

**Town of Kittery
 Planning Board Meeting
 July 14, 2016**

91 Route 236 – Major Modification to an Approved Plan – Completeness Review

Action: Accept or deny plan application. Schedule a Public Hearing. Owner, Synergy Storage Structures, LLC, and applicant, Camall, LLC. requests approval for a plan modification to the 2014 approved plans to construct a single, 25,200 square foot building containing a self-storage business office and storage area located at 91 Route 236 (Tax Map 28, Lot 14-1) in the Commercial (C-2) Zone. Agent is Lew Chamberlain, Attar Engineering.

PROJECT TRACKING

REQ'D	ACTION	COMMENTS	STATUS
YES	Determination of Completeness/Acceptance	Scheduled for 7/14/2016	PENDING
NO	Site Visit	TBD	-
YES	Public Hearing		-
YES	Preliminary/Final Plan Review and Approval		-

Applicant: Prior to the signing of the approved Plan any Conditions of Approval related to the Findings of Fact along with waivers and variances (by the BOA) must be placed on the Final Plan and, when applicable, recorded at the York County Registry of Deeds. PLACE THE MAP AND LOT NUMBER IN 1/4" HIGH LETTERS AT LOWER RIGHT BORDER OF ALL PLAN SHEETS. As per Section 16.4.4.13 - Grading/Construction Final Plan Required. - Grading or construction of roads, grading of land or lots, or construction of buildings is prohibited until the original copy of the approved final plan endorsed has been duly recorded in the York County registry of deeds when applicable.

Background

This is a first review of a plan for a large, climate controlled, storage facility located at 91 Route 236. The parcel located as Map 28 Lot 14-1 was part of a subdivision (Bartlett Hill), approved August 20, 2015 and amended November 12, 2015. Several conditions of that approval will impact the development of this parcel, including an easement along the property line of 89 and 91 Route 236 that serves to provide access to the two lots.

Staff Review

At the time of these notes, Staff has not completed a full review of the project. The purpose of the review is to determine the application’s completeness and what additional information the Board may require prior to final review.

The applicant has provided a purchase and sale agreement between the property owner, Synergy Storage Structures and Camall, LLC. The application sites both Arenhall and Camall, LLC when referencing the applicant. Staff spoke with the agent who clarified Arenhall owns Camall, LLC, however Camall, LLC will proceed with the permitting and land acquisition for this proposal. The applicant has demonstrated a stake in the property under consideration.

CMA has completed an initial review and provided comments for the application (attached). In addition, the applicant has submitted a stormwater management plan dated June 1, 2016 by agent, Attar Engineering.

The applicant has included a traffic and parking analysis, prepared by Eaton Traffic Engineering during the application period for abutting site 89 Route 236. Applicant is requesting a waiver of requirement 16.8.9.4, off street parking standards, due to the nature and intensity of the proposed development.

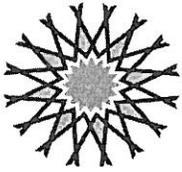
Recommendation

As a Site Plan, a public hearing is required. The application information submitted appears sufficient to schedule a public hearing and staff can work with the applicant on what the final plan requirements for approval will need to be submitted. The Board may also want to schedule a site walk prior to the public hearing.

Move to accept the plan application for owner Synergy Storage Structures, LLC, and applicant, Camall, LLC located at 91 Route 236 (Tax Map 28 Lot 14-1) in the Commercial 2 Zone.

and

Move to schedule a public hearing for owner Synergy Storage Structures, LLC, and applicant, Camall, LLC located at 91 Route 236 (Tax Map 28 Lot 14-1) in the Commercial 2 Zone.



ATTAR

ENGINEERING, INC

CIVIL • STRUCTURAL • MARINE

Ann Grinnell, Chairman, Planning Board
Chis DiMatteo, Town Planner
Town of Kittery
P.O. Box 808
Kittery, Maine 03904

May 31, 2016
Project No.: C022-16

**Re: Kittery Storage
Kittery, Maine**

Dear Chair Grinnell and Mr. DiMatteo:

On behalf of Arenhall Corporation, I have attached an Amended Plan application for your review and consideration for the referenced project. The project involves a new, 25,200 SF of interior storage on Rte. 236, just north of Fernald Road. The 2.8 acre site is identified as Map 28, Lot 14-1.

This is a similar plan that Gerry Mylroie, our planning consultant, Chris, Robert Marchi and I met to discuss on March 23, 2016.

I am respectfully requesting that the Board consider one waiver request. Section 16.8.9.4, Off-Street Parking Standards requires 1 space per 500 SF. This would result in 151 required, on-site spaces. Due to the nature of the proposed business, there will only be 2 – 4 tenants on-site at one time (REF also the attached traffic assessment prepared by Eaton Traffic Engineering). Eight spaces are provided which will be more than sufficient to accommodate the peak number of tenants and the one employee/manager.

We look forward to meeting with the Board at their next available meeting.

Please contact me for any additional information or clarifications required.

Sincerely,

Kenneth A. Wood, P.E.
President

cc: Jon Hall, Arenhall Corporation

Arenhall Corporation
P.O. Box 158
Wells, ME 04090

Town of Kittery
Planning Department
Chris Di Matteo
200 Rogers Rd
Kittery, ME 03904

May 31, 2016

To Whom It May Concern:

Please be informed that Lewis Chamberlain, P.E. of Attar Engineering, Inc. will be acting as my agent for the Major Modification Application.

Contact me if I can provide any additional information.

Sincerely;



Jonathan Hall
Arenhall Corporation
President

cc: Lewis Chamberlain, P.E. Attar Engineering, Inc.

TOWN OF KITTERY, MAINE

TOWN PLANNING AND DEVELOPMENT DEPARTMENT

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



APPLICATION: MAJOR MODIFICATION TO AN APPROVED PLAN- SITE PLAN

FEE FOR SITE PLAN AMENDMENT REVIEW: (TITLE 16.10.9.3)	<input checked="" type="checkbox"/> \$300.00 PLUS THE GREATER OF	<input type="checkbox"/> \$50/ADDITIONAL USE OF UNIT; OR <input type="checkbox"/> \$0.50/LINEAR FOOT OF ADDITIONAL DOCK, SLIP & FLOAT; OR	<input checked="" type="checkbox"/> \$5.00/100 SQ FT OF ADDITIONAL GROSS FLOOR AREA <input type="checkbox"/> \$20.00/ADDITIONAL UNIT INTENDED TO PROVIDE OVERNIGHT SLEEPING ACCOMODATIONS	Application Fee Paid: \$4,080.00 Date: 6/2/16 ASA Fee Paid: (TITLE 3.3 TOWN CODE) \$ _____ Date: _____
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PROPERTY DESCRIPTION	Parcel ID	Map	28	Lot	14-1	Zone(s):	C-2	Total Land Area (Square Feet)	121,523 S.F.
	Physical Address								
						Base:	_____	YES	
						Overlay:	_____	NO	
						MS4:	_____		

PROPERTY OWNER'S INFORMATION	Name	Synergy Storage Structures, LLC	Mailing Address	Synergy Storage Structures, LLC 401 Daniel Webster Highway, Suite 5 Merrimack, NH 03054
	Phone	N/A		
	Fax	N/A		
	Email	N/A		

APPLICANT'S AGENT INFORMATION	Name	Lew Chamberlain, P.E.	Mailing Address	Attar Engineering, INC 1284 State Road Eliot, ME 03903
	Phone	207-439-6023		
	Fax	207-439-2128		
	Email	lew@attarengineering.com		

PROJECT DESCRIPTION	Project Name: Kittery Self Storage
	Existing Use: Gravel Lot for Retail / Wholesale Firewood Sales.
	Proposed Amendment Please describe how the approved plan is proposed to be amended. State any known areas of non-compliance to the Town Code and how this amendment will decrease or remove non-compliance, if applicable.
	Construct 3 - 120' X 210' level, climate controlled, self - storage building with associated site improvements. Footprint will be 25, 200 S. F. and building = 75, 600 G.F.A.

I certify, to the best of my knowledge, this application information is true and correct and I will not deviate from the plan submitted without notifying the Kittery Town Planning Department of any changes.

Applicant's Signature:		Owner's Signature:	_____
Date:	6/2/16	Date:	_____

Minimum Plan Submittal Requirements

- 15 COPIES OF THIS APPLICATION
- 15 COPIES OF THE APPROVED SITE PLAN – 12 REDUCED SIZE AT 11”X17”AND 3 FULL SIZE AT 24”X 36”
- 15 COPIES OF THE PROPOSED AMENDED SITE PLAN– 12 REDUCED SIZE AT 11”X17”AND 3 FULL SIZE AT 24”X 36”
- 1 PDF OF THE SITE PLAN SHOWING GPS COORDINATES

PRIOR TO BEGINNING THE REVIEW PROCESS, THE PLANNING BOARD WILL DECIDE WHETHER SUFFICIENT INFORMATION HAS BEEN PROVIDED AND WILL VOTE TO DETERMINE COMPLETENESS/ACCEPTANCE.

THE APPLICANT IS RESPONSIBLE TO PRESENT A CLEAR UNDERSTANDING OF THE PROPOSED AMENDMENT.

- A) Paper size:
 - No less than 11” X 17” (reduced) or greater than 24” X 36” (full)
- B) Scale size:
 - Under 10 acres: no greater than 1” = 30’
 - 10 + acres: 1” = 50’
- C) Title block:
 - Applicant’s name and address
 - Name of preparer of plans with professional information and professional seal
 - Date of plan preparation
 - PARCEL’S TAX MAP ID (MAP/LOT) 1/4” TALL IN LOWER RIGHT
 - ‘SITE PLAN AMENDMENT’ CLEARLY PART OF TITLE
- D) Clearly show how the approved plan will be amended.
- E) Provide signature blocks for amended approval.
- F) Provide all associated reference material and or documentation that clarifies and or supports the purpose of the proposed amendment.
- G) Revisions to the boundary, internal lots and or parcels must be signed and sealed by a surveyor licensed in the State of Maine.
- H) Revisions to the proposed site must be signed and sealed by a professional engineer licensed in the State of Maine.

SEE TITLE 16.10.5.2 FOR COMPLETE LIST OF SUBMITTAL INFORMATION

NOTE TO APPLICANT: PRIOR TO THE SITE WALK, TEMPORARY MARKERS MUST BE ADEQUATELY PLACED THAT ENABLE THE PLANNING BOARD TO READILY LOCATE AND APPRAISE THE LAYOUT OF DEVELOPMENT.

Waiver Request

DESCRIPTION	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.
	16.8.9.4. OFFSTREET PARKING.	Requesting that the board consider one waiver request. Section 16.8.9.4., Off-Street Parking Standards requires 1 space per 500 SF. There will only be 2-4 tenants on-site at one time. Eight spaces are provided which will be more than sufficient to accommodate the peak number of tenants and the one employee/manager.

16.10.8.2.5 Conditions or Waivers.

Conditions required by the Planning Board at the final plan review phase must have been met before the final plan may be given final approval unless so specified in the condition or specifically waived, upon written request by the applicant, by formal Planning Board action wherein the character and extent of such waivers which may have been requested are such that they may be waived without jeopardy to the public health, safety and general welfare.

16.7.4.1 Objectives Met. 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.

SUBMITTALS THE TOWN PLANNER DEEMS SUFFICIENTLY LACKING IN CONTENT WILL NOT BE SCHEDULED FOR PLANNING BOARD REVIEW.

COMPLETED BY OFFICE STAFF

ASA CHARGE	AMOUNT	ASA CHARGE	AMOUNT
REVIEW		SERVICES	
LEGAL FEES (TBD)		RECORDER	\$35
ENGINEERS REVIEW (TBD)		FACT FINDING (TBD)	
ABUTTER NOTICES		3 RD PARTY INSPECTIONS (TBD)	
POSTAGE	\$20	OTHER PROFESSIONAL SERVICES	\$50
LEGAL NOTICES		PERSONNEL	
ADVERTISING	\$300	SALARY CHARGES IN EXCESS OF 20 HOURS	
SUPPLIES			
OFFICE	\$5		
SUB TOTAL		SUB TOTAL	
		TOTAL ASA REVIEW FEES	

Application: Major Modification to an Approved Plan – Subdivision/Site Plan

Property Description – Tax Map 28, Lot 14-1 at 89 Route 236, Kittery, Maine

WHEREAS: Owner/ applicant, Arenhall Corp, requests consideration of “Modifications to An Approved Plan” previously approved on February 20, 2014 to enable construction of a single, 25,200 square-foot building containing a self-storage business office and storage area at 89 Route 236, (Tax Map 28, Lot 14-1) in the Commercial (C-2) Zone; hereinafter the “Modified Plan.”

NOW THEREFORE, the following are findings of fact (please see yellow highlight) per the following Town Code Section 16.10.8.3.4:

(RECODIFICATION - ORDAINMENT – 07/26/2010 (With amendments Ordained 9/26/11; 1/23/12; 5/30/12; 9/24/12; 3/25/13; 6/10/13; 1/27/14; 1/28/15; 9/28/15;10/14/15;10/26/15)

16.10 DEVELOPMENT PLAN APPLICATION AND REVIEW Page | 308

16.10.8.3.4 Findings of Fact.

Action by the Planning Board must be based upon findings of fact which certify or waive compliance with all the required standards of this Code, and which certify the development meets the following requirements:

A. Development Conforms to Local Ordinances.

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 Modified Plan conforms with the duly adopted Comprehensive Plan by providing for a commercial land use that complies with the Subdivision and Site Plan previously found consistent with the Comprehensive Plan and approved on February 20, 2014, and for a warehouse or storage land use that is an allowed land use in the Commercial – 2 (C-2) Zone. This standard has been met.

B. 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.

The Modified Plan shows the small wetland along Route 236 consistent with the previously approved plan. This standard has been met.

C. 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. §480-B, Subsection 9.

There is no River, Stream or Brook so none has been identified. This standard is not applicable.

D. Water Supply Sufficient. (and)

Application: Major Modification to an Approved Plan – Site Plan

Property – Tax Map 28, Lot 14-1 at 89 Route 236, Kittery, Maine

The proposed development has sufficient water available for the reasonably foreseeable needs of the development.

E. Municipal Water Supply Available.

The proposed development will not cause an unreasonable burden on an existing water supply, if one is to be used.

The Kittery Water District provided a letter of evaluation verifying its capacity to supply water to the proposed project per the prior approval. This standard has been met.

F. 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.

The location of subsurface wastewater disposal system has been located on the plan consistent with the previously approved plan. This standard has been met.

G. 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.

The proposed development accommodates a dumpster with screening. This standard has been met.

H. Water Body Quality and Shoreline Protected.

Whenever situated entirely or partially within two hundred fifty (250) feet of any wetland, the proposed development will not adversely affect the quality of that body of water or unreasonably affect the shoreline of that body of water.

The development is not within 250 feet of any regulated (non-forested) wetland as it relates to the shoreland overlay zone as previously approved by the Board. This standard is not applicable.

I. Groundwater Protected.

The proposed development will not, alone or in conjunction with existing activities, adversely affect the quality or quantity of groundwater.

As referenced in para. F, above Sewage Disposal is adequate, the proposed development will not adversely affect the quality or quantity of ground water. This standard has been met.

J. Flood Areas Identified and Development Conditioned.

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

The property is not located within a flood prone area. This standard is not applicable.

K. Stormwater Management.

The proposed development will provide for adequate stormwater management.

As previously approved and modified, the property provides for adequate stormwater management. This standard has been met.

Application: Major Modification to an Approved Plan – Site Plan

Property – Tax Map 28, Lot 14-1 at 89 Route 236, Kittery, Maine

L. Erosion Controlled.

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

The Modified Plan also shall follow MDEP best management practices for erosion control and sediment control (silt fencing, silt sacks, etc.) and CMA engineers will be notified to observe application during construction per prior condition of approval #2. The proposed development Modification Plan conforms to Title 16.8.8 Surface Drainage and will provide for adequate sediment control measures on site. This standard has been met.

M. Traffic Managed.

The proposed development will:

1. Not cause unreasonable highway or public road congestion or unsafe conditions with respect to the use of the highways or public roads existing or proposed; and
2. Provides adequate traffic circulation, both on-site and off-site.

The Modification Plan is consistent with the previously approved plan and complies with Title 06.8.9 Parking, Loading, and Traffic and will provide for adequate traffic circulation. This standard has been met.

N. 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:

1. Elevation of the land above sea level and its relation to the floodplains;
2. Nature of soils and sub-soils and their ability to adequately support waste disposal;
3. Slope of the land and its effect on effluents;
4. Availability of streams for disposal of effluents;
5. Applicable state and local health and water resource rules and regulations; and
6. Safe transportation, disposal and storage of hazardous materials.

The Modified Plan is consistent with the previously approved plan and the development will not result in undue water or air pollution. This standard has been met.

O. 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 Modified Plan's structure meets the building design standards for the C-2 zone and will not have an adverse effect on the scenic or natural beauty of the area. Per the previous approved plan finding, the property does not include any significant aesthetic, cultural or natural values that require protection. This standard has been met.

P. Developer Financially and Technically Capable.

Developer is financially and technically capable to meet the standards of this section.

The developer will provide an inspection escrow in an amount suitable to cover the costs of on-site inspection by the Peer Review Engineer to ensure the proposed development is constructed according to the approved Modified Plan. This standard has been met.

Q. For Q. For Wireless Communication System Facility (WCSF).

Application: Major Modification to an Approved Plan – Site Plan
Property – Tax Map 28, Lot 14-1 at 89 Route 236, Kittery, Maine

Not applicable.

R. In Shoreland, Resource Protection or Commercial Fisheries/Maritime Use Overlay Zone.

Not applicable.

S. For a Right of Way Plan.

Not applicable.

T. Special Exception Use Permitted.

The allowable special exception “warehouse and storage” use will:

1. Not prevent the orderly and reasonable use of adjacent properties or of properties in adjacent use zones;

The Modified Plan use is consistent with the Comprehensive Plan and adjacent land uses within the same adjacent zone along Route 236. The standard is met.

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; and,

The Modified Plan use is consistent with the Comprehensive Plan and adjacent land uses within the same adjacent zone along Route 236. The standard is met.

3. Not adversely affect safety, the health, and the welfare of the Town.

The Modified Plan use meets Town standards related to water, air, traffic and related public safety and welfare considerations per the previously approved and above Findings of Fact.

4. Use will be in harmony with and promote the general purposes and intent of this Code.

The Modified Plan use meets the Town Code provisions as noted in the previously approved Plan and above Findings of Fact.

End

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List of Abutters

Project: Kittery Self Storage, Kittery, ME

Location: Map 28 Lot 14-1

Map	Lot	Property Owner	Mailing Address
28	14	Peter J. Paul, Trustee Paolucci Realty Trust	291 Dow Highway
28	14-2	Rockwell Homes, LLC	P.O. Box 206 Lebanon, ME 04027
28	20	Martel Investment Group, LP c/o Capital Video Corporation	44 Bedson Road Cranston, RI 02910
28	25-A	Bruce C. Lane, Trustee Castania L. Lane, Trustee	21 Alden Lane Eliot, ME 03903
28	25-C	Central Maine Power Company c/o Utility Shared Services Local Tax Department	70 Farm View Drive Freeport Building New Gloucester, ME 04260
		Town of Kittery Planning Department	200 Rogers Road Kittery, ME 03904

PURCHASE AND SALE AGREEMENT
(Real Estate)

Agreement made and entered into this 9th day of March, 2016 ("Effective Date") by and between **SYNERGY STORAGE STRUCTURES, LLC**, a limited liability company duly organized and existing under the laws of the State of New Hampshire whose mailing address is 403 Daniel Webster Highway, Merrimack, NH 03054 of Merrimack, New Hampshire ("Seller") and **CAMALL, LLC**, a limited liability company organized and existing under the laws of the Commonwealth of Massachusetts with an office of Wells, Maine ("Buyer"). In consideration of the mutual covenants contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereby agree as follows:

1. **PURCHASE AND SALE PREMISES.** Seller agrees to sell and Buyer agrees to buy, on the terms and conditions hereinafter set forth, a 2.8 acre parcel together with access at 91 Route 236, Kittery, Maine, (the "Premises") a plan of which is attached hereto as Exhibit A and the deed to which is attached hereto as Exhibit B. Except as specifically provided otherwise herein, the Premises are sold "as is", "where is", "with all faults."

2. **PURCHASE PRICE.** Subject to any adjustments and prorations hereinafter described, Buyer agrees to pay for the Premises the sum of

a. The sum of _____ as Deposit payable upon the signing of this Agreement by both parties ("DEPOSIT"). This Deposit shall be held by Sperry Van Ness, Commercial Real Estate Advisors, ("Escrow Agent") in a non-interest bearing account. It shall be applied as credit to the purchase price at closing or disposed of as set forth herein. In the event of a dispute over the return or forfeiture of any deposit held by the Escrow Agent, the Escrow Agent shall continue to hold the deposit until it has received a written release from the parties consenting to its disposition, or until receipt of a final order from a court of competent jurisdiction involving a matter with Buyer and Seller are parties. Regardless of its representation of any party to this Agreement, Escrow Agent shall not, as Escrow Agent, have any responsibility or liability to any party beyond the proper disposition of the escrow funds actually paid over to it. All parties agree to indemnify and hold the Escrow Agent harmless from any and all costs, actions, failure to act, or payment or refusal to pay, so long as said actions are made in good faith and are not a result of willful misconduct, including any defense costs or attorney's fees. The Escrow Agent shall incur no liability in acting upon any signature, notice, request, waiver, consent or other document believed by the Escrow Agent to be genuine. All deposit funds shall be payable as provided herein.

b. The balance of the purchase price, the sum of _____ less additional Deposits paid in accordance with Section 4 below, if any) by bank check, wire transfer or equivalent, at the time of closing subject to adjustment and as set forth in the Prorations.

JPW

CL

3. **FEASIBILITY PERIOD.** The Buyer shall have forty-five (45) days from the Effective Date ("Feasibility Period") during which the Buyer will, at Buyer's cost, investigate the Property, including but not limited to its, environmental condition, economic feasibility, title and survey, and review of all zoning matters. Buyer represents that any access to the Premises by Buyer's personnel, contractors and consultants will be covered in a minimum of \$1,000,000.00 in liability insurance coverage. Certificates of insurance naming Seller as an insured party shall be provided to Seller prior to access by any such personnel, contractor or consultant. Buyer shall reasonably return the Premises to its original condition in the event Buyer does not intend to purchase the Premises and the deposit shall be held by Escrow Agent until Escrow Agent received written confirmation that Seller is satisfied with the condition of the Premises post-inspections.

Seller shall be free to accept "back up offers" during the Feasibility Period. If the Buyer determines no later than the end of the Feasibility Period, in its sole judgment, that the purchase is not feasible, it may void the contract with no obligation to Seller of any kind and the deposit shall be completely refundable to the Buyer. Notice that this contract is voided shall be given by Buyer to Seller by e-mail as provided herein dated not later than forty-five (45) days from the Effective Date and followed by certified mail or nationally recognized overnight carrier (FedEx, UPS) after which said contingency and all matters addressed hereunder shall be deemed waived, automatically and without further action on the part of either party. Time is of the essence in this Agreement and any extension of this date must be in writing and signed by both parties.

At the expiration of the Feasibility Period the Buyer shall assume responsibility for timely payment of the real estate taxes. Seller shall provide Buyer copies of tax bills and Buyer shall pay such tax bills in full on or before the due date as set forth on such tax bills.

4. **PERMITS and APPROVALS.** Buyer shall have a period of two hundred twenty five (225) days from the Effective Date ("Approval Period") to secure all desired permits and approvals to construct a self-storage facility in substantial conformance with The Proposal for Development attached hereto as Exhibit C recognizing that time is of the essence. Seller shall assist, attend and participate in the approval process as requested by the Buyer. If the Buyer determines no later than the end of the Approval Period, in its sole judgment, that it cannot secure all desired permits and approvals, it may void the contract with no obligation to Seller of any kind and the deposit shall be completely refundable to the Buyer. Notice that this contract is voided shall be given by Buyer to Seller by e-mail as provided herein dated not later than two hundred twenty five (225) days from the Effective Date and followed by certified mail or nationally recognized overnight carrier (FedEx, UPS) after which said contingency and all matters addressed hereunder shall be deemed waived, automatically and without further action on the part of either party and the deposit shall become non-refundable except upon Seller's default. Time is of the essence in this Agreement and any extension of the Approval Period must be in writing and signed by both parties.

Buyer may extend the Approval Period for up to three (3) - thirty (30) day extension periods by providing written notice to Seller prior to the expiration of the Approval Period as it may be extended ("Extension Notice") and providing an additional Five Thousand Dollar (\$5,000.00) non-refundable Deposit to the Escrow Agent for each thirty (30) day extension.

JDM

ck

period. Upon the issuance of the first Extension Notice, the original Deposit shall become non-refundable except if Seller refuses to close. Should Buyer elect to terminate this Agreement during any extension of the Approval Period, Buyer may do so in the same manner as if terminated during the initial Approval Period, provided that all Deposits paid shall be released by the Escrow Agent to the Seller.

5. **CLOSING.** The closing shall take place at the offices of Bergen & Parkinson, 62 Portland Road, Kennebunk, Maine on that date that is fifteen (15) days after the expiration of the Approval Period, unless this Agreement is terminated by Buyer pursuant to Section 4 above. Buyer and Seller may mutually agree in advance and in writing, to close this transaction at another time and place.

6. **TRANSFER OF TITLE.** Seller shall convey the Premises to Buyer at the closing in fee simple with good and marketable title free and clear of liens and encumbrances, subject to the following:

a. Buyer shall have 45 days from the Effective Date to determine if title to the Premises is acceptable and notify Seller of the same after which all objections to the status of title to the Premises are deemed waived. In the event that Buyer determines that Seller would be unable to convey title to the Premises as aforesaid and Buyer properly notifies Seller, then Seller shall have a reasonable period of time after notice from Buyer, up to thirty (30) days prior to closing, in which to remedy any title defects. Seller agrees to use his best efforts at its reasonable expense to remedy any such title defects that render the title uninsurable. In the event that said defects cannot be corrected or remedied within said time period, then the Deposit shall be returned to Buyer and this Agreement shall terminate. Buyer may, however, elect to close notwithstanding such defects as may exist. Seller and Buyer understand and agree that any mortgages and liens on the Premises shall not be considered title defects provided that the same shall be discharged at or prior to the closing at Seller's expense. Seller may use purchase money proceeds for this purpose.

b. Insurable Title shall mean the ability to obtain an ALTA Form 6/17/06 Title Policy, an extended title insurance policy insuring marketable fee simple title by Warranty Deed.

c. Seller agrees that it will not further encumber or permit to be encumbered the Premises by any liens, mortgages, attachments, covenants, restrictions or easements after the date of this Agreement.

d. At the closing, Seller shall execute and deliver to Buyer, against payment of the purchase price, a Warranty Deed to the Premises, with full Warranty Covenants in accordance with the Short Form Deeds Act, 33 M.R.S.A. § 761 et seq., (the "Deed").

e. Seller further agrees to execute and deliver to Buyer at the closing such Affidavits and Certificates as are reasonably necessary for Buyer's acquisition and financing of the Premises, including without limitation a Certificate of Non-Foreign

Status (as required by Internal Revenue Service regulations), an affidavit regarding underground storage tanks (as required by Maine Laws), Affidavit Certifying compliance with the Improvident Transfer Act, and a title insurance "Seller's Affidavit" regarding mechanics liens and persons in possession.

7. RESERVED.

8. **POSSESSION OF THE PREMISES AND LEASES**. The Premises shall be delivered to the Buyer at the time of the closing free and clear of all tenancies or occupancies by any person or entity

9. **REPRESENTATIONS AND WARRANTIES OF SELLER**. Seller represents and warrants to Buyer that the following are true as of the date of this Agreement and will be true as of the closing:

a. Seller has received no written notice that the Premises are not in compliance with applicable laws, ordinances and regulations.

b. To the Seller's knowledge, the Premises are free of special wastes, underground storage tanks, urea-formaldehyde foam insulation, radon, asbestos containing materials, lead-based paint, waste oil, petroleum and any other hazardous, biomedical, radioactive or toxic, substances, materials or wastes. The terms used in the foregoing sentence shall include, without limitation, all substances, materials, etc., designated by such terms under any laws, ordinances or regulations, whether federal, state or local.

c. There are no outstanding pending or threatened liens, claims, rights of first refusal, or encumbrances against the Premises.

d. All outstanding bills and/or accounts payable concerning the Premises are either paid or will be paid prior to or at the time of closing.

e. There are no outstanding claims, losses or demands against Seller by any tenant or other person respecting Seller's ownership, use and/or occupancy of the Premises.

f. There are no leases on the Premises.

g. To Seller's knowledge the Premises, or portion thereof, are not correctly classified as Farm land Open Space or Tree Growth under applicable provisions of Title 36 M.R.S.A., nor are there any unpaid receptive or other penalties arising from the withdrawal or reclassification of the Premises.

h. To Seller's knowledge, there are no boundary disputes or encroachments affecting the Premises.

PH

CL

All representations and warranties that are to the "Seller's knowledge", shall mean the knowledge of Christopher Ross.

10. **DEFAULT AND REMEDIES.** In the event that Seller fails to close hereunder for a reason other than default of Buyer, Buyer shall be entitled to either (A) terminate this Agreement by written notice to Seller and Buyer shall be entitled to the return of the Deposit; or (B) Buyer may pursue a claim for specific performance, options (A) and (B) being Buyer's sole remedies hereunder. In the event that Buyer defaults in the performance of its obligations hereunder, Seller shall be entitled to terminate this Agreement by written notice to Buyer and Seller shall be entitled to receive the Deposit as full and complete liquidated damages in lieu of any other legal or equitable remedy, and this Agreement will terminate and neither party will be under any further obligation hereunder.

11. RESERVED

12. **BROKERAGE.** Buyer and Seller acknowledge that no brokers have been involved with the transaction contemplated herein other than Connie Neville of Sperry Van Ness, and Buyer and Seller shall indemnify each other regarding brokerage commissions due to any other person or entity. Seller shall pay the Brokerage fee pursuant to a separate agreement negotiated between Seller and Broker.

13. **ADJUSTMENTS, PRORATIONS AND CLOSING COSTS.**

a. The Maine real estate transfer tax shall be paid by Seller and Buyer in accordance with 36 M.R.S.A. § 4641-A.

b. The recording fee for the deed of conveyance will be paid by Buyer.

c. A portion of the purchase price shall be withheld at the closing by Buyer if required by 36 M.R.S.A. § 5250-A.

14. **CONFIDENTIALITY.** Seller and Buyer covenant and agree to keep confidential the parties to this agreement and the terms of this agreement.

15. **MISCELLANEOUS.** The parties further agree as follows:

a. **Binding Agreement/Assignment.** This Agreement shall inure to the benefit of and shall be binding upon the parties hereto and their respective heirs, legal representatives, successors, and assigns. Buyer reserves the right to assign this Agreement to an entity in which Howard Hall holds a controlling interest, otherwise this Agreement is not assignable by Buyer without the consent of the Seller.

b. **Amendment.** This Agreement shall not be changed in any respect except by written instrument signed by the parties hereto.

(Handwritten initials)

(Handwritten initials)

c. Governing Law/Jurisdiction. This Agreement and all rights and obligations hereunder, including matters of construction, validity, and performance, shall be governed by the laws of the State of Maine and parties recognize Maine as the sole forum having jurisdiction.

d. Severability. If any term, condition, or provision of this Agreement or the application thereof to any person or circumstance shall, to any extent, be held invalid or unenforceable according to the law, then the remaining terms, conditions, and provisions of this Agreement, or the application of any such invalid or unenforceable terms, condition or provision to persons or circumstances other than those to which it is held invalid or unenforceable shall not be affected thereby, and each term, condition, and provision of this Agreement shall be valid and enforced to the fullest extent permitted by law.

e. Headings. The descriptive headings of the sections of this Agreement have been inserted for the convenience and reference only and shall not control or affect the meaning or construction of any of the contents hereof.

f. Integration. This Agreement may be executed in multiple originals and embodies the entire understanding of the parties. All prior discussions and representations are merged herein.

g. Notice. Any demand or notice required or permitted hereunder, shall be effective if sent by email and immediately followed by either: (i) certified mail, return receipt requested and postage prepaid, or (ii) delivered to a private express company (i.e. FedEx, UPS) addressed to the addressee: (A) at the address shown below, or (B) if such party has provided the other in writing with a change of address, at the last address so provided. Any notice or demand mailed as provided in this paragraph shall be deemed given and received on the earlier of:

- (i) the date received, or
- (ii) the date of delivery, refusal or non-delivery as indicated on the return receipt, if sent by mail or private express as provided above;

All notices required to be given, or which may be given hereunder, shall be in writing and if mailed, shall be sent by mail to the party to be notified as follows:

pt *et*

<p>Seller: Synergy Storage Structures, LLC c/o Christopher Ross, Manager 403 Daniel Webster Highway, Suite 5 Merrimack, NH 03054 e-mail: chris@svnergystorage.com</p>
<p>Seller: With copy to:</p> <p>Address: Connie Neville Sperry Van Ness P.O. Box 193 Lexington, MA 02420 E-Mail: nevillec@svn.com</p> <p>Seller: With copy to:</p> <p>Address: Jason M. Craven 740 Chestnut Street Manchester, NH 03104 Email: jcraven@bclawnh.com</p>
<p>Buyer: CAMALL, LLC P.O. Box 339 Wells, ME 04090</p>
<p>Buyer: With copy to:</p> <p>Address: Wayne T. Adams, Esq. 62 Portland Road, Suite 25 Kennebunk, ME 04043 E-mail: wadams@bergenparkinson.com</p>

or to such other addresses as one party may from time to time hereafter designate by like notice to the other.

h. Gender and Number. All words denoting gender or number shall be construed to include any other gender or number as the context and facts require.

i. Survival/Merger. All representations of Seller survive closing unless extinguished by their terms at closing. Acceptance of the Deed by Buyer merges all provisions of this Agreement and satisfies all obligations and representations of Seller pursuant hereto.

j. Time. Time is of the essence in this Agreement.

k. Professional Advice. Each party hereby acknowledges that they have read and understand this Agreement and have had an opportunity to obtain professional advice regarding the same.

(Handwritten initials)

(Handwritten initials)

l. Recording. Absent written agreement of the Seller, Buyer shall not record this Agreement or any memorandum hereof at the York County Registry of Deeds.

m. Authority. Seller warrants and represents that he has have full authority to execute this Agreement and perform all obligations contained herein. All such actions have been properly authorized by any required votes and the party signing on behalf of Seller is duly appointed to so act in said capacity to make this Agreement binding upon Seller.

n. Signatures. Facsimile or Electronic Signatures shall be deemed to be and treated as originals.

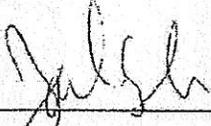
o. Seller warrants and represents that he has fully complied with the Improvident Transfer Act and that this Agreement is enforceable pursuant to the provisions thereof.

p. Mediation/Arbitration. In the event of a dispute between the parties related to this Agreement (whether before or after closing), then the parties agree to participate in a minimum of four hours of Mediation. Said Mediation to be scheduled as soon as is practical. In the event that said dispute is not resolved by Mediation, then the parties agree to submit the dispute to binding Arbitration. The parties agree to split the cost of Mediation and Arbitration on a 50-50% basis.

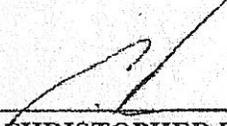
16. **AGREEMENT OF ESCROW AGENT**. In the event of any dispute regarding the disposition of the escrowed funds held by Escrow Agent, Escrow Agent shall have the right to deliver said funds to a court of competent jurisdiction and commence an interpleader action to determine the proper disposition of said funds. Seller and Buyer agree to reimburse Escrow Agent for all expenses incurred by Escrow Agent in the interpleader action, including, without limitation, attorney's fees. Seller and Buyer further agree to hold Escrow Agent harmless for any action taken in good faith pursuant to the terms of this Agreement.

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

**SYNERGY STORAGE STRUCTURES,
LLC**

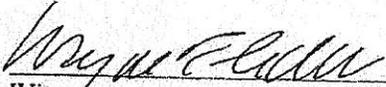


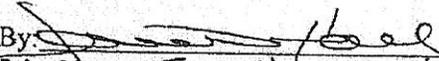
Witness



CHRISTOPHER ROSS, Manager
SS / FEIN# 46-2400362

CAMALL, LLC


Witness

By: 
Print Name: Jonathan Hall Manager
SS / FEIN# 47-2813217



ATTAR
ENGINEERING, INC

CIVIL STRUCTURAL MARINE
1284 STATE ROAD, ELIOT ME 03903

KITTERY STORAGE SOLUTIONS
91 ROUTE 236, KITTERY, MAINE
USGS 7.5' SERIES - PORTSMOUTH QUAD.
APPROX. SCALE 1" = 2,000'
PROJECT NO. C022-16

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Dept. Health & Human Services
Div of Environmental Health, 11 SHS
(207) 287-5672 Fax: (207) 287-4172

PROPERTY LOCATION		>> CAUTION: LPI APPROVAL REQUIRED <<			
City, Town, or Plantation	KITTERY	Town/City _____	Permit # _____		
Street or Road	91 Rte 236	Date Permit Issued ___/___/___	Fee: \$ _____ Double Fee Charged []		
Subdivision, Lot #	PETER PAUL LOT ONE	Local Plumbing Inspector Signature _____ L.P.I. # _____			
OWNER/APPLICANT INFORMATION		The Subsurface Wastewater Disposal System shall not be installed until a Permit is issued by the Local Plumbing Inspector. The Permit shall authorize the owner or installer to install the disposal system in accordance with this application and the Maine Subsurface Wastewater Disposal Rules.			
Name (last, first, MI)	ARENHALL CORP.			Municipal Tax Map # <u>28</u> Lot # <u>4</u>	
Mailing Address of Owner/Applicant	P.O. Box 158 WELLS, ME 04090				
Daytime Tel. #					
OWNER OR APPLICANT STATEMENT		CAUTION: INSPECTION REQUIRED			
I state and acknowledge that the information submitted is correct to the best of my knowledge and understand that any falsification is reason for the Department and/or Local Plumbing Inspector to deny a Permit.		I have inspected the installation authorized above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application.			
Signature of Owner or Applicant _____ Date _____		Local Plumbing Inspector Signature _____ (1st) date approved _____			
Signature of Owner or Applicant _____ Date _____		Local Plumbing Inspector Signature _____ (2nd) date approved _____			

PERMIT INFORMATION		
TYPE OF APPLICATION <input checked="" type="checkbox"/> 1. First Time System <input type="checkbox"/> 2. Replacement System Type replaced: _____ Year installed: _____ <input type="checkbox"/> 3. Expanded System <input type="checkbox"/> a. <25% Expansion <input type="checkbox"/> b. >25% Expansion <input type="checkbox"/> 4. Experimental System <input type="checkbox"/> 5. Seasonal Conversion	THIS APPLICATION REQUIRES <input checked="" type="checkbox"/> 1. No Rule Variance <input type="checkbox"/> 2. First Time System Variance <input type="checkbox"/> a. Local Plumbing Inspector Approval <input type="checkbox"/> b. State & Local Plumbing Inspector Approval <input type="checkbox"/> 3. Replacement System Variance <input type="checkbox"/> a. Local Plumbing Inspector Approval <input type="checkbox"/> b. State & Local Plumbing Inspector Approval <input type="checkbox"/> 4. Minimum Lot Size Variance <input type="checkbox"/> 5. Seasonal Conversion Permit	DISPOSAL SYSTEM COMPONENTS <input checked="" type="checkbox"/> 1. Complete Non-engineered System <input type="checkbox"/> 2. Primitive System (graywater & alt. toilet) <input type="checkbox"/> 3. Alternative Toilet, specify: _____ <input type="checkbox"/> 4. Non-engineered Treatment Tank (only) <input type="checkbox"/> 5. Holding Tank, _____ gallons <input type="checkbox"/> 6. Non-engineered Disposal Field (only) <input type="checkbox"/> 7. Separated Laundry System <input type="checkbox"/> 8. Complete Engineered System (2000 gpd or more) <input type="checkbox"/> 9. Engineered Treatment Tank (only) <input type="checkbox"/> 10. Engineered Disposal Field (only) <input type="checkbox"/> 11. Pre-treatment, specify: _____ <input type="checkbox"/> 12. Miscellaneous Components
SIZE OF PROPERTY 2.8 <input type="checkbox"/> SQ. FT. <input checked="" type="checkbox"/> ACRES	DISPOSAL SYSTEM TO SERVE <input type="checkbox"/> 1. Single Family Dwelling Unit, No. of Bedrooms: _____ <input type="checkbox"/> 2. Multiple Family Dwelling, No. of Units: _____ <input checked="" type="checkbox"/> 3. Other: <u>OFFICE FOR STORAGE FACILITY</u> (specify) Current Use <input type="checkbox"/> Seasonal <input type="checkbox"/> Year Round <input checked="" type="checkbox"/> Undeveloped	TYPE OF WATER SUPPLY <input type="checkbox"/> 1. Drilled Well <input type="checkbox"/> 2. Dug Well <input type="checkbox"/> 3. Private <input checked="" type="checkbox"/> 4. Public <input type="checkbox"/> 5. Other
SHORELAND ZONING <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		

DESIGN DETAILS (SYSTEM LAYOUT SHOWN ON PAGE 3)			
TREATMENT TANK <input checked="" type="checkbox"/> 1. Concrete <input checked="" type="checkbox"/> a. Regular <input type="checkbox"/> b. Low Profile <input type="checkbox"/> 2. Plastic <input type="checkbox"/> 3. Other: _____ CAPACITY: <u>750</u> GAL.	DISPOSAL FIELD TYPE & SIZE <input checked="" type="checkbox"/> 1. Stone Bed <input type="checkbox"/> 2. Stone Trench <input type="checkbox"/> 3. Proprietary Device <input type="checkbox"/> a. cluster array <input type="checkbox"/> c. Linear <input type="checkbox"/> b. regular load <input type="checkbox"/> d. H-20 load <input type="checkbox"/> 4. Other: <u>10' x 20' =</u> SIZE: <u>200</u> <input checked="" type="checkbox"/> sq. ft. <input type="checkbox"/> lin. ft.	GARBAGE DISPOSAL UNIT <input checked="" type="checkbox"/> 1. No <input type="checkbox"/> 2. Yes <input type="checkbox"/> 3. Maybe If Yes or Maybe, specify one below: <input type="checkbox"/> a. multi-compartment tank <input type="checkbox"/> b. ___ tanks in series <input type="checkbox"/> c. increase in tank capacity <input type="checkbox"/> d. Filter on Tank Outlet	DESIGN FLOW <u>45</u> gallons per day BASED ON: <input type="checkbox"/> 1. Table 4A (dwelling unit(s)) <input checked="" type="checkbox"/> 2. Table 4C (other facilities) SHOW CALCULATIONS for other facilities <u>3 EMPLOYEES @ 15 GPD</u> <input type="checkbox"/> 3. Section 4G (meter readings) ATTACH WATER METER DATA
SOIL DATA & DESIGN CLASS PROFILE CONDITION <u>3 / C</u> a) Observation Hole # <u>B</u> Depth <u>15</u> " of Most Limiting Soil Factor	DISPOSAL FIELD SIZING <input type="checkbox"/> 1. Medium---2.6 sq. ft. / gpd <input checked="" type="checkbox"/> 2. Medium---Large 3.3 sq. ft. / gpd <input type="checkbox"/> 3. Large---4.1 sq. ft. / gpd <input type="checkbox"/> 4. Extra Large---5.0 sq. ft. / gpd	EFFLUENT/EJECTOR PUMP <input type="checkbox"/> 1. Not Required <input type="checkbox"/> 2. May Be Required <input checked="" type="checkbox"/> 3. Required Specify only for engineered systems: DOSE: _____ gallons	LATITUDE AND LONGITUDE at center of disposal area Lat. <u>43</u> d <u>7</u> m <u>3.7</u> s Lon. <u>73</u> d <u>45</u> m <u>20.6</u> s if g.p.s, state margin of error:

SITE EVALUATOR STATEMENT	
I certify that on <u>27 MAY 16</u> (date) I completed a site evaluation on this property and state that the data reported are accurate and that the proposed system is in compliance with the State of Maine Subsurface Wastewater Disposal Rules (10-144A CMR 241).	
Site Evaluator Signature <u>Michael Cuomo</u>	SE # <u>211</u> Date <u>31 May 16</u>
Michael Cuomo Site Evaluator Name Printed	(207) 363-4532 Telephone Number
	mcuomosoil@gmail.com E-mail Address

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Human Services
Division of Health Engineering
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation

Street, Road, Subdivision

Owner's Name

KITTSELY

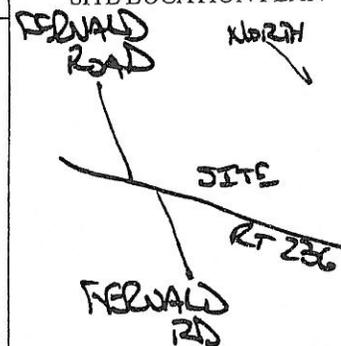
91 ROUTE 236

AIDENWALL CORP.

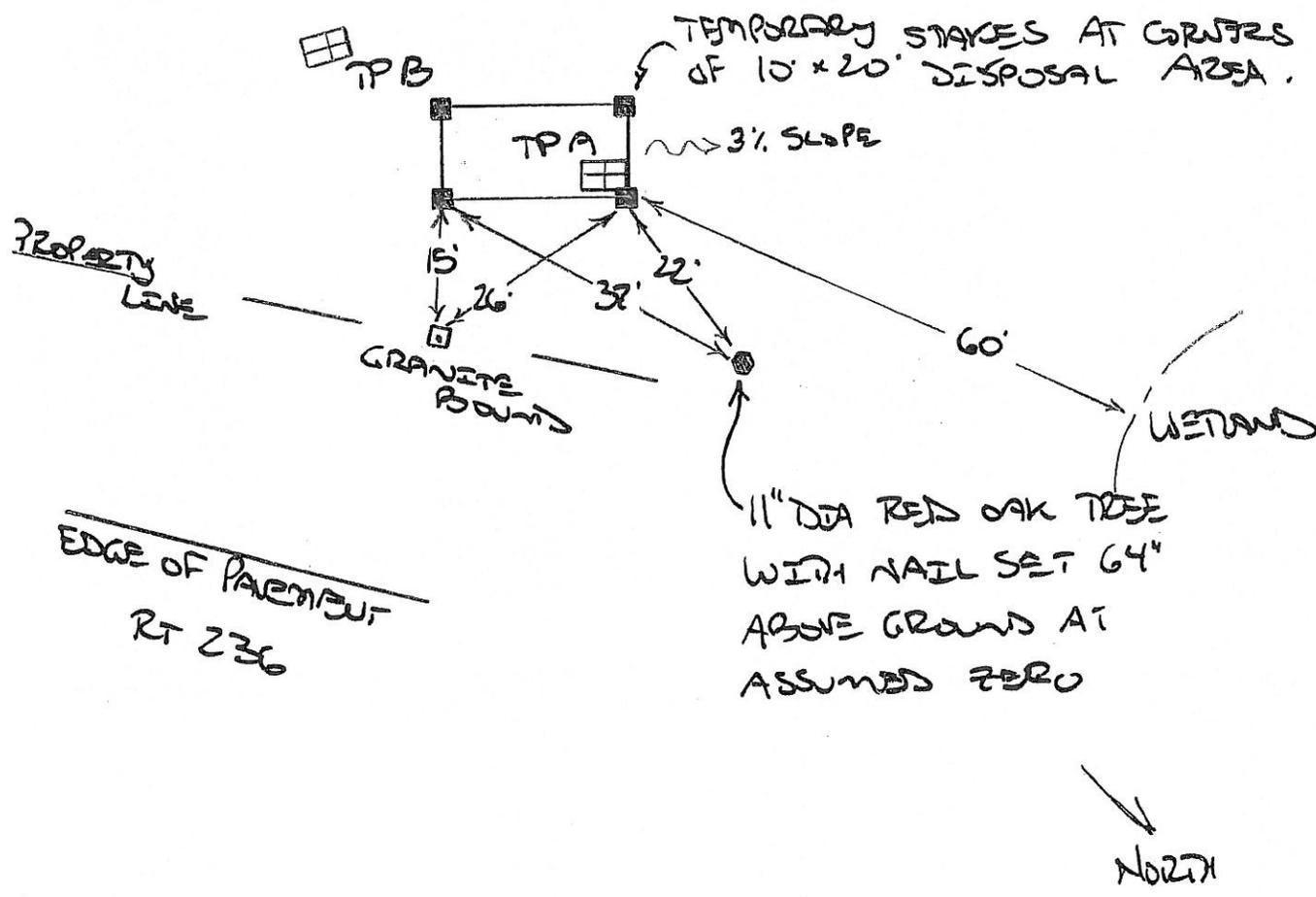
SITE PLAN

Scale 1" = 20 ft.

SITE LOCATION PLAN



PROPOSED STORAGE BLDG.
(PROP'D. PAVEMENT)



Michael Curran

Site Evaluator Signature

211

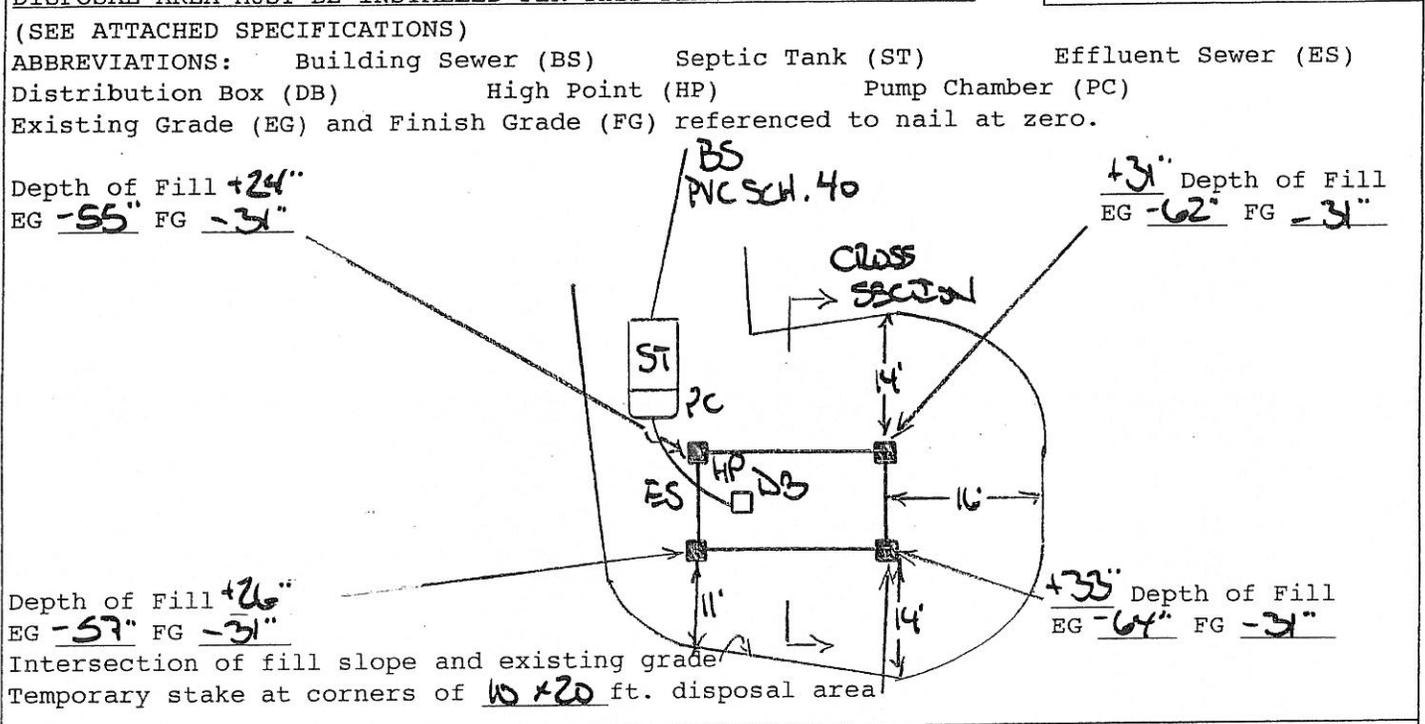
SE #

31 MAY 16

Date

Town, City, Plantation KITTERY	Street, Road, Subdivision 91 ROUTE 236	Owner's Name AIRWALL CORP.
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SUBSURFACE WASTEWATER DISPOSAL PLAN	SCALE: 1" = <u>20</u> FT.
--------------------------------------------	---------------------------



FILL REQUIREMENTS	CONSTRUCTION ELEVATIONS	ELEVATION REFERENCE POINT
Depth of Fill (Upslope) <u>+24"</u>	Finished Grade Elevation <u>-31"</u>	Location & Description <u>SEE PAGE 2</u>
Depth of Fill (Downslope) <u>+33"</u>	Top of Distribution Pipe <u>-44"</u>	Reference Elevation: <u>NAACL = 3500</u>
	Bottom of Disposal Area <u>-55"</u>	

DISPOSAL AREA CROSS SECTION	Scale <u>N/A</u>
	Horizontal 1" = <u> </u> ft.
	Vertical 1" = <u> </u> ft.

- * Where ST access cover is more than 6" below grade, a watertight riser at least 18" dia. must be provided to within 6" of finish grade.
- * PC requires watertight riser to grade at least 24" dia.
- * ST and PC locations may be moved so long as they are at least 10' from the foundation, 10' from the water line, 10' from the property line, ~~and 50ft off well~~
- * ES shall drain back to PC after each dose or be frost protected with 2" expanded rigid polystyrene insulation.
- * DBox must be frost protected with 2" HD expanded rigid polystyrene insulation. DBox must have baffle or elbow at inlet. DBox may be at either end of disposal area.
- * **Do not work soil when wet**

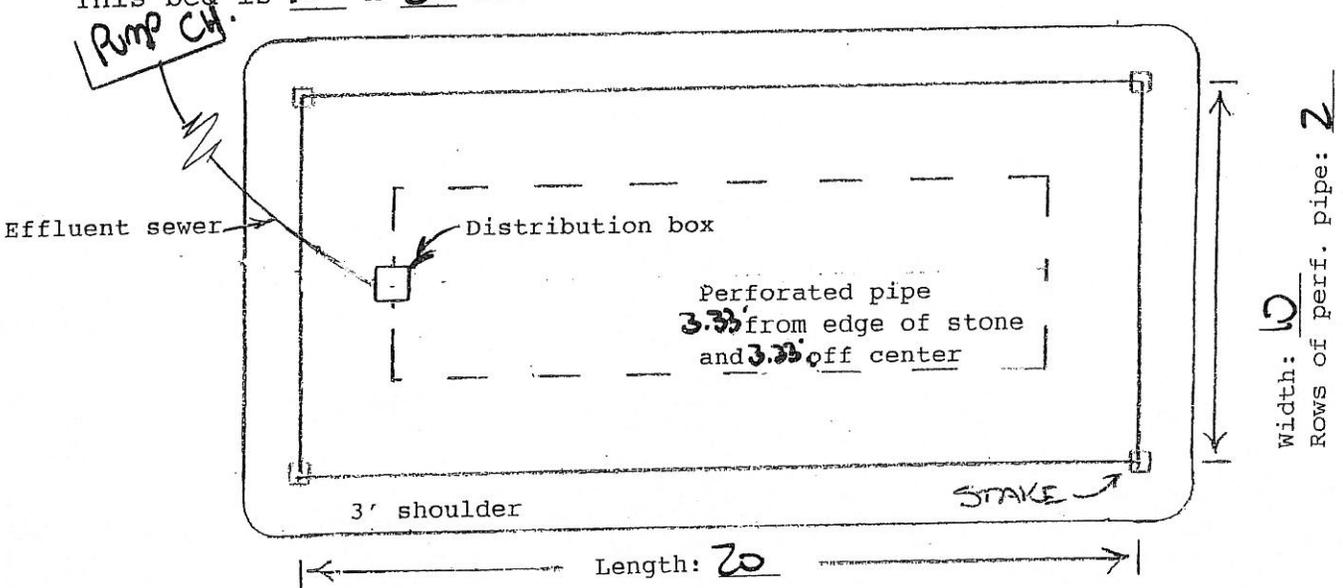
Town: KITTERY

Street: 91 RT 236

Owner: ARENHALL CORP.

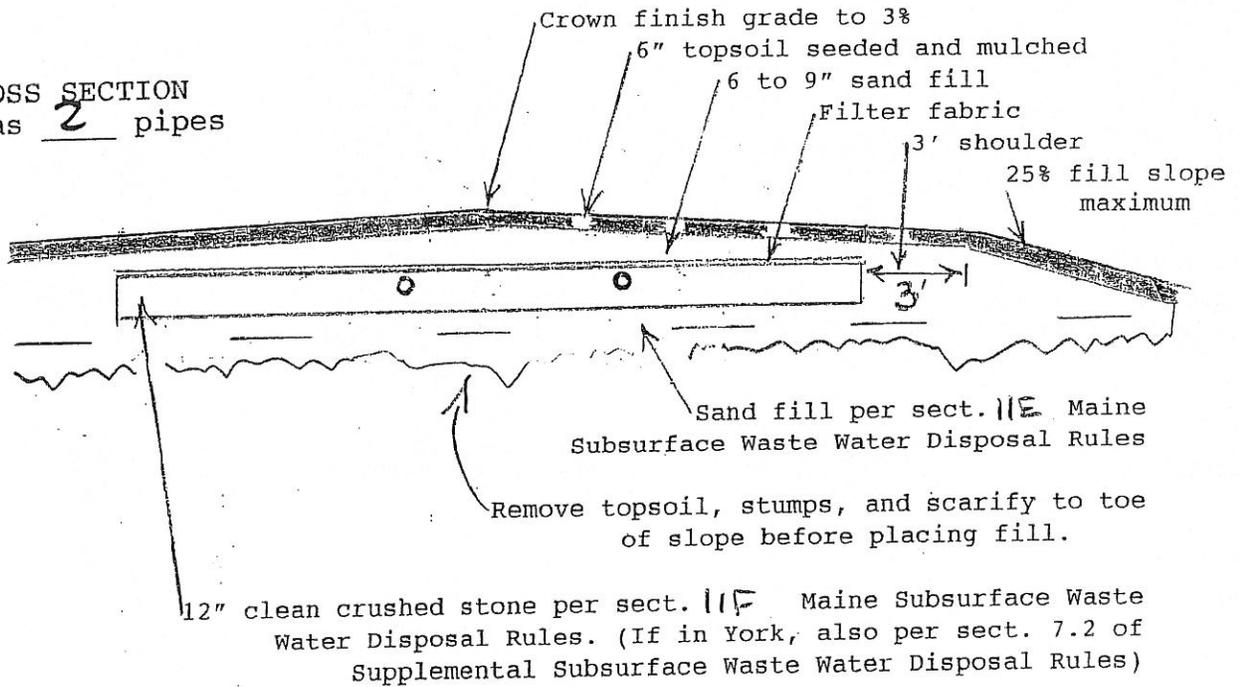
TYPICAL PLAN VIEW

This bed is 10 x 20 feet



TYPICAL CROSS SECTION

This bed has 2 pipes



Michael Adams

SE# 211

Date: 31 May 16

Page 4 of 5

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Dept. of Health & Human Services
 Division of Environmental Health, STS 11
 (207) 287-5689 FAX (207) 287-3165

Town, City, Plantation

KITTERY

Street, Road, Subdivision

91 ROSE 236

Owner or Applicant Name

ARJUNAL CORP.

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole A Test Pit Boring
1 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0	FINE		DARK BROWN	
10	SANDY LOAM	FRAGILE	DARK YELLOW BROWN	NO
20				
30	SILT	FIRM	OLIVE	YES
40	LOAM		BROWN	
50				

Soil Classification <u>7</u> <u>C</u> Profile Condition	Slope <u>5</u> %	Limiting Factor <u>17</u> "	<input checked="" type="checkbox"/> Ground Water <input checked="" type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth
---------------------------------------------------------------	---------------------	--------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Observation Hole B Test Pit Boring
3 " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0	FINE		DARK BROWN	
10	SANDY LOAM	FRAGILE	YELLOW BROWN	NO
20	SANDY			
30	FINE	FIRM	OLIVE	YES
40	SANDY		BROWN	
50	LOAM			

Soil Classification <u>3</u> <u>C</u> Profile Condition	Slope <u>3</u> %	Limiting Factor <u>15</u> "	<input checked="" type="checkbox"/> Ground Water <input checked="" type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth
---------------------------------------------------------------	---------------------	--------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Michael C. [Signature]
 Site Evaluator Signature

211
 SE #

31 May 16
 Date



EATON TRAFFIC ENGINEERING
67 Winter Street Suite1•Topsham•Maine•04086
Tel 207.725.9805 Cell 207.841.4200

To: Lew Chamberlain, PE, Attar Engineering

Fm: Bill Eaton, PE, Eaton Traffic Engineering

Re: Trip Generation for proposed Climate Controlled Storage Facility on Route 236 in Kittery Maine (site of recently approved Aroma Joe's project).

Dt: June 1, 2016

Per your request I have evaluated the likely trip generation associated with a proposed climate controlled, 3 story storage facility to be located on Route 236 in Kittery and using the same access drive serving the recently approved Aroma Joe's (Rockwell Homes developer). As part of the Aroma Joe's application for an MDOT Traffic Movement Permit (TMP) and Town planning board approval, I submitted an estimate of trip generation for this proposed facility because it would eventually be implemented and would use the same access drive on Route 236 (thus the capacity/level of service analysis would reflect this additional traffic). My analysis of the estimated trip generation associated with the facility was as follows (excerpted from the Aroma Joe's application to MDOT):

In addition to the proposed Aroma Joe's kiosk, there will be another land use on the site utilizing the same access driveway. This will be an 81,000 square foot high end storage facility. This facility will have three floors and contain 750 storage units. Typically traffic generation would be estimated using data from the ITE publication Trip Generation, for land use code 151, "Mini-Warehouse"; however, this proposed facility does not fit the description of a typical storage unit facility, which is generally on a single floor with generally only a light for amenities. The proposed facility's storage units will average only about 100 square feet, including corridors, and are primarily intended for high value items. Accordingly, the manager of a similar facility in Merrimac NH provided traffic data for that facility to help estimate trip generation. Generally the facility is expected to generate 1 trip daily for each 50 units (15 trips per day for the proposed facility) plus 1 trip per 250 units for miscellaneous inquiries, deliveries, etc, (3 trips per day), yielding 18 daily trips total. It is assumed that the "trips" referred to here are the same as "visits", i.e. each visit involves an entering trip and an exiting trip, and are essentially, in traffic engineering terms, 2 trips. Accordingly, the average daily one-way trip total would be 36 trips. During the AM peak hour these are likely to be very low – perhaps 5 percent of the daily total. For this study it will be assumed that there will be 2 AM peak hour trips, one entering and one exiting.

You have indicated that the current proposal is for a 3 story building with 75,560 square feet of floor area (gross) and perhaps up to 600 storage units. If one uses the data in the publication Trip Generation (Institute of Transportation Engineers) for land use code 151 “Mini-Warehouse”, which is described as a “self-storage facility physically separated from other units with access generally provided via an overhead door”, then the estimated AM and PM peak hour traffic volumes for 600 units would be 12 trips for either time period – 8 entering the site and 4 leaving in the AM and 4 entering and 8 exiting in the PM. For either trip generation estimate, these are very low levels of traffic, and off-site improvements were required for the Aroma Joe’s project (construction of an auxiliary right turn lane on Route 236 southbound at the driveway access), which generates a more significant level of traffic (130+ trips in the AM peak hour).

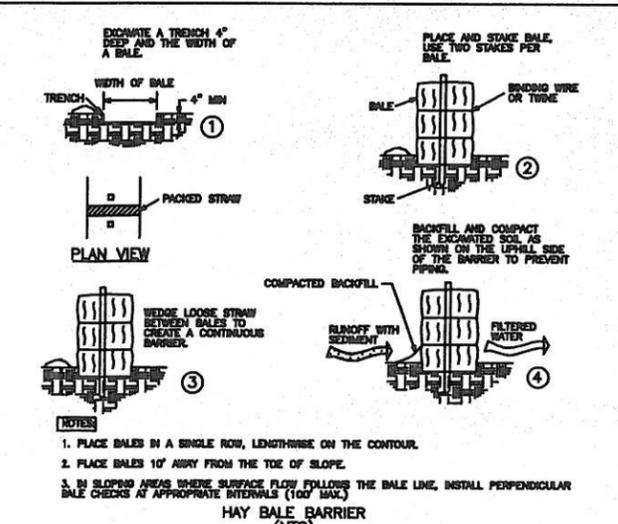
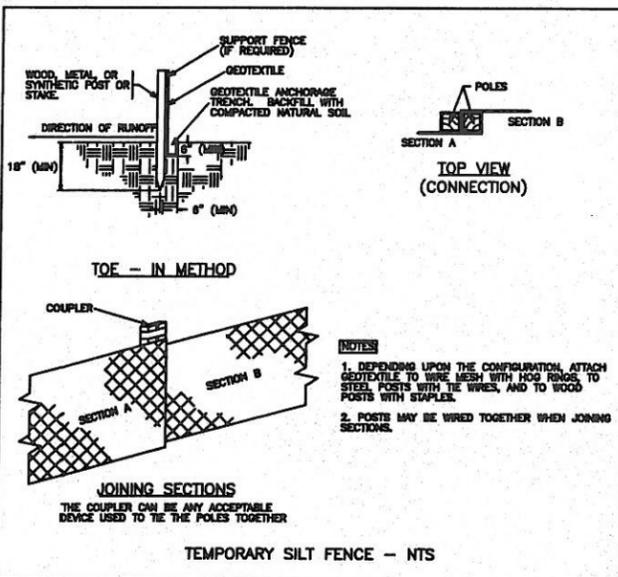
I feel that my original trip generation estimate for the MDOT TMP is appropriate (and assume that MDOT reviewers concurred as it was accepted); however, you should present both estimates to the Town for their consideration.

With regard to parking demand, the publication Parking Generation (Institute of Transportation Engineers), the average demand for Mini-Warehouses is reported as 0.16 spaces per 1000 square feet. For the 75, 560 square foot facility proposed, this would indicate a demand for 12 parking spaces.

I trust that the above addresses your needs in this matter; should you need any additional assistance please contact me.

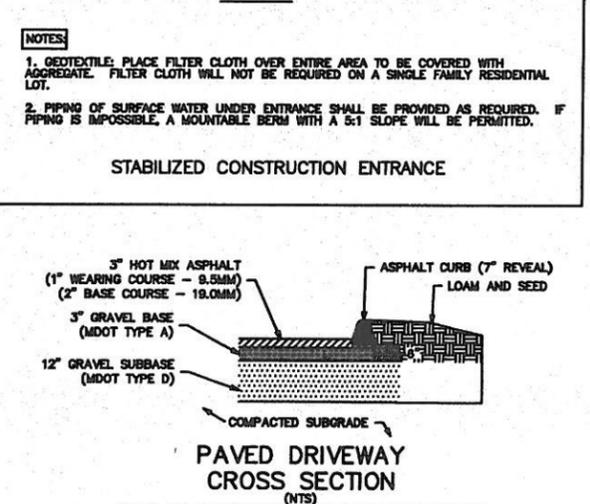
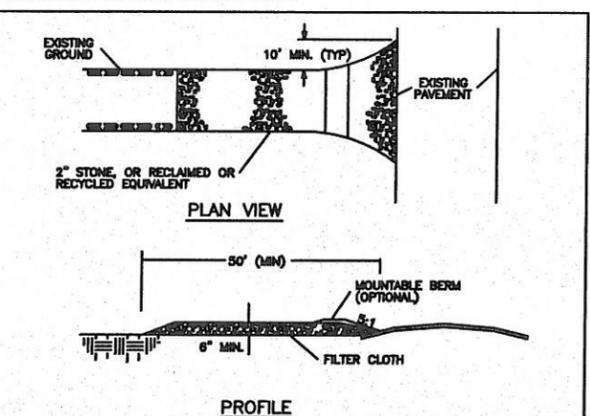
EROSION & SEDIMENTATION CONTROL NOTES

- SILTATION FENCE OR HAY BALE BARRIERS WILL BE INSTALLED DOWN-SLOPE OF ALL STRIPPING OR CONSTRUCTION OPERATIONS. A DOUBLE SILT FENCE BARRIER SHALL BE INSTALLED DOWN-SLOPE OF ANY SOIL MATERIAL STOCKPILES. SILT FENCES SHALL BE INSPECTED AFTER EACH RAIN EVENT AND DAILY DURING PROLONGED RAIN. SILT AND SOIL PARTICLES ACCUMULATING BEHIND THE FENCE SHALL BE REMOVED AFTER EACH SIGNIFICANT RAIN EVENT AND IN NO INSTANCE SHOULD ACCUMULATION EXCEED 1/2 THE HEIGHT OF THE FENCE. TORN OR DAMAGED AREAS SHALL BE REPAIRED.
- TEMPORARY AND PERMANENT VEGETATION AND MULCHING IS AN INTEGRAL COMPONENT OF THE EROSION AND SEDIMENTATION CONTROL PLAN. ALL AREAS SHALL BE INSPECTED AND MAINTAINED UNTIL THE DESIRED VEGETATIVE COVER IS ESTABLISHED. THESE CONTROL MEASURES ARE ESSENTIAL TO EROSION PREVENTION AND ALSO REDUCE COSTLY REWORK OF GRADED AND SHAPED AREAS.
- SEEDING, FERTILIZER AND LIME RATES AND TIME OF APPLICATION WILL BE DEPENDENT ON SOIL REQUIREMENTS. TEMPORARY VEGETATION SHALL BE MAINTAINED IN THESE AREAS UNTIL PERMANENT SEEDING IS APPLIED. ADDITIONALLY, EROSION AND SEDIMENTATION MEASURES SHALL BE MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED.
- ALL LAWN AREA, OUTER POND SIDE SLOPES AND SWALES SHALL BE PERMANENTLY SEEDDED WITH THE FOLLOWING MIXTURE: 20 LB/ACRE CREEPING RED FESCUE, 2 LB/ACRE REDTOP AND 20 LB/ACRE TALL FESCUE FOR A TOTAL OF 42 LB/ACRE. FERTILIZER AND LIME RATES SHALL BE DEPENDENT ON SOIL TESTING. IN THE ABSENCE OF SOIL TESTS, FERTILIZE WITH 10-20-20 (N-P205-K20) AT 800 LB/ACRE AND LIME AT 3 TONS/ACRE. MULCH WITH HAY AT 70-90 LB/1000 S.F. 4" OF LOAM SHALL BE APPLIED PRIOR TO SEEDING.
- POND BOTTOMS AND INNER POND SIDESLOPES SHALL BE PERMANENTLY SEEDDED WITH THE FOLLOWING MIXTURE: 20 LB/ACRE CREEPING RED FESCUE, 6 LB/ACRE BIRDSFOOT TREFOIL AND 20 LB/ACRE TALL FESCUE FOR A TOTAL OF 46 LB/ACRE. SEE THE ABOVE NOTE FOR FERTILIZER, LIME AND MULCHING RATES.
- TEMPORARY VEGETATION OF ALL DISTURBED AREAS, MATERIAL STOCKPILES AND OTHER SUCH AREAS SHALL BE ESTABLISHED BY SEEDING WITH EITHER WINTER RYE AT A RATE OF 112 LB/ACRE OR ANNUAL RYEGRASS AT A RATE OF 40 LB/ACRE. WINTER RYE SHALL BE USED FOR FALL SEEDING AND ANNUAL RYEGRASS FOR SHORT DURATION SEEDING. SEEDING SHALL BE ACCOMPLISHED BEFORE OCTOBER 1.
- TEMPORARY SEEDING OF DISTURBED AREAS SHALL BE ACCOMPLISHED BEFORE OCTOBER 1. PERMANENT SEEDING SHALL BE ACCOMPLISHED BEFORE SEPTEMBER 15.
- ALL SEEDED AREAS SHALL BE MULCHED WITH HAY AT A RATE OF 2 BALES (70-90 LB) PER 1000 S.F. OF SEEDED AREA.
- SLOPES 2:1 OR STEEPER SHALL BE TREATED WITH POLYJUTE OPEN WEAVE GEOTEXTILE (OR EQUIVALENT) AFTER SEEDING. JUTE MATS SHALL BE ANCHORED PER MANUFACTURER'S SPECIFICATIONS.
- EXCESSIVE DUST CAUSED BY CONSTRUCTION OPERATIONS SHALL BE CONTROLLED BY APPLICATION OF WATER OR CALCIUM CHLORIDE.
- THE CONTRACTOR MAY OPT TO USE EROSION CONTROL MIX BERM AS A SEDIMENT BARRIER IN LIEU OF SILTATION FENCE OR HAY BALE BARRIERS WITH APPROVAL FROM THE INSPECTING ENGINEER.
- MINIMIZE DISTURBED AREAS AND PROTECT NATURAL DOWNGRADIENT BUFFER AREAS TO THE EXTENT PRACTICABLE. CONTROL STORMWATER VOLUME AND VELOCITY WITHIN THE SITE TO MINIMIZE SOIL EROSION. MINIMIZE THE DISTURBANCE OF STEEP SLOPES. CONTROL STORMWATER DISCHARGES, INCLUDING BOTH PEAK FLOW RATES AND VOLUME, TO MINIMIZE EROSION AT OUTLETS. THE DISCHARGE MAY NOT RESULT IN EROSION OF ANY OPEN DRAINAGE CHANNELS, SWALES, STREAM CHANNELS OR STREAM BANKS, UPLAND, OR COASTAL OR FRESHWATER WETLANDS OFF THE PROJECT SITE.



EROSION & SED. CONTROL NOTES (CONT.)

- WHENEVER PRACTICABLE, NO DISTURBANCE ACTIVITIES SHOULD TAKE PLACE WITHIN 50 FEET OF ANY PROTECTED NATURAL RESOURCE. IF DISTURBANCE ACTIVITIES TAKE PLACE BETWEEN 30 FEET AND 50 FEET OF ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TOWARD THE PROTECTED NATURAL RESOURCE, PERMETER EROSION CONTROLS MUST BE DOUBLED. IF DISTURBANCE ACTIVITIES TAKE PLACE LESS THAN 30 FEET FROM ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES TOWARD THE DISTURBED AREAS TOWARD THE PROTECTED NATURAL RESOURCE, PERMETER EROSION CONTROLS MUST BE DOUBLED AND DISTURBED AREAS MUST BE TEMPORARILY OR PERMANENTLY STABILIZED WITHIN 7 DAYS.
- PRIOR TO CONSTRUCTION, PROPERLY INSTALL SEDIMENT BARRIERS AT THE DOWNGRADIENT EDGE OF ANY AREA TO BE DISTURBED AND ADJACENT TO ANY DRAINAGE CHANNELS WITHIN THE DISTURBED AREA. SEDIMENT BARRIERS SHOULD BE INSTALLED DOWNGRADIENT OF SOIL OR SEDIMENT STOCKPILES AND STORMWATER PREVENTED FROM RUNNING ONTO THE STOCKPILE. MAINTAIN THE SEDIMENT BARRIERS BY REMOVING ACCUMULATED SEDIMENT, OR REMOVING AND REPLACING THE BARRIER, UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED. WHERE A DISCHARGE TO A STORM DRAIN INLET OCCURS, IF THE STORM DRAIN CARRIES WATER DIRECTLY TO A SURFACE WATER AND YOU HAVE AUTHORITY TO ACCESS THE STORM DRAIN INLET, YOU MUST INSTALL AND MAINTAIN PROTECTION MEASURES THAT REMOVE SEDIMENT FROM THE DISCHARGE.
- PRIOR TO CONSTRUCTION, PROPERLY INSTALL A STABILIZED CONSTRUCTION ENTRANCE (SCE) AT ALL POINTS OF EGRESS FROM THE SITE. THE SCE IS A STABILIZED PAD OF AGGREGATE, UNDERLAIN BY A GEOTEXTILE FILTER FABRIC, USED TO PREVENT TRAFFIC FROM TRACKING MATERIAL AWAY FROM THE SITE ONTO PUBLIC ROW'S. MAINTAIN THE SCE UNTIL ALL DISTURBED AREAS ARE STABILIZED.
- WITHIN 7 DAYS OF THE CESSATION OF CONSTRUCTION ACTIVITIES IN AN AREA THAT WILL NOT BE WORKED FOR MORE THAN 7 DAYS, STABILIZE ANY EXPOSED SOIL WITH MULCH, OR OTHER NON-ERODIBLE COVER. STABILIZE AREAS WITHIN 75 FEET OF A WETLAND OR WATERBODY WITHIN 48 HOURS OF THE INITIAL DISTURBANCE OF THE SOIL OR PRIOR TO ANY STORM EVENT, WHICHEVER COMES FIRST.
- REMOVE ANY TEMPORARY CONTROL MEASURES, SUCH AS SILTATION FENCE, WITHIN 30 DAYS AFTER PERMANENT STABILIZATION IS ATTAINED. REMOVE ANY ACCUMULATED SEDIMENTS AND STABILIZE.
- IF THE AREA WILL NOT BE WORKED FOR MORE THAN ONE YEAR OR HAS BEEN BROUGHT TO FINAL GRADE, THEN PERMANENTLY STABILIZE THE AREA WITHIN 7 DAYS BY PLANTING VEGETATION, SEEDING, SOD, OR THROUGH THE USE OF PERMANENT MULCH, OR RIPRAP, OR ROAD SUB-BASE. IF USING VEGETATION FOR STABILIZATION, SELECT THE PROPER VEGETATION FOR THE LIGHT, MOISTURE, AND SOIL CONDITIONS. AMEND AREAS OF DISTURBED SUBSOILS WITH TOPSOIL, COMPOST, OR FERTILIZERS. PROTECT SEEDED AREAS WITH MULCH OR, IF NECESSARY, EROSION CONTROL BLANKETS, AND SCHEDULE SODDING, PLANTING, AND SEEDING SO TO AVOID DIE-OFF FROM SUMMER DROUGHT AND FALL FROSTS. NEWLY SEED OR SODDED AREAS MUST BE PROTECTED FROM VEHICLE TRAFFIC, EXCESSIVE PEDESTRIAN TRAFFIC, AND CONCENTRATED RUNOFF UNTIL THE VEGETATION IS WELL-ESTABLISHED WITH 90% COVER BY HEALTHY VEGETATION. AREAS MUST BE REWORKED AND RESTABILIZED IF GERMINATION IS SPARSE, PLANT COVERAGE IS SPOTTY, OR TOPSOIL EROSION IS EVIDENT. ONE OR MORE OF THE FOLLOWING MAY APPLY TO A PARTICULAR SITE.
- FOR SEEDED AREAS, PERMANENT STABILIZATION MEANS A 90% COVER OF THE DISTURBED AREA WITH MATURE, HEALTHY PLANTS WITH NO EVIDENCE OF WASHING OR RILLING OF THE TOPSOIL.
- FOR SODDED AREAS, PERMANENT STABILIZATION MEANS THE COMPLETE BINDING OF THE SOD ROOTS INTO THE UNDERLYING SOIL WITH NO SLUMPING OF THE SOD OR DIE-OFF.
- FOR MULCHED AREAS, PERMANENT MULCHING MEANS TOTAL COVERAGE OF THE EXPOSED AREA WITH AN APPROVED MULCH MATERIAL. EROSION CONTROL MIX MAY BE USED AS MULCH FOR PERMANENT STABILIZATION ACCORDING TO THE APPROVED APPLICATION RATES AND LIMITATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATE HOUSEKEEPING PRACTICES DURING THE CONSTRUCTION OF THE PROJECT. THESE STANDARDS CAN BE FOUND IN THE FOLLOWING DOCUMENT: MDEP CHAPTER 500 (STORMWATER MANAGEMENT), APPENDIX C. HOUSEKEEPING. HOUSEKEEPING PRACTICES INCLUDE, BUT ARE NOT LIMITED TO, SPILL PREVENTION, GROUNDWATER PROTECTION, FUGITIVE SEDIMENT AND DUST, DEBRIS AND OTHER MATERIALS, EXCAVATION DEMATERING, AUTHORIZED NON-STORMWATER DISCHARGES AND UNAUTHORIZED NON-STORMWATER DISCHARGES.



ROAD CONSTRUCTION NOTES

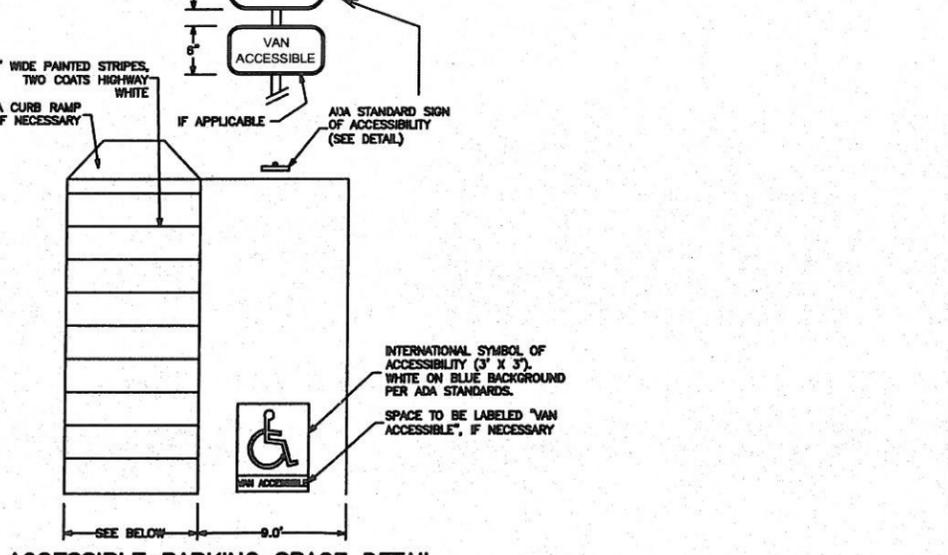
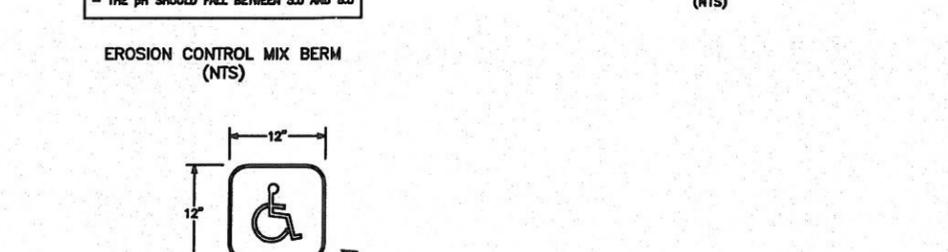
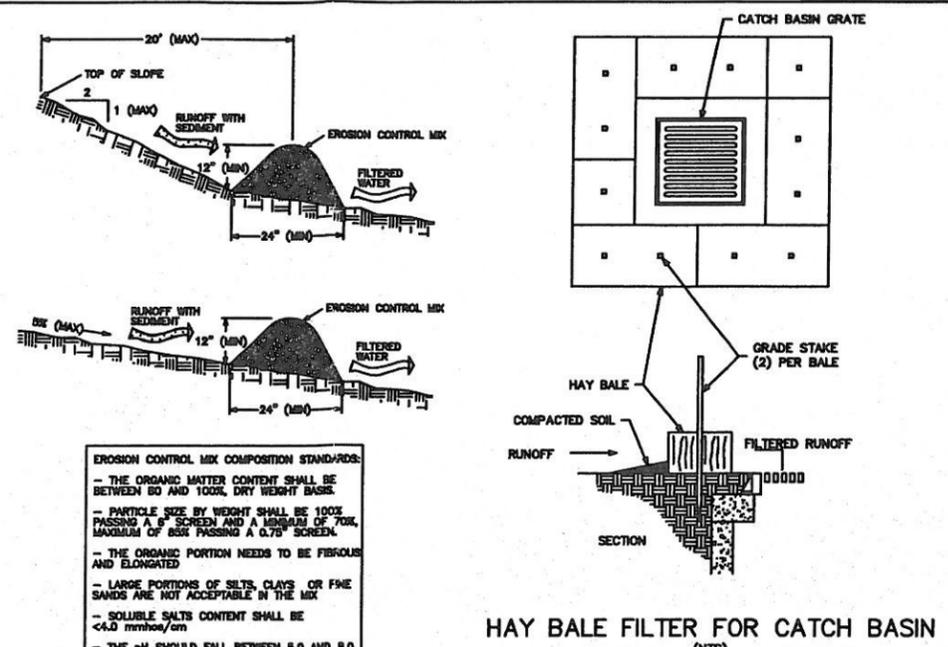
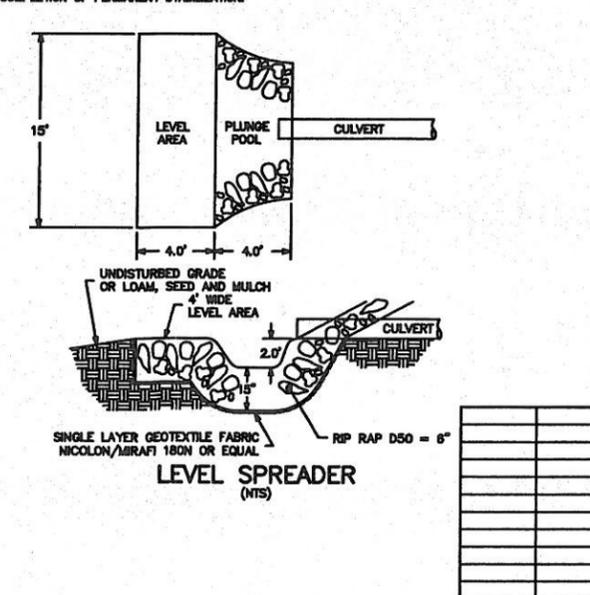
- DRIVEWAYS TO BE CONSTRUCTED IN ACCORDANCE WITH THE APPROPRIATE CROSS SECTION DETAIL. GRAVEL FILL TO BE COMPACTED TO 95% MODIFIED PROCTOR IN ACCORDANCE WITH ASTM D 1557. LIFT THICKNESSES TO BE A MAXIMUM OF 6".
- ALL STUMPS, ORGANIC MATERIAL, ROCKS AND BOULDERS TO BE REMOVED TO A MINIMUM DEPTH OF 24" BELOW SUBBASE.
- ALL STUMPS, LEDGE AND LARGE BOULDERS TO BE REMOVED FROM THE CONSTRUCTION AREA. THE CONSTRUCTION AREA SHALL BE CLEARED AND ROUGH GRADED.
- ALL CULVERTS TO BE ADS N-12 (HOPE) OR APPROVED EQUAL. CULVERT INLETS AND OUTLETS TO BE PROTECTED IN ACCORDANCE WITH THE CULVERT INLET/OUTLET PROTECTION DETAIL.
- THE CONTRACTOR MUST CONTACT DIG SAFE AND ALL LOCAL UTILITIES PRIOR TO THE START OF CONSTRUCTION TO VERIFY THE LOCATION OF EXISTING SUBSURFACE UTILITIES AND CONDITIONS. LOCATING AND PROTECTING ANY UNDERGROUND OR ABOVE GROUND UTILITY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

WINTER CONSTRUCTION NOTES

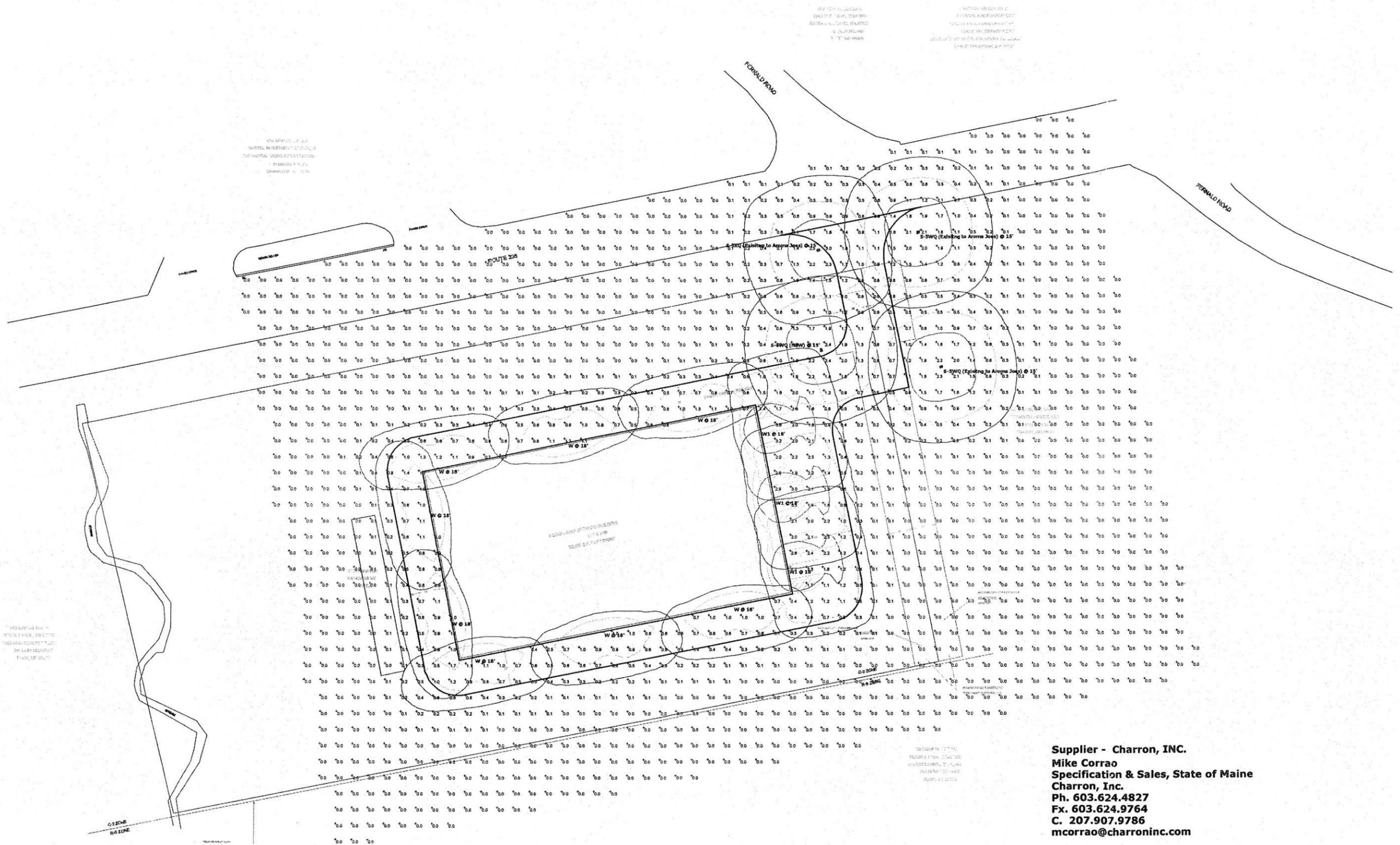
- EXPOSED AREAS SHOULD BE LIMITED TO AN AREA THAT CAN BE MULCHED IN ONE DAY PRIOR TO ANY SNOW EVENT.
- AN AREA SHALL BE CONSIDERED STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED WITH HAY AT A RATE OF 100 LB/1000 S.F. OR DORMANT SEEDING, MULCHED AND ADEQUATELY ANCHORED BY AN APPROVED ANCHORING TECHNIQUE. IN ALL CASES, MULCH SHALL BE APPLIED SO THAT THE SOIL SURFACE IS NOT VISIBLE THROUGH THE MULCH.
- FROM OCTOBER 15 TO APRIL 1, LOAM AND SEED WILL NOT BE REQUIRED. DURING PERIODS OF TEMPERATURES ABOVE FREEZING, DISTURBED AREAS SHALL BE FINE GRADED AND PROTECTED WITH MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL PERMANENT SEEDING CAN BE APPLIED. AFTER NOVEMBER 1, DISTURBED AREAS MAY BE LOAMED, FINE GRADED AND DORMANT SEEDING AT A RATE 200-300% HIGHER THAN THE SPECIFIED PERMANENT SEEDING RATE. IF CONSTRUCTION CONTINUES DURING FREEZING WEATHER, DISTURBED AREAS SHALL BE GRADED BEFORE FREEZING AND TEMPORARILY STABILIZED WITH MULCH. DISTURBED AREAS SHALL NOT BE LEFT OVER THE WINTER OR FOR ANY OTHER EXTENDED PERIOD OF TIME UNLESS STABILIZED WITH MULCH.
- FROM NOVEMBER 1 TO APRIL 15 ALL MULCH SHALL BE ANCHORED BY EITHER PEG LINE, MULCH NETTING, ASPHALT EMULSION CHEMICAL, TRACK OR WOOD CELLULOSE FIBER. MULCH NETTING SHALL BE USED TO ANCHOR MULCH ON ALL DRAINAGEWAYS WITH SLOPES GREATER THAN 3% SLOPES EXPOSED TO DIRECT WINDS AND FOR SLOPES GREATER THAN 6%. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL AREAS WITH SLOPES GREATER THAN 15% AFTER OCTOBER 1, THE SAME APPLIES TO ALL SLOPES GREATER THAN 6%.
- DURING WINTER CONSTRUCTION, DORMANT SEEDING OR MULCH AND ANCHORING SHALL BE APPLIED TO ALL DISTURBED AREAS AT THE END OF EACH WORKING DAY.
- SNOW SHALL BE REMOVED FROM AREAS OF SEEDING AND MULCHING PRIOR TO PLACEMENT.
- FOR WINTER STABILIZATION, HAY MULCH SHALL BE APPLIED AT TWICE THE STANDARD TEMPORARY STABILIZATION RATE. AT THE END OF EACH CONSTRUCTION DAY, AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE SHALL BE STABILIZED. MULCH SHALL NOT BE SPREAD ON TOP OF SNOW.
- ALL AREAS WITHIN 75 FEET OF A PROTECTED NATURAL RESOURCE SHALL BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIERS.
- ALL VEGETATED DITCH LINES THAT HAVE NOT BEEN STABILIZED BY NOVEMBER 1, OR WILL BE WORKED DURING THE WINTER CONSTRUCTION PERIOD, SHALL BE STABILIZED WITH AN APPROPRIATE STONE LINING BACKED BY AN APPROPRIATE GRAVEL BED OR GEOTEXTILE UNLESS SPECIFICALLY RELEASED FROM THIS STANDARD BY THE DEPARTMENT.
- MULCH NETTING SHALL BE USED TO ANCHOR MULCH ON ALL SLOPES GREATER THAN 6% UNLESS EROSION CONTROL BLANKETS OR EROSION CONTROL MIX IS BEING USED ON SUCH SLOPES.

E&S INSPECTION/MAINT. DURING CONSTRUCTION

- INSPECTION AND CORRECTIVE ACTION: INSPECT DISTURBED AND IMPERVIOUS AREAS, EROSION CONTROL MEASURES, MATERIALS STORAGE AREAS THAT ARE EXPOSED TO PRECIPITATION, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE. INSPECT THESE AREAS AT LEAST ONCE A WEEK AS WELL AS BEFORE AND WITHIN 24 HOURS AFTER A STORM EVENT (RAINFALL), AND PRIOR TO COMPLETING PERMANENT STABILIZATION MEASURES. A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING THE STANDARDS AND CONDITIONS IN THE PERMIT, SHALL CONDUCT THE INSPECTIONS.
- MAINTENANCE: IF BEST MANAGEMENT PRACTICES (BMPs) NEED TO BE REPAIRED, THE REPAIR WORK SHOULD BE INITIATED UPON DISCOVERY OF THE PROBLEM BUT NO LATER THAN THE END OF THE NEXT WORKDAY. IF ADDITIONAL BMPs OR SIGNIFICANT REPAIR OF BMPs ARE NECESSARY, REPLENISHMENT MUST BE COMPLETED WITHIN 7 CALENDAR DAYS AND PRIOR TO ANY STORM EVENT (RAINFALL). ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION UNTIL AREAS ARE PERMANENTLY STABILIZED.
- DOCUMENTATION: KEEP A LOG (REPORT) SUMMARIZING THE INSPECTIONS AND ANY CORRECTIVE ACTION TAKEN. THE LOG MUST INCLUDE THE NAME(S) AND QUALIFICATIONS OF THE PERSON MAKING THE INSPECTIONS, THE DATE(S) OF THE INSPECTIONS, AND MAJOR OBSERVATIONS ABOUT THE OPERATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROLS, MATERIALS STORAGE AREAS, AND VEHICLE ACCESS POINTS TO THE PARCEL. MAJOR OBSERVATIONS MUST INCLUDE BMPs THAT NEED MAINTENANCE, BMPs THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION, AND LOCATION(S) WHERE ADDITIONAL BMPs ARE NEEDED. FOR EACH BMP REQUIRING MAINTENANCE, BMP REPAIR REPLACEMENT, AND LOCATION NEEDING ADDITIONAL BMPs, NOTE IN THE LOG THE CORRECTIVE ACTION TAKEN AND WHEN IT WAS TAKEN. THE LOG MUST BE MADE ACCESSIBLE TO DEPARTMENT STAFF AND A COPY MUST BE PROVIDED UPON REQUEST. THE PERMITTEE SHALL RETAIN A COPY OF THE LOG FOR A PERIOD OF AT LEAST THREE YEARS FROM THE COMPLETION OF PERMANENT STABILIZATION.



SITE DETAILS		
KITTERY STORAGE SOLUTIONS 91 ROUTE 236, KITTERY, ME		
FOR: ARENHALL CORP. P.O. BOX 158 WELLS, ME 04090		
ATTAR ENGINEERING, INC. CIVIL • STRUCTURAL • MARINE 1284 STATE ROAD • ELJOT, MAINE 03903 PHONE: (207)439-8023 FAX: (207)439-2128		
SCALE: AS NOTED	APPROVED BY:	DRAWN BY: MJS
DATE: 06/01/18		REVISION : DATE - : -
JOB NO: C022-18	FILE: KITTERY STORAGE DET.DWG	SHEET 3



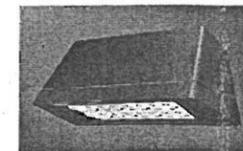
Supplier - Charron, INC.
 Mike Corrao
 Specification & Sales, State of Maine
 Charron, Inc.
 Ph. 603.624.4827
 Fx. 603.624.9764
 C. 207.907.9786
 mcorrao@charroninc.com

Plan View
 Scale - 1" = 30'

	S-5WQ (NEW)	1	EATON - MCGRAW-EDISON (FORMER COOPER LIGHTING)	TLM-E02-LED-E1-5WQ
	S-5WQ (Existing to Aroma Joes)	2	EATON - MCGRAW-EDISON (FORMER COOPER LIGHTING)	TLM-E02-LED-E1-5WQ
	S-5XQ (Existing to Aroma Joes)	1	EATON - MCGRAW-EDISON (FORMER COOPER LIGHTING)	TLM-E02-LED-E1-5XQ
	W	8	COOPER LIGHTING - MCGRAW-EDISON	ISS-F01-LED-E1-BL3
	W1	3	EATON - MCGRAW-EDISON (FORMER COOPER LIGHTING)	IST-E02-LED-E1-BL4

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
All Points	+	0.3 fc	4.4 fc	0.0 fc	N/A	N/A
Park and Drive	+	1.1 fc	4.4 fc	0.4 fc	11.0:1	2.8:1

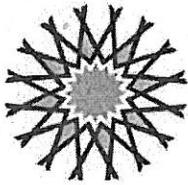


Eaton's Cooper Lighting - IMPACT ELITE - IST LED WALL PACK



Eaton's Cooper Lighting - TALON - TLM LED SITE FIXTURE

SHEET 5 - TAX MAP 28. LOT 14-1



STORMWATER MANAGEMENT PLAN KITTERY STORAGE SOLUTIONS 91 ROUTE 236, KITTERY, MAINE

Project No.: C022-16

June 1, 2016

◆ **Scope**

This stormwater management plan has been prepared for the proposed Kittery Storage Solutions facility located at 91 Route 236 in Kittery, Maine. The project will consist of a three-level self-storage building and associated asphalt surfaced parking areas and access aisles. The project site contains approximately 2.8 acres.

The project will create approximately 1.8 acres of disturbed area and approximately 1.15 acres of impervious area, therefore, Chapter 500 (Stormwater Management) permitting is necessary from the Maine Department of Environmental Protection (MDEP). The project has been designed to meet the stormwater management requirements outlined in MDEP Chapter 500 as well as the Kittery Land Use and Development Code (LUDC).

◆ **Site and Watershed Description**

The project site is located on Route 236 in Kittery, Maine. A 7½ minute series U.S.G.S. map of the project area is attached; the parcel is located on the west side of Route 236, several hundred feet north of the Fernald Road intersection.

The site is located in the Piscataqua River watershed (sources: USGS 7 ½ minute series, Portsmouth Quadrangle. The Piscataqua River is directly tributary to the Atlantic Ocean.

Existing site features consist of a gravel surface, less than one acre in area, that was permitted to support a firewood sales business. In addition, along the southerly property line, a driveway is under construction that will access a recently approved mixed-use building on an adjacent lot to the south of the subject parcel. Kittery Storage Solutions will utilize this driveway as well. The remainder of the site is wooded and contains several wooded wetland and an unnamed stream that flows in a westerly direction along the north property line.

The topography of the site, in general, slopes down from north to south with an intermediate low area along the westerly property line. A swale with several driveway cross culverts exists along the easterly property line, adjacent to Route 236. Runoff is collected at the northerly property line by the previously mentioned stream. Existing grades are mostly from 3-8%. On-site elevations (datum is NAD 1988) range from a high point of approximately 50' at the southerly property line (adjacent to the neighboring development project), 43'-44' at the interior of the site, to a low point of approximately 34' along the stream. It should be noted that these elevations do not reflect the finished elevations of the previously noted gravel fill; it is estimated that 3'-5' of fill has been placed.

The site is not located within a 100-Year Special Flood Hazard Area per the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) 2301710004C (7/5/84).

A majority of the site will need to be filled to accommodate the proposed facility, with a maximum fill of approximately 6' (existing grade to building floor elevation). Proposed cuts, in general, are less than 3'.

◆ **Soils/Hydrologic Soil Groups**

Site soil types and the respective HSG's were taken from a High Intensity Soil Survey prepared by Kenneth Gardner (CSS# 61).

Soil types are as follows:

BrB – Adams loamy sand, 0-8% slopes (HSG D)

PeB/C – Peru fine sandy loam, B 3-8% slopes, C 8-15% slopes, (HSG D)

ScA – Scantic silt loam, 0-3% slopes, (HSG D)

◆ **Methodology**

The stormwater quantity analysis was conducted using the HydroCAD Stormwater Modeling System by Applied Microcomputer Systems. The analysis was accomplished to determine the "Existing Condition" and "Developed Condition" stormwater flows. Both cases were analyzed for the 2, 10, and 25 year, 24-hour frequency storm events. The Existing Condition analyzes the site as it currently exists (wooded and undeveloped) and the Developed Condition models the site with the proposed development described above.

◆ **Water Quantity Analysis and Results**

Existing Condition

The site was modeled as four subcatchments (SC) for the Existing Condition analysis. All SC's include on and off-site areas.

Two Analysis Point (AP) were selected, downstream of the SC's. Analysis Points are typically located downstream of proposed developed areas and provide convenient locations to compare Existing Condition flows to Developed Condition flows. AP 1 is at the point of runoff into the stream and AP 2 is at a low spot along the westerly property line.

This report includes a plan that depicts the existing conditions on which the Existing Condition calculations are based.

Developed Condition

The Developed Condition analysis consists of ten subcatchments. Other features such as ponds and reaches were added to account for on-site routing, detention and treatment of stormwater. An underdrained soil filter (USF) pond (Pond 1) is included to provide both treatment and storage of stormwater. The Pond 1 outlet includes a level spreader intended to distribute runoff over an existing wooded buffer. All Developed Condition flows are routed to AP's 1 and 2, described above.

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

The analysis indicates decreases in peak flow at AP's 1 and 2 for all storm events, thus meeting the requirements of the Kittery LUDC.

This report includes a plan that depicts the developed conditions on which the Developed Condition calculations are based.

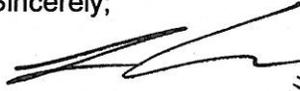
◆ **Water Quality**

In accordance with the MDEP *Chapter 500* General Standards, runoff from developed areas on the site will receive treatment in an underdrained soil filter pond prior to being discharged from the site. Approximately 99.8% of the impervious area and 81.2% of the developed area will be treated, exceeding the MDEP General Standards requirements of 95% and 80%, respectively. Treatment calculations and BMP sizing calculations are included in this report and are also depicted on the developed conditions / treatment plan noted above.

◆ **Summary**

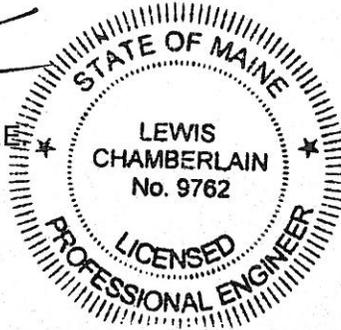
The use of a USF pond to attenuate peak flows results in no significant increase in peak runoff quantity from the proposed Kittery Storage Solutions development. No adverse effects are anticipated on any downstream properties or drainage structures for the analyzed storm events. The USF pond also serves to address runoff quality, as required by MDEP Chapter 500.

Sincerely;



Lewis Chamberlain, P.E.

C022-16_SW.doc



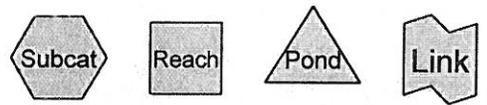
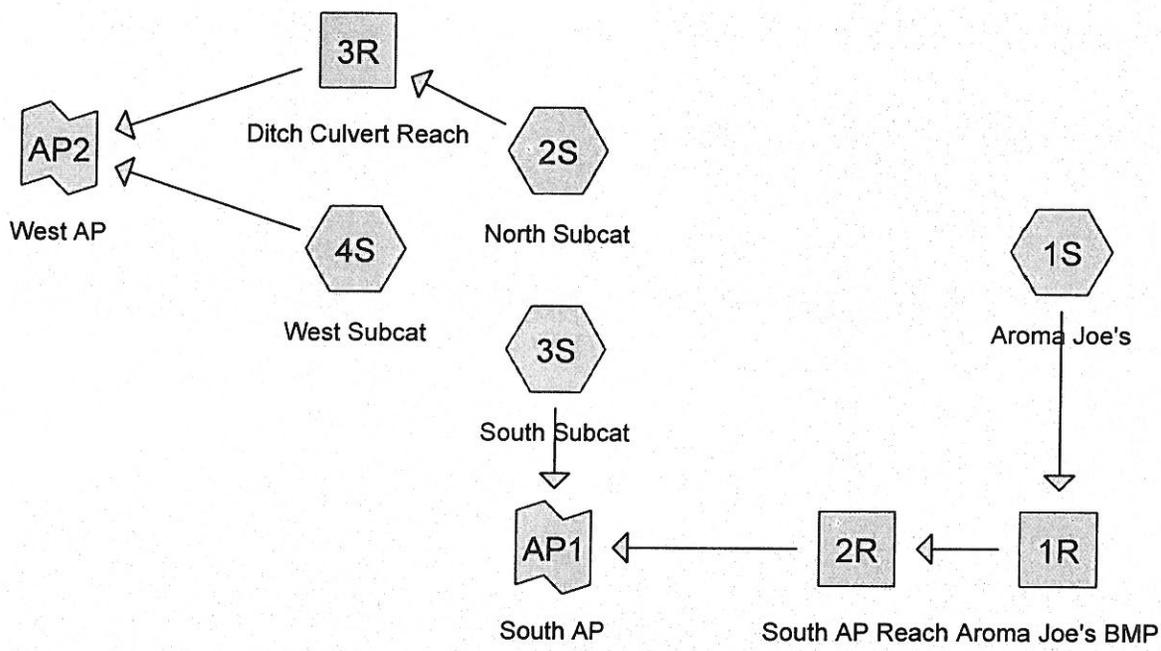


ATTAR
ENGINEERING, INC

CIVIL • STRUCTURAL MARINE
1284 STATE ROAD, ELIOT ME 03903

KITTERY STORAGE SOLUTIONS
91 ROUTE 236, KITTERY, MAINE
USGS 7.5' SERIES - PORTSMOUTH QUAD.
APPROX. SCALE 1" = 2,000'
PROJECT NO. C022-16

EXISTING CONDITION CALCULATIONS



Routing Diagram for Kittery Storage EXT
 Prepared by Hewlett-Packard Company, Printed 6/2/2016
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Kittery Storage EXT

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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
3.433	82	Woods/grass comb., Fair, HSG D (1S, 2S, 3S, 4S)
0.584	98	Paved parking, HSG D (1S, 2S, 4S)

Kittery Storage EXT

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

Prepared by Hewlett-Packard Company

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Aroma Joe's	Runoff Area=26,860 sf 44.17% Impervious Runoff Depth>2.04" Flow Length=210' Tc=8.1 min CN=89 Runoff=1.43 cfs 0.105 af
Subcatchment2S: North Subcat	Runoff Area=61,619 sf 15.96% Impervious Runoff Depth>1.71" Flow Length=428' Tc=18.5 min CN=85 Runoff=2.12 cfs 0.202 af
Subcatchment3S: South Subcat	Runoff Area=30,450 sf 0.00% Impervious Runoff Depth>1.50" Flow Length=191' Tc=11.6 min CN=82 Runoff=1.09 cfs 0.087 af
Subcatchment4S: West Subcat	Runoff Area=56,031 sf 6.68% Impervious Runoff Depth>1.57" Flow Length=181' Tc=10.2 min CN=83 Runoff=2.19 cfs 0.168 af
Reach 1R: Aroma Joe's BMP 12.0" Round Pipe w/ 1.0" inside fill n=0.013	Avg. Flow Depth=0.49' Max Vel=3.25 fps Inflow=1.43 cfs 0.105 af L=124.0' S=0.0050 '/' Capacity=2.37 cfs Outflow=1.42 cfs 0.105 af
Reach 2R: South AP Reach	Avg. Flow Depth=0.20' Max Vel=0.31 fps Inflow=1.42 cfs 0.105 af n=0.400 L=96.0' S=0.0638 '/' Capacity=6.11 cfs Outflow=1.26 cfs 0.104 af
Reach 3R: Ditch Culvert Reach	Avg. Flow Depth=0.30' Max Vel=0.29 fps Inflow=2.12 cfs 0.202 af n=0.400 L=151.0' S=0.0331 '/' Capacity=4.41 cfs Outflow=1.90 cfs 0.199 af
Link AP1: South AP	Inflow=2.36 cfs 0.191 af Primary=2.36 cfs 0.191 af
Link AP2: West AP	Inflow=3.35 cfs 0.368 af Primary=3.35 cfs 0.368 af

Kittery Storage EXT

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

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Aroma Joe's

Runoff Area=26,860 sf 44.17% Impervious Runoff Depth>3.47"
Flow Length=210' Tc=8.1 min CN=89 Runoff=2.38 cfs 0.178 af

Subcatchment2S: North Subcat

Runoff Area=61,619 sf 15.96% Impervious Runoff Depth>3.07"
Flow Length=428' Tc=18.5 min CN=85 Runoff=3.75 cfs 0.361 af

Subcatchment3S: South Subcat

Runoff Area=30,450 sf 0.00% Impervious Runoff Depth>2.79"
Flow Length=191' Tc=11.6 min CN=82 Runoff=2.02 cfs 0.163 af

Subcatchment4S: West Subcat

Runoff Area=56,031 sf 6.68% Impervious Runoff Depth>2.89"
Flow Length=181' Tc=10.2 min CN=83 Runoff=3.98 cfs 0.309 af

Reach 1R: Aroma Joe's BMP

Avg. Flow Depth=0.73' Max Vel=3.58 fps Inflow=2.38 cfs 0.178 af
12.0" Round Pipe w/ 1.0" inside fill n=0.013 L=124.0' S=0.0050 '/ Capacity=2.37 cfs Outflow=2.35 cfs 0.178 af

Reach 2R: South AP Reach

Avg. Flow Depth=0.27' Max Vel=0.38 fps Inflow=2.35 cfs 0.178 af
n=0.400 L=96.0' S=0.0638 '/ Capacity=6.11 cfs Outflow=2.17 cfs 0.177 af

Reach 3R: Ditch Culvert Reach

Avg. Flow Depth=0.43' Max Vel=0.37 fps Inflow=3.75 cfs 0.361 af
n=0.400 L=151.0' S=0.0331 '/ Capacity=4.41 cfs Outflow=3.46 cfs 0.358 af

Link AP1: South AP

Inflow=4.19 cfs 0.340 af
Primary=4.19 cfs 0.340 af

Link AP2: West AP

Inflow=6.25 cfs 0.668 af
Primary=6.25 cfs 0.668 af

Kittery Storage EXT

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

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Aroma Joe's	Runoff Area=26,860 sf 44.17% Impervious Runoff Depth>4.66" Flow Length=210' Tc=8.1 min CN=89 Runoff=3.14 cfs 0.239 af
Subcatchment2S: North Subcat	Runoff Area=61,619 sf 15.96% Impervious Runoff Depth>4.22" Flow Length=428' Tc=18.5 min CN=85 Runoff=5.09 cfs 0.497 af
Subcatchment3S: South Subcat	Runoff Area=30,450 sf 0.00% Impervious Runoff Depth>3.91" Flow Length=191' Tc=11.6 min CN=82 Runoff=2.80 cfs 0.228 af
Subcatchment4S: West Subcat	Runoff Area=56,031 sf 6.68% Impervious Runoff Depth>4.02" Flow Length=181' Tc=10.2 min CN=83 Runoff=5.47 cfs 0.431 af
Reach 1R: Aroma Joe's BMP 12.0" Round Pipe w/ 1.0" inside fill n=0.013	Avg. Flow Depth=0.92' Max Vel=3.58 fps Inflow=3.14 cfs 0.239 af L=124.0' S=0.0050 '/' Capacity=2.37 cfs Outflow=2.39 cfs 0.239 af
Reach 2R: South AP Reach n=0.400	Avg. Flow Depth=0.29' Max Vel=0.39 fps Inflow=2.39 cfs 0.239 af L=96.0' S=0.0638 '/' Capacity=6.11 cfs Outflow=2.38 cfs 0.238 af
Reach 3R: Ditch Culvert Reach n=0.400	Avg. Flow Depth=0.52' Max Vel=0.41 fps Inflow=5.09 cfs 0.497 af L=151.0' S=0.0331 '/' Capacity=4.41 cfs Outflow=4.77 cfs 0.493 af
Link AP1: South AP	Inflow=5.15 cfs 0.466 af Primary=5.15 cfs 0.466 af
Link AP2: West AP	Inflow=8.69 cfs 0.924 af Primary=8.69 cfs 0.924 af

Kittery Storage EXT

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

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Summary for Subcatchment 1S: Aroma Joe's

Runoff = 3.14 cfs @ 12.11 hrs, Volume= 0.239 af, Depth> 4.66"

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

Area (sf)	CN	Description
11,863	98	Paved parking, HSG D
14,997	82	Woods/grass comb., Fair, HSG D
26,860	89	Weighted Average
14,997		55.83% Pervious Area
11,863		44.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	50	0.1000	0.12		Sheet Flow, SF 1 Woods: Light underbrush n= 0.400 P2= 3.00"
0.4	40	0.1000	1.58		Shallow Concentrated Flow, SCF 1 Woodland Kv= 5.0 fps
1.0	120	0.0100	2.03		Shallow Concentrated Flow, SCF 2 Paved Kv= 20.3 fps
8.1	210	Total			

Summary for Subcatchment 2S: North Subcat

Runoff = 5.09 cfs @ 12.25 hrs, Volume= 0.497 af, Depth> 4.22"

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

Area (sf)	CN	Description
9,834	98	Paved parking, HSG D
51,785	82	Woods/grass comb., Fair, HSG D
61,619	85	Weighted Average
51,785		84.04% Pervious Area
9,834		15.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0300	0.08		Sheet Flow, SF 1 Woods: Light underbrush n= 0.400 P2= 3.00"
3.2	185	0.0378	0.97		Shallow Concentrated Flow, SCF 1 Woodland Kv= 5.0 fps
4.5	193	0.0207	0.72		Shallow Concentrated Flow, SCF 2 Woodland Kv= 5.0 fps
18.5	428	Total			

Kittery Storage EXT

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

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Summary for Subcatchment 3S: South Subcat

Runoff = 2.80 cfs @ 12.16 hrs, Volume= 0.228 af, Depth> 3.91"

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

Area (sf)	CN	Description
30,450	82	Woods/grass comb., Fair, HSG D
30,450		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.7	50	0.0400	0.09		Sheet Flow, SF 1 Woods: Light underbrush n= 0.400 P2= 3.00"
1.9	141	0.0638	1.26		Shallow Concentrated Flow, SCF 1 Woodland Kv= 5.0 fps
11.6	191	Total			

Summary for Subcatchment 4S: West Subcat

Runoff = 5.47 cfs @ 12.14 hrs, Volume= 0.431 af, Depth> 4.02"

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

Area (sf)	CN	Description
3,743	98	Paved parking, HSG D
52,288	82	Woods/grass comb., Fair, HSG D
56,031	83	Weighted Average
52,288		93.32% Pervious Area
3,743		6.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	50	0.0600	0.10		Sheet Flow, SF 1 Woods: Light underbrush n= 0.400 P2= 3.00"
0.6	55	0.1091	1.65		Shallow Concentrated Flow, SCF 1 Woodland Kv= 5.0 fps
1.4	76	0.0329	0.91		Shallow Concentrated Flow, SCF 2 Woodland Kv= 5.0 fps
10.2	181	Total			

Summary for Reach 1R: Aroma Joe's BMP

Inflow Area = 0.617 ac, 44.17% Impervious, Inflow Depth > 4.66" for 25 YEAR STORM event
 Inflow = 3.14 cfs @ 12.11 hrs, Volume= 0.239 af
 Outflow = 2.39 cfs @ 12.30 hrs, Volume= 0.239 af, Atten= 24%, Lag= 11.3 min

Kittery Storage EXT

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

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

Max. Velocity= 3.58 fps, Min. Travel Time= 0.6 min

Avg. Velocity = 1.51 fps, Avg. Travel Time= 1.4 min

Peak Storage= 94 cf @ 12.10 hrs

Average Depth at Peak Storage= 1.00' above invert (0.92' above fill)

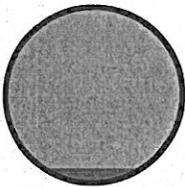
Bank-Full Depth= 1.00' above invert (0.92' above fill) Flow Area= 0.8 sf, Capacity= 2.37 cfs

12.0" Round Pipe w/ 1.0" inside fill

n= 0.013 Corrugated PE, smooth interior

Length= 124.0' Slope= 0.0050 '/'

Inlet Invert= 46.00', Outlet Invert= 45.38'



Summary for Reach 2R: South AP Reach

Inflow Area = 0.617 ac, 44.17% Impervious, Inflow Depth > 4.65" for 25 YEAR STORM event

Inflow = 2.39 cfs @ 12.30 hrs, Volume= 0.239 af

Outflow = 2.38 cfs @ 12.30 hrs, Volume= 0.238 af, Atten= 1%, Lag= 0.0 min

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

Max. Velocity= 0.39 fps, Min. Travel Time= 4.1 min

Avg. Velocity = 0.12 fps, Avg. Travel Time= 13.2 min

Peak Storage= 581 cf @ 12.30 hrs

Average Depth at Peak Storage= 0.29'

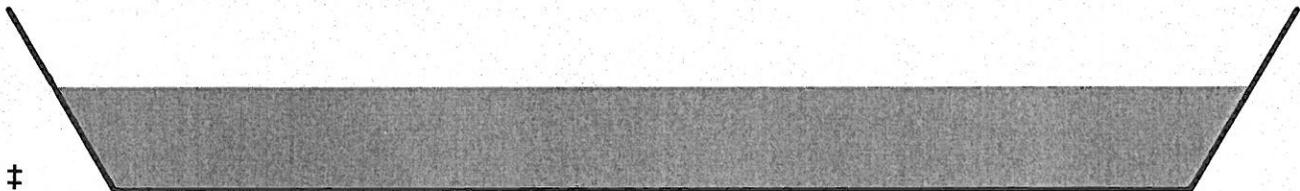
Bank-Full Depth= 0.50' Flow Area= 11.0 sf, Capacity= 6.11 cfs

20.00' x 0.50' deep channel, n= 0.400 Sheet flow: Woods+light brush

Side Slope Z-value= 4.0 '/' Top Width= 24.00'

Length= 96.0' Slope= 0.0638 '/'

Inlet Invert= 45.38', Outlet Invert= 39.26'



Kittery Storage EXT

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

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Summary for Reach 3R: Ditch Culvert Reach

Inflow Area = 1.415 ac, 15.96% Impervious, Inflow Depth > 4.22" for 25 YEAR STORM event
Inflow = 5.09 cfs @ 12.25 hrs, Volume= 0.497 af
Outflow = 4.77 cfs @ 12.32 hrs, Volume= 0.493 af, Atten= 6%, Lag= 4.1 min

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

Max. Velocity= 0.41 fps, Min. Travel Time= 6.1 min

Avg. Velocity = 0.13 fps, Avg. Travel Time= 19.6 min

Peak Storage= 1,748 cf @ 12.32 hrs

Average Depth at Peak Storage= 0.52'

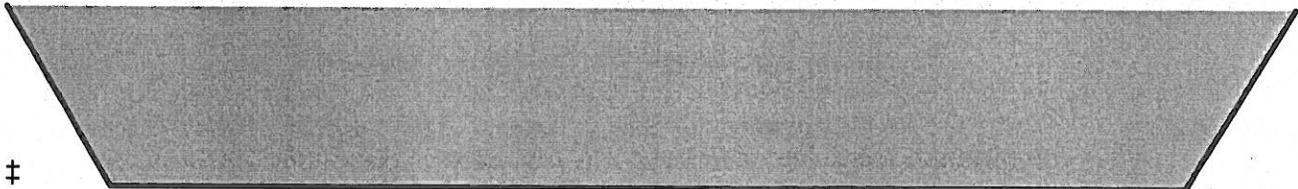
Bank-Full Depth= 0.50' Flow Area= 11.0 sf, Capacity= 4.41 cfs

20.00' x 0.50' deep channel, n= 0.400 Sheet flow: Woods+light brush

Side Slope Z-value= 4.0 ' / ' Top Width= 24.00'

Length= 151.0' Slope= 0.0331 ' / '

Inlet Invert= 39.50', Outlet Invert= 34.50'



Summary for Link AP1: South AP

Inflow Area = 1.316 ac, 20.70% Impervious, Inflow Depth > 4.25" for 25 YEAR STORM event
Inflow = 5.15 cfs @ 12.16 hrs, Volume= 0.466 af
Primary = 5.15 cfs @ 12.16 hrs, Volume= 0.466 af, Atten= 0%, Lag= 0.0 min

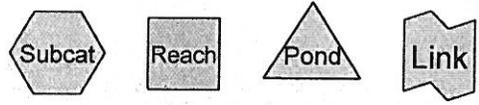
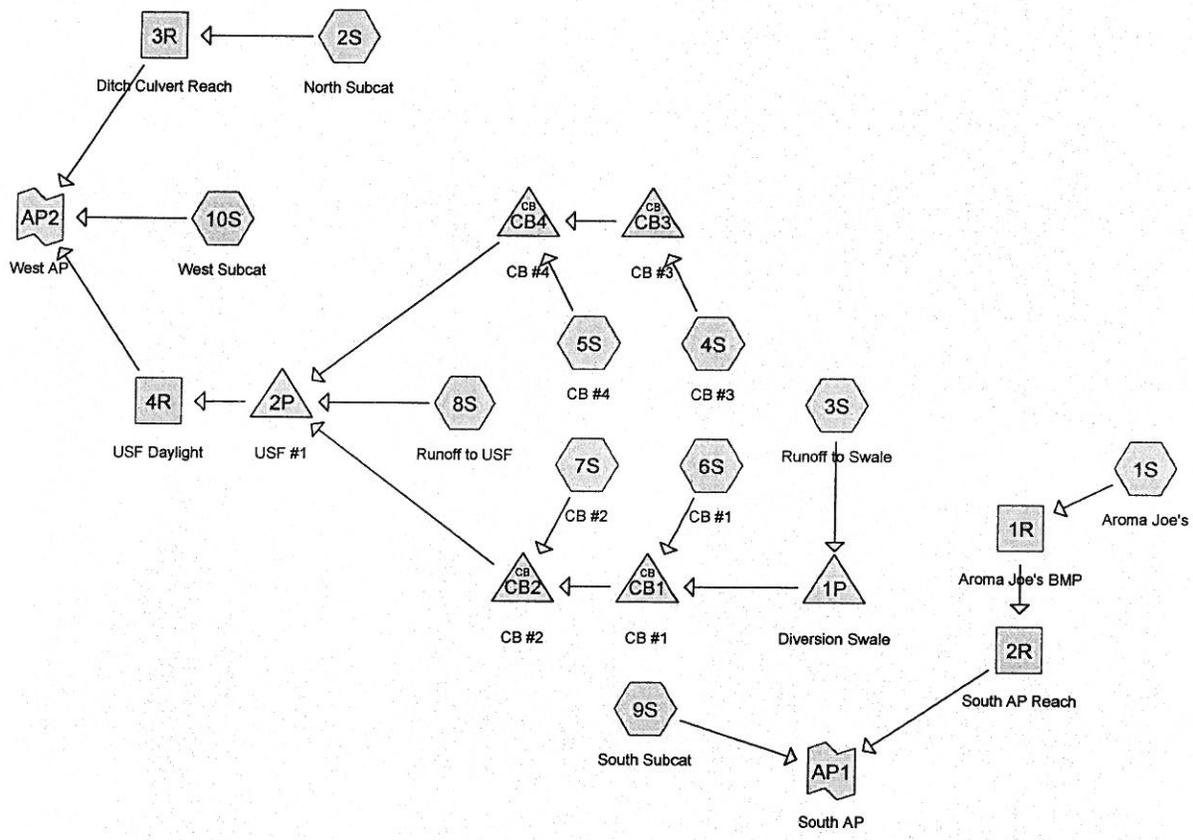
Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link AP2: West AP

Inflow Area = 2.701 ac, 11.54% Impervious, Inflow Depth > 4.11" for 25 YEAR STORM event
Inflow = 8.69 cfs @ 12.19 hrs, Volume= 0.924 af
Primary = 8.69 cfs @ 12.19 hrs, Volume= 0.924 af, Atten= 0%, Lag= 0.0 min

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

DEVELOPED CONDITION CALCULATIONS



Routing Diagram for Kittery Storage PRP
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Kittery Storage PRP

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.595	80	>75% Grass cover, Good, HSG D (2S, 3S, 8S, 9S, 10S)
1.778	82	Woods/grass comb., Fair, HSG D (1S, 2S, 3S, 9S, 10S)
1.055	98	Paved parking, HSG D (1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S, 10S)
0.590	98	Unconnected roofs, HSG D (4S, 5S, 6S, 7S, 8S)

Kittery Storage PRP

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Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	1R	46.00	45.38	124.0	0.0050	0.013	12.0	0.0	1.0
2	1P	44.00	43.70	52.0	0.0058	0.013	12.0	0.0	0.0
3	2P	39.80	39.00	25.0	0.0320	0.013	12.0	0.0	0.0
4	2P	40.00	39.90	20.0	0.0050	0.013	6.0	0.0	0.0
5	CB1	43.60	43.10	101.0	0.0050	0.013	12.0	0.0	0.0
6	CB2	43.00	42.30	141.0	0.0050	0.013	12.0	0.0	0.0
7	CB3	43.60	43.10	101.0	0.0050	0.013	12.0	0.0	0.0
8	CB4	43.00	42.30	134.0	0.0052	0.013	12.0	0.0	0.0

Kittery Storage PRP

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

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Aroma Joe's	Runoff Area=26,296 sf 45.11% Impervious Runoff Depth>2.04" Flow Length=210' Tc=8.1 min CN=89 Runoff=1.40 cfs 0.103 af
Subcatchment2S: North Subcat	Runoff Area=29,239 sf 30.31% Impervious Runoff Depth>1.80" Flow Length=277' Tc=6.5 min CN=86 Runoff=1.46 cfs 0.100 af
Subcatchment3S: Runoff to Swale	Runoff Area=7,988 sf 60.02% Impervious Runoff Depth>2.22" Flow Length=100' Tc=0.9 min CN=91 Runoff=0.56 cfs 0.034 af
Subcatchment4S: CB #3	Runoff Area=6,635 sf 100.00% Impervious Runoff Depth>2.87" Flow Length=78' Slope=0.0200 '/ Tc=1.0 min CN=98 Runoff=0.54 cfs 0.036 af
Subcatchment5S: CB #4	Runoff Area=8,200 sf 100.00% Impervious Runoff Depth>2.87" Flow Length=48' Slope=0.0200 '/ Tc=0.7 min CN=98 Runoff=0.68 cfs 0.045 af
Subcatchment6S: CB #1	Runoff Area=6,909 sf 100.00% Impervious Runoff Depth>2.87" Flow Length=54' Slope=0.0200 '/ Tc=0.8 min CN=98 Runoff=0.57 cfs 0.038 af
Subcatchment7S: CB #2	Runoff Area=8,200 sf 100.00% Impervious Runoff Depth>2.87" Flow Length=48' Slope=0.0200 '/ Tc=0.7 min CN=98 Runoff=0.68 cfs 0.045 af
Subcatchment8S: Runoff to USF	Runoff Area=22,610 sf 54.93% Impervious Runoff Depth>2.13" Flow Length=82' Tc=0.9 min CN=90 Runoff=1.52 cfs 0.092 af
Subcatchment9S: South Subcat	Runoff Area=14,842 sf 0.00% Impervious Runoff Depth>1.43" Flow Length=224' Tc=13.2 min CN=81 Runoff=0.48 cfs 0.041 af
Subcatchment10S: West Subcat	Runoff Area=44,042 sf 8.48% Impervious Runoff Depth>1.57" Flow Length=148' Tc=4.9 min CN=83 Runoff=2.01 cfs 0.133 af
Reach 1R: Aroma Joe's BMP	Avg. Flow Depth=0.48' Max Vel=3.24 fps Inflow=1.40 cfs 0.103 af 12.0" Round Pipe w/ 1.0" inside fill n=0.013 L=124.0' S=0.0050 '/ Capacity=2.37 cfs Outflow=1.39 cfs 0.103 af
Reach 2R: South AP Reach	Avg. Flow Depth=0.19' Max Vel=0.30 fps Inflow=1.39 cfs 0.103 af n=0.400 L=96.0' S=0.0638 '/ Capacity=6.11 cfs Outflow=1.24 cfs 0.102 af
Reach 3R: Ditch Culvert Reach	Avg. Flow Depth=0.22' Max Vel=0.24 fps Inflow=1.46 cfs 0.100 af n=0.400 L=151.0' S=0.0331 '/ Capacity=4.41 cfs Outflow=1.07 cfs 0.099 af
Reach 4R: USF Daylight	Avg. Flow Depth=0.09' Max Vel=0.16 fps Inflow=0.31 cfs 0.223 af n=0.400 L=117.0' S=0.0427 '/ Capacity=5.00 cfs Outflow=0.31 cfs 0.219 af
Pond 1P: Diversion Swale	Peak Elev=44.44' Storage=114 cf Inflow=0.56 cfs 0.034 af 12.0" Round Culvert n=0.013 L=52.0' S=0.0058 '/ Outflow=0.43 cfs 0.034 af
Pond 2P: USF #1	Peak Elev=43.88' Storage=5,976 cf Inflow=4.40 cfs 0.290 af Primary=0.31 cfs 0.223 af Secondary=0.00 cfs 0.000 af Outflow=0.31 cfs 0.223 af

Kittery Storage PRP

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

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Pond CB1: CB #1	Peak Elev=44.25'	Inflow=0.98 cfs	0.072 af
12.0" Round Culvert n=0.013 L=101.0' S=0.0050 '/	Outflow=0.98 cfs	0.072 af	
Pond CB2: CB #2	Peak Elev=43.88'	Inflow=1.65 cfs	0.117 af
12.0" Round Culvert n=0.013 L=141.0' S=0.0050 '/	Outflow=1.65 cfs	0.117 af	
Pond CB3: CB #3	Peak Elev=44.07'	Inflow=0.54 cfs	0.036 af
12.0" Round Culvert n=0.013 L=101.0' S=0.0050 '/	Outflow=0.54 cfs	0.036 af	
Pond CB4: CB #4	Peak Elev=43.88'	Inflow=1.23 cfs	0.081 af
12.0" Round Culvert n=0.013 L=134.0' S=0.0052 '/	Outflow=1.23 cfs	0.081 af	
Link AP1: South AP	Inflow=1.72 cfs	0.142 af	
	Primary=1.72 cfs	0.142 af	
Link AP2: West AP	Inflow=3.05 cfs	0.451 af	
	Primary=3.05 cfs	0.451 af	

Kittery Storage PRP

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

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Aroma Joe's	Runoff Area=26,296 sf 45.11% Impervious Runoff Depth>3.47" Flow Length=210' Tc=8.1 min CN=89 Runoff=2.33 cfs 0.174 af
Subcatchment2S: North Subcat	Runoff Area=29,239 sf 30.31% Impervious Runoff Depth>3.17" Flow Length=277' Tc=6.5 min CN=86 Runoff=2.53 cfs 0.178 af
Subcatchment3S: Runoff to Swale	Runoff Area=7,988 sf 60.02% Impervious Runoff Depth>3.68" Flow Length=100' Tc=0.9 min CN=91 Runoff=0.90 cfs 0.056 af
Subcatchment4S: CB #3	Runoff Area=6,635 sf 100.00% Impervious Runoff Depth>4.33" Flow Length=78' Slope=0.0200 '/ Tc=1.0 min CN=98 Runoff=0.81 cfs 0.055 af
Subcatchment5S: CB #4	Runoff Area=8,200 sf 100.00% Impervious Runoff Depth>4.33" Flow Length=48' Slope=0.0200 '/ Tc=0.7 min CN=98 Runoff=1.02 cfs 0.068 af
Subcatchment6S: CB #1	Runoff Area=6,909 sf 100.00% Impervious Runoff Depth>4.33" Flow Length=54' Slope=0.0200 '/ Tc=0.8 min CN=98 Runoff=0.85 cfs 0.057 af
Subcatchment7S: CB #2	Runoff Area=8,200 sf 100.00% Impervious Runoff Depth>4.33" Flow Length=48' Slope=0.0200 '/ Tc=0.7 min CN=98 Runoff=1.02 cfs 0.068 af
Subcatchment8S: Runoff to USF	Runoff Area=22,610 sf 54.93% Impervious Runoff Depth>3.58" Flow Length=82' Tc=0.9 min CN=90 Runoff=2.49 cfs 0.155 af
Subcatchment9S: South Subcat	Runoff Area=14,842 sf 0.00% Impervious Runoff Depth>2.70" Flow Length=224' Tc=13.2 min CN=81 Runoff=0.91 cfs 0.077 af
Subcatchment10S: West Subcat	Runoff Area=44,042 sf 8.48% Impervious Runoff Depth>2.89" Flow Length=148' Tc=4.9 min CN=83 Runoff=3.68 cfs 0.244 af
Reach 1R: Aroma Joe's BMP	Avg. Flow Depth=0.72' Max Vel=3.57 fps Inflow=2.33 cfs 0.174 af 12.0" Round Pipe w/ 1.0" inside fill n=0.013 L=124.0' S=0.0050 '/ Capacity=2.37 cfs Outflow=2.31 cfs 0.174 af
Reach 2R: South AP Reach	Avg. Flow Depth=0.27' Max Vel=0.37 fps Inflow=2.31 cfs 0.174 af n=0.400 L=96.0' S=0.0638 '/ Capacity=6.11 cfs Outflow=2.13 cfs 0.173 af
Reach 3R: Ditch Culvert Reach	Avg. Flow Depth=0.31' Max Vel=0.30 fps Inflow=2.53 cfs 0.178 af n=0.400 L=151.0' S=0.0331 '/ Capacity=4.41 cfs Outflow=2.00 cfs 0.175 af
Reach 4R: USF Daylight	Avg. Flow Depth=0.23' Max Vel=0.28 fps Inflow=1.39 cfs 0.369 af n=0.400 L=117.0' S=0.0427 '/ Capacity=5.00 cfs Outflow=1.36 cfs 0.364 af
Pond 1P: Diversion Swale	Peak Elev=44.70' Storage=228 cf Inflow=0.90 cfs 0.056 af 12.0" Round Culvert n=0.013 L=52.0' S=0.0058 '/ Outflow=0.72 cfs 0.056 af
Pond 2P: USF #1	Peak Elev=44.38' Storage=8,526 cf Inflow=6.81 cfs 0.459 af Primary=1.39 cfs 0.369 af Secondary=0.00 cfs 0.000 af Outflow=1.39 cfs 0.369 af

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

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Pond CB1: CB #1

Peak Elev=44.69' Inflow=1.48 cfs 0.113 af
12.0" Round Culvert n=0.013 L=101.0' S=0.0050 '/ Outflow=1.48 cfs 0.113 af

Pond CB2: CB #2

Peak Elev=44.50' Inflow=2.49 cfs 0.181 af
12.0" Round Culvert n=0.013 L=141.0' S=0.0050 '/ Outflow=2.49 cfs 0.181 af

Pond CB3: CB #3

Peak Elev=44.39' Inflow=0.81 cfs 0.055 af
12.0" Round Culvert n=0.013 L=101.0' S=0.0050 '/ Outflow=0.81 cfs 0.055 af

Pond CB4: CB #4

Peak Elev=44.39' Inflow=1.83 cfs 0.123 af
12.0" Round Culvert n=0.013 L=134.0' S=0.0052 '/ Outflow=1.83 cfs 0.123 af

Link AP1: South AP

Inflow=3.03 cfs 0.250 af
Primary=3.03 cfs 0.250 af

Link AP2: West AP

Inflow=5.65 cfs 0.783 af
Primary=5.65 cfs 0.783 af

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

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Aroma Joe's	Runoff Area=26,296 sf 45.11% Impervious Runoff Depth>4.66" Flow Length=210' Tc=8.1 min CN=89 Runoff=3.07 cfs 0.234 af
Subcatchment2S: North Subcat	Runoff Area=29,239 sf 30.31% Impervious Runoff Depth>4.34" Flow Length=277' Tc=6.5 min CN=86 Runoff=3.41 cfs 0.243 af
Subcatchment3S: Runoff to Swale	Runoff Area=7,988 sf 60.02% Impervious Runoff Depth>4.87" Flow Length=100' Tc=0.9 min CN=91 Runoff=1.17 cfs 0.074 af
Subcatchment4S: CB #3	Runoff Area=6,635 sf 100.00% Impervious Runoff Depth>5.51" Flow Length=78' Slope=0.0200 '/ Tc=1.0 min CN=98 Runoff=1.03 cfs 0.070 af
Subcatchment5S: CB #4	Runoff Area=8,200 sf 100.00% Impervious Runoff Depth>5.51" Flow Length=48' Slope=0.0200 '/ Tc=0.7 min CN=98 Runoff=1.29 cfs 0.086 af
Subcatchment6S: CB #1	Runoff Area=6,909 sf 100.00% Impervious Runoff Depth>5.51" Flow Length=54' Slope=0.0200 '/ Tc=0.8 min CN=98 Runoff=1.08 cfs 0.073 af
Subcatchment7S: CB #2	Runoff Area=8,200 sf 100.00% Impervious Runoff Depth>5.51" Flow Length=48' Slope=0.0200 '/ Tc=0.7 min CN=98 Runoff=1.29 cfs 0.086 af
Subcatchment8S: Runoff to USF	Runoff Area=22,610 sf 54.93% Impervious Runoff Depth>4.77" Flow Length=82' Tc=0.9 min CN=90 Runoff=3.27 cfs 0.206 af
Subcatchment9S: South Subcat	Runoff Area=14,842 sf 0.00% Impervious Runoff Depth>3.81" Flow Length=224' Tc=13.2 min CN=81 Runoff=1.27 cfs 0.108 af
Subcatchment10S: West Subcat	Runoff Area=44,042 sf 8.48% Impervious Runoff Depth>4.03" Flow Length=148' Tc=4.9 min CN=83 Runoff=5.05 cfs 0.339 af
Reach 1R: Aroma Joe's BMP	Avg. Flow Depth=0.92' Max Vel=3.58 fps Inflow=3.07 cfs 0.234 af 12.0" Round Pipe w/ 1.0" inside fill n=0.013 L=124.0' S=0.0050 '/ Capacity=2.37 cfs Outflow=2.37 cfs 0.234 af
Reach 2R: South AP Reach	Avg. Flow Depth=0.29' Max Vel=0.39 fps Inflow=2.37 cfs 0.234 af n=0.400 L=96.0' S=0.0638 '/ Capacity=6.11 cfs Outflow=2.37 cfs 0.233 af
Reach 3R: Ditch Culvert Reach	Avg. Flow Depth=0.38' Max Vel=0.34 fps Inflow=3.41 cfs 0.243 af n=0.400 L=151.0' S=0.0331 '/ Capacity=4.41 cfs Outflow=2.78 cfs 0.240 af
Reach 4R: USF Daylight	Avg. Flow Depth=0.29' Max Vel=0.32 fps Inflow=1.96 cfs 0.494 af n=0.400 L=117.0' S=0.0427 '/ Capacity=5.00 cfs Outflow=1.94 cfs 0.489 af
Pond 1P: Diversion Swale	Peak Elev=45.11' Storage=473 cf Inflow=1.17 cfs 0.074 af 12.0" Round Culvert n=0.013 L=52.0' S=0.0058 '/ Outflow=1.53 cfs 0.074 af
Pond 2P: USF #1	Peak Elev=44.79' Storage=10,878 cf Inflow=8.66 cfs 0.596 af Primary=1.96 cfs 0.494 af Secondary=0.00 cfs 0.000 af Outflow=1.96 cfs 0.494 af

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

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Pond CB1: CB #1	Peak Elev=45.53'	Inflow=1.84 cfs	0.147 af
12.0" Round Culvert n=0.013 L=101.0' S=0.0050 '/	Outflow=1.84 cfs	0.147 af	
Pond CB2: CB #2	Peak Elev=45.43'	Inflow=3.11 cfs	0.234 af
12.0" Round Culvert n=0.013 L=141.0' S=0.0050 '/	Outflow=3.11 cfs	0.234 af	
Pond CB3: CB #3	Peak Elev=44.86'	Inflow=1.03 cfs	0.070 af
12.0" Round Culvert n=0.013 L=101.0' S=0.0050 '/	Outflow=1.03 cfs	0.070 af	
Pond CB4: CB #4	Peak Elev=44.81'	Inflow=2.32 cfs	0.156 af
12.0" Round Culvert n=0.013 L=134.0' S=0.0052 '/	Outflow=2.32 cfs	0.156 af	
Link AP1: South AP	Inflow=3.62 cfs	0.341 af	
	Primary=3.62 cfs	0.341 af	
Link AP2: West AP	Inflow=8.41 cfs	1.069 af	
	Primary=8.41 cfs	1.069 af	

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

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Summary for Subcatchment 1S: Aroma Joe's

Runoff = 3.07 cfs @ 12.11 hrs, Volume= 0.234 af, Depth> 4.66"

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

Area (sf)	CN	Description
11,863	98	Paved parking, HSG D
14,433	82	Woods/grass comb., Fair, HSG D
26,296	89	Weighted Average
14,433		54.89% Pervious Area
11,863		45.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	50	0.1000	0.12		Sheet Flow, SF 1 Woods: Light underbrush n= 0.400 P2= 3.00"
0.4	40	0.1000	1.58		Shallow Concentrated Flow, SCF 1 Woodland Kv= 5.0 fps
1.0	120	0.0100	2.03		Shallow Concentrated Flow, SCF 2 Paved Kv= 20.3 fps
8.1	210	Total			

Summary for Subcatchment 2S: North Subcat

Runoff = 3.41 cfs @ 12.10 hrs, Volume= 0.243 af, Depth> 4.34"

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

Area (sf)	CN	Description
8,863	98	Paved parking, HSG D
5,601	80	>75% Grass cover, Good, HSG D
14,775	82	Woods/grass comb., Fair, HSG D
29,239	86	Weighted Average
20,376		69.69% Pervious Area
8,863		30.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	50	0.0700	0.24		Sheet Flow, SF 1 Grass: Short n= 0.150 P2= 3.00"
0.8	82	0.0548	1.64		Shallow Concentrated Flow, SCF 1 Short Grass Pasture Kv= 7.0 fps
2.2	145	0.0241	1.09		Shallow Concentrated Flow, SCF 2 Short Grass Pasture Kv= 7.0 fps
6.5	277	Total			

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

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Summary for Subcatchment 3S: Runoff to Swale

Runoff = 1.17 cfs @ 12.01 hrs, Volume= 0.074 af, Depth> 4.87"

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

Area (sf)	CN	Description
4,794	98	Paved parking, HSG D
2,265	80	>75% Grass cover, Good, HSG D
929	82	Woods/grass comb., Fair, HSG D
7,988	91	Weighted Average
3,194		39.98% Pervious Area
4,794		60.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	42	0.0200	1.12		Sheet Flow, SF 1
					Smooth surfaces n= 0.011 P2= 3.00"
0.3	58	0.0517	3.41		Shallow Concentrated Flow, SCF 1
					Grassed Waterway Kv= 15.0 fps
0.9	100	Total			

Summary for Subcatchment 4S: CB #3

Runoff = 1.03 cfs @ 12.01 hrs, Volume= 0.070 af, Depth> 5.51"

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

Area (sf)	CN	Description
3,380	98	Unconnected roofs, HSG D
3,255	98	Paved parking, HSG D
6,635	98	Weighted Average
6,635		100.00% Impervious Area
3,380		50.94% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	78	0.0200	1.27		Sheet Flow, SF 1
					Smooth surfaces n= 0.011 P2= 3.00"

Summary for Subcatchment 5S: CB #4

Runoff = 1.29 cfs @ 12.01 hrs, Volume= 0.086 af, Depth> 5.51"

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

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

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Area (sf)	CN	Description
6,080	98	Unconnected roofs, HSG D
2,120	98	Paved parking, HSG D
8,200	98	Weighted Average
8,200		100.00% Impervious Area
6,080		74.15% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	48	0.0200	1.15		Sheet Flow, SF 1 Smooth surfaces n= 0.011 P2= 3.00"

Summary for Subcatchment 6S: CB #1

Runoff = 1.08 cfs @ 12.01 hrs, Volume= 0.073 af, Depth> 5.51"

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

Area (sf)	CN	Description
3,380	98	Unconnected roofs, HSG D
3,529	98	Paved parking, HSG D
6,909	98	Weighted Average
6,909		100.00% Impervious Area
3,380		48.92% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	54	0.0200	1.18		Sheet Flow, SF 1 Smooth surfaces n= 0.011 P2= 3.00"

Summary for Subcatchment 7S: CB #2

Runoff = 1.29 cfs @ 12.01 hrs, Volume= 0.086 af, Depth> 5.51"

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

Area (sf)	CN	Description
6,080	98	Unconnected roofs, HSG D
2,120	98	Paved parking, HSG D
8,200	98	Weighted Average
8,200		100.00% Impervious Area
6,080		74.15% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	48	0.0200	1.15		Sheet Flow, SF 1 Smooth surfaces n= 0.011 P2= 3.00"

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

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Summary for Subcatchment 8S: Runoff to USF

Runoff = 3.27 cfs @ 12.01 hrs, Volume= 0.206 af, Depth> 4.77"

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

Area (sf)	CN	Description
6,760	98	Unconnected roofs, HSG D
5,660	98	Paved parking, HSG D
10,190	80	>75% Grass cover, Good, HSG D
22,610	90	Weighted Average
10,190		45.07% Pervious Area
12,420		54.93% Impervious Area
6,760		54.43% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	65	0.0200	1.22		Sheet Flow, SF 1 Smooth surfaces n= 0.011 P2= 3.00"
0.0	17	0.2500	7.50		Shallow Concentrated Flow, SCF 1 Grassed Waterway Kv= 15.0 fps
0.9	82	Total			

Summary for Subcatchment 9S: South Subcat

Runoff = 1.27 cfs @ 12.18 hrs, Volume= 0.108 af, Depth> 3.81"

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

Area (sf)	CN	Description
3,893	80	>75% Grass cover, Good, HSG D
10,949	82	Woods/grass comb., Fair, HSG D
14,842	81	Weighted Average
14,842		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0300	0.08		Sheet Flow, SF 1 Woods: Light underbrush n= 0.400 P2= 3.00"
2.4	174	0.0574	1.20		Shallow Concentrated Flow, SCF 1 Woodland Kv= 5.0 fps
13.2	224	Total			

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Summary for Subcatchment 10S: West Subcat

Runoff = 5.05 cfs @ 12.07 hrs, Volume= 0.339 af, Depth> 4.03"

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

Area (sf)	CN	Description
3,736	98	Paved parking, HSG D
3,956	80	>75% Grass cover, Good, HSG D
36,350	82	Woods/grass comb., Fair, HSG D
44,042	83	Weighted Average
40,306		91.52% Pervious Area
3,736		8.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.7	50	0.1300	0.30		Sheet Flow, SF 1 Grass: Short n= 0.150 P2= 3.00"
0.2	17	0.1000	1.58		Shallow Concentrated Flow, SCF 1 Woodland Kv= 5.0 fps
2.0	81	0.0185	0.68		Shallow Concentrated Flow, SCF 2 Woodland Kv= 5.0 fps
4.9	148	Total			

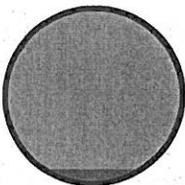
Summary for Reach 1R: Aroma Joe's BMP

Inflow Area = 0.604 ac, 45.11% Impervious, Inflow Depth > 4.66" for 25 YEAR STORM event
 Inflow = 3.07 cfs @ 12.11 hrs, Volume= 0.234 af
 Outflow = 2.37 cfs @ 12.10 hrs, Volume= 0.234 af, Atten= 23%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 3.58 fps, Min. Travel Time= 0.6 min
 Avg. Velocity = 1.50 fps, Avg. Travel Time= 1.4 min

Peak Storage= 94 cf @ 12.10 hrs
 Average Depth at Peak Storage= 1.00' above invert (0.92' above fill)
 Bank-Full Depth= 1.00' above invert (0.92' above fill) Flow Area= 0.8 sf, Capacity= 2.37 cfs

12.0" Round Pipe w/ 1.0" inside fill
 n= 0.013 Corrugated PE, smooth interior
 Length= 124.0' Slope= 0.0050 '/'
 Inlet Invert= 46.00', Outlet Invert= 45.38'



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

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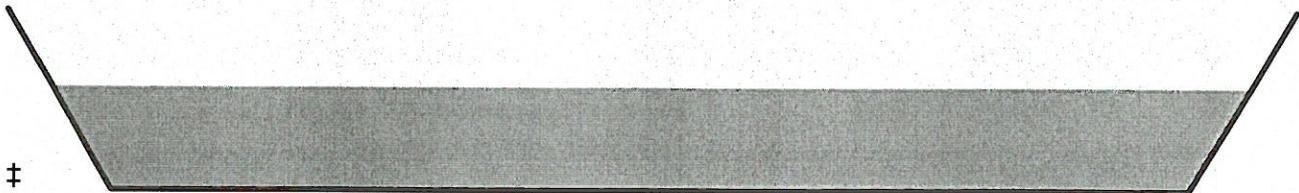
Summary for Reach 2R: South AP Reach

Inflow Area = 0.604 ac, 45.11% Impervious, Inflow Depth > 4.65" for 25 YEAR STORM event
Inflow = 2.37 cfs @ 12.10 hrs, Volume= 0.234 af
Outflow = 2.37 cfs @ 12.23 hrs, Volume= 0.233 af, Atten= 0%, Lag= 7.9 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.39 fps, Min. Travel Time= 4.1 min
Avg. Velocity = 0.12 fps, Avg. Travel Time= 13.3 min

Peak Storage= 581 cf @ 12.23 hrs
Average Depth at Peak Storage= 0.29'
Bank-Full Depth= 0.50' Flow Area= 11.0 sf, Capacity= 6.11 cfs

20.00' x 0.50' deep channel, n= 0.400 Sheet flow: Woods+light brush
Side Slope Z-value= 4.0 ' / ' Top Width= 24.00'
Length= 96.0' Slope= 0.0638 ' / '
Inlet Invert= 45.38', Outlet Invert= 39.26'



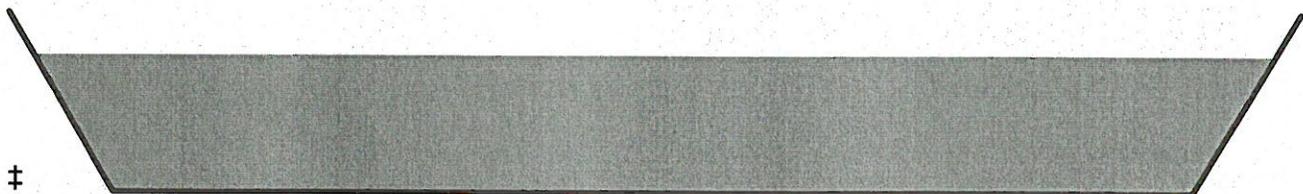
Summary for Reach 3R: Ditch Culvert Reach

Inflow Area = 0.671 ac, 30.31% Impervious, Inflow Depth > 4.34" for 25 YEAR STORM event
Inflow = 3.41 cfs @ 12.10 hrs, Volume= 0.243 af
Outflow = 2.78 cfs @ 12.16 hrs, Volume= 0.240 af, Atten= 18%, Lag= 3.8 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.34 fps, Min. Travel Time= 7.4 min
Avg. Velocity = 0.10 fps, Avg. Travel Time= 26.0 min

Peak Storage= 1,240 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.38'
Bank-Full Depth= 0.50' Flow Area= 11.0 sf, Capacity= 4.41 cfs

20.00' x 0.50' deep channel, n= 0.400 Sheet flow: Woods+light brush
Side Slope Z-value= 4.0 ' / ' Top Width= 24.00'
Length= 151.0' Slope= 0.0331 ' / '
Inlet Invert= 39.50', Outlet Invert= 34.50'



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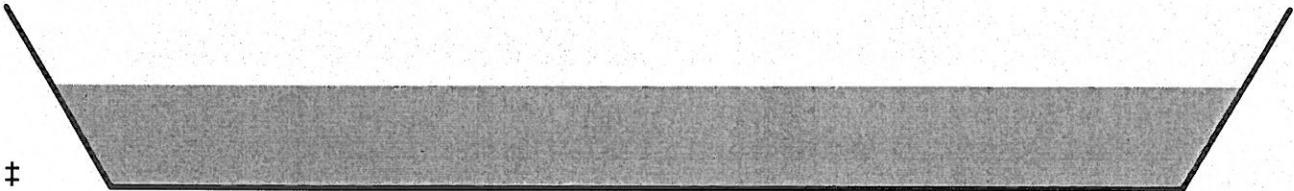
Summary for Reach 4R: USF Daylight

Inflow Area = 1.390 ac, 77.89% Impervious, Inflow Depth > 4.26" for 25 YEAR STORM event
 Inflow = 1.96 cfs @ 12.37 hrs, Volume= 0.494 af
 Outflow = 1.94 cfs @ 12.48 hrs, Volume= 0.489 af, Atten= 1%, Lag= 6.5 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Max. Velocity= 0.32 fps, Min. Travel Time= 6.1 min
 Avg. Velocity = 0.16 fps, Avg. Travel Time= 12.5 min

Peak Storage= 707 cf @ 12.48 hrs
 Average Depth at Peak Storage= 0.29'
 Bank-Full Depth= 0.50' Flow Area= 11.0 sf, Capacity= 5.00 cfs

20.00' x 0.50' deep channel, n= 0.400 Sheet flow: Woods+light brush
 Side Slope Z-value= 4.0 ' Top Width= 24.00'
 Length= 117.0' Slope= 0.0427 ' / '
 Inlet Invert= 39.50', Outlet Invert= 34.50'



Summary for Pond 1P: Diversion Swale

Inflow Area = 0.183 ac, 60.02% Impervious, Inflow Depth > 4.87" for 25 YEAR STORM event
 Inflow = 1.17 cfs @ 12.01 hrs, Volume= 0.074 af
 Outflow = 1.53 cfs @ 12.30 hrs, Volume= 0.074 af, Atten= 0%, Lag= 17.3 min
 Primary = 1.53 cfs @ 12.30 hrs, Volume= 0.074 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 45.11' @ 12.25 hrs Surf.Area= 702 sf Storage= 473 cf

Plug-Flow detention time= 12.4 min calculated for 0.074 af (99% of inflow)
 Center-of-Mass det. time= 10.7 min (759.4 - 748.7)

Volume	Invert	Avail.Storage	Storage Description
#1	44.00'	4,898 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.00	148	0	0
46.00	1,144	1,292	1,292
48.00	2,462	3,606	4,898

Device	Routing	Invert	Outlet Devices
#1	Primary	44.00'	12.0" Round CMP_Round 12" L= 52.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.00' / 43.70' S= 0.0058 ' / ' Cc= 0.900

Kittery Storage PRP

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

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n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.30 hrs HW=45.00' TW=45.17' (Dynamic Tailwater)

←1=CMP_Round 12" (Controls 0.00 cfs)

Summary for Pond 2P: USF #1

Inflow Area = 1.390 ac, 77.89% Impervious, Inflow Depth > 5.15" for 25 YEAR STORM event
 Inflow = 8.66 cfs @ 12.01 hrs, Volume= 0.596 af
 Outflow = 1.96 cfs @ 12.37 hrs, Volume= 0.494 af, Atten= 77%, Lag= 21.7 min
 Primary = 1.96 cfs @ 12.37 hrs, Volume= 0.494 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 44.79' @ 12.37 hrs Surf.Area= 6,041 sf Storage= 10,878 cf

Plug-Flow detention time= 112.9 min calculated for 0.492 af (83% of inflow)
 Center-of-Mass det. time= 64.2 min (805.3 - 741.1)

Volume	Invert	Avail.Storage	Storage Description
#1	42.30'	19,233 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.30	2,784	0	0
43.00	3,658	2,255	2,255
43.80	4,691	3,340	5,594
44.00	4,955	965	6,559
46.00	7,719	12,674	19,233

Device	Routing	Invert	Outlet Devices
#1	Primary	39.80'	12.0" Round CMP_Round 12" L= 25.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 39.80' / 39.00' S= 0.0320 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	40.00'	6.0" Round Culvert L= 20.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.00' / 39.90' S= 0.0050 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 2	42.30'	2.400 in/hr Exfiltration over Horizontal area
#4	Device 1	44.80'	8.0" W x 8.0" H Vert. Orifice/Grate X 6 rows with 1.0" cc spacing C= 0.600
#5	Secondary	44.80'	20.0' long x 4.0' 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#6	Device 1	43.80'	6.0" Vert. Orifice/Grate X 2.00 C= 0.600

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Primary OutFlow Max=1.95 cfs @ 12.37 hrs HW=44.78' TW=39.78' (Dynamic Tailwater)

- ↑1=CMP_Round 12" (Passes 1.95 cfs of 8.01 cfs potential flow)
- ↑2=Culvert (Passes 0.34 cfs of 1.88 cfs potential flow)
- ↑3=Exfiltration (Exfiltration Controls 0.34 cfs)
- ↑4=Orifice/Grate (Controls 0.00 cfs)
- ↑6=Orifice/Grate (Orifice Controls 1.62 cfs @ 4.12 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=42.30' TW=39.50' (Dynamic Tailwater)

- ↑5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond CB1: CB #1

Inflow Area = 0.342 ac, 78.56% Impervious, Inflow Depth > 5.16" for 25 YEAR STORM event
 Inflow = 1.84 cfs @ 12.30 hrs, Volume= 0.147 af
 Outflow = 1.84 cfs @ 12.30 hrs, Volume= 0.147 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.84 cfs @ 12.30 hrs, Volume= 0.147 af

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

Peak Elev= 45.53' @ 12.05 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	43.60'	12.0" Round CMP_Round 12" L= 101.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.60' / 43.10' S= 0.0050 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.30 hrs HW=45.17' TW=45.43' (Dynamic Tailwater)

- ↑1=CMP_Round 12" (Controls 0.00 cfs)

Summary for Pond CB2: CB #2

Inflow Area = 0.530 ac, 86.17% Impervious, Inflow Depth > 5.28" for 25 YEAR STORM event
 Inflow = 3.11 cfs @ 12.00 hrs, Volume= 0.234 af
 Outflow = 3.11 cfs @ 12.00 hrs, Volume= 0.234 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.11 cfs @ 12.00 hrs, Volume= 0.234 af

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

Peak Elev= 45.43' @ 12.30 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	43.00'	12.0" Round CMP_Round 12" L= 141.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.00' / 42.30' S= 0.0050 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.83 cfs @ 12.00 hrs HW=45.39' TW=44.20' (Dynamic Tailwater)

- ↑1=CMP_Round 12" (Outlet Controls 2.83 cfs @ 3.60 fps)

Kittery Storage PRP

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Summary for Pond CB3: CB #3

Inflow Area = 0.152 ac, 100.00% Impervious, Inflow Depth > 5.51" for 25 YEAR STORM event
 Inflow = 1.03 cfs @ 12.01 hrs, Volume= 0.070 af
 Outflow = 1.03 cfs @ 12.01 hrs, Volume= 0.070 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.03 cfs @ 12.01 hrs, Volume= 0.070 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 44.86' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	43.60'	12.0" Round CMP_Round 12" L= 101.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.60' / 43.10' S= 0.0050 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.01 hrs HW=44.52' TW=44.74' (Dynamic Tailwater)
 ↑1=CMP_Round 12" (Controls 0.00 cfs)

Summary for Pond CB4: CB #4

Inflow Area = 0.341 ac, 100.00% Impervious, Inflow Depth > 5.51" for 25 YEAR STORM event
 Inflow = 2.32 cfs @ 12.01 hrs, Volume= 0.156 af
 Outflow = 2.32 cfs @ 12.01 hrs, Volume= 0.156 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.32 cfs @ 12.01 hrs, Volume= 0.156 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 44.81' @ 12.40 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	43.00'	12.0" Round CMP_Round 12" L= 134.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.00' / 42.30' S= 0.0052 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.85 cfs @ 12.01 hrs HW=44.74' TW=44.24' (Dynamic Tailwater)
 ↑1=CMP_Round 12" (Outlet Controls 1.85 cfs @ 2.36 fps)

Summary for Link AP1: South AP

Inflow Area = 0.944 ac, 28.84% Impervious, Inflow Depth > 4.33" for 25 YEAR STORM event
 Inflow = 3.62 cfs @ 12.19 hrs, Volume= 0.341 af
 Primary = 3.62 cfs @ 12.19 hrs, Volume= 0.341 af, Atten= 0%, Lag= 0.0 min

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

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Summary for Link AP2: West AP

Inflow Area = 3.072 ac, 44.65% Impervious, Inflow Depth > 4.17" for 25 YEAR STORM event
Inflow = 8.41 cfs @ 12.10 hrs, Volume= 1.069 af
Primary = 8.41 cfs @ 12.10 hrs, Volume= 1.069 af, Atten= 0%, Lag= 0.0 min

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

BMP CALCULATIONS

Kittery Storage Solutions - Existing Condition Peak Flows

Analysis Point	2 Year Storm (cfs)	10 Year Storm (cfs)	25 Year Storm (cfs)
AP1	2.36	4.19	5.15
AP2	3.35	6.25	8.69

Kittery Storage Solutions - Developed Condition Peak Flows

Analysis Point	2 Year Storm (cfs)	10 Year Storm (cfs)	25 Year Storm (cfs)
AP1	1.72	3.03	3.62
AP2	3.05	5.65	8.41

Kittery Storage Solutions - Change in Peak Flows

Analysis Point	2 Year Storm (cfs)	10 Year Storm (cfs)	25 Year Storm (cfs)
AP1	-0.64	-1.16	-1.53
AP2	-0.30	-0.60	-0.28

KITTERY STORAGE SOLUTIONS [KITTERY] - BMP Calculations

Kittery Self Storage SWA BMP.xls

C022-16

POND SIZING CALCULATIONS

AREA	IMP. (ft ²)	LA. (ft ²)	RA. (ft ²)	BMP	Treatment Volume (ft ³)	CHECK
SC				USF 1		
3S	3,778	2,265	1,945		455	
4S	6,405	0	230		541	
5S	8,200	0	0		683	
6S	6,909	0	0		576	
7S	8,200	0	0		683	
8S	12,420	10,190	0		1,375	
Total	45,912	12,455	2,175		4,314	
				5% Impervious + 2% Landscaped Area =	2,588	Filter Area
				Provided Volume =	5,594	OK
				Provided Area =	2,784	OK

IMP - IMPERVIOUS AREA

RA - REMAINING SUBCATCHMENT AREA

BMP - BEST MANAGEMENT PRACTICE

CPV - CHANNEL PROTECTION VOLUME

LA - LANDSCAPED AREA, AREAS THAT WILL BE REPLANTED WITH SHRUBS OR GRASS

DEV - DEVELOPED AREA, THE SUM OF THE IMPERVIOUS AREA AND LANDSCAPED AREA.

*BIORETENTION - MAX 1 ACRE SUBCATCHMENT, BOP<2000 S.F.

KITTERY STORAGE SOLUTIONS [KITTERY] - BMP Calculations
 Kittery Self Storage SWA BMP.xls
 C022-16

TREATMENT CALCULATIONS

Amended Impervious Area to be Treated 45,988 sf 1.06 Acres
 Amended Developed Area to be Treated 71,893 sf 1.65 Acres

AMENDED DEVELOPED CONDITIONS:

AREA	IMP. (ft ²)			L.A. (ft ²)			DEV. (ft ²)			TREATMENT			
	Ext. (HCAD)	Created Require to Treat	Total (Hydro CAD)	Ext. (HCAD)	Created Require to Treat	Total (Hydro CAD)	Ext.	Created Require to Treat	Total (Hydro CAD)		Not Treated	Treated	Not Treated
1S	0	0	0	0	0	0	0	0	0	0	0	0	AP1
2S	0	0	76	0	0	5,601	0	0	5,677	0	5,677	0	AP1
3S	0	0	3,778	0	2,265	2,265	0	0	6,043	6,043	6,043	0	AP1
4S	0	0	6,405	0	0	0	0	0	6,405	6,405	6,405	0	AP1
5S	0	0	8,200	0	0	0	0	0	8,200	8,200	8,200	0	AP1
6S	0	0	6,909	0	0	0	0	0	6,909	6,909	6,909	0	AP1
7S	0	0	8,200	0	0	0	0	0	8,200	8,200	8,200	0	AP1
8S	0	0	12,420	0	0	10,190	0	0	22,610	22,610	22,610	0	AP1
9S	0	0	0	0	0	3,893	0	0	3,893	3,893	3,893	0	AP1
10S	0	0	0	0	0	3,956	0	0	3,956	3,956	3,956	0	AP4
TOTAL	0	0	45,988	0	0	25,905	0	0	71,893	58,367	13,450	13,526	

*BIORETENTION - MAX 1 ACRE SUBCATCHMENT, BOP-2000 S.F.

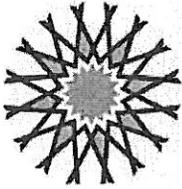
AREA	IMP. (ft ²)	DEV. (ft ²)
Total Area	45912	58367
Total Acres	1.05	1.34
% Treated=	99.8%	81.2%

*BIORETENTION - MAX 1 ACRE SUBCATCHMENT, BOP-2000 S.F.

Total SC Area (HCAD)	REMAINING (ft ²)
22,610	22,610
14,842	9,165
44,042	37,998
174,962	168,557
0	-8,200
0	-6,909
0	-8,200
0	-22,610
0	-3,893
14,842	10,896

271,298	199,405
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OPERATION AND MAINTENANCE PROGRAM



ATTAR

ENGINEERING, INC

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**KITTERY STORAGE SOLUTIONS
91 ROUTE 236
KITTERY, MAINE**

OPERATION AND MAINTENANCE PROGRAM STORMWATER MANAGEMENT BMP's

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

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

Swales

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

Catch Basins

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

Culverts

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

Snow Removal

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

Underdrained Soil Filters

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

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

Seeding, Fertilizing and Mulching

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

Record Keeping

Routine maintenance and inspections will be accomplished by the property owner [Arenhall Corp., P.O. Box 158, Wells, ME, 04090, (207)-467-1778], the property owner's maintenance staff or third party contracted by the property owner. All inspections accomplished in accordance with this program shall be documented on the attached Inspection & Maintenance Log. Copies of the Log shall be kept by the property owner and be made available to the Department (Maine Department of Environmental Protection), upon request.

SEWERAGE TREATMENT PLANT: BMP Calculations
 (Site Plan & Storm Water BMP Plan)

POND SIZING CALCULATIONS

NO.	AREA (SQ FT)	LA (IN)	RA (IN)	IMP	Volume (CU FT)	ORIG.
1	1,200	12	12	0.05	1,008	0.05
2	1,500	12	12	0.05	1,296	0.05
3	1,800	12	12	0.05	1,584	0.05
4	2,100	12	12	0.05	1,872	0.05
5	2,400	12	12	0.05	2,160	0.05
6	2,700	12	12	0.05	2,448	0.05
7	3,000	12	12	0.05	2,736	0.05
8	3,300	12	12	0.05	3,024	0.05
9	3,600	12	12	0.05	3,312	0.05
10	3,900	12	12	0.05	3,600	0.05
11	4,200	12	12	0.05	3,888	0.05
12	4,500	12	12	0.05	4,176	0.05
13	4,800	12	12	0.05	4,464	0.05
14	5,100	12	12	0.05	4,752	0.05
15	5,400	12	12	0.05	5,040	0.05
16	5,700	12	12	0.05	5,328	0.05
17	6,000	12	12	0.05	5,616	0.05
18	6,300	12	12	0.05	5,904	0.05
19	6,600	12	12	0.05	6,192	0.05
20	6,900	12	12	0.05	6,480	0.05
21	7,200	12	12	0.05	6,768	0.05
22	7,500	12	12	0.05	7,056	0.05
23	7,800	12	12	0.05	7,344	0.05
24	8,100	12	12	0.05	7,632	0.05
25	8,400	12	12	0.05	7,920	0.05
26	8,700	12	12	0.05	8,208	0.05
27	9,000	12	12	0.05	8,496	0.05
28	9,300	12	12	0.05	8,784	0.05
29	9,600	12	12	0.05	9,072	0.05
30	9,900	12	12	0.05	9,360	0.05
31	10,200	12	12	0.05	9,648	0.05
32	10,500	12	12	0.05	9,936	0.05
33	10,800	12	12	0.05	10,224	0.05
34	11,100	12	12	0.05	10,512	0.05
35	11,400	12	12	0.05	10,800	0.05
36	11,700	12	12	0.05	11,088	0.05
37	12,000	12	12	0.05	11,376	0.05
38	12,300	12	12	0.05	11,664	0.05
39	12,600	12	12	0.05	11,952	0.05
40	12,900	12	12	0.05	12,240	0.05
41	13,200	12	12	0.05	12,528	0.05
42	13,500	12	12	0.05	12,816	0.05
43	13,800	12	12	0.05	13,104	0.05
44	14,100	12	12	0.05	13,392	0.05
45	14,400	12	12	0.05	13,680	0.05
46	14,700	12	12	0.05	13,968	0.05
47	15,000	12	12	0.05	14,256	0.05
48	15,300	12	12	0.05	14,544	0.05
49	15,600	12	12	0.05	14,832	0.05
50	15,900	12	12	0.05	15,120	0.05
51	16,200	12	12	0.05	15,408	0.05
52	16,500	12	12	0.05	15,696	0.05
53	16,800	12	12	0.05	15,984	0.05
54	17,100	12	12	0.05	16,272	0.05
55	17,400	12	12	0.05	16,560	0.05
56	17,700	12	12	0.05	16,848	0.05
57	18,000	12	12	0.05	17,136	0.05
58	18,300	12	12	0.05	17,424	0.05
59	18,600	12	12	0.05	17,712	0.05
60	18,900	12	12	0.05	18,000	0.05
61	19,200	12	12	0.05	18,288	0.05
62	19,500	12	12	0.05	18,576	0.05
63	19,800	12	12	0.05	18,864	0.05
64	20,100	12	12	0.05	19,152	0.05
65	20,400	12	12	0.05	19,440	0.05
66	20,700	12	12	0.05	19,728	0.05
67	21,000	12	12	0.05	20,016	0.05
68	21,300	12	12	0.05	20,304	0.05
69	21,600	12	12	0.05	20,592	0.05
70	21,900	12	12	0.05	20,880	0.05
71	22,200	12	12	0.05	21,168	0.05
72	22,500	12	12	0.05	21,456	0.05
73	22,800	12	12	0.05	21,744	0.05
74	23,100	12	12	0.05	22,032	0.05
75	23,400	12	12	0.05	22,320	0.05
76	23,700	12	12	0.05	22,608	0.05
77	24,000	12	12	0.05	22,896	0.05
78	24,300	12	12	0.05	23,184	0.05
79	24,600	12	12	0.05	23,472	0.05
80	24,900	12	12	0.05	23,760	0.05
81	25,200	12	12	0.05	24,048	0.05
82	25,500	12	12	0.05	24,336	0.05
83	25,800	12	12	0.05	24,624	0.05
84	26,100	12	12	0.05	24,912	0.05
85	26,400	12	12	0.05	25,200	0.05
86	26,700	12	12	0.05	25,488	0.05
87	27,000	12	12	0.05	25,776	0.05
88	27,300	12	12	0.05	26,064	0.05
89	27,600	12	12	0.05	26,352	0.05
90	27,900	12	12	0.05	26,640	0.05
91	28,200	12	12	0.05	26,928	0.05
92	28,500	12	12	0.05	27,216	0.05
93	28,800	12	12	0.05	27,504	0.05
94	29,100	12	12	0.05	27,792	0.05
95	29,400	12	12	0.05	28,080	0.05
96	29,700	12	12	0.05	28,368	0.05
97	30,000	12	12	0.05	28,656	0.05
98	30,300	12	12	0.05	28,944	0.05
99	30,600	12	12	0.05	29,232	0.05
100	30,900	12	12	0.05	29,520	0.05

SOILS LEGEND

SOIL SYMBOLS: B3, B4, B5, B6, B7, B8, B9, B10, B11, B12, B13, B14, B15, B16, B17, B18, B19, B20, B21, B22, B23, B24, B25, B26, B27, B28, B29, B30, B31, B32, B33, B34, B35, B36, B37, B38, B39, B40, B41, B42, B43, B44, B45, B46, B47, B48, B49, B50, B51, B52, B53, B54, B55, B56, B57, B58, B59, B60, B61, B62, B63, B64, B65, B66, B67, B68, B69, B70, B71, B72, B73, B74, B75, B76, B77, B78, B79, B80, B81, B82, B83, B84, B85, B86, B87, B88, B89, B90, B91, B92, B93, B94, B95, B96, B97, B98, B99, B100.

FLOW TYPES

SHEET FLOW
 SHALLOW CONCENTRATED FLOW
 CHANNEL FLOW

LEGEND

DET. TO FLOW LINE
 DET. TO GRADE CALC.
 P.P.P. TO FLOW LINE
 P.P.P. TO GRADE CALC.
 F.A. WETLAND BNDY.
 F.A. WETLAND AREA.
 SUBCATCHMENT BNDY.
 SOIL TYPE BOUNDARY.

SOILS LEGEND

SOIL SYMBOLS: B3, B4, B5, B6, B7, B8, B9, B10, B11, B12, B13, B14, B15, B16, B17, B18, B19, B20, B21, B22, B23, B24, B25, B26, B27, B28, B29, B30, B31, B32, B33, B34, B35, B36, B37, B38, B39, B40, B41, B42, B43, B44, B45, B46, B47, B48, B49, B50, B51, B52, B53, B54, B55, B56, B57, B58, B59, B60, B61, B62, B63, B64, B65, B66, B67, B68, B69, B70, B71, B72, B73, B74, B75, B76, B77, B78, B79, B80, B81, B82, B83, B84, B85, B86, B87, B88, B89, B90, B91, B92, B93, B94, B95, B96, B97, B98, B99, B100.

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SOILS LEGEND

SOIL SYMBOLS: B3, B4, B5, B6, B7, B8, B9, B10, B11, B12, B13, B14, B15, B16, B17, B18, B19, B20, B21, B22, B23, B24, B25, B26, B27, B28, B29, B30, B31, B32, B33, B34, B35, B36, B37, B38, B39, B40, B41, B42, B43, B44, B45, B46, B47, B48, B49, B50, B51, B52, B53, B54, B55, B56, B57, B58, B59, B60, B61, B62, B63, B64, B65, B66, B67, B68, B69, B70, B71, B72, B73, B74, B75, B76, B77, B78, B79, B80, B81, B82, B83, B84, B85, B86, B87, B88, B89, B90, B91, B92, B93, B94, B95, B96, B97, B98, B99, B100.

FLOW TYPES

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 F.A. WETLAND BNDY.
 F.A. WETLAND AREA.
 SUBCATCHMENT BNDY.
 SOIL TYPE BOUNDARY.

SOILS LEGEND

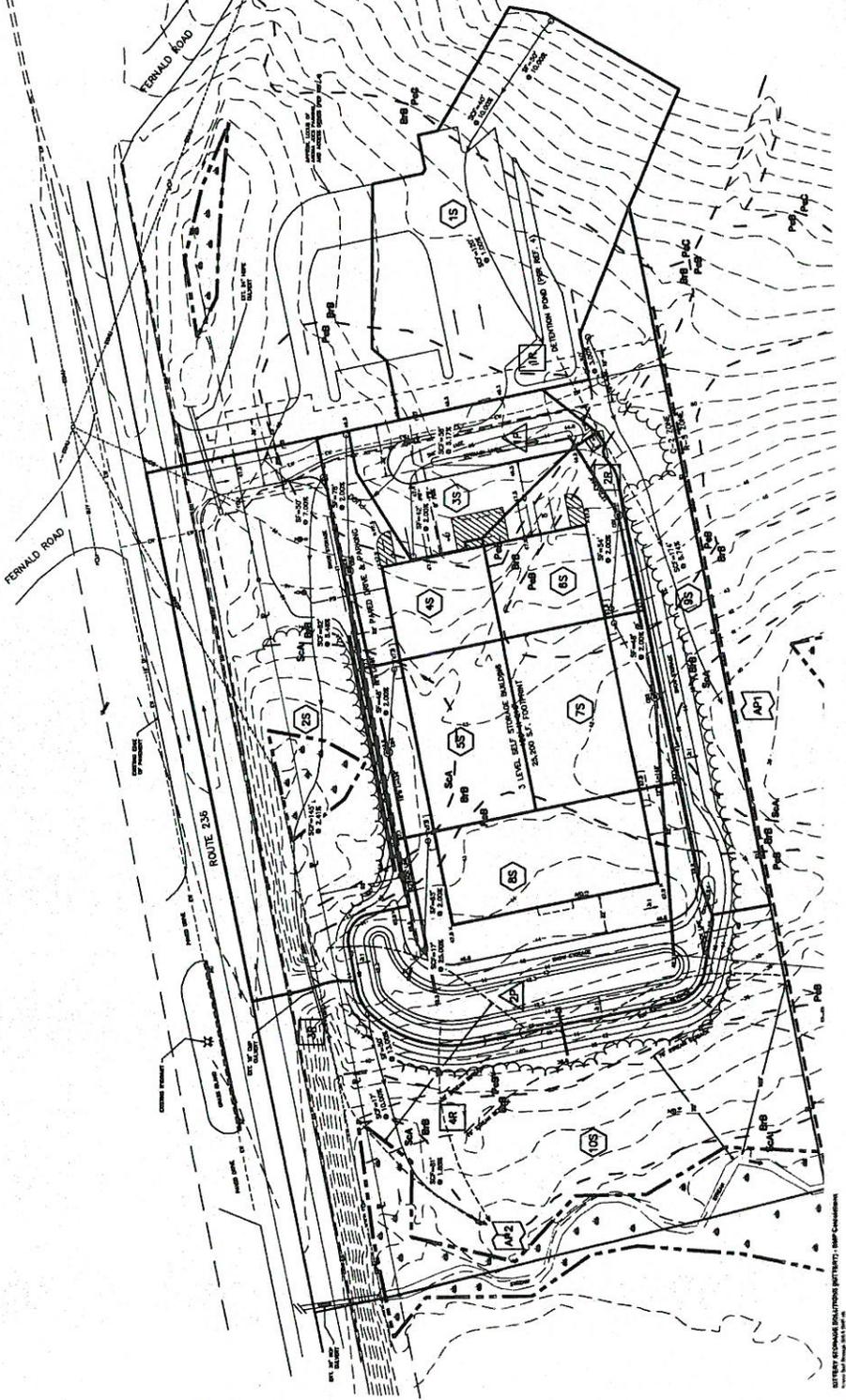
SOIL SYMBOLS: B3, B4, B5, B6, B7, B8, B9, B10, B11, B12, B13, B14, B15, B16, B17, B18, B19, B20, B21, B22, B23, B24, B25, B26, B27, B28, B29, B30, B31, B32, B33, B34, B35, B36, B37, B38, B39, B40, B41, B42, B43, B44, B45, B46, B47, B48, B49, B50, B51, B52, B53, B54, B55, B56, B57, B58, B59, B60, B61, B62, B63, B64, B65, B66, B67, B68, B69, B70, B71, B72, B73, B74, B75, B76, B77, B78, B79, B80, B81, B82, B83, B84, B85, B86, B87, B88, B89, B90, B91, B92, B93, B94, B95, B96, B97, B98, B99, B100.

FLOW TYPES

SHEET FLOW
 SHALLOW CONCENTRATED FLOW
 CHANNEL FLOW

LEGEND

DET. TO FLOW LINE
 DET. TO GRADE CALC.
 P.P.P. TO FLOW LINE
 P.P.P. TO GRADE CALC.
 F.A. WETLAND BNDY.
 F.A. WETLAND AREA.
 SUBCATCHMENT BNDY.
 SOIL TYPE BOUNDARY.



TREATMENT CALCULATIONS

NO.	AREA (SQ FT)	LA (IN)	RA (IN)	IMP	Volume (CU FT)	ORIG.	TREATMENT	
							Detention	Retention
1	1,200	12	12	0.05	1,008	0.05	0.05	0.05
2	1,500	12	12	0.05	1,296	0.05	0.05	0.05
3	1,800	12	12	0.05	1,584	0.05	0.05	0.05
4	2,100	12	12	0.05	1,872	0.05	0.05	0.05
5	2,400	12	12	0.05	2,160	0.05	0.05	0.05
6	2,700	12	12	0.05	2,448	0.05	0.05	0.05
7	3,000	12	12	0.05	2,736	0.05	0.05	0.05
8	3,300	12	12	0.05	3,024	0.05	0.05	0.05
9	3,600	12	12	0.05	3,312	0.05	0.05	0.05
10	3,900	12	12	0.05	3,600	0.05	0.05	0.05
11	4,200	12	12	0.05	3,888	0.05	0.05	0.05
12	4,500	12	12	0.05	4,176	0.05	0.05	0.05
13	4,800	12	12	0.05	4,464	0.05	0.05	0.05
14	5,100	12	12	0.05	4,752	0.05	0.05	0.05
15	5,400	12	12	0.05	5,040	0.05	0.05	0.05
16	5,700	12	12	0.05	5,328	0.05	0.05	0.05
17	6,000	12	12	0.05	5,616	0.05	0.05	0.05
18	6,300	12	12	0.05	5,904	0.05	0.05	0.05
19								

