LETTERS AT LOWER RIGHT BORDER OF ALL PLAN SHEETS.** As per Section 16.4.4.L - Grading/Construction Final Plan Required. - Grading or construction of roads, grading of land or lots, or construction of buildings is prohibited until the original copy of the approved final plan endorsed has been duly recorded in the York County registry of deeds when applicable.			

OTHER PERMITS AND REQUIREMENTS
- Wetland delineation study
- State Fire Marshal NFPA #13 fire protection system approval.
- DEP construction permitting and site review.

PROJECT INTRODUCTION

This is the first preliminary review for a proposed 3-story rooming house that would consist of 61 beds and 35 total rental units. The development is located on the properties of 17 & 25 Route 236, both of which are non-conforming lots due to road frontage. The proposed rooming house would be located entirely on the property of 17 Route 236, which currently contains woodlands and a shed that would be demolished. The existing apartment and parking lot are located entirely on 25 Route 236. The apartment is a legally non-conforming use in the C-2 zone, meets current parking requirements, and will not be modified as a part of the development. A 420-foot driveway provides access to both lots from route 236, and directly abuts a 1,314 sq ft. wetland on the northwest side of the lot (the bottom left corner of the site plan).

The proposed rooming house would have nine 1-bedroom units and twenty-six 2-bedroom units for a total of 35 rooms. Each floor would have separate bathrooms for men and women, shared living room space, and a shared kitchen. Workers would be charged rent for staying in the rooming house, and a superintendent would live on the site in one of the single bed units, meaning the development meets the definition of a rooming house per **§16.3**. Parking spaces would connect to the existing parking lot for the apartment. The applicant is proposing a bike storage shed and vanpool service to facilitate alternative methods of travel for the tenants of the rooming house. Existing utilities servicing the apartment would be extended to the proposed development, and the project proposes to utilize existing vegetation to provide screening along Route 236.

The applicant provided the required conceptual plan and narrative information and is requesting modifications for landscaping and parking standards, discussed below. The site plan and drainage analysis were reviewed by a third-party engineer, who concluded the plan meets requirements and any identified issues are not significant enough to hinder preliminary plan approval. Staff advise discussing prospective phasing during this meeting.

WAIVERS REQUESTED

1. Minimum Parking Standards: the applicant requests to reduce parking minimum requirements from 49 spaces to 37 spaces. The applicant argues current parking requirements do not accurately represent the expected parking demand and proposes a vanpool service and facilities to encourage biking to compensate for reduced parking.
2. Landscaping of parking requirements: the applicant is requesting a waiver of a landscape strip as the site is screened with an existing tree line and not visible to the surrounding lots.
3. Landscaping plan modification: the applicant is requesting a waiver from parking lot landscaping requirements, as they believe the site contains adequate vegetation that will not be removed as part of the development.

STAFF COMMENTS

Listed below are additional comments provided by staff in addition to general review of standards:

1. The engineer peer review made a note requesting existing utility information be added to the plan. Fire and water district staff note the water main on the property must be large enough to allow adequate capacity for a hydrant.
2. At the sketch review, the planning board asked if an elevator was required in the rooming house. This determination is the purview of the State Fire Marshal. The applicant is currently communicating with the State Fire Marshal's Office to determine whether an elevator will be required and anticipates an answer before final plan approval.
3. The applicant has stated they will comply with state regulations to require a superintendent's ledger of all tenants in the rooming house.
4. Following input from the planning board, the applicant increased the size of the proposed patio to 24x50 feet to provide increased recreational area.
5. The applicant is proposing only building-mounted lighting. A full photometric plan is a requirement at the final site plan review.
6. The proposed new ADA parking space has been designated as van accessible, to ensure the accessibility of the vanpool service.
7. The applicant provided a FIRM map showing the parcels are outside of the nearby flood zones indicated by the survey.
8. The applicant has stated the intention of the rooming house is to house staff year-round, and not will not be utilized during a specific season.

PROJECT ANALYSIS

Staff reviewed the application and provided materials and have provided their determination on the requirements and standards below:

Code Ref.	§16.4 Land Use Zone Standards	
	Standard	Determination
§16.4.20.B/C.	Permitted/Special Exception Uses	The proposed use is permitted
§16.4.20.D.(2).(a).	Lot size: 40,000 sq ft. minimum	It appears the standard is satisfied.
§16.4.20.D.(2).(b).	Street frontage: 150 ft minimum	25 Route 236 is a legally nonconforming lot with less than approximately 60 feet of frontage. 17 Route 236 is a legally nonconforming lot with 0 frontage. Merging the two lots will reduce overall nonconformance.
§16.4.20.D.(2).(c).	Front setback: 50 ft minimum	It appears the standard is satisfied.
§16.4.20.D.(2).(d).	Rear and side setbacks: 30 ft minimum NOTE: Except as may be required by the buffer provisions of this title, and where the side and/or rear yards of the proposed nonresidential use abut a residential zone or use; in which case a minimum of 40 feet is required.	It appears the standard is satisfied.
§16.4.20.D.(2).(e).	Building height: 40 ft maximum	It appears the standard is satisfied.
§16.4.20.D.(2).(f).	Imperious surface: 40% maximum	It appears the standard is satisfied.
§16.4.20.D.(2).(g).	Water body setback for water dependent uses: 0 ft minimum	Not applicable.
§16.4.20.D.(2).(i)..	Gasoline sales not located within: • 1,000 feet of an existing station or private residence • 150 feet of an existing structure	Not applicable
§16.4.20.D.(2).(j).	Repair garages not located within 150 feet of a private dwelling or existing structure	Not applicable

§16.4.20.D.(2).(l).	Mixed-use building must have nonresidential uses comprising at least 50% of the street-facing first floor	The proposed development is for a single use. The standard is not applicable.
§16.4.20.D.(2).(m).	Underground utilities are required.	It appears the standard is satisfied.
§16.4.20.D.(3).(a).	New parking must be visually screened through the use of landscaping or fencing from adjacent public streets or residential properties. Parking space dimensions: 19' x 9'	The applicant is requesting a waiver from the screening requirement, described above. Otherwise, the standard appears satisfied.
§16.4.20.D.(3).(b)..	New buildings must follow principles set forth in the Design Handbook	It appears the standard is satisfied.
§16.4.20.D.(3).(c).	Landscaping improvements: • Minimum 20 feet vegetated planter strip adjacent to the right of way of public roads.	The applicant is requesting a waiver from landscaping improvements, as they do not abut residential properties.
§16.4.20.D.(3).(d).	Special situations applying to landscaping standards.	Does not appear applicable.
§16.4.20.D.(3).(e).	Waste storage areas such as dumpsters must be within an enclosure and visually screened by fencing, landscaping, or other treatments.	The dumpster pad in the parking area must have visual screening.
§16.4.20.D.(3).(f).	Vehicle and pedestrian circulation standards must meet the general provisions of the Design Handbook.	It appears the standard is satisfied.
Code Ref.	§16.5 Performance Standards	
	Standard	Determination
§16.5.14.B	The creation of new flag-shaped lots is prohibited.	Because 17 Route 236 is a land-locked parcel, merging the two lots together would reduce overall non-conformity by increasing its road frontage from 0 to ~60. 25 Route

		236 is an already existing flag-shaped lot, meaning the merging would not increase non-conformity.
§16.5.10	Essential Services	All utilities must be underground. The plan proposes to upgrade a failed culvert in the private driveway. Fire staff have requested a hydrant be installed adjacent to the existing apartment building, to ensure emergency coverage of both properties.
§16.5.25	Sprinkler Systems are required in all buildings of three or more stories.	Sprinkler systems must meet NFPA standards.
§16.5.27	Street Standards: sidewalks are required along the entire Old Post Road ROW	The only frontage to Route 236 is through the private driveway. Per the definition of a driveway in **16.3**, it is too short to be considered a right-of-way.
§16.5.30	All wetlands of 501 sq ft.or greater trigger setbacks for certain uses	The driveway is within a 30-foot setback for a wetland identified in the southwest corner. The driveway is legally non-conforming and will not be expanded in any way as a part of this development.
§16.7.11.F.(e).	A minimum of 49 parking spaces are required: • 14 spaces for the existing 7-room apartment (2 spaces per apartment) • 35 spaces for the new rooming house (1 space per room)	The applicant is requesting a waiver to allow for 37 parking spaces, as described above. The plan appears to meet ADA space requirements
Code Ref.	§16.7.10 Preliminary Site Plan Requirements	
	Standard	Determination

§16.7.10.C.(4).(a-i).	• Paper plan sheets no smaller than 11" x 17" • Scale of drawing no greater than 1 inch = 30 feet • Code block in right-hand corner • Standard boundary survey of existing conditions • Compass with arrow pointing true north • Locus map of property • Vicinity map and aerial photograph • Surveyed acreage of parcel(s), rights-of-way, wetlands, and amount of street frontage • Names and addresses of owners of record abutting property	Provided
§16.7.10.C.(4).(j).	Existing conditions survey including all identified structures, natural resources, rights-of-way, and utilities located on and within 100 feet of the property.	Provided
§16.7.10.C.(4).(k).	• Proposed development area including: • Location and detail of proposed structures and signs • Proposed utilities including power, water, and sewer. • Sewage facilities type and placement. • Domestic water source • Lot lines, rights-of-way, and street alignments • Road and other paved area plans • Existing and proposed setbacks • Storage areas for waste or hazardous materials • Topographic contours of existing contours and finished grade elevations • Locations and dimensions of artificial features such as pedestrian ways, sidewalks, curb cuts, driveways, fences, retaining walls,	Provided
§16.7.10.C.(4).(l).	Natural features or site elements to be preserved.	Provided
§16.7.10.C.(4).(m).	Identified property encumbrances.	Provided
§16.7.10.C.(4).(n).	Kittery Water District approval letter.	Provided
§16.7.10.C.(4).(o).	Erosion and sedimentation control plan.	Provided
§16.7.10.C.(4).(p).	Stormwater management plan and drainage analysis.	Provided
§16.7.10.C.(4).(q).	Soil survey.	Provided
§16.7.10.C.(4).(r).	Vehicular traffic report.	Provided
§16.7.10.C.(4).(s).	Traffic impact analysis.	Neither proposed number of parking spaces nor estimated trip generation trigger requirements for a traffic impact analysis.
§16.7.10.C.(4).(t).	Test pit analysis.	Not applicable
§16.7.10.C.(4).(u).	Approval letter from Town sewage.	Provided

§16.7.10.C.(4).(v).	Evaluation of development by Technical Review Committee department heads.	Provided
§16.7.10.C.(4).(w).	Additional submissions as required.	None identified at this time

DISCUSSION, NEXT STEPS, AND RECOMMENDATIONS

The purpose of the first meeting of a preliminary site plan is to determine the completeness of the application, provide specific feedback to the applicant, and determine whether the plan is ready to schedule a public hearing. The issues that have been identified are able to be modified at later iterations of the preliminary site plan. Staff believe the application meets all submission requirements for initial acceptance and suggest the planning board advise the applicant regarding their willingness to entertain the proposed modifications.

RECOMMENDED MOTIONS

Below are recommended motions for the Board's use and consideration:

Motion to accept the application as complete

Move to accept the preliminary site plan by Geoff Aleva, on behalf of owner/applicant 25 & 17 Route 236 LLC, proposing to develop a 35-unit rooming house and associated parking shared with an existing 7-unit apartment on the properties of 25 and 17 Route 236, Tax Map 21 Lot 20 & Map 20 Lot 12, in the Route 236 Commercial (C-2) Zone.

Motion to schedule a site walk

Move to visit the site of the preliminary site plan by Geoff Aleva, on behalf of owner/applicant 25 & 17 Route 236 LLC, proposing to develop a 35-unit rooming house and associated parking shared with an existing 7-unit apartment on the properties of 25 and 17 Route 236, Tax Map 21 Lot 20 & Map 20 Lot 12, in the Route 236 Commercial (C-2) Zone.

Motion to schedule a public hearing

Move to schedule a public hearing for the preliminary site plan by Geoff Aleva, on behalf of owner/applicant 25 & 17 Route 236 LLC, proposing to develop a 35-unit rooming house and associated parking shared with an existing 7-unit apartment on the properties of 25 and 17 Route 236, Tax Map 21 Lot 20 & Map 20 Lot 12, in the Route 236 Commercial (C-2) Zone.

CIVIL CONSULTANTS MEMORANDUM

TO: **Town of Kittery Planning Department**

FROM: **Geoffrey R. Aleva, PE**

SUBJECT: **PRELIMINARY PLAN PROJECT NARRATIVE**

DATE: ***09/14/2023***

PROJECT: **22-180.00 – 25 & 17 ROUTE 236 LLC**

This project narrative is intended to accompany the sketch plan submission for the redevelopment at 17 and 25 Route 236, known as Map 20, Lot 12 and Map 21, Lot 20 on the Town of Kittery tax map system. The properties are owned by the same entity and will be merged into one lot. The combined lot area of the combined parcel will be 152,583 SF(3.5 Acres).

This narrative has been slightly modified from the Sketch Plan review submission; the remaining items will stay consistent to the previous submission. The plans have been adjusted to add additional parking spaces, covered bike storage area and a larger outdoor patio for tenants.

The intent of the project is to construct a new 3 story, 6,789 SF rooming house for the primary use of employees of the property owner. As most know, housing for workers is very difficult in this area of the state. This proposed rooming house will provide convenient housing for seasonal workers. The project will require a Major Site Plan review as it will result in the construction of over 5,000 SF of gross nonresidential floor area.

The property currently contains a 3,543 SF, 2-story seven-unit apartment building with associated parking and drainage facilities. A single two-way driveway (430 LF) is provided for access to Route 236. 14 parking spaces are provided for tenant parking. The remaining portion of the lot is undeveloped.

The proposed development will consist of a 6,789 SF 3-story rooming house on southern portion of the lot, with associated drainage facilities and new parking areas. The new parking lot will contain 22 parking spaces and will be accessed through the existing apartment parking lot.

ZONING INFORMATION

The property is in the Commercial 2 (C-2) zone. The existing apartment is a non-conforming use that will not be altered by this development. The new building will be a rooming house, which is an allowable use per section 16.4.20.B.10 of the Kittery Land

Use Zone Regulations. The definition of rooming house is "A residential use in which the owner or manager of the facility resides on the premises and in which more than three persons who are not part of the owner's manager's family are house in rooms for compensation with or without meals."

The intent of the new rooming house building is for workers for the owner's local businesses and for other similar businesses that have seasonal help requirements.

The 6,789 SF 3-story rooming house with shared living space will have approximately eleven rooms on each floor, thirty-three rooms total. Eight of the eleven rooms will contain two beds and the remaining three rooms will contain one bed each, for a total of nineteen beds per floor and fifty-seven total beds. The building superintendent will occupy one of the first-floor units. Each floor will also contain separate men's and women's bathrooms, a common living room space, and common kitchen space.

A large portion of the workers will not be driving or own vehicles but will be driven to and from the site via work vans, work related carpools and rideshares. The parking requirements of section 16.7.11.F.4.d of the Kittery Ordinance do not accurately represent the expected parking demand of this type of use.

In reviewing the parking requirements dwellings require 2 vehicle spaces per dwelling unit, hotels would require 1 space per room. This project is not creating dwelling units but rooms for rent directed to a specific type of work arrangement. It is assumed that the parking demand will be closer to one parking space per three beds. With 61 proposed beds, a minimum of 20 parking spaces would be required.

Based on discussion during the sketch plan review, the site plan was modified to add two additional parking stalls. The total count for the rooming house project is 22 spaces. We have also provided covered bike storage. In addition to carpooling, the business owners have large passenger vans that are used and available to the workers and tenants.

The existing apartment building is a two-story, seven-unit building. The existing lot contains 13 existing parking spaces, including one ADA accessible space. Based on ordinance, a seven-unit apartment building requires 14 parking spaces. The total number of required parking spaces is therefore 34.

The proposed number of parking spaces is 37, including 2 ADA parking spaces. We believe this provides sufficient parking for the existing apartment and proposed seasonal rooming house.

The proposed development is set back from any public right-of-way. The property is naturally separated from surrounding lots, with Map 21 Lot 19 to the east being the closest developed lot. This lot contains Gagne and Son landscaping supply store. There are no residences in the surrounding lots. For this reason, we believe the parking lot is adequately screened and will not require any additional landscaping. Existing vegetation

will remain to the greatest extent possible. It is requested that the Planning Board not require a Landscape Architect to prepare plans and details indicating the proposed vegetation.

It is proposed not to have pole mounted lights for the project. Any lighting will be building mounted. The lighting will indicate downlit fixtures that comply with the dark sky requirements.

The combined lot area is 152,583 SF (3.5 acres). There is 61.5 ft of frontage along Route 236. Although the zoning regulations require 150 ft in the C-2 zone, Kittery Ordinance Section 16.1.8.C.6.a.1 states "nonconforming lots may be built upon consistent with the uses in the particular zone". The proposed development is allowed per the C-2 zoning regulations and the existing nonconformance will not be increased.

The maximum allowable lot coverage is 40%, or 61,033 SF. Existing lot coverage is 12.7%, while proposed lot coverage is 23.6%. The maximum building height is limited to 40 ft. Per the requirements of the zoning district, the new building will be located to meet the 30 ft side and rear setbacks. The proposed development meets the zoning requirements for frontage and lot coverage. Additional information is provided on the attached site plans.

There is a small 1,314 SF wetland at the northwest corner of Lot 12. The proposed project will have no impact on the wetland as the new development does not direct stormwater in this direction. No new development is located within the 50 ft building/structure setback requirements. The existing driveway is located within the 30 ft setback from the wetland, this driveway has been in existence since the construction of the apartment building in late 1960's / early 1970's.

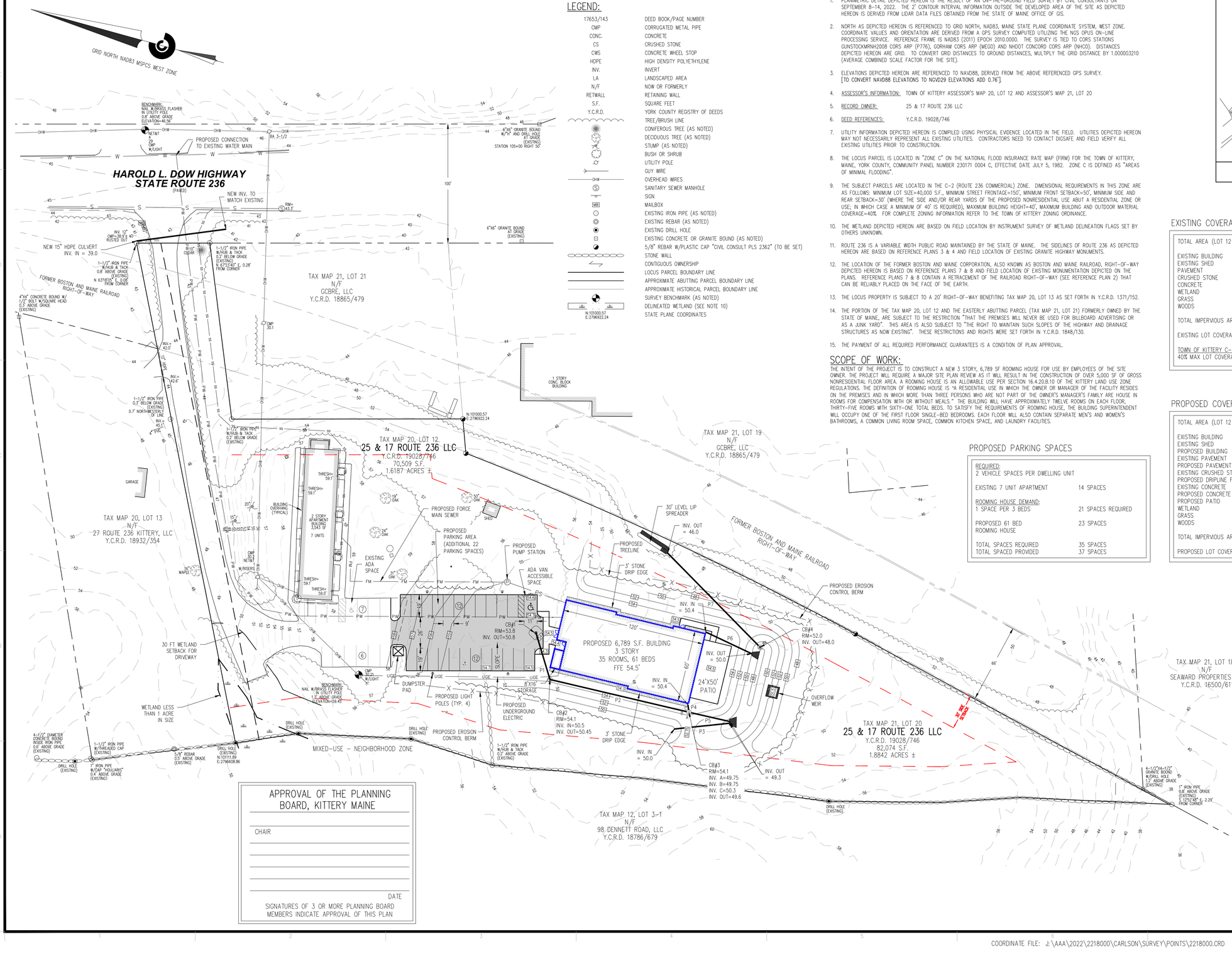
Per Section 16.4.20.D.m of the Kittery Ordinance, underground utilities are required. The site is already serviced by year-round sewer. The existing apartment utilizes a private well. The existing sewer line will be extended to the proposed building, and a new water line will be extended from the water main along Route 236. Overhead wires extend from Route 236 to Lot 12 along multiple utility poles on site. The proposed building will be connected to CMP pole number 30.21 with new underground services.

A detailed stormwater report and maintenance plan has been submitted with this portion of the review to address Town of Kittery requirements.

CONCLUSION:

It is our opinion that this project meets the requirements and intent of the Kittery Land Use Ordinance. The applicant looks forward to presenting the project at the next available meeting.

CIVIL CONSULTANTS
P.O. Box 100 South Berwick, Maine 03908 207-384-2550



LEGEND:

17653/143	DEED BOOK/PAGE NUMBER
CMP	CORRUGATED METAL PIPE
CONC.	CONCRETE
CS	CRUSHED STONE
CWS	CONCRETE WHEEL STOP
HDPE	HIGH DENSITY POLYETHYLENE
INV.	INVERT
LA	LANDSCAPED AREA
N/F	NOW OR FORMERLY
RETWALL	RETAINING WALL
S.F.	SQUARE FEET
Y.C.R.D.	YORK COUNTY REGISTRY OF DEEDS
	TREE/BRUSH LINE
	CONIFEROUS TREE (AS NOTED)
	DECIDUOUS TREE (AS NOTED)
	STUMP (AS NOTED)
	BUSH OR SHRUB
	UTILITY POLE
	GUY WIRE
OHW	OVERHEAD WIRES
S	SANITARY SEWER MANHOLE
	SIGN
MB	MAILBOX
	EXISTING IRON PIPE (AS NOTED)
	EXISTING REBAR (AS NOTED)
	EXISTING DRILL HOLE
	EXISTING CONCRETE OR GRANITE BOUND (AS NOTED)
	5/8" REBAR W/PLASTIC CAP "CIVIL CONSULT PLS 2362" (TO BE SET)
	STONE WALL
	CONTIGUOUS OWNERSHIP
	LOCUS PARCEL BOUNDARY LINE
	APPROXIMATE ABUTTING PARCEL BOUNDARY LINE
	APPROXIMATE HISTORICAL PARCEL BOUNDARY LINE
	SURVEY BENCHMARK (AS NOTED)
	DELINEATED WETLAND (SEE NOTE 10)
N:101000.57 E:2796922.24	STATE PLANE COORDINATES

NOTES:

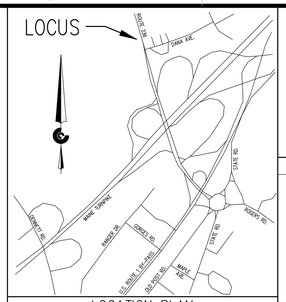
1. PLANIMETRIC DETAIL DEPICTED HEREON IS THE RESULT OF AN ON-THE-GROUND FIELD SURVEY BY CIVIL CONSULTANTS ON SEPTEMBER 8-14, 2022. THE 2' CONTOUR INTERVAL INFORMATION OUTSIDE THE DEVELOPED AREA OF THE SITE AS DEPICTED HEREON IS DERIVED FROM LIDAR DATA FILES OBTAINED FROM THE STATE OF MAINE OFFICE OF GIS.
2. NORTH AS DEPICTED HEREON IS REFERENCED TO GRID NORTH, NAD83, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE. COORDINATE VALUES AND ORIENTATION ARE DERIVED FROM A GPS SURVEY COMPUTED UTILIZING THE NGS OPUS ON-LINE PROCESSING SERVICE. REFERENCE FRAME IS NAD83 (2011) EPOCH 2010.0000. THE SURVEY IS TIED TO CORS STATIONS GUNSTOCKMRNH2008 CORS ARP (P776), GORHAM CORS ARP (MEGO) AND NHDOT CONCORD CORS ARP (NHCO). DISTANCES DEPICTED HEREON ARE GRID. TO CONVERT GRID DISTANCES TO GROUND DISTANCES, MULTIPLY THE GRID DISTANCE BY 1.000003210 (AVERAGE COMBINED SCALE FACTOR FOR THE SITE).
3. ELEVATIONS DEPICTED HEREON ARE REFERENCED TO NAVD88, DERIVED FROM THE ABOVE REFERENCED GPS SURVEY. [TO CONVERT NAVD88 ELEVATIONS TO NGVD29 ELEVATIONS ADD 0.76'].
4. ASSESSOR'S INFORMATION: TOWN OF KITTERY ASSESSOR'S MAP 20, LOT 12 AND ASSESSOR'S MAP 21, LOT 20
5. RECORD OWNER: 25 & 17 ROUTE 236 LLC
6. DEED REFERENCES: Y.C.R.D. 19028/746
7. UTILITY INFORMATION DEPICTED HEREON IS COMPILED USING PHYSICAL EVIDENCE LOCATED IN THE FIELD. UTILITIES DEPICTED HEREON MAY NOT NECESSARILY REPRESENT ALL EXISTING UTILITIES. CONTRACTORS NEED TO CONTACT DIGSAFE AND FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
8. THE LOCUS PARCEL IS LOCATED IN "ZONE C" ON THE NATIONAL FLOOD INSURANCE RATE MAP (FIRM) FOR THE TOWN OF KITTERY, MAINE, YORK COUNTY, COMMUNITY PANEL NUMBER 230171 0004 C, EFFECTIVE DATE JULY 5, 1982. ZONE C IS DEFINED AS "AREAS OF MINIMAL FLOODING".
9. THE SUBJECT PARCELS ARE LOCATED IN THE C-2 (ROUTE 236 COMMERCIAL) ZONE. DIMENSIONAL REQUIREMENTS IN THIS ZONE ARE AS FOLLOWS: MINIMUM LOT SIZE=40,000 S.F., MINIMUM STREET FRONTAGE=150', MINIMUM FRONT SETBACK=50', MINIMUM SIDE AND REAR SETBACK=30' (WHERE THE SIDE AND/OR REAR YARDS OF THE PROPOSED NONRESIDENTIAL USE ABUT A RESIDENTIAL ZONE OR USE; IN WHICH CASE A MINIMUM OF 40' IS REQUIRED), MAXIMUM BUILDING HEIGHT=40', MAXIMUM BUILDING AND OUTDOOR MATERIAL COVERAGE=40%. FOR COMPLETE ZONING INFORMATION REFER TO THE TOWN OF KITTERY ZONING ORDINANCE.
10. THE WETLAND DEPICTED HEREON ARE BASED ON FIELD LOCATION BY INSTRUMENT SURVEY OF WETLAND DELINEATION FLAGS SET BY OTHERS UNKNOWN.
11. ROUTE 236 IS A VARIABLE WIDTH PUBLIC ROAD MAINTAINED BY THE STATE OF MAINE. THE SIDELINES OF ROUTE 236 AS DEPICTED HEREON ARE BASED ON REFERENCE PLANS 3 & 4 AND FIELD LOCATION OF EXISTING GRANITE HIGHWAY MONUMENTS.
12. THE LOCATION OF THE FORMER BOSTON AND MAINE CORPORATION, ALSO KNOWN AS BOSTON AND MAINE RAILROAD, RIGHT-OF-WAY DEPICTED HEREON IS BASED ON REFERENCE PLANS 7 & 8 AND FIELD LOCATION OF EXISTING MONUMENTATION DEPICTED ON THE PLANS. REFERENCE PLANS 7 & 8 CONTAIN A RETRACEMENT OF THE RAILROAD RIGHT-OF-WAY (SEE REFERENCE PLAN 2) THAT CAN BE RELIABLY PLACED ON THE FACE OF THE EARTH.
13. THE LOCUS PROPERTY IS SUBJECT TO A 20' RIGHT-OF-WAY BENEFITING TAX MAP 20, LOT 13 AS SET FORTH IN Y.C.R.D. 1371/152.
14. THE PORTION OF THE TAX MAP 20, LOT 12 AND THE EASTERLY ABUTTING PARCEL (TAX MAP 21, LOT 21) FORMERLY OWNED BY THE STATE OF MAINE, ARE SUBJECT TO THE RESTRICTION "THAT THE PREMISES WILL NEVER BE USED FOR BILLBOARD ADVERTISING OR AS A JUNK YARD". THIS AREA IS ALSO SUBJECT TO "THE RIGHT TO MAINTAIN SUCH SLOPES OF THE HIGHWAY AND DRAINAGE STRUCTURES AS NOW EXISTING". THESE RESTRICTIONS AND RIGHTS WERE SET FORTH IN Y.C.R.D. 1848/130.
15. THE PAYMENT OF ALL REQUIRED PERFORMANCE GUARANTEES IS A CONDITION OF PLAN APPROVAL.

SCOPE OF WORK:

THE INTENT OF THE PROJECT IS TO CONSTRUCT A NEW 3 STORY, 6,789 SF ROOMING HOUSE FOR USE BY EMPLOYEES OF THE SITE OWNER. THE PROJECT WILL REQUIRE A MAJOR SITE PLAN REVIEW AS IT WILL RESULT IN THE CONSTRUCTION OF OVER 5,000 SF OF GROSS NONRESIDENTIAL FLOOR AREA. A ROOMING HOUSE IS AN ALLOWABLE USE PER SECTION 16.4.20.B.10 OF THE KITTERY LAND USE ZONE REGULATIONS. THE DEFINITION OF ROOMING HOUSE IS "A RESIDENTIAL USE IN WHICH THE OWNER OR MANAGER OF THE FACILITY RESIDES ON THE PREMISES AND IN WHICH MORE THAN THREE PERSONS WHO ARE NOT PART OF THE OWNER'S MANAGER'S FAMILY ARE HOUSE IN ROOMS FOR COMPENSATION WITH OR WITHOUT MEALS." THE BUILDING WILL HAVE APPROXIMATELY TWELVE ROOMS ON EACH FLOOR, THIRTY-FIVE ROOMS WITH SIXTY-ONE TOTAL BEDS. TO SATISFY THE REQUIREMENTS OF ROOMING HOUSE, THE BUILDING SUPERINTENDENT WILL OCCUPY ONE OF THE FIRST FLOOR SINGLE-BED BEDROOMS. EACH FLOOR WILL ALSO CONTAIN SEPARATE MEN'S AND WOMEN'S BATHROOMS, A COMMON LIVING ROOM SPACE, COMMON KITCHEN SPACE, AND LAUNDRY FACILITIES.

PROPOSED PARKING SPACES

REQUIRED: 2 VEHICLE SPACES PER DWELLING UNIT	
EXISTING 7 UNIT APARTMENT	14 SPACES
ROOMING HOUSE DEMAND: 1 SPACE PER 3 BEDS	21 SPACES REQUIRED
PROPOSED 61 BED ROOMING HOUSE	23 SPACES
TOTAL SPACES REQUIRED	35 SPACES
TOTAL SPACED PROVIDED	37 SPACES



LOCATION PLAN
(NOT TO SCALE)

EXISTING COVERAGE INFO

TOTAL AREA (LOT 12 AND LOT 20)	152,583	SF
EXISTING BUILDING	3,653	SF
EXISTING SHED	125	SF
PAVEMENT	14,414	SF
CRUSHED STONE	1,041	SF
CONCRETE	180	SF
WETLAND	1,314	SF
GRASS	25,507	SF
WOODS	106,349	SF
TOTAL IMPERVIOUS AREA	19,413	SF
EXISTING LOT COVERAGE	19,413/152,583 = 12.7% < 40%	
TOWN OF KITTERY C-2 ZONE 40% MAX LOT COVERAGE		

PROPOSED COVERAGE INFO

TOTAL AREA (LOT 12 AND LOT 20)	152,583	SF
EXISTING BUILDING	3,653	SF
EXISTING SHED	125	SF
PROPOSED BUILDING	6,917	SF
EXISTING PAVEMENT	14,194	SF
PROPOSED PAVEMENT	7,284	SF
EXISTING CRUSHED STONE	1,041	SF
PROPOSED DRIPLINE FILTER	723	SF
EXISTING CONCRETE	180	SF
PROPOSED CONCRETE	684	SF
PROPOSED PATIO	1,200	SF
WETLAND	1,314	SF
GRASS	43,484	SF
WOODS	71,784	SF
TOTAL IMPERVIOUS AREA	36,001	SF
PROPOSED LOT COVERAGE	36,001/152,583 = 23.6% < 40%	

APPROVAL OF THE PLANNING BOARD, KITTERY MAINE

CHAIR

DATE

SIGNATURES OF 3 OR MORE PLANNING BOARD MEMBERS INDICATE APPROVAL OF THIS PLAN

PREPARED FOR DEPARTMENT HEAD REVIEW NOT FOR CONSTRUCTION 9/14/2023

© CIVIL CONSULTANTS
CIVIL CONSULTANTS
Engineers
Planners
Surveyors
P.O. Box 100
South Berwick
Maine
03908
207-384-2550
www.civcon.com

NO.	REVISIONS	INT.	DATE

RECORD OWNER: 25 & 17 ROUTE 236 LLC
ADDRESS: P.O. BOX 630 KITTERY, ME 03904

SITE PLAN
LAND OF 25 & 17 ROUTE 236 LLC
17/25 ROUTE 236
KITTERY, YORK COUNTY, MAINE

PREPARED FOR: 25 & 17 ROUTE 236 LLC
CLIENT ADDRESS: 8 PEPPERELL WAY, YORK, ME 03909

1" = 40'
0' 40'

DATE: 08/18/2023
DRAWN BY: DRC/JAA
CHECKED BY: GRA
APPROVED BY:

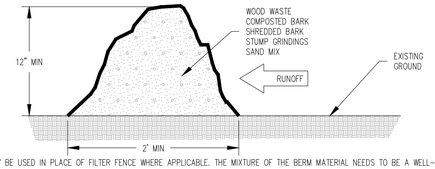
PROPOSED SITE PLAN

PROJECT NO: 22-180.00

L1

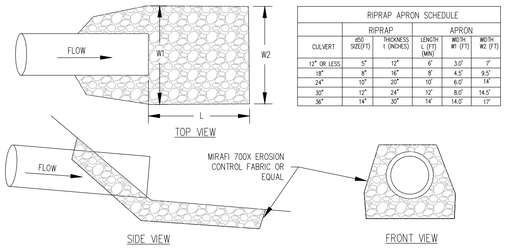
SHEET: 1 OF 3

COORDINATE FILE: J:\AAA\2022\2218000\CARLSON\SURVEY\POINTS\2218000.CRD
CADD FILE: J:\AAA\2022\2218000\CARLSON\ENGR\2218000-SITE-OPT1.DWG



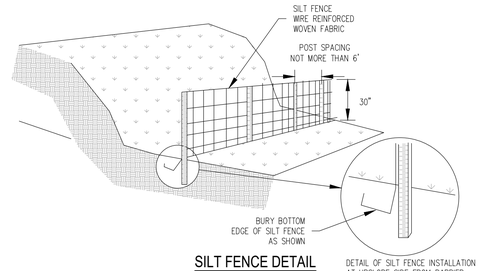
NOTES:
1. THIS BERM MAY BE USED IN PLACE OF FILTER FENCE WHERE APPLICABLE. THE MIXTURE OF THE BERM MATERIAL NEEDS TO BE A WELL-GRADE BLEND OF ORGANIC & MINERAL SUBSTANCE CONFORMING TO THE FOLLOWING STANDARDS:
   ORGANIC MATTER CONTENT: BETWEEN 80% AND 100%
   MOISTURE CONTENT: 30%-60%
   PH: BETWEEN 5.0 AND 8.0
   PARTICLE SIZE BY WEIGHT SHALL BE 100% PASSING A 5" SCREEN AND A MINIMUM OF 70% MAXIMUM OF 85%, PASSING A 0.75" SCREEN. LARGE PORTION OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE MIX
2. THE BERM SHALL BE PLACED ALONG A RELATIVELY LEVEL CONTOUR WHEREVER POSSIBLE. THE EXISTING SURFACE MUST BE SCOURED AND THE MIXTURE KEYED IN LIKE ANY OTHER SEDIMENT CONTROL MEASURE.

FILTER BERM DETAIL
NOT TO SCALE

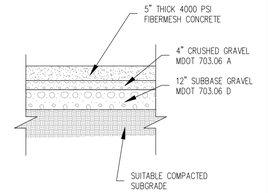


RIPRAP APRON SCHEDULE					
	RIPRAP		APRON		
CULVERT	d50 SIZE(FT)	THICKNESS T (INCHES)	LENGTH L (FT) (MIN)	WIDTH W1 (FT)	WIDTH W2 (FT)
12" OR LESS	5"	12"	6'	3.0'	7'
18"	8"	16"	8'	4.5'	9.5'
24"	10"	20"	10'	6.0'	14'
30"	12"	24"	12'	8.0'	14.5'
36"	14"	30"	14'	14.0'	17'

RIPRAP APRON PIPE OUTLET DETAIL
NOT TO SCALE

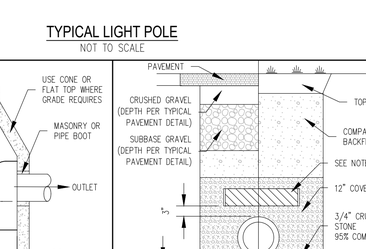


SILT FENCE DETAIL
NOT TO SCALE



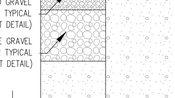
CONCRETE WALK DETAIL
NOT TO SCALE

NOTES:
1. ALL SIGNAGE SHALL BE TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS AND MDOT STANDARDS.
2. SIGN, HARDWARE, AND INSTALLATION TO CONFORM TO MDOT STANDARD SPECIFICATIONS, SECTION 719 – SIGNING MATERIAL.
3. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS/ CATALOGUE CUTS TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ERECTING SIGNS.

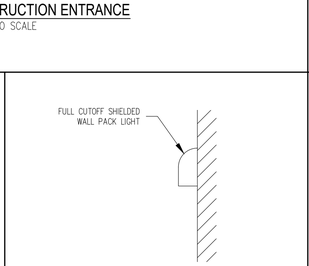


SIGN R7-8 AS SHOWN IN THE MUTCD. INSTALLATION WILL BE IN ACCORDANCE WITH THE MUTCD AND MDOT STANDARD SPECIFICATIONS SECTION 719 – SIGNING MATERIAL.

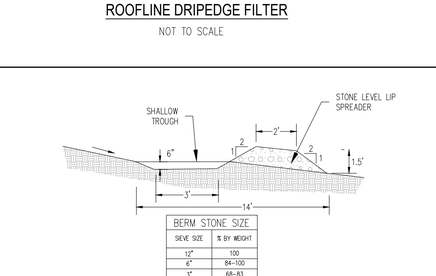
ACCESSIBLE SIGN & SIGN POST
NOT TO SCALE



HANDICAP VAN ACCESIBLE SIGN
NOT TO SCALE

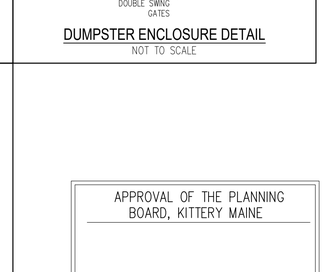


ACCESSIBLE CAR PARKING DETAIL
NOT TO SCALE



NOTE:
COORDINATE WITH LOCAL UTILITY COMPANIES FOR EXACT LAYOUT AND SIZE OF UTILITY SERVICES.

ELECTRIC & TELEPHONE TRENCH DETAIL
NOT TO SCALE



TYPICAL PAVEMENT SECTION
NOT TO SCALE

TYPICAL LIGHT POLE
NOT TO SCALE

CONSTRUCTION SPECIFICATIONS
1. STONE SIZE – AASHTO DESIGNATION M43, SIZE NO 2 (2-1/2" TO 1-1/2"). USE CRUSHED STONE.
2. LENGTH – AS EFFECTIVE, BUT NOT LESS THAT 50 FEET.
3. THICKNESS – NOT LESS THAN EIGHT (8) INCHES.
4. WIDTH – NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
5. WASHING – WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATER COURSE THROUGH USE OF SAND BAGS, GRAVEL, BOARDS, OR OTHER APPROVED METHODS.
6. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED, ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.

STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

ROOFLINE DRIPEDGE FILTER
NOT TO SCALE

VERTICAL GRANITE CURB DETAIL
NOT TO SCALE

DUMPSTER ENCLOSURE DETAIL
NOT TO SCALE

CATCH BASIN DETAIL
NOT TO SCALE

NOTE:
2"x2" STYROFOAM INSULATION BOARD SHALL BE PLACED IN AREAS WHERE COVER OVER LINE IS LESS THAN 5' OR WHERE SHOWN.

SEWER/DRAINLINE TRENCH WITH INSULATION
NOT TO SCALE

WATER LINE TRENCH DETAIL
NOT TO SCALE

WALL-MOUNT LIGHTING DETAIL
NOT TO SCALE

BERM STONE SIZE	
SIEVE SIZE	% BY WEIGHT
12"	100
6"	84-100
3"	68-83
1"	42-55
#4	8-12

STONE LINED LEVEL LIP SPREADER
NOT TO SCALE

APPROVAL OF THE PLANNING BOARD, KITTERY MAINE

CHAIR DATE

PREPARED FOR SITE PLAN REVIEW NOT FOR CONSTRUCTION 9/14/2023

CIVIL CONSULTANTS
Engineers
Planners
Surveyors
P.O. Box 100
South Berwick
Maine
03908
207-384-2550
www.civcon.com

NO.	REVISIONS	INT.	DATE

RECORD OWNER:
25 & 17 ROUTE 236 LLC
ADDRESS:
P.O. BOX 630
KITTERY, ME 03904

SITE PLAN
LAND OF 25 & 17 ROUTE 236 LLC
17/25 ROUTE 236
KITTERY, YORK COUNTY, MAINE

PREPARED FOR: 25 & 17 ROUTE 236 LLC
CLIENT ADDRESS: 8 PEPPERELL WAY, YORK, ME 03909

SCALE AS NOTED
0" 1"

DATE: 08/18/2023
DRAWN BY: DRC
CHECKED BY: GRA
APPROVED BY:

PROPOSED CONSTRUCTION DETAILS

PROJECT NO: 22-180.00

L2

SHEET: 2 OF 3

COORDINATE FILE: J:\AAA\2022\2218000\CARLSON\SURVEY\POINTS\2218000.CRD
CADD FILE: J:\AAA\2022\2218000\CARLSON\ENGR\2218000-SITE-OPT1.DWG

MAINTENANCE PROCEDURES

THE FOLLOWING PROCEDURES ARE BASED ON THE MAINE STORMWATER MANAGEMENT DESIGN MANUAL , TECHNICAL DESIGN MANUAL VOLUME III, MAY 2016. MAINTENANCE PROCEDURES WILL BE FOLLOWED FOR INITIAL AND LONG TERM MAINTENANCE OF THE STORMWATER MANAGEMENT FACILITIES AT THIS SITE. NOTE: FOR THE PURPOSES OF THESE PROCEDURES, A MAJOR STORM EVENT IS CLASSIFIED AS A RAINFALL EXCEEDING 3.0 INCHES. A SIGNIFICANT RAINFALL IS 1/2" IN A 24 HOUR PERIOD.

DETENTION BASINS

DETENTION BASINS SHOULD BE INSPECTED ANNUALLY FOR EROSION. THEREAFTER, DESTABILIZATION OF SIDE SLOPES EMBANKMENT SETTLING AND OTHER SIGNS OF STRUCTURE FAILURE, AND LOSS OF STORAGE VOLUME DUE TO SEDIMENT ACCUMULATION. CORRECTIVE ACTION SHOULD BE TAKEN IMMEDIATELY UPON IDENTIFICATION OF PROBLEMS.

MAINTENANCE AGREEMENT: A LEGAL ENTITY SHOULD BE ESTABLISHED OR INSPECTING AND MAINTAINING ANY DETENTION BASIN. THE LEGAL AGREEMENT SHOULD LIST SPECIFIC MAINTENANCE RESPONSIBILITIES (INCLUDING TIMETABLES) AND PROVIDE FOR THE FUNDING TO OVER LONG-TERM INSPECTION AND MAINTENANCE.

INLET AND OUTLET INSPECTIONS: THE INLET AND OUTLET OF THE BASIN SHOULD BE CHECKED PERIODICALLY TO ENSURE THAT FLOW STRUCTURES ARE NOT BLOCKED BY DEBRIS. INSPECTIONS SHOULD BE CONDUCTED MONTHLY DURING WET WEATHER CONDITIONS (MARCH TO NOVEMBER). FLOW STRUCTURES SHOULD BE EASILY ACCESSIBLE FOR INSPECTION AND THE REMOVAL OF DEBRIS BLOCKAGE DURING STORM CONDITIONS.

EMBANKMENT MAINTENANCE: EMBANKMENTS SHOULD BE MAINTAINED TO PRESERVE THEIR INTEGRITY AS IMPOUNDMENT STRUCTURES, INCLUDING: MOWING, CONTROL OF WOODY VEGETATION, RODENT, AND OUTLET MAINTENANCE AND REPAIR. BASINS SHOULD BE MOWED NO MORE THAN TWICE A YEAR DURING THE GROWING SEASON TO MAINTAIN MAXIMUM GRASS HEIGHTS LESS THAN 12 INCHES. ALL ACCUMULATED TRASH AND DEBRIS SHOULD BE REMOVED.

SEDIMENT REMOVAL: SEDIMENT SHOULD BE REMOVED FROM THE PRETREATMENT STRUCTURE AT LEAST ANNUALLY AND FROM THE BASIN WHEN NECESSARY.

WET PONDS

THE WET POND SHOULD BE INSPECTED AFTER EVERY MAJOR STORM TO ENSURE PROPER FUNCTIONING. THEREAFTER, THE BASIN SHOULD BE INSPECTED AT LEAST EVERY SIX MONTHS. INSPECTIONS SHOULD INCLUDE VERIFICATION THAT THE POND IS SLOWLY EMPTYING THROUGH THE GRAVEL FILTER FOR A SHORT TIME (122-24 HOURS) AFTER A STORM. IT IS IMPORTANT TO DESIGN FLOW STRUCTURES THAT CAN BE INSPECTED FOR DEBRIS BLOCKAGE.

MAINTENANCE AGREEMENT – A LEGAL AGREEMENT SHOULD LIST SPECIFIC MAINTENANCE RESPONSIBILITIES, ESTABLISH THE RESPONSIBLE PARTY, AND PROVIDE FOR THE FUNDING TO COVER LONG TERM INSPECTION AND MAINTENANCE.

1. EMBANKMENTS – WET PONDS SHOULD BE INSPECTED ANNUALLY FOR EROSION, SIDE SLOPE DESTABILIZATION, EMBANKMENT SETTLING OR OTHER SIGNS OF STRUCTURE FAILURE. CORRECTIVE ACTIONS SHOULD BE TAKEN IMMEDIATELY UPON IDENTIFICATION OF A PROBLEM.
2. GRAVEL TRENCH – THE GRAVEL TRENCH SHOULD BE CLEAR OF CLOGGING MATERIAL (E.G. DECAYING LEAVES) SO THAT DISCHARGE THROUGH THE TRENCH IS NOT IMPEDED. THE TOP SEVERAL INCHES OF THE GRAVEL IN THE OUTLET TRENCH SHOULD BE REPLACED WITH FRESH MATERIAL WHEN WATER PONDS ABOVE THE PERMANENT POOL FOR MORE THAN 72 HOURS. THE SEDIMENTS REMOVED FROM THE WET POND SHOULD BE DISPOSED OF IN ACCORDANCE WITH APPLICABLE REGULATIONS.
3. INLETS AND OUTLETS – THE INLET AND OUTLET OF THE POND SHOULD BE CHECKED PERIODICALLY TO ENSURE THAT FLOW STRUCTURES ARE NOT BLOCKED BY DEBRIS. ALL DITCHES OR PIPES CONNECTING PONDS IN SERIES SHOULD BE CHECKED FOR DEBRIS THAT MAY OBSTRUCT FLOW.

VEGETATED BUFFERS

BUFFERS SHOULD BE INSPECTED ANNUALLY FOR EVIDENCE

MAINTENANCE AGREEMENT – A LEGAL AGREEMENT SHOULD LIST SPECIFIC MAINTENANCE RESPONSIBILITIES, ESTABLISH THE RESPONSIBLE PARTY, AND PROVIDE FOR THE FUNDING TO COVER LONG TERM INSPECTION AND MAINTENANCE.

1. EMBANKMENTS – WET PONDS SHOULD BE INSPECTED ANNUALLY FOR EROSION, SIDE SLOPE DESTABILIZATION, EMBANKMENT SETTLING OR OTHER SIGNS OF STRUCTURE FAILURE. CORRECTIVE ACTIONS SHOULD BE TAKEN IMMEDIATELY UPON IDENTIFICATION OF A PROBLEM.
2. GRAVEL TRENCH – THE GRAVEL TRENCH SHOULD BE CLEAR OF CLOGGING MATERIAL (E.G. DECAYING LEAVES) SO THAT DISCHARGE THROUGH THE TRENCH IS NOT IMPEDED. THE TOP SEVERAL INCHES OF THE GRAVEL IN THE OUTLET TRENCH SHOULD BE REPLACED WITH FRESH MATERIAL WHEN WATER PONDS ABOVE THE PERMANENT POOL FOR MORE THAN 72 HOURS. THE SEDIMENTS REMOVED FROM THE WET POND SHOULD BE DISPOSED OF IN ACCORDANCE WITH APPLICABLE REGULATIONS.
3. INLETS AND OUTLETS – THE INLET AND OUTLET OF THE POND SHOULD BE CHECKED PERIODICALLY TO ENSURE THAT FLOW STRUCTURES ARE NOT BLOCKED BY DEBRIS. ALL DITCHES OR PIPES CONNECTING PONDS IN SERIES SHOULD BE CHECKED FOR DEBRIS THAT MAY OBSTRUCT FLOW.

INFILTRATION BASINS, DRY WELLS AND INFILTRATION TRENCHES

MAINTENANCE: PREVENTIVE MAINTENANCE IS VITAL FOR THE LONG-TERM EFFECTIVENESS OF AN INFILTRATION SYSTEM. SINCE INFILTRATION IS LESS CONSPICUOUS THAN MOST BMPS, IT IS EASY TO OVERLOOK DURING MAINTENANCE INSPECTIONS. THE FOLLOWING CRITERIA APPLY TO ALL INFILTRATION SYSTEMS.

FERTILIZATION: FERTILIZATION OF THE AREA OVER THE INFILTRATION BED SHOULD BE AVOIDED UNLESS ABSOLUTELY NECESSARY TO ESTABLISH VEGETATION.

SNOW STORAGE: SNOW REMOVED FROM ANY ON-SITE OR OFF-SITE AREAS MAY NOT BE STORED OVER AN INFILTRATION AREA, WITH THE EXCEPTION OF STORAGE ON PERMEABLE PAVEMENT.

MONITORING AND INSPECTIONS: INSPECT THE INFILTRATION SYSTEM SEVERAL TIMES IN THE FIRST YEAR OF OPERATION AND AT LEAST ANNUALLY THEREAFTER. CONDUCT THE INSPECTIONS AFTER LARGE STORMS TO CHECK FOR SURFACE PONDING AT THE INLET THAT MAY INDICATE CLOGGING. WATER LEVELS IN THE OBSERVATION WELL SHOULD BE RECORDED OVER SEVERAL DAYS AFTER THE STORM TO ENSURE THAT THE SYSTEM DRAINS WITHIN 24 TO 48 HOURS AFTER FILLING. THE BASIN WILL NEED TO BE REHABILITATED IF IT FAILS TO DRAIN BEFORE THE NEXT RAIN EVENT OF 72 HOURS.

POLLUTION-CONTROL DEVICES: POLLUTION-CONTROL DEVICES SUCH AS OIL-WATER SEPARATORS, SKIMMERS, AND BOOMS SHOULD BE INSPECTED REGULARLY TO DETERMINE IF THEY NEED TO BE CLEANED OR REPLACED.

SEDIMENT REMOVAL AND MAINTENANCE OF SYSTEM PERFORMANCE: SEDIMENT MUST BE REMOVED FROM THE SYSTEM AT LEAST ANNUALLY TO PREVENT DETERIORATION OF SYSTEM PERFORMANCE. THE PRE-TREATMENT INLETS SHOULD BE CHECKED AND CLEANED OUT WHEN ACCUMULATED SEDIMENT OCCUPIES MORE THAN 10% OF THE AVAILABLE CAPACITY. THIS CAN BE DONE MANUALLY OR BY A VACUUM PUMP. INLET AND OUTLET PIPES SHOULD BE CHECKED FOR CLOGGING. ACCUMULATED GREASE AND OIL FROM SEPARATOR DEVICES SHOULD BE REMOVED FREQUENTLY AND DISPOSED OF IN ACCORDANCE WITH APPLICABLE STATE AND LOCAL REGULATIONS. THE SYSTEM MUST BE REHABILITATED OR REPLACED IF ITS PERFORMANCE IS DEGRADED TO THE POINT THAT APPLICABLE STORMWATER STANDARDS ARE NOT MET.

PRETREATMENT BUFFER STRIPS: IF A GRASS BUFFER STRIP IS USED IN CONJUNCTION WITH THE INFILTRATION BMP IT SHOULD HAVE VIGOROUS AND DENSE VEGETATION. BARE SPOTS OR ERODED AREAS SHOULD BE REPAIRED AND/OR RE-SEEDED OR RE-SODDED. WATERING AND/OR FERTILIZATION SHOULD BE PROVIDED DURING THE FIRST FEW MONTHS AFTER THE STRIP IS ESTABLISHED, AND MAY BE NEEDED IN TIMES OF DROUGHT. GRASS FILTER STRIPS SHOULD BE MOWED REGULARLY TO PREVENT THE UNCONTROLLED GROWTH OF WEEDS, BUT FILTER STRIP PERFORMANCE WILL BE IMPAIRED IF THE GRASS IS CUT TOO SHORT.

GRASSED UNDERDRAINED SOIL FILTERS

MAINTENANCE: THE BASIN SHOULD BE INSPECTED SEMI-ANNUALLY AND FOLLOWING MAJOR STORM EVENTS. DEBRIS AND SEDIMENT BUILDUP SHOULD BE REMOVED FROM THE FOREBAY AND BASIN AS NEEDED. ANY BARE AREA OR EROSION RILLS SHOULD BE REPAIRED WITH NEW FILTER MEDIA, SEEDED AND MULCHED.

MAINTENANCE AGREEMENT: A LEGAL ENTITY SHOULD BE ESTABLISHED WITH RESPONSIBILITY FOR INSPECTING AND MAINTAINING ANY UNDERDRAINED FILTER. THE LEGAL AGREEMENT ESTABLISHING THE ENTITY SHOULD LIST SPECIFIC MAINTENANCE RESPONSIBILITIES (INCLUDING TIMETABLES) AND PROVIDE FOR THE FUNDING TO COVER LONG-TERM INSPECTION AND MAINTENANCE.

DRAINAGE: THE FILTER SHOULD WITHIN 24 TO 48 HOURS FOLLOWING A ONE-INCH STORM OR GREATER. IF THE SYSTEM DRAINS TOO FAST, AN ORIFICE MAY NEED TO BE ADDED ON THE UNDERDRAIN OUTLET OR MAY NEED TO BE MODIFIED IF ALREADY PRESENT.

SEDIMENT REMOVAL: SEDIMENT AND PLANT DEBRIS SHOULD BE REMOVED FROM THE PRETREATMENT STRUCTURE AT LEAST ANNUALLY. MOWING: IF MOWING IS DESIRED, ONLY HAND-HELD STRING TRIMMERS OR PUSH-MOWERS ARE ALLOWED ON THE FILTER (NO TRACTOR) AND THE GRASS BED SHOULD BE MOWED NO MORE THAN 2 TIMES PER GROWING SEASON TO MAINTAIN GRASS HEIGHTS OF NO LESS THAN 6 INCHES.

FERTILIZATION: FERTILIZATION OF THE UNDERDRAINED FILTER AREA SHOULD BE AVOIDED UNLESS ABSOLUTELY NECESSARY TO ESTABLISH VEGETATION.

HARVESTING AND WEEDING: HARVESTING AND PRUNING OF EXCESSIVE GROWTH SHOULD BE DONE OCCASIONALLY. WEEDING TO CONTROL UNWANTED OR INVASIVE PLANTS MAY ALSO BE NECESSARY.

GRASS COVER: MAINTAINING A HEALTHY COVER OF GRASS WILL MINIMIZE CLOGGING WITH FINE SEDIMENTS. IF PONDING EXCEEDS 48 HOURS, THE TOP OF THE FILTER BED SHOULD BE ROTOTILLED TO REESTABLISH THE SOIL'S FILTRATION CAPACITY.

SOIL FILTER REPLACEMENT: THE TOP SEVERAL INCHES OF THE FILTER CAN BE REPLACED WITH FRESH MATERIAL IF WATER IS PONDING FOR MORE THAN 72 HOURS, OR THE BASIN CAN BE ROTOTILLED, SEEDED AND MULCHED. ONCE THE FILTER IS MATURE, ADDING NEW MATERIAL (A 1-INCH TO 2-INCH COVER OF MATURE COMPOST) CAN COMPENSATE FOR SUBSIDENCE.

BIORETENTION FILTERS

MAINTENANCE: THE BIORETENTION BASIN SHOULD BE INSPECTED SEMI-ANNUALLY AND FOLLOWING MAJOR STORM EVENTS. DEBRIS AND SEDIMENT BUILDUP SHOULD BE REMOVED FROM THE FOREBAY AND BASIN AS NEEDED. ANY BARE AREA OR EROSION RILLS SHOULD BE REPAIRED WITH NEW FILTER MEDIA, SEEDED AND MULCHED.

MAINTENANCE AGREEMENT: A LEGAL ENTITY SHOULD BE ESTABLISHED WITH RESPONSIBILITY FOR INSPECTING AND MAINTAINING ANY FILTER BASIN. THE LEGAL AGREEMENT ESTABLISHING THE ENTITY SHOULD LIST SPECIFIC MAINTENANCE RESPONSIBILITIES (INCLUDING TIMETABLES) AND PROVIDE FOR THE FUNDING TO COVER LONG-TERM INSPECTION AND MAINTENANCE.

DRAINAGE: THE FILTER SHOULD BE DRAINING WITHIN 48 HOURS FOLLOWING A ONE-INCH STORM OR GREATER. IF THE SYSTEM DRAINS TOO FAST, AN ORIFICE MAY NEED TO BE ADDED ON THE UNDERDRAIN OUTLET OR MAY NEED TO BE MODIFIED IF ALREADY PRESENT.

SEDIMENT REMOVAL: SEDIMENT AND PLANT DEBRIS SHOULD BE REMOVED FROM THE PRETREATMENT STRUCTURE AT LEAST ANNUALLY.

REMEDIAL COVER: THE ORGANIC MULCH SHOULD BE REMOVED AND REPLACED WITH A 2-3 INCH LAYER OF FRESH MULCH ANNUALLY OR AS NEEDED.

SOIL FILTER REPLACEMENT: THE MULCH SHALL BE REPLACED WITH FRESH MATERIAL ON A YEARLY BASIS.

FERTILIZATION: FERTILIZATION OF THE FILTER AREA SHOULD BE AVOIDED UNLESS ABSOLUTELY NECESSARY TO ESTABLISH VEGETATION.

HARVESTING AND WEEDING: HARVESTING AND PRUNING OF EXCESSIVE GROWTH SHOULD BE DONE OCCASIONALLY. WEEDING TO CONTROL UNWANTED OR INVASIVE PLANTS MAY ALSO BE NECESSARY.

PLANTING: MAINTAINING A HEALTHY VEGETATIVE COVER WILL MINIMIZE CLOGGING WITH FINE SEDIMENTS. IF PONDING EXCEEDS 48 HOURS, THE TOP OF THE FILTER BED SHOULD BE ROTOTILLED TO REESTABLISH THE SOIL'S FILTRATION CAPACITY.

SOIL FILTER REPLACEMENT: THE TOP SEVERAL INCHES OF THE FILTER CAN BE REPLACED WITH FRESH MATERIAL IF WATER IS PONDING FOR MORE THAN 72 HOURS.

SUBSURFACE SAND FILTERS

MAINTENANCE: A LEGAL AGREEMENT BETWEEN THE OWNER AND AN APPROVED MAINTENANCE OPERATOR SHOULD IDENTITY THE RESPONSIBLE INSPECTOR, ALL INSPECTION AND MAINTENANCE TASKS, AND ALL FINANCIAL OBLIGATIONS.

MAINTENANCE AGREEMENT: A LEGAL CONTRACT WITH A 5 YEAR TIME PERIOD SHOULD ESTABLISH MAINTENANCE RESPONSIBILITIES AND THE COST TO COVER LONG-TERM INSPECTION AND MAINTENANCE NEEDS.

PRE-TREATMENT DEVICE: CLEANING OF THE PRETREATMENT DEVICE SHOULD BE PERFORMED AS IDENTIFIED BY THE ENTITY HOLDING THE MAINTENANCE CONTRACTUAL AGREEMENT. A ROUTINE BUT SPECIFIC INSPECTION SCHEDULE NEEDS TO BE IDENTIFIED FOR EVERY SITE BASED ON SITE VARIABLES SUCH AS ANTICIPATED POLLUTANT LOAD, PERCENT IMPERVIOUSNESS, LAND USE (I.E. ROAD, INDUSTRIAL, COMMERCIAL, RESIDENTIAL), ETC.

DRAINAGE: THE FILTER SHOULD BE DRAINING WITHIN 48 HOURS FOLLOWING A ONE-INCH STORM OR GREATER. IF THE SYSTEM DRAINS TOO FAST, AN ORIFICE MAY NEED TO BE ADDED ON THE UNDERDRAIN OUTLET OR MAY NEED TO BE MODIFIED IF ALREADY PRESENT.

SEDIMENT REMOVAL: THE PRETREATMENT STRUCTURE MUST BE CLEANED WHEN NECESSARY.

GRAVEL WETLANDS

MAINTENANCE: OPERATION AND MAINTENANCE REQUIREMENTS SIMILAR TO THOSE FOR UNDERDRAINED FILTER BASINS SHOULD BE EXPECTED. THE PLANT BIOMASS SHOULD BE HARVESTED ANNUALLY, AND ACCUMULATED SEDIMENT REMOVED AT INTERVALS OF 5-10 YEARS. THESE ACTIVITIES MAY DISRUPT THE WETLANDS SYSTEM AND MAY REQUIRE SOME VEGETATION RE-ESTABLISHMENT. THE RISER PIPES MAY CLOG AND WILL REQUIRE ANNUAL CLEAN-OUT (IT SHOULD BE DONE IN THE WINTER TIME WHEN ONE CAN WALK ON THE WETLAND).

FIRST YEAR POST-CONSTRUCTION: INSPECTION FREQUENCY SHOULD OCCUR AFTER EVERY MAJOR STORM IN THE FIRST YEAR FOLLOWING CONSTRUCTION.

- INSPECT THAT THE SYSTEM DRAINS WITHIN 24-48 HOURS.
- THE PLANTS MAY NEED WATERING IF NECESSARY DURING THE FIRST GROWING SEASON. REVEGETATE IF THE VEGETATION IS POORLY ESTABLISHING.
- IDENTIFY AREAS OF EROSION AND MAKE TIMELY REPAIRS.
- CHECK ALL INLETS, OUTLETS AND SUBDRAINS FOR PROPER FUNCTIONING. RISERS MAY NEED TO BE CLEANED.

POST-CONSTRUCTION: INSPECTION FREQUENCY SHOULD OCCUR AT LEAST EVERY 6 MONTHS AND AFTER EVERY MAJOR STORM. ACTIVITIES ARE EXPECTED TO INCLUDE:

- CHECK THE BASIN FOR A DENSE ROOT MAT ESTABLISHMENT OF WETLAND VEGETATION.
- CHECK AND CLEAN THE RISERS IF THERE IS EVIDENCE OF STANDING WATER, DISCOLORED WATER OR ACCUMULATED SEDIMENTS IN THE CELLS.
- CHECK AND CLEAN THE FOREBAY FOR SEDIMENTS, TRASH AND DEBRIS. WHEN SEDIMENTS HAVE ACCUMULATED TO A DEPTH OF 12 INCHES, STANDING WATER IS PERSISTENT OR WETLAND VEGETATION BECOME ESTABLISHED, THE FOREBAY WILL NEED TO BE EXCAVATED AND REFORMED.
- VERIFY THAT THE CELLS DRAIN WITHIN 24-48 HOURS. SEDIMENT WILL NEED TO BE REMOVED WHEN AN ACCUMULATION OF 4 INCHES IS EVIDENT OVER THE WETLAND SURFACE.
- CHECK AND CLEAN ALL OUTLETS AND OVERFLOW SPILLWAY IF BLOCKED OR THERE IS EVIDENCE OF STRUCTURAL DAMAGE OR EROSION.
- REMOVE DECAYING VEGETATION, LITTER AND DEBRIS.
- CHECK FOR FOREIGN SPECIES. PARTICULAR CARE MUST BE USED TO AVOID THE UNINTENDED INTRODUCTION OF INVASIVE SPECIES SUCH AS PURPLE LOOSESTRIFE (LYTHRUM SALICARIA) AND COMMON REED (PHRAGMITES AUSTRALIS). IT IS RECOMMENDED THAT A QUALIFIED WETLAND BIOLOGIST BE CONSULTED WHEN THESE ARE FOUND IN THE AREA OF THE GRAVEL WETLAND.

ROOF DRIPLINE FILTERS

MAINTENANCE: A DRIPLINE FILTER BED NEEDS TO BE MAINTAINED LIKE ANY OTHER FILTER BASIN. THE MAINTENANCE ACTIVITIES FOR FILTRATION BMPS LISTED IN CHAPTER 7.2 OF THE BMP MANUAL APPLY EQUALLY TO THIS TYPE OF STRUCTURE. ANY DEBRIS MUST BE REMOVED FROM THE RESERVOIR COURSE. THE MAINTENANCE PLAN NEEDS TO ADDRESS THAT THESE STRUCTURES ARE PART OF THE STORMWATER MANAGEMENT PLAN FOR THE PROJECT, CANNOT BE PAVED OVER OR ALTERED IN ANYWAY. NO GUTTER MAY BE INSTALLED ON THE ROOF LINE.

VEGETATED ROOF

MAINTENANCE CRITERIA: A GREEN ROOF NEEDS TO BE MAINTAINED LIKE ANY OTHER SOIL FILTER STRUCTURE. THE MAINTENANCE ACTIVITIES FOR FILTRATION BMPS LISTED IN CHAPTER 7 OF THE BMP MANUAL APPLY EQUALLY TO THIS TYPE OF STRUCTURE. REPLACEMENT OF THE VEGETATION WILL BE REQUIRED IF IT IS FOUND TO BE UNHEALTHY, DYING AND WITH SOIL SHOWING THOUGH.

- VEGETATION UPKEEP: THE MORE COMPLICATED AND INTENSIVE THE GREEN ROOF, THE MORE MAINTENANCE ASSOCIATED WITH CARING FOR THE VEGETATION, WHEREAS AN EXTENSIVE ROOF PLANTED IN SEDUMS CAN REPRESENT LITTLE OR NO MAINTENANCE OTHER THAN A PERIODIC FEEDING DURING THE FIRST YEAR OF OPERATION.

MANMADE PERVIOUS SURFACE

MAINTENANCE: PERVIOUS SURFACES AND PAVEMENT, WHETHER ASPHALT, CONCRETE OR PAVING STONES, HAVE THE POTENTIAL TO BECOME IMPERVIOUS IF NOT PROPERLY MAINTAINED. THE FOLLOWING NEED TO BE PLANNED FOR AND BE MET:

- FREQUENT INSPECTIONS ARE PERFORMED DURING THE FIRST FEW MONTHS FOLLOWING CONSTRUCTION. THEN, THE SYSTEM IS INSPECTED ROUTINELY ON AN ANNUAL BASIS. INSPECTIONS SHOULD BE MADE AFTER SIGNIFICANT STORM EVENTS TO CHECK FOR SURFACE PONDING THAT COULD INDICATE FAILURE DUE TO CLOGGING. NON-ROUTINE MAINTENANCE MAY REQUIRE RECONSTRUCTION OF THE SURFACE TREATMENT, AND POSSIBLY THE FILTER AND RESERVOIR LAYERS, TO RELIEVE MAJOR CLOGGING.
- PREVENT SEDIMENTATION DUE TO THE EROSION OF AREAS UPGRADIENT THE PERVIOUS PAVEMENT STRUCTURES.
- PREVENT VEHICLES WITH MUDDY WHEELS FROM ACCESSING ONTO AREAS INTENDED FOR PERVIOUS PAVEMENT.
- SWEEP, VACUUM AND/OR PRESSURE WASH PAVEMENT TWICE ANNUALLY AT A MINIMUM.
- LIMIT SALT USE FOR DEICING, AND DO NOT USE SAND.
- REMOVE LEAVES AND ORGANIC DEBRIS IN THE FALL.
- MEASURES SHOULD BE TAKEN TO ENSURE THAT AN AREA DESIGNED TO BE POROUS DOES NOT RECEIVE A FUTURE OVERLAY OF CONVENTIONAL NON-POROUS PAVING.

VEGETATED SWALE

MAINTENANCE: THE AREA SHOULD BE INSPECTED FOR FAILURES FOLLOWING HEAVY RAINFALL AND REPAIRED AS NECESSARY FOR NEWLY FORMED CHANNELS OR GULLIES. BARE SPOTS SHOULD BE RESEEDED OR RESODDED. TRASH, LEAVES AND/OR ACCUMULATED SEDIMENTS SHOULD BE REMOVED. WOODY OR OTHER UNDESIRABLE VEGETATION SHOULD BE CONTROLLED. CHECK DAM INTEGRITY SHOULD BE CHECKED.

- AERATION: THE BUFFER STRIP MAY REQUIRE PERIODIC MECHANICAL AERATION (BY ROTOTILLING OR OTHER) TO RESTORE INFILTRATION CAPACITY. THIS AERATION MUST BE DONE DURING A TIME WHEN THE AREA CAN BE RESEEDED AND MULCHED PRIOR TO ANY SIGNIFICANT RAINFALL.
- MOWING: GRASS SHOULD NOT BE TRIMMED EXTREMELY SHORT, AS THIS WILL REDUCE THE FILTERING EFFECT OF THE SWALE (MPCA, 1989). THE CUT VEGETATION SHOULD BE REMOVED TO PREVENT THE DECAYING ORGANIC LITTER FROM ADDING POLLUTANTS TO THE DISCHARGE FROM THE SWALE. MOWED HEIGHT OF THE GRASS SHOULD BE 2-4 INCHES TALLER THAN THE MAXIMUM FLOW DEPTH OF THE DESIGN WATER QUALITY STORM. A MINIMUM MOW HEIGHT OF 6 INCHES IS GENERALLY RECOMMENDED (GALLI, 1993).
- EROSION: IT IS IMPORTANT TO INSTALL EROSION AND SEDIMENT CONTROL MEASURES TO STABILIZE THIS AREA AS SOON AS POSSIBLE AND RETAIN ANY ORGANIC MATTER IN THE BOTTOM OF THE TRENCH.
- FERTILIZATION: ROUTINE FERTILIZATION AND/OR PESTICIDE USE IS STRONGLY DISCOURAGED. IF COMPLETE RESEEDING IS NECESSARY, HALF THE ORIGINAL RECOMMENDED RATE OF FERTILIZER SHOULD BE APPLIED WITH A FULL RATE OF SEED.
- SEDIMENT REMOVAL: LEVEL OF SEDIMENT DEPOSITION IN THE CHANNEL SHOULD BE MONITORED REGULARLY, AND REMOVED FROM GRASSED CHANNELS BEFORE PERMANENT DAMAGE IS DONE TO THE GRASSED VEGETATION, OR IF INFILTRATION TIMES ARE LONGER THAN 12 HOURS. SEDIMENT SHOULD BE REMOVED FROM A CHANNEL WHEN IT REDUCES THE CAPACITY OF THE CHANNEL.

FLOW SPLITTER

MAINTENANCE: A FLOW SPLITTER SHOULD BE CHECKED REGULARLY AND AFTER EVERY LARGE STORM TO REMOVE DEBRIS WITHIN THE SPLITTER.

LEVEL SPREADERS

MAINTENANCE: LONG TERM MAINTENANCE OF THE LEVEL SPREADER IS ESSENTIAL TO ENSURE ITS EFFECTIVENESS. SPREADERS CONSTRUCTED OF WOOD, ASPHALT, STONE OR CONCRETE CURBING ALSO REQUIRE INSPECTION AND MAINTENANCE.

- INSPECTIONS: AT LEAST ONCE A YEAR AND FOLLOWING MAJOR STORMS, THE LEVEL SPREADER POOL SHOULD BE INSPECTED FOR SAND ACCUMULATION AND DEBRIS THAT MAY REDUCE ITS CAPACITY.
- SEDIMENT REMOVAL: SEDIMENT BUILD-UP WITHIN THE SWALE SHOULD BE REMOVED WHEN IT HAS ACCUMULATED TO APPROXIMATELY 25% OF DESIGN VOLUME OR CHANNEL CAPACITY. DISPOSE OF THE SEDIMENTS APPROPRIATELY.
- DEBRIS: REMOVE DEBRIS SUCH AS LEAF LITTER, BRANCHES AND TREE GROWTH FROM THE SPREADER.
- MOWING: VEGETATED SPREADERS MAY REQUIRE MOWING.
- SNOW STORAGE: DO NOT STORE SNOW WITHIN THE AREA OF THE LEVEL SPREADER.
- LEVEL SPREADER REPLACEMENT: THE RECONSTRUCTION OF THE LEVEL SPREADER MAY BE NECESSARY WHEN SHEET FLOW FROM THE SPREADER CHANNELIZE INTO THE BUFFER.

PERMEABLE ROAD BASE

MAINTENANCE: CHECK UPSLOPE FACE OF STONE LAYER TO PREVENT CLOGGING BY ERODED SOIL, ROAD SAND, DEBRIS AND LEAF LITTER. CLEAN REGULARLY.

WATER QUALITY INLET

MAINTENANCE: SEDIMENT REMOVAL FROM THE SUMP AND ANY FLOATING DEBRIS AND PRODUCTS IS IMPERATIVE FOR THE CONTINUITY OF THE EFFECTIVENESS OF THE STRUCTURE. THE SUMP NEEDS CLEANING WHEN SEDIMENTS ARE VISIBLE AT THE BOTTOM OF THE OUTLET PIPE.

- INSPECTION: WATER QUALITY INLETS SHOULD BE INSPECTED THREE TO FOUR TIMES ANNUALLY.
- SEDIMENT REMOVAL: SEDIMENT SHOULD BE REMOVED WHEN ACCUMULATION IS WITHIN 6 INCHES OF THE BOTTOM OF THE HOOD.

OIL/GRIT AND OIL/WATER SEPARATOR

MAINTENANCE: THE PERFORMANCE OF OIL/GRIT SEPARATORS IS VERY DEPENDENT ON THE REGULAR AND FREQUENT REMOVAL OF TRAPPED SEDIMENTS AND FLOATING PRODUCTS, AND SHOULD BE CLEANED OUT AT LEAST TWICE A YEAR. FAILURE TO CLEAN THEM OUT CAN RESULT IN THE RE-SUSPENSION AND LOSS OF PREVIOUSLY TRAPPED MATERIAL. THE DESIGNER SHOULD CONSULT THE MAINE DEP BUREAU OF WASTE MANAGEMENT TO DETERMINE PROPER DISPOSAL OF THE OIL-CONTAMINATED WATER SEDIMENT AND SLURRY PRIOR TO THE INSTALLATION OF THESE DEVICES AT A SITE.

OVERWINTER STABILIZATION

MAINE EROSION AND SEDIMENT CONTROL BMP (3/2016)

1. STABILIZATION OF DITCHES AND CHANNELS

ALL STONE-LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED AND STABILIZED BY NOVEMBER 15. ALL GRASS-LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED AND STABILIZED BY SEPTEMBER 1. IF A DITCH OR CHANNEL IS NOT GRASS-LINED BY SEPTEMBER 1, THEN ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE DITCH FOR LATE FALL AND WINTER MUST BE TAKEN.

SOD LINING: A DITCH OR CHANNEL MUST BE LINED WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES: PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL, AND ANCHORING THE SOD AT THE BASE OF THE DITCH WITH JUTE OR PLASTIC MESH TO PREVENT THE SOD FROM SLOUGHING DURING FLOW CONDITIONS.

STONE LINING: A DITCH OR CHANNEL MUST BE LINED WITH STONE RIPRAP BY NOVEMBER 15. A REGISTERED PROFESSIONAL ENGINEER MUST DETERMINE THE STONE SIZE AND LINING THICKNESS NEEDED TO WITHSTAND THE ANTICIPATED FLOW VELOCITIES AND FLOW DEPTHS WITHIN THE DITCH. IF NECESSARY, THE CONTRACTOR WILL REGRADE THE DITCH PRIOR TO PLACING THE STONE LINING TO PREVENT THE STONE LINING FROM REDUCING THE DITCH'S CROSS-SECTIONAL AREA.

2. STABILIZATION OF DISTURBED SLOPES

ALL STONE-COVERED SLOPES MUST BE CONSTRUCTED AND STABILIZED BY NOVEMBER 15. ALL SLOPES TO BE VEGETATED MUST BE SEEDED AND MULCHED BY SEPTEMBER 1. THE DEPARTMENT WILL CONSIDER ANY AREA HAVING A GRADE GREATER THAN 15% TO BE A SLOPE. IF A SLOPE TO BE VEGETATED IS NOT STABILIZED BY SEPTEMBER 1, THEN ONE OF THE FOLLOWING ACTIONS MUST BE TAKEN TO STABILIZE THE SLOPE FOR LATE FALL AND WINTER.

TEMPORARY VEGETATION AND EROSION CONTROL MATS: BY OCTOBER 1, THE DISTURBED SLOPE MUST BE SEEDED WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1,000 SQUARE FEET FOLLOWED BY INSTALLATION OF EROSION CONTROL MATS OR ANCHORED MULCH OVER THE SEEDING. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR FAILS TO COVER AT LEAST 75% OF THE SLOPE BY NOVEMBER 1, THEN THE CONTRACTOR WILL COVER THE SLOPE WITH A LAYER OF EROSION CONTROL MIX OR STONE RIPRAP AS DESCRIBED IN THE FOLLOWING STANDARDS.

SOD: THE DISTURBED SLOPE MUST BE STABILIZED WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES THE CONTRACTOR PINNING THE SOD ONTO THE SLOPE WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL. THE CONTRACTOR WILL NOT USE LATE-SEASON SOD INSTALLATION TO STABILIZE SLOPES HAVING A GRADE GREATER THAN 33% (3H:1V) OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.

EROSION CONTROL MIX: EROSION CONTROL MIX MUST BE PROPERLY INSTALLED BY NOVEMBER 15. THE CONTRACTOR WILL NOT USE EROSION CONTROL MIX TO STABILIZE SLOPES HAVING GRADES GREATER THAT 50% (2H:1V) OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.

STONE RIPRAP: PLACE A LAYER OF STONE RIPRAP ON THE SLOPE BY NOVEMBER 15. THE DEVELOPMENT'S OWNER WILL HIRE A REGISTERED PROFESSIONAL ENGINEER TO DETERMINE THE STONE SIZE NEEDED FOR STABILITY ON THE SLOPE AND TO DESIGN A FILTER LAYER TO BE INSTALLED BENEATH THE RIPRAP.

3. STABILIZATION OF DISTURBED SOILS

TEMPORARY VEGETATION: BY OCTOBER 1, SEED THE DISTURBED SOIL WITH WINTER RYE AT A SEEDING RATE OF 3-LBS PER 1,000 SQUARE FEET, LIGHTLY MULCH THE SEEDED SOIL WITH HAY OR STRAW AT 75-LBS PER 1,000 SQUARE FEET, AND ANCHOR THE MULCH WITH PLASTIC NETTING. MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS GROW AT LEAST THREE INCHES OR COVER AT LEAST 75% OF THE DISTURBED SOIL BEFORE NOVEMBER 1, THEN MULCH THE AREA FOR OVERWINTER PROTECTION AS FOLLOWS.

MULCH: BY NOVEMBER 15, MULCH THE DISTURBED SOIL BY SPREADING HAY OR STRAW AT A RATE OF AT LEAST 150-LBS PER 1,000 SQUARE FEET ON THE AREA SO THAT NO SOIL IS VISIBLE THROUGH THE MULCH. IMMEDIATELY AFTER APPLYING THE MULCH, ANCHOR THE MULCH WITH PLASTIC NETTING TO PREVENT WIND FROM MOVING THE MULCH OFF THE DISTURBED SOIL.

MAINTENANCE

MAINTENANCE MEASURES SHALL BE APPLIED AS NEEDED DURING THE ENTIRE CONSTRUCTION SEASON. AFTER EACH RAINFALL, SNOW STORM OR PERIOD OF THAWING AND RUNOFF, THE SITE CONTRACTOR SHALL PERFORM A VISUAL INSPECTION OF ALL INSTALLED EROSION CONTROL MEASURES AND PERFORM REPAIRS AS NEEDED TO INSURE THEIR CONTINUOUS FUNCTION.
FOLLOWING THE TEMPORARY AND OR FINAL SEEDING AND MULCHING, THE CONTRACTOR SHALL IN THE SPRING INSPECT AND REPAIR ANY DAMAGES AND/OR BARE SPOTS. AN ESTABLISHED VEGETATIVE COVER MEANS A MINIMUM OF 85% TO 90% OF AREAS VEGETATED WITH VIGOROUS GROWTH.

STABILIZATION SCHEDULE BEFORE WINTER

SEPTEMBER 15 ALL DISTURBED AREAS MUST BE SEEDED AND MULCHED. ALL SLOPES MUST BE STABILIZED. SEEDED AND MULCHED. ALL GRASS-LINED DITCHES AND CHANNELS MUST BE STABILIZED WITH MULCH OR AN EROSION CONTROL BLANKET.

OCTOBER 1 IF THE SLOPE IS STABILIZED WITH AN EROSION CONTROL BLANKET AND SEEDED. ALL DISTURBED AREAS TO BE PROTECTED WITH ANNUAL GRASS MUST BE SEEDED AT A SEEDING RATE OF 3-LBS PER 1,000 SQUARE FEET AND MULCHED.

NOVEMBER 15 ALL STONE-LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED AND STABILIZED. SLOPES THAT ARE COVERED WITH RIPRAP MUST BE CONSTRUCTED BY THIS DATE.

DECEMBER 1 ALL DISTURBED AREAS WHERE GROWTH OF VEGETATION FAILS TO BE AT LEAST THREE INCHES TALL OR AT LEAST 75% OF THE DISTURBED SOIL IS COVERED VEGETATION, MUST BE PROTECTED FOR OVER-WINTER.
NOTE: THE DATES GIVEN ARE FOR PROJECTS IN SOUTH-CENTRAL MAINE.

EROSION AND SEDIMENT CONTROL PRACTICES

1. NO SOIL SHALL BE DISTURBED DURING THE PERIOD OF MARCH 1 THROUGH APRIL 15, NOR DURING ANY OTHER PERIOD WHEN SOILS ARE SATURATED DUE TO RAIN OR SNOW MELT.
2. DISTURBED SOILS SHALL BE STABILIZED WITHIN ONE (1) WEEK FROM THE TIME IT WAS LAST ACTIVELY WORKED USING TEMPORARY OR PERMANENT MEASURES SUCH AS PLACEMENT OF RIPRAP, MULCH OR EROSION CONTROL BLANKET, OR OTHER COMPARABLE MEASURES.
3. HAY OR STRAW MULCH SHALL BE APPLIED AT A RATE OF AT LEAST ONE (1) BALE PER 500 SQUARE FEET (1-2 TONS PER ACRE).
4. IF MULCH IS LIKELY TO BE REMOVED DUE TO TO STEEP SLOPES OR WIND, IT SHALL BE ANCHORED WITH NETTING, PEG OR TWINE, OR OTHER SUITABLE METHOD AND SHALL BE MAINTAINED UNTIL A CATCH OF VEGETATION IS ESTABLISHED OVER THE ENTIRE DISTURBED AREA.
5. IN ADDITION TO PLACEMENT OF RIPRAP, MULCH OR EROSION CONTROL BLANKETS, ADDITIONAL STEPS SHALL BE TAKEN WHERE NECESSARY IN ORDER TO PREVENT SEDIMENTATION OF THE WATER. EVIDENCE OF SEDIMENTATION INCLUDES VISIBLE GULLY EROSION, DISCOLORATION OF WATER BY SUSPENDED PARTICLES AND SLUMPING OF BANKS, SILT FENCES, STAKED HAY BALES AND OTHER SEDIMENTATION CONTROL MEASURES, WHERE PLANNED FOR, SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF WORK, BUT SHALL ALSO BE INSTALLED WHEREVER NECESSARY DUE TO SEDIMENTATION.
6. MULCH OR OTHER TEMPORARY MEASURES SHALL BE MAINTAINED UNTIL THE SITE IS PERMANENTLY STABILIZED WITH VEGETATION OR OTHER PERMANENT CONTROL MEASURES AFTER WHICH TEMPORARY MEASURES WILL BE REMOVED.
7. PERMANENT RE-VEGETATION OF ALL DISTURBED AREAS, USING NATIVE PLANT MATERIAL WHEN POSSIBLE, SHALL OCCUR WITHIN 30 DAYS FROM THE TIME THE AREAS WERE LAST ACTIVELY WORKED, OR FOR FALL AND WINTER ACTIVITIES, BY JUNE 15, EXCEPT WHERE PRECLUDED BY THE TYPE OF ACTIVITY (E.G. RIRRAP, ROAD SURFACES, ETC.). THE VEGETATIVE COVER SHALL BE MAINTAINED.
8. DISPOSAL OF COLLECTED DEBRIS MUST BE IN CONFORMANCE WITH MAINE SOLID WASTE LAW, TITLE 38 MRSA SECTION 1301 ET. SEQ.
9. LIME AND FERTILIZER APPLICATION RATES SHALL NOT EXCEED THE FOLLOWING:

   GROUND LIMESTONE: 3 TONS/ACRE (130 LBS./1000 S.F.)
   FERTILIZER, 10-10-10 OF EQUIVALENT: 600 LBS./ACRE
   (14 LBS./1000 S.F.)

FERTILIZER SHALL NOT BE APPLIED BEFORE START OF THE GROWING SEASON NOR AFTER SEPTEMBER 30. FERTILIZED AREAS SHALL BE MULCHED TO REDUCE OFF-SITE TRANSPORT OF NUTRIENTS UNTIL USED BY VEGETATIVE GROWTH.

SEEDING MIXTURE AND SCHEDULE:

SPREAD TOPSOIL UNIFORMLY 6" DEEP OVER AREAS TO BE RECLAIMED. THE FOLLOWING SEED MIXTURE SHALL BE USED:

LAWNS:

KENTUCKY BLUEGRASS	0.46 LBS./1000 S.F.
CREEPING RED FESCUE	0.46 LBS./1000 S.F.
PERENNIAL RYE GRASS	0.11 LBS./1000 S.F.
TOTAL	1.03 LBS./1000 S.F.

APPLY LIME AND FERTILIZER AS SPECIFIED UNDER THE EROSION AND SEDIMENTATION CONTROL NOTES. WORK INTO THE TOP (4) INCHES OF SOIL PRIOR TO SEEDING. AFTER SEEDING, APPLY MULCH HAY AS SPECIFIED. ON FLAT AREAS AND NOT EXPOSED TO WIND, THE MULCH WILL BE ANCHORED BY WETTING DOWN. IN OTHER AREAS, JUTE NETTING SHALL BE USED FOR ANCHORAGE. THE ABOVE SEEDING SCHEDULE IS APPLICABLE IF SEEDING DURING THE GROWING SEASON (APRIL 15 TO JUNE 15 AND AUGUST 30 TO SEPTEMBER 30). BETWEEN JUNE 15 AND AUGUST 30, SEEDING WILL BE DELAYED UNTIL AUGUST 30. IF SOIL IS DISTURBED BETWEEN OCTOBER 1 AND NOVEMBER 1, DELAY SEEDING UNTIL NOVEMBER 1. AFTER NOVEMBER 1 AND BEFORE A SNOW COVER FORMS, THE SAME PROCEDURE WILL BE FOLLOWED EXCEPT THE SEED RATE WILL BE DOUBLED. AFTER SNOW COVER AND BEFORE APRIL 15, SEEDING WILL BE DELAYED UNTIL APRIL 15. HAY MULCH WILL BE APPLIED AT A RATE OF 150 LBS./1000 SQUARE FEET. THIS WILL BE ANCHORED BY NON-ASPHALTIC TACKIFIER SPRAYED ON LAWNS AND JUTE NETTING IN DRAINAGE WAYS AND OTHER AREAS.

APPROVAL OF THE PLANNING BOARD, KITTERY MAINE

CHAIR DATE

PREPARED FOR SITE PLAN REVIEW NOT FOR CONSTRUCTION 9/14/2023

CIVIL CONSULTANTS
Engineers
Planners
Surveyors
P.O. Box 100
South Berwick
Maine
03908
207-384-2550
www.civcon.com

NO.	REVISIONS	INT.	DATE

RECORD OWNER:
25 & 17 ROUTE 236 LLC

ADDRESS:
P.O. BOX 630
KITTERY, ME 03904

SITE PLAN
LAND OF 25 & 17 ROUTE 236 LLC
17/25 ROUTE 236
KITTERY, YORK COUNTY, MAINE

PREPARED FOR: 25 & 17 ROUTE 236 LLC
CLIENT ADDRESS: 8 PEPPERELL WAY, YORK, ME 03909

SCALE AS NOTED
0" 1"

DATE: 08/18/2023
DRAWN BY: DRC
CHECKED BY: GRA
APPROVED BY:

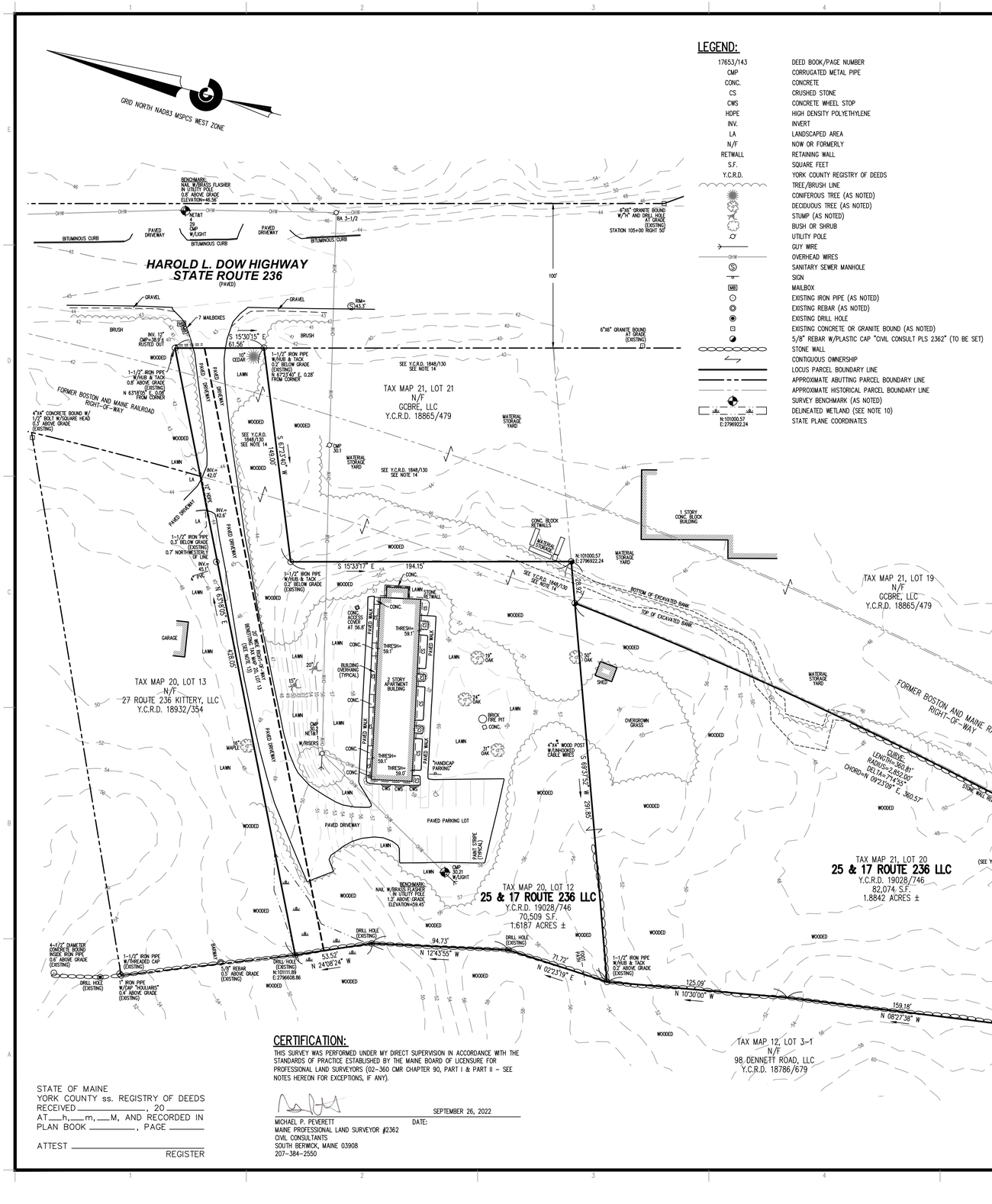
MAINTENANCE NOTES

PROJECT NO: 22-180.00

L3

SHEET: 3 OF 3

COORDINATE FILE: J:\AAA\2022\2218000\CARLSON\SURVEY\POINTS\2218000.CRD
CADD FILE: J:\AAA\2022\2218000\CARLSON\ENGR\2218000-SITE-OPT1.DWG



LEGEND:

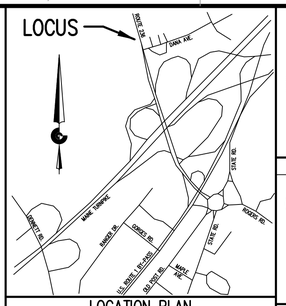
17653/143	DEED BOOK/PAGE NUMBER
CMP	CORRUGATED METAL PIPE
CONC.	CONCRETE
CS	CRUSHED STONE
CWS	CONCRETE WHEEL STOP
HDPE	HIGH DENSITY POLYETHYLENE
INV.	INVERT
LA	LANDSCAPED AREA
N/F	NOW OR FORMERLY
RETWALL	RETAINING WALL
S.F.	SQUARE FEET
Y.C.R.D.	YORK COUNTY REGISTRY OF DEEDS
	TREE/BRUSH LINE
	CONIFEROUS TREE (AS NOTED)
	DECIDUOUS TREE (AS NOTED)
	STUMP (AS NOTED)
	BUSH OR SHRUB
	UTILITY POLE
	GUY WIRE
	OVERHEAD WIRES
S	SANITARY SEWER MANHOLE
	SIGN
MB	MAILBOX
	EXISTING IRON PIPE (AS NOTED)
	EXISTING REBAR (AS NOTED)
	EXISTING DRILL HOLE
	EXISTING CONCRETE OR GRANITE BOUND (AS NOTED)
	5/8" REBAR W/PLASTIC CAP "CIVIL CONSULT PLS 2362" (TO BE SET)
	STONE WALL
	CONTIGUOUS OWNERSHIP
	LOCUS PARCEL BOUNDARY LINE
	APPROXIMATE ABUTTING PARCEL BOUNDARY LINE
	APPROXIMATE HISTORICAL PARCEL BOUNDARY LINE
	SURVEY BENCHMARK (AS NOTED)
	DELINEATED WETLAND (SEE NOTE 10)
N:101000.57 E:2796922.24	STATE PLANE COORDINATES

NOTES:

1. PLANIMETRIC DETAIL DEPICTED HEREON IS THE RESULT OF AN ON-THE-GROUND FIELD SURVEY BY CIVIL CONSULTANTS ON SEPTEMBER 8-14, 2022. THE 2' CONTOUR INTERVAL INFORMATION OUTSIDE THE DEVELOPED AREA OF THE SITE AS DEPICTED HEREON IS DERIVED FROM LIDAR DATA FILES OBTAINED FROM THE STATE OF MAINE OFFICE OF GIS.
10. NORTH AS DEPICTED HEREON IS REFERENCED TO GRID NORTH, NAD83, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE. COORDINATE VALUES AND ORIENTATION ARE DERIVED FROM A GPS SURVEY COMPUTED UTILIZING THE NGS OPUS ON-LINE PROCESSING SERVICE. REFERENCE FRAME IS NAD83 (2011) EPOCH 2010.0000. THE SURVEY IS TIED TO CORS STATIONS GUNSTOCKMRNH2008 CORS ARP (P776), GORHAM CORS ARP (MEGO) AND NHDOT CONCORD CORS ARP (NHCO). DISTANCES DEPICTED HEREON ARE GRID. TO CONVERT GRID DISTANCES TO GROUND DISTANCES, MULTIPLY THE GRID DISTANCE BY 1.000003210 (AVERAGE COMBINED SCALE FACTOR FOR THE SITE).
11. ELEVATIONS DEPICTED HEREON ARE REFERENCED TO NAVD88, DERIVED FROM THE ABOVE REFERENCED GPS SURVEY. **[TO CONVERT NAVD88 ELEVATIONS TO NGVD29 ELEVATIONS ADD 0.76'].**
12. ASSESSOR'S INFORMATION: TOWN OF KITTERY ASSESSOR'S MAP 20, LOT 12 AND ASSESSOR'S MAP 21, LOT 20
13. RECORD OWNER: 25 & 17 ROUTE 236 LLC
14. DEED REFERENCES: Y.C.R.D. 19028/746
15. UTILITY INFORMATION DEPICTED HEREON IS COMPILED USING PHYSICAL EVIDENCE LOCATED IN THE FIELD. UTILITIES DEPICTED HEREON MAY NOT NECESSARILY REPRESENT ALL EXISTING UTILITIES. CONTRACTORS NEED TO CONTACT DIGSAFE AND FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
16. THE LOCUS PARCEL IS LOCATED IN "ZONE C" ON THE NATIONAL FLOOD INSURANCE RATE MAP (FIRM) FOR THE TOWN OF KITTERY, MAINE, YORK COUNTY, COMMUNITY PANEL NUMBER 230171 0004 C, EFFECTIVE DATE JULY 5, 1982. ZONE C IS DEFINED AS "AREAS OF MINIMAL FLOODING".
17. THE SUBJECT PARCELS ARE LOCATED IN THE C-2 (ROUTE 236 COMMERCIAL) ZONE. DIMENSIONAL REQUIREMENTS IN THIS ZONE ARE AS FOLLOWS: MINIMUM LOT SIZE=40,000 S.F., MINIMUM STREET FRONTAGE=150', MINIMUM FRONT SETBACK=50', MINIMUM SIDE AND REAR SETBACK=30' (WHERE THE SIDE AND/OR REAR YARDS OF THE PROPOSED NONRESIDENTIAL USE ABUT A RESIDENTIAL ZONE OR USE; IN WHICH CASE A MINIMUM OF 40' IS REQUIRED), MAXIMUM BUILDING HEIGHT=40', MAXIMUM BUILDING AND OUTDOOR MATERIAL COVERAGE=40%. FOR COMPLETE ZONING INFORMATION REFER TO THE TOWN OF KITTERY ZONING ORDINANCE.
18. THE WETLAND DEPICTED HEREON ARE BASED ON FIELD LOCATION BY INSTRUMENT SURVEY OF WETLAND DELINEATION FLAGS SET BY OTHERS UNKNOWN.
19. ROUTE 236 IS A VARIABLE WIDTH PUBLIC ROAD MAINTAINED BY THE STATE OF MAINE. THE SIDELINES OF ROUTE 236 AS DEPICTED HEREON ARE BASED ON REFERENCE PLANS 3 & 4 AND FIELD LOCATION OF EXISTING GRANITE HIGHWAY MONUMENTS.
20. THE LOCATION OF THE FORMER BOSTON AND MAINE CORPORATION, ALSO KNOWN AS BOSTON AND MAINE RAILROAD, RIGHT-OF-WAY DEPICTED HEREON IS BASED ON REFERENCE PLANS 7 & 8 AND FIELD LOCATION OF EXISTING MONUMENTATION DEPICTED ON THE PLANS. REFERENCE PLANS 7 & 8 CONTAIN A RETRACEMENT OF THE RAILROAD RIGHT-OF-WAY (SEE REFERENCE PLAN 2) THAT CAN BE RELIABLY PLACED ON THE FACE OF THE EARTH.
21. THE LOCUS PROPERTY IS SUBJECT TO A 20' RIGHT-OF-WAY BENEFITING TAX MAP 20, LOT 13 AS SET FORTH IN Y.C.R.D. 1371/152.
22. THE PORTION OF THE TAX MAP 20, LOT 12 AND THE EASTERLY ABUTTING PARCEL (TAX MAP 21, LOT 21) FORMERLY OWNED BY THE STATE OF MAINE, ARE SUBJECT TO THE RESTRICTION "THAT THE PREMISES WILL NEVER BE USED FOR BILLBOARD ADVERTISING OR AS A JUNK YARD". THIS AREA IS ALSO SUBJECT TO "THE RIGHT TO MAINTAIN SUCH SLOPES OF THE HIGHWAY AND DRAINAGE STRUCTURES AS NOW EXISTING". THESE RESTRICTIONS AND RIGHTS WERE SET FORTH IN Y.C.R.D. 1848/130.

REFERENCE PLANS:

1. "PLAN SHOWING PORTION OF PROPERTY OF CHESTER A. BOYCE AND SHIRLEY J. BOYCE, KITTERY, YORK COUNTY, MAINE", DATED AUGUST 31, 1970, PREPARED BY MOULTON ENGINEERING CO., INC., RECORDED AT THE YORK COUNTY REGISTRY OF DEEDS IN PLAN BOOK 51, PAGE 33.
2. "RIGHT-OF-WAY AND TRACK MAP, BOSTON AND MAINE R.R., OPERATED BY THE BOSTON AND MAINE R.R., STATION 309+67 TO STATION 3145+47", SHEET V3 ME/58, DATED JUNE 30, 1914, LAST REVISED DECEMBER 10, 1952, PREPARED BY OFFICE OF VALUATION ENGINEER.
3. "MAINE STATE HIGHWAY COMMISSION, RIGHT OF WAY MAP, STATE HIGHWAY "100", KITTERY, YORK COUNTY, FEDERAL AID SECONDARY PROJECT S-0100(5), S.H.C. FILE NO. 16-112", SHEETS 2-3 OF 13, DATED JANUARY, 1956, LAST REVISED OCTOBER, 1956, PREPARED BY MAINE STATE HIGHWAY COMMISSION, RECORDED AT THE YORK COUNTY REGISTRY OF DEEDS IN PLAN BOOK 29, PAGES 28-29.
4. "MAINE STATE HIGHWAY COMMISSION, RIGHT OF WAY MAP, STATE HIGHWAY "95", KITTERY, YORK COUNTY, FEDERAL AID PROJECT NO. I-95-1 (2), SECTION 2 & SECTION 3, PART 1, S.H.C. NO. 16-181", SHEETS 16-17 OF 56, DATED JULY 1967, PREPARED BY MAINE STATE HIGHWAY COMMISSION.
5. "PROPERTY OF RALPH E. DENNETT KITTERY, YORK COUNTY, MAINE", DATED SEPTEMBER, 1975, PREPARED BY WILLIAM J. LOCKE, RECORDED AT THE YORK COUNTY REGISTRY OF DEEDS IN PLAN BOOK 77, PAGE 24.
6. "PLAN OF PARTITION LINE ESTABLISHED FOR THE HEIRS OF RALPH E. DENNETT, DENNETT ROAD AND MARTIN ROAD, KITTERY, MAINE", DATED JANUARY 31, 1994, LAST REVISED MARCH 16, 1994, PREPARED BY CIVIL CONSULTANTS, RECORDED AT THE YORK COUNTY REGISTRY OF DEEDS IN PLAN BOOK 217, PAGE 19. (CIVCON PROJECT #:93-142)
7. "LAND IN KITTERY, MAINE, BOSTON AND MAINE CORPORATION TO SEAWARD CORPORATION, INC.", DATED SEPTEMBER 29, 1989, PREPARED BY THOMAS F. MORAN INC., RECORDED AT THE YORK COUNTY REGISTRY OF DEEDS IN PLAN BOOK 183, PAGE 41.
8. "LAND IN KITTERY, MAINE, BOSTON AND MAINE CORPORATION TO SEAWARD CORPORATION AND DANIEL O. SEAWARD", DATED OCTOBER 9, 1989, LAST REVISED DECEMBER 5, 1989, PREPARED BY THOMAS F. MORAN INC., RECORDED AT THE YORK COUNTY REGISTRY OF DEEDS IN PLAN BOOK 187, PAGE 15.
9. "STANDARD BOUNDARY SURVEY & DIVISION OF LAND PLAN FOR PROPERTY AT 1 & 7 ROUTE 236, KITTERY, YORK COUNTY, MAINE OWNED BY DANIEL O. SEAWARD, 2 CHAUNCEY CREEK ROAD, KITTERY POINT, ME 03905", DATED OCTOBER 20, 2008, LAST REVISED NOVEMBER 24, 2008, PREPARED BY EASTERLY SURVEYING, INC., RECORDED AT THE YORK COUNTY REGISTRY OF DEEDS IN PLAN BOOK 335, PAGE 5.
10. "EXISTING LEASE PARCEL FOR PROPERTY AT 7 ROUTE 236, KITTERY, YORK COUNTY, MAINE OWNED BY DANIEL O. SEAWARD, 2 CHAUNCEY CREEK ROAD, KITTERY POINT, ME 03905", DATED OCTOBER 20, 2008, LAST REVISED NOVEMBER 24, 2008, PREPARED BY EASTERLY SURVEYING, INC., RECORDED AT THE YORK COUNTY REGISTRY OF DEEDS IN PLAN BOOK 335, PAGE 6.
11. "PLAN OF SEWER EASEMENTS FOR TOWN OF KITTERY, 1 & 7 ROUTE 236, KITTERY, YORK COUNTY, MAINE OVER LANDS OWNED BY SEAWARD PROPERTIES LLC & GERASIN FAMILY REALTY LLC", DATED SEPTEMBER 23, 2014, PREPARED BY WSP TRANSPORTATION & INFRASTRUCTURE, RECORDED AT THE YORK COUNTY REGISTRY OF DEEDS IN PLAN BOOK 372, PAGE 45.



LOCATION PLAN
(NOT TO SCALE)

CERTIFICATION:

THIS SURVEY WAS PERFORMED UNDER MY DIRECT SUPERVISION IN ACCORDANCE WITH THE STANDARDS OF PRACTICE ESTABLISHED BY THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS (02-360 CMR CHAPTER 90, PART I & PART II – SEE NOTES HEREON FOR EXCEPTIONS, IF ANY).

SEPTEMBER 26, 2022
MICHAEL P. PEVERETT — DATE:
MAINE PROFESSIONAL LAND SURVEYOR #2362
CIVIL CONSULTANTS
SOUTH BERWICK, MAINE 03908
207-384-2550

STATE OF MAINE
YORK COUNTY ss. REGISTRY OF DEEDS
RECEIVED _____, 20____
AT ___h, ___m, ___M, AND RECORDED IN PLAN BOOK _____, PAGE _____

ATTEST _____
REGISTER

STATE OF MAINE — MICHAEL P. PEVERETT — 2362 — PROFESSIONAL LAND SURVEYOR

© CIVIL CONSULTANTS
CIVIL CONSULTANTS
Engineers
Planners
Surveyors
P.O. Box 100
South Berwick
Maine
03908
207-384-2550
www.civcon.com

NO.	REVISIONS	INT.	DATE

RECORD OWNER: 25 & 17 ROUTE 236 LLC
ADDRESS: P.O. BOX 630 KITTERY, ME 03904

BOUNDARY / EXISTING CONDITIONS SURVEY
LAND OF 25 & 17 ROUTE 236 LLC
17/25 ROUTE 236
KITTERY, YORK COUNTY, MAINE

PREPARED FOR: SONNY NATARAJAN
CLIENT ADDRESS: 8 PEPPERELL WAY, YORK, ME 03909

1" = 40'
0' 40'

DATE: SEPTEMBER 26, 2022
DRAWN BY: MPP
CHECKED BY: CHM
APPROVED BY: MPP

BOUNDARY/EXISTING CONDITIONS PLAN

PROJECT NO: 2218000

EC1

SHEET: 1 OF 1

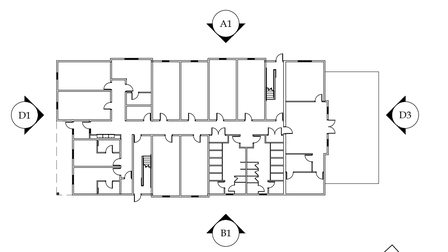
COORDINATE FILE: J:\AAA\2022\2218000\CARLSON\SURVEY\POINTS\2218000.CRD
CADD FILE: J:\AAA\2022\2218000\CARLSON\SURVEY\DWG\2218000S-EX-1D.DWG

D1 NORTH ELEVATION
SCALE: 1/8" = 1'-0"

D3 SOUTH ELEVATION
SCALE: 1/8" = 1'-0"

B1 WEST ELEVATION
SCALE: 1/8" = 1'-0"

A1 EAST ELEVATION
SCALE: 1/8" = 1'-0"



A5 KEY PLAN
SCALE: NTS

KITTERY HOUSING

ROUTE 236,
ME

ISSUE:

SA PROJECT TEAM: PRINCIPAL _____
PROJ. ARCH. _____ DRAFTER _____
JOB CAPT. _____ INTERIORS _____

SEAL:

TITLE:

EXTERIOR ELEVATIONS

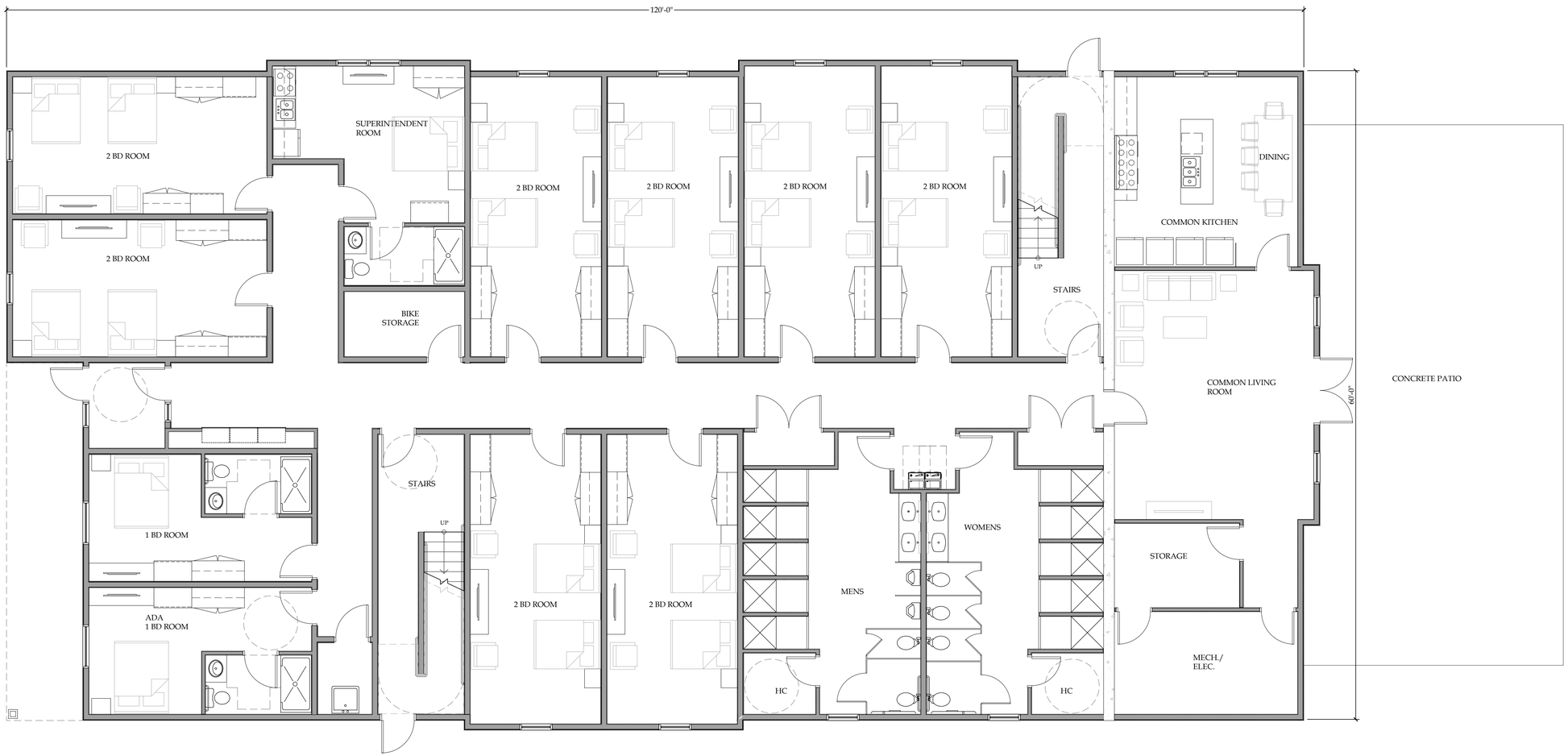
SILVESTRI
ARCHITECTS · PC
1321 MILLERSPORT HWY PH. 716.691.0900
AMHERST, NY 14221 FAX 716.691.4773

SA JOB #: 23063.01

DATE: 09-20-23

DRAWING #: A-201

UNIT COUNT					
DWELLING UNITS	1ST FLOOR	2ND FLOOR	3RD FLOOR	TOTAL-	
1 BD ROOM	2	3	3	8	23%
ADA 1 BD ROOM	1	0	0	1	3%
2 BD ROOM	7	9	9	25	71%
ADA 2 BD ROOM	1	0	0	1	3%
TOTAL	11	12	12	35	



A1 FIRST FLOOR PLAN
SCALE: 3/32" = 1'-0"

KITTERY HOUSING

ROUTE 236, ME

ISSUE:

SA PROJECT TEAM: PRINCIPAL _____
PROJ. ARCH. _____ DRAFTER _____
JOB CAPT. _____ INTERIORS _____

SEAL:

TITLE:

FIRST FLOOR PLAN

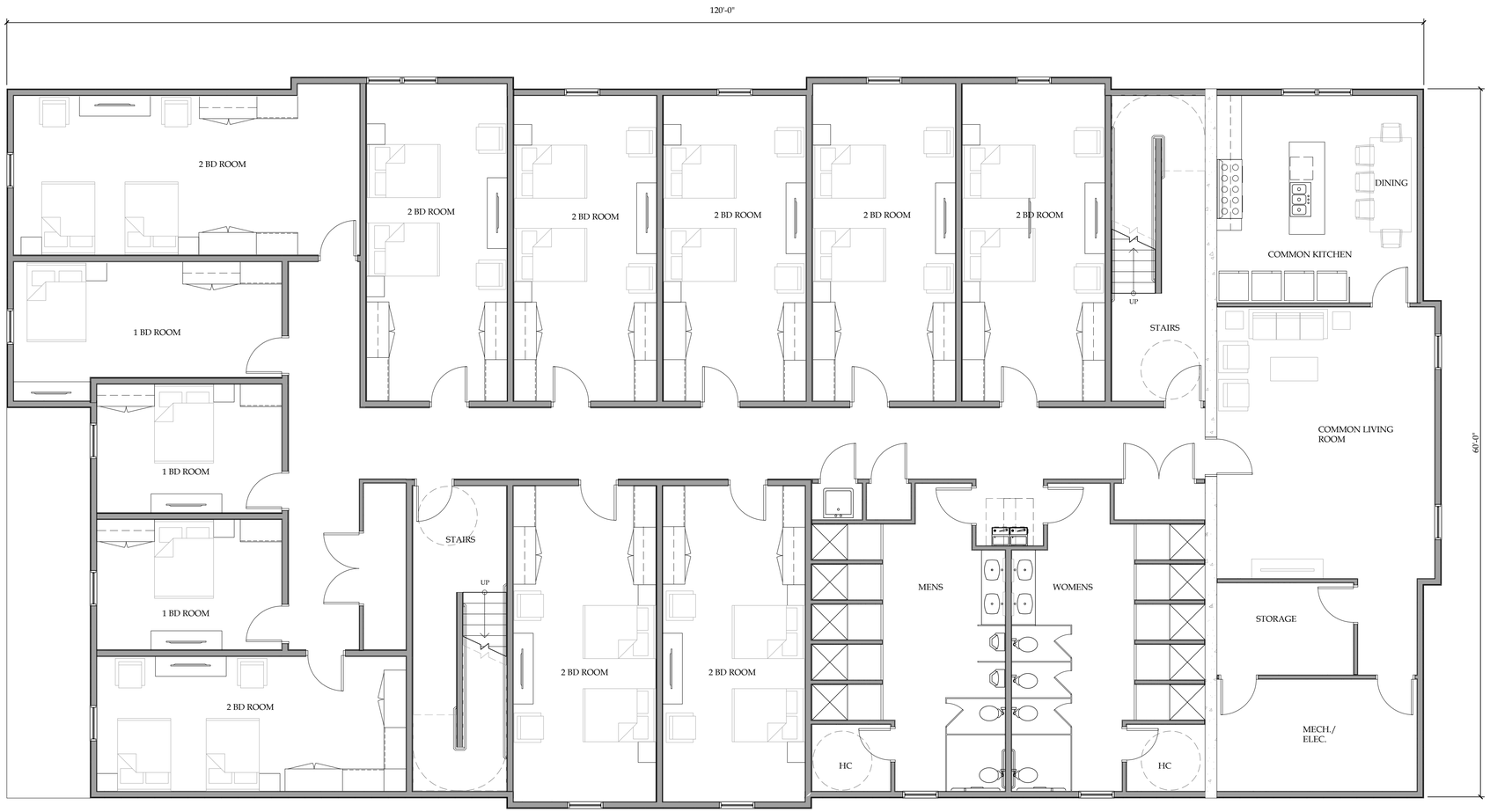
SILVESTRI ARCHITECTS · PC
1321 MILLERSPORT HWY PH. 716.691.0900
AMHERST, NY 14221 FAX 716.691.4773

SA JOB #: 23063.01

DATE: 09-20-23

DRAWING #: A-101

UNIT COUNT					
DWELLING UNITS	1ST FLOOR	2ND FLOOR	3RD FLOOR	TOTAL-	
1 BD ROOM	2	3	3	8	23%
ADA 1 BD ROOM	1	0	0	1	3%
2 BD ROOM	7	9	9	25	71%
ADA 2 BD ROOM	1	0	0	1	3%
TOTAL	11	12	12	35	



A1 SECOND FLOOR PLAN
SCALE: 3/16" = 1'-0"

KITTERY HOUSING

ROUTE 236, ME

ISSUE:

SA PROJECT TEAM: PRINCIPAL _____
PROJ. ARCH. _____ DRAFTER _____
JOB CAPT. _____ INTERIORS _____

SEAL:

TITLE:

SECOND FLOOR PLAN

SILVESTRI ARCHITECTS · PC

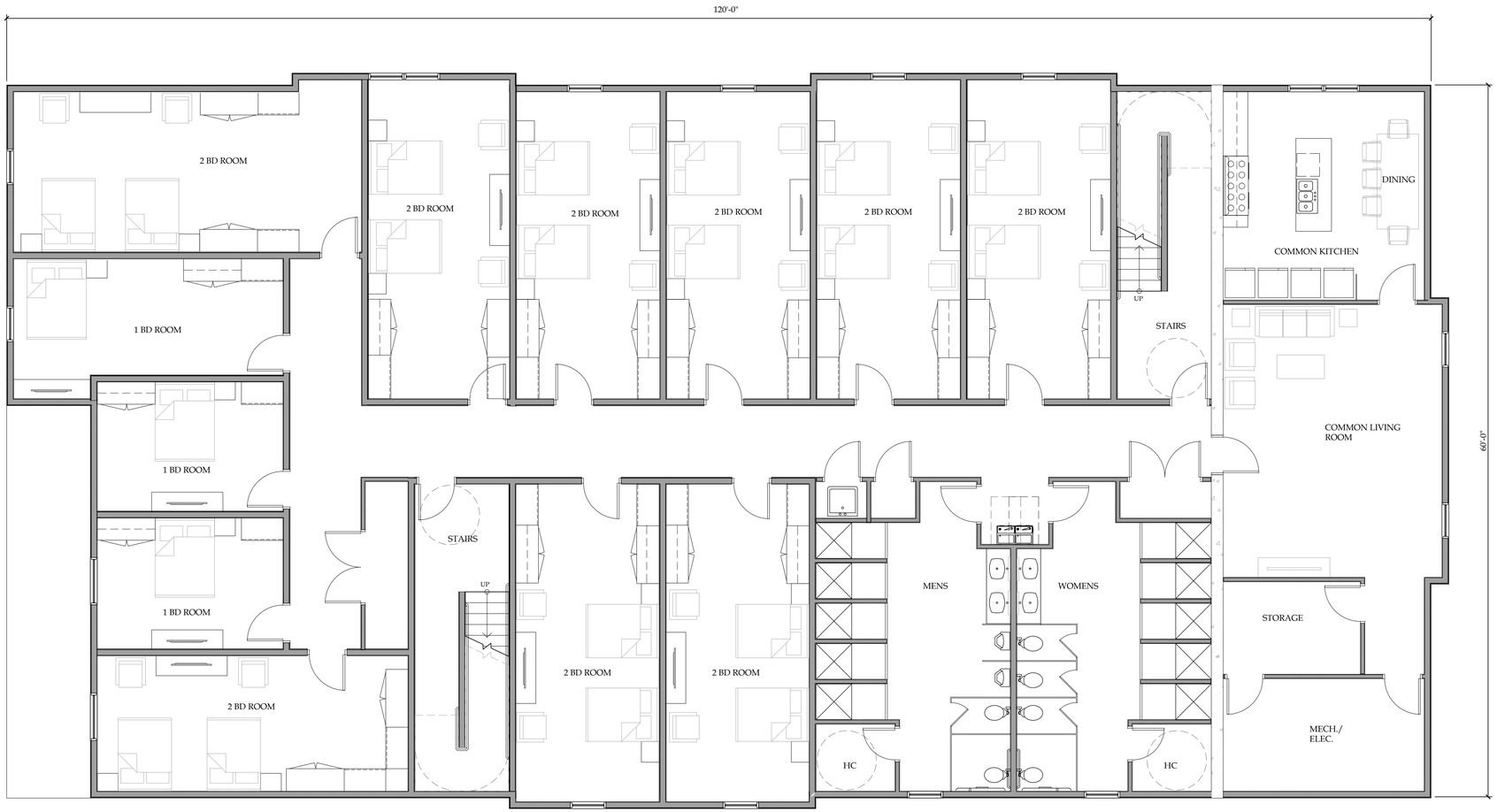
1321 MILLERSPORT HWY PH. 716.691.0900
AMHERST, NY 14221 FAX 716.691.4773

SA JOB #: 23063.01

DATE: 09-20-23

DRAWING #: A-102

UNIT COUNT					
DWELLING UNITS	1ST FLOOR	2ND FLOOR	3RD FLOOR	TOTAL-	
1 BD ROOM	2	3	3	8	23%
ADA 1 BD ROOM	1	0	0	1	3%
2 BD ROOM	7	9	9	25	71%
ADA 2 BD ROOM	1	0	0	1	3%
TOTAL	11	12	12	35	



A1 THIRD FLOOR PLAN
SCALE: 3/16" = 1'-0"

KITTERY HOUSING

ROUTE 236, ME

ISSUE:

SA PROJECT TEAM: PRINCIPAL _____
PROJ. ARCH. _____ DRAFTER _____
JOB CAPT. _____ INTERIORS _____

SEAL:

TITLE:

THIRD FLOOR PLAN

SILVESTRI
ARCHITECTS · PC
1321 MILLERSPORT HWY PH. 716.691.0900
AMHERST, NY 14221 FAX 716.691.4773

SA JOB #: 23063.01

DATE: 09-20-23

DRAWING #: A-103

CIVIL CONSULTANTS MEMORANDUM

TO: Town of Kittery **FROM:** Geoff R. Aleva, PE **DATE:** 09/14/2023

SUBJECT: Kittery Section 16.7.10 Preliminary Plan Review Checklist

PROJECT: 22-180.00 – 17 & 25 Route 236 LLC Proposed Rooming House

Below, please find CIVIL CONSULTANTS's responses to the submission requirements for the proposed rooming house at 25 & 17 Route 236.

SUBMISSION REQUIREMENTS	RESPONSE
Article 16.7.10 Preliminary Plan Review	
4. Plan requirements.	
a) Plan sheets drawn on a reproducible medium and must measure no less than 11 inches by 17 inches and no larger than 24 inches by 36 inches;	*Provided*
b) With scale of the drawings no greater than one inch equals 30 feet for developments less than 10 acres, and one inch equals 50 feet for all others;	*Scale of 1"=40' provided due to unconventional site layout*
c) Code block in the lower right-hand corner. The block must contain:	*Provided on all plan sheets*
1) Name(s) and address(es) of the applicant and owner;	*Provided on all plan sheets*
2) Name of the project;	*Provided on all plan sheets*
3) Name and address of the preparer of the plan, with professional seal, if applicable;	*Provided on all plan sheets*
4) Date of plan preparation/revision, and a unique ID number for the plan and any revisions;	*Provided on all plan sheets*
d) Standard boundary survey conducted by a surveyor licensed in the State of Maine, in the manner recommended by the State Board of Registration for Land Surveyors;	*Provided in submission. See attachment.*
e) An arrow showing true North and the magnetic declination, a graphic scale, and signature blocks for the owner(s) and members of the Planning Board;	*Provided on all plan sheets*
f) Locus map showing the property in relation to surrounding roads, within 2,000 feet of any property line of the development;	*Provided on all plan sheets*
g) Vicinity map and aerial photograph showing the property in relation to surrounding properties, roads, geographic, natural resource (wetland, etc.), historic sites, applicable comprehensive plan features such as proposed park locations, land uses, zones, and other features within 500 feet from any boundary of the proposed development;	*Provided in submission. See attachment.*
h) Surveyed acreage of the total parcel, of rights-of-way, wetlands, and area to be disturbed and amount of street frontage;	*Provided on sheet L1*
i) Names and addresses of all owners of record of property abutting the development, including those across a street;	*Provided on sheet L1*
j) Existing development area conditions, including but not limited to:	*Provided on sheet L1*
1) Location and description of all structures, including signs, existing on the site, together with accesses located within 100 feet of the property line;	*Provided*

2) Essential physical features such as watercourses, wetlands, floodplains, wildlife habitat areas, forest cover, and outcroppings;	*Provided*
3) Utilities existing, including power, water, sewer, holding tanks, bridges, culverts and drainageways;	*Provided*
k) Proposed development area conditions including, but not limited to:	*Provided on sheet L1*
1) Structures: their location and description, including signs, to be placed on the site, floor plans and elevations of principal structures as well as detail of all structures, showing building materials and colors, and accesses located within 100 feet of the property line;	*Provided*
2) Utilities proposed including power, water, sewer, holding tanks, bridges, culverts and drainageways;	*Provided*
3) Sewage facilities type and placement. Test pit locations, at least two of which must meet the State of Maine Plumbing Code requirements, must be shown;	*Development to be on public sewer. Test pits not required.*
4) Domestic water source;	*Development to be on public water.*
5) Parks, open space, or conservation easement locations;	*N/A*
6) Lot lines, interior and exterior, right-of-way, and street alignments;	*Provided on sheet L1*
7) Road and other paved ways plans, profiles and typical sections including all relevant data;	*Provided on sheets L1 and L2*
8) Setbacks existing and proposed;	*Provided on sheet L1*
9) Machinery permanently installed locations likely to cause appreciable noise at the lot lines;	*N/A*
10) Raw, finished, or waste materials to be stored outside the buildings, and any stored material of a toxic or hazardous nature;	*N/A*
11) Topographic contours of existing contours and finished grade elevations within the development;	*Provided on sheet L1*
12) Pedestrian ways/sidewalks, curbs, driveways, fences, retaining walls, and other artificial features locations and dimensions proposed;	*Provided on sheet L1*
13) Temporary marker locations adequate to enable the Planning Board to readily locate and appraise the layout of the development;	*To be provided as necessary.*
14) Land proposed to be dedicated to public use and the conditions of such dedication;	*N/A*
l) Natural features or site elements to be preserved. Written submission requirements legal interest documents showing legal interest of the applicant in the property to be developed. Such documents must contain the description upon which the survey was based;	*N/A*
m) Property encumbrances currently affecting the property, as well as any proposed encumbrances;	*Provided on sheet L1*
n) Water district approval letter, if public water is used, indicating there is adequate supply and pressure to be provided to the development;	*A letter has been sent to the Kittery Water District. A copy of the letter has been included in this submission. Water District approval will be provided prior to final plan approval. See attachment.*
o) Erosion and sedimentation control plan prepared by a qualified erosion and sedimentation control professional in accordance with the requirements of **§ 16.7.11C**; [Amended 5-8-2023]	*Provided on sheet L2. Sediment and Erosion control requirements during construction are also included in the stormwater maintenance plan.*

p) Stormwater management preliminary plan for stormwater and other surface water drainage prepared by a registered professional engineer including the general location of stormwater and other surface water drainage areas;	*A stormwater management plan has been included in this submission.*
q) Soil survey for York County covering the development. Where the soil survey shows soils with severe restrictions for development, a high intensity Class "A" soil survey must be provided;	*Included in stormwater management plan. See attachment.*
r) Vehicular traffic report estimating the amount and type of vehicular traffic that will be generated by the development on a daily basis and for peak hours;	*Traffic assessment provided in submission. See attachment.*
s) Traffic impact analysis in accordance with **§ 16.5.27E** for developments involving 40 or more parking spaces or which are projected to generate more than 400 vehicle trips per day;	*Traffic impact analysis not required. The total number of proposed parking spaces between the existing and proposed development is 37. Development will not generate more than 400 trips per day.*
t) Test pit(s) analysis prepared by a licensed site evaluator when sewage disposal is to be accomplished by subsurface disposal, pits, prepared by a licensed site evaluator;	*Development to be on public sewer. Test pits not required.*
u) Town Sewage Department or community system authority letter, when sewage disposal is to be through a public or community system, approving the connection and its location;	*A letter has been sent to the Kittery Sewer Department. A copy of the letter has been included in this submission. Sewer Department approval will be provided prior to final plan approval. See attachment.*
v) Letters of evaluation of the development by the Chief of Police, Fire Chief, Commissioner of Public Works, and, for residential applications, the superintendent of schools, must be collected and provided by the Town Planner;	*A letter has been sent to the Police Chief, Fire Chief, and Commissioner of Public Works. A copy of the letters has been included in this submission. Their responses will be provided prior to final plan approval. See attachments.*
w) Additional submissions as may be required by other sections of this title such as for clustered development, mobile home parks, or junkyards must be provided.	*N/A*
4. Additional requirements. In its consideration of an application/plan, the Planning Board may at any point in the review require the applicant to submit additional materials, studies, analyses, and agreement proposals as it may deem necessary for complete understanding of the application. Such materials may include:	*Additional materials will be provided as required*
a) Traffic impact analysis, for projects that are not otherwise required to submit a traffic impact analysis by submission requirement in Subsection **C(4)(s)**, above.	*To be provided as required*
b) Environmental analysis. An analysis of the effects that the development may have upon surrounding lands and resources, including intensive study of groundwater, ecosystems, or pollution control systems.	*To be provided as required*
c) Hydrologic analysis. An analysis of the effects that the development may have on groundwater must be conducted in accordance with **§ 16.7.11J**. This analysis is always required for mobile home park proposals.	*To be provided as required*
5. Additional submittal content required for review of wireless	*To be provided as required*

communication services facilities (WCSF).	
a) A visual impact analysis prepared by a landscape architect or other qualified professional acceptable to the Town that quantifies the amount of visual impact on properties located within 500 feet, within 2,500 feet and within two miles of the WCSF. This analysis will include recommendations to mitigate adverse visual impacts on such properties;	*To be provided as required*
b) An analysis prepared by a qualified professional acceptable to the Town that describes why this site and structure is critical to the operation for which it is proposed. The analysis must address, at a minimum, existing and proposed service area; how this WCSF is integrated with other company operations, particularly other structures in Kittery and surrounding communities; future expansion needs in the area; the effect on company operations if this structure is not constructed in this location; other sites evaluated for location of this structure and how such sites compare to the proposed site; other options, if any, which could be used to deliver similar services, particularly if the proposed equipment can be co-located (shared use) on an existing structure; and an analysis to the projected life cycle of this structure and location;	*To be provided as required*
c) Certification by a structural engineer that construction of the structure satisfies all federal, state and local building code requirements as well as the requirement of maximum permitted co-location at the site as approved by the Planning Board/Town Planner;	*To be provided as required*
d) A plan note stating the payment of all required performance guarantees as a condition of plan approval;	*See note 15 on plan sheet L1*
e) Payments of the Planning Board application fees;	*All application fees to be paid as required*
f) And all other requirements per this chapter.	*To be provided as required*
D. Final plan review.	
1. Process, major site plan.	*Development requires major site plan approval*
a) Final plan application. The applicant must, within six months after approval of a preliminary plan, file with the Planning Board an application for approval of the final plan in the form prescribed herein.	*Final application to be provided within 6 months of preliminary approval.*
b) Failure to submit final plan application. If the final plan is not submitted to the Planning Board within six months after the approval of the preliminary plan, the Planning Board may refuse to act on the final plan and require resubmission of the preliminary plan. Any plan resubmitted must comply with all application requirements, including payment of fees.	*Final application to be provided within 6 months of preliminary approval.*
c) A completed application must be submitted to the Town Planner no later than 21 days prior to the meeting date for the item to be included on the agenda. The submission must include on the plan or attached thereto, the requirements of Subsection **D(3)**, Final plan requirements, unless upon the applicant's written request the Planning Board, by formal action, waives or defers any requirement(s) for submission.	*Final application will include all necessary requirements of subsection D(3)*
1) Refer to current Planning Department application checklist for required number of paper copies.	*Proper number of paper copies to be provided*
2) One electronic submission in PDF format of the complete submission including all forms, plans, and documentation.	*A PDF copy of the submission will be provided*

3) GIS data for all property corners and site plan elements.	*GIS map included, see attachment.*
d) Application/plan review expiration.	
1) Uncounted time. When an approved plan is required to be reviewed/approved by another agency (e.g., DEP, BOA, KPA), any period the plan is at such an agency or that a plan is continued by the Planning Board in accordance with **§ 16.7.10C(3)** from time of submission to time of decision inclusive, verifiable by recorded documentation, is not counted as part of the cumulative time periods described in this section.	*No response required*
2) Requests for extension. The Planning Board may grant extensions to expiration dates upon written request by the developer, on a case-by-case basis.	*No response required*
2. Process, minor site plan.	*N/A – Major Site Plan*
a) The final plan application may be submitted concurrently with preliminary plan submission requirements to the Director of Planning and Development for administrative review and decision.	*N/A*
3. Final plan requirements. A complete final plan application must fulfill all the requirements of a preliminary plan as indicated in § 16.7.10C of this section and must show the following items, unless the Planning Board, by formal action, upon the applicant's written request, waives or defers any requirement(s) for submission. If no changes occurred to the preliminary plan, it also may be considered to be the final plan.	*Final plan application will include all items required for preliminary and final approval.*
a) Preliminary plan information, including vicinity map and any amendments thereto suggested or required by the Planning Board or other required reviewing agency.	*Provided in submission. See attachment.*
b) Street names and lines, pedestrianways, lots, easements and areas to be reserved for or dedicated to public use.	*N/A – No public use areas proposed*
c) Street length of all straight lines, the deflection angles, radii, lengths of curves and central angles of all curves, tangent distances and tangent bearings.	*N/A – No new streets proposed*
d) Lots and blocks within a subdivision, numbered in accordance with local practice.	*N/A*
e) Markers/permanent reference monuments. Their location, source references and, where required, constructed in accordance with specifications herein.	*Existing monuments shown. No monuments proposed.*
f) Structures, their location and description, including signs, to be placed on the site, floor plans and elevations of principal structures as well as detail of all structures, showing building materials and colors, and accesses located within 100 feet of the property line.	*Proposed building shown on plan sheet L1. Architectural elevations and floorplans provided in submission. See attachments.*
g) Outdoor lighting and signage plan if the application involves the construction of more than 5,000 square feet of nonresidential floor area; or the creation of more than 20,000 square feet of impervious area; or the creation of three or more dwelling units in a building, prepared by a qualified lighting professional, showing at least the following at the same scale as the site plan:	*A lighting plan will be submitted prior to final approval.All lights will be down lit and dark-sky compliant.*
1) All buildings, parking areas, driveways, service areas, pedestrian areas, landscaping and proposed exterior lighting fixtures and snow storage;	*To be provided*
2) All proposed lighting fixture specifications and illustrations, including photometric data, designation as cutoff fixtures, color rendering index (CRI) of all lamps (bulbs), and other descriptive	*To be provided*

information on the fixtures;	
3) Mounting height of all exterior lighting fixtures;	*To be provided*
4) Lighting analyses and luminance level diagrams or photometric point-by-point diagrams on a twenty-foot grid, showing that the proposed installation conforms to the lighting level standards of the ordinance codified in this section together with statistical summaries documenting the average luminance, maximum luminance, minimum luminance, average-to-minimum uniformity ratio, and maximum-to-minimum uniformity ratio for each parking area, drive, canopy, and sales or storage area;	*To be provided*
5) Drawings of all relevant building elevations, showing the fixtures, the portions of the walls to be illuminated, the luminance levels of the walls, and the aiming points for any remote light fixtures; and	*To be provided*
6) A narrative that describes the hierarchy of site lighting and how the lighting will be used to provides safety, security and aesthetic effects.	*To be provided*
h) Machinery in permanently installed locations likely to cause appreciable noise at the lot lines.	*N/A*
i) Materials (raw, finished or waste) storage areas, their types and location, and any stored toxic or hazardous materials, their types and locations.	*N/A*
j) Fences, retaining walls and other artificial features, locations, and dimensions proposed.	*N/A*
k) Landscaping plan, including location, size and type of plant material.	*A waiver has been requested for a landscaping plan. The lot is sufficiently buffered from adjacent lots. Existing vegetation will remain to the greatest extent practical.*
l) Stormwater management plan for stormwater and other surface water drainage prepared by a registered professional engineer, including the location of stormwater and other surface water drainage area; a post-construction stormwater management plan that defines maintenance responsibilities, responsible parties, shared costs, and schedule for maintenance; a draft maintenance agreement for stormwater management facilities; and, where applicable, draft documents creating a homeowners' association referencing the maintenance responsibilities. Where applicable, the maintenance agreement must be included in the document of covenants, homeowners' documents and/or as riders to the individual deed and recorded with the York County Registry of Deeds.	*A stormwater management plan has been included in the submission. See attachment. The plan includes maintenance requirements during and after construction.*
4. Written submission requirements	
a) Municipal impact analysis of the relationship of the revenues to the Town from the development and the costs of additional publicly funded resources, including:	*See answers below*
1) Review for impacts. A list of the construction items that will be completed by the developer prior to the sale of lots.	*N/A – no sale of lots proposed*
2) Municipal construction and maintenance items. A list of construction and maintenance items that must be borne by the municipality, which must include, but not be limited to:	
(a) Schools, including busing;	*Development will have no impact on the school system.*
(b) Road maintenance and snow removal;	*Private road and private snow*

	removal. No impact on Town.
(c) Police and fire protection;	*Responses from Police and Fire departments will be incorporated into final plan. See attachments for letters sent to Police and Fire, respectively.*
(d) Solid waste disposal;	*A new dumpster is proposed. Private solid waste disposal.*
(e) Recreation facilities;	*No recreation facilities are proposed.*
(f) Runoff water disposal drainageways and/or storm sewer enlargement with sediment traps.	*The proposed drainage will not impact the municipal stormwater system. See attachment for stormwater management.*
3) Municipal costs and revenues. Cost estimates to the Town for the above services and the expected tax revenue of the development.	*The development will not cost the Town money but will provide additional tax revenue.*
b) Open space land cession offers. Written offers of cession to the municipality of all public open space shown on the plan, and copies of agreements or other documents showing the manner in which space(s), title to which is reserved by the subdivider, are to be maintained.	*N/A – No open space proposed*
c) Open space land cession offers acknowledgement by Town. Written evidence that the municipal officers are satisfied with the legal sufficiency of the documents referred to in **§ 16.7.10D(4)b**. Such written evidence does not constitute an acceptance by the municipality of any public open space referred to in **§ 16.7.10D(4)b**.	*N/A – No open space proposed*
d) Maintenance plan and agreement defining maintenance responsibilities, responsible parties, shared costs and schedule. Where applicable, a maintenance agreement must be included in the document of covenants, homeowners' documents and/or as riders to the individual deed.	*See attached stormwater management plan for the included maintenance plan.*
e) Estimated costs. Specify the estimated total cost of the development and itemize the estimated major expenses. The itemization of major costs should include, but not be limited to, the costs of the following activities: roads, sewers, structures, water supply, erosion control, pollution abatement and landscaping.	*Cost estimate to be provided at the request of the Town.*
f) The applicant shall demonstrate they have sent written notice of their filing for minor site plan review by postage paid, first-class mail (cost to be paid by the applicant) to all owners of abutting property, as herein defined (within 150 feet of the property).	*Proof of abutter notice has been included in this submission. See attachment.*
5. Findings of fact.	
a) After considering all submissions, evidence and testimony in accordance with the requirements of all applicable state and the Town Code, the Planning Board or Director of Planning and Development must make a finding of facts for each and every proposed phase of development, including the development master plan and each subsequent development plan, and take formal action as required in this title.	*No response required*
b) Findings of fact. Action by the Planning Board must be based upon findings of fact which certify or waive compliance with all the required standards of this title and which certify the development	*See responses below*

meets the following requirements:	
1) Development conforms to local ordinances. The proposed development conforms to a duly adopted Comprehensive Plan as per adopted provisions in the Town Code, zoning ordinance, subdivision regulation or ordinance, development plan or land use plan, if any. In making this determination, the municipal reviewing authority may interpret these ordinances and plans.	*The proposed development conforms to local ordinances.*
2) Water supply sufficient. The proposed development has sufficient water available for the reasonably foreseeable needs of the development.	*A letter has been sent to the Kittery Water District. A copy of the letter has been included in this submission. Water District approval will be provided prior to final plan approval. See attachment.*
3) Sewage disposal adequate. The proposed development will provide for adequate sewage waste disposal and will not cause an unreasonable burden on municipal services, if they are utilized.	*A letter has been sent to the Kittery Sewer Department. A copy of the letter has been included in this submission. Sewer Department approval will be provided prior to final plan approval. See attachment.*
4) Stormwater managed. The proposed development will provide for adequate stormwater management.	*A stormwater management plan has been included in the submission. See attachment.*
5) Traffic managed. The proposed development will:	*Traffic assessment provided in submission. See attachment.*
(a) Not cause unreasonable highway or public road congestion or unsafe conditions with respect to the use of the highways or public roads existing or proposed; and	*The proposed development will utilize existing entrance from Route 236 and is not expected to cause unreasonable road congestion.*
(b) Provide adequate traffic circulation, both on site and off site.	*The development has been designed to provide safe traffic circulation on and off the site.*
6) Parking and loading. Provisions have been made for safe internal vehicular circulation, loading and service areas, and parking associated with the proposed development.	*A waiver has been requested for the required number of parking spaces.*
7) Utilities. The size, type, and locations of all public utilities and private utilities to serve the proposed development will be installed per accepted engineering practices.	*Proposed utilities are shown on sheet L1. Required sizes will be coordinated with Water and Sewer Departments.*
8) Erosion controlled. The proposed development will not cause unreasonable soil erosion or a reduction in the land's capacity to hold water so that a dangerous or unhealthy condition results.	*An erosion and sediment control plan is provided on sheet L2. Sediment and Erosion control requirements during construction are also included in the stormwater maintenance plan.*
9) Groundwater protected. The proposed development will not, alone or in conjunction with existing activities, adversely affect the quality or quantity of groundwater.	*It is the opinion of Civil Consultants that the proposed development does not adversely affect the quality or quantity of groundwater.*
10) Freshwater wetlands identified. All freshwater wetlands within the project area have been identified on any maps submitted as part of the application, regardless of the size of these wetlands.	*Wetland location has been provided on sheet L1.*

11) River, stream or brook identified. Any river, stream or brook within or abutting the proposed project area has been identified on any maps submitted as part of the application. For purposes of this section, "river, stream or brook" has the same meaning as in 38 M.R.S.A. § 480-B, Subsection 9, Municipal solid waste disposal available. The proposed development will not cause an unreasonable burden on the municipality's ability to dispose of solid waste, if municipal services are to be used.	*There are no rivers, streams or brooks located on site.*
12) Water body quality and shoreline protected. Whenever situated entirely or partially within 250 feet of any wetland, the proposed development will not adversely affect the quality of that body of water or unreasonably affect the shoreline of that body of water. Flood areas identified and development conditioned. All flood-prone areas within the project area have been identified on maps submitted as part of the application. Water and air pollution minimized. The proposed development will not result in undue water or air pollution. In making this determination, the following must be considered:	*The proposed development will have no impact on the wetland. All disturbed areas drain away from the wetland. The site is in Flood Zone 'C' which is defined as areas of minimal flooding. FEMA flood map included in submission. See attachment. There will be no undue water or air pollution because of this project.*
(a) Elevation of the land above sea level and its relation to the floodplains;	*Elevations have been provided on plans.*
(b) Nature of soils and subsoils and their ability to adequately support waste disposal;	*N/A – Public sewer to be utilized*
(c) Slope of the land and its effect on effluents;	*N/A – Public sewer to be utilized*
(d) Availability of streams for disposal of effluents;	*N/A – Public sewer to be utilized*
(e) Applicable state and local health and water resource rules and regulations; and	*The project disturbs less than an acre and will not require MDEP approval.*
(f) Safe transportation, disposal and storage of hazardous materials.	*N/A – No hazardous material to be stored on site.*
13) Aesthetic, cultural and natural values protected. The proposed development will not have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites, significant wildlife habitat identified by the Department of Inland Fisheries and Wildlife or the municipality, or rare and irreplaceable natural areas, or any public rights for physical or visual access to the shoreline.	*The site is sufficiently screened from the surrounding area and will have no effect on scenic beauty of the area. The development will not impact any wildlife habitats. Beginning with Habitat Maps included in submission. See attachment.*
14) Environmental considerations. The proposed development will not result in undue levels of lighting, noise, vibrations, smoke, heat, glare, fumes, dust, toxic matter, odors, or electromagnetic interference.	*The development will not result in any undue environmental considerations as defined in this section.*
15) Utilization of the site. The proposed development does reflect the natural capabilities of the site to support development.	*The proposed development has been located on the site to meet all applicable land use requirements.*
16) Developer financially and technically capable. Developer is financially and technically capable to meet the standards of this section.	*25 & 17 Route 236 LLC is in good standing with the Maine Department of the Secretary of State. See attached copy of the letter. The owner can provide additional proof of financial capability if requested.*
c) For wireless communication system facility (WCSF). In	*N/A – Not a WCSF*

development, the WCSF:	
1) Tower or other structure height does not exceed that which is essential for its intended use and public safety;	*N/A*
2) Proximity of tower to residential development or zones is acceptable;	*N/A*
3) Nature of uses on adjacent and nearby properties is compatible;	*N/A*
4) Surrounding topography is protected;	*N/A*
5) Surrounding tree coverage and foliage is protected;	*N/A*
6) Design of the tower, antenna, or facility with particular reference to design characteristics effectively eliminating or significantly reducing visual obtrusiveness is minimized;	*N/A*
7) Proposed ingress and egress to the site is adequate;	*N/A*
8) Co-location with another existing WCSF has been thoroughly pursued and is not feasible;	*N/A*
9) Visual impacts on viewsheds, ridgelines and other impacts caused by tower location, tree and foliage clearing and placement of structures and associated development is minimized;	*N/A*
10) Will not unreasonably interfere with the view of or from any public park, natural scenic vista, and historic building or major view corridor and the Kittery waterfront and harbor;	*N/A*
11) Is not constructed in such a manner as to result in needless height, mass and guy wire supports, with documentation having been provided and reviewed regarding the design capacity and/or the remaining co-location capacity of the tower/facility; and	*N/A*
12) Stealth technology has been pursued and is not a viable option.	*N/A*
d) In Shoreland, Resource Protection or Commercial Fisheries/Maritime Use Overlay Zones, the proposed use will:	*N/A – Not located in overlay zone*
1) Maintain safe and healthful conditions;	*N/A*
2) Not result in water pollution, erosion, or sedimentation to surface waters;	*N/A*
3) Adequately provide for the disposal of all wastewater;	*N/A*
4) Not have an adverse impact on spawning grounds, fish, aquatic life, bird, or other wildlife habitat;	*N/A*
5) Conserve shore cover and visual, as well as actual, points of access to inland and coastal waters;	*N/A*
6) Protect archaeological and historic resources as designated in the Comprehensive Plan;	*N/A*
7) Not adversely affect existing commercial fishing or maritime activities in a commercial fisheries/maritime activities district;	*N/A*
8) Avoid problems associated with floodplain development and use; and	*N/A*
9) Is in conformance with the provisions of this title.	*N/A*
e) For a right-of-way plan. The proposed right-of-way:	*N/A – Existing R.O.W. to be utilized*
1) Does not create any nonconforming lots or buildings; and	*N/A*
2) Could reasonably permit the right of passage for an automobile.	*N/A*
f) For special exception use - special exception use permitted. If a special exception use is requested, the special exception use will:	*N/A – Not a special exception use*

1) Not prevent the orderly and reasonable use of adjacent properties or of properties in adjacent use zones;	*N/A*
2) Not prevent the orderly and reasonable use of permitted or legally established uses in the zone wherein the proposed use is to be located, or of permitted or legally established uses in adjacent use zones;	*N/A*
3) Not adversely affect the safety, the health, and the welfare of the Town; and	*N/A*
4) Be in harmony with and promote the general purposes and intent of this title.	*N/A*
6. Final plan approval and recording.	
a) Agreement form. An approval by the Planning Board or Director of Planning and Development must take the form of an agreement between the Town and the applicant, incorporating as elements the application, the Planning Board's findings of fact, and such conditions as the Planning Board may impose upon approval.	*No response required*
b) Agreement distribution. The Planning Board must send copies of the agreement to the Town Manager and Code Enforcement Officer.	*No response required*
c) Updated GIS information. The applicant shall provide revised GIS data with any changes made during the review process for major site plans, if necessary.	*The proposed development will require a merging of Map 20, Lot 12 and Map 21, Lot 20. This update should be reflected in the GIS data. Civil Consultants will provide as built information.*
d) Approved final plan signing. A plan has final approval only when the Planning Board has indicated approval by formal action and the plan has been properly signed by a majority of the Planning Board members or by the Chair only, if so voted by the Planning Board.	*A signature block has been provided on all plan sheets.*
e) Approved final plan recording. An approved plan involving the division of land, easements, or property boundary must be recorded by the York County Registry of Deeds.	*No response required*

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TOWN OF KITTERY, MAINE

TOWN PLANNING AND DEVELOPMNET DDEPARTMENT

200 Rogers Road, Kittery, Maine 03904
PHONE: (207) 475-1323
Fax: (207) 439-6806
www.kittery.org

APPLICATION: SITE PLAN REVIEW

FEE FOR REVIEW:	☒ $300. 00 PLUS THE GREATER OF:	☐ $50/USE OF UNIT; OR	☐ $5.00/100 SQ FT OF GROSS FLOOR AREA	**Fees Paid:** $_____ Date: _____
		☐ $0.50/LINEAR FOOT OF DOCK, SLIP & FLOAT; OR	☒ $20.00/ UNIT INTENDED TO PROVIDE OVERNIGHT SLEEPING ACCOMODATIONS	**Escrow Fees Paid:** $_____ Date:_____

PROPERTY DESCRIPTION	**Parcel ID**	**Map**	20 & 21	**Lot**	12 & 20	**Zone(s): Base: Overlay: MS4:**	C-2 NONE X YES ____ NO	**Total Land Area**	152,583 SF
	Physical Address	17 & 25 ROUTE 236, KITTERY, ME							

PROPERTY OWNER'S INFORMATION (print clearly)	**Name**	25 & 17 ROUTE 236 LLC	**Mailing Address**	P.O. BOX 630, KITTERY, ME 03904
	Phone	SEE AGENT		
	Fax			
	Email	SEE AGENT		
APPLICANT'S AGENT INFORMATION (print clearly)	**Name**	GEOFF R ALEVA	**Name of Business**	CIVIL CONSULTANTS
	Phone	203-434-7005	**Mailing Address**	293 MAIN ST., P.O. BOX 100 SOUTH BERWICK, ME 03908
	Fax			
	Email	GEOFF@CIVCON.COM		

PROJECT DESCRIPTION

Existing Use:

THE PROPERTY CURRENTLY CONTAINS A 3,543 SF, SEVEN-UNIT 2-STORY APARTMENT BUILDING WITH ASSOCIATED PARKING FACILITIES.

Project Name: 25 & 17 ROUTE 236 LLC SITE EXPANSION

Proposed Use:

THE PROPOSED DEVELOPMENT WILL CONSIST OF A 6,789 SF 3-STORY ROOMING HOUSE CONTAINING 61 BEDS. THERE WILL ALSO BE AN EXPANSION OF THE EXISTING PARKING FACILITIES AND NEW DRAINAGE FACILTIES.

WAIVER REQUESTS

Title 16.7.4.1:		In granting modifications or waivers, the Planning Board must require such conditions as will, in its judgment, substantially meet the objectives of the requirements so waived or modified.
REQUESTED WAIVERS	**Ordinance Section**	**Describe why this request is being made**.
	****EXAMPLE**** 16.32.560 (B)- OFFSTREET PARKING.	****EXAMPLE**** Requesting a waiver of this ordinance since the proposed professional offices have a written agreement with the abutting Church owned property to share parking.
	LANDSCAPING AT PARKING	THE SITE IS SCREENED WITH NATURAL VEGETATION AND IS NOT VISIBLE TO THE SURROUNDING LOTS.
	NUMBER OF PARKING SPACES	THE PARKING REQUIREMENTS OF SECTION 16.7.11.F.4.d DO NOT ACCURATELY REPRESENT THE EXPECTED PARKING DEMAND. THE SEASONAL NATURE OF THE WORKERS AND THE FACT THAT WORKERS WILL CARPOOL FROM THE SITE WILL REDUCE THE PARKING REQUIREMENT CLOSER TO 1 SPACE PER 3 BEDS.
	LANDSCAPING PLAN	JUSTIFICATION SIMILAR TO LANDSCAPING AT PARKING AREA. THE SITE IS SCREENED WITH NATURAL VEGETATION AND IS NOT VISIBLE TO THE SURROUNDING LOTS.

☒ ABUTTER NOTIFICATION

16.10.5.1.1. Preliminary Plan Application Filing and Completeness Review. The application must be accompanied by a Plan and the required fee together with a certification the applicant has notified abutters by mail of the filing of the Plan application for approval.

Submitted Applications must include a list of the names and addresses of the abutters and date notification mailed.
The abutter Notice of Filing must include the owner/applicant name, address and description of the proposed project.

Applications will not be accepted without submittal of all plan requirements as specified herein, and without a complete, signed application page (page 5).

Prior to the issuance of building permits, Applicants shall secure performance assurances and escrow agreements. Forms for Cost Estimates (escrow) are available on line (Excel format) or at the Kittery Planning office.

PORTION OF USGS MAP Portsmouth, New Hampshire		PREPARED FOR:	25 & 17 Route 236 LLC PO Box 630 Kittery, ME 03904
JOB NO: 22-180.00	NTS	DATE: August 2023	

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17 & 25 RT 236

Kittery, ME

July 18, 2023

1 inch = 250 Feet

0 250 500 750

CAI Technologies
Precision Mapping. Geospatial Solutions.

www.cai-tech.com

- Tract Line
- Right of Way
- RoadNotPar
- Condo
- Private Road
- Property Line
- Public Road

MAP 20 LOT 12 AND MAP 21 LOT 20

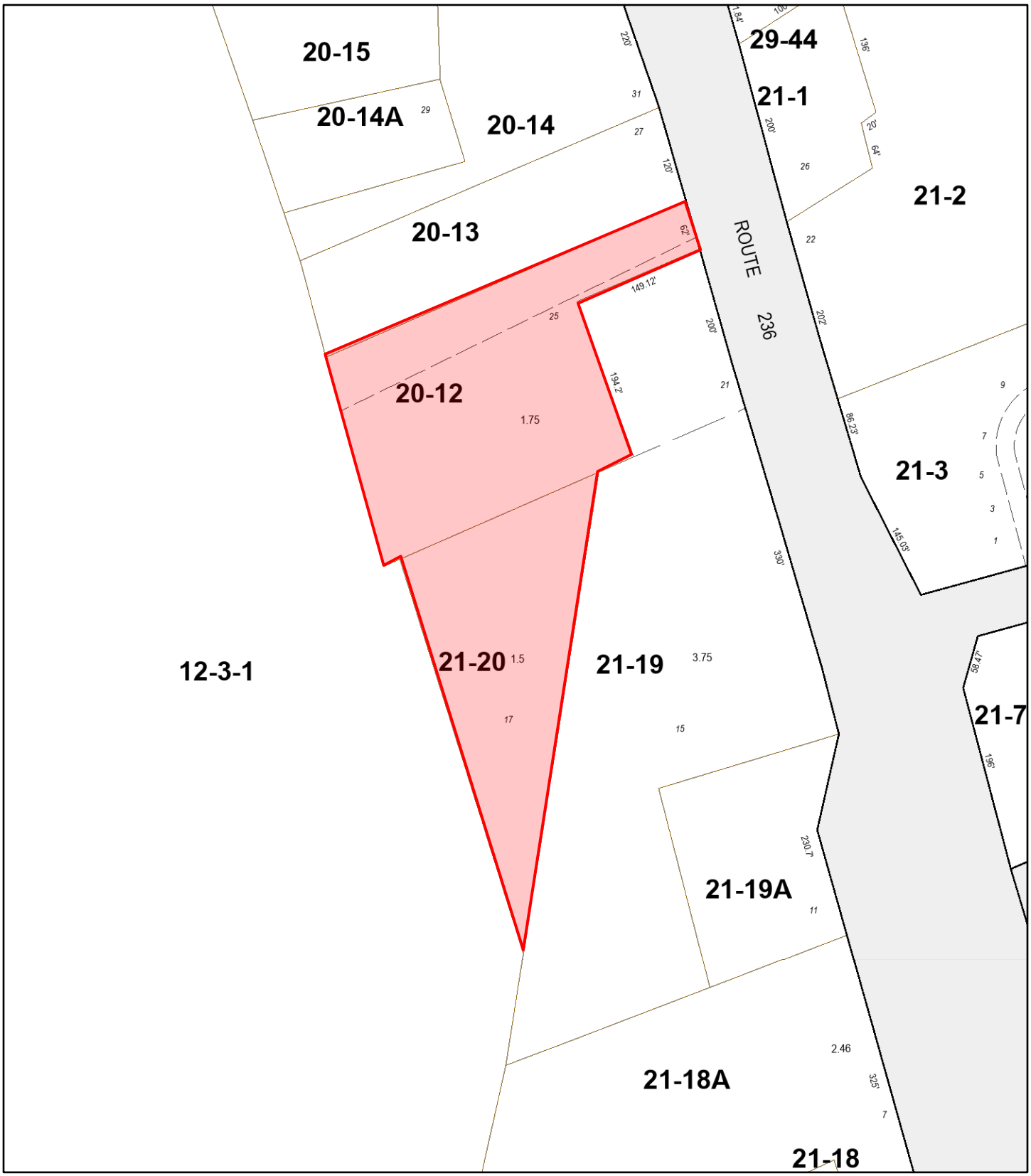
Kittery, ME

1 inch = 150 Feet

0 150 300 450

June 20, 2023

CAI Technologies
Precision Mapping. Geospatial Solutions.
www.cai-tech.com



Data shown on this map is provided for planning and informational purposes only. The municipality and CAI Technologies are not responsible for any use for other purposes or misuse or misrepresentation of this map.

CIVIL
CONSULTANTS

Engineers
Planners
Surveyors
P.O. Box 100
293 Main Street
South Berwick
Maine
03908
207-384-2550

August 18, 2023

Via Email

Michael Rogers
Superintendent of Kittery Water District
17 State Road
Kittery, ME 03904

RE: **25 & 17 Route 236 LLC – Site Expansion**
17 & 25 Route 236, Kittery, Maine
Map 20 Lot 12 and Map 21 Lot 20

Dear Mr. Rogers:

25 & 17 Route 236 LLC is proposing to construct a new 3-story, 6,789 SF rooming house residential building with 61 beds. The development is located at 17 and 25 Route 236. There is an existing seven-unit apartment building on the lot with 13 total bedrooms. There are no alterations to the existing building proposed.

The property is serviced by year-round sewer and a private well. The project will extend the sewer line to the new building with a new pump station. There will be a new connection to municipal water which will require crossing Route 236. Both the existing and new buildings will be connected to municipal water. The new building will be protected with a sprinkler system. Please send me your recommendations for meter pit locations and details.

Per NH Septic rules, 1-bedroom apartments use 225 gpd while 2-bedroom apartments use 150 gpd/room. Therefore, the existing seven-unit apartment uses approximately 2,025 gpd. Rooming houses that include meals use 60 gpd per person. The sixty-one occupants will use 3,660 gpd. The total expected usage is 5,685 gpd.

In accordance with Kittery Ordinance Section 16.7.10.C.4.n we are requesting your review and comments. We have provided a set of plans for your review.

Please feel free to contact us with any questions. We are available to meet to discuss.

Respectfully yours,
CIVIL CONSULTANTS

Geoffrey Aleva, P.E.
President

Enclosures: Sheet EC1, Sheet L1, Arch. Floor Plans, Vicinity Map

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CONSULTANTS

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Planners
Surveyors
P.O. Box 100
293 Main Street
South Berwick
Maine
03908
207-384-2550

August 18, 2023

Via Email

Timothy Babkirk
Superintendent of Kittery Sewer Services
18 Dennet Road
Kittery, ME 03904

RE: **25 & 17 Route 236 LLC – Site Expansion**
17 & 25 Route 236, Kittery, Maine
Map 20 Lot 12 and Map 21 Lot 20

Dear Mr. Babkirk:

25 & 17 Route 236 LLC is proposing to construct a new 3-story, 6,789 SF rooming house residential building with 61 beds. The development is located at 17 and 25 Route 236. There is an existing seven-unit apartment building on the lot with 13 total bedrooms. There are no alterations to the existing building proposed.

The property is serviced by year-round sewer and a private well. The project will extend the sewer line to the new building with a new pump station. There will be a new connection to municipal water which will require crossing Route 236. Both the existing and new buildings will be connected to municipal water. The new building will be protected with a sprinkler system. Please send me your recommendations for meter pit locations and details.

Per NH Septic rules, 1-bedroom apartments use 225 gpd while 2-bedroom apartments use 150 gpd/room. Therefore, the existing seven-unit apartment uses approximately 2,025 gpd. Rooming houses that include meals use 60 gpd per person. The sixty-one occupants will use 3,660 gpd. The total expected usage is 5,685 gpd.

In accordance with Kittery Ordinance Section 16.7.10.C.4.u we are requesting your review and comments. We have provided a set of plans for your review.

Please feel free to contact us with any questions. We are available to meet to discuss.

Respectfully yours,
CIVIL CONSULTANTS

Geoffrey Aleva, P.E.
President

Enclosures: Sheet EC1, Sheet L1, Arch. Floor Plans, Vicinity Map

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CIVIL
CONSULTANTS

Engineers
Planners
Surveyors
P.O. Box 100
293 Main Street
South Berwick
Maine
03908
207-384-2550

August 18, 2023

Via Email

David W. O'Brien, Fire Chief
Kittery Fire Department
200 Rogers Rd.
Kittery, Maine 03904

RE: **25 & 17 Route 236 LLC – Site Expansion**
17 & 25 Route 236, Kittery, Maine
Map 20 Lot 12 and Map 21 Lot 20

Dear Chief O'Brien:

25 & 17 Route 236 LLC is proposing to construct a new 3 story, 6,789 SF rooming house at 17 Route 236 for the primary use of seasonal employees of the property owner. The rooming house will contain shared living space with approximately 20 beds per floor, with 61 beds total. Each floor will contain separate men's and women's bathrooms, a common living room space, and common kitchen space. The building superintendent will occupy one of the first-floor units.

The existing lot contains a seven unit 2-story apartment building with associated parking. The new development will be accessed through the existing driveway and the parking lot will be expanded. There are no alterations to the existing building proposed.

In accordance with Kittery Ordinance Section 16.7.10.C.4.v we are requesting your review and comments. We have provided a set of plans for your review.

Feel free to contact us with any questions. We are available to meet to discuss.

Respectfully yours,
CIVIL CONSULTANTS

Geoffrey R. Aleva, P.E.
President

Enclosures: Sheet EC1, Sheet L1, Floor Plans, Vicinity Map

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CIVIL CONSULTANTS

Engineers
Planners
Surveyors
P.O. Box 100
293 Main Street
South Berwick
Maine
03908
207-384-2550

August 18, 2023

Via Email

Robert Richter, Police Chief
Kittery Police Department
200 Rogers Rd.
Kittery, Maine 03904

RE: **25 & 17 Route 236 LLC – Site Expansion**
17 & 25 Route 236, Kittery, Maine
Map 20 Lot 12 and Map 21 Lot 20

Dear Chief Richter:

25 & 17 Route 236 LLC is proposing to construct a new 3 story, 6,789 SF rooming house at 17 Route 236 for the primary use of seasonal employees of the property owner. The rooming house will contain shared living space with approximately 20 beds per floor, with 61 beds total. Each floor will contain separate men's and women's bathrooms, a common living room space, and common kitchen space. The building superintendent will occupy one of the first-floor units.

The existing lot contains a seven unit 2-story apartment building with associated parking. The new development will be accessed through the existing driveway and the parking lot will be expanded. There are no alterations to the existing building proposed.

In accordance with Kittery Ordinance Section 16.7.10.C.4.v we are requesting your review and comments. We have provided a set of plans for your review.

Feel free to contact us with any questions. We are available to meet to discuss.

Respectfully yours,
CIVIL CONSULTANTS

Geoffrey R. Aleva, P.E.
President

Enclosures: Sheet EC1, Sheet L1, Floor Plans, Vicinity Map

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CIVIL
CONSULTANTS

Engineers
Planners
Surveyors
P.O. Box 100
293 Main Street
South Berwick
Maine
03908
207-384-2550

August 18, 2023

Via Email

David Rich
Public Works Commissioner
200 Rogers Road
Kittery, Maine 03904

RE: **25 & 17 Route 236 LLC – Site Expansion**
17 & 25 Route 236, Kittery, Maine
Map 20 Lot 12 and Map 21 Lot 20

Dear Mr. Rich:

25 & 17 Route 236 LLC is proposing to construct a new 3 story, 6,789 SF rooming house at 17 Route 236 for the primary use of seasonal employees of the property owner. The rooming house will contain 35 bedrooms with shared living space. Most bedrooms will contain two beds, for a total of 61 beds.

The existing lot contains a seven unit 2-story apartment building with associated parking. The new development will be accessed through the existing driveway and the parking lot will be expanded. There are no alterations to the existing building proposed. The existing damaged CMP culvert at the driveway entrance will be replaced with a new 15" HDPE.

In accordance with Kittery Ordinance Section 16.7.10.C.4.v we are requesting your review and comments. We have provided a set of plans for your review along with a traffic assessment. The traffic generation is not expected to exceed the requirement for a full traffic study.

Feel free to contact us with any questions. We are available to meet to discuss.

Respectfully yours,
CIVIL CONSULTANTS

Geoffrey Aleva, P.E.
President

Enclosures: Sheet EC1, Sheet L1, Traffic Assessment, Vicinity Map

J:\aaa\2022\2218000\PLANNINGBOARD\PRELIMINARY PLAN\REVIEW LETTERS\PUBLIC WORKS\20230818-2218000-PublicWorksLetter.docx

Assessment of Traffic Generation

25 & 17 Route 236 LLC is proposing to develop a 6,789 SF, 3-story rooming house at 17 Route 236 in Kittery, ME for the primary use of employees of the property owner. The development will include an expansion to the existing parking lot.

Currently, the site contains a 3,543 SF, 2-story seven-unit apartment building with associated parking. There is an existing 18 ft± wide driveway entrance from Route 236 to access the apartment building and parking area. The new development will extend the existing parking lot and increase the number of parking spaces from 14 to 37, including a new ADA van accessible space. Access to the new development will be through the existing driveway entrance. There will be no changes to the existing use.

Part of the Town review process requires an estimate of the average daily traffic projected to be generated by the proposed use. The following information is provided as that estimate (based in the Institute of Traffic Engineer – ITE Trip Generation Manual, 11th Edition):

EXISTING DEVELOPMENT:

7-Unit Apartment Building

The existing 7-unit apartment building use falls most closely under ITE Land Use category Multifamily Housing (Low-Rise) Not Close to Rail Transit (220). This use provides expected traffic based per dwelling unit. As noted, there are 7 dwelling units.

ITE Land Use Code 220 – Multifamily Housing (Low-Rise) Not Close to Rail Transit (7 Units)

			Total
Daily Trip Ends Weekday/Unit	6.74 ave	(range 2.46-12.50)	**48 Trips**
Peak Hour AM Trip Ends Weekday/Unit	0.40 ave	(range 0.13-0.73)	3 Trips
Peak Hour PM Trip Ends Weekday/Unit	0.51 ave	(range 0.08-1.04)	4 Trips
Peak Hour AM Generator Trip Ends Weekday/Unit	0.47 ave	(range 0.25-0.98)	4 Trips
Peak Hour PM Generator Trip Ends Weekday/Unit	0.57 ave	(range 0.25-1.26)	4 Trips
Daily Trip Ends Saturday/Unit	4.55 ave	(range 4.55-4.55)	32 Trips
Peak Hour Generator Trip Ends Saturday/Unit	0.41 ave	(range 0.41-0.41)	3 Trips
Daily Trip Ends Sunday/Unit	3.86 ave	(range 3.86-3.86)	28 Trips
Peak Hour Generator Trip Ends Sunday/Unit	0.36 ave	(range 0.36-0.36)	3 Trips

Based upon the above, the highest average day figure would be the Daily Trip Ends Weekday rate of 6.74 trip ends – or – (6.74/Unit) x 7 Units = 47.18 say ***48 trip ends for the day***

Based upon the above, the highest peak hour figure would be the Peak Hour PM Generator Trip Ends rate of 0.57 trip ends in the peak hour – or – (0.57/Unit) x 7 Units = 3.99 say ***4 trip ends in the peak hour***

Based on the traffic estimates, the maximum number of daily trips for the existing apartment is 48 trips. The number of trips during the peak hour is 4.

PROPOSED DEVELOPMENT:

6,789 SF Rooming House

The proposed 6,789 SF rooming house will contain 35 bedrooms for seasonal workers of the building owner. Due to the nature of the building occupants, it is anticipated that a large portion of the workers will not be driving or own vehicles but will be driven to and from the site. Transportation to and from work will be via work vans, work-related carpools and rideshares.

The rooming house use falls most closely under ITE Land Use category Off-Campus Student Apartment (Low-Rise) Over 1/2 Mile from Campus (225). This use provides expected traffic based per bedroom. It should be noted that the use of this specific rooming house does not quite match that of off-campus housing due to the seasonal nature and carpooling of the occupants.

ITE Land Use Code 225 – Off-Campus Student Apartments (35 Bedrooms)

			Total
Daily Trip Ends Weekday/Bedroom	3.97 ave	(range 1.68-6.68)	**139 Trips**
Peak Hour AM Trip Ends Weekday/Bedroom	0.16 ave	(range 0.07-0.58)	6 Trips
Peak Hour PM Trip Ends Weekday/Bedroom	0.31 ave	(range 0.12-0.52)	11 Trips
Peak Hour AM Generator Trip Ends Weekday/Bedroom	0.20 ave	(range 0.10-0.58)	7 Trips
Peak Hour PM Generator Trip Ends Weekday/Bedroom	0.32 ave	(range 0.13-0.50)	12 Trips

Based upon the above, the highest average day figure would be the Daily Trip Ends Weekday rate of 3.97 trip ends – or – (3.97/Bedroom) x 35 = 138.95 say ***139 trip ends for the day***

Based upon the above, the highest peak hour figure would be the Peak Hour PM Generator Trip Ends rate of 11.82 trip ends in the peak hour – or – (1,700/1,000) x 11.82= 20.1 say ***21 trip ends in the peak hour***

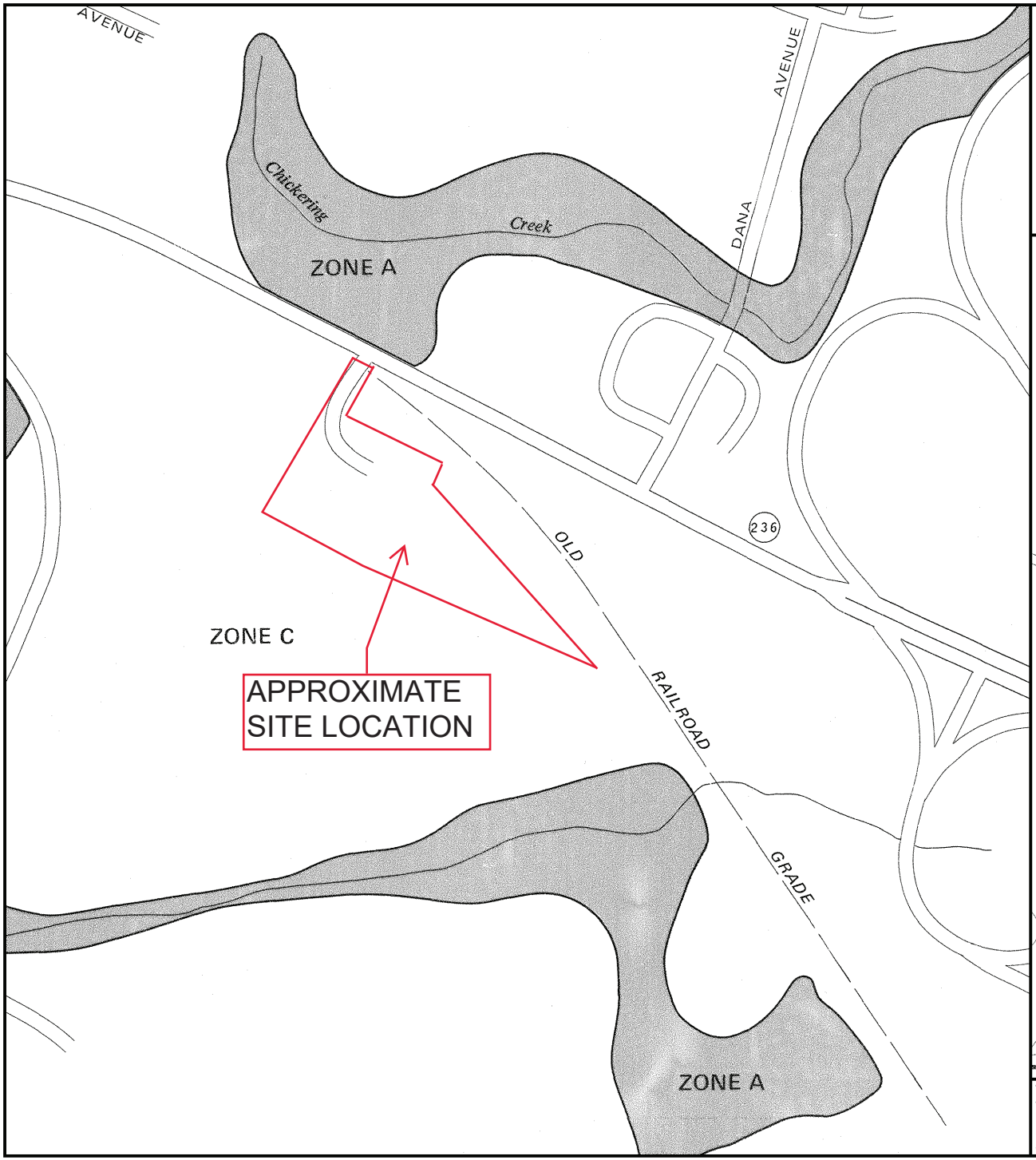
Based on the traffic estimates, the maximum number of daily trips for the Rooming House is 139 trips. The number of trips during the peak hour is 11.

Conclusion

Section 16.7.10.C.4.s of the Kittery Ordinance requires a traffic impact analysis for site plans involving 40 or more parking spaces or more than 400 vehicle trips per day. The proposed number of parking spaces is 37. Based on this traffic assessment, the maximum number of daily trips is 187.

As stated above, the use of this specific rooming house does not quite match that of off-campus housing. Due to the nature of the seasonal and foreign workers, most of the travel from the rooming house will be through carpooling. The 139 weekday trips presented above from the new development far exceed the expected vehicle travel from the site. The expected traffic may be 60-70% of the presented values.

Given these factors, is our opinion that the proposed project will not adversely impact traffic on adjacent roadways, and that a full traffic study is not required for the proposed development.



APPROXIMATE SCALE

400 0 400 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

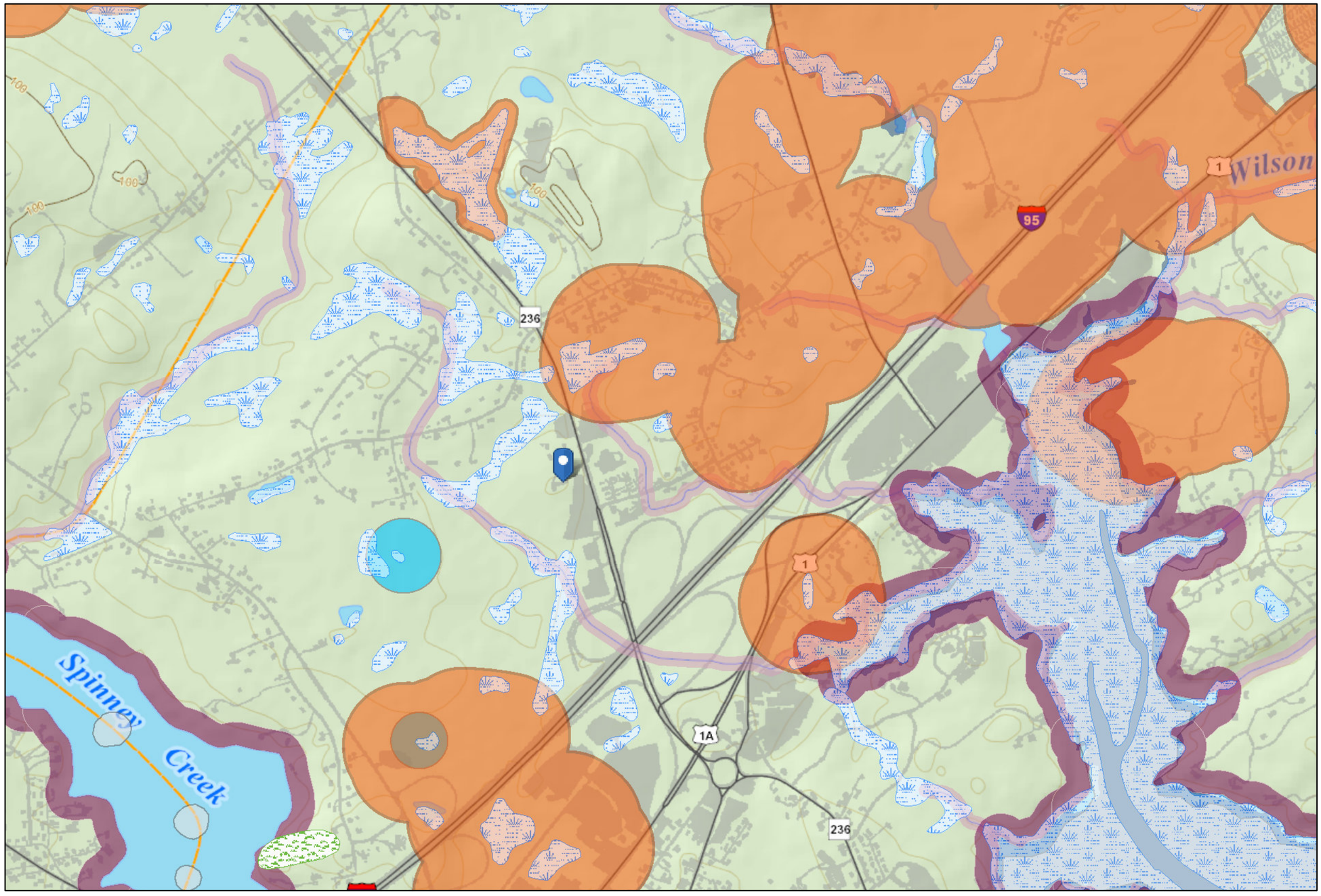
TOWN OF
KITTERY, MAINE
YORK COUNTY

PANEL 4 OF 10
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
230171 0004 C

EFFECTIVE DATE:
JULY 5, 1984

Federal Emergency Management Agency



BEGINNING WITH HABITAT

Legend

- City/Township
- 1
- 2
- Watershed Divide (HUC 12)
- Watershed Divide (HUC 10)
- Watershed Divide (HUC 8)
- Watershed Divide (HUC 6)
- Wetlands
- Great Ponds
- Stream_Buffers_75ft
- Shellfish Beds
- Public Water Supply Wells
- Source Protection
- Aquifers
- ETSC Animal Habitat Buffers
- Rare Plants and Natural Communities
- Natural Communities
- Wild Brook Trout Habitat
- Atlantic Salmon Rearing Habitat
- Atlantic Salmon Spawning Habitat
- Roseate Tern, Piping Plover or Least Tern Nesting Areas
- Deer Wintering
- Inland Wading Bird and Waterfowl Habitat
- Wildlife Wetlands
- Seabird Nesting Island
- Shorebird Habitat
- Tidal Wading Bird and Waterfowl Habitat
- Significant Vernal Pools
- Less than 2000 Vehicles/Day
- More than 2000 Vehicles/Day
- Less than 2000 Vehicles/Day
- More than 2000 Vehicles/Day
- Undeveloped Habitat Blocks
- Highway Bridge Connectors
- Maine Conserved Lands
- Federal
- Municipal
- Water Dist., etc.
- Private
- State
- Conserved Lands Easements
- Focus

State of Maine

0 0.225 0.45 0.9 1.35 mi

N W E S

Supported in part by Maine Outdoor Heritage Fund lottery ticket sales

Map Prepared by Maine Department of Inland Fisheries & Wildlife
August 2023

Supported in part by Loon Conservation Plate finds

Corporate Name Search

Information Summary

Subscriber activity report

This record contains information from the CEC database and is accurate as of: Thu Aug 17 2023 14:21:05. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
25 & 17 ROUTE 236 LLC	20231905DC	LIMITED LIABILITY COMPANY (DOMESTIC)	GOOD STANDING

Filing Date	Expiration Date	Jurisdiction
04/06/2022	N/A	MAINE

Other Names **(A=Assumed ; F=Former)**

NONE

Clerk/Registered Agent

DAVID J. BALLOU
408 US ROUTE ONE
2ND FLOOR
YORK, ME 03909

New Search

Click on a link to obtain additional information.

List of Filings	View list of filings	
Obtain additional information:		
Additional Addresses	Plain Copy	Certified copy
Certificate of Existence (more info)	Short Form without amendments ($30.00)	Long Form with amendments ($30.00)

You will need Adobe Acrobat version 3.0 or higher in order to view PDF files.
If you encounter problems, visit the troubleshooting page.

SILVESTRI
ARCHITECTS PC

1321 Millersport Hwy., Ste. 101
Amherst · New York 14221

P. 716.691.0900
F. 716.691.4773

Kittery Planning and Development
200 Rogers Road
Kittery, ME 03904

August 22, 2023

To Whom it May Concern:

Regarding the lack of need for an elevator at the Kittery Housing Project on Route 263, we provide the following building code substantiation:

As a boarding house with more than 16 occupants, the building falls under Occupancy Classification R-2 as defined by section 310.4. In section 1107.6.2.3 Dwelling and Sleeping Units, Group R-2 Other Than Live/Work Units, Apartment Houses, Monasteries and Convents, two accessible units are required, and the remainder are type B; the number of type B units are permitted to be reduced in accordance with section 1107.7, General Exceptions. Section 1107.7.1 explains that in structures without elevator service, at least one story containing dwelling units shall be provided with an accessible entrance, and all units shall be type B. This is achieved on the first floor.

Sincerely,

Philip J Silvestri
President

The seal affixed above applies to this report and all attachments including the HydroCAD calculations, Stormwater Plans D1, D2

Site Plan Application
Stormwater Management Plan

"25 & 17 ROUTE 236 LLC"
KITTERY, MAINE

Prepared for

25 & 17 Route 236 LLC
P.O. Box 630
Kittery, ME 03904

August 2023

Site Plan Application

STORMWATER MANAGEMENT PLAN

"25 & 17 Route 236 LLC"
25 & 17 Route 236
Kittery, Maine

Prepared for:

25 & 17 Route 236 LLC
P.O. Box 630
Kittery, ME 03904

August 2023

INTRODUCTION:

The project site is located at 25 & 17 Route 236 in Kittery, Maine. 25 Route 236 is known as Map 20, Lot 12 and 17 Route 236 is known as Map 21, Lot 20 on the Town of Kittery tax map system. The existing lots contain a total of 3.50 acres of land, of which 0.445 acres are impervious coverage.

Most of the existing development is located on Map 20, Lot 12. There is an existing seven-unit 3,653 SF apartment building with associated parking and driveway entrance. The area surrounding the building is grassed, with the remainder of the property being woodland. There is 1,314 SF of wetlands in the northwest corner of the lot.

The only development on Map 21, Lot 20 is a small 125 SF shed with overgrown grass in the surrounding area. The remainder of the lot is undeveloped woodland.

The proposed development is intending to construct a new 3 story, 6,789 SF rooming house for the primary use of employees of the property owner. The building will have an associated parking lot extended from the existing parking lot. There will also be a 128 SF storage building and a 1,200 SF patio on the south side of the building. Access to the new building will be from the existing driveway from Route 236.

The project will disturb less than an acre and will not require DEP review. The impervious area of the site will increase but will remain under the allowable 40% lot coverage for the Commercial-2 zone.

DESIGN REQUIREMENTS:

Section 16.7.11.C.4.a. of the Kittery Ordinance requires post-development peak discharges be limited to pre-development levels for a 2- year and 25-year, 24-hour storm.

The analysis for this report includes the 2-year and 25-year events to predict the downstream effects of the proposed site coverage changes.

EXISTING DRAINAGE CONDITIONS:

The existing lot is broken into four distinct drainage areas. Subcatchment 1 contains the northernmost portion of the property and includes a large offsite area to the northwest of the lot which drains toward the property. Stormwater from this area drains toward the culvert crossing under the entrance to the property. This culvert is a rusted out 12" corrugated metal pipe. While the outlet to this culvert was not able to be field located, the outlet area was modeled as OUT 1 for the purpose of this analysis.

Subcatchment 2 is the northern portion of the existing apartment building. The stormwater from this area also drains to OUT 1 along the southern side of the existing driveway entrance.

Subcatchment 3 contains the southeast side of the existing apartment building. This area drains east toward Gagne & Son landscaping supply store. This outlet is modeled as OUT 2.

Subcatchment 4 contains the remaining portion of the existing apartment, parking lot, the entire undeveloped area of Map 21, Lot 20, and a portion of undeveloped woodland to the west. This area also drains east toward Gagne & Son. The outlet is far enough south that it has been modeled separately as OUT 3.

Based on the Medium Intensity Soil Survey (attached) obtained from the NRCA Web Soil Survey website, soils in the watershed were found to be entirely hydrologic soil type D soils. See sheet D1 for the pre-development drainage conditions.

The area to be developed is in Zone C which is defined as areas of minimal flooding. A copy of the applicable FEMA map is included in the Town Site Plan Application.

PROPOSED DRAINAGE:

The proposed site has been designed to limit post-development flows off site during 2-year and 25-year storms to the greatest extent practical. This will ensure that there are minimal adverse downstream impacts as a result of the new development.

Subcatchments 10 and 20 are equivalent to subcatchments 1 and 2 in the pre-development analysis and will drain to OUT 1. These drainage areas will not be affected by the proposed development. However, the damaged CMP pipe under the entrance will be replaced as part of the work. This adjustment increases the flow to OUT 1 based on the stormwater analysis with no other changes to the drainage areas.

Subcatchment 30 is equivalent to subcatchments 3 in the pre-development analysis and will drain to OUT 2. There are no changes to this area caused by the new development.

Subcatchment 4 in the pre-development analysis has been broken into six drainage areas to account for the new development.

Subcatchment 40 contains the northern portion of the new development, including the new parking lot. A catch basin routes the runoff towards a large detention basin modelled as pond 46P to the south of the new building.

Subcatchment 41 primarily contains the undeveloped portion to the west of the lot. A culvert collects the runoff from this area and routes to pond 46P.

Subcatchment 42 primarily contains the undeveloped portion to the south of the new development. The runoff from this subcatchment routes directly to OUT 3.

Subcatchment 43 contains the area to the east of the new development. Roughly half of this area will remain undeveloped, while the other half will be regraded and contain grass cover. The runoff from this subcatchment routes directly to OUT 3.

Subcatchments 44 and 45 contain the east and west side of the new building roof, respectively. There is a roof dripline filter on both sides of the building that collects roof runoff. All runoff from these areas are eventually routed to pond 46P.

Subcatchment 46 contains the southern portion of the new building roof, the proposed patio, and pond 46P. All runoff

from pond 46P gets routed through a new culvert and outlets to a level lip spreader on the east side of the lot. The level lip spreader is intended to convert runoff back to sheet flow prior to discharging off the property.

ANALYSIS:

The overall perimeter of the watershed remained the same for both Pre- and Post Development analyses. There were four subcatchments identified in the Pre-Development analysis and ten in the Post-Development analysis.

Three distinct discharge points known as OUT 1, OUT 2 and OUT 3 were used to compare the pre and post-development storm water flows.

For further details regarding subcatchment determination, refer to the project drawings and D1 & D2 included with this report.

METHODOLOGY:

All runoff calculations were performed using methods based on USDA–SCS Technical Release No. 20 (also known as TR-20). The 2- and 25-year events for the city of Portsmouth, New Hampshire (Type III rainfall distribution) were used for the analysis to determine the pre- and post-development peak discharge rates per Town of York requirements. Rainfall data was obtained from the Cornell Extreme Precipitation maps using 24 hour rainfall for Portsmouth, NH, in accordance with section 16.7.11.C.4.a. of the Kittery Ordinance.

Runoff curve numbers (CN) and times of concentration (Tc) were determined by the methods outlined in USDA-SCS Technical Release No. 55 (better known as TR-55). On site watershed areas were determined using one-foot contour data gathered from an on the ground field survey performed by Civil Consultants. Offsite watershed areas were determined using two-foot contours from LIDAR.

The detailed analysis for this project was performed by computer utilizing "HYDROCAD" stormwater modeling software. The computer printouts are attached.

The attached Pre- and Post Development plans (D1 & D2) show subcatchment boundaries, hydraulic flow lines, existing and proposed roads, and drainage features and facilities. Land cover type boundaries used in the model for on-site areas are also shown on the plan (i.e. tree lines, gravel, etc).

FLOW RATES (REVISED):

TWO-YEAR EVENT -

Discharge Point Desig Pre/Post	Peak Runoff(in cfs) Pre	Post	Change (cfs)
OUT 1	3.47	5.88	**+2.41**
OUT 2	0.59	0.59	0.00
OUT 3	3.98	3.31	**-0.67**

TWENTY FIVE-YEAR EVENT -

Discharge Point Desig Pre/Post	Peak Runoff(in cfs) Pre	Post	Change (cfs)
OUT 1	22.23	15.83	**-6.40**
OUT 2	1.61	1.61	0.00
OUT 3	11.88	8.04	**-3.84**

Although there is an increase in flow to OUT 1 during the 2-year storm, this increase is due only to the model changing the exiting damaged culvert from a 12" CMP to a 15" HDPE. This change also results in a large decrease in flow during the 25-year storm.

This change in flow is due only to the way HydroCAD models stormwater. Realistically, the replacement of the culvert will have minimal impact on the runoff.

There are no changes to OUT 2 as the new development has no impact on this drainage area.

Runoff to OUT 3 has been decreased in both the 2-year and 25-year storm analyses in accordance with the Town of Kittery regulations. A large detention basin has been utilized to store runoff from the new development, and a level lip spreader will convert runoff back to sheet flow prior to discharging from the property.

A stormwater maintenance and inspection plan has also been included as part of this submission.

CONCLUSIONS:

The proposed site expansion will result in a decrease in stormwater flows to analysis point OUT 3. A large detention basin with a riprapped outlet will be utilized to reduce the impact of runoff to abutting lots.

The flow to OUT 1 has been modeled to increase during smaller storms due to the replacement of the damaged CMP culvert. There is no new development proposed that will affect this outlet.

It is our opinion that there will be no adverse downstream impacts because of this project, and the surrounding lots have been sufficiently protected by the proposed stormwater management plan.

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Stormwater Maintenance/Inspection Plan

During the construction of the new rooming house and parking facilities, maintenance of all erosion, sedimentation, and stormwater flow control structures and devices will be the responsibility of 25 & 17 Route 236, LLC., henceforth referred to as "Owner".

The Owner will be responsible for the continued maintenance of the stormwater collection system during construction.

During construction, all erosion control devices and structures shall be checked weekly and after each "significant rainfall"**. Necessary repairs will be made to correct undermining or deterioration of the devices and/or structures.

After construction, the Owner will be responsible for the continued maintenance of all stormwater BMPs. The BMPs shall be checked annually and after major storm events.

The Owner shall maintain inspection logs (attached) of all stormwater and erosion control measures. The log shall reflect the dates of the inspections and describe actions taken. The log shall be kept on file for a minimum of 5 years and be made available to the Town upon request.

If invasive species are observed in any of the stormwater facilities, they shall be removed immediately. Any damage to the surface of the basins or filters shall be repaired and stabilized as soon as possible after disturbance.

The activities listed in the inspection log will be accomplished in early spring and in late fall.

A major storm event is classified as a rainfall exceeding 2.0 inches in a 24-hr storm event.

** Significant rainfall is 0.5" in 24 hr

J:\aaa\2022\2218000\DRAINAGE\20230816_2218000-Stormwater Maintenance Plan.docx

During Construction

During construction, maintenance shall be performed routinely on all erosion and sediment control BMPs. Refer to the following list of erosion and sediment control procedures.

Dust Control

Stabilize all laydown areas and all unpaved surfaces with a base gravel or coarse gravel as soon as possible. Use traffic control to restrict speed and route.
Water Application with frequent reapplication during warm sunny days will mitigate dust. The distribution of water should not cause turbid runoff.
Sweep and Vacuum paved road surface when dry. Sweep from the centerline to the edge of the travel way. Do not sweep into a waterbody or wetland. The public roadway may also require sweeping.

Construction Entrance

The entrance/exit pad should have a length of 50 feet or more and a 12-foot minimum width (or as appropriate to contain the wheel base of construction vehicles plus 3 feet on either side). The pad should be 6 inches or more thick with angular aggregate (2-3 inch diameter). Appropriate reclaimed concrete material may be used. The aggregate should be placed over a geotextile filter to prevent the stones from pushing into the native soil. At the bottom of slopes, a diversion ridge should be provided to intercept runoff. Berms may be necessary to divert water around any exposed soil, and runoff should be directed to a sediment trap. The pad should be inspected weekly, and before and after each storm. The pad may have to be replaced if the voids become filled with sediment. Street sweeping may be necessary.

Sediment Controls – All sediment controls shall be checked weekly and after significant rainfalls.

Silt Fence - The fence should be anchored to resist pull-out, and be stretched tightly between stakes to prevent sagging. A 6-inch wide and 6-inch deep trench should be excavated upgradient of the fence line to key the "flap" of the fabric. The trench is backfilled and compacted. When joints are necessary, filter cloth should be spliced by wrapping end stakes together. In areas where the flap cannot be keyed properly (due to frozen ground, bedrock, stony soil, roots, near a protected natural resource, etc.), the silt fence should be anchored with aggregate, crushed stone, erosion control mix, or other material.

Erosion Control Mix Berm - It may be necessary to cut, pack down or remove tall grasses, brush or woody vegetation to avoid voids and bridges that allow the washing away of fine soil particles. The ECM berm should be a minimum of 12" high and a minimum of two feet wide. On longer or steeper slopes, the berm will need to be wider and higher. Berms composed of ECM can be reshaped when necessary.

Storm Drain Inlet Protection - An inlet protection (storm drain drop inlet or curb inlet) captures sediment before runoff enters a catch basin. It is not effective for silts and clays. Various types of off-the-shelf devices are acceptable if installed, used, and maintained as specified by the manufacturer.

Overwinter Construction – The winter construction period runs from November 1st through April 15th; however no vegetation growth should be anticipated past October 15th in southern Maine. Additional stabilization measures should be provided by November 1st for winter and spring snowmelt if a construction site is not permanently stabilized with pavement, a gravel road base, 90% mature vegetation cover, erosion control mulch, or riprap. Ideally, permanent seeding should occur 45 days before the first killing frost (different dates for different Maine locations); otherwise, overwinter mulching is necessary.

Mulching – Mulching is the application of an organic cover over exposed soil to protect its structure from the impact of raindrops, to reduce the potential for erosion, and to maintain soil permeability and moisture for vegetation uptake. Erosion will occur where the soil does not have firm and continuous contact with an erosion control cover. Mulch must remain until the site is permanently stabilized or revegetated. Mulching shall be performed per weather prediction, soil erodibility, season, extent of disturbance, etc. within 7 days in sensitive areas (within 100 feet of a natural resource) or within 14 to 30 days in other areas.

Hay/Straw Mulch - Hay (straw will not import weeds) mulch prevents rain drop erosion, protects new seeding from sun exposure, and maintains moisture during germination. Loose mulch is not effective in windy areas, in areas of groundwater seepage or in channels with concentrated flows. Temporary mulch should be applied to areas that will not be actively worked for more than 14 days (7 days in sensitive areas). Application rate should be 2 bales (70-90 pounds) per 1000 square feet or 1.5 to 2 tons (90-100 bales) per acre and must be evenly distributed. Provide a mulch cover to soil stockpiles. Anchoring should be provided in areas with strong wind or on slopes greater than 5%. Hay mulch should be limited to slopes flatter than 2:1 unless short (less than 10 feet), and in non-seepage areas. Another measure should be used on steeper slopes with a high runoff potential. Anchoring can be accomplished by punching, crimping the mulch into the soil or tracking with a punch-roller or a knife blade roller. Walking and punching with a spade or shovel may be practicable on very small sites. Peg and twine or netting should be installed per the manufacturer's recommendations. Non-biodegradable plastic netting should be removed after the site is revegetated. Apply additional mulch if not revegetated with 90% grass uptake.

Erosion Control Blankets - An erosion control blanket could be used in the following conditions:

- Vegetated waterways and ditches; but not in areas of groundwater seepage
- Steep slopes (15% or greater and up to 2:1)
- In protected natural resource areas
- On areas that may be slow to revegetate
- For overwinter stabilization (November 1st - April 15th)

The soil surface should be finely graded and smooth for the blanket to have direct contact with the soil and to prevent undermining. Erosion control blankets perform best on loamy soils and should not be used on rocky sites or shallow soils. Seed should be sown before installing the erosion control blanket. Always unroll the blanket downhill without stretching and anchor the upslope edge in a 12 inch deep trench that is backfilled and tamped. Overlap shingle style a minimum of 12 inches at the top of each row and 4 inches at the edges of parallel rows. Anchor along the overlap with a maximum spacing of 3 feet or as required by the manufacturer.

Erosion Control Mix - Erosion control mix can be used on frozen ground, forested areas, on cut and fill slopes, and on roadside embankments. Apply a thickness of 2 inches on 3:1 slopes or less and add an additional 1/2 inch per 20 feet of slope or up to 4 inches for a 100 foot slope. On slopes greater than 3:1, 4 inches or more of material is recommended; and if slopes are greater than 60 feet long, 5 inches are needed. Erosion control mix is not recommended for slopes steeper than 1:1. The mix must be distributed evenly with a hydraulic bucket, pneumatic blower, or by hand. Other reinforcement BMPs (i.e. riprap) should be used on slopes with groundwater seepage, within drainage channels and their outlets, or in gullies.

Slopes – To be effective, slope stabilization and reinforcement should be adapted to the soil type, angle and length of the slope, presence of surface or groundwater, depth to bedrock, etc. Consultation with a civil engineer is advised for slopes that are over six feet, steeper than 1.5:1 grade, on unstable soils, with groundwater seeps, or where a structure is located near the top of the bank. A proper permit and design may be required for an embankment repair near a waterbody.

Cuts and Fills - Erosion potentials on fill slopes depend upon the depth of the fill, steepness, watershed size and presence of water. Fill slopes are more unstable than cut slopes from being disturbed or if lacking fines for proper compaction. In a wet area, gravel fill is preferred; but is at risk of being unstable. Terracing prevents surface runoff and promotes vegetation establishment by retaining moisture. The time between initial exposure and final stabilization should be minimized to prevent soil loss. Divert clean water away from the area and disperse to an undisturbed buffer or swale. For a fill slope, the native area should be cleared, grubbed, and scarified to a 3-inch depth. When working in below freezing temperatures, the ground should be scarified immediately before adding fill. The fill should be free of brush, rocks, or roots, and should not include frozen, soft or mucky material. The fill should be placed and compacted in 8-inch lifts to reduce lenses of loose soil. When filling or cutting a long slope (greater than 20 feet), benches (or terraces) should be provided to direct runoff away from the slope. The number of benches should be based upon the erodibility of the soil, steepness of the slope, and groundwater seeps. Mulch any soil exposed for longer than 7 days and with seed if ready for revegetation. Rill or gully erosion should be repaired immediately. Use winter stabilization practices if the construction is stopped for the winter months.

Geotextiles - Geotextiles should be placed with 12 inch overlaps and keyed 6 to 12 inches at the top and bottom of the area. Avoid using damaged cloth. ***Woven Geotextiles*** are mostly used for soil reinforcement beneath sharp, angular aggregates if dropped more than 5 feet; and where the cover will be more than 10 feet thick. It may be used for seepage management if the fabric's openings are smaller than the soil gradation. A woven filter fabric is usually used in a road base to provide bearing capacity and linear strength over soft subsoil. ***Nonwoven Geotextiles*** will retain more fine particles than woven geotextiles; and may allow water seepage without clogging. Nonwoven geotextiles have a rough surface that will bond soil layers and resists sliding along the planes of contact.

Riprap Protection - Riprap is used for structural support when a slope cannot be vegetated due to length or steepness of the slope, groundwater or surface water seepage, poor soil conditions, flowing water, etc. On a long slope, larger stones are used and placed at the bottom of the embankment and gradually grading down to smaller stones toward the top. A riprap stabilization project is composed of three sections:
• The surface armor layer of rough, angular rocks.
• The filter layer (a sand and gravel layer and/or a geotextile fabric) that supports the stones against settlement, allows groundwater to drain through the structure, and prevents the soil beneath from being washed through the riprap layer.
• The toe protection that reinforce the slope and prevents movement of the riprap. It is usually anchored in a trench at the toe of the slope.

Pipe Outlet Protection – Pipe outlet protection is the armor and/or plunge pool at the outlet of a culvert that prevents scour or turbulence, and will dissipate the flow energy from the pipe to the channel. For channels with a continuous flow, the culvert should be imbedded one quarter (1/4) its diameter to prevent a 'hanging' condition (drop from the pipe outlet to channel).

Post Construction – Routine Ongoing Maintenance

Sweeping

Paved surfaces shall be swept or vacuumed at least annually in the Spring to remove all Winter sand, and periodically during the year on an as-needed basis to minimize transportation of sediment during rainfall events. **Applicable to: All parking lots and travel ways on site.**

Roadways and Parking Surfaces				
	Spring	Fall or Yearly	After a Major Storm	Every 2– 5 Years
Clear accumulated winter sand in parking lots and along roadways	**X**			
Sweep pavement to remove sediment	**X**			
Clean-out the sediment within water bars or open top culverts	**X**			
Ensure that stormwater is not impeded by accumulations of material or false ditches in the shoulder	**X**			

Ditches, Swales and Culverts

Open swales and ditches need to be inspected on a monthly basis or after a major rainfall event to assure that debris or sediments do not reduce the effectiveness of the system. Debris needs to be removed at that time. Any sign of erosion or blockage shall be immediately repaired to assure a vigorous growth of vegetation for the stability of the structure and proper functioning.

Vegetated ditches should be mowed at least monthly during the growing season. Larger brush or trees must not be allowed to become established in the channel. Any areas where the vegetation fails will be subject to erosion and should be repaired and revegetated.

If sediment in culverts or piped drainage systems exceeds 20% of the diameter of the pipe, it should be removed. This may be accomplished by hydraulic flushing or any mechanical means; however, care should be taken to not flush the sediments into the retention/detention pond as it will reduce the pond's capacity and hasten the time when it must be cleaned. All pipes should be inspected on an annual basis.

Stormwater Channels				
	Spring	Fall or Yearly	After a Major Storm	Every 2– 5 Years
Inspect ditches, swales and other open stormwater channels	**X**	**X**	**X**	
Remove any obstructions and accumulated sediments or debris	**X**	**X**		
Control vegetated growth and woody vegetation		**X**		
Repair any erosion of the ditch lining		**X**		
Mow vegetated ditches		**X**		
Remove woody vegetation growing through riprap		**X**		
Repair any slumping side slopes	**X**	**X**		
Replace riprap where underlying filter fabric or underdrain gravel is showing or where stones have dislodge	**X**			**X**

Vegetated Areas

All areas of maintained lawn are to be inspected regularly for signs of erosions and channelization. Areas where erosion is occurring or areas of sparse growth shall be replanted and stabilized. Channelized flows from the eroded land shall be diverted to buffers or other areas able to withstand the high sediment load in the erosive runoff. **Applicable to: Lawn areas receiving/conveying flows in any storm event.**

Vegetated Areas				
	Spring	Fall or Yearly	After a Major Storm	Every 2– 5 Years
Inspect all slopes and embankments	**X**		**X**	
Replant bare areas or areas with sparse growth	**X**		**X**	
Armor areas with fill erosions with an appropriate lining or divert the erosive flows to on-site areas able to withstand concentrated flows	**X**		**X**	

Catch Basins/Manholes

All catch basins, and any other field inlets throughout the collection system, need to be inspected on a monthly basis to assure that the inlet entry point is clear of debris and will allow the intended water entry. These will be cleared, if necessary on a yearly basis or when sediment reaches two thirds of total volume. Catch basins and manholes need to be vacuumed and cleaned of all accumulated sediment. This work must be done by a vacuum truck. The removed material must be disposed of in accordance with the Maine Solid Waste Disposal Rules.

Catch Basin/Manhole Systems				
	Spring	Fall or Yearly	After a Major Storm	Every 2– 5 Years
Remove and legally dispose of accumulated sediments and debris from the bottom of the basin, inlet grates, inflow channels to the basin, and pipes between basins.	**X**	**X**		
Remove floating debris and floating oils (using oil absorptive pads) from any trap designed for such	**X**	**X**		

Detention Basin

After each significant rainfall event, or at least monthly, the basin shall be visually inspected to assure that the outlet structure is not blocked and that no sign of erosion is apparent within the berm or riprap.

Any sign of erosion or blockage shall be immediately repaired.

The basin shall be inspected on an annual basis to assure that significant sediment accumulation has not occurred. Whenever the sediment is within three inches of the outlet invert the accumulated sediment shall be removed and disposed of properly.

The basin shall be inspected on an annual basis for erosion, destabilization of side slopes, embankment settling, and other signs of structural failure. Corrective actions should be taken immediately upon identification of problems. Contact design engineer.

On a semi-annual basis, remove debris from the riprap apron, outlets, and emergency overflow.

On a semi-annual basis, inspect and remove debris from the control structure; check the orifice and all openings, and the elevation of any outlet weirs.

Remove sediment if it occupies 15% of the pond volume. In ponds with a permanent pool of water, the sediment can be measured by measuring the bottom surface elevations and comparing with records of initial construction.

Detention Basin				
	Spring	Fall or Yearly	After a Major Storm	Every 2– 5 Years
Inspect the embankments for settlement, slope erosion, internal piping, and downstream swamping. A professional engineer must review these immediately.		**X**	**X**	
Mow the embankment to control woody vegetation.		**X**		
Inspect the outlet control structure for broken seals, obstructed orifices, and plugged trash racks.	**X**	**X**	**X**	
Remove and dispose of sediments and debris within the control structure.		**X**		**X**
Repair any damage to trash racks or debris guards		**X**		
Mow vegetated spillways to control woody vegetation and replace any dislodged stone in riprap spillways		**X**		
The riprap outlet should be inspected after every major storm in the first few months to ensure proper function and thereafter should be inspected at least once every six months.	**X**	**X**	**X**	
Detention basins should be inspected annually for erosion, destabilization of side slopes, embankment settling, and other signs of structural failure. Corrective actions should be taken immediately upon identification of problems. Contact design engineer.		**X**		

Level Lip Spreader

Long term maintenance of the level spreader is essential to ensure its continued effectiveness. The following provisions should be followed; in the first year the level spreader should be inspected semi annually and following major storm events for any signs of channelization and should be immediately repaired. After the first year, annual inspection should be sufficient.

Inspect and remove debris in level spreader. Record weir elevation, and adjust if necessary per the direction of the design engineer. Inspect for bypass or undermining, repair as needed any channelization as it is occurring and remove sediment buildup to assure sheet flow conditions.

Inspections: At least once a year, the level spreader pool should be inspected for sand accumulation and debris that may reduce its capacity.
Sediment Removal: Sediment build-up within the swale should be removed when it has accumulated to approximately 25% of design volume or channel capacity. Dispose of the sediments appropriately.
Debris: As needed remove debris such as leaf litter, branches and tree growth from the spreader.
Level Spreader Replacement: The reconstruction of the level spreader may be necessary when sheet flow from the spreader becomes channeled.
Mowing: Filters with grass cover should be mowed no more than 2 times per growing season to maintain grass heights less than 12 inches.

Level Lip Spreader				
	Spring	Fall or Yearly	After a Major Storm	Every 2– 5 Years
The level spreader pool should be inspected for sand accumulation and debris that may reduce its capacity	**X**			
Sediment build-up within the swale should be removed when it has accumulated to approximately 25% of design volume or channel capacity				**X**
Remove debris such as leaf litter, branches and tree growth from the spreader	**X**	**X**		
The reconstruction of the level spreader may be necessary when sheet flow from the spreader becomes channeled into the buffer				**X**
Filters with grass cover should be mowed not more than 2 times per growing season				

Stormwater Maintenance
25 & 17 Route 236 LLC – Site Expansion

Post Construction Maintenance Checklist

This log is intended to accompany the Stormwater Management Facilities Maintenance Plan for 25 & 17 Route 236, LLC site expansion. The following items shall be checked, cleaned and maintained on regular basis as specified in the Maintenance Plan and as described in the table below. This log shall be kept on file for a minimum of five years and shall be available for review by the Town upon request. Qualified personnel familiar with drainage systems and soils shall perform all inspections.

Item	Maintenance Required & Frequency	Date Completed	Maintenance Personnel	Comments
Sweeping of Paved areas	Sweep annually in the Spring.			
Ditches, Swales and Culverts	Inspect after major rainfall event. Repair erosion or drainage immediately. Remove sediment if filtration times become greater than 12 hours. Clean culverts when sediment occupies more than 20% of pipe diameter.			
Vegetated Areas	Inspected regularly for signs of erosions and channelization. Areas where erosion is occurring or areas of sparse growth shall be replanted and stabilized.			
Catch Basins/ Manhole	Clean sumps with vacuum pump annually or when sediment occupies more than two thirds of the sump capacity.			
Detention Basin	After each significant rainfall event, or at least monthly, the basin shall be visually inspected to assure that the outlet structure is not blocked and that no sign of erosion is apparent within the berm or riprap. Repair erosion or drainage immediately.			
Level Lip Spreader	Inspected regularly for signs of erosions and channelization. Remove debris and sediment buildup. Grass should be mowed not more than 2 times per growing season.			

Stormwater Management System

25 & 17 Route 236 LLC – Site Expansion

Post Construction Inspection & Maintenance Log

BMP/System Component	Date Inspected	Inspector	Cleaning/Repair Needed *(List Items/Comments)*	Date of Cleaning/Repair	Performed By

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Stormwater Management System

25 & 17 Route 236 LLC – Site Expansion

During Construction Inspection & Maintenance Log

BMP/System Component	Date Inspected	Inspector	Cleaning/Repair Needed *(List Items/Comments)*	Date of Cleaning/Repair	Performed By

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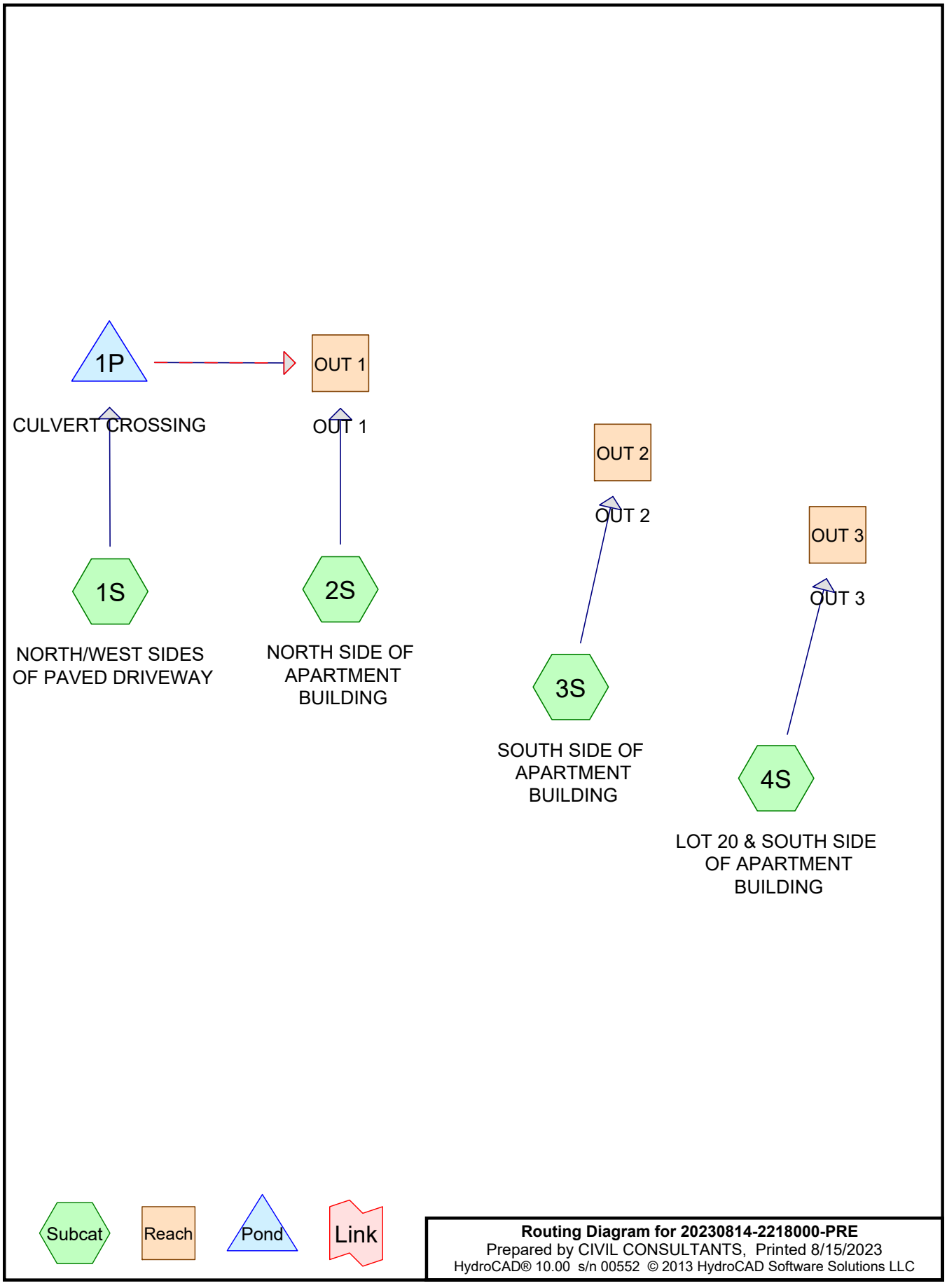


Routing Diagram for 20230814-2218000-PRE
Prepared by CIVIL CONSULTANTS, Printed 8/15/2023

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.459	84	1 acre lots, 20% imp, HSG D (1S)
0.616	80	>75% Grass cover, Good, HSG D (1S, 2S, 3S, 4S)
0.035	96	Gravel surface, HSG D (1S, 2S, 3S, 4S)
0.133	98	Paved parking, HSG D (1S, 2S, 3S, 4S)
0.346	93	Paved roads w/open ditches, 50% imp, HSG D (1S, 2S)
0.087	98	Roofs, HSG D (2S, 3S, 4S)
0.004	98	Unconnected pavement, HSG D (2S, 3S, 4S)
7.315	77	Woods, Good, HSG D (1S, 2S, 3S, 4S)
9.995	**79**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
9.995	HSG D	1S, 2S, 3S, 4S
0.000	Other	
9.995		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchr Numbers
0.000	0.000	0.000	1.459	0.000	1.459	1 acre lots, 20% imp	
0.000	0.000	0.000	0.616	0.000	0.616	>75% Grass cover, Good	
0.000	0.000	0.000	0.035	0.000	0.035	Gravel surface	
0.000	0.000	0.000	0.133	0.000	0.133	Paved parking	
0.000	0.000	0.000	0.346	0.000	0.346	Paved roads w/open ditches, 50% imp	
0.000	0.000	0.000	0.087	0.000	0.087	Roofs	
0.000	0.000	0.000	0.004	0.000	0.004	Unconnected pavement	
0.000	0.000	0.000	7.315	0.000	7.315	Woods, Good	
0.000	**0.000**	**0.000**	**9.995**	**0.000**	**9.995**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	1S	0.00	0.00	53.0	0.0200	0.013	12.0	0.0	0.0
2	1P	38.90	38.00	91.0	0.0099	0.025	12.0	0.0	0.0

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: NORTH/WEST SIDES Runoff Area=245,360 sf 7.93% Impervious Runoff Depth=1.41"
Flow Length=1,072' Tc=25.4 min CN=80 Runoff=5.59 cfs 0.662 af

Subcatchment 2S: NORTH SIDE OF Runoff Area=27,202 sf 19.18% Impervious Runoff Depth=1.62"
Flow Length=193' Tc=6.7 min CN=83 Runoff=1.15 cfs 0.084 af

Subcatchment 3S: SOUTH SIDE OF Runoff Area=15,862 sf 12.01% Impervious Runoff Depth=1.48"
Flow Length=119' Tc=7.8 min CN=81 Runoff=0.59 cfs 0.045 af

Subcatchment 4S: LOT 20 & SOUTH SIDE Runoff Area=146,939 sf 2.30% Impervious Runoff Depth=1.28"
Flow Length=373' Tc=12.7 min CN=78 Runoff=3.98 cfs 0.360 af

Reach OUT 1: OUT 1 Inflow=3.47 cfs 0.746 af
Outflow=3.47 cfs 0.746 af

Reach OUT 2: OUT 2 Inflow=0.59 cfs 0.045 af
Outflow=0.59 cfs 0.045 af

Reach OUT 3: OUT 3 Inflow=3.98 cfs 0.360 af
Outflow=3.98 cfs 0.360 af

Pond 1P: CULVERT CROSSING Peak Elev=42.23' Storage=3,518 cf Inflow=5.59 cfs 0.662 af
Primary=3.21 cfs 0.662 af Secondary=0.00 cfs 0.000 af Outflow=3.21 cfs 0.662 af

Total Runoff Area = 9.995 ac Runoff Volume = 1.151 af Average Runoff Depth = 1.38"
93.11% Pervious = 9.306 ac 6.89% Impervious = 0.688 ac

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: NORTH/WEST SIDES Runoff Area=245,360 sf 7.93% Impervious Runoff Depth=3.93"
Flow Length=1,072' Tc=25.4 min CN=80 Runoff=15.79 cfs 1.847 af

Subcatchment 2S: NORTH SIDE OF Runoff Area=27,202 sf 19.18% Impervious Runoff Depth=4.25"
Flow Length=193' Tc=6.7 min CN=83 Runoff=3.00 cfs 0.221 af

Subcatchment 3S: SOUTH SIDE OF Runoff Area=15,862 sf 12.01% Impervious Runoff Depth=4.04"
Flow Length=119' Tc=7.8 min CN=81 Runoff=1.61 cfs 0.123 af

Subcatchment 4S: LOT 20 & SOUTH SIDE Runoff Area=146,939 sf 2.30% Impervious Runoff Depth=3.73"
Flow Length=373' Tc=12.7 min CN=78 Runoff=11.88 cfs 1.048 af

Reach OUT 1: OUT 1 Inflow=22.23 cfs 2.068 af
Outflow=22.23 cfs 2.068 af

Reach OUT 2: OUT 2 Inflow=1.61 cfs 0.123 af
Outflow=1.61 cfs 0.123 af

Reach OUT 3: OUT 3 Inflow=11.88 cfs 1.048 af
Outflow=11.88 cfs 1.048 af

Pond 1P: CULVERT CROSSING Peak Elev=43.24' Storage=8,341 cf Inflow=15.79 cfs 1.847 af
Primary=3.68 cfs 1.455 af Secondary=17.36 cfs 0.392 af Outflow=21.03 cfs 1.847 af

Total Runoff Area = 9.995 ac Runoff Volume = 3.239 af Average Runoff Depth = 3.89"
93.11% Pervious = 9.306 ac 6.89% Impervious = 0.688 ac

Summary for Subcatchment 1S: NORTH/WEST SIDES OF PAVED DRIVEWAY

Runoff = 15.79 cfs @ 12.34 hrs, Volume= 1.847 af, Depth= 3.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 YR Rainfall=6.17"

Area (sf)	CN	Description
165,393	77	Woods, Good, HSG D
1,360	98	Paved parking, HSG D
10,792	93	Paved roads w/open ditches, 50% imp, HSG D
63,556	84	1 acre lots, 20% imp, HSG D
3,908	80	>75% Grass cover, Good, HSG D
351	96	Gravel surface, HSG D
245,360	80	Weighted Average
225,893		92.07% Pervious Area
19,467		7.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.4	100	0.0400	0.10		**Sheet Flow, 1.1** Woods: Light underbrush n= 0.400 P2= 3.17"
3.1	250	0.0720	1.34		**Shallow Concentrated Flow, 1.2** Woodland Kv= 5.0 fps
4.4	389	0.0051	1.47	25.81	**Trap/Vee/Rect Channel Flow, 1.3** Bot.W=5.00' D=0.50' Z= 60.0 '/' Top.W=65.00' n= 0.030 Stream, clean & straight
1.0	185	0.0216	3.09	7.71	**Trap/Vee/Rect Channel Flow, 1.4** Bot.W=1.00' D=0.50' Z= 8.0 '/' Top.W=9.00' n= 0.030 Stream, clean & straight
0.1	53	0.0200	6.42	5.04	**Pipe Channel, 1.5** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
0.4	95	0.0316	3.64	46.38	**Trap/Vee/Rect Channel Flow, 1.6** Bot.W=3.00' D=0.50' Z= 45.0 '/' Top.W=48.00' n= 0.030 Stream, clean & straight
25.4	1,072	Total			

Summary for Subcatchment 2S: NORTH SIDE OF APARTMENT BUILDING

Runoff = 3.00 cfs @ 12.10 hrs, Volume= 0.221 af, Depth= 4.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 YR Rainfall=6.17"

Area (sf)	CN	Description
1,102	98	Paved parking, HSG D
4,266	93	Paved roads w/open ditches, 50% imp, HSG D
609	96	Gravel surface, HSG D
1,827	98	Roofs, HSG D
8,433	80	>75% Grass cover, Good, HSG D
10,809	77	Woods, Good, HSG D
156	98	Unconnected pavement, HSG D
27,202	83	Weighted Average
21,984		80.82% Pervious Area
5,218		19.18% Impervious Area
156		2.99% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.2300	0.27		**Sheet Flow, 2.1** Grass: Dense n= 0.240 P2= 3.17"
3.6	143	0.0175	0.66		**Shallow Concentrated Flow, 2.2** Woodland Kv= 5.0 fps
6.7	193	Total			

Summary for Subcatchment 3S: SOUTH SIDE OF APARTMENT BUILDING

Runoff = 1.61 cfs @ 12.11 hrs, Volume= 0.123 af, Depth= 4.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 YR Rainfall=6.17"

Area (sf)	CN	Description
9,050	77	Woods, Good, HSG D
4,503	80	>75% Grass cover, Good, HSG D
516	98	Paved parking, HSG D
1,372	98	Roofs, HSG D
404	96	Gravel surface, HSG D
17	98	Unconnected pavement, HSG D
15,862	81	Weighted Average
13,957		87.99% Pervious Area
1,905		12.01% Impervious Area
17		0.89% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	50	0.0300	0.12		**Sheet Flow, 3.1** Grass: Dense n= 0.240 P2= 3.17"
0.8	69	0.0870	1.47		**Shallow Concentrated Flow, 3.2** Woodland Kv= 5.0 fps
7.8	119	Total			

Summary for Subcatchment 4S: LOT 20 & SOUTH SIDE OF APARTMENT BUILDING

Runoff = 11.88 cfs @ 12.18 hrs, Volume= 1.048 af, Depth= 3.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 YR Rainfall=6.17"

Area (sf)	CN	Description
133,384	77	Woods, Good, HSG D
9,988	80	>75% Grass cover, Good, HSG D
580	98	Roofs, HSG D
2,800	98	Paved parking, HSG D
181	96	Gravel surface, HSG D
6	98	Unconnected pavement, HSG D
146,939	78	Weighted Average
143,553		97.70% Pervious Area
3,386		2.30% Impervious Area
6		0.18% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	50	0.0500	0.10		**Sheet Flow, 4.1** Woods: Light underbrush n= 0.400 P2= 3.17"
0.9	93	0.1075	1.64		**Shallow Concentrated Flow, 4.2** Woodland Kv= 5.0 fps
1.7	101	0.0396	0.99		**Shallow Concentrated Flow, 4.3** Woodland Kv= 5.0 fps
1.5	129	0.0050	1.48	20.36	**Trap/Vee/Rect Channel Flow, 4.4** Bot.W=5.00' D=0.50' Z= 50.0 & 40.0 '/' Top.W=50.00' n= 0.030 Stream, clean & straight
12.7	373	Total			

Summary for Reach OUT 1: OUT 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 6.257 ac, 9.06% Impervious, Inflow Depth = 3.97" for 25 YR event
Inflow = 22.23 cfs @ 12.34 hrs, Volume= 2.068 af
Outflow = 22.23 cfs @ 12.34 hrs, Volume= 2.068 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3

Summary for Reach OUT 2: OUT 2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.364 ac, 12.01% Impervious, Inflow Depth = 4.04" for 25 YR event
Inflow = 1.61 cfs @ 12.11 hrs, Volume= 0.123 af
Outflow = 1.61 cfs @ 12.11 hrs, Volume= 0.123 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3

Summary for Reach OUT 3: OUT 3

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.373 ac, 2.30% Impervious, Inflow Depth = 3.73" for 25 YR event
Inflow = 11.88 cfs @ 12.18 hrs, Volume= 1.048 af
Outflow = 11.88 cfs @ 12.18 hrs, Volume= 1.048 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3

Summary for Pond 1P: CULVERT CROSSING

[93] Warning: Storage range exceeded by 0.24'
[58] Hint: Peaked 0.24' above defined flood level
[90] Warning: Qout>Qin may require Finer Routing or smaller dt
[87] Warning: Oscillations may require Finer Routing or smaller dt (severity=23)

Inflow Area = 5.633 ac, 7.93% Impervious, Inflow Depth = 3.93" for 25 YR event
Inflow = 15.79 cfs @ 12.34 hrs, Volume= 1.847 af
Outflow = 21.03 cfs @ 12.34 hrs, Volume= 1.847 af, Atten= 0%, Lag= 0.0 min
Primary = 3.68 cfs @ 12.34 hrs, Volume= 1.455 af
Secondary = 17.36 cfs @ 12.34 hrs, Volume= 0.392 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 43.24' @ 12.34 hrs Surf.Area= 7,732 sf Storage= 8,341 cf
Flood Elev= 43.00' Surf.Area= 7,732 sf Storage= 8,341 cf

Plug-Flow detention time= 11.3 min calculated for 1.847 af (100% of inflow)
Center-of-Mass det. time= 11.3 min (842.3 - 831.0)

Volume	Invert	Avail.Storage	Storage Description
#1	38.90'	8,341 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

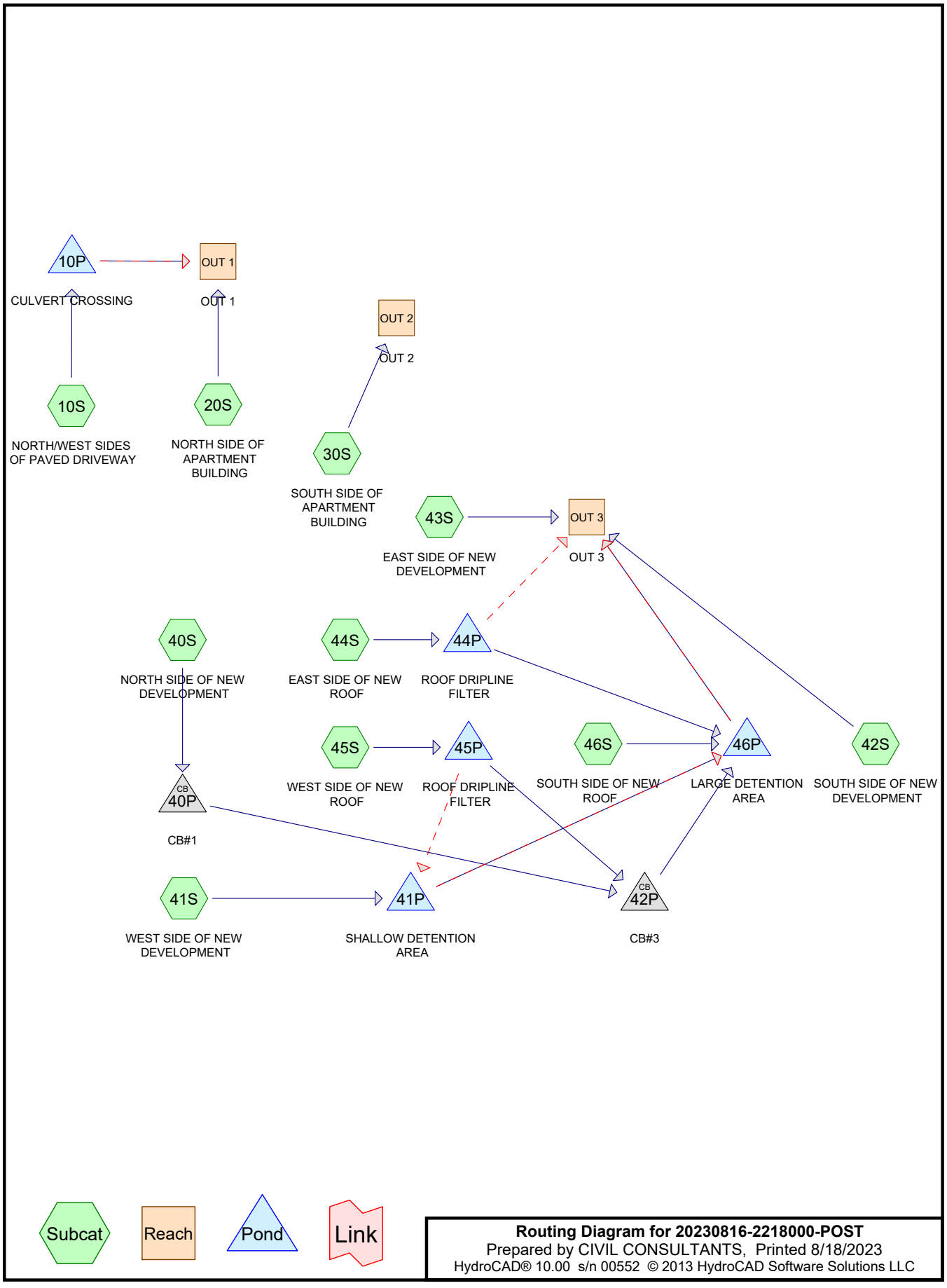
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
38.90	0	0.0	0	0	0
39.00	1	3.0	0	0	1
40.00	97	39.0	36	36	123
41.00	548	90.6	292	328	659
42.00	4,250	384.6	2,108	2,436	11,779
43.00	7,732	555.4	5,905	8,341	24,564

Device	Routing	Invert	Outlet Devices
#1	Primary	38.90'	**12.0" Round CMP_Round 12"** L= 91.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 38.90' / 38.00' S= 0.0099 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	42.90'	**32.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60

Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=3.68 cfs @ 12.34 hrs HW=43.24' TW=0.00' (Dynamic Tailwater)
↑—**1=CMP_Round 12"** (Barrel Controls 3.68 cfs @ 4.68 fps)

Secondary OutFlow Max=17.36 cfs @ 12.34 hrs HW=43.24' TW=0.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 17.36 cfs @ 1.58 fps)



Routing Diagram for 20230816-2218000-POST
Prepared by CIVIL CONSULTANTS, Printed 8/18/2023

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.459	84	1 acre lots, 20% imp, HSG D (10S)
1.078	80	>75% Grass cover, Good, HSG D (10S, 20S, 30S, 40S, 41S, 42S, 43S, 46S)
0.052	96	Gravel surface, HSG D (10S, 20S, 30S, 40S, 44S, 45S)
0.295	98	Paved parking, HSG D (10S, 20S, 30S, 40S)
0.346	93	Paved roads w/open ditches, 50% imp, HSG D (10S, 20S)
0.246	98	Roofs, HSG D (20S, 30S, 40S, 44S, 45S, 46S)
0.047	98	Unconnected pavement, HSG D (20S, 30S, 40S, 43S, 44S, 46S)
6.472	77	Woods, Good, HSG D (10S, 20S, 30S, 40S, 41S, 42S, 43S)
9.995	**80**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
9.995	HSG D	10S, 20S, 30S, 40S, 41S, 42S, 43S, 44S, 45S, 46S
0.000	Other	
9.995		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchr Numbers
0.000	0.000	0.000	1.459	0.000	1.459	1 acre lots, 20% imp	
0.000	0.000	0.000	1.078	0.000	1.078	>75% Grass cover, Good	
0.000	0.000	0.000	0.052	0.000	0.052	Gravel surface	
0.000	0.000	0.000	0.295	0.000	0.295	Paved parking	
0.000	0.000	0.000	0.346	0.000	0.346	Paved roads w/open ditches, 50% imp	
0.000	0.000	0.000	0.246	0.000	0.246	Roofs	
0.000	0.000	0.000	0.047	0.000	0.047	Unconnected pavement	
0.000	0.000	0.000	6.472	0.000	6.472	Woods, Good	
0.000	**0.000**	**0.000**	**9.995**	**0.000**	**9.995**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	10S	0.00	0.00	53.0	0.0200	0.013	12.0	0.0	0.0
2	10P	38.90	38.00	91.0	0.0099	0.013	15.0	0.0	0.0
3	40P	50.80	49.75	160.0	0.0066	0.013	12.0	0.0	0.0
4	41P	50.00	49.00	47.0	0.0213	0.013	12.0	0.0	0.0
5	42P	49.60	49.00	30.0	0.0200	0.013	12.0	0.0	0.0
6	44P	50.40	50.00	43.0	0.0093	0.010	6.0	0.0	0.0
7	45P	50.40	50.30	4.0	0.0250	0.010	6.0	0.0	0.0
8	46P	48.00	46.00	109.0	0.0183	0.013	12.0	0.0	0.0

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 10S: NORTH/WEST SIDES Runoff Area=245,360 sf 7.93% Impervious Runoff Depth=1.41"
Flow Length=1,072' Tc=25.4 min CN=80 Runoff=5.59 cfs 0.662 af

Subcatchment 20S: NORTH SIDE OF Runoff Area=27,202 sf 19.18% Impervious Runoff Depth=1.62"
Flow Length=193' Tc=6.7 min CN=83 Runoff=1.15 cfs 0.084 af

Subcatchment 30S: SOUTH SIDE OF Runoff Area=15,862 sf 12.01% Impervious Runoff Depth=1.48"
Flow Length=119' Tc=7.8 min CN=81 Runoff=0.59 cfs 0.045 af

Subcatchment 40S: NORTH SIDE OF NEW Runoff Area=21,626 sf 53.63% Impervious Runoff Depth=2.18"
Flow Length=105' Tc=6.8 min CN=90 Runoff=1.22 cfs 0.090 af

Subcatchment 41S: WEST SIDE OF NEW Runoff Area=53,516 sf 0.00% Impervious Runoff Depth=1.22"
Flow Length=143' Tc=9.5 min CN=77 Runoff=1.51 cfs 0.125 af

Subcatchment 42S: SOUTH SIDE OF NEW Runoff Area=44,253 sf 0.00% Impervious Runoff Depth=1.22"
Flow Length=216' Tc=12.8 min CN=77 Runoff=1.13 cfs 0.103 af

Subcatchment 43S: EAST SIDE OF NEW Runoff Area=13,486 sf 1.33% Impervious Runoff Depth=1.34"
Flow Length=50' Slope=0.1700 '/' Tc=5.3 min CN=79 Runoff=0.49 cfs 0.035 af

Subcatchment 44S: EAST SIDE OF NEW Runoff Area=3,045 sf 88.28% Impervious Runoff Depth=2.98"
Flow Length=28' Tc=6.0 min CN=98 Runoff=0.22 cfs 0.017 af

Subcatchment 45S: WEST SIDE OF NEW Runoff Area=3,007 sf 87.83% Impervious Runoff Depth=2.98"
Flow Length=28' Tc=6.0 min CN=98 Runoff=0.22 cfs 0.017 af

Subcatchment 46S: SOUTH SIDE OF NEW Runoff Area=8,006 sf 26.78% Impervious Runoff Depth=1.62"
Flow Length=28' Tc=6.0 min UI Adjusted CN=83 Runoff=0.35 cfs 0.025 af

Reach OUT 1: OUT 1 Inflow=5.88 cfs 0.746 af
Outflow=5.88 cfs 0.746 af

Reach OUT 2: OUT 2 Inflow=0.59 cfs 0.045 af
Outflow=0.59 cfs 0.045 af

Reach OUT 3: OUT 3 Inflow=3.31 cfs 0.411 af
Outflow=3.31 cfs 0.411 af

Pond 10P: CULVERT CROSSING Peak Elev=40.90' Storage=275 cf Inflow=5.59 cfs 0.662 af
Primary=5.47 cfs 0.662 af Secondary=0.00 cfs 0.000 af Outflow=5.47 cfs 0.662 af

Pond 40P: CB#1 Peak Elev=51.47' Inflow=1.22 cfs 0.090 af
12.0" Round Culvert n=0.013 L=160.0' S=0.0066 '/' Outflow=1.22 cfs 0.090 af

Pond 41P: SHALLOW DETENTION AREA Peak Elev=50.43' Storage=1,655 cf Inflow=1.51 cfs 0.125 af
Primary=0.57 cfs 0.124 af Secondary=0.00 cfs 0.000 af Outflow=0.57 cfs 0.124 af

Pond 42P: CB#3 Peak Elev=50.31' Inflow=1.34 cfs 0.107 af
12.0" Round Culvert n=0.013 L=30.0' S=0.0200 '/' Outflow=1.34 cfs 0.107 af

Pond 44P: ROOF DRIPLINE FILTER Peak Elev=53.52' Storage=57 cf Inflow=0.22 cfs 0.017 af
Primary=0.17 cfs 0.017 af Secondary=0.00 cfs 0.000 af Outflow=0.17 cfs 0.017 af

Pond 45P: ROOF DRIPLINE FILTER Peak Elev=53.53' Storage=58 cf Inflow=0.22 cfs 0.017 af
Primary=0.17 cfs 0.017 af Secondary=0.00 cfs 0.000 af Outflow=0.17 cfs 0.017 af

Pond 46P: LARGE DETENTION AREA Peak Elev=48.88' Storage=327 cf Inflow=2.05 cfs 0.273 af
Primary=1.85 cfs 0.273 af Secondary=0.00 cfs 0.000 af Outflow=1.85 cfs 0.273 af

Total Runoff Area = 9.995 ac Runoff Volume = 1.203 af Average Runoff Depth = 1.44"
89.47% Pervious = 8.942 ac 10.53% Impervious = 1.052 ac

Summary for Subcatchment 10S: NORTH/WEST SIDES OF PAVED DRIVEWAY

Runoff = 5.59 cfs @ 12.36 hrs, Volume= 0.662 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.21"

Area (sf)	CN	Description
165,393	77	Woods, Good, HSG D
1,360	98	Paved parking, HSG D
10,792	93	Paved roads w/open ditches, 50% imp, HSG D
63,556	84	1 acre lots, 20% imp, HSG D
3,908	80	>75% Grass cover, Good, HSG D
351	96	Gravel surface, HSG D
245,360	80	Weighted Average
225,893		92.07% Pervious Area
19,467		7.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.4	100	0.0400	0.10		**Sheet Flow, 10.1** Woods: Light underbrush n= 0.400 P2= 3.17"
3.1	250	0.0720	1.34		**Shallow Concentrated Flow, 10.2** Woodland Kv= 5.0 fps
4.4	389	0.0051	1.47	25.81	**Trap/Vee/Rect Channel Flow, 10.3** Bot.W=5.00' D=0.50' Z= 60.0 '/' Top.W=65.00' n= 0.030 Stream, clean & straight
1.0	185	0.0216	3.09	7.71	**Trap/Vee/Rect Channel Flow, 10.4** Bot.W=1.00' D=0.50' Z= 8.0 '/' Top.W=9.00' n= 0.030 Stream, clean & straight
0.1	53	0.0200	6.42	5.04	**Pipe Channel, 10.5** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
0.4	95	0.0316	3.64	46.38	**Trap/Vee/Rect Channel Flow, 10.6** Bot.W=3.00' D=0.50' Z= 45.0 '/' Top.W=48.00' n= 0.030 Stream, clean & straight
25.4	1,072	Total			

Summary for Subcatchment 20S: NORTH SIDE OF APARTMENT BUILDING

Runoff = 1.15 cfs @ 12.10 hrs, Volume= 0.084 af, Depth= 1.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.21"

Area (sf)	CN	Description
1,102	98	Paved parking, HSG D
4,266	93	Paved roads w/open ditches, 50% imp, HSG D
609	96	Gravel surface, HSG D
1,827	98	Roofs, HSG D
8,433	80	>75% Grass cover, Good, HSG D
10,809	77	Woods, Good, HSG D
156	98	Unconnected pavement, HSG D
27,202	83	Weighted Average
21,984		80.82% Pervious Area
5,218		19.18% Impervious Area
156		2.99% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.2300	0.27		**Sheet Flow, 20.1** Grass: Dense n= 0.240 P2= 3.17"
3.6	143	0.0175	0.66		**Shallow Concentrated Flow, 20.2** Woodland Kv= 5.0 fps
6.7	193	Total			

Summary for Subcatchment 30S: SOUTH SIDE OF APARTMENT BUILDING

Runoff = 0.59 cfs @ 12.11 hrs, Volume= 0.045 af, Depth= 1.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.21"

Area (sf)	CN	Description
9,050	77	Woods, Good, HSG D
4,503	80	>75% Grass cover, Good, HSG D
516	98	Paved parking, HSG D
1,372	98	Roofs, HSG D
404	96	Gravel surface, HSG D
17	98	Unconnected pavement, HSG D
15,862	81	Weighted Average
13,957		87.99% Pervious Area
1,905		12.01% Impervious Area
17		0.89% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	50	0.0300	0.12		**Sheet Flow, 30.1** Grass: Dense n= 0.240 P2= 3.17"
0.8	69	0.0870	1.47		**Shallow Concentrated Flow, 30.2** Woodland Kv= 5.0 fps
7.8	119	Total			

Summary for Subcatchment 40S: NORTH SIDE OF NEW DEVELOPMENT

Runoff = 1.22 cfs @ 12.10 hrs, Volume= 0.090 af, Depth= 2.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.21"

Area (sf)	CN	Description
1,193	77	Woods, Good, HSG D
8,654	80	>75% Grass cover, Good, HSG D
1,264	98	Roofs, HSG D
9,863	98	Paved parking, HSG D
181	96	Gravel surface, HSG D
471	98	Unconnected pavement, HSG D
21,626	90	Weighted Average
10,028		46.37% Pervious Area
11,598		53.63% Impervious Area
471		4.06% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	50	0.0400	0.13		**Sheet Flow, 40.1** Grass: Dense n= 0.240 P2= 3.17"
0.4	21	0.0143	0.84		**Shallow Concentrated Flow, 40.2** Short Grass Pasture Kv= 7.0 fps
0.2	34	0.0265	3.30		**Shallow Concentrated Flow, 40.3** Paved Kv= 20.3 fps
6.8	105	Total			

Summary for Subcatchment 41S: WEST SIDE OF NEW DEVELOPMENT

Runoff = 1.51 cfs @ 12.14 hrs, Volume= 0.125 af, Depth= 1.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.21"

Area (sf)	CN	Description
47,707	77	Woods, Good, HSG D
5,809	80	>75% Grass cover, Good, HSG D
53,516	77	Weighted Average
53,516		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	50	0.0500	0.10		**Sheet Flow, 41.1** Woods: Light underbrush n= 0.400 P2= 3.17"
0.9	93	0.1075	1.64		**Shallow Concentrated Flow, 41.2** Woodland Kv= 5.0 fps
9.5	143	Total			

Summary for Subcatchment 42S: SOUTH SIDE OF NEW DEVELOPMENT

Runoff = 1.13 cfs @ 12.19 hrs, Volume= 0.103 af, Depth= 1.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.21"

Area (sf)	CN	Description
40,851	77	Woods, Good, HSG D
3,402	80	>75% Grass cover, Good, HSG D
44,253	77	Weighted Average
44,253		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0300	0.08		**Sheet Flow, 42.1** Woods: Light underbrush n= 0.400 P2= 3.17"
2.3	166	0.0575	1.20		**Shallow Concentrated Flow, 42.2** Woodland Kv= 5.0 fps
12.8	216	Total			

Summary for Subcatchment 43S: EAST SIDE OF NEW DEVELOPMENT

Runoff = 0.49 cfs @ 12.08 hrs, Volume= 0.035 af, Depth= 1.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.21"

Area (sf)	CN	Description
6,910	77	Woods, Good, HSG D
6,397	80	>75% Grass cover, Good, HSG D
179	98	Unconnected pavement, HSG D
13,486	79	Weighted Average
13,307		98.67% Pervious Area
179		1.33% Impervious Area
179		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.1700	0.16		**Sheet Flow, 43.1** Woods: Light underbrush n= 0.400 P2= 3.17"

Summary for Subcatchment 44S: EAST SIDE OF NEW ROOF

Runoff = 0.22 cfs @ 12.08 hrs, Volume= 0.017 af, Depth= 2.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.21"

Area (sf)	CN	Description
2,673	98	Roofs, HSG D
357	96	Gravel surface, HSG D
15	98	Unconnected pavement, HSG D
3,045	98	Weighted Average
357		11.72% Pervious Area
2,688		88.28% Impervious Area
15		0.56% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	28		0.08		**Direct Entry, 44.1 - DIRECT ENTRY**

Summary for Subcatchment 45S: WEST SIDE OF NEW ROOF

Runoff = 0.22 cfs @ 12.08 hrs, Volume= 0.017 af, Depth= 2.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.21"

Area (sf)	CN	Description
2,641	98	Roofs, HSG D
366	96	Gravel surface, HSG D
3,007	98	Weighted Average
366		12.17% Pervious Area
2,641		87.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	28		0.08		**Direct Entry, 45.1 - DIRECT ENTRY**

Summary for Subcatchment 46S: SOUTH SIDE OF NEW ROOF

Runoff = 0.35 cfs @ 12.09 hrs, Volume= 0.025 af, Depth= 1.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.21"

Area (sf)	CN	Adj	Description
919	98		Roofs, HSG D
1,225	98		Unconnected pavement, HSG D
5,862	80		>75% Grass cover, Good, HSG D
8,006	85	83	Weighted Average, UI Adjusted
5,862			73.22% Pervious Area
2,144			26.78% Impervious Area
1,225			57.14% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	28		0.08		**Direct Entry, 46.1 - DIRECT ENTRY**

Summary for Reach OUT 1: OUT 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 6.257 ac, 9.06% Impervious, Inflow Depth = 1.43" for 2 YR event
Inflow = 5.88 cfs @ 12.40 hrs, Volume= 0.746 af
Outflow = 5.88 cfs @ 12.40 hrs, Volume= 0.746 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3

Summary for Reach OUT 2: OUT 2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.364 ac, 12.01% Impervious, Inflow Depth = 1.48" for 2 YR event
Inflow = 0.59 cfs @ 12.11 hrs, Volume= 0.045 af
Outflow = 0.59 cfs @ 12.11 hrs, Volume= 0.045 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3

Summary for Reach OUT 3: OUT 3

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.373 ac, 13.10% Impervious, Inflow Depth > 1.46" for 2 YR event
Inflow = 3.31 cfs @ 12.16 hrs, Volume= 0.411 af
Outflow = 3.31 cfs @ 12.16 hrs, Volume= 0.411 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3

Summary for Pond 10P: CULVERT CROSSING

Inflow Area = 5.633 ac, 7.93% Impervious, Inflow Depth = 1.41" for 2 YR event
Inflow = 5.59 cfs @ 12.36 hrs, Volume= 0.662 af
Outflow = 5.47 cfs @ 12.42 hrs, Volume= 0.662 af, Atten= 2%, Lag= 3.2 min
Primary = 5.47 cfs @ 12.42 hrs, Volume= 0.662 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 40.90' @ 12.42 hrs Surf.Area= 485 sf Storage= 275 cf
Flood Elev= 43.00' Surf.Area= 7,732 sf Storage= 8,341 cf

Plug-Flow detention time= 0.2 min calculated for 0.662 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (860.8 - 860.6)

Volume	Invert	Avail.Storage	Storage Description
#1	38.90'	8,341 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
38.90	0	0.0	0	0	0
39.00	1	3.0	0	0	1
40.00	97	39.0	36	36	123
41.00	548	90.6	292	328	659
42.00	4,250	384.6	2,108	2,436	11,779
43.00	7,732	555.4	5,905	8,341	24,564

Device	Routing	Invert	Outlet Devices
#1	Primary	38.90'	**15.0" Round NEW 15" HDPE** L= 91.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 38.90' / 38.00' S= 0.0099 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	42.90'	**32.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=5.47 cfs @ 12.42 hrs HW=40.90' TW=0.00' (Dynamic Tailwater)
↑—**1=NEW 15" HDPE** (Inlet Controls 5.47 cfs @ 4.45 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=38.90' TW=0.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 40P: CB#1

Inflow Area = 0.496 ac, 53.63% Impervious, Inflow Depth = 2.18" for 2 YR event
Inflow = 1.22 cfs @ 12.10 hrs, Volume= 0.090 af
Outflow = 1.22 cfs @ 12.10 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.0 min
Primary = 1.22 cfs @ 12.10 hrs, Volume= 0.090 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 51.47' @ 12.10 hrs
Flood Elev= 53.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	50.80'	**12.0" Round 12" HDPE** L= 160.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 50.80' / 49.75' S= 0.0066 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.22 cfs @ 12.10 hrs HW=51.47' TW=50.29' (Dynamic Tailwater)
↑—**1=12" HDPE** (Inlet Controls 1.22 cfs @ 2.19 fps)

Summary for Pond 41P: SHALLOW DETENTION AREA

Inflow Area = 1.229 ac, 0.00% Impervious, Inflow Depth = 1.22" for 2 YR event
Inflow = 1.51 cfs @ 12.14 hrs, Volume= 0.125 af
Outflow = 0.57 cfs @ 12.49 hrs, Volume= 0.124 af, Atten= 62%, Lag= 21.3 min
Primary = 0.57 cfs @ 12.49 hrs, Volume= 0.124 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 50.43' @ 12.49 hrs Surf.Area= 4,430 sf Storage= 1,655 cf
Flood Elev= 52.50' Surf.Area= 10,950 sf Storage= 17,994 cf

Plug-Flow detention time= 95.4 min calculated for 0.124 af (99% of inflow)
Center-of-Mass det. time= 92.0 min (947.4 - 855.4)

Volume	Invert	Avail.Storage	Storage Description
#1	50.00'	23,695 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
50.00	3,280	317.0	0	0	3,280
52.00	10,078	423.8	12,738	12,738	9,619
53.00	11,859	448.7	10,956	23,695	11,402

Device	Routing	Invert	Outlet Devices
#1	Primary	50.00'	**12.0" Round Culvert** L= 47.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 50.00' / 49.00' S= 0.0213 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	52.75'	**10.0' long x 11.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.53 2.59 2.70 2.68 2.67 2.68 2.66 2.64

Primary OutFlow Max=0.57 cfs @ 12.49 hrs HW=50.43' TW=48.66' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.57 cfs @ 1.76 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=50.00' TW=48.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 42P: CB#3

Inflow Area = 0.565 ac, 57.80% Impervious, Inflow Depth = 2.28" for 2 YR event
Inflow = 1.34 cfs @ 12.12 hrs, Volume= 0.107 af
Outflow = 1.34 cfs @ 12.12 hrs, Volume= 0.107 af, Atten= 0%, Lag= 0.0 min
Primary = 1.34 cfs @ 12.12 hrs, Volume= 0.107 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 50.31' @ 12.12 hrs
Flood Elev= 53.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	49.60'	**12.0" Round 12" HDPE** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 49.60' / 49.00' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.34 cfs @ 12.12 hrs HW=50.31' TW=48.85' (Dynamic Tailwater)
↑└**1=12" HDPE** (Inlet Controls 1.34 cfs @ 2.26 fps)

Summary for Pond 44P: ROOF DRIPLINE FILTER

[87] Warning: Oscillations may require Finer Routing or smaller dt (severity=3)

Inflow Area = 0.070 ac, 88.28% Impervious, Inflow Depth = 2.98" for 2 YR event
Inflow = 0.22 cfs @ 12.08 hrs, Volume= 0.017 af
Outflow = 0.17 cfs @ 12.11 hrs, Volume= 0.017 af, Atten= 23%, Lag= 1.6 min
Primary = 0.17 cfs @ 12.11 hrs, Volume= 0.017 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 53.52' @ 12.15 hrs Surf.Area= 720 sf Storage= 57 cf
Flood Elev= 133.00' Surf.Area= 1,120 sf Storage= 294 cf

Plug-Flow detention time= 3.0 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 3.0 min (759.3 - 756.3)

Volume	Invert	Avail.Storage	Storage Description
#1	53.50'	144 cf	**3.00'W x 120.00'L x 1.00'H Prismatoid - STONE** 360 cf Overall x 40.0% Voids
#2	52.50'	54 cf	**3.00'W x 120.00'L x 1.00'H Prismatoid FILTER** 360 cf Overall x 15.0% Voids
#3	54.50'	96 cf	**Ponding over filter surface (Conic)** Listed below (Recalc)
		294 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
54.50	372	0	0	372
54.75	400	96	96	405

Device	Routing	Invert	Outlet Devices
#1	Primary	50.40'	**6.0" Round Culvert-collector** L= 43.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 50.40' / 50.00' S= 0.0093 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Device 1	52.50'	**10.000 in/hr Exfiltration over Surface area** Phase-In= 0.10'
#3	Secondary	54.60'	**120.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.17 cfs @ 12.11 hrs HW=53.50' TW=48.83' (Dynamic Tailwater)
↑**1=Culvert-collector** (Passes 0.17 cfs of 1.26 cfs potential flow)
↑**2=Exfiltration** (Exfiltration Controls 0.17 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=52.50' TW=0.00' (Dynamic Tailwater)
↑**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 45P: ROOF DRIPLINE FILTER

[87] Warning: Oscillations may require Finer Routing or smaller dt (severity=3)

Inflow Area = 0.069 ac, 87.83% Impervious, Inflow Depth = 2.98" for 2 YR event
Inflow = 0.22 cfs @ 12.08 hrs, Volume= 0.017 af
Outflow = 0.17 cfs @ 12.12 hrs, Volume= 0.017 af, Atten= 23%, Lag= 2.2 min
Primary = 0.17 cfs @ 12.12 hrs, Volume= 0.017 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 53.53' @ 12.15 hrs Surf.Area= 720 sf Storage= 58 cf
Flood Elev= 133.00' Surf.Area= 1,120 sf Storage= 294 cf

Plug-Flow detention time= 3.0 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 3.0 min (759.3 - 756.3)

Volume	Invert	Avail.Storage	Storage Description
#1	53.50'	144 cf	**3.00'W x 120.00'L x 1.00'H Prismatoid - STONE** 360 cf Overall x 40.0% Voids
#2	52.50'	54 cf	**3.00'W x 120.00'L x 1.00'H Prismatoid FILTER** 360 cf Overall x 15.0% Voids
#3	54.50'	96 cf	**Ponding over filter surface (Conic)** Listed below (Recalc)
		294 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
54.50	372	0	0	372
54.75	400	96	96	405

Device	Routing	Invert	Outlet Devices
#1	Primary	50.40'	**6.0" Round Culvert-collector** L= 4.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 50.40' / 50.30' S= 0.0250 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Device 1	52.50'	**10.000 in/hr Exfiltration over Surface area** Phase-In= 0.10'
#3	Secondary	54.60'	**120.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.17 cfs @ 12.12 hrs HW=53.52' TW=50.31' (Dynamic Tailwater)
└**1=Culvert-collector** (Passes 0.17 cfs of 1.26 cfs potential flow)
└**2=Exfiltration** (Exfiltration Controls 0.17 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=52.50' TW=50.00' (Dynamic Tailwater)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 46P: LARGE DETENTION AREA

Inflow Area = 2.048 ac, 21.38% Impervious, Inflow Depth > 1.60" for 2 YR event
Inflow = 2.05 cfs @ 12.12 hrs, Volume= 0.273 af
Outflow = 1.85 cfs @ 12.16 hrs, Volume= 0.273 af, Atten= 10%, Lag= 2.5 min
Primary = 1.85 cfs @ 12.16 hrs, Volume= 0.273 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 48.88' @ 12.16 hrs Surf.Area= 581 sf Storage= 327 cf

Plug-Flow detention time= 5.1 min calculated for 0.273 af (100% of inflow)
Center-of-Mass det. time= 4.8 min (872.0 - 867.2)

Volume	Invert	Avail.Storage	Storage Description
#1	48.00'	5,760 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
48.00	193	102.7	0	0	193
50.00	1,371	196.5	1,386	1,386	2,446
52.00	3,122	267.4	4,375	5,760	5,104

Device	Routing	Invert	Outlet Devices
#1	Primary	48.00'	**12.0" Round Culvert** L= 109.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 48.00' / 46.00' S= 0.0183 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	51.50'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=1.85 cfs @ 12.16 hrs HW=48.88' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 1.85 cfs @ 2.53 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=48.00' TW=0.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 10S: NORTH/WEST SIDES Runoff Area=245,360 sf 7.93% Impervious Runoff Depth=3.93"
Flow Length=1,072' Tc=25.4 min CN=80 Runoff=15.79 cfs 1.847 af

Subcatchment 20S: NORTH SIDE OF Runoff Area=27,202 sf 19.18% Impervious Runoff Depth=4.25"
Flow Length=193' Tc=6.7 min CN=83 Runoff=3.00 cfs 0.221 af

Subcatchment 30S: SOUTH SIDE OF Runoff Area=15,862 sf 12.01% Impervious Runoff Depth=4.04"
Flow Length=119' Tc=7.8 min CN=81 Runoff=1.61 cfs 0.123 af

Subcatchment 40S: NORTH SIDE OF NEW Runoff Area=21,626 sf 53.63% Impervious Runoff Depth=5.01"
Flow Length=105' Tc=6.8 min CN=90 Runoff=2.70 cfs 0.207 af

Subcatchment 41S: WEST SIDE OF NEW Runoff Area=53,516 sf 0.00% Impervious Runoff Depth=3.63"
Flow Length=143' Tc=9.5 min CN=77 Runoff=4.64 cfs 0.371 af

Subcatchment 42S: SOUTH SIDE OF NEW Runoff Area=44,253 sf 0.00% Impervious Runoff Depth=3.63"
Flow Length=216' Tc=12.8 min CN=77 Runoff=3.47 cfs 0.307 af

Subcatchment 43S: EAST SIDE OF NEW Runoff Area=13,486 sf 1.33% Impervious Runoff Depth=3.83"
Flow Length=50' Slope=0.1700 '/' Tc=5.3 min CN=79 Runoff=1.42 cfs 0.099 af

Subcatchment 44S: EAST SIDE OF NEW Runoff Area=3,045 sf 88.28% Impervious Runoff Depth=5.93"
Flow Length=28' Tc=6.0 min CN=98 Runoff=0.42 cfs 0.035 af

Subcatchment 45S: WEST SIDE OF NEW Runoff Area=3,007 sf 87.83% Impervious Runoff Depth=5.93"
Flow Length=28' Tc=6.0 min CN=98 Runoff=0.42 cfs 0.034 af

Subcatchment 46S: SOUTH SIDE OF NEW Runoff Area=8,006 sf 26.78% Impervious Runoff Depth=4.25"
Flow Length=28' Tc=6.0 min UI Adjusted CN=83 Runoff=0.90 cfs 0.065 af

Reach OUT 1: OUT 1 Inflow=15.83 cfs 2.068 af
Outflow=15.83 cfs 2.068 af

Reach OUT 2: OUT 2 Inflow=1.61 cfs 0.123 af
Outflow=1.61 cfs 0.123 af

Reach OUT 3: OUT 3 Inflow=8.04 cfs 1.118 af
Outflow=8.04 cfs 1.118 af

Pond 10P: CULVERT CROSSING Peak Elev=43.08' Storage=8,341 cf Inflow=15.79 cfs 1.847 af
Primary=8.79 cfs 1.784 af Secondary=6.27 cfs 0.063 af Outflow=15.06 cfs 1.847 af

Pond 40P: CB#1 Peak Elev=52.29' Inflow=2.70 cfs 0.207 af
12.0" Round Culvert n=0.013 L=160.0' S=0.0066 '/' Outflow=2.70 cfs 0.207 af

Pond 41P: SHALLOW DETENTION AREA Peak Elev=50.96' Storage=4,442 cf Inflow=4.64 cfs 0.371 af
Primary=2.05 cfs 0.371 af Secondary=0.00 cfs 0.000 af Outflow=2.05 cfs 0.371 af

Pond 42P: CB#3 Peak Elev=51.02' Inflow=2.87 cfs 0.241 af
12.0" Round Culvert n=0.013 L=30.0' S=0.0200 '/' Outflow=2.87 cfs 0.241 af

Pond 44P: ROOF DRIPLINE FILTER Peak Elev=54.50' Storage=198 cf Inflow=0.42 cfs 0.035 af
Primary=0.21 cfs 0.035 af Secondary=0.00 cfs 0.000 af Outflow=0.21 cfs 0.035 af

Pond 45P: ROOF DRIPLINE FILTER Peak Elev=54.50' Storage=198 cf Inflow=0.42 cfs 0.034 af
Primary=0.19 cfs 0.034 af Secondary=0.00 cfs 0.000 af Outflow=0.19 cfs 0.034 af

Pond 46P: LARGE DETENTION AREA Peak Elev=50.15' Storage=1,595 cf Inflow=5.18 cfs 0.712 af
Primary=3.83 cfs 0.712 af Secondary=0.00 cfs 0.000 af Outflow=3.83 cfs 0.712 af

Total Runoff Area = 9.995 ac Runoff Volume = 3.309 af Average Runoff Depth = 3.97"
89.47% Pervious = 8.942 ac 10.53% Impervious = 1.052 ac

Summary for Subcatchment 10S: NORTH/WEST SIDES OF PAVED DRIVEWAY

Runoff = 15.79 cfs @ 12.34 hrs, Volume= 1.847 af, Depth= 3.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 YR Rainfall=6.17"

Area (sf)	CN	Description
165,393	77	Woods, Good, HSG D
1,360	98	Paved parking, HSG D
10,792	93	Paved roads w/open ditches, 50% imp, HSG D
63,556	84	1 acre lots, 20% imp, HSG D
3,908	80	>75% Grass cover, Good, HSG D
351	96	Gravel surface, HSG D
245,360	80	Weighted Average
225,893		92.07% Pervious Area
19,467		7.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.4	100	0.0400	0.10		**Sheet Flow, 10.1** Woods: Light underbrush n= 0.400 P2= 3.17"
3.1	250	0.0720	1.34		**Shallow Concentrated Flow, 10.2** Woodland Kv= 5.0 fps
4.4	389	0.0051	1.47	25.81	**Trap/Vee/Rect Channel Flow, 10.3** Bot.W=5.00' D=0.50' Z= 60.0 '/' Top.W=65.00' n= 0.030 Stream, clean & straight
1.0	185	0.0216	3.09	7.71	**Trap/Vee/Rect Channel Flow, 10.4** Bot.W=1.00' D=0.50' Z= 8.0 '/' Top.W=9.00' n= 0.030 Stream, clean & straight
0.1	53	0.0200	6.42	5.04	**Pipe Channel, 10.5** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
0.4	95	0.0316	3.64	46.38	**Trap/Vee/Rect Channel Flow, 10.6** Bot.W=3.00' D=0.50' Z= 45.0 '/' Top.W=48.00' n= 0.030 Stream, clean & straight
25.4	1,072	Total			

Summary for Subcatchment 20S: NORTH SIDE OF APARTMENT BUILDING

Runoff = 3.00 cfs @ 12.10 hrs, Volume= 0.221 af, Depth= 4.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 YR Rainfall=6.17"

Area (sf)	CN	Description
1,102	98	Paved parking, HSG D
4,266	93	Paved roads w/open ditches, 50% imp, HSG D
609	96	Gravel surface, HSG D
1,827	98	Roofs, HSG D
8,433	80	>75% Grass cover, Good, HSG D
10,809	77	Woods, Good, HSG D
156	98	Unconnected pavement, HSG D
27,202	83	Weighted Average
21,984		80.82% Pervious Area
5,218		19.18% Impervious Area
156		2.99% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.2300	0.27		**Sheet Flow, 20.1** Grass: Dense n= 0.240 P2= 3.17"
3.6	143	0.0175	0.66		**Shallow Concentrated Flow, 20.2** Woodland Kv= 5.0 fps
6.7	193	Total			

Summary for Subcatchment 30S: SOUTH SIDE OF APARTMENT BUILDING

Runoff = 1.61 cfs @ 12.11 hrs, Volume= 0.123 af, Depth= 4.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 YR Rainfall=6.17"

Area (sf)	CN	Description
9,050	77	Woods, Good, HSG D
4,503	80	>75% Grass cover, Good, HSG D
516	98	Paved parking, HSG D
1,372	98	Roofs, HSG D
404	96	Gravel surface, HSG D
17	98	Unconnected pavement, HSG D
15,862	81	Weighted Average
13,957		87.99% Pervious Area
1,905		12.01% Impervious Area
17		0.89% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	50	0.0300	0.12		**Sheet Flow, 30.1** Grass: Dense n= 0.240 P2= 3.17"
0.8	69	0.0870	1.47		**Shallow Concentrated Flow, 30.2** Woodland Kv= 5.0 fps
7.8	119	Total			

Summary for Subcatchment 40S: NORTH SIDE OF NEW DEVELOPMENT

Runoff = 2.70 cfs @ 12.10 hrs, Volume= 0.207 af, Depth= 5.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 YR Rainfall=6.17"

Area (sf)	CN	Description
1,193	77	Woods, Good, HSG D
8,654	80	>75% Grass cover, Good, HSG D
1,264	98	Roofs, HSG D
9,863	98	Paved parking, HSG D
181	96	Gravel surface, HSG D
471	98	Unconnected pavement, HSG D
21,626	90	Weighted Average
10,028		46.37% Pervious Area
11,598		53.63% Impervious Area
471		4.06% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	50	0.0400	0.13		**Sheet Flow, 40.1** Grass: Dense n= 0.240 P2= 3.17"
0.4	21	0.0143	0.84		**Shallow Concentrated Flow, 40.2** Short Grass Pasture Kv= 7.0 fps
0.2	34	0.0265	3.30		**Shallow Concentrated Flow, 40.3** Paved Kv= 20.3 fps
6.8	105	Total			

Summary for Subcatchment 41S: WEST SIDE OF NEW DEVELOPMENT

Runoff = 4.64 cfs @ 12.13 hrs, Volume= 0.371 af, Depth= 3.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 YR Rainfall=6.17"

Area (sf)	CN	Description
47,707	77	Woods, Good, HSG D
5,809	80	>75% Grass cover, Good, HSG D
53,516	77	Weighted Average
53,516		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	50	0.0500	0.10		**Sheet Flow, 41.1** Woods: Light underbrush n= 0.400 P2= 3.17"
0.9	93	0.1075	1.64		**Shallow Concentrated Flow, 41.2** Woodland Kv= 5.0 fps
9.5	143	Total			

Summary for Subcatchment 42S: SOUTH SIDE OF NEW DEVELOPMENT

Runoff = 3.47 cfs @ 12.18 hrs, Volume= 0.307 af, Depth= 3.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 YR Rainfall=6.17"

Area (sf)	CN	Description
40,851	77	Woods, Good, HSG D
3,402	80	>75% Grass cover, Good, HSG D
44,253	77	Weighted Average
44,253		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0300	0.08		**Sheet Flow, 42.1** Woods: Light underbrush n= 0.400 P2= 3.17"
2.3	166	0.0575	1.20		**Shallow Concentrated Flow, 42.2** Woodland Kv= 5.0 fps
12.8	216	Total			

Summary for Subcatchment 43S: EAST SIDE OF NEW DEVELOPMENT

Runoff = 1.42 cfs @ 12.08 hrs, Volume= 0.099 af, Depth= 3.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 YR Rainfall=6.17"

Area (sf)	CN	Description
6,910	77	Woods, Good, HSG D
6,397	80	>75% Grass cover, Good, HSG D
179	98	Unconnected pavement, HSG D
13,486	79	Weighted Average
13,307		98.67% Pervious Area
179		1.33% Impervious Area
179		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.1700	0.16		**Sheet Flow, 43.1** Woods: Light underbrush n= 0.400 P2= 3.17"

Summary for Subcatchment 44S: EAST SIDE OF NEW ROOF

Runoff = 0.42 cfs @ 12.08 hrs, Volume= 0.035 af, Depth= 5.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 YR Rainfall=6.17"

Area (sf)	CN	Description
2,673	98	Roofs, HSG D
357	96	Gravel surface, HSG D
15	98	Unconnected pavement, HSG D
3,045	98	Weighted Average
357		11.72% Pervious Area
2,688		88.28% Impervious Area
15		0.56% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	28		0.08		**Direct Entry, 44.1 - DIRECT ENTRY**

Summary for Subcatchment 45S: WEST SIDE OF NEW ROOF

Runoff = 0.42 cfs @ 12.08 hrs, Volume= 0.034 af, Depth= 5.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 YR Rainfall=6.17"

Area (sf)	CN	Description
2,641	98	Roofs, HSG D
366	96	Gravel surface, HSG D
3,007	98	Weighted Average
366		12.17% Pervious Area
2,641		87.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	28		0.08		**Direct Entry, 45.1 - DIRECT ENTRY**

Summary for Subcatchment 46S: SOUTH SIDE OF NEW ROOF

Runoff = 0.90 cfs @ 12.09 hrs, Volume= 0.065 af, Depth= 4.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 YR Rainfall=6.17"

Area (sf)	CN	Adj	Description
919	98		Roofs, HSG D
1,225	98		Unconnected pavement, HSG D
5,862	80		>75% Grass cover, Good, HSG D
8,006	85	83	Weighted Average, UI Adjusted
5,862			73.22% Pervious Area
2,144			26.78% Impervious Area
1,225			57.14% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	28		0.08		**Direct Entry, 46.1 - DIRECT ENTRY**

Summary for Reach OUT 1: OUT 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 6.257 ac, 9.06% Impervious, Inflow Depth = 3.97" for 25 YR event
Inflow = 15.83 cfs @ 12.48 hrs, Volume= 2.068 af
Outflow = 15.83 cfs @ 12.48 hrs, Volume= 2.068 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3

Summary for Reach OUT 2: OUT 2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.364 ac, 12.01% Impervious, Inflow Depth = 4.04" for 25 YR event
Inflow = 1.61 cfs @ 12.11 hrs, Volume= 0.123 af
Outflow = 1.61 cfs @ 12.11 hrs, Volume= 0.123 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3

Summary for Reach OUT 3: OUT 3

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.373 ac, 13.10% Impervious, Inflow Depth = 3.98" for 25 YR event
Inflow = 8.04 cfs @ 12.16 hrs, Volume= 1.118 af
Outflow = 8.04 cfs @ 12.16 hrs, Volume= 1.118 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3

Summary for Pond 10P: CULVERT CROSSING

[93] Warning: Storage range exceeded by 0.08'
[58] Hint: Peaked 0.08' above defined flood level
[87] Warning: Oscillations may require Finer Routing or smaller dt (severity=2)

Inflow Area = 5.633 ac, 7.93% Impervious, Inflow Depth = 3.93" for 25 YR event
Inflow = 15.79 cfs @ 12.34 hrs, Volume= 1.847 af
Outflow = 15.06 cfs @ 12.48 hrs, Volume= 1.847 af, Atten= 5%, Lag= 8.5 min
Primary = 8.79 cfs @ 12.48 hrs, Volume= 1.784 af
Secondary = 6.27 cfs @ 12.48 hrs, Volume= 0.063 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 43.08' @ 12.48 hrs Surf.Area= 7,732 sf Storage= 8,341 cf
Flood Elev= 43.00' Surf.Area= 7,732 sf Storage= 8,341 cf

Plug-Flow detention time= 4.8 min calculated for 1.847 af (100% of inflow)

Center-of-Mass det. time= 4.8 min (835.8 - 831.0)

Volume	Invert	Avail.Storage	Storage Description
#1	38.90'	8,341 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
38.90	0	0.0	0	0	0
39.00	1	3.0	0	0	1
40.00	97	39.0	36	36	123
41.00	548	90.6	292	328	659
42.00	4,250	384.6	2,108	2,436	11,779
43.00	7,732	555.4	5,905	8,341	24,564

Device	Routing	Invert	Outlet Devices
#1	Primary	38.90'	**15.0" Round NEW 15" HDPE** L= 91.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 38.90' / 38.00' S= 0.0099 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	42.90'	**32.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=8.78 cfs @ 12.48 hrs HW=43.07' TW=0.00' (Dynamic Tailwater)
1=NEW 15" HDPE (Inlet Controls 8.78 cfs @ 7.16 fps)

Secondary OutFlow Max=6.02 cfs @ 12.48 hrs HW=43.07' TW=0.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 6.02 cfs @ 1.11 fps)

Summary for Pond 40P: CB#1

Inflow Area = 0.496 ac, 53.63% Impervious, Inflow Depth = 5.01" for 25 YR event
Inflow = 2.70 cfs @ 12.10 hrs, Volume= 0.207 af
Outflow = 2.70 cfs @ 12.10 hrs, Volume= 0.207 af, Atten= 0%, Lag= 0.0 min
Primary = 2.70 cfs @ 12.10 hrs, Volume= 0.207 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 52.29' @ 12.10 hrs
Flood Elev= 53.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	50.80'	**12.0" Round 12" HDPE** L= 160.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 50.80' / 49.75' S= 0.0066 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.70 cfs @ 12.10 hrs HW=52.29' TW=51.02' (Dynamic Tailwater)
1=12" HDPE (Outlet Controls 2.70 cfs @ 3.43 fps)

Summary for Pond 41P: SHALLOW DETENTION AREA

Inflow Area = 1.229 ac, 0.00% Impervious, Inflow Depth = 3.63" for 25 YR event
Inflow = 4.64 cfs @ 12.13 hrs, Volume= 0.371 af
Outflow = 2.05 cfs @ 12.40 hrs, Volume= 0.371 af, Atten= 56%, Lag= 16.1 min
Primary = 2.05 cfs @ 12.40 hrs, Volume= 0.371 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 50.96' @ 12.40 hrs Surf.Area= 6,089 sf Storage= 4,442 cf
Flood Elev= 52.50' Surf.Area= 10,950 sf Storage= 17,994 cf

Plug-Flow detention time= 60.9 min calculated for 0.371 af (100% of inflow)
Center-of-Mass det. time= 59.6 min (883.2 - 823.6)

Volume	Invert	Avail.Storage	Storage Description
#1	50.00'	23,695 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
50.00	3,280	317.0	0	0	3,280
52.00	10,078	423.8	12,738	12,738	9,619
53.00	11,859	448.7	10,956	23,695	11,402

Device	Routing	Invert	Outlet Devices
#1	Primary	50.00'	**12.0" Round Culvert** L= 47.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 50.00' / 49.00' S= 0.0213 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	52.75'	**10.0' long x 11.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.53 2.59 2.70 2.68 2.67 2.68 2.66 2.64

Primary OutFlow Max=2.05 cfs @ 12.40 hrs HW=50.96' TW=50.12' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 2.05 cfs @ 2.64 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=50.00' TW=48.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 42P: CB#3

Inflow Area = 0.565 ac, 57.80% Impervious, Inflow Depth = 5.12" for 25 YR event
Inflow = 2.87 cfs @ 12.10 hrs, Volume= 0.241 af
Outflow = 2.87 cfs @ 12.10 hrs, Volume= 0.241 af, Atten= 0%, Lag= 0.0 min
Primary = 2.87 cfs @ 12.10 hrs, Volume= 0.241 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 51.02' @ 12.10 hrs
Flood Elev= 53.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	49.60'	**12.0" Round 12" HDPE** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 49.60' / 49.00' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.86 cfs @ 12.10 hrs HW=51.02' TW=49.69' (Dynamic Tailwater)
↑└**1=12" HDPE** (Inlet Controls 2.86 cfs @ 3.64 fps)

Summary for Pond 44P: ROOF DRIPLINE FILTER

[87] Warning: Oscillations may require Finer Routing or smaller dt (severity=1)

Inflow Area = 0.070 ac, 88.28% Impervious, Inflow Depth = 5.93" for 25 YR event
Inflow = 0.42 cfs @ 12.08 hrs, Volume= 0.035 af
Outflow = 0.21 cfs @ 12.23 hrs, Volume= 0.035 af, Atten= 49%, Lag= 8.6 min
Primary = 0.21 cfs @ 12.23 hrs, Volume= 0.035 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 54.50' @ 12.23 hrs Surf.Area= 720 sf Storage= 198 cf
Flood Elev= 133.00' Surf.Area= 1,120 sf Storage= 294 cf

Plug-Flow detention time= 6.0 min calculated for 0.035 af (100% of inflow)
Center-of-Mass det. time= 6.0 min (750.7 - 744.7)

Volume	Invert	Avail.Storage	Storage Description
#1	53.50'	144 cf	**3.00'W x 120.00'L x 1.00'H Prismatoid - STONE** 360 cf Overall x 40.0% Voids
#2	52.50'	54 cf	**3.00'W x 120.00'L x 1.00'H Prismatoid FILTER** 360 cf Overall x 15.0% Voids
#3	54.50'	96 cf	**Ponding over filter surface (Conic)** Listed below (Recalc)
		294 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
54.50	372	0	0	372
54.75	400	96	96	405

Device	Routing	Invert	Outlet Devices
#1	Primary	50.40'	**6.0" Round Culvert-collector** L= 43.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 50.40' / 50.00' S= 0.0093 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Device 1	52.50'	**10.000 in/hr Exfiltration over Surface area** Phase-In= 0.10'
#3	Secondary	54.60'	**120.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.17 cfs @ 12.23 hrs HW=54.50' TW=50.11' (Dynamic Tailwater)
└**1=Culvert-collector** (Passes 0.17 cfs of 1.46 cfs potential flow)
└**2=Exfiltration** (Exfiltration Controls 0.17 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=52.50' TW=0.00' (Dynamic Tailwater)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 45P: ROOF DRIPLINE FILTER

Inflow Area = 0.069 ac, 87.83% Impervious, Inflow Depth = 5.93" for 25 YR event
Inflow = 0.42 cfs @ 12.08 hrs, Volume= 0.034 af
Outflow = 0.19 cfs @ 12.26 hrs, Volume= 0.034 af, Atten= 54%, Lag= 10.5 min
Primary = 0.19 cfs @ 12.26 hrs, Volume= 0.034 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 54.50' @ 12.26 hrs Surf.Area= 720 sf Storage= 198 cf
Flood Elev= 133.00' Surf.Area= 1,120 sf Storage= 294 cf

Plug-Flow detention time= 6.0 min calculated for 0.034 af (100% of inflow)
Center-of-Mass det. time= 6.0 min (750.7 - 744.7)

Volume	Invert	Avail.Storage	Storage Description
#1	53.50'	144 cf	**3.00'W x 120.00'L x 1.00'H Prismatoid - STONE** 360 cf Overall x 40.0% Voids
#2	52.50'	54 cf	**3.00'W x 120.00'L x 1.00'H Prismatoid FILTER** 360 cf Overall x 15.0% Voids
#3	54.50'	96 cf	**Ponding over filter surface (Conic)** Listed below (Recalc)
		294 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
54.50	372	0	0	372
54.75	400	96	96	405

Device	Routing	Invert	Outlet Devices
#1	Primary	50.40'	**6.0" Round Culvert-collector** L= 4.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 50.40' / 50.30' S= 0.0250 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#2	Device 1	52.50'	**10.000 in/hr Exfiltration over Surface area** Phase-In= 0.10'
#3	Secondary	54.60'	**120.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.17 cfs @ 12.26 hrs HW=54.50' TW=50.46' (Dynamic Tailwater)
↑**1=Culvert-collector** (Passes 0.17 cfs of 1.46 cfs potential flow)
↑**2=Exfiltration** (Exfiltration Controls 0.17 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=52.50' TW=50.00' (Dynamic Tailwater)
↑**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 46P: LARGE DETENTION AREA

Inflow Area = 2.048 ac, 21.38% Impervious, Inflow Depth = 4.17" for 25 YR event
Inflow = 5.18 cfs @ 12.11 hrs, Volume= 0.712 af
Outflow = 3.83 cfs @ 12.32 hrs, Volume= 0.712 af, Atten= 26%, Lag= 12.6 min
Primary = 3.83 cfs @ 12.32 hrs, Volume= 0.712 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 50.15' @ 12.32 hrs Surf.Area= 1,476 sf Storage= 1,595 cf

Plug-Flow detention time= 4.9 min calculated for 0.712 af (100% of inflow)
Center-of-Mass det. time= 4.7 min (839.3 - 834.6)

Volume	Invert	Avail.Storage	Storage Description
#1	48.00'	5,760 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
48.00	193	102.7	0	0	193
50.00	1,371	196.5	1,386	1,386	2,446
52.00	3,122	267.4	4,375	5,760	5,104

Device	Routing	Invert	Outlet Devices
#1	Primary	48.00'	**12.0" Round Culvert** L= 109.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 48.00' / 46.00' S= 0.0183 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	51.50'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=3.83 cfs @ 12.32 hrs HW=50.15' TW=0.00' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 3.83 cfs @ 4.88 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=48.00' TW=0.00' (Dynamic Tailwater)
↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Metadata for Point	
Smoothing	Yes
State	
Location	
Latitude	43.070 degrees North
Longitude	70.755 degrees West
Elevation	0 feet
Date/Time	Fri Aug 18 2023 09:16:28 GMT-0400 (Eastern Daylight Time)

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.81	1.04	**1yr**	0.70	0.98	1.21	1.56	2.03	2.66	2.92	**1yr**	2.35	2.81	3.22	3.94	4.55	**1yr**
2yr	0.32	0.50	0.62	0.82	1.02	1.30	**2yr**	0.88	1.18	1.52	1.94	2.49	3.21	3.57	**2yr**	2.84	3.43	3.94	4.68	5.33	**2yr**
5yr	0.37	0.58	0.73	0.98	1.25	1.61	**5yr**	1.08	1.47	1.89	2.43	3.14	4.07	4.58	**5yr**	3.60	4.40	5.04	5.94	6.70	**5yr**
10yr	0.41	0.65	0.82	1.12	1.45	1.89	**10yr**	1.25	1.73	2.23	2.89	3.75	4.86	5.53	**10yr**	4.31	5.32	6.09	7.11	7.98	**10yr**
25yr	0.48	0.76	0.97	1.34	1.78	2.34	**25yr**	1.53	2.14	2.78	3.63	4.74	6.17	7.10	**25yr**	5.46	6.83	7.81	9.03	10.05	**25yr**
50yr	0.54	0.86	1.10	1.54	2.08	2.76	**50yr**	1.79	2.53	3.29	4.33	5.67	7.39	8.58	**50yr**	6.54	8.25	9.43	10.81	11.97	**50yr**
100yr	0.60	0.97	1.25	1.77	2.42	3.26	**100yr**	2.09	2.98	3.91	5.16	6.77	8.85	10.38	**100yr**	7.83	9.98	11.39	12.96	14.27	**100yr**
200yr	0.68	1.10	1.43	2.05	2.83	3.84	**200yr**	2.44	3.52	4.62	6.14	8.08	10.60	12.55	**200yr**	9.38	12.06	13.76	15.55	17.01	**200yr**
500yr	0.80	1.32	1.72	2.49	3.49	4.78	**500yr**	3.01	4.39	5.78	7.72	10.22	13.47	16.14	**500yr**	11.92	15.52	17.68	19.78	21.48	**500yr**

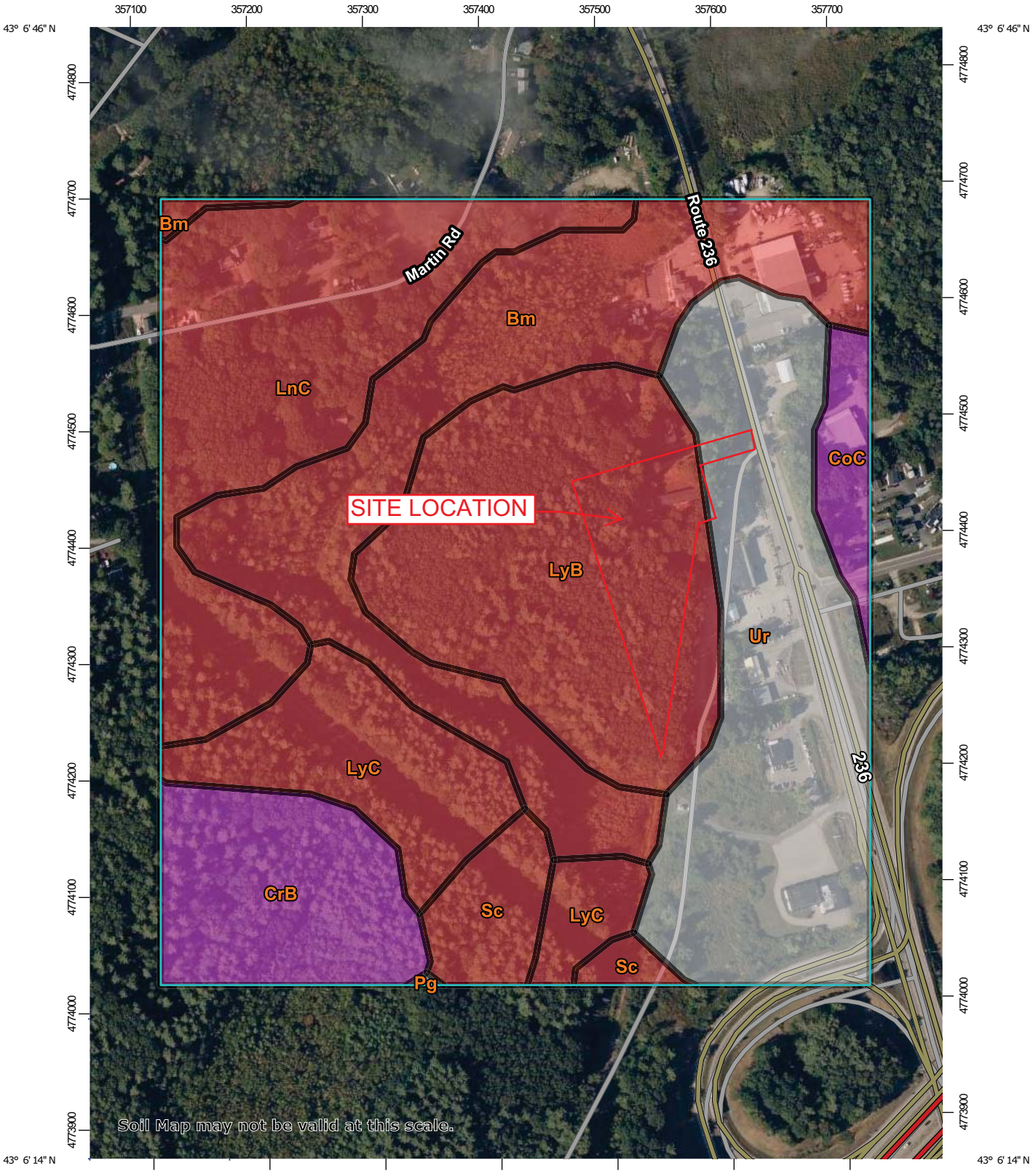
Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.36	0.44	0.59	0.72	0.88	**1yr**	0.63	0.86	0.93	1.33	1.69	2.24	2.49	**1yr**	1.98	2.39	2.87	3.19	3.90	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.19	**2yr**	0.86	1.16	1.37	1.82	2.34	3.06	3.45	**2yr**	2.71	3.32	3.82	4.55	5.09	**2yr**
5yr	0.35	0.54	0.67	0.92	1.17	1.40	**5yr**	1.01	1.37	1.61	2.12	2.73	3.78	4.19	**5yr**	3.35	4.03	4.72	5.53	6.24	**5yr**
10yr	0.39	0.59	0.73	1.03	1.33	1.60	**10yr**	1.14	1.56	1.80	2.39	3.05	4.37	4.85	**10yr**	3.87	4.67	5.43	6.41	7.19	**10yr**
25yr	0.44	0.67	0.83	1.19	1.56	1.90	**25yr**	1.35	1.86	2.10	2.75	3.53	4.73	5.88	**25yr**	4.19	5.65	6.64	7.78	8.67	**25yr**
50yr	0.48	0.73	0.91	1.31	1.76	2.17	**50yr**	1.52	2.12	2.35	3.06	3.92	5.35	6.78	**50yr**	4.73	6.52	7.71	9.03	10.00	**50yr**
100yr	0.54	0.81	1.01	1.46	2.01	2.47	**100yr**	1.73	2.41	2.62	3.40	4.33	6.02	7.82	**100yr**	5.32	7.52	8.95	10.49	11.55	**100yr**
200yr	0.59	0.89	1.13	1.63	2.27	2.81	**200yr**	1.96	2.75	2.93	3.77	4.77	6.75	9.02	**200yr**	5.97	8.68	10.38	12.20	13.35	**200yr**
500yr	0.68	1.02	1.31	1.90	2.71	3.36	**500yr**	2.33	3.28	3.41	4.30	5.43	7.86	10.89	**500yr**	6.95	10.47	12.63	14.92	16.17	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.44	0.54	0.72	0.89	1.08	**1yr**	0.77	1.06	1.26	1.74	2.20	2.98	3.17	**1yr**	2.64	3.05	3.58	4.37	5.04	**1yr**
2yr	0.34	0.52	0.64	0.87	1.07	1.27	**2yr**	0.92	1.24	1.48	1.96	2.52	3.42	3.71	**2yr**	3.03	3.56	4.09	4.84	5.63	**2yr**
5yr	0.40	0.62	0.77	1.05	1.34	1.62	**5yr**	1.15	1.59	1.89	2.54	3.25	4.34	4.97	**5yr**	3.84	4.78	5.38	6.38	7.16	**5yr**
10yr	0.47	0.72	0.89	1.25	1.61	1.98	**10yr**	1.39	1.93	2.28	3.11	3.96	5.34	6.21	**10yr**	4.72	5.97	6.83	7.85	8.76	**10yr**
25yr	0.58	0.88	1.09	1.56	2.05	2.57	**25yr**	1.77	2.52	2.96	4.08	5.16	7.76	8.36	**25yr**	6.87	8.04	9.17	10.35	11.42	**25yr**
50yr	0.67	1.02	1.27	1.83	2.47	3.13	**50yr**	2.13	3.06	3.60	5.01	6.34	9.71	10.48	**50yr**	8.59	10.08	11.48	12.74	13.98	**50yr**
100yr	0.79	1.20	1.50	2.16	2.97	3.82	**100yr**	2.56	3.73	4.38	6.17	7.79	12.15	13.14	**100yr**	10.75	12.63	14.36	15.72	17.11	**100yr**
200yr	0.93	1.39	1.77	2.56	3.57	4.66	**200yr**	3.08	4.56	5.35	7.60	9.57	15.23	16.48	**200yr**	13.48	15.85	18.00	19.38	20.94	**200yr**
500yr	1.15	1.71	2.20	3.20	4.55	6.06	**500yr**	3.93	5.92	6.94	10.05	12.62	20.58	22.27	**500yr**	18.21	21.41	24.26	25.55	27.37	**500yr**

Powered by ACIS Northeast Regional Climate Center



Map Scale: 1:4,740 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: York County, Maine
Survey Area Data: Version 21, Aug 30, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 19, 2020—Sep 20, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Bm	Biddeford mucky peat, 0 to 3 percent slopes	D	20.5	20.0%
CoC	Colton gravelly sandy loam, 8 to 15 percent slopes	A	2.4	2.3%
CrB	Croghan loamy fine sand, 0 to 8 percent slopes, wooded	A	8.6	8.4%
LnC	Lyman loam, 8 to 15 percent slopes, rocky	D	17.8	17.3%
LyB	Lyman-Rock outcrop complex, 3 to 8 percent slopes	D	19.8	19.3%
LyC	Lyman-Rock outcrop complex, 8 to 15 percent slopes	D	9.3	9.1%
Pg	Pits, gravel		0.0	0.0%
Sc	Scantic silt loam, 0 to 3 percent slopes	D	3.6	3.5%
Ur	Urban land		20.5	20.0%
Totals for Area of Interest			**102.4**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

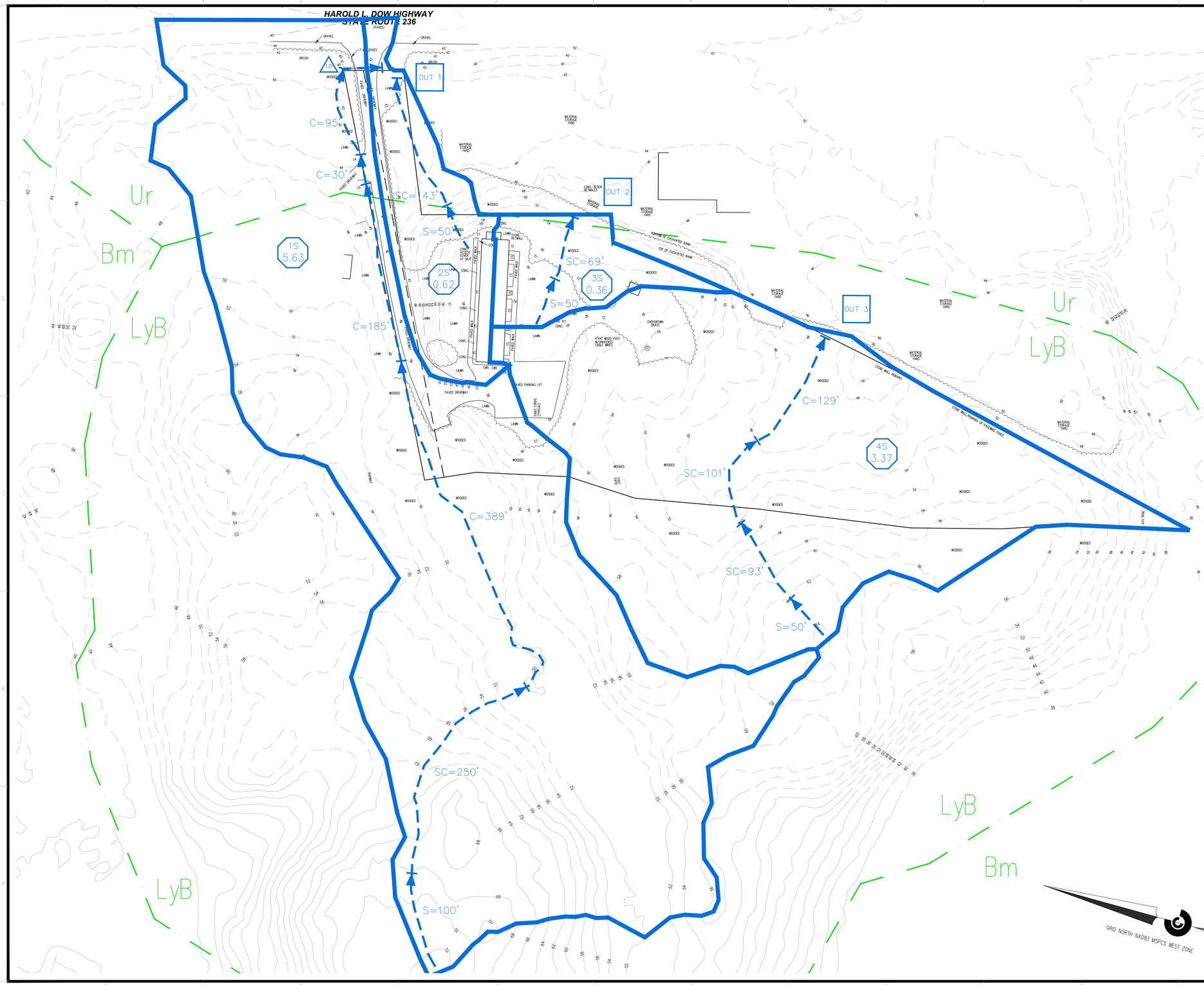
Rating Options

Aggregation Method: Dominant Condition

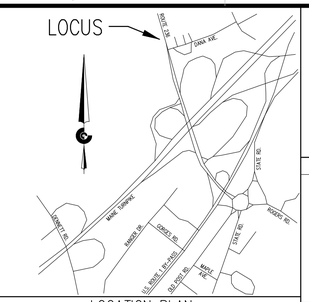
Component Percent Cutoff: None Specified

Tie-break Rule: Higher

HAROLD L. DOW HIGHWAY
STATE ROUTE 236
(YARD)



LOCUS



LOCATION PLAN
(NOT TO SCALE)

DRAINAGE LEGEND:

POND — 4 — POND NUMBER

SUBCATCHMENT — 11 / 0.56 — SUBCATCHMENT NUMBER / SUBCATCHMENT ACREAGE

REACH — 50 — REACH NUMBER

Tc COMPONENTS — S = Sheet; SC = Shallow Concentrated; C = Channel

SOILS LEGEND

- A Soils: SCS Soils: HISS Soils:
- B Soils: SCS Soils: HISS Soils:
- C Soils: SCS Soils: HISS Soils:
- D Soils: SCS Soils: Bm, LyB, Ur HISS Soils:

- Subcatchment Boundaries Pre-Development
- Subcatchment Boundaries Post-Development
- SCS Soil Line
- High Intensity Soil Line (N/A)
- Tc Flow Path & Direction Pre-Development
- Tc Flow Path & Direction Post-Development

PRE-DEVELOPMENT STORMWATER FLOWS

	OUT 1	OUT 2	OUT 3
2-YEAR	3.47 CFS	0.59 CFS	3.98 CFS
25-YEAR	22.23 CFS	1.61 CFS	11.88 CFS

TAX MAP 20, LOT 12
TAX MAP 21, LOT 20

PREPARED FOR SITE PLAN REVIEW
NOT FOR CONSTRUCTION
8/18/2023

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CIVIL CONSULTANTS
Engineers
Planners
Surveyors
P.O. Box 100
South Berwick
Maine
03908
207-384-2550
www.civcon.com

NO.	REVISIONS	INT.	DATE

RECORD OWNER:
25 & 17 ROUTE 236 LLC
ADDRESS:
P.O. BOX 630
KITTERY, ME 03904

SITE PLAN
LAND OF 25 & 17 ROUTE 236 LLC
17/25 ROUTE 236
KITTERY, YORK COUNTY, MAINE

PREPARED FOR:
SONNY NATARAJAN
CLIENT ADDRESS:
8 PEPPERELL WAY, YORK, ME 03909

1" = 50'
0' 50'

DATE: 08/18/2023
DRAWN BY: STR/DRC
CHECKED BY: GRA
APPROVED BY:

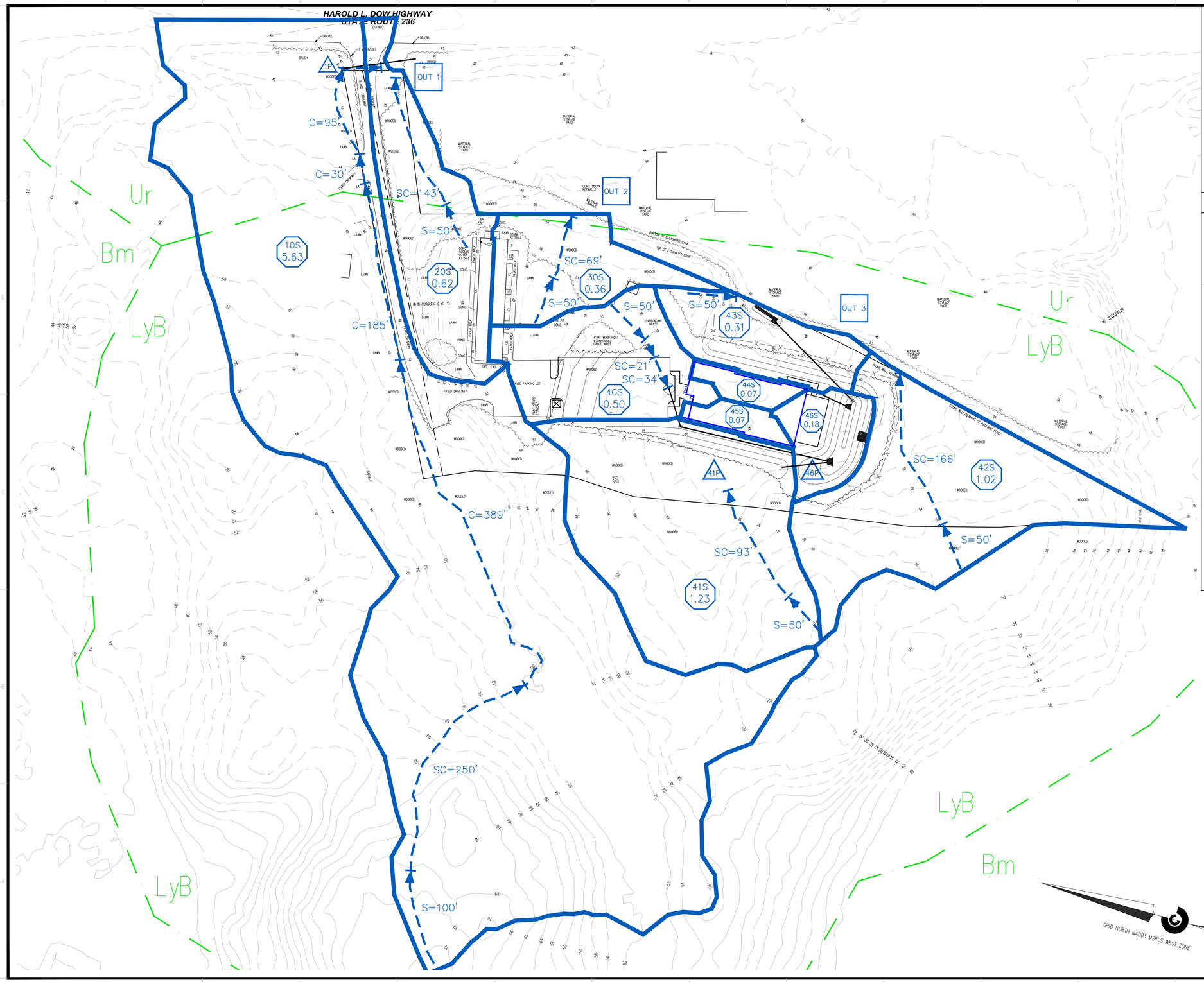
PRE-DEVELOPMENT STORMWATER MANAGEMENT PLAN

PROJECT NO: 22-180.00

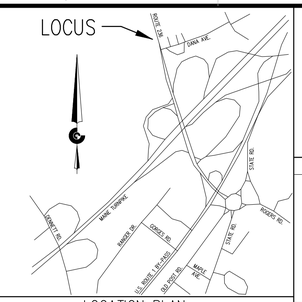
D1

SHEET: 1 OF 2

COORDINATE FILE: J:\AAA\2022\2218000\CARLSON\SURVEY\POINTS\2218000.CRD
CADD FILE: J:\AAA\2022\2218000\CARLSON\ENGR\2218000-SITE-OPT1.DWG



LOCUS



LOCATION PLAN
(NOT TO SCALE)

DRAINAGE LEGEND:

POND	4	POND NUMBER
SUBCATCHMENT	11 / 0.56	SUBCATCHMENT NUMBER / SUBCATCHMENT ACREAGE
REACH	50	REACH NUMBER

Tc COMPONENTS: S = Sheet; SC = Shallow Concentrated; C = Channel

SOILS LEGEND

- A Soils: SCS Soils: HISS Soils:
- B Soils: SCS Soils: HISS Soils:
- C Soils: SCS Soils: HISS Soils:
- D Soils: SCS Soils: Bm, LyB, Ur HISS Soils:

- Subcatchment Boundaries Pre-Development
- Subcatchment Boundaries Post-Development
- SCS Soil Line
- High Intensity Soil Line (N/A)
- Tc Flow Path & Direction Pre-Development
- Tc Flow Path & Direction Post-Development

PRE-DEVELOPMENT STORMWATER FLOWS

	OUT 1	OUT 2	OUT 3
2-YEAR	3.47 CFS	0.59 CFS	3.98 CFS
25-YEAR	22.23 CFS	1.61 CFS	11.88 CFS

PRE-DEVELOPMENT STORMWATER FLOWS

	OUT 1	OUT 2	OUT 3
2-YEAR	5.88 CFS	0.59 CFS	3.31 CFS
25-YEAR	15.83 CFS	1.61 CFS	8.04 CFS

TAX MAP 20, LOT 12
TAX MAP 21, LOT 20

PREPARED FOR SITE PLAN REVIEW
NOT FOR CONSTRUCTION
8/18/2023

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Engineers
Planners
Surveyors
P.O. Box 100
South Berwick
Maine
03908
207-384-2550
www.civcon.com

NO.	REVISIONS	DATE

RECORD OWNER:
25 & 17 ROUTE 236 LLC
ADDRESS:
P.O. BOX 630
KITTERY, ME 03904

SITE PLAN
LAND OF 25 & 17 ROUTE 236 LLC
17/25 ROUTE 236
KITTERY, YORK COUNTY, MAINE

PREPARED FOR:
SONNY NATARAJAN
CLIENT ADDRESS:
8 PEPPERELL WAY, YORK, ME 03909

1" = 50'
0' 50'

DATE: 08/18/2023
DRAWN BY: STR/DRC
CHECKED BY: GRA
APPROVED BY:

POST-DEVELOPMENT STORMWATER MANAGEMENT PLAN

PROJECT NO: 22-180.00

D2

SHEET: 2 OF 2

COORDINATE FILE: J:\AAA\2022\2218000\CARLSON\SURVEY\POINTS\2218000.CRD
CADD FILE: J:\AAA\2022\2218000\CARLSON\ENGR\2218000-SITE-OPT1.DWG

TOWN OF KITTERY, MAINE

SEWER DEPARTMENT

200 Rogers Road, Kittery, ME 03904

Telephone: (207) 439-4646 Fax: (207) 439-2799

October 13, 2023

Re: Treatment Plant Capacity-Acceptance letter
25 & 17 Route 236
Kittery, ME 03904

Geoff Aleva,

This letter is to confirm the acceptance of sanitary sewer discharge for the proposed Project at 25 & 17 Route 236 in the Town of Kittery Maine. The sewer system (piping and pumping stations) and the treatment plant will have the capacity and ability to handle the discharge flow estimates of 5,685 Gallons per day of wastewater requiring treatment and disposal.

This project must follow all specifications in accordance with design and performance standards set by the Kittery Sewer Department found in Title 13 of the Town Code.

Before the connection to the Kittery Sewer line, you will need to obtain a sewer permit from the Town of Kittery and pay all Impact and Entrance fees.

During the engineering and construction process plans may change, if they do, consideration for acceptance may change. Please notify me of any changes in design or construction.

If you have further questions or concerns, please contact me.

Sincerely,

Timothy Babkirk
Town of Kittery
Superintendent of Sewer Services
1-207-439-4646
tbabkirk@kitteryme.org

OFFICE OF

KITTERY WATER DISTRICT

17 State Road
Kittery, ME 03904-1565
TEL: 207-439-1128
FAX: 207-439-8549
Email: info@kitterywater.org

Kittery Planning Board
200 Rogers Road
Kittery, ME 03904

October 13, 2023

Re: 25 & 17 Route 236, Kittery

Dear Planning Board Members,

Please accept this letter as verification that the Kittery Water District does have the capacity to supply the proposed Rooming House to be located at 25 & 17 Route 236, Kittery with Municipal Water Service.

Sincerely,

Michael S. Rogers
Superintendent

cc: Geoffrey Aleva, P.E. President, Civil Consultants

CMA ENGINEERS, INC.
CIVIL | ENVIRONMENTAL | STRUCTURAL

35 Bow Street
Portsmouth
New Hampshire
03801-3819

P: 603|431|6196
www.cmaengineers.com

October 10, 2023

Maxim Zakian, Town Planner
Town of Kittery
200 Rogers Road
Kittery, Maine 03904

RE: Town of Kittery, Planning Board Services
Major Site Plan Review – Preliminary Review
Rooming House Redevelopment, 17 & 25 Route 236, Tax Map 20, Lot 12 and Tax Map 21, Lot 20
CMA #591.165

Dear Max:

CMA Engineers has received the following information for Assignment #165 for a preliminary site plan review for the proposed redevelopment and rooming house construction at 17 & 25 Route 236 in Kittery (Tax Map 20, Lot 12 and Tax Map 21, Lot 20).

1) Application and supporting documentation prepared by Civil Consultants dated 9/14/2023.
2) Stormwater Management Plan prepared for 25 & 17 Route 236 LLC dated August 2023 by Civil Consultants.
3) Plan set entitled "Site Plan Land of 25 & 17 Route 236, LLC" by Civil Consultants dated 8/18/2023.
4) Memorandum regarding Preliminary Plan Project Narrative by Civil Consultants dated 9/14/2023.

The proposed project will construct a new 3-story, 6,789 sf rooming house, with drainage and parking, for the primary use of employees of the property owner. There is an existing 2-story, 3,543 sf seven-unit apartment building with associated parking and drainage on-site. Access to the new building is proposed through the existing apartment building parking lot. There are no wetland impacts proposed.

We have reviewed the information submitted for conformance with the Kittery Land Use and Development Code (LUDC) and general engineering practices and offer the comments below that correspond directly to the Town's Ordinances.

16.4 Zoning Regulations

16.4.20 Commercial 2, Route 236 Commercial Zone (C-2)

16.4.20.B.10. The proposed use (rooming house) is allowed in the C-2 Zone. We note that the existing apartment building is a nonconforming use. No alterations to the apartment building are proposed.

16.4.20.D.(2) The plans should show required and proposed space standards for the C-2 zone in a table (we note required standards are listed in note 9 on Sheet L1) to demonstrate compliance.

16.4.20.D.(3)(c)[1]. The applicant has requested a waiver from this standard with the explanation that the site is screened with natural vegetation. We note that in the waiver section of the application the applicant has not provided the ordinance section.

16.7 General Development Requirements

16.7.11 Performance Standards and Approval Criteria

16.7.11.A. Water Supply

16.7.11.A.(2) The applicant has requested that the Kittery Wate District provide review and comments. KWD should also comment on capacity to serve the new development. We note that the proposed water estimate is established from NH Septic rules; is this appropriate for a Maine project?

The plans should include size and material of the proposed water main/services.

The location of the existing well used as a water supply for the apartment building should be shown on the plan if the apartment building is not proposed to tie into the new water.

16.7.11.B Sewage Disposal

16.7.11.B.(1)(b) The applicant has requested that the Town's sewer services department provide review and comments. The Town's SSS should also comment on capacity to serve the new development. We note that the proposed sewer estimate is established from NH Septic rules; is this appropriate for a Maine project?

The proposed sewer is extremely long with multiple bends. Sewer manholes should be proposed as part of the design.

What size is the proposed sewer main? What are the sizes, materials, and details of the service connections? Information should be provided for the proposed force main and pump station.

16.7.11.C. Stormwater and Surface Drainage

Stormwater treatment is accomplished through the use of closed drainage including catch basins and piping, infiltration with roofline drip edge and open drainage with a detention pond and level lip spreader and forested buffer.

We have the following comments on the drainage analysis:

1. The invert out of pipe 41P is listed as 49.0 in the Pipe Listing table in the Drainage Analysis and used in modeling but shown as 49.3 on the plan.
2. The invert out of pipe 42P is listed as 49.0 in the Pipe Listing table in the Drainage Analysis and used in modeling but shown as 49.3 on the plan.
3. The invert in of the 15" HDPE culvert crossing at the intersection with Route 236 is specified as 38.9 in the Pipe Listing table in the Drainage Analysis but indicated as 39.0 on the plan. These elevations should match.
4. The invert out of the 15" HDPE culvert crossing at the intersection with Route 236 is specified as 38.00 in the Pipe Listing table in the Drainage Analysis but indicated as "to match existing" on the plan. This should be verified in the field.

5. We note that the 12-hour storm amounts are highlighted in the Extreme Precipitation Table, but the 24-hour amounts are correctly used in modelling.
6. The storm water design is provided for the 2 and 25-year storms per the Ordinance. It is assumed that the emergency spillway elevations and the pond depths were designed for bigger storms but there is no way to verify these assumptions with the information that was provided. Full design calculations should be provided.

16.7.11.E. Vehicular traffic
The applicant has provided an Assessment of Traffic Generation for the exiting apartment building and proposed rooming house. The rooming house is categorized as an "off-campus student apartment" with 35 bedrooms. It is not clear that this is the most accurate categorization for this use. The number of trips are then modeled off of the number of rooms (35) but there are actually 61 beds. It does not appear that these additional beds are accounted for in the estimate. The applicant has stated that the primary use of the rooming house is for foreign, seasonal employees. Are there no other renters aside from the seasonal employees? Is the building vacant during the off-season?

16.7.11.F. Parking and loading (parking waiver)
16.7.11.F.(4)(d) The applicant has requested a waiver from the requirement of 2 parking spaces per dwelling unit for the rooming house and is instead proposing 1 space per 3 beds. The applicant states that the occupants are seasonal, foreign workers likely without vehicles and ridesharing, carpooling and vans will be provided. The use is stated primarily for the owner's workers. Are there no other renters aside from the seasonal employees? Is the building vacant during the off-season? Where was the 1 space per 3 beds figure derived from? Additionally, we note that the existing apartment building has 13 parking spaces, which is less than the 2 spaces per dwelling unit required by the Ordinance. Finally, if more parking spaces are required and provided a traffic impact study is required for lots with 40 or more spaces per 16.7.10.C.(4)(s).

16.7.11.4.(4)(g) The applicant has requested a waiver from the requirement of parking screening but does not specifically comment on interior landscaping requirements in parking lots. The existing and proposed parking lots are connected to form a parking lot with 37 spots. There is no proposed landscaping inside or adjacent to the parking lot. The applicant should apply for a waiver.

16.7.11.H Exterior Lighting Requirements
Site lighting is proposed. Please provide a photometric plan.

<u>General Comments</u>

1. There are inconsistencies between the plan set and the project narrative with respect to number of bedrooms, number of beds and parking spaces.
2. The parking space assumptions for a rooming house (1 space per 3 beds) result in a reduced number of parking spaces that does not trip the requirement of a traffic impact study. The assumptions.
3. The applicant has requested a waiver from submitting a landscaping plan with the justification that the site is screened with natural vegetation. The natural vegetation screens the property from surrounding lots but does not provide any onsite screening or aesthetics.

Site Plan Comments

We have the following comments with respect to the site plans.

Sheet L1-Proposed Site Plan:

1. The Scope of Work indicates that project will "…result in the construction of over 5,000 of gross nonresidential floor area…"
2. The plan shows, and the scope of work states, that there are 35 rooms, 61 beds and 12 rooms per floor. This is in conflict with the 11 rooms per floor, 33 rooms and 57 beds discussed in the project narrative.
3. The plan shows 24 additional spaces but 22 are described in the project narrative.
4. The Proposed Parking Spaces Table indicates that there are 14 existing spaces and 23 proposed but the plan shows 13 existing and 24 proposed.
5. The 1 space per 3 beds, 21 spaces required in the Proposed Parking Spaces table does not have data to support the assumption.
6. In the Proposed Coverage Info table, the existing pavement amount decreases. The area that is to be removed should be shown on the plan.
7. In the Proposed Coverage Info table, the proposed dripline filter is included in the impervious calculation.
8. There are items/linetypes on the plan that should be defined in the legend.
9. The pipe sizes and materials should be called out on the plan.
10. There are multiple symbols used for catch basins.
11. The dumpster pad needs to be enclosed.
12. The existing ADA space should have a sign.
13. Areas of pavement and concrete should be called out on the plan.
14. Is there a significance to the colored lines? If so, these should be explained in the legend.
15. The size and material of the sewer force main should be called out.
16. The size and material of the water should be called out.
17. The water main and services should have gate valve and shutoff.
18. The proposed stormwater pond to the south of the building should be labeled.
19. Profiles of the water and sewer mains should be provided.
20. Where does the piping for the 3'stone drip edge on the east side of the building outlet?
21. The sawcut lines to install the proposed 15" HPE culvert at the intersection with Route 236 and the water main connection should be shown.
22. Existing utility information – size, material, inverts, etc. should be shown on the plan.
23. The proposed inert out of the 15" HDPE culvert at the intersection with Route 236 should be field verified and indicated on the plan.
24. There are P numbers for the piping (P1, P2, etc.) but there is no table or notes that explain the designation.

Sheet L2-Proposed Construction Details:

1. Where is the riprap apron(s) located? These should be called out on the plan.
2. Where is silt fence proposed to be used? Call this out on the plan.
3. Moe information and details are required on the proposed site lighting.
4. The Water Line Trench detail should show warning tape.
5. There should be a detail for the water service.
6. The Sewer/Drain line Trench with Insulation detail should show warning tape. Where is cover anticipated to be less than 5'? A sewer profile should be provided.
7. There should be a detail for the sewer service.
8. Where are the wall mount lights located?
9. There should be a detail for the pond.
10. The Roofline Drip edge Filter detail indicates there are foundation drains. These should be shown on the plan.
11. There should be a striping detail.
12. Details for the water main connection should be provided.
13. Provide details for thrust blocks.
14. Details for the sewer main connection should be provided.
15. There should be a trench patch detail for the work in Route 236.
16. The Typical Pavement Section should specify pavement and gravel thicknesses (not match existing). The details should include tackifier and/or lane joint adhesive.

Sheet L3-Maintenance Notes:

1. The Maintenance Procedures should be updated to apply to this project.

Sheet EC1-Boundary/Existing Conditions Plan:

1. Existing utilities – sizes, materials, inverts, etc. should be shown on the plan.

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

Very truly yours,
CMA ENGINEERS, INC.

Jodie Bray Strickland, P.E.
Project Manager

Attachment
cc: Geoffrey Aleva, P.E., Civil Consultants

150 foot Abutters List Report

Kittery, ME
August 16, 2023

Subject Properties:

Parcel Number:	20-12	Mailing Address:	25 & 17 ROUTE 236 LLC 25 & 17 ROUTE 236 LLC PO BOX 630 KITTERY, ME 03904
CAMA Number:	20-12		
Property Address:	25 ROUTE 236		
Parcel Number:	21-20	Mailing Address:	25 & 17 ROUTE 236 LLC 25 & 17 ROUTE 236 LLC PO BOX 630 KITTERY, ME 03904
CAMA Number:	21-20		
Property Address:	17 ROUTE 236		

Abutters:

Parcel Number:	12-3-1	Mailing Address:	98 DENNETT ROAD LLC 98 DENNETT ROAD LLC 12 ROSEBERRY LANE KITTERY, ME 03904
CAMA Number:	12-3-1		
Property Address:	98 DENNETT ROAD		
Parcel Number:	20-13	Mailing Address:	27 ROUTE 236 KITTERY, LLC 27 ROUTE 236 KITTERY, LLC 12 ROSEBERRY LANE KITTERY, ME 03904
CAMA Number:	20-13		
Property Address:	27 ROUTE 236		
Parcel Number:	20-14	Mailing Address:	DUMAS, ARTHUR P DUMAS, ARTHUR P 31 ROUTE 236 KITTERY, ME 03904-5528
CAMA Number:	20-14		
Property Address:	31 ROUTE 236		
Parcel Number:	20-14A	Mailing Address:	SEAWARD, KAREN D SEAWARD, KAREN D 29 ROUTE 236 KITTERY, ME 03904-5528
CAMA Number:	20-14A		
Property Address:	29 ROUTE 236		
Parcel Number:	21-1	Mailing Address:	WRIGHT, TR, JONATHAN C. WRIGHT, TR, JONATHAN C. 103 OLD DENNETT ROAD KITTERY, ME 03904
CAMA Number:	21-1		
Property Address:	26 ROUTE 236		
Parcel Number:	21-18A	Mailing Address:	SEAWARD PROPERTIES LLC SEAWARD PROPERTIES LLC 2 CHAUNCEY CREEK KITTERY POINT, ME 03905
CAMA Number:	21-18A		
Property Address:	7 ROUTE 236		
Parcel Number:	21-18A	Mailing Address:	SEAWARD PROPERTIES LLC SEAWARD PROPERTIES LLC 2 CHAUNCEY CREEK KITTERY POINT, ME 03905
CAMA Number:	21-18A-1		
Property Address:	7 ROUTE 236		
Parcel Number:	21-19	Mailing Address:	GCBRE, LLC GCBRE, LLC 28 OLD ROUTE 27 ROAD BELGRADE, ME 04917
CAMA Number:	21-19		
Property Address:	15 ROUTE 236		
Parcel Number:	21-19A	Mailing Address:	WILSON, DAVID W WILSON, DAVID W P0 BOX 120 FAIRFIELD, ME 04737
CAMA Number:	21-19A		
Property Address:	11 ROUTE 236		

150 foot Abutters List Report

Kittery, ME
August 16, 2023

Parcel Number:	21-2	Mailing Address:	PATTEN TR, SUZANNE R PATTEN TR, SUZANNE R 86 WILSON ROAD KITTERY, ME 03904
CAMA Number:	21-2		
Property Address:	22 ROUTE 236		

Notice of intent to file Preliminary Site Plan Review Application

Please take notice that:

Civil Consultants, P.O. BOX 100, South Berwick, Maine 03908, on behalf of 25 & 17 Route 236, LLC, the owners of the property at 17 & 25 Route 236, Kittery, ME 03904, is intending to file a Preliminary Site Plan Review Application through the Major Site Plan Review process with the Town of Kittery, ME on or about September 1, 2023.

This application is to construct a new 3-story 6,789 SF rooming house with associated parking expansion and drainage facilities at 17 Route 236, Kittery, ME 03904.

As part of the Kittery Preliminary Plan Application process, notice of intent to file an application must be sent to all abutters within 150 ft. A public hearing will be held as part of the site plan review process. Public comment on the application will be accepted during the Planning Board review process.

The application will be filed at the Town of Kittery Planning Office during normal working hours. After submitting, a copy of the application may be found at the municipal offices in Kittery, ME or at the office of Civil Consultants at 293 Main Street in South Berwick, ME.

Please contact Geoff Aleva at Civil Consultants with questions. (207-384-2550) Witten public comments may be sent to the Town of Kittery at 200 Rogers Rd, Kittery, Maine 03904.