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: SITE PLAN REVIEW

FEE FOR SITE PLAN REVIEW:	☐ **$300. 00 PLUS THE GREATER OF:**	☐ **$50/USE OF UNIT; 0R**	☒ **$5.00/100 SQ FT OF GROSS FLOOR AREA** 12,750 SF	**Application Fee Paid:** $_____ Date:_____ **ASA Fee Paid:** (TITLE 3.3 TOWN CODE) $_____ Date:_____
		☐ **$0.50/LINEAR FOOT OF DOCK, SLIP & FLOAT; OR**	☐ **$20.00/ UNIT INTENDED TO PROVIDE OVERNIGHT SLEEPING ACCOMODATIONS**	

PROPERTY DESCRIPTION	**Parcel ID**	**Map**	21	**Lot**	7	**Zone:** C - 2 **Base:** _____ **Overlay:** _____ **MS4:** ___ YES ____ NO		**Total Land Area (Square Feet)**	102,884
	Physical Address	2 Dana Avenue							

PROPERTY OWNER'S INFORMATION	**Name**	Dow Highway Properties	**Mailing Address**	35 Hodgdon Farm Lane Newington, NH 03801
	Phone	603-396-1635		
	Fax			
	Email	`greatbaynh@comcast.net		
APPLICANT'S AGENT INFORMATION	**Name**	Same as Owner	**Name of Business**	
	Phone		**Mailing Address**	
	Fax			
	Email			

PROJECT DESCRIPTION	**Existing Use:**	Mobile Home Park
	Project Name:	The Storage Barn of Kittery
	Proposed Use:	Mobile Home Park and Self Storage Facility

WAIVER REQUEST

	Ordinance Section	Describe why this request is being made.
DESCRIPTION	****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.

Related Kittery Land Use Code concerning waivers and modifications:

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.

I certify that, to the best of my knowledge, the information provided in this application is true and correct and will not deviate from the plans submitted without notifying the Kittery Planning Department of any changes.			
Applicant's Signature:		**Owner's Signature:**	John Chagnon
Date:		**Date:**	8-19-21 See Attached Authorization

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		3RD 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	

Minimum Submission Requirements

- ☐ **15 COPIES OF THIS APPLICATION**
- ☐ **15 COPIES OF THE PROPOSED 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**

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

Related Ordinances: Kittery Land Use Code- Title 16

16.10.5.2 Planner Review and Confirmation of Submittal Content - Preliminary Plan.
A completed application must include on the plan or attached thereto, the following items, unless upon the applicant’s written request, the Planning Board, by formal action, waives or defers any requirement(s) for submission.

A. A minimum of fifteen (15) paper copies of the application form, plan and all attachments thereto plus if applicable, five (5) paper copies of the 24 x 36 inches size plan sheets.

B. Plan must include:

1. Plan sheets drawn on a reproducible medium and must measure no less than eleven (11) inches by seventeen (17) inches and no larger than twenty-four (24) inches by thirty-six (36) inches; with a:

2. Scale of the drawings no greater than one inch equals thirty (30) feet for developments less than ten (10) acres, and one inch equals fifty (50) feet for all others;

3. Code block in the lower right-hand corner. The block must contain:

   a. Name(s) and address(es) of the applicant and owner,
   b. Name of the project.
   c. Name and address of the preparer of the plan, with professional seal, if applicable,
   d. Date of plan preparation/revision, and a unique ID number for the plan and any revisions;

4. Standard boundary survey conducted by a surveyor licensed in the state of Maine, in the manner recommended by the State Board of Registration for Land Surveyors;

5. An arrow showing true north and the magnetic declination, a graphic scale, and signature blocks for the owner(s) and members of the Planning Board;

6. Locus map showing the property in relation to surrounding roads, within two thousand (2,000) feet of any property line of the development,

7. Surveyed acreage of the total parcel, of rights-of-way, wetlands, and area to be disturbed and amount of street frontage;

8. Names and addresses of all owners of record of property abutting the development, including those across a street;

9. Locations of essential physical features such as watercourses, forest cover, and outcroppings

10. Proposed development area conditions including, but not limited to:

   a. Structures; their location and description including signs, to be placed on the site, floor plan of exterior walls and accesses located within one hundred (100) feet of the property line;

   b. Utilities proposed including power, water, sewer, holding tanks, bridges, culverts and drainage ways;

c. Sewage facilities type and placement. Test pit locations, at least two of which must meet the State of Maine Plumbing Code requirements, must be shown;

d. Domestic water source;

e. Parks, open space, or conservation easement locations;

f. Lot lines, interior and exterior, right-of-way, and street alignments;

g. Road and other paved ways plans, profiles and typical sections including all relevant data;

h. Setbacks Existing and proposed;

i. Machinery permanently installed locations likely to cause appreciable noise at the lot lines;

j. Raw, finished or waste materials to be stored outside the buildings, and any stored material of a toxic or hazardous nature;

k. Topographic contours of existing contours and finished grade elevations within the development;

l. Sidewalks, curbs, driveways, fences, retaining walls and other artificial features locations and dimensions proposed;;

m. Landscaping required including size and type of plant material;

n. Temporary markers locations adequate to enable the Planning Board to readily locate and appraise the layout of the development;

o. Land proposed to be dedicated to public use and the conditions of such dedication;

p. Natural features or site elements to be preserved.

C. Supporting documentation must include:

1. Vicinity map and aerial photograph showing the property in relation to surrounding properties, roads, geographic, natural resource (wetland, etc.), historic sites, applicable comprehensive plan features such as proposed park locations, land uses, zones, and other features within five hundred (500) feet from any boundary of the proposed development;

2. Existing Development Area Conditions including but not limited to:

a. Location and description of all structures, including signs, existing on the site, together with accesses located within one hundred (100) feet of the property line;

b. Essential physical features such as watercourses, wetlands, flood plains, wildlife habitat areas, forest cover, and outcroppings;

c. Utilities existing, including power, water, sewer, holding tanks, bridges, culverts and drainage ways;

3. Legal interest documents showing legal interest of the applicant in the property to be developed. Such documents must contain the description upon which the survey was based;

4. Property encumbrances currently affecting the property, as well as any proposed encumbrances;

5. Water District approval letter, if public water is used, indicating there is adequate supply and pressure to be provided to the development;

6. Erosion and sedimentation control plan endorsed by the York County soil and water conservation district;

7. Stormwater management plan for stormwater and other surface water drainage prepared by a registered professional engineer including a Maintenance Plan and Agreement that defines maintenance responsibilities, responsible parties, shared costs, and schedule. Where applicable, a Maintenance Agreement must be included in the Document of Covenants, Homeowners Documents and/or as riders to the individual deed and recorded with the York County Registry of Deeds.

8. Soil survey for York County covering the development. Where the soil survey shows soils with severe restrictions for development, a high intensity Class "A" soil survey must be provided;

9. Vehicular traffic report estimating the amount and type of vehicular traffic that will be generated by the development on a daily basis and for peak hours.

10. Traffic impact analysis in accordance with subsection (E)(2) for developments involving forty (40) or more parking spaces or which are projected to generate more than four hundred (400) vehicle trips per day;

11. Test pit(s) analysis prepared by a licensed site evaluator when sewage disposal is to be accomplished by subsurface disposal, pits, prepared by a licensed site evaluator;

12. Town Sewage Department or community system authority letter, when sewage disposal is to be through a public or community system, approving the connection and its location;

    a. Additional submissions as may be required by other sections of this Code such as for clustered development, mobile home parks, or junkyards must be provided.

    b. Letters of evaluation of the development by the Chief of Police, Fire Chief, Commissioner of Public Works, and, for residential applications, the superintendent of schools, must be collected and provided by the Town Planner.

    c. Additional Requirements. In its consideration of an application/plan, the Planning Board may at any point in the review, require the applicant to submit additional materials, studies, analyses, and agreement proposals as it may deem necessary for complete understanding of the application.

1. Such materials may include:

1. Traffic impact study, including the following data:

a. An executive summary outlining the study findings and recommendations.

b. A physical description of the project site and study area encompassed by the report with a diagram of the site and its relationship to existing and proposed development sites within the study area.

c. A complete description of the proposed uses for the project site (in cases where specific uses have not been identified, the highest traffic generators within the category best fitting the proposed development must be used to estimate traffic generators).

d. Existing land uses and zone(s) in the vicinity of the site must be described. Any proposals for the development of vacant parcels or redevelopment of parcels within the study area of which the municipality makes the applicant aware, must be included in the description.

e. Roadway geometry and existing traffic control devices on all major streets and intersections affected by the anticipated traffic generated.

f. Trip generation must be calculated for the proposed project and other proposed new projects and redevelopment projects within the study area using the most recent data available from the Institute of Transportation Engineers' (ITE) Trip Generation Guide, and/or actual field data collected from a comparable trip generator (i.e., comparable in size, location and setting). This data will be presented in a summary table

such that assumptions on trip generation and rates arrived at by the engineer are fully understandable to the Planning Board.

g. The anticipated trip distribution of vehicles entering and exiting the proposed site during the appropriate peak hour(s) must be described and diagrammed.

h. Trip assignment, the anticipated utilization of study area roadways by traffic generated by the proposed project, must be described and diagrammed.

i. Existing traffic conditions in the study area will be identified and analyzed based upon actual field counts and/or recent available machine counts.

j. Existing traffic conditions in the study area will be described and diagrammed, specifically AADT, appropriate peak design hour(s), traffic volumes, roadway and intersection capacities, and levels of service.

k. Existing safety conditions must be evaluated based upon the traffic accident data available for the most current three years and described including link and node critical rate factors (CRF).

l. Future traffic conditions on the roadway system will be estimated based on existing volumes, projected traffic growth in the general study area, projected traffic from approved development, and traffic generated by the proposed project, specifically AADT traffic, appropriate peak hour(s) traffic volumes, roadway and intersection capacity, roadway and intersection levels of service will be analyzed. When other projects are being proposed within the impact area of the project, the Planning Board may require these projects to be incorporated into the analysis.

m. When the analysis of the proposed project's impact on traffic indicates unsatisfactory CRF, levels of service or operating capacity on study area roadways and intersections, a description of proposed improvements to remedy identified deficiencies must be included.

n. The base data collected and analyzed during the course of the traffic impact study must be made available upon request of the Planning Board.

2. o. If a development that requires a traffic impact study is within five hundred (500) feet of York or Eliot, Maine or if the study identifies impacts on segments of Route 1 or Route 236 or on their intersections located in York or Eliot, Maine, the applicant must provide evidence that a copy of the impact study has been given to the impacted municipality's chief administrative officer;

3. Environmental Analysis. An analysis of the effects that the development may have upon surrounding lands and resources, including intensive study of groundwater, ecosystems, or pollution control systems, as the Planning Board, upon review and recommendation by the Conservation Commission, may deem necessary;

4. Hydrologic Analysis. When required, an analysis of the effects that the development may have on groundwater must be conducted in accordance with Section 16.32.520. This analysis is always required for mobile home park proposals.

5. Wireless Communication Services Facilities (WCSF) Analysis.

a. A visual impact analysis prepared by a landscape architect or other qualified professional acceptable to the Town that quantifies the amount of visual impact on properties located within five hundred (500) feet, within two thousand five hundred (2,500) feet and within two miles of the WCSF. This analysis will include recommendations to mitigate adverse visual impacts on such properties;

b. An analysis prepared by a qualified professional acceptable to the Town that describes why this site and structure is critical to the operation for which it is proposed. The analysis must address, at a minimum: existing and proposed service area; how this WCSF is integrated with other company operations, particularly other structures in Kittery and surrounding communities; future expansion needs in the area; the effect on company operations if this structure is not constructed in this location; other sites evaluated for location of this

structure and how such sites compare to the proposed site; other options, if any, which could be used to deliver similar services, particularly if the proposed equipment can be co-located (shared use) on an existing structure; and an analysis to the projected life cycle of this structure and location;

c. Certification by a structural engineer that construction of the structure satisfies all federal, state and local building code requirements as well as the requirement of maximum permitted co-location at the site as approved by the Planning Board / Town Planner;

d. Payment of all required performance guarantees as a condition of plan approval, with a note on the plan so stating;

e. Payment of the Planning Board application fees;

f. And all other requirements per Section 16.10.

16.10.7.2 Final Plan Application Submittal Content.

A. A complete final plan application must fulfill all the requirements of a preliminary plan as indicated in subsection 16.36.??? of this section and must show the following items, unless the Planning Board, by formal action, upon the applicant's written request, waives or defers any requirement(s) for submission. If no changes occurred to the preliminary plan it also may be considered to be the final plan.

B. Preliminary plan information including vicinity map and any amendments thereto suggested or required by the Planning Board, or other required reviewing agency;

C. Street names and lines, pedestrian ways, lots, easements, and areas to be reserved for or dedicated to public use;

D. Street length of all straight lines, the deflection angles, radii, lengths of curves and central angles of all curves, tangent distances and tangent bearings;

E. Lots and blocks within a subdivision numbered in accordance with local practice;

F. Markers/permanent reference monuments: Their location, source references, and where required, constructed in accordance with specifications herein;

G. Structures; their location and description including signs, to be placed on the site, floor plans and elevations of principal structures as well as detail of all structures showing building materials
and colors, and accesses located within one hundred (100) feet of the property line;

H. Outdoor lighting and signage plan; if the

1. Lighting plan, if the application involves the construction of more than five thousand (5,000) square feet of nonresidential floor area, or the creation of more than twenty thousand (20,000) square feet of impervious area, or the creation of three or more dwelling units in a building; prepared by a qualified lighting professional, showing at least the following at the same scale as the site plan:

a. All buildings, parking areas, driveways, service areas, pedestrian areas, landscaping, and proposed exterior lighting fixtures;
b. All proposed lighting fixture specifications and illustrations including photometric data, designation as "cut-off" fixtures, color rendering index (CRI) of all lamps (bulbs), and other descriptive information on the fixtures;
c. Mounting height of all exterior lighting fixtures;
d. Lighting analyses and luminance level diagrams or photometric point by point diagrams on a twenty (20) foot grid showing that the proposed installation conforms to the lighting level standards of the ordinance codified in this Section together with statistical summaries documenting the average luminance, maximum luminance, minimum luminance, average to minimum uniformity ratio, and maximum to minimum uniformity ratio for each parking area, drive, canopy, and sales or storage area;

e. Drawings of all relevant building elevations showing the fixtures, the portions of the walls to be illuminated, the luminance levels of the walls, and the aiming points for any remote light fixtures; and

f. A narrative that describes the hierarchy of site lighting hierarchy and how the lighting will be used to provides safety, security, and aesthetic effects.

I. Machinery permanently installed locations likely to cause appreciable noise at the lot lines;

J. Materials (raw, finished or waste) storage areas, their types and location; and any stored toxic or hazardous materials, their types and locations;

K. Fences, retaining walls and other artificial features locations and dimensions proposed;

L. Landscaping plan including location, size, and type of plant material;

M. Boundary markers for protected land areas permanently marked using Town environmental boundary markers, their location and type. The five boundary markers are: (1) Conservation Land, (2) Protected Wetland, (3) Protected Vernal Pool, (4) Wildlife Habitat, and (5) Wetlands. Depending on the proposed development the required markers(s), number of markers, placement and spacing, and the method of mounting.

N. Municipal impact analysis of the relationship of the revenues to the Town from the development and the costs of additional publicly funded resources including;

1. Review for impacts. A list of the construction items that will be completed by the developer prior to the sale of lots.

2. Municipal construction and maintenance items. A list of construction and maintenance items that must be borne by the municipality, which must include, but not be limited to:

a.. Schools, including busing;
b. Road maintenance and snow removal;
c. Police and fire protection;
d. Solid waste disposal;
e. Recreation facilities;
f. Runoff water disposal drainage ways and/or storm sewer enlargement with sediment traps

3. Municipal costs and revenues. Cost estimates to the Town for the above services and the expected tax revenue of the development.

O. Open Space Land Cession Offers. Written offers of cession to the municipality of all public open space shown on the plan, and copies of agreements, or other documents showing the manner in which space(s), Code to which is reserved by the subdivider, are to be maintained.

P. Open Space Land Cession Offers Acknowledgement by Town. Written evidence that the municipal officers are satisfied with the legal sufficiency of the documents referred to in subsection (C)(2)(a) of this section. Such written evidence does not constitute an acceptance by the municipality of any public open space referred to in subsection (C)(2)(a) of this section.

Q. Performance Guaranty and Town Acceptance to secure completion of all improvements required by the Planning Board and written evidence the Town manager is satisfied with the sufficiency of such guaranty.

1. Where improvements for the common use of lessees or the general public have been approved, the Planning Board must require a performance guaranty of amount sufficient to pay for said improvements as a part of the agreement.

2. Process. Prior to the issue of a building permit, the applicant must, in an amount and form acceptable to the Town manager, file with the municipal treasurer an instrument to cover the full cost of the required improvements. A period of one year (or such other period as the Planning Board may determine appropriate, not to exceed three years) is the guaranty time within which required improvements must be completed. The performance guaranty must include an amount required for recreation land or improvements as specified.

R. Maintenance Plan and Agreement defining maintenance responsibilities, responsible parties, shared costs, and schedule. Where applicable, a Maintenance Agreement must be included in the Document of Covenants, Homeowners Documents and/or as riders to the individual deed.

S. Phasing Plan. Where, upon applicant's request, the Planning Board may permit phasing of the plans where it can be demonstrated to the Planning Board's satisfaction that such phasing would result in a safe and orderly development of the plan.

1. The applicant may file a section of the approved plan with the municipal officials and the York County registry of deeds if said section constitutes at least twenty-five percent (25%) of the total number of lots, or for plans including buildings, twenty-five percent (25%) of the gross area, contained in the approved plan. In all circumstances, plan approval of the remaining sections of the plan will remain in effect for three years unless the applicant requests and the Planning Board grants extensions of time equivalent to the requirements for approved plans in Section 16.36.050(E).

2. Phasing is subject to any conditions deemed necessary to assure a reasonable mixture of uses is completed within each separate phase of the plan.

3. Where projects are to be constructed in phases, phasing of stormwater management, water mains and streets are part of the review process.

4. Portions of both the developed and undeveloped site, impacted by interim infrastructure conditions such as un-looped water systems, stormwater runoff from unfinished areas onto finished areas and vice versa, dead end streets, etc., must be clearly defined and shown on the plans.

5. The Planning Board may permit construction of phases "out of order" only when the storm drainage plan and the water plan, etc. have been reviewed and it has been demonstrated that the impact on both the developed and undeveloped sections is negligible.

T. Right-of-Way Plan.

1. A completed application for a Planning Board approved right-of-way must include the requirements of Section 16.36.060 with the following modifications:

a. The following submission requirements are not necessary for Right-of-Way review: subsections (B)(2)(l), (m), (p), (r)—(w) and (z); (B)(3)(c)—(h); (B)(4); and (B)(5) of this section.

b. Subsection (B)(2) of this section modified so floor plans and elevations of principal structures are not required;

c. Include the size of the parcel minus the area in the ROW, and the street frontage excluding the ROW;

d. Only need to show and locate on the plan the names and addresses of all owners of record of contiguous property, including those across a street;

e. Include required front yards from the R.O.W. on the plan.

18 August, 2021

To Whom It May Concern

RE: Client Representation for proposed redevelopment of property owned by Dow Highway Properties on Dana Avenue, Kittery, Maine

This letter is to inform the Town of Kittery, and other parties, that Ambit Engineering is authorized to represent the above-mentioned property as our agent in the approval process. This includes signatory powers on any and all applications.

Please feel free to call me if there is any question regarding this authorization.

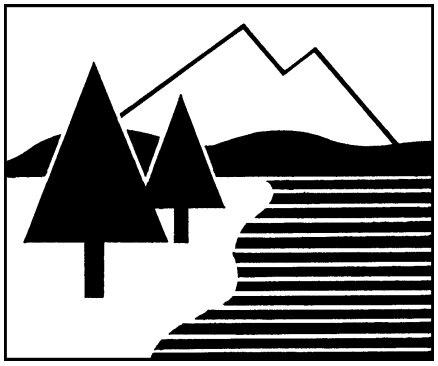
Sincerely,

Dow Highway Properties
35 Hodgdon Farm Lane
Newington, NH 03801

DRAINAGE ANALYSIS

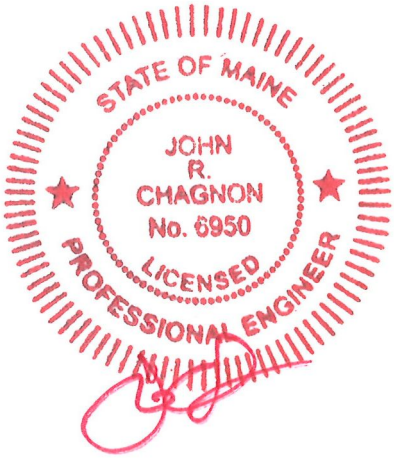
THE STORAGE BARN OF KITTERY

2 DANA AVENUE, KITTERY, ME



FOR
DOW HIGHWAY PROPERTIES, LLC

19 AUGUST 2021



Ambit Engineering, Inc.
Civil Engineers and Land Surveyors
200 Griffin Road, Unit 3
Portsmouth, NH 03801
Phone: 603.430.9282; Fax: 603.436.2315
E-mail: jrc@ambitengineering.com
(Ambit Job Number 1548.01)

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EXECUTIVE SUMMARY

This drainage analysis examines the pre-development (existing) and post-development (proposed) stormwater drainage patterns for the proposed construction of storage units and associated site improvements at 2 Dana Avenue in Kittery, ME. The site area is shown on the Town of Kittery Assessor's Tax Map 21 as Lot 7. The project proposes to redevelop the existing mobile home park into a storage unit facility with associated pavement. The redevelopment of storage unit facility will increase the impervious surface area from the site, which will increase the potential for surface runoff.

The proposed development drains into a nearby wetland buffer. Therefore, development has the potential to impact this resource and stormwater treatment must be provided. Also, the rules require not increasing stormwater runoff to adjacent properties, and the site must be designed in a manner to minimize that occurrence. Resultant from that proximity, special consideration was given to the placement of all stormwater treatment practices.
The runoff from the new impermeable surfaces will be diverted into a filtration basin, also permeable pavement will be utilized. The filtration basin will increase the storage of stormwater on-site and decrease the peak flow rate to the adjacent resource.

The hydrologic modeling utilized for this analysis uses the "Precipitation Frequency Estimate" values for rainfall from The National Oceanic and Atmospheric Administration (NOAA) as currently required by the Maine DEP.

INTRODUCTION / PROJECT DESCRIPTION

This drainage report is designed to assist the owner, planning board, contractor, regulatory reviewer, and others in understanding the impact of the proposed development project on local surface water runoff and quality. The project site is shown on the Town of Kittery, Maine, as Assessor's Tax Map 21, Lot 7.

Bounding the site to the north is Dana Avenue followed by a mobile home park. On the west is the Harold L. Dow Highway, followed by commercial property. To the east is residential property. To the south, an I-95 on-ramp. A vicinity map is included in the Appendix to this report.

The proposed development will construct a new storage unit facility, and other associated improvements such as parking and landscaping.

This report includes information about the existing site and the proposed development necessary to analyze stormwater runoff and to design any required treatment. The report includes maps of pre-development and post-development watersheds, sub-catchment areas and calculations of runoff. The report will provide a narrative of the stormwater runoff and describe numerically and graphically the surface water runoff patterns for this site. Proposed stormwater management, treatment structures, and methods will also be described, as well as erosion and sediment control practices. To fully understand the proposed site development the reader should also review a complete site plan set in addition to this report.

METHODOLOGY

The project proposes to direct the runoff from most of the proposed buildings and parking lot into a filtration basin. Also, impermeable pavement treatment will be used. The runoff flows through the systems and is discharged in the buffer of a local wetland. Water will be directed through the proposed treatment systems before discharge. Excess flow from major storm events from the proposed buildings and parking lot will be routed through a high flow bypass before being discharged into the nearby wetland buffer.

The storm events used for the peak discharge calculations in this report are the 2-year, 10-year and 25-year (24-hour) storms. The 50-year storm was used to calculate any additional needed conveyance measures. Watershed basin boundaries have been delineated using topographic maps prepared by Ambit Engineering and field observations to confirm.

SITE SPECIFIC INFORMATION

Based on the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), Soil Survey of York County, Maine, the site is made up of three soil types:

CoC – Colton gravelly sandy loam, 8 to 15 percent slopes, drained with a typical depth to restrictive feature of more than 80 inches. The provided HSG was class A.

Sc – Scantic silt loam, 0 to 3 percent slopes, depth of water table 0 to 12 inches. The provided HSG was class D.

Ur – Urban land, the assumed HSG was class D.

Ambit Engineering did an investigation of the site and determined that the site was predominantly fill with restrictive features and dense clay underneath. Contrary to the grading of a class A soil as determined by the soil report, it was determined that the soil was more characteristic of a type C soil.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) number 2301710004C (effective date July 5, 1984), the development portion of the project site is located in Zone C and is determined to be outside of the 0.2% annual chance floodplain. A copy of the FIRM map is included in the Appendix.

PRE-DEVELOPMENT DRAINAGE

The majority of the existing site drains via overland flow directly from the developed site, into the wetland on the south edge of the lot. In the pre-development condition, the site has been analyzed as four subcatchments (ES1, ES2, ES3, and ES4) based on localized topography and discharge location. The subcatchment (ES1) contains a small area on the northern edge of the property, and is the only section of the property that drains into the local stormwater infrastructure on Dana Avenue (DP1). The other subcatchments (ES2,

ES3, and ES4) all drain to the adjacent swale, flowing to Chickering Creek (DP2). Subcatchments ES2, ES3, and ES4 flow into the swale on site to the west, south, and south-east respectively. While ES3 and ES4 could be considered the same subcatchment, they were separated into two distinct subcatchments, for ease of calculation purposes.

Table 1: Pre-Development Watershed Basin Summary

Watershed Basin ID	Basin Area (SF)	Tc (MIN)	CN	10-Year Runoff (CFS)	25-Year Runoff (CFS)	To Design Point
ES1	6138	5.0	79	0.51	0.69	DP1
ES2	19286	5.0	81	1.69	2.28	DP2
ES3	64168	8.5	83	5.38	7.12	DP2
ES4	36678	5.0	83	3.42	4.52	DP2

POST-DEVELOPMENT DRAINAGE

In the post-development condition, the site has been analyzed as six separate subcatchments (PS1, PS2, PS3, PS3a, PS3b, and PS4). Subcatchments PS1 and PS2 share similar spaces and outlets to ES1and ES2 respectively, but are both reduced in size. Subcatchment PS4 remains unchanged from ES4. Subcatchment ES3 is subdivided into subcatchments PS3, PS3a, and PS3b for the post-development analysis. PS3b contains all area contributing to the porous pavement treatment. PS3a contains all additional impervious surface of the proposed design that is not contributing to the porous pavement, as well as contributing area to the filtration basin. PS3 contains all other area that would have contributed to the ES3 drainage point in the pre-development analysis.

Table 2: Post-Development Watershed Basin Summary

Watershed Basin ID	Basin Area (SF)	Tc (MIN)	CN	10-Year Runoff (CFS)	25-Year Runoff (CFS)	Design Point
PS1	1860	5.0	86	0.19	0.24	DP1
PS2	14286	5.0	80	1.22	1.65	DP2
PS3	26236	5.0	80	2.24	3.03	DP2

PS3a	32988	11.6	92	3.07	3.87	DP2
PS3b	15391	5.2	98	1.84	2.27	DP2
PS4	36709	5.0	83	3.42	4.52	DP2

Table 3 shows a summary of the comparison between pre-developed flows and post-developed flows for the design points.

Table 3: Pre-Development to Post-Development Comparison

	Q2 (CFS)		**Q10 (CFS)**		**Q25 (CFS)**		
Design Point	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Description**
DP1	0.23	0.10	0.51	0.19	0.69	0.24	Dana Ave.
DP2	5.01	4.50	10.22	9.35	13.53	13.42	Chickering Creek

Note that all drainage points of interest experience lower or equal peak flows.

OFFSITE INFRASTRUCTURE CAPACITY

DP1 flows to Town storm drainage. Flow to that point is reduced. Otherwise, retention and routing to the final destination of the stormwater is done on-site. The small area draining to Dana Avenue is shrunken and peak discharges from the area are lowered. The drainage going to DP1, the large wetland area off site, will be ultimately discharged through a stone apron, as to spread the flow path and dissipate the energy in the stormwater.

EROSION AND SEDIMENT CONTROL PRACTICES

The erosion potential for this site as it exists is moderate due to the presence of gravel areas that are highly erodible. During construction, the major potential for erosion is wind and stormwater runoff. The contractor will be required to inspect and maintain all necessary erosion control measures, as well as installing any additional measures as required. All erosion control practices shall conform to the “Maine Stormwater Management Design Manual, Technical Design Manual Volume III.” Some examples of

erosion and sediment control measures to be utilized for this project during construction may include:

- Silt Soxx located at the toe of disturbed slopes
- Catch Basin Filters
- Stabilized construction entrance at access point to the site
- Temporary mulching and seeding for disturbed areas
- Spraying water over disturbed areas to minimize wind erosion

After construction, permanent stabilization will be accomplished by permanent seeding, landscaping, and surfacing the access drives and parking areas with asphalt paving and other areas with concrete walkways.

CONCLUSION

The proposed development has been designed to minimize the impacts to neighboring properties and to the adjacent wetland resources. The addition of a filtration basin is sufficient to offset peak flows as required. Erosion and sediment control practices will be implemented for both the temporary condition during construction and for final stabilization after construction. Therefore, there are no negative impacts to downstream receptors or adjacent properties anticipated as a result of this project. There is also no negative impact to the Town of Kittery's adjacent wetland resources.

REFERENCES

1. Town of Kittery, ME. Land Use and Development Code, Amended 01-11-2021.
2. Maine Department of Environmental Protection, *Maine Stormwater Management Design Manual (Volumes I-III)*, March 2016.
3. HydroCAD Software Solution, LLC. *HydroCAD Stormwater Modeling System Version 10.0* copyright 2013.

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors

INSPECTION & LONG-TERM MAINTENANCE PLAN
FOR
THE STORAGE BARN OF KITTERY

2 DANA AVENUE
KITTERY, ME

Introduction

The intent of this plan is to provide Dow Highway Properties, LLC (herein referred to as "owner") with a list of procedures that document the inspection and maintenance requirements of the stormwater management system for this development. Specifically, the filtration basin, permeable pavement, and associated structures on the project site (collectively referred to as the "Stormwater Management System"). The contact information for the owner shall be kept current, and if there is a change of ownership of the property this plan must be transferred to the new owner.

The following inspection and maintenance program is necessary to keep the stormwater management system functioning properly and will help in maintaining a high quality of stormwater runoff to minimize potential environmental impacts. By following the enclosed procedures, the owner will be able to maintain the functional design of the stormwater management system and maximize its ability to remove sediment and other contaminants from site generated stormwater runoff.

Annual Report

The owner shall prepare an annual Inspection & Maintenance Report. The report shall include a summary of the system's maintenance and repair by transmission of the Inspection & Maintenance Log and other information as required. A copy of the report shall be delivered annually to the Kittery Code Enforcement Officer, if required.

Inspection & Maintenance Checklist/Log

The following pages contain the Stormwater Management System Inspection & Maintenance Requirements and a blank copy of the Stormwater Management System Inspection & Maintenance Log. These forms are provided to the owner as a guideline for performing the inspection and maintenance of the Stormwater Management System. This is a guideline and should be periodically reviewed for conformance with current practice and standards.

Stormwater Management System Components

The Stormwater Management System is designed to mitigate both the quantity and quality of site-generated stormwater runoff. As a result, the design includes the following elements:

Non-Structural BMPs

Non-Structural best management practices (BMP's) include temporary and permanent measures that typically require less labor and capital inputs and are intended to provide protection against erosion of soils. Examples of non-structural BMP's on this project include but are not limited to:

- Temporary and Permanent mulching
- Temporary and Permanent grass cover
- Shrubs and ground covers
- Miscellaneous landscape plantings
- Dust control
- Tree protection
- Topsoiling
- Sediment barriers
- Stabilized construction entrance

Structural BMPs

Structural BMP's are more labor and capital-intensive structures or installations that require more specialized personnel to install. Examples on this project include but are not limited to:

- Permeable pavement
- Filtration basin
- Sediment forebay
- Grassed Swale

Inspection and Maintenance Requirements

The following summarizes the inspection and maintenance requirements for the various BMP's that may be found on this project.

1. **Grassed areas:** After each rain event of 0.5" or more during a 24-hour period, inspect grassed areas for signs of disturbance, such as erosion. If damaged areas are discovered, immediately repair the damage. Repairs may include adding new topsoil, lime, seed, fertilizer, and mulch.
2. **Plantings**: Planting and landscaping (trees, shrubs) shall be monitored bi-monthly during the first year to insure viability and vigorous growth. Replace dead or dying vegetation with new stock and adjust the conditions that caused the dead or dying vegetation. During dryer times of the year, provide weekly watering or irrigation during the establishment period of the first year. Make the necessary adjustments to ensure long-term health of the vegetated covers, i.e., provide more

permanent mulch or compost or other means of protection.

3. **Storm Drain and Catch Basin Inlets/Outlets:** Monitor drain inlets and outlet aprons for excessive accumulation of sediments or missing stone/riprap. Remove sediments as required to maintain filtering capabilities of the stone—replace missing riprap.
4. **Filtration Basin:** After installation of the filter/detention basins, perform the following inspections on an annual basis:

    a. Monitor for excessive or concentrated accumulations of debris, or excessive erosion below the various pipe inlets. Remove debris as required and replace or augment inlet fabric strips.
    b. Monitor the outfall structure for problems with uneven flow or clogged pipes. Repair or remove clogs as required.
    c. After significant rainfalls, monitor pond surface for ponding of water. If water remains flooded over the surface 24 hours after a 1" rainfall, then investigate the cause, if not related to pipe/drain blockage, then excavate and replace filter media.
    d. Monitor vegetation on pond and replace dead or dying vegetation as required.
    e. Monitor rodent screens and repair or replace as required.
    f. Monitor side slopes of ponds for damage or erosion—repair, as necessary.
5. **Porous Pavers:** After placement of the porous pavers, inspect the area for signs that rainfall is flowing through the surface and not running off of the surface. Sweep and / or vacuum as needed.

Pollution Prevention

The following pollution prevention activities shall be undertaken to minimize potential impacts on stormwater runoff quality. The Contractor is responsible for all activities during construction. The Owner is responsible thereafter.

Spill Procedures

Any discharge of waste oil or other pollutant shall be reported immediately to the New Hampshire Department of Environmental Services (NHDES). The Contractor/Owner will be responsible for any incident of groundwater contamination resulting from the improper discharge of pollutants to the stormwater system and may be required by NHDES to remediate incidents that may impact groundwater quality. If the property ownership is transferred, the new owner will be informed of the legal responsibilities associated with operation of the stormwater system, as indicated above.

Sanitary Facilities

Sanitary facilities shall be provided during all phases of construction.

Material Storage

No on site trash facility is provided. The customers are required to remove trash from the site. Hazardous material storage is prohibited.

Material Disposal

All waste material, trash, sediment, and debris shall be removed from the site and disposed of in accordance with applicable local, state, and federal guidelines and regulations. Removed sediments shall be if necessary dewatered prior to disposal.

Snow & Ice Management for Standard Asphalt and Walkways

Snow storage will be located such that no direct untreated discharges are possible to receiving waters from the storage site. Snow storage areas have been shown on the Site Plan. Salt storage areas shall be covered and located such that no direct discharges are possible to receiving waters from the storage site. Salt and sand shall be used as minimally as possible.

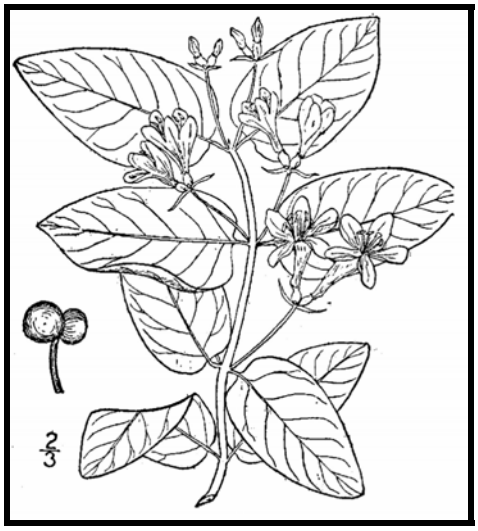
Invasive Species

Monitor the Stormwater Management System for signs of invasive species growth. If caught early, their eradication is much easier. The most likely places where invasions start is in wetter, disturbed soils or detention ponds. Species such as phragmites and purple loose-strife are common invaders in these wetter areas. If they are found, the owner shall refer to the fact-sheet created by the University of New Hampshire Cooperative Extension or contact a wetlands scientist with experience in invasive species control to implement a plan of action for eradication. Measures that do not require the application of chemical herbicides should be the first line of defense.

University of New Hampshire Cooperative Extension

Methods for Disposing Non-Native Invasive Plants

Prepared by the Invasives Species Outreach Group, volunteers interested in helping people control invasive plants. Assistance provided by the Piscataquog Land Conservancy and the NH Invasives Species Committee. Edited by Karen Bennett, Extension Forestry Professor and Specialist.



Tatarian honeysuckle
Lonicera tatarica
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 3: 282.

Non-native invasive plants crowd out natives in natural and managed landscapes. They cost taxpayers billions of dollars each year from lost agricultural and forest crops, decreased biodiversity, impacts to natural resources and the environment, and the cost to control and eradicate them.

Invasive plants grow well even in less than desirable conditions such as sandy soils along roadsides, shaded wooded areas, and in wetlands. In ideal conditions, they grow and spread even faster. There are many ways to remove these non-native invasives, but once removed, care is needed to dispose the removed plant material so the plants don't grow where disposed.

Knowing how a particular plant reproduces indicates its method of spread and helps determine the appropriate disposal method. Most are spread by seed and are dispersed by wind, water, animals, or people. Some reproduce by vegetative means from pieces of stems or roots forming new plants. Others spread through both seed and vegetative means.

Because movement and disposal of viable plant parts is restricted (see NH Regulations), viable invasive parts can't be brought to most transfer stations in the state. Check with your transfer station to see if there is an approved, designated area for invasives disposal. This fact sheet gives recommendations for rendering plant parts non-viable.

Control of invasives is beyond the scope of this fact sheet. For information about control visit www.nhinvasives.org or contact your UNH Cooperative Extension office.

New Hampshire Regulations

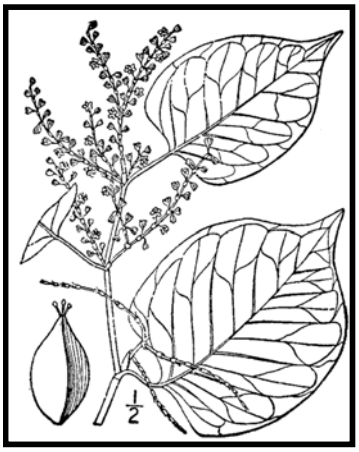
Prohibited invasive species shall only be disposed of in a manner that renders them nonliving and nonviable. (Agr. 3802.04)

No person shall collect, transport, import, export, move, buy, sell, distribute, propagate or transplant any living and viable portion of any plant species, which includes all of their cultivars and varieties, listed in Table 3800.1 of the New Hampshire prohibited invasive species list. (Agr 3802.01)

How and When to Dispose of Invasives?

To prevent seed from spreading remove invasive plants before seeds are set (produced). Some plants continue to grow, flower and set seed even after pulling or cutting. Seeds can remain viable in the ground for many years. If the plant has flowers or seeds, place the flowers and seeds in a heavy plastic bag "head first" at the weeding site and transport to the disposal site. The following are general descriptions of disposal methods. See the chart for recommendations by species.

Burning: Large woody branches and trunks can be used as firewood or burned in piles. For outside burning, a written fire permit from the local forest fire warden is required unless the ground is covered in snow. Brush larger than 5 inches in diameter can't be burned. Invasive plants with easily airborne seeds like black swallow-wort with mature seed pods (indicated by their brown color) shouldn't be burned as the seeds may disperse by the hot air created by the fire.



Japanese knotweed
Polygonum cuspidatum
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 1: 676.

Bagging (solarization): Use this technique with softer-tissue plants. Use heavy black or clear plastic bags (contractor grade), making sure that no parts of the plants poke through. Allow the bags to sit in the sun for several weeks and on dark pavement for the best effect.

Tarping and Drying: Pile material on a sheet of plastic and cover with a tarp, fastening the tarp to the ground and monitoring it for escapes. Let the material dry for several weeks, or until it is clearly nonviable.

Chipping: Use this method for woody plants that don't reproduce vegetatively.

Burying: This is risky, but can be done with watchful diligence. Lay thick plastic in a deep pit before placing the cut up plant material in the hole. Place the material away from the edge of the plastic before covering it with more heavy plastic. Eliminate as much air as possible and toss in soil to weight down the material in the pit. Note that the top of the buried material should be at least three feet underground. Japanese knotweed should be at least 5 feet underground!

Drowning: Fill a large barrel with water and place soft-tissue plants in the water. Check after a few weeks and look for rotted plant material (roots, stems, leaves, flowers). Well-rotted plant material may be composted. A word of caution- seeds may still be viable after using this method. Do this before seeds are set. This method isn't used often. Be prepared for an awful stink!

Composting: Invasive plants can take root in compost. Don't compost any invasives unless you know there is no viable (living) plant material left. Use one of the above techniques (bagging, tarping, drying, chipping, or drowning) to render the plants nonviable before composting. Closely examine the plant before composting and avoid composting seeds.

Be diligent looking for seedlings for *years* in areas where removal and disposal took place.

Suggested Disposal Methods for Non-Native Invasive Plants

This table provides information concerning the disposal of removed invasive plant material. If the infestation is treated with herbicide and left in place, these guidelines don't apply. Don't bring invasives to a local transfer station, unless there is a designated area for their disposal, or they have been rendered non-viable. This listing includes wetland and upland plants from the New Hampshire Prohibited Invasive Species List. The disposal of aquatic plants isn't addressed.

<table>
<tr><th>Woody Plants</th><th>Method of Reproducing</th><th>Methods of Disposal</th></tr>
<tr><td rowspan="2">Norway maple
(Acer platanoides)
European barberry
(Berberis vulgaris)
Japanese barberry
(Berberis thunbergii)
autumn olive
(Elaeagnus umbellata)
burning bush
(Euonymus alatus)
Morrow's honeysuckle
(Lonicera morrowii)
Tatarian honeysuckle
(Lonicera tatarica)
showy bush honeysuckle
(Lonicera x bella)
common buckthorn
(Rhamnus cathartica)
glossy buckthorn
(Frangula alnus)</td><td rowspan="2">Fruit and Seeds
  </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Use as firewood.
▪ Make a brush pile.
▪ Chip.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip once all fruit has dropped from branches.
▪ Leave resulting chips on site and monitor.</td></tr>
<tr><td rowspan="2">oriental bittersweet
(Celastrus orbiculatus)
multiflora rose
(Rosa multiflora)</td><td rowspan="2">Fruits, Seeds, Plant Fragments
  </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Make a brush pile.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip – only after material has fully dried (1 year) and all fruit has dropped from branches. Leave resulting chips on site and monitor.</td></tr>
</table>

Non-Woody Plants	Method of Reproducing	Methods of Disposal
garlic mustard *(Alliaria petiolata)* spotted knapweed *(Centaurea maculosa)* ▪ Sap of related knapweed can cause skin irritation and tumors. Wear gloves when handling. black swallow-wort *(Cynanchum nigrum)* ▪ May cause skin rash. Wear gloves and long sleeves when handling. pale swallow-wort *(Cynanchum rossicum)* giant hogweed *(Heracleum mantegazzianum)* ▪ Can cause major skin rash. Wear gloves and long sleeves when handling. dame's rocket *(Hesperis matronalis)* perennial pepperweed *(Lepidium latifolium)* purple loosestrife *(Lythrum salicaria)* Japanese stilt grass *(Microstegium vimineum)* mile-a-minute weed *(Polygonum perfoliatum)*	**Fruits and Seeds** 	**Prior to flowering** Depends on scale of infestation Small infestation ▪ Pull or cut plant and leave on site with roots exposed. Large infestation ▪ Pull or cut plant and pile. (You can pile onto or cover with plastic sheeting). ▪ Monitor. Remove any re-sprouting material. **During and following flowering** Do nothing until the following year or remove flowering heads and bag and let rot. Small infestation ▪ Pull or cut plant and leave on site with roots exposed. Large infestation ▪ Pull or cut plant and pile remaining material. (You can pile onto plastic or cover with plastic sheeting). ▪ Monitor. Remove any re-sprouting material.
common reed (*Phragmites australis*) Japanese knotweed *(Polygonum cuspidatum)* Bohemian knotweed *(Polygonum x bohemicum)*	**Fruits, Seeds, Plant Fragments** Primary means of spread in these species is by plant parts. Although all care should be given to preventing the dispersal of seed during control activities, the presence of seed doesn't materially influence disposal activities.	**Small infestation** ▪ Bag all plant material and let rot. ▪ Never pile and use resulting material as compost. ▪ Burn. **Large infestation** ▪ Remove material to unsuitable habitat (dry, hot and sunny or dry and shaded location) and scatter or pile. ▪ Monitor and remove any sprouting material. ▪ Pile, let dry, and burn.

January 2010

FILTRATION BASIN MAINTENANCE SHEET

INSPECTION REQUIREMENTS		
ACTION TAKEN	**FREQUENCY**	**MAINTENANCE REQUIREMENTS**
-Inspect trench for the occurrence of sediment, trash, debris, or structural damage.	Yearly and following major storm events	*-Ensure that sediments do not enter and plug inlet. Remove sediments, trash, and debris, as necessary.* *-Repair outlet structures and appurtenances, as necessary.*
-Check to see if trench drains within 24 to 48 hours of rainfall. *-Check vegetation health.*	Annually	*-If system does not drain within 24 to 48 hours of a rainfall event, consult a qualified professional about restoration of function of the dry well.* *-Vegetation should be maintained and pruned.* *-Dead or diseased vegetation should be*
-Monitor sediment accumulation in forebay and inlet swale	Yearly	*-Replace dead or dying vegetation* *-Remove sediments when required*

MAINTENANCE LOG	
PROJECT NAME	
INSPECTOR NAME	**INSPECTOR CONTACT INFO**
DATE OF INSPECTION	**REASON FOR INSPECTION** ☐LARGE STORM EVENT ☐PERIODIC CHECK-IN
IS CORRECTIVE ACTION NEEDED? ☐YES ☐NO	**DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE**
DATE OF MAINTENANCE	**PERFORMED BY**
NOTES	

PERMEABLE PAVER MAINTENANCE SHEET

INSPECTION REQUIREMENTS		
ACTION TAKEN	**FREQUENCY**	**MAINTENANCE REQUIREMENTS**
-Inspect trench for the occurrence of sediment, trash, debris, or structural damage. *-Check pavement for surface ponding*	Bi-Yearly and frequently in first few months following construction	*-Ensure that sediments do not enter and plug pavement. Remove sediments, trash, and debris, as necessary.* *-Repair outlet structures and appurtenances, as necessary.* *-Vacuum pavement at least twice annually.* *-Prevent vehicles with muddy wheels from accessing permeable pavement.*
-No winter sanding permitted *-Minimize application of salt*	Continuous practice	*-Vegetation should be maintained and pruned.* *-Dead or diseased vegetation should be removed, as well as any invasive species.*

MAINTENANCE LOG	
PROJECT NAME	
INSPECTOR NAME	**INSPECTOR CONTACT INFO**
DATE OF INSPECTION	**REASON FOR INSPECTION** ☐LARGE STORM EVENT ☐PERIODIC CHECK-IN
IS CORRECTIVE ACTION NEEDED? ☐YES ☐NO	**DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE**
DATE OF MAINTENANCE	**PERFORMED BY**
NOTES	

AMBIT ENGINEERING,INC. CIVIL ENGINEERS AND LAND SURVEYORS
200 Griffin Road, Unit 3, Portsmouth, NH 03801 Phone (603) 430-9282 Fax 436-2315

18 August 2021

Memo to File 1548.01

Re: Application of Land Use & Development Code to Adjacent Wetlands
Tax Map 21, Lot 7
2 Dana Avenue, Kittery, ME
Proposed Storage Barn Site Plan

Wetlands associated with subject property delineated on July 7, 2016. See corresponding wetland delineation report dated July 13, 2016.

The entire lot was observed, palustrine emergent and palustrine scrub shrub wetlands exist to the west and south of the previously developed area on the lot. Wetlands are depicted on the Existing Conditions Plan, prepared by Ambit Engineering, Inc., dated April 2021.

There are no vernal pools located on, or within 100 feet of the subject parcel.

Chickering Brook runs south/southeasterly along the eastern border of the property. Wetlands associated with the site are contiguous with Chickering Brook.

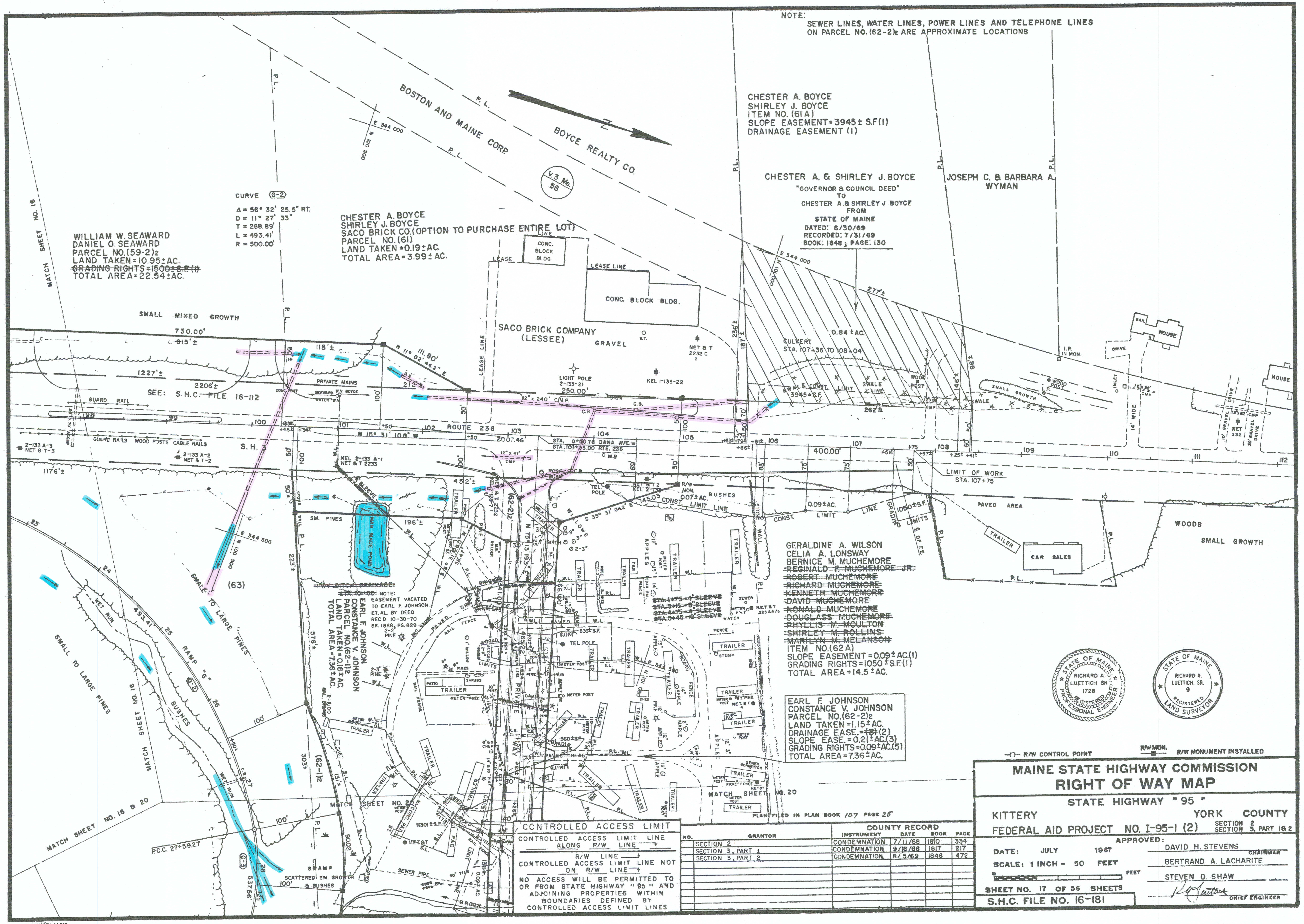
According to the Town of Kittery, Title 16, Land Use & Development Code, Article III, 16.9.3.1. C. (1) through (10), a great majority of the wetland associated with the site would not be considered a Wetland of Special Significance (WOSS). Characteristics required (detailed in 1 through 10) for WOSS designation were verified utilizing the Maine GIS database, Kittery GIS Database and on-site investigations. However, per 16.9.3.1. (8), portions of wetland located within 25 feet of a stream would be considered a WOSS, but not the entire contiguous wetland, in my opinion. In this case, the above would apply to wetland areas within 25 feet of the centerline of Chickering Brook.

According to the Town of Kittery, Title 16, Land Use & Development Code, Article III, 16.2.2., "Drainage Ditch" is defined as: *A man-made, regularly maintained channel, trench or swale for conducting water that has a direction of flow to remove surface water or groundwater from land by means of gravity. For the purposes of this title, any new activity that reroutes a streambed or dredges a wetland is not considered to be a "drainage ditch". Where a drainage ditch widens out into a larger wetland, a route no more than 12 feet in width can be considered to be the drainage ditch. The remainder is considered wetlands unless it is demonstrated that the originally developed drainage ditch was designed to be greater than 12 feet in width.*

The subject parcel with existing and proposed drainage is depicted on a plan titled "Right of Way Map, State Highway 95, Kittery, York County", dated July 1967, attached to this memo. The plan details drainage structures which direct stormwater onto the subject parcel from Route 236 via catch basins and from areas west of 236 via culverts underneath Route 236. A man made pond (likely filled post 1967) is also depicted on the plan, presumably to detain stormwater and arrows on the plan depicting flow direction are also noted

to the west of the man made pond. Arrows are highlighted in Blue on the plan and drainage structures are highlighted in Pink on the plan. Given the plan, and the above details on the plan in regards to drainage, it is my opinion that the area located to the south of the property has been subject to stormwater drainage via gravity, and that the intent of this area of land was to convey stomwater to Chickering Brook. While the plan does not provide details for a ditch, nor provides dimensions, the fact that the drainage structure locations are further apart than 12 feet demonstrates that the intent was for the area, in general, to convey stormwater drainage. As a result, I believe the area located to the south and west of the subject parcel meets the definition of "drainage ditch" above.

Steven D. Riker
NH Certified Wetland Scientist/Wildlife Biologist/Permitting Specialist


NOTE: SEWER LINES, WATER LINES, POWER LINES AND TELEPHONE LINES ON PARCEL NO.(62-2)2 ARE APPROXIMATE LOCATIONS
BOSTON AND MAINE CORP.
BOYCE REALTY CO.
CHESTER A. BOYCE
SHIRLEY J. BOYCE
ITEM NO. (61A)
SLOPE EASEMENT=3945± S.F.(1)
DRAINAGE EASEMENT (1)
CHESTER A. & SHIRLEY J. BOYCE
"GOVERNOR & COUNCIL DEED" TO CHESTER A. & SHIRLEY J BOYCE FROM STATE OF MAINE
DATED: 6/30/69
RECORDED: 7/31/69
BOOK: 1848 ; PAGE: 130
JOSEPH C. & BARBARA A. WYMAN
CURVE (G-2)
Δ = 56° 32' 25.5" RT.
D = 11° 27' 33"
T = 268.89'
L = 493.41'
R = 500.00'
CHESTER A. BOYCE
SHIRLEY J. BOYCE
SACO BRICK CO.(OPTION TO PURCHASE ENTIRE LOT)
PARCEL NO.(61)
LAND TAKEN=0.19±AC.
TOTAL AREA=3.99±AC.
WILLIAM W. SEAWARD
DANIEL O. SEAWARD
PARCEL NO.(59-2)2
LAND TAKEN=10.95±AC.
GRADING RIGHTS=1800±S.F.(1)
TOTAL AREA=22.54±AC.
MATCH SHEET NO. 16
CONC. BLOCK BLDG.
SACO BRICK COMPANY (LESSEE)
SEE: S.H.C. FILE 16-112
ROUTE 236
LIMIT OF WORK STA. 107+75
GERALDINE A. WILSON
CELIA A. LONSWAY
BERNICE M. MUCHEMORE
REGINALD F. MUCHEMORE JR.
ROBERT MUCHEMORE
RICHARD MUCHEMORE
KENNETH MUCHEMORE
DAVID MUCHEMORE
RONALD MUCHEMORE
DOUGLASS MUCHEMORE
PHYLLIS M. MOULTON
SHIRLEY M. ROLLINS
MARILYN M. MELANSON
ITEM NO.(62A)
SLOPE EASEMENT=0.09±AC.(1)
GRADING RIGHTS=1050±S.F.(1)
TOTAL AREA=14.5±AC.
EARL F. JOHNSON
CONSTANCE V. JOHNSON
PARCEL NO.(62-2)2
LAND TAKEN=1.15±AC.
DRAINAGE EASE.=(3)(2)
SLOPE EASE.=0.21±AC.(3)
GRADING RIGHTS=0.09±AC.(5)
TOTAL AREA=7.36±AC.
EARL F. JOHNSON
CONSTANCE V. JOHNSON
PARCEL NO.(62-1)2
LAND TAKEN=0.16±AC.
TOTAL AREA=7.36±AC.
MAN MADE POND
WOODS
SMALL GROWTH
CAR SALES
MATCH SHEET NO. 20
MATCH SHEET NO. 16 & 20
RAMP "G"
STATE OF MAINE RICHARD A. LUETTICH SR. 1728 REGISTERED PROFESSIONAL ENGINEER
STATE OF MAINE RICHARD A. LUETTICH, SR. 9 REGISTERED LAND SURVEYOR
R/W CONTROL POINT
R/W MONUMENT INSTALLED
CONTROLLED ACCESS LIMIT
CONTROLLED ACCESS LIMIT LINE ALONG R/W LINE
CONTROLLED ACCESS LIMIT LINE NOT ON R/W LINE
NO ACCESS WILL BE PERMITTED TO OR FROM STATE HIGHWAY "95" AND ADJOINING PROPERTIES WITHIN BOUNDARIES DEFINED BY CONTROLLED ACCESS LIMIT LINES
PLAN FILED IN PLAN BOOK 107 PAGE 25
COUNTY RECORD
SECTION 2 — CONDEMNATION 7/11/68 1810 334
SECTION 3, PART 1 — CONDEMNATION 9/18/68 1817 217
SECTION 3, PART 2 — CONDEMNATION 8/5/69 1848 472
MAINE STATE HIGHWAY COMMISSION
RIGHT OF WAY MAP
STATE HIGHWAY "95"
KITTERY YORK COUNTY
FEDERAL AID PROJECT NO. I-95-1 (2) SECTION 2 SECTION 3, PART 1 & 2
DATE: JULY 1967
SCALE: 1 INCH = 50 FEET
APPROVED:
DAVID H. STEVENS CHAIRMAN
BERTRAND A. LACHARITE
STEVEN D. SHAW
CHIEF ENGINEER
SHEET NO. 17 OF 56 SHEETS
S.H.C. FILE NO. 16-181

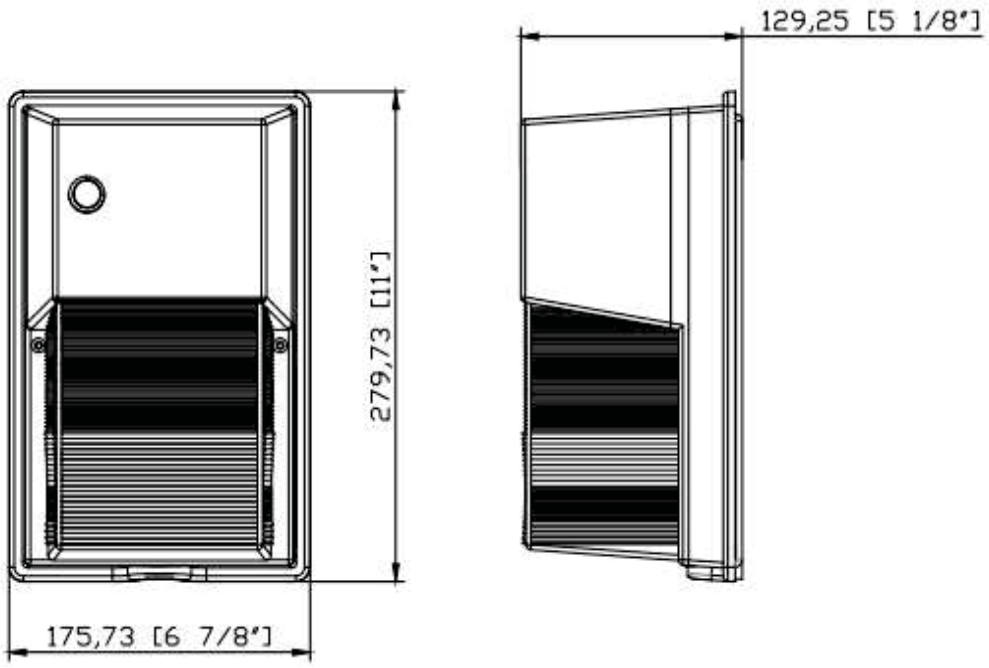

DO NOT
ENTER

Cat# 71420
LED MINI Wall-PACK

QPL ID #
PL08MT480BZK

	Model :	**71420**
OVERALL LAMP PARAMETERS	Input Voltage	100-277VAC
	Input Current	0.50A Max.@120V 0 .20A@277V
	Input Power	22W
	Power Factor	PF≥0.95
	Luminance	2160LM
	Luminous Efficiency	65 LM/W
	CRI	83
	Beam Angle	180°
	Main Structure	Alluminium + Polycarbonate
	Surface	Baking Varnish
LED DRIVER	Output Voltage	18.2-36 VDC
	Output Current	.9A
	Driver Efficiency	88%
LED	LED Type	XBD
	LED Quantity	14PCS
	LED Manufacturer	Cree
	LED Efficacy	110 lm/W
	Color Temperature	WW/NW/CW/R/G/B 5000K
LIFESPAN & ENVIRONMENT	Lifespan	50000 Hrs.
	Warranty	5 Years
	IP Rating	IP54
	Operating Temperature	-40F - +131F
	Storage Temperature.Humidity	-40℃—+80℃ , 10—90% RH
SAFETY&EMC	Safety Norms	EN60598, EN61347-2-13, EN62031, EN62471, UL1598, UL8750
	Withstand Voltage	I/P-FG: 2121VDC
	Grounding Resistance	25A 100mΩ
	Electromagnetic Compatibility	EN55015, EN61000-2-3, EN61000-3-3, EN61547
OTHERS	Diamension	Pls refer to attached diamension drawing
	Net Weight(Kg)	4.3
	Gross Weight(Kg)	5.2
	Box Size	--
	Carton Size	390*230*315
	Q'ty / Carton	1

Dimensions: 71420



THE STORAGE BARN OF KITTERY

2 DANA AVENUE
KITTERY, MAINE

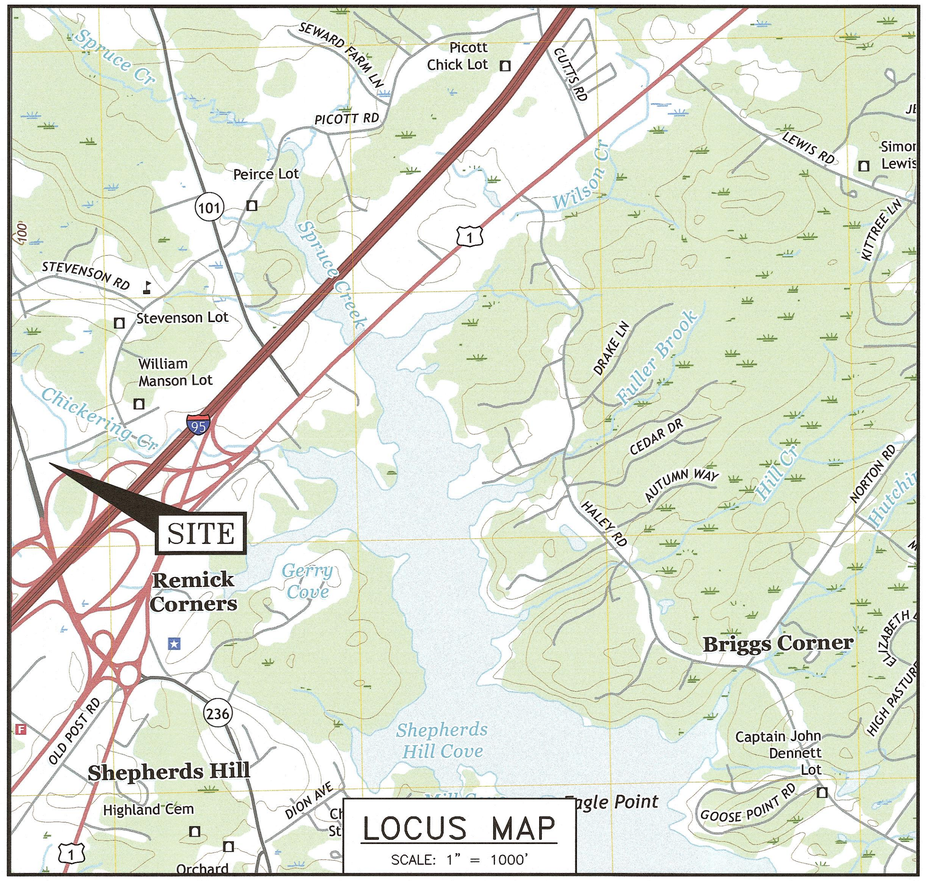
PERMIT PLANS
PRELIMINARY PLAN APPLICATION

OWNER:
DOW HIGHWAY PROPERTIES, LLC
35 HODGDON FARM LANE
NEWINGTON, N.H. 03801
TEL: (603) 396-1635

CIVIL ENGINEER & LAND SURVEYOR:
AMBIT ENGINEERING, INC.
200 GRIFFIN ROAD, UNIT 3
PORTSMOUTH, N.H. 03801-7114
TEL: (603) 430-9282
FAX: (603) 436-2315

INDEX OF SHEETS

	– BOUNDARY PLAN
C1	– EXISTING CONDITIONS PLAN
C2	– PROPOSED SITE PLAN
C3	– GRADING & EROSION CONTROL PLAN
C4	– UTILITY PLAN
C5	– LANDSCAPE PLAN
C6	– LIGHTING PLAN
D1–D3	– DETAILS



LOCUS MAP
SCALE: 1" = 1000'

OWNER:

_____ _____
SIGNATURE DATE

APPROVED BY THE KITTERY PLANNING BOARD

_____ _____
CHAIRMAN DATE

LEGEND:

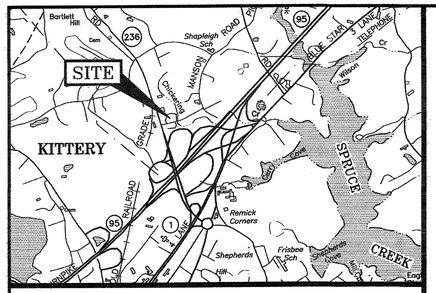
N/F		NOW OR FORMERLY
RP		RECORD OF PROBATE
YCRD		YORK COUNTY REGISTRY OF DEEDS
11/27		MAP 11/LOT 21
RR SPK FND	RR SPK SET	RAILROAD SPIKE FOUND / SET
IR FND	IR SET	IRON ROD FOUND / SET
IP FND	IP SET	IRON PIPE FOUND / SET
DH FND	DH SET	DRILL HOLE FOUND
BND w/DH	BND w/DH	BOUND WITH DRILL HOLE
ST BND w/DH	ST BND w/DH	STONE BOUND WITH DRILL HOLE
EXISTING	PROPOSED	
		FORCE MAIN
		SEWER LINE
		GAS LINE
		STORM DRAIN
		WATER LINE
		UNDERGROUND ELECTRIC
		OVERHEAD ELECTRIC/WIRES
		EDGE/℄ OF WATER BODY
		EDGE OF WETLAND
		EDGE OF RESOURCE PROTECTION AREA
		AREA OF WETLAND DISTURBANCE
		℄ OF DITCH/SWALE
100	100	CONTOUR
97x3	98x0	SPOT ELEVATION
		EDGE OF PAVEMENT (EP)
		WOODS / TREE LINE
		SECURITY FENCE
		WETLANDS
BuB		SOIL SERIES
		UTILITY POLE
		WATER SHUT OFF/CURB STOP
		GAS SHUT OFF
GV	GV	GATE VALVE
HYD	HYD	HYDRANT
CB	CB	CATCH BASIN
T	TMH	TELEPHONE MANHOLE
S	SMH	SEWER MANHOLE
D	DMH	DRAIN MANHOLE
W	W	WELL
AC		ASBESTOS CEMENT PIPE
℄	℄	CENTERLINE
CI	CI	CAST IRON PIPE
CMP	CMP	CORRUGATED METAL PIPE
COP	COP	COPPER PIPE
CPP	CPP	CORRUGATED PLASTIC PIPE
DI	DI	DUCTILE IRON PIPE
EL.	EL.	ELEVATION
EP	EP	EDGE OF PAVEMENT
FF	FF	FINISHED FLOOR
INV	INV	INVERT
PVC	PVC	POLYVINYL CHLORIDE PIPE
RCP	RCP	REINFORCED CONCRETE PIPE
TBD	TBD	TO BE DETERMINED
TBM	TBM	TEMPORARY BENCH MARK
TYP	TYP	TYPICAL
VC	VC	VITRIFIED CLAY PIPE
	9	PARKING SPACE COUNT

DIG SAFE
MA – ME – NH – RI – VT
1-888-344-7233
CALL TOLL FREE

PRELIMINARY PLAN
TAX MAP 21, LOT 7
THE STORAGE BARN OF KITTERY
2 DANA AVENUE
KITTERY, MAINE

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

PLAN SET SUBMITTAL DATE: 19 AUGUST 2021



LOCATION MAP SCALE: 1" = 2000'

ABUTTERS:

21/6 — N/F STUART R. & ALMA L. CRESSEY, 12 DANA AVENUE, KITTERY, ME 03904-5531, 1322 / 363

21/19 — N/F GAGNE REALTY HOLDINGS, LLC, 28 OLD ROUTE 27 ROAD, BELGRADE, ME 04197, 14617 / 465

21/18 — N/F DANIEL O. SEAWARD, 2 POCOHONTAS ROAD, KITTERY POINT, ME 03905-5303, 5286 / 227

21/19A — N/F DAVID W. WILSON, P. O. BOX 120, FAIRFIELD, ME 04737, 2892 / 79

PLAN REFERENCES

1) Minor Subdivision Plan of Land of Earl F. Johnson, Dana Avenue, Kittery, Maine. Dated March 27, 1980 by Moulton Engineering Co. YCRD 104/18.
2) Minor Subdivion Plan of Land of Earl F. Johnson, Dana Avenue, Kittery, Maine. Dated 8/78 by Moulton Engineering Co. YCRD 96/30.
3) Property Survey for Earl Johnson, Kittery Maine. Dated 5/30/54 by Pettigrew – Searles & Gove. YCRD 24/41.
4) Redrafted Minor Subdivion Plan of Land of Earl F. Johnson, Dana Avenue, Kittery, Maine. Dated Feb. 3, 1982 by Thomas F. Moran, Inc. YCRD 116/43.
5) Sketch of Property and Existing Structures, Dana Ave. and Route 236, Kittery, Maine Made for Ronald S. Smith. Dated January 9, 1990 by Tilcomb Associates. Not recorded.
6) Maine State Highway Commission Right of Way Map, State Highway "95", Federal Aid Project No. I-95-1 (2) S.H.C. File no. 16-181. Sheets 17 & 20 of 56 sheets. Dated July 1967. YCRD 107/25 & 28

MEASURED LEGAL DESCRIPTION

Beginning at an iron rod on the easterly sideline of the Harold L. Dow Highway (Maine Route 236) at the southerly sideline of Dana Avenue thence running South 88°52'12" East a distance of three hundred forty one and zero hundredths (341.00) feet along the southerly sideline of Dana Avenue to a point; thence turning and running along a curve to the left with a radius of one thousand nine hundred thirty nine and eighty six hundredths (1939.86) feet a distance of one hundred twenty two and eighty five hundredths (122.85) feet along the southerly sideline of Dana Avenue to an iron rod at land now or formerly of Stuart and Alma Cressey; thence turning and running South 05°31'04" East a distance of one hundred seventy eight and zero hundredths (178.00) feet along land of said Cressey to an iron rod at Interstate Highway 95; thence turning and running North 85°45'38" West a distance of seventy one and seventy three hundredths (71.73) feet along Interstate 95 to a point; thence turning and running along a curve to the left with a radius of three hundred fifty and zero hundredths (350.00) feet a distance of ninety and two hundredths (90.02) feet along Interstate 95 to a point; thence turning and running along a curve to the left with a radius of six hundred and zero hundredths (600.00) feet a distance of one hundred thirty one and zero hundredths (131.00) feet along Interstate 95 to an iron rod; thence turning and running South 84°47'18" West a distance of two hundred twenty three and zero hundredths (223.00) feet along Interstate 95 to a Maine Highway bound; thence turning and running North 00°23'29" East a distance of one hundred ninety six and zero hundredths (196.00) feet to an iron pipe; thence turning and running North 24°25'55" East a distance of fifty eight and forty seven hundredths (58.47) feet to an iron rod and the point of beginning.

Said parcel contains 102,884 square feet or 2.3619 acres, more or less.

HISTORIC LEGAL DESCRIPTION

Two certain lots or parcels of land with the buildings and improvements thereon situated on the northerly and southerly side of Dana Avenue, so-called, along Route 236 in the Town of Kittery, County of York and State of Maine, and being further bounded and described as follows:

PARCEL 2: A certain tract or parcel of land, together with the buildings and improvements thereon beginning at the northwesterly corner of the land now or formerly of Stuart Cressey on the easterly sideline of Dana Avenue, so-called; thence turning and proceeding in a general southerly direction along the land of Cressey 195 feet more or less to the land of the State of Maine; thence turning and proceeding in a general northwesterly direction along the land of the State of Maine to a State Highway bound on the easterly sideline of Route 236, so-called; thence turning and proceeding along the easterly sideline of Route 236 to the southerly sideline of Dana Avenue, so-called; thence turning and proceeding along the southerly sideline of Dana Avenue in a general easterly direction to the point begun.

LEGEND:

N/F	NOW OR FORMERLY
RP	RECORD OF PROBATE
YCRD	YORK COUNTY REGISTRY OF DEEDS
RR SPK	RAILROAD SPIKE
11/21	MAP 11/LOT 21
IR FND	IRON ROD FOUND
IP FND	IRON PIPE FOUND
IR SET	IRON ROD SET
DH FND	DRILL HOLE FOUND
DH SET	DRILL HOLE SET
RR SPK SET	RAILROAD SPIKE SET
MHBND FND	MAINE HIGHWAY BOUND FOUND
TB	TOWN BOUND
BND w/DH	BOUND WITH DRILL HOLE
ST BND w/DH	STONE BOUND WITH DRILL HOLE

NOTES:

1) PARCEL IS SHOWN ON THE TOWN OF KITTERY ASSESSORS MAP 21 AS LOT 7.
2) OWNER OF RECORD
LARIAT CORPORATION
P. O. BOX 238
HINGHAM, MA 02043
3) PARCEL IS IN A FLOOD HAZARD ZONE AS SHOWN ON FIRM PANEL 23017I0004C. EFFECTIVE DATE: JULY 5, 1984.
4) EXISTING AREA: LOT 7
102,884 S.F.
2.3619 ACRES
5) PARCEL IS LOCATED IN RURAL RESIDENCE (RR) AND COMMERCIAL (C) DISTRICTS.
6) DIMENSIONAL REQUIREMENTS:

	RURAL	COMMERCIAL
MIN. LOT AREA:	40,000 S.F.	40,000 S.F.
FRONTAGE:	150 FEET	150 FEET
SETBACKS:		
FRONT:	40 FEET	50 FEET
SIDE:	20 FEET	30 FEET
REAR:	20 FEET	30 FEET
MAXIMUM BUILDING HEIGHT:	35 FEET	40 FEET
MAXIMUM BUILDING COVERAGE:	15%	40%

RESTRICTIONS TO SUBJECT PROPERTY

(A) Deed of vacation by the State of Maine Department of Transportation dated October 28, 1970 and recorded at Book 1888, Page 829.

(B) Easement in favor of Kittery Electric Light Company and New England Telephone and Telegraph Company dated April 1, 1958 and recorded at Book 1398, Page 345.

(C) Notice of Condemnation, Layout and Taking by the State of Maine Department of Transportation dated July 30, 1969 and recorded at Book 1848, Page 472.

(D) Notice of Layout and Taking by the State of Maine Department of Transportation recorded at Book 1327, Page 87 which was amended by instrument recorded at Book 1345, Page 153.

(E) Receipt and Confirmation of Taking dated November 1, 1957 and recorded at Book 1365, Page 491.

STATEMENT OF ENCROACHMENTS

[1] UNIT IS LOCATED OVER THE PROPERTY LINE.

[2] STRUCTURES WITHIN SLOPE EASEMENTS.

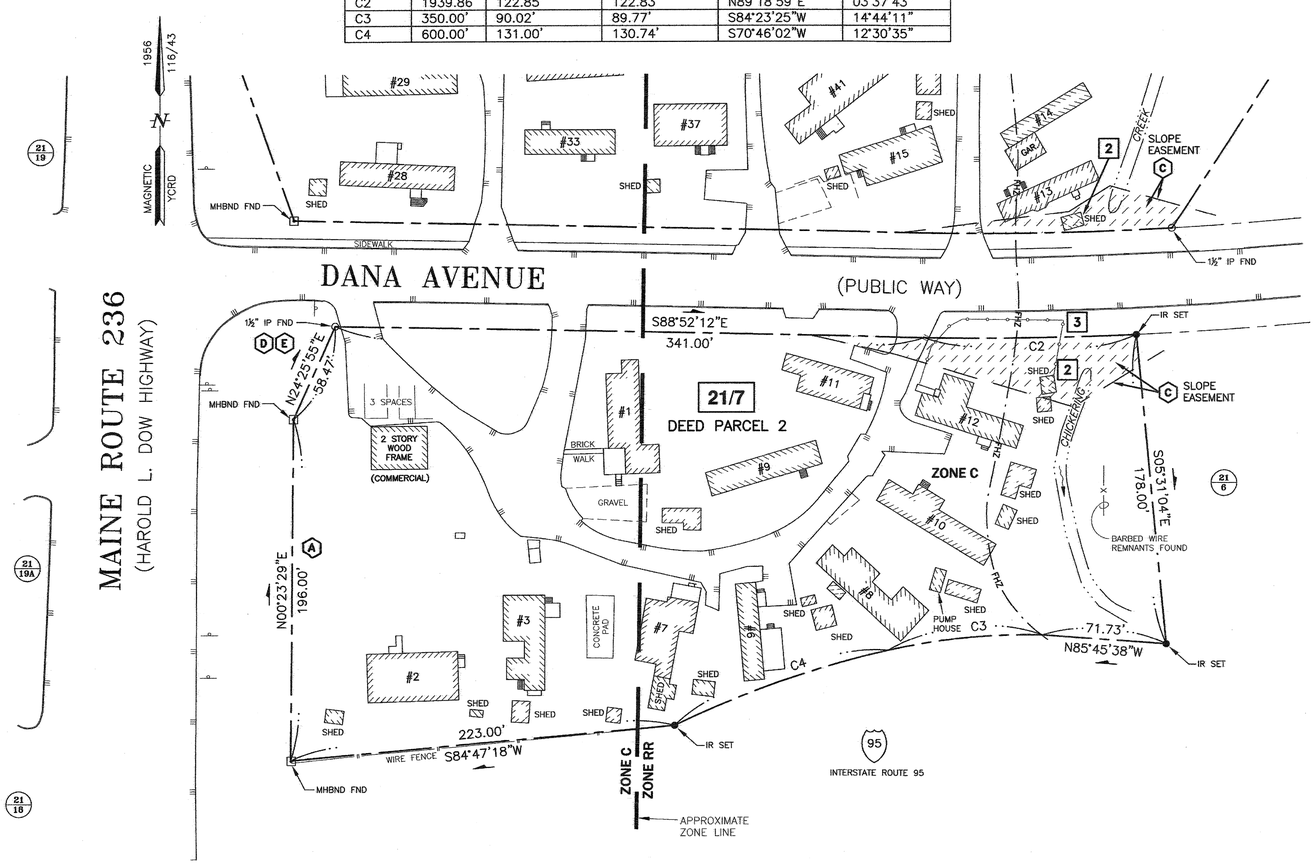
[3] FENCE WITHIN SLOPE EASEMENT AND RIGHT OF WAY.

NOTES:

1) SEE YCRD 1848/472 FOR RESERVATIONS WHICH BENEFIT THE LOCUS PARCEL FOR UTILITIES IN DANA AVENUE.

CURVE TABLE – PARCEL 2

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C2	1939.86'	122.85'	122.83'	N89°18'59"E	03°37'43"
C3	350.00'	90.02'	89.77'	S84°23'25"W	14°44'11"
C4	600.00'	131.00'	130.74'	S70°46'02"W	12°30'35"



GRAPHIC SCALE
1" = 40'
40 30 20 10 0 50 100 150 FEET
10 5 0 10 20 30 40 50 METERS

SURVEYORS CERTIFICATION:

The undersigned hereby certifies, as of July 12, 2006, to Column Financial, Inc.. and its successors and assigns, Ticor Title Insurance Company and Dow Highway Properties, LLC that he is a duly registered Land Property surveyor of the State of Maine; that this survey is made at least in accordance with the minimum standards established by said state for surveys and Land Property surveyors and with the minimum detail requirements for Land Property title surveys as adopted by The American Land Title Association and American Congress on Surveying and Mapping; that this survey correctly shows the location of all buildings, structures and other improvements situated on the subject premises; and that, except as shown, there are no visible easements or rights of way across said premises or any other easements or rights of way of which the undersigned has been advised, no party walls, no encroachments onto adjoining premises, streets or alleys by any of said buildings, structures or other improvements, and no encroachments onto said premises by buildings, structures or other improvements situated on adjoining premises. The Property is partly located in a "flood hazard area," as defined by the US Department of Housing and Urban Development, pursuant to the Flood Disaster Protection Act of 1973, as amended, as reflected by Flood Insurance Rate Map Panel 230171 0004 C, effective date July 5, 1984 which same map panel covers the area in which the Property is situated. The Property is partially located within Zone A.

To Column Financial, Inc., and its successors and assigns, Ticor Title Insurance Company and Dow Highway Properties, LLC:

This is to certify that this map or plat and the survey on which it is based were made in accordance with "Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys", jointly established and adopted by ALTA and NSPS in 2005, and includes items 1, 2, 3, 4, 6, 8, 9, 10, 11(a), and 13 of Table A thereof, pursuant to the accuracy standards as adopted by ALTA and NSPS and in effect on the date of this certification, undersigned further certifies that in my professional opinion, as a land surveyor registered in the State of Maine, the relative positional accuracy of this survey does not exceed that which is specified therein.

John R. Chagnon, Surveyor

Licensed Land Surveyor: No. 2276

Date surveyed: July 2006

Date of last revision: July 17, 2006

STATE OF MAINE JOHN R. CHAGNON No. 2276 PROFESSIONAL LAND SURVEYOR

ALTA/ACSM LAND TITLE SURVEY
FOR
DOW HIGHWAY PROPERTIES, LLC
TAX MAP 21 – LOT 7

RECORD OWNER:
LARIAT CORPORATION
P. O. BOX 238
HINGHAM, MA 02043

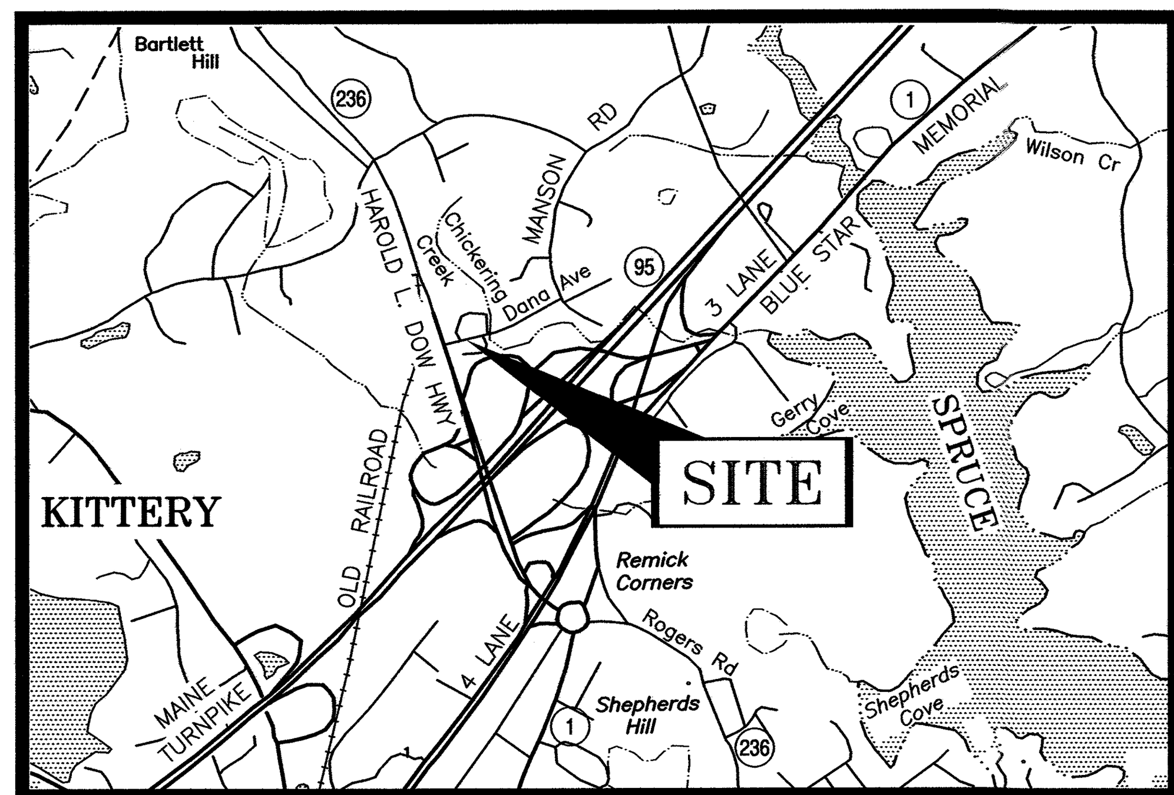
PROPERTY LOCATED AT:
DANA AVENUE
TOWN OF KITTERY
COUNTY OF YORK
STATE OF MAINE

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

SCALE: 1" = 40' DATE: JULY 2006 SHEET 2 OF 3

FB 193, PG 1 JN1548 MAP 21 – LOTS 3 & 7

M:\jobs1\JN1500s\JN1540s\JN1548\PLANS1548\1548ALTA_21-7.dwg, ALTA_21-7



LOCATION MAP SCALE: 1" = 2000'

LEGEND:

SEE COVER SHEET

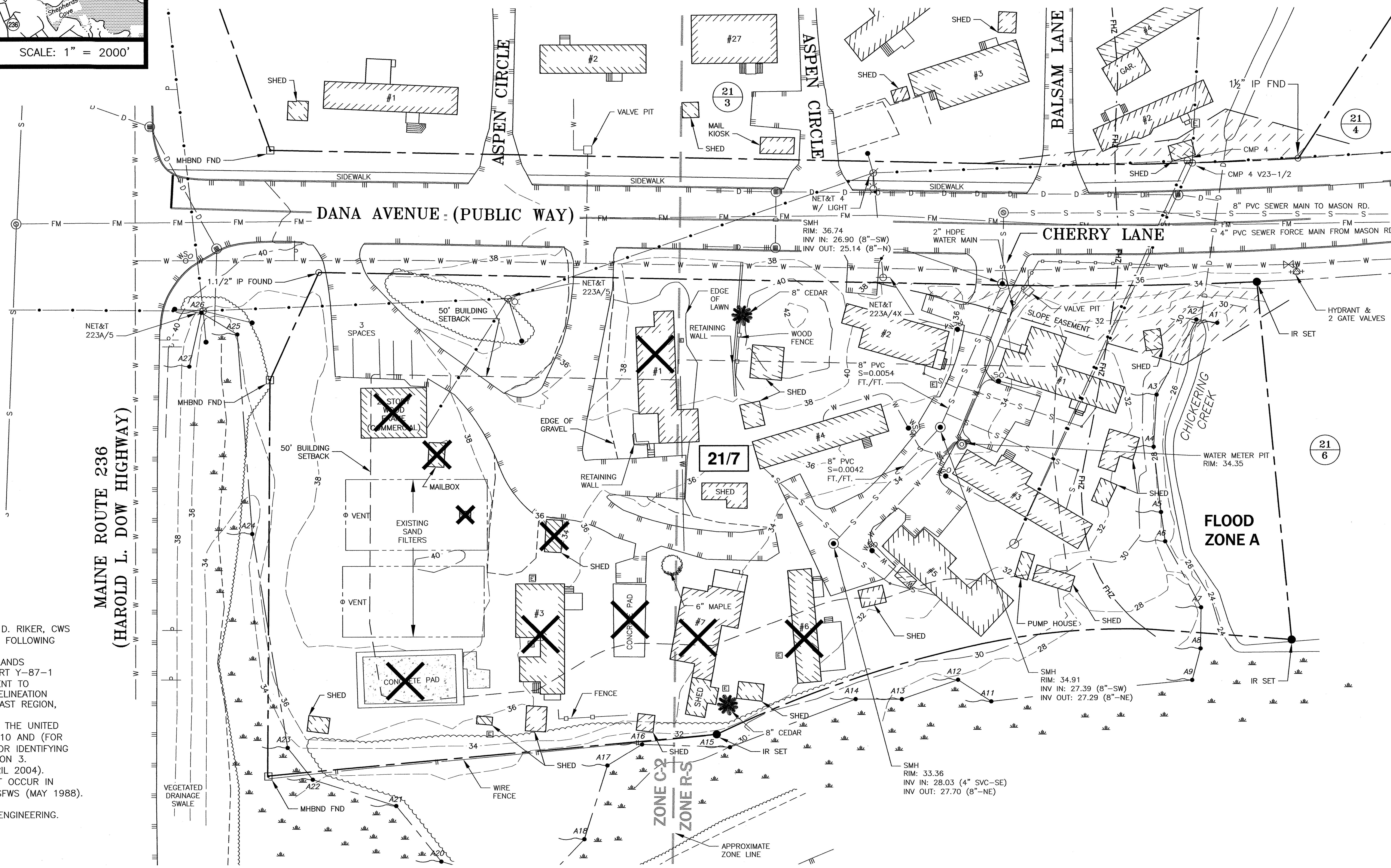
DENOTES BUILDING REMOVED

ABUTTERS:

- 21/3 — N/F DOW HIGHWAY PROPERTIES, 35 HODGON FARM LANE, NEWINGTON, NH 03801, 14907/397
- 21/4 — N/F TROY E. WILSEY, 11 DANA AVENUE, KITTERY, ME 03904, 17920/0638
- 21/6 — N/F ALMA L. CRESSEY REVOCABLE TRUST, ALMA L. CRESSEY, TRUSTEE, 12 DANA AVENUE, KITTERY, ME 03904, 16858/0841
- 21/18A — N/F SEAWARD PROPERTIES, LLC, C/O DANIEL O. SEAWARD, JR., 2 CHAUNCEY CREEK, KITTERY POINT, ME 03905, 16500/064
- 21/19 — N/F GCBRE, LLC, 28 OLD ROUTE 27 ROAD, BELGRADE, ME 04917, 18611/0660
- 21/19A — N/F DAVID W. WILSON, P. O. BOX 120, FAIRFIELD, ME 04737, 2892/0079

PLAN REFERENCES:

1) Minor Subdivision Plan of Land of Earl F. Johnson, Dana Avenue, Kittery, Maine. Dated March 27, 1980 by Moulton Engineering Co. YCRD 104/18.
2) Minor Subdivion Plan of Land of Earl F. Johnson, Dana Avenue, Kittery, Maine. Dated 8/78 by Moulton Engineering Co. YCRD 96/30.
3) Property Survey for Earl Johnson, Kittery Maine. Dated 5/30/54 by Pettigrew – Searles & Gove. YCRD 24/41.
4) Redrafted Minor Subdivion Plan of Land of Earl F. Johnson, Dana Avenue, Kittery, Maine. Dated Feb. 3, 1982 by Thomas F. Moran, Inc. YCRD 116/43.
5) Sketch of Property and Existing Structures, Dana Ave. and Route 236, Kittery, Maine Made for Ronald S. Smith. Dated January 9, 1990 by Titcomb Associates. Not recorded.
6) Maine State Highway Commission Right of Way Map, State Highway "95", Federal Aid Project No. I–95–1 (2) S.H.C. File no. 16–181. Sheets 17 & 20 of 56 sheets. Dated July 1967. YCRD 107/25 & 28



AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) PARCEL IS SHOWN ON THE TOWN OF KITTERY ASSESSORS MAP 21 AS LOT 7.

2) OWNER OF RECORD
DOW HIGHWAY PROPERTIES
35 HODGDON FARM LANE
NEWINGTON, N.H. 03801
14907/397

3) PARCEL IS PARTIALLY IN A FLOOD HAZARD ZONE AS SHOWN ON FIRM PANEL 2301710004C. EFFECTIVE DATE: JULY 5, 1984.

4) EXISTING AREA: 102,884 S.F. 2.3619 ACRES

5) PARCEL IS LOCATED IN RESIDENTIAL–SUBURBAN (R–S) AND COMMERCIAL 2 (C–2) DISTRICTS.

6) DIMENSIONAL REQUIREMENTS:

	R–S	C–2
MIN. LOT AREA:	40,000 S.F.	40,000 S.F.
FRONTAGE:	150 FEET	150 FEET
SETBACKS: FRONT:	40 FEET	50 FEET
SIDE:	15 FEET	30 FEET
REAR:	15 FEET	30 FEET
MAXIMUM BUILDING HEIGHT:	35 FEET	40 FEET
MAXIMUM BUILDING COVERAGE:	20%	40%

7) VERTICAL DATUM IS MEAN SEA LEVEL NAVD88, BASIS OF VERTICAL DATUM MEDOT D–602 1975.

8) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1–888–DIG–SAFE (1–888–344–7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

9) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

10) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "MAINE EROSION AND SEDIMENT CONTROL BMP's" PUBLISHED BY THE MAINE D.E.P. IN 2016.

THE STORAGE BARN OF KITTERY DANA AVENUE KITTERY, MAINE

NO.	DESCRIPTION	DATE
1	ISSUED FOR APPROVAL	8/19/21
0	ISSUED FOR COMMENT	4/8/21

REVISIONS

WETLAND NOTES:

1) WETLAND LINE DELINEATED BY STEVEN D. RIKER, CWS ON 7/7/16 IN ACCORDANCE WITH THE FOLLOWING STANDARDS:
A) U.S. ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL. TECHNICAL REPORT Y–87–1 (JAN. 1987). AND REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTH CENTRAL AND NORTHEAST REGION, VERSION 2.0, JANUARY 2012.
B) FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 7.0, USDA–NRCS, 2010 AND (FOR DISTURBED SITES) FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 3. NEIWPCC WETLANDS WORK GROUP (APRIL 2004).
C) NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS: NORTHEAST (REGION 1). USFWS (MAY 1988).

2) FLAGS WERE FIELD LOCATED BY AMBIT ENGINEERING.

THIS SURVEY CONFORMS TO THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS CHAPTER 90 STANDARDS OF PRACTICE, EFFECTIVE DATE APRIL 1, 2001 EXCEPT AS NOTED ON THIS PLAN.

PAUL A. DOBBERSTEIN, PLS #2526 — DATE 8/18/2021

STATE OF MAINE — PAUL A. DOBBERSTEIN — 2526 — PROFESSIONAL LAND SURVEYOR

GRAPHIC SCALE: 30 0 50 100 120 FEET; 10 5 0 10 20 30 METERS

OWNER & APPLICANT:
DOW HIGHWAY PROPERTIES
35 HODGDON FARM LANE
NEWINGTON, N.H. 03801

PREPARED BY:
AMBIT ENGINEERING
200 GRIFFIN ROAD UNIT 3
PORTSMOUTH, N.H. 03801

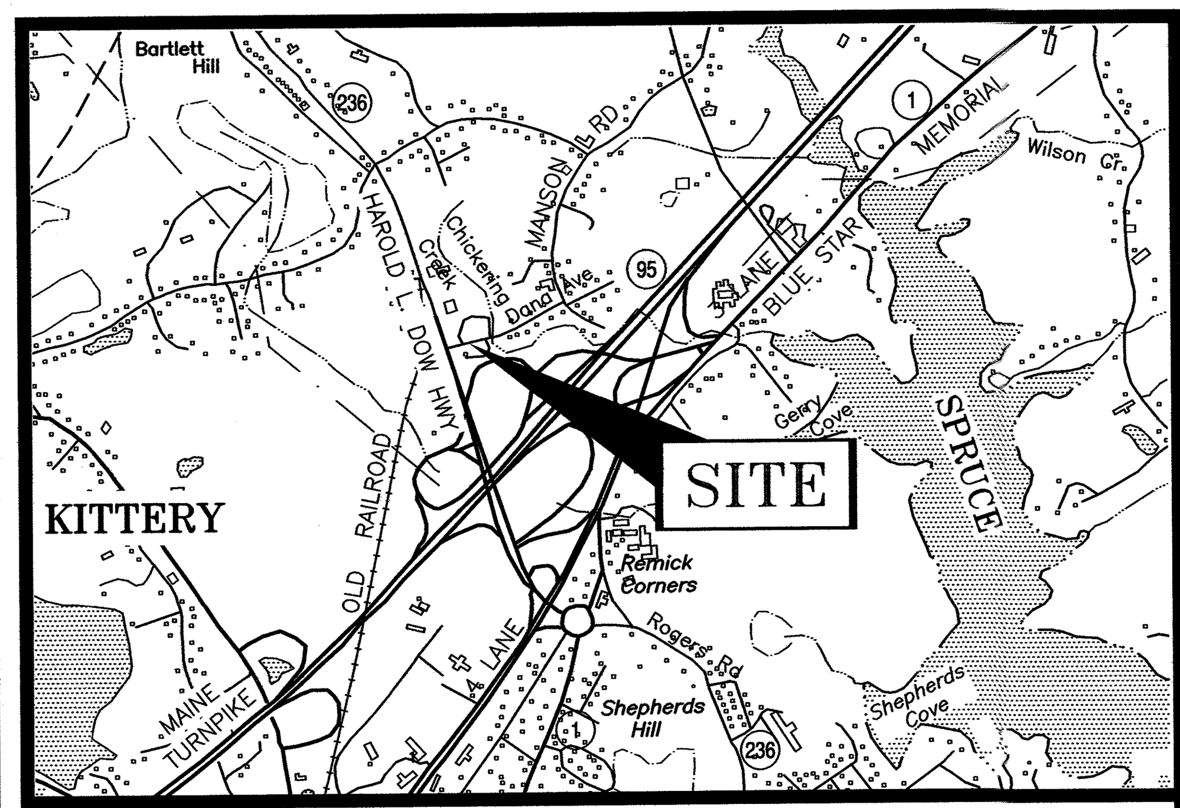
STORAGE BARN OF KITTERY

SCALE 1"=30' APRIL 2021

EXISTING CONDITIONS PLAN — C1

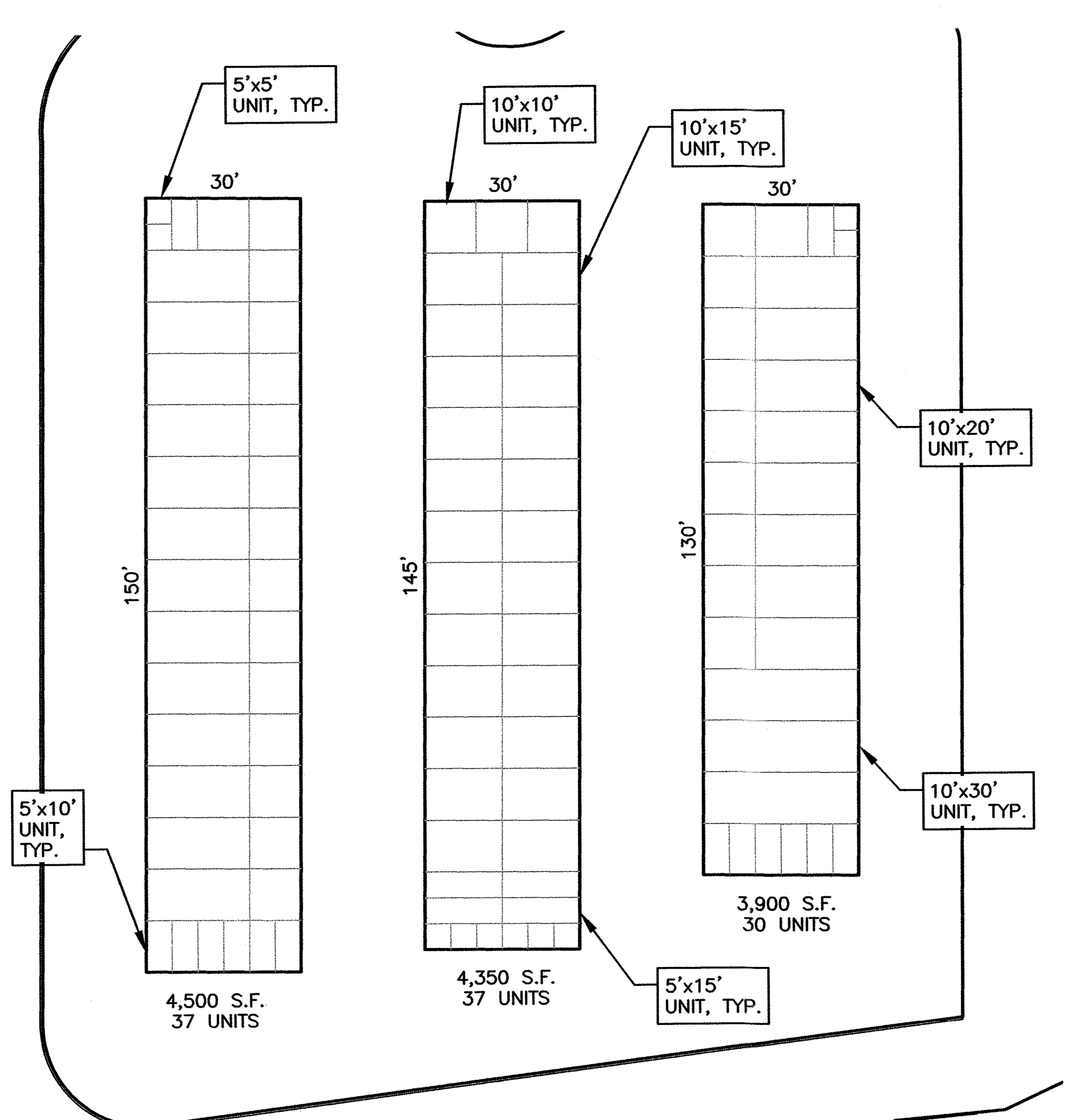
FB 193 PG 1 — 1548.01

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315



LOCATION MAP SCALE: 1" = 2000'

IMPERVIOUS SURFACE AREAS (TO PROPERTY LINE)		
STRUCTURE	PRE-CONSTRUCTION IMPERVIOUS (S.F.)	POST-CONSTRUCTION IMPERVIOUS (S.F.)
MAIN STRUCTURES	13,091	19,107
CONCRETE	2,178	0
PAVEMENT	14,539	29,918
CURBING	0	217
RETAINING WALL	86	66
GRAVEL	2139	0
TOTAL	32,033	49,308
LOT SIZE	102,884	102,884
% LOT COVERAGE	31.1%	47.9%



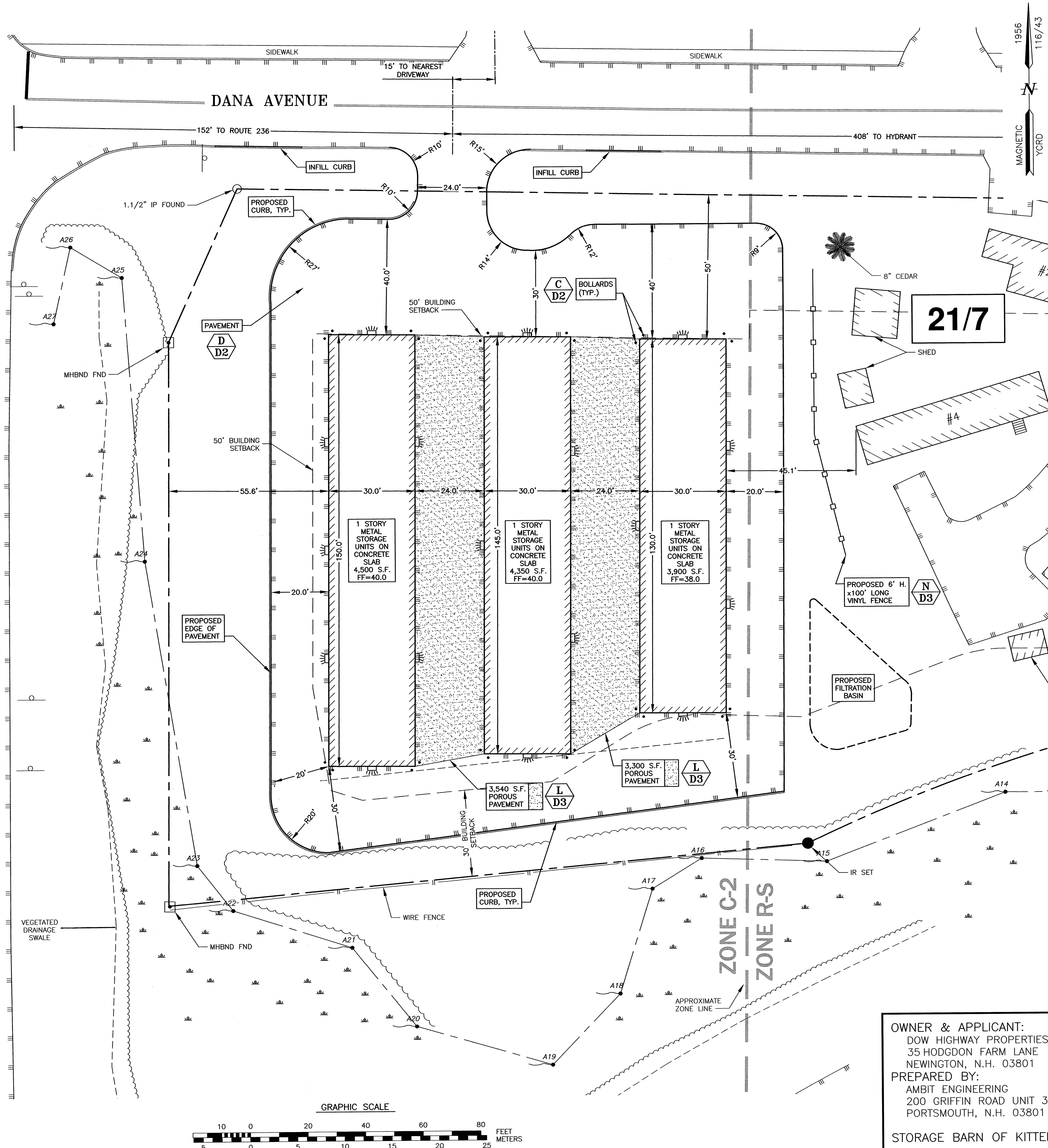
STORAGE UNIT INTERIOR LAYOUTS
SCALE: 1" = 30' TOTAL UNITS = 104

OWNER:

SIGNATURE

APPROVED BY THE KITTERY PLANNING BOARD

CHAIRMAN DATE



NOTES:

1) PARCEL IS SHOWN ON THE TOWN OF KITTERY ASSESSORS MAP 21 AS LOT 7.

2) OWNER OF RECORD
DOW HIGHWAY PROPERTIES
35 HODGDON FARM LANE
NEWINGTON, N.H. 03801
14907/397

3) PARCEL IS IN A FLOOD HAZARD ZONE AS SHOWN ON FIRM PANEL 2301710004C. EFFECTIVE DATE: JULY 5, 1984.

4) EXISTING AREA: LOT 7
102,884 S.F.
2.3619 ACRES

5) PARCEL IS LOCATED IN RESIDENTIAL-SUBURBAN (R-S) AND COMMERCIAL 2 (C-2) DISTRICTS.

6) DIMENSIONAL REQUIREMENTS:

	R-S	C-2
MIN. LOT AREA:	40,000 S.F.	40,000 S.F.
FRONTAGE:	150 FEET	150 FEET
SETBACKS: FRONT:	40 FEET	50 FEET
SIDE:	15 FEET	30 FEET
REAR:	15 FEET	30 FEET
MAXIMUM BUILDING HEIGHT:	35 FEET	40 FEET
MAXIMUM BUILDING COVERAGE:	20%	40%

7) VERTICAL DATUM IS MEAN SEA LEVEL NAVD88, BASIS OF VERTICAL DATUM MEDOT D-602 1975.

8) THE PURPOSE OF THIS PLAN IS TO SHOW PROPOSED DEVELOPMENT ON TAX MAP 21 LOT 7.

9) 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY WITHIN 100 FEET OF UNDERGROUND UTILITIES. THE EXCAVATOR IS RESPONSIBLE TO MAINTAIN MARKS. DIG SAFE TICKETS EXPIRE IN THIRTY DAYS.

10) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

11) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "MAINE EROSION AND SEDIMENT CONTROL BMP's" PUBLISHED BY THE MAINE D.E.P. IN 2016.

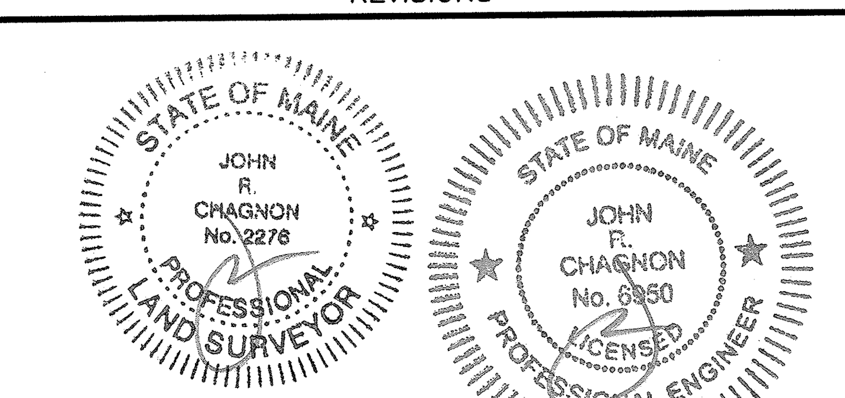
THE STORAGE BARN OF KITTERY DANA AVENUE KITTERY, MAINE

NO.	DESCRIPTION	DATE
1	ISSUED FOR APPROVAL	8/19/21
0	ISSUED FOR COMMENT	4/8/21

REVISIONS

OWNER & APPLICANT:
DOW HIGHWAY PROPERTIES
35 HODGDON FARM LANE
NEWINGTON, N.H. 03801
PREPARED BY:
AMBIT ENGINEERING
200 GRIFFIN ROAD UNIT 3
PORTSMOUTH, N.H. 03801

STORAGE BARN OF KITTERY



8-19-21

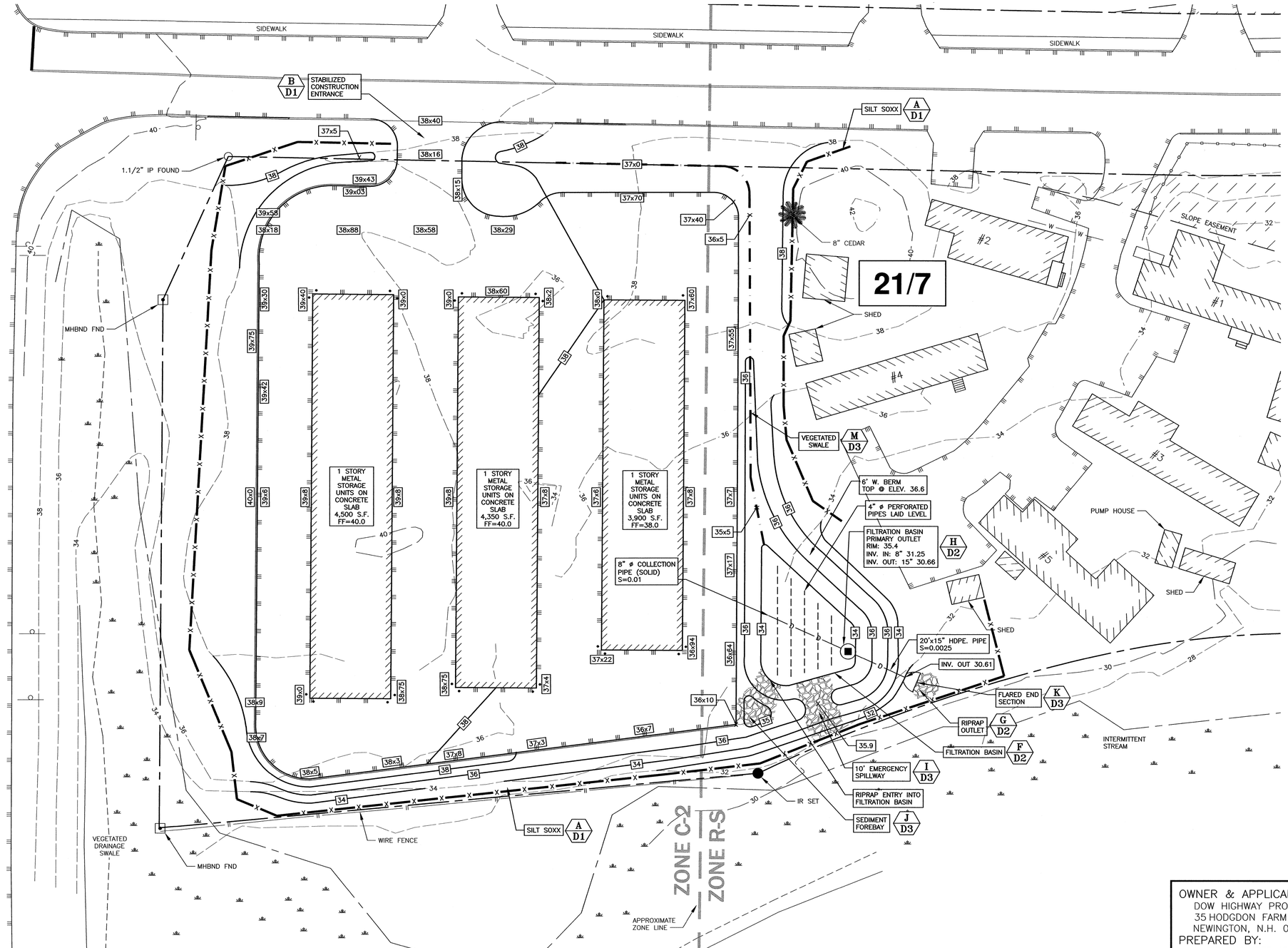
SCALE 1"=20' APRIL 2021

PROPOSED SITE PLAN

C2

FB 193 PG 1

1548.01



AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY WITHIN 100 FEET OF UNDERGROUND UTILITIES. THE EXCAVATOR IS RESPONSIBLE TO MAINTAIN MARKS. DIG SAFE TICKETS EXPIRE IN THIRTY DAYS.

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3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "MAINE EROSION AND SEDIMENT CONTROL BMP's" PUBLISHED BY THE MAINE D.E.P. IN 2016.

4) PROJECT DISTURBED AREA: 49,962 S.F.

THE STORAGE BARN OF KITTERY
DANA AVENUE
KITTERY, MAINE

NO.	DESCRIPTION	DATE
0	ISSUED FOR APPROVAL	8/19/21

REVISIONS

STATE OF MAINE
JOHN R. CHAGNON
No. 9850
LICENSED PROFESSIONAL ENGINEER

8.19.21

OWNER & APPLICANT:
DOW HIGHWAY PROPERTIES
35 HODGDON FARM LANE
NEWINGTON, N.H. 03801

PREPARED BY:
AMBIT ENGINEERING
200 GRIFFIN ROAD UNIT 3
PORTSMOUTH, N.H. 03801

STORAGE BARN OF KITTERY

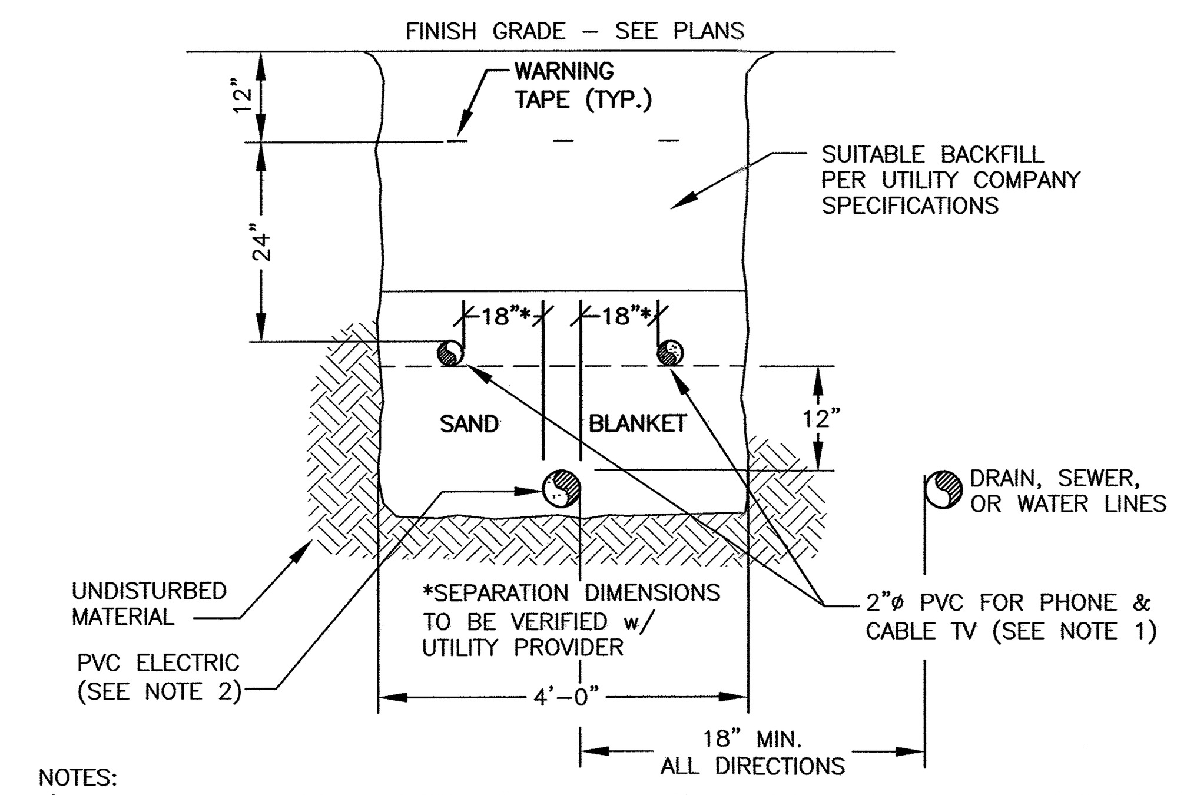
SCALE 1"=20' APRIL 2021

GRADING & EROSION CONTROL PLAN

C3

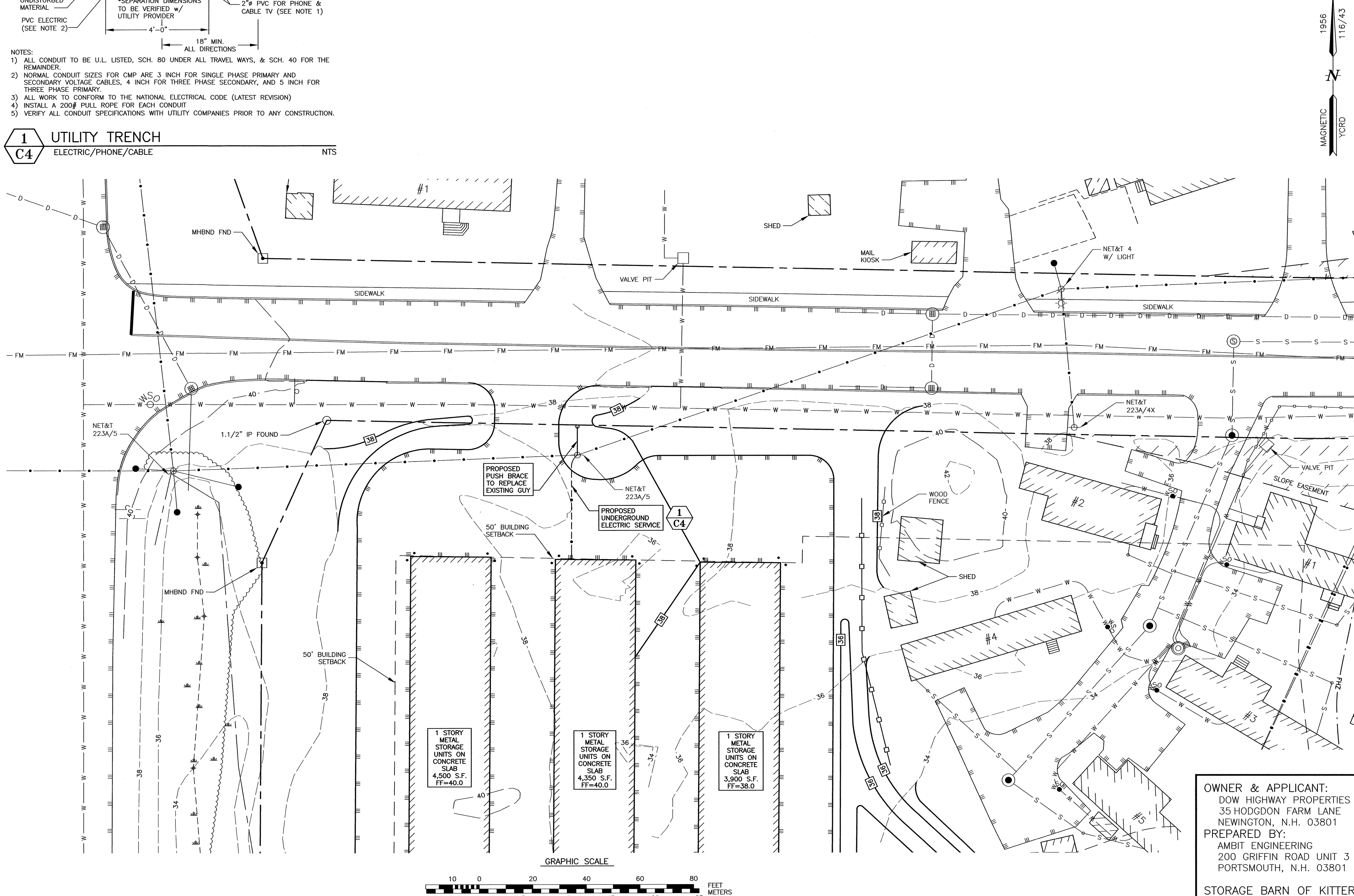
FB 193 PG 1

1548.01



NOTES:
1) ALL CONDUIT TO BE U.L. LISTED, SCH. 80 UNDER ALL TRAVEL WAYS, & SCH. 40 FOR THE REMAINDER.
2) NORMAL CONDUIT SIZES FOR CMP ARE 3 INCH FOR SINGLE PHASE PRIMARY AND SECONDARY VOLTAGE CABLES, 4 INCH FOR THREE PHASE SECONDARY, AND 5 INCH FOR THREE PHASE PRIMARY.
3) ALL WORK TO CONFORM TO THE NATIONAL ELECTRICAL CODE (LATEST REVISION)
4) INSTALL A 200# PULL ROPE FOR EACH CONDUIT
5) VERIFY ALL CONDUIT SPECIFICATIONS WITH UTILITY COMPANIES PRIOR TO ANY CONSTRUCTION.

1 / C4 UTILITY TRENCH
ELECTRIC/PHONE/CABLE — NTS



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3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "MAINE EROSION AND SEDIMENT CONTROL BMP's" PUBLISHED BY THE MAINE D.E.P. IN 2016.

4) THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE STATE, LOCAL AND FEDERAL CODES FOR EXCAVATION, TRENCHING AND TRENCH PROTECTION REQUIREMENTS.

5) CONTRACTOR SHALL FIELD VERIFY THE DEPTH OF EXISTING UTILITIES AND COORDINATE WITH THE ENGINEER PRIOR TO CONSTRUCTION OF THE PROPOSED UTILITIES.

6) ALL UTILITIES SHOWN ARE TO REMAIN UNLESS NOTED OTHERWISE.

7) COORDINATE UTILITY CONNECTIONS AND INSTALLATIONS WITH RESPECTIVE UTILITY COMPANIES AND SERVICE PROVIDERS.

8) CONTRACTOR SHALL MAINTAIN EXISTING UTILITY SERVICES TO ADJACENT PROPERTIES DURING CONSTRUCTION. PROVIDE PROPER NOTIFICATION OF ANY SERVICE INTERRUPTIONS.

THE STORAGE BARN OF KITTERY DANA AVENUE KITTERY, MAINE

NO.	DESCRIPTION	DATE
0	ISSUED FOR APPROVAL	8/19/21

REVISIONS

STATE OF MAINE — JOHN R. CHAGNON — No. 6960 — LICENSED — PROFESSIONAL ENGINEER
8-19-21

OWNER & APPLICANT:
DOW HIGHWAY PROPERTIES
35 HODGDON FARM LANE
NEWINGTON, N.H. 03801
PREPARED BY:
AMBIT ENGINEERING
200 GRIFFIN ROAD UNIT 3
PORTSMOUTH, N.H. 03801

STORAGE BARN OF KITTERY

SCALE 1"=20' — APRIL 2021

UTILITY PLAN — C4

FB 193 PG 1 — 1548.01

TOPSOILING

TOPSOIL QUALITY

1) TOPSOIL MAY BE OF THE FOLLOWING TEXTURES: SANDY LOAM, LOAM, OR SILT LOAM.
2) THE MATERIAL SHALL BE FRIABLE AND FREE OF TREE ROOTS, WEEDS, STONES MORE THAN 1.5 INCHES IN DIAMETER OR LENGTH, AND OF OTHER DEBRIS.
3) SOIL TREATED WITH AN HERBICIDE WILL NOT BE USED FOR TOPSOILING IF IT IS DETERMINED THAT THE HERBICIDE WILL BE DAMAGING TO DESIRABLE VEGETATION.

SOURCES OF TOPSOIL

1) MATERIAL FOR TOPSOILING SHALL BE TAKEN FROM THE NATURAL SURFACE LAYERS (A HORIZON) OF SOILS KNOWN TO BE CAPABLE OF PRODUCING GOOD YIELDS OF CULTIVATED CROPS OR HAY.
2) SOIL THAT HAS BEEN TREATED WITH AN HERBICIDE SHOULD NOT BE USED FOR TOPSOILING IF IT IS DETERMINED THAT THE RESIDUAL EFFECTS OF THE HERBICIDE WILL BE DAMAGING TO THE NEW SEEDING.
3) TOPSOIL MAY BE STRIPPED FROM AND STOCKPILED AT A SITE FOR LATER REPLACEMENT. STOCKPILED TOPSOIL WILL NOT BE COMPACTED AND SHALL BE PROTECTED AGAINST EROSION.
4) AREAS FROM WHICH TOPSOIL HAS BEEN REMOVED SHALL BE PROTECTED AGAINST EROSION.

APPLYING TOPSOIL

1) TOPSOIL SHOULD NOT BE COLLECTED OR SPREAD WHILE IT IS WET.
2) SUBSURFACES WILL BE SCARIFIED OR OTHERWISE TILLED TO FACILITATE BONDING PRIOR TO SPREADING TOPSOIL.
3) TOPSOIL WILL BE UNIFORMLY SPREAD TO A MINIMUM DEPTH OF 5 INCHES (THIS WILL PROVIDE 4 INCHES OF SETTLED TOPSOIL DEPTH).

PLANTING NOTES

1) ALL PLANT MATERIALS SHALL BE FIRST QUALITY NURSERY GROWN STOCK. ALL EVERGREEN TREES AND SHRUBS SHALL BE "HEAVY".

2) ALL PLANTS SHALL BE PLANTED IN ACCORDANCE WITH NEW HAMPSHIRE LANDSCAPE ASSOCIATION STANDARDS AND GUARANTEED FOR TWO YEARS BY THE LANDSCAPE CONTRACTOR.

3) ALL TREES AND SHRUBS SHALL BE MULCHED WITH 4" OF AGED BARK MULCH.

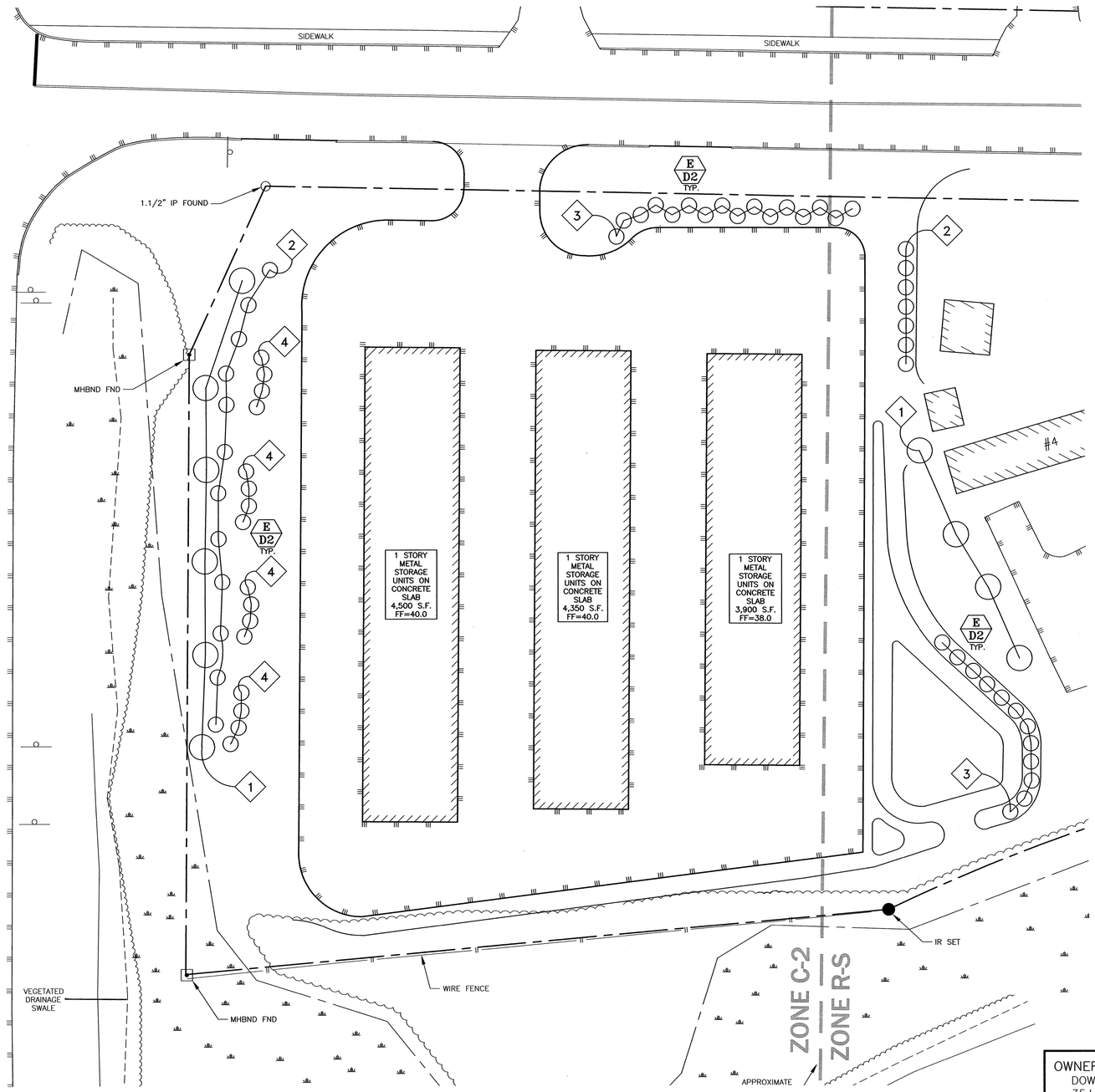
4) ALL LAWN AREAS SHALL BE LOAMED WITH 4" OF CLEAN LOAM, FREE OF ROCKS, ROOTS AND TRASH. TURF GRASS SHALL BE ESTABLISHED BY HYDROSEEDING A MIX OF MULCH, SEED AND FERTILIZER.

5) ALL DISTURBED AREAS NOT DESIGNATED FOR GRAVEL, ASPHALT, CONCRETE OR PLANTINGS SHALL BE SEEDED.

6) REFER TO VEGETATIVE PRACTICE NOTES ON SHEET D1 FOR SEEDING INFORMATION AND SEED MIXTURE.

LANDSCAPE SCHEDULE

I.D. No.	ITEM	SIZE	QTY
1	LARGE TREE	1½" CAL	10
2	TALL BUSH	6–8' HEIGHT	19
3	SMALL EVERGREEN SHRUB	18" HEIGHT	28
4	TALL PERENNIAL GRASS	1 GALLON	16



GRAPHIC SCALE

10 0 20 40 60 80 FEET
5 0 5 10 15 20 25 METERS

1956 116/43 N MAGNETIC YCRD

OWNER & APPLICANT:
DOW HIGHWAY PROPERTIES
35 HODGDON FARM LANE
NEWINGTON, N.H. 03801
PREPARED BY:
AMBIT ENGINEERING
200 GRIFFIN ROAD UNIT 3
PORTSMOUTH, N.H. 03801

STORAGE BARN OF KITTERY

AMBIT ENGINEERING, INC.
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THE STORAGE BARN OF KITTERY
DANA AVENUE
KITTERY, MAINE

NO.	DESCRIPTION	DATE
0	ISSUED FOR APPROVAL	8/19/21

REVISIONS

SCALE 1"=20' APRIL 2021

LANDSCAPE PLAN

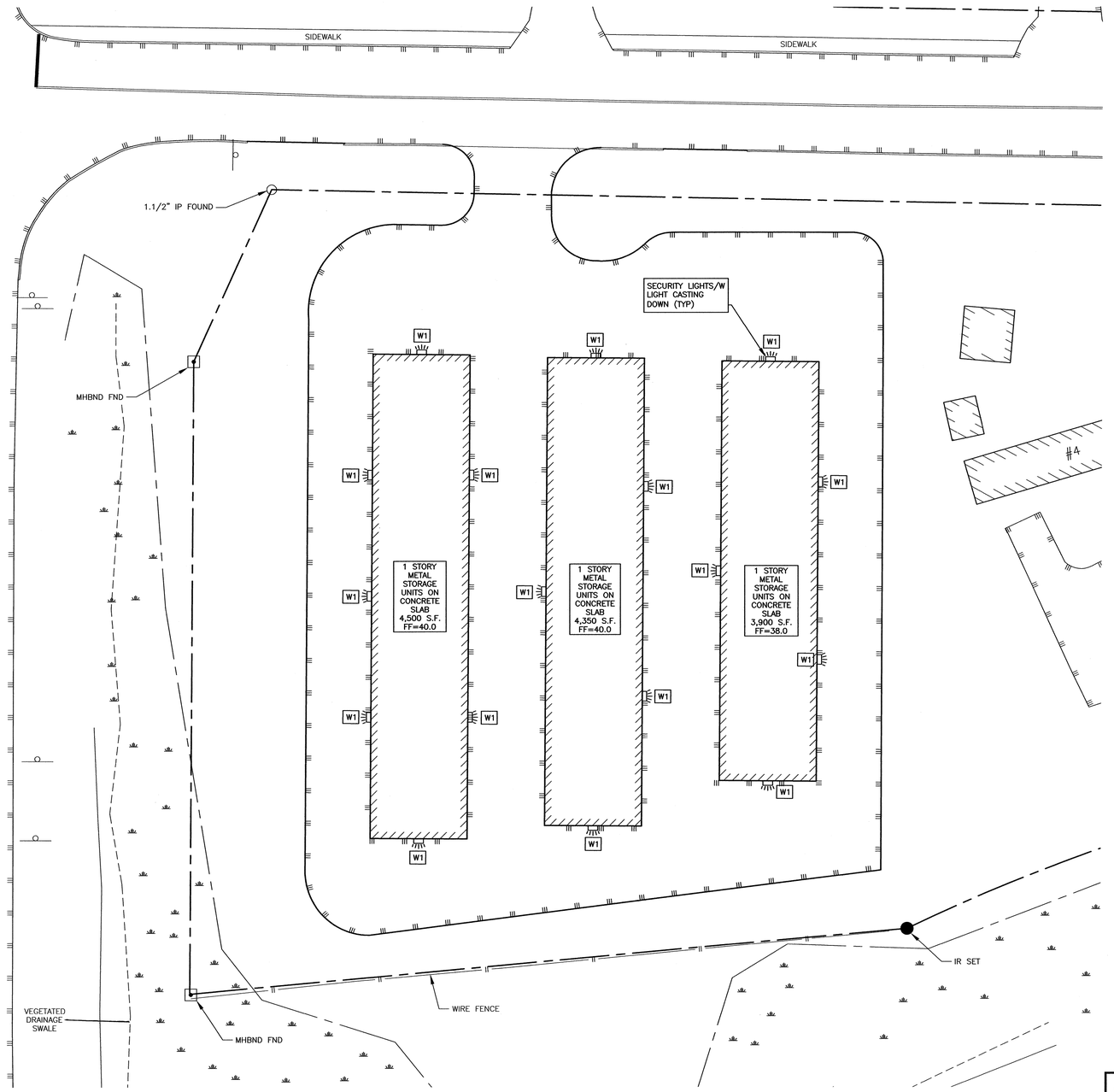
C5

FB 193 PG 1

1548.01

LUMINAIRE SCHEDULE

SYMBOL	LABEL	QTY.	DESCRIPTION	ARRANGMENT
	W1	17	MORRIS CAT. #71420 LED MINI WALL PACK	SINGLE



GRAPHIC SCALE

10 0 20 40 60 80 FEET

5 0 5 10 15 20 25 METERS

1956 116/43

N

MAGNETIC YCRD

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
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3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE ''MAINE EROSION AND SEDIMENT CONTROL BMP's'' PUBLISHED BY THE MAINE D.E.P. IN 2016.

4) LIGHTS SHALL HAVE A FIXTURE OF HEIGHT OF 10 FEET +/-.

5) ALL LIGHTING SHALL BE SHIELDED TO MINIMIZE LIGHT TRESPASS AND DIRECT GLARE BEYOND THE PROPERTY.

6) ALL LIGHTS SHALL BE DARK SKY COMPLIANT AND DIRECTED DOWNWARD.

7) LIGHTING SHALL BE MOTION ACTIVATED.

8) LIGHTS SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.

THE STORAGE BARN OF KITTERY
DANA AVENUE
KITTERY, MAINE

NO.	DESCRIPTION	DATE
0	ISSUED FOR APPROVAL	8/19/21

REVISIONS

OWNER & APPLICANT:
DOW HIGHWAY PROPERTIES
35 HODGDON FARM LANE
NEWINGTON, N.H. 03801

PREPARED BY:
AMBIT ENGINEERING
200 GRIFFIN ROAD UNIT 3
PORTSMOUTH, N.H. 03801

STORAGE BARN OF KITTERY

SCALE 1"=20' APRIL 2021

LIGHTING PLAN

C6

FB 193 PG 1

1548.01

EROSION CONTROL NOTES

CONSTRUCTION SEQUENCE

DO NOT BEGIN CONSTRUCTION UNTIL ALL LOCAL, STATE, AND FEDERAL PERMITS HAVE BEEN APPLIED FOR AND RECEIVED.

INSTALL PERIMETER CONTROLS, i.e., SILTSOXX AROUND THE LIMITS OF DISTURBANCE BEFORE ANY EARTH MOVING OPERATIONS. THE USE OF HAY BALES IS NOT ALLOWED.

CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE.

CUT AND GRUB ALL TREES, SHRUBS, SAPLINGS, BRUSH, VINES AND REMOVE OTHER DEBRIS AND RUBBISH AS REQUIRED.

DEMOLISH FOUNDATIONS & OLD SEPTIC SYSTEM.

BULLDOZE TOPSOIL INTO STOCKPILES, AND CIRCLE WITH SILT FENCING OR SILTSOXX. IF EROSION IS EXCESSIVE, THEN COVER WITH MULCH.

CONSTRUCT FILTRATION BASIN, BUT DO NOT ALLOW INFLOW UNTIL ALL CONTRIBUTING AREAS ARE STABILIZED AND EROSION-FREE. ROUGH GRADE SITE. BACKFILL WITH GRAVEL IN 12" LIFTS. IN LANDSCAPED AREAS OUT OF THE WAY OF SUBSEQUENT CONSTRUCTION ACTIVITY, INSTALL TOPSOIL, MULCH, SEED AND FERTILIZER. STABILIZE STEEPER SLOPES PER DETAILS.

CONSTRUCT FOUNDATIONS.

LAYOUT AND INSTALL ALL BURIED UTILITIES AND SERVICES TO THE PROPOSED BUILDING FOUNDATIONS. CAP AND MARK TERMINATIONS OR LOG SWING TIES.

CONSTRUCT BUILDING FRAMES.

FINISH GRADE SITE, BACKFILL DRIVEWAY & PARKING SUBBASE GRAVEL IN TWO, COMPACTED LIFTS. PROVIDE TEMPORARY EROSION PROTECTION TO DITCHES AND SWALES IN THE FORM OF MULCHING, JUTE MESH OR DITCH DAMS. CONSTRUCT BINDER COURSE.

BUILDING EXTERIOR WORK: LIGHT FIXTURES

ALL PERMANENT FILTRATION BASINS, DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.

AFTER BUILDING IS COMPLETED FINISH ALL REMAINING LANDSCAPED WORK.

CONSTRUCT ASPHALT WEARING COURSE.

REMOVE TRAPPED SEDIMENTS FROM COLLECTION DEVICES AS APPROPRIATE, AND THEN REMOVE TEMPORARY EROSION CONTROL MEASURES UPON COMPLETION OF FINAL STABILIZATION OF THE SITE.

GENERAL CONSTRUCTION NOTES

THE EROSION CONTROL PROCEDURES SHALL CONFORM TO "MAINE EROSION AND SEDIMENT CONTROL BMP's" PUBLISHED BY THE MAINE D.E.P. IN 2016.

DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED. THE SMALLEST PRACTICAL AREA OF LAND SHOULD BE EXPOSED AT ANY ONE TIME DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.

AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
- BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
- A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
- A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED; OR,
- EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

ANY DISTURBED AREAS WHICH ARE TO BE LEFT TEMPORARILY, AND WHICH WILL BE REGRADED LATER DURING CONSTRUCTION SHALL BE MACHINE HAY MULCHED AND SEEDED WITH RYE GRASS TO PREVENT EROSION.

DUST CONTROL: IF TEMPORARY STABILIZATION PRACTICES, SUCH AS TEMPORARY VEGETATION AND MULCHING, DO NOT ADEQUATELY REDUCE DUST GENERATION, APPLICATION OF WATER OR CALCIUM CHLORIDE SHALL BE APPLIED IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES.

ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY DURING THE LIFE OF THE PROJECT AND AFTER EACH STORM OF 0.5" OR GREATER. ALL DAMAGED SILT FENCES SHALL BE REPAIRED. SEDIMENT DEPOSITS SHALL PERIODICALLY BE REMOVED AND DISPOSED IN A SECURED LOCATION.

AVOID THE USE OF FUTURE OPEN SPACES (LOAM AND SEED AREAS) WHEREVER POSSIBLE DURING CONSTRUCTION. CONSTRUCTION TRAFFIC SHALL USE THE ROADBEDS OF FUTURE ACCESS DRIVES AND PARKING AREAS.

TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED IN AMOUNTS NECESSARY TO COMPLETE FINISHED GRADING OF ALL EXPOSED AREAS. CONSTRUCT SILT FENCE AROUND TOPSOIL STOCKPILE.

AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIAL. STUMPS SHALL BE DISPOSED BY GRINDING OR FILL IN AN APPROVED FACILITY.

ALL FILLS SHALL BE PLACED AND COMPACTED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS.

ALL FILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8 INCHES IN THICKNESS UNLESS OTHERWISE NOTED.

FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIAL SHALL NOT BE INCORPORATED INTO FILLS.

FILL MATERIAL SHALL NOT BE PLACED ON FROZEN FOUNDATION SUBGRADE.

DISTURBED AREAS SHALL BE SEEDED WITHIN 72 HOURS FOLLOWING FINISHED GRADING.

AT NO TIME SHALL ANY DISTURBED AREA REMAIN UNSTABILIZED FOR LONGER THAN 72 HOURS. ALL AREAS WHERE CONSTRUCTION IS NOT COMPLETE WITHIN THIRTY DAYS OF THE INITIAL DISTURBANCE SHALL BE MACHINE HAY MULCHED AND SEEDED WITH RYE GRASS TO PREVENT EROSION.

VEGETATIVE PRACTICE

FOR PERMANENT MEASURES AND PLANTINGS:

LIMESTONE SHALL BE THOROUGHLY INCORPORATED INTO THE LOAM LAYER AT A RATE OF 2 TONS PER ACRE.

FERTILIZER SHALL BE SPREAD ON THE TOP LAYER OF LOAM AND WORKED INTO THE SURFACE. FERTILIZER APPLICATION RATE SHALL BE 500 POUNDS PER ACRE OF 10-20-20 FERTILIZER.

SEED SHALL BE SOWN AT THE RATES SHOWN IN THE TABLE BELOW. IMMEDIATELY BEFORE SEEDING, THE SOIL SHALL BE LIGHTLY RAKED. ONE HALF THE SEED SHALL BE SOWN IN ONE DIRECTION AND THE OTHER HALF AT RIGHT ANGLES TO THE ORIGINAL DIRECTION. IT SHALL BE LIGHTLY RAKED INTO THE SOIL TO A DEPTH NOT OVER 1/4 INCH AND ROLLED WITH A HAND ROLLER WEIGHING NOT OVER 100 POUNDS PER LINEAR FOOT OF WIDTH. HAY MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING AT A RATE OF 1.5 TO 2 TONS PER ACRE, AND SHALL BE HELD IN PLACE USING APPROPRIATE TECHNIQUES FROM THE EROSION AND SEDIMENT CONTROL HANDBOOK.

THE SURFACE SHALL BE WATERED AND KEPT MOIST WITH A FINE SPRAY AS REQUIRED, WITHOUT WASHING AWAY THE SOIL, UNTIL THE GRASS IS WELL ESTABLISHED. ANY AREAS WHICH ARE NOT SATISFACTORILY COVERED SHALL BE RESEEDED, AND ALL NOXIOUS WEEDS REMOVED.

A GRASS SEED MIXTURE CONTAINING THE FOLLOWING SEED REQUIREMENTS SHALL BE:

GENERAL COVER	PROPORTION	SEEDING RATE
CREEPING RED FESCUE	50%	100 LBS/ACRE
KENTUCKY BLUEGRASS	50%	
SLOPE SEED (USED ON ALL SLOPES GREATER THAN OR EQUAL TO 3:1)		
CREEPING RED FESCUE	42%	
TALL FESCUE	42%	48 LBS/ACRE
BIRDSFOOT TREFOIL	16%	

IN NO CASE SHALL THE WEED CONTENT EXCEED ONE PERCENT BY WEIGHT. ALL SEED SHALL COMPLY WITH APPLICABLE STATE AND FEDERAL SEED LAWS.

FOR TEMPORARY PROTECTION OF DISTURBED AREAS:
MULCHING AND SEEDING SHALL BE APPLIED AT THE FOLLOWING RATES:
PERENNIAL RYE: 0.7 LBS/1,000 S.F.
MULCH: 1.5 TONS/ACRE

MAINTENANCE AND PROTECTION

THE CONTRACTOR SHALL MAINTAIN ALL LOAM & SEED AREAS UNTIL FINAL ACCEPTANCE AT THE COMPLETION OF THE CONTRACT. MAINTENANCE SHALL INCLUDE WATERING, WEEDING, REMOVAL OF STONES AND OTHER FOREIGN OBJECTS OVER 1/2 INCHES IN DIAMETER WHICH MAY APPEAR AND THE FIRST TWO (2) CUTTINGS OF GRASS NO CLOSER THEN TEN (10) DAYS APART. THE FIRST CUTTING SHALL BE ACCOMPLISHED WHEN THE GRASS IS FROM 2 1/2 TO 3 INCHES HIGH. ALL BARE AND DEAD SPOTS WHICH BECOME APPARENT SHALL BE PROPERLY PREPARED, LIMED AND FERTILIZED, AND RESEEDED BY THE CONTRACTOR AT HIS EXPENSE AS MANY TIMES AS NECESSARY TO SECURE GOOD GROWTH. THE ENTIRE AREA SHALL BE MAINTAINED, WATERED AND CUT UNTIL ACCEPTANCE OF THE LAWN BY THE OWNER'S REPRESENTATIVE.

THE CONTRACTOR SHALL TAKE WHATEVER MEASURES ARE NECESSARY TO PROTECT THE GRASS WHILE IT IS DEVELOPING.

TO BE ACCEPTABLE, SEEDED AREAS SHALL CONSIST OF A UNIFORM STAND OF AT LEAST 90 PERCENT ESTABLISHED PERMANENT GRASS SPECIES, WITH UNIFORM COUNT OF AT LEAST 100 PLANTS PER SQUARE FOOT.

SEEDED AREAS WILL BE FERTILIZED AND RESEEDED AS NECESSARY TO INSURE VEGETATIVE ESTABLISHMENT.

THE SWALES WILL BE CHECKED WEEKLY AND REPAIRED WHEN NECESSARY UNTIL ADEQUATE VEGETATION IS ESTABLISHED.

THE SILT FENCE BARRIER SHALL BE CHECKED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.

SILT FENCING SHALL BE REMOVED ONCE VEGETATION IS ESTABLISHED, AND DISTURBED AREAS RESULTING FROM SILT FENCE REMOVAL SHALL BE PERMANENTLY SEEDED.

WINTER NOTES

ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.

ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.

AFTER NOVEMBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.

INSPECTION AND MAINTENANCE PLAN

INTRODUCTION

THE INTENT OF THIS IS TO PROVIDE DOW HIGHWAY PROPERTIES A LIST OF PROCEDURES THAT DOCUMENT THE INSPECTION AND MAINTENANCE REQUIREMENTS OF THE STORMWATER MANAGEMENT SYSTEM FOR THIS DEVELOPMENT. SPECIFICALLY, THE FILTRATION BASIN AND ASSOCIATED STRUCTURES ON THE PROJECT SITE (COLLECTIVELY REFERRED TO AS THE "STORMWATER MANAGEMENT SYSTEM")

THE FOLLOWING INSPECTION AND MAINTENANCE PROGRAM IS NECESSARY TO KEEP THE STORMWATER MANAGEMENT SYSTEM FUNCTIONING PROPERLY. THESE MEASURES WILL ALSO HELP MINIMIZE POTENTIAL ENVIRONMENTAL IMPACTS. BY FOLLOWING THE ENCLOSED PROCEDURES, THE OWNER WILL BE ABLE TO MAINTAIN THE FUNCTIONAL DESIGN OF THE STORMWATER MANAGEMENT SYSTEM AND MAXIMIZED ITS ABILITY TO REMOVE SEDIMENT AND OTHER CONTAMINANTS FROM THE SITE GENERATED STORMWATER RUNOFF.

STORMWATER MANAGEMENT SYSTEM COMPONENTS

THE STORMWATER MANAGEMENT SYSTEM IS DESIGNED TO MITIGATE BOTH THE QUANTITY AND QUALITY OF SITE-GENERATED RUNOFF. AS THE RESULT, THE DESIGN INCLUDES THE FOLLOWING ELEMENTS:

NON-STRUCTURAL BMP'S

NON-STRUCTURAL BEST MANAGEMENT PRACTICES (BMP'S) INCLUDE TEMPORARY AND PERMANENT MEASURES THAT TYPICALLY REQUIRE LESS LABOR AND CAPITAL INPUTS AND ARE INTENDED TO PROVIDE PROTECTION AGAINST EROSION OF SOILS. EXAMPLES OF NON-STRUCTURAL BMP'S ON THIS PROJECT INCLUDE BUT ARE NOT LIMITED TO: TEMPORARY AND PERMANENT MULCHING, TEMPORARY AND PERMANENT GRASS COVER, TREES, SHRUBS AND GROUND OVERS, MISCELLANEOUS LANDSCAPE PLANTINGS, DUST CONTROL, TREE PROTECTION, TOPSOILING, SEDIMENT BARRIERS, AND DURING CONSTRUCTION, STABILIZED CONSTRUCTION ENTRANCES.

STRUCTURAL BMP'S

STRUCTURAL BMP'S REQUIRE MORE SPECIALIZED PERSONNEL TO INSTALL. EXAMPLES ON THE PROJECT INCLUDE BUT ARE NOT LIMITED TO: STORM SWALES, FILTRATION BASIN, AND ASSOCIATED OUTLET CONTROL STRUCTURES.

INSPECTION AND MAINTENANCE REQUIREMENTS

THE FOLLOWING SUMMARIZES THE INSPECTION AND MAINTENANCE REQUIREMENTS FOR THE VARIOUS BMP'S THAT MAY BE FOUND ON THIS PROJECT:

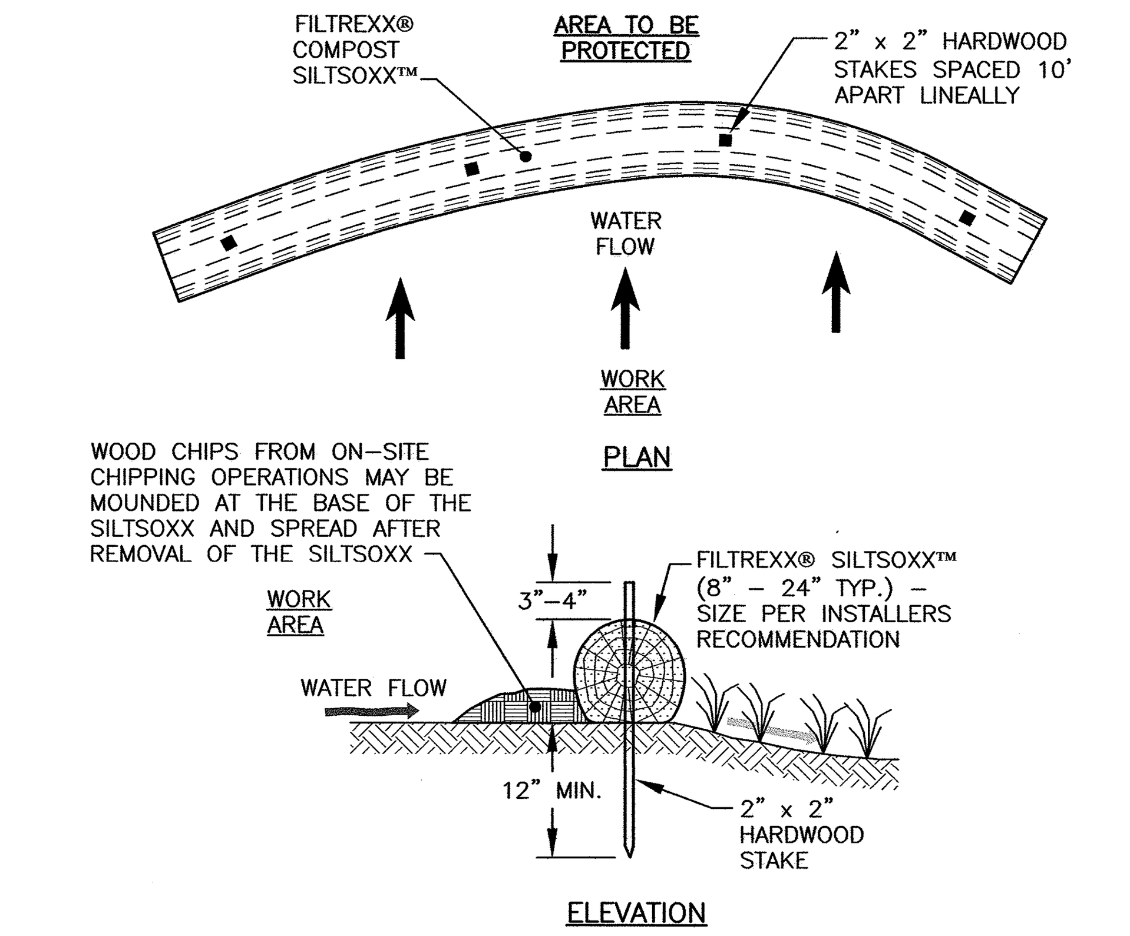
1. GRASSED AREAS: AFTER EACH RAIN EVEN OF 0.5" OR MORE DURING A 24 HOUR PERIOD, INSPECT GRASSED AREAS FOR SIGNS OF DISTURBANCE, SUCH AS EROSION. IF DAMAGED AREAS ARE DISCOVERED, IMMEDIATELY REPAIR THE DAMAGE. REPAIRS MAY INCLUDE ADDING NEW TOPSOIL, LIME, SEED, FERTILIZER AND MULCH.

2. PLANTINGS: PLANTING AND LANDSCAPING (TREES, SHRUBS) SHALL BE MONITORED BI-MONTHLY DURING THE FIRST YEAR TO INSURE VIABILITY AND VIGOROUS GROWTH. REPLACE DEAD OR DYING VEGETATION WITH NEW STOCK AND MAKE ADJUSTMENTS TO THE CONDITIONS THAT CAUSED THE DEAD OR DYING VEGETATION. DURING DRYER TIMES OF THE YEAR, PROVIDED WEEKLY WATERING OR IRRIGATION DURING THE ESTABLISHMENT PERIOD OF THE FIRST YEAR. MAKE NECESSARY ADJUSTMENTS TO ENSURE LONG-TERM HEALTH OF VEGETATED COVER, I.E. PROVIDE MORE PERMANENT MULCH OR COMPOST OR OTHER MEANS OF PROTECTION.

3. STORM DRAIN OUTLETS AND OUTLET CONTROL STRUCTURES: MONITOR DRAIN INLETS AND OUTLET APRONS FOR EXCESSIVE ACCUMULATION OF SEDIMENTS OR MISSING STONE. REMOVE SEDIMENTS AS REQUIRED TO MAINTAIN FILTERING CAPABILITIES OF THE STONE.

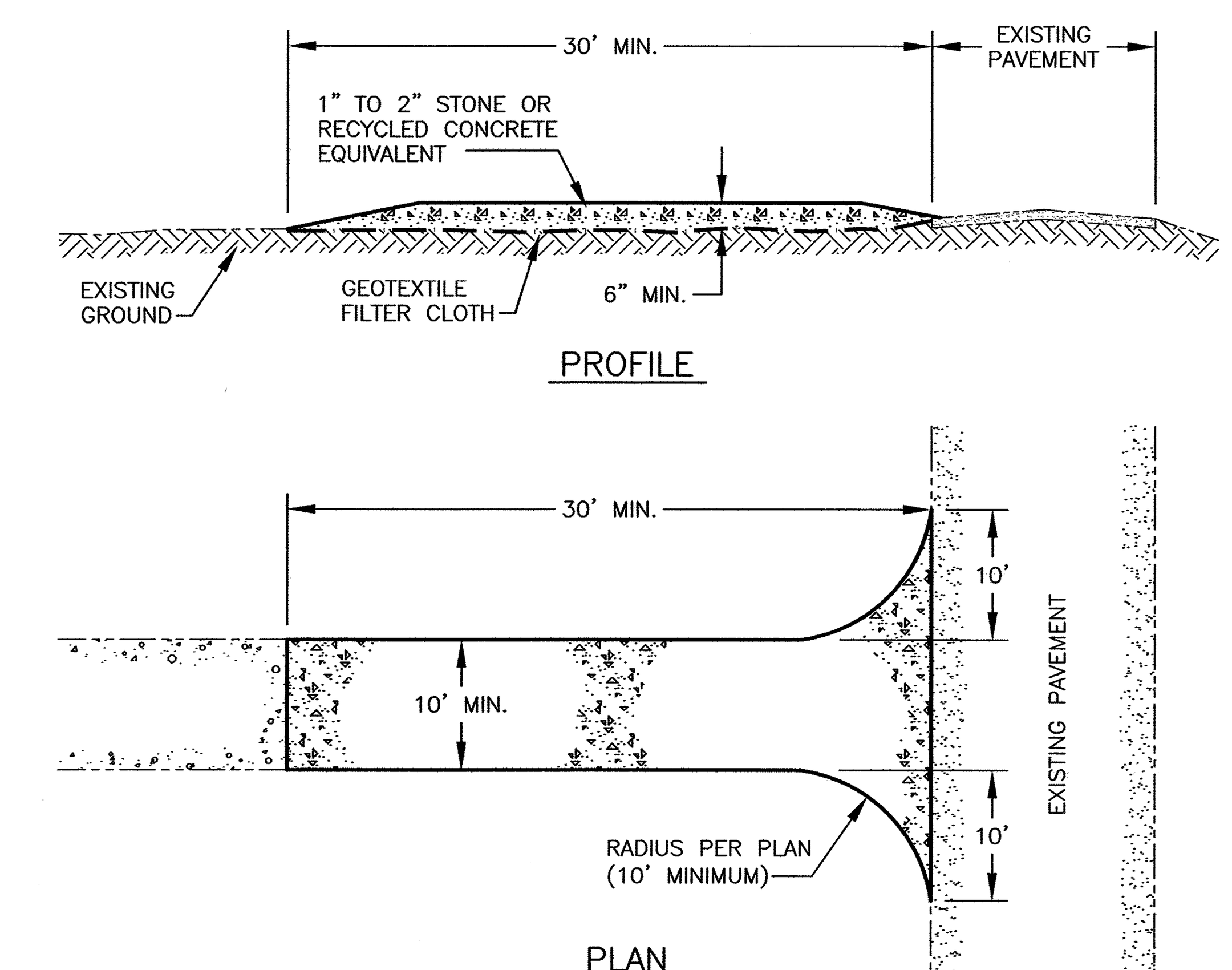
4. FILTRATION BASIN: AFTER ACCEPTANCE OF THE FILTRATION BASIN, PERFORM THE FOLLOWING INSPECTIONS ON A SEMI-ANNUAL BASIS OR AFTER SIGNIFICANT RAINFALL EVENTS (10 YEAR, 24 HR STORMS, OR BACK TO BACK 2 YEAR, 24 HOUR STORMS):
   a. MONITOR FOR EXCESSIVE OR CONCENTRATED ACCUMULATIONS OF DEBRIS, OR EXCESSIVE EROSION. REMOVE DEBRIS AS REQUIRED.
   b. MONITOR THE OVERFLOW FOR PROBLEMS WITH EROSION. REPAIR REQUIRED AFTER DETERMINED CAUSE OF EROSION. PIPES SHOULD BE INSPECTED ANNUALLY AND AFTER EVERY MAJOR RAINSTORM. BROKEN OR DAMAGE PIPES SHOULD BE REPAIRED OR REPLACED AS NECESSARY.
   c. MONITOR SIDE SLOPES OF BASIN FOR DAMAGES OR EROSION - REPAIR AS NECESSARY.
   d. MONITOR TURF HEALTH AND KEEP PROTECTED FROM FIRE, GRAZING, TRAFFIC AND DENSE WEED GROWTH. LIME AND FERTILIZER SHOULD BE APPLIED AS NECESSARY TO PROMOTE GOOD GROWTH AS DETERMINED BY SOIL TESTS. MOWING THE VEGETATED AREAS OF THE BASIN SHOULD BE CARRIED OUT AS NECESSARY.
   e. SEDIMENT ACCUMULATION SHOULD BE CONTINUALLY CHECKED IN THE BASIN. SEDIMENT SHOULD BE REMOVED AS IT IS DISCOVERED PARTICULARLY IF IT HAS ACCUMULATED NEAR THE OUTLET OF THE BASIN.

5. INVASIVE SPECIES
   MONITOR STORMWATER MANAGEMENT SYSTEM FOR SIGNS OF INVASIVE SPECIES GROWTH. IF CAUGHT EARLIER ENOUGH, THEIR ERADICATION IS MUCH EASIER. THE MOST LIKELY PLACES WHERE INVASIONS START ARE IN WETTER, DISTURBED SOILS OR SWALES. SPECIES SUCH AS PHRAGMITES AND PURPLE LOOSE-STRIFE ARE COMMON INVADERS IN THESE WETTER AREAS. IF THEY ARE FOUND THEN THE OWNER SHALL CONTACT A WETLAND SCIENTIST WITH EXPERIENCE IN INVASIVE SPECIES CONTROL TO IMPLEMENT A PLAN OF ACTION TO ERADICATE THE INVADERS. MEASURES THAT DO NOT REQUIRE THE APPLICATION OF CHEMICAL HERBICIDES SHOULD BE THE FIRST LINE OF DEFENSE.



NOTES:
1. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
2. FILLTREXX SYSTEM SHALL BE INSTALLED BY A CERTIFIED FILTREXX INSTALLER.
3. THE CONTRACTOR SHALL MAINTAIN THE COMPOST FILTRATION SYSTEM IN A FUNCTIONAL CONDITION AT ALL TIMES. IT WILL BE ROUTINELY INSPECTED AND REPAIRED WHEN REQUIRED.
4. SILTSOXX DEPICTED IS FOR MINIMUM SLOPES, GREATER SLOPES MAY REQUIRE ADDITIONAL PLACEMENTS.
5. THE COMPOST FILTER MATERIAL WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED, AS DETERMINED BY THE ENGINEER.

A/C3 FILTREXX® SILTSOXX™ FILTRATION SYSTEM
(AS NEEDED) NTS



MAINTENANCE

1) MUD AND SOIL PARTICLES WILL EVENTUALLY CLOG THE VOIDS IN THE GRAVEL AND THE EFFECTIVENESS OF THE GRAVEL PAD WILL NOT BE SATISFACTORY. WHEN THIS OCCURS, THE PAD SHOULD BE TOP DRESSED WITH NEW STONE. COMPLETE REPLACEMENT OF THE PAD MAY BE NECESSARY WHEN THE PAD BECOMES COMPLETELY CLOGGED.
2) IF WASHING FACILITIES ARE USED, THE SEDIMENT TRAPS SHOULD BE CLEANED OUT AS OFTEN AS NECESSARY TO ASSURE THAT ADEQUATE TRAPPING EFFICIENCY AND STORAGE VOLUME IS AVAILABLE. VEGETATIVE FILTER STRIPS SHOULD BE MAINTAINED TO INSURE A VIGOROUS STAND OF VEGETATION AT ALL TIMES.

CONSTRUCTION SPECIFICATIONS

1) STONE FOR A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 2 TO 4 INCH STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
2) THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 30 FEET FOR A SINGLE RESIDENTIAL LOT.
3) THE THICKNESS OF THE STONE FOR THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
4) THE WIDTH OF THE ENTRANCE SHALL NOT BE LESS THAN THE FULL WIDTH OF THE ENTRANCE WHERE INGRESS OR EGRESS OCCURS OR 10 FEET, WHICHEVER IS GREATER.
5) GEOTEXTILE FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE. FILTER CLOTH IS NOT REQUIRED FOR A SINGLE FAMILY RESIDENCE LOT.
6) ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
7) THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED PROMPTLY.
8) WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY, WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

B/C3 STABILIZED CONSTRUCTION ENTRANCE
(AS NEEDED) FODS MAY BE SUBSTITUTED NTS

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road - Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

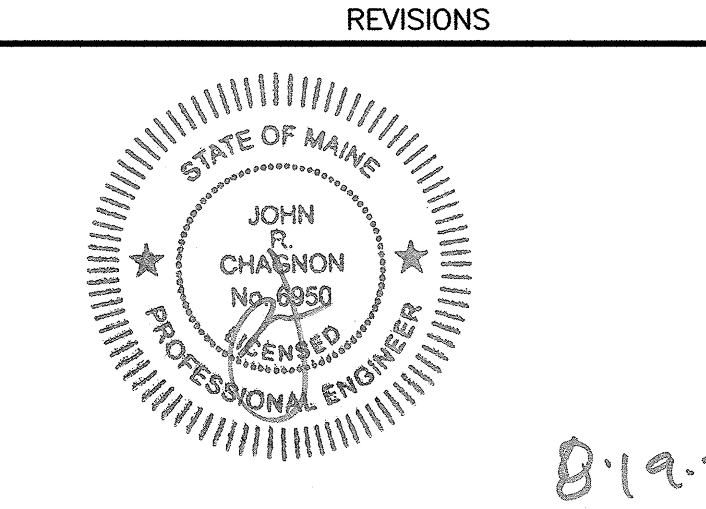
2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "MAINE EROSION AND SEDIMENT CONTROL BMP's" PUBLISHED BY THE MAINE D.E.P. IN 2016.

THE STORAGE BARN OF KITTERY
DANA AVENUE
KITTERY, MAINE

NO.	DESCRIPTION	DATE
0	ISSUED FOR APPROVAL	8/19/21

REVISIONS



SCALE: AS SHOWN   APRIL 2021

EROSION CONTROL NOTES & DETAILS   D1

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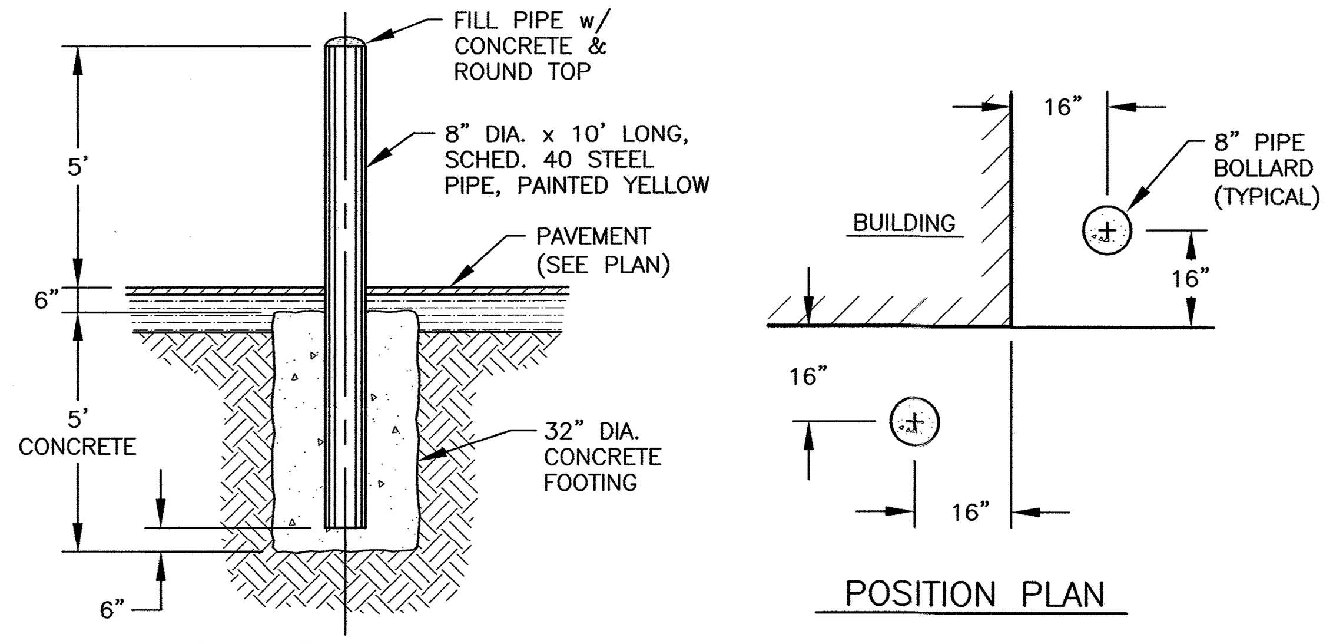
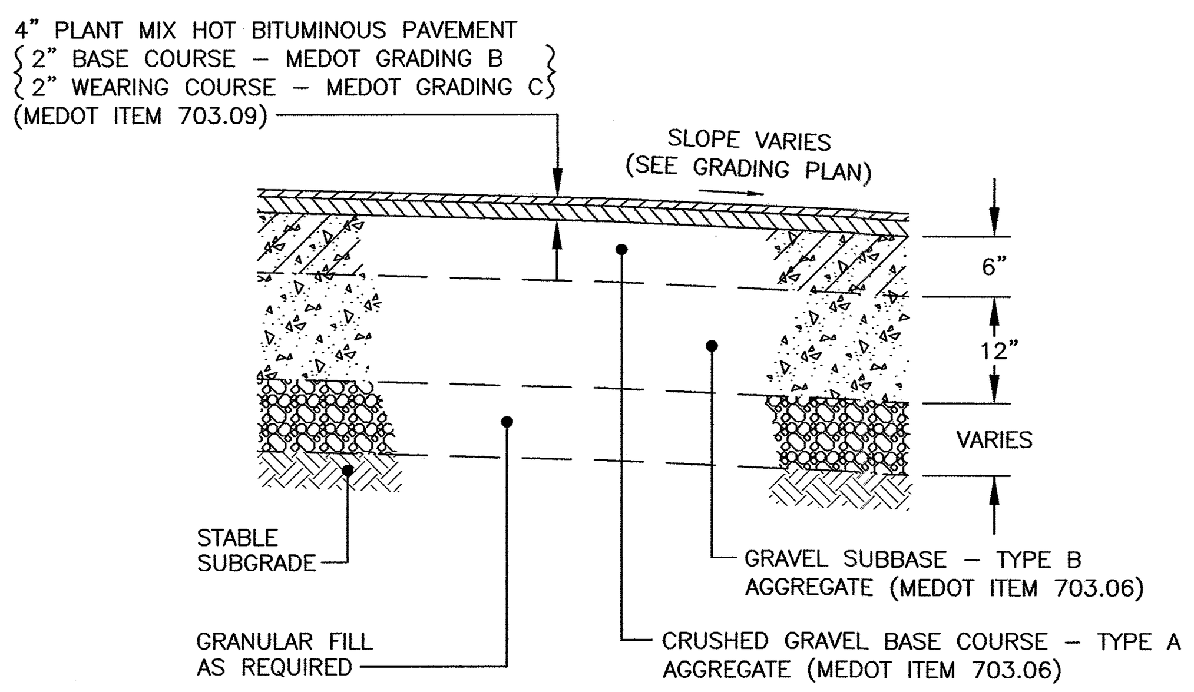


C / C2 PIPE BOLLARDS AT CORNER

NTS



NOTE:

1) AGGREGATE BASE AND SUBBASE COURSES SHALL CONFORM TO SECTIONS 304 AND 703 OF MAINE DOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, APRIL 1995.

2) PLANT MIX HOT BITUMINOUS PAVEMENT SHALL CONFORM TO SECTIONS 401, 403, 702 AND 703 OF MAINE DOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, APRIL 1995.

D / C2 TYPICAL PAVEMENT CROSS–SECTION

NTS

FILTRATION BASIN MEDIA

1. WET MEADOW SEED MIX
2. SOIL FILTER LAYER: 20% – 30% MULCH BY VOLUME, MIXED THOROUGHLY WITH LOAMY, COARSE SAND (70% – 80% BY VOLUME) MEETING THE FOLLOWING GRADATION;

SIEVE NO.	% BY WEIGHT, PASSING
10	85 – 100
20	70 –100
60	15 – 40
200	8 – 15

3. 3/8" PEA STONE
4. 0.75"ø – 1.5"ø CRUSHED STONE, WASHED.

SAND SPECIFICATION

SIEVE SIZE	ASTM C33 FINE AGGREGATE SPECIFICATION
3/8"	100
#4	95–100
#8	80–100
#10	50–85
#16	50–85
#30	25–60
#40	50–85
#50	5–30
#100	0–10

FILL BELOW FILTERATION BASIN

SOILS: SOILS PLACED BELOW FILTER BASIN SHALL BE BANK RUN GRAVEL, MANUFACTURED SAND OR MODIFIED 304.1 BEDDING THE MATERIAL SHALL BE TESTED FOR HYDRAULIC CONDUCTIVITY IN TWO PLACES BY A EITHER BOREHOLE TESTING, DOUBLE RING INFILTROMETER TEST, OR AN AMMOZEMETER IN ACCORDANCE WITH NHDES REGULATIONS ENV–WQ 1500. TO ENSURE THE MIN. KSAT = 10 IN/HR).

FILTRATION CONSTRUCTION

SOILS: DO NOT COMPACT SOIL. EXCAVATE BASIN, HAND RAKE STONE, PEA STONE AND MULCH LAYERS.

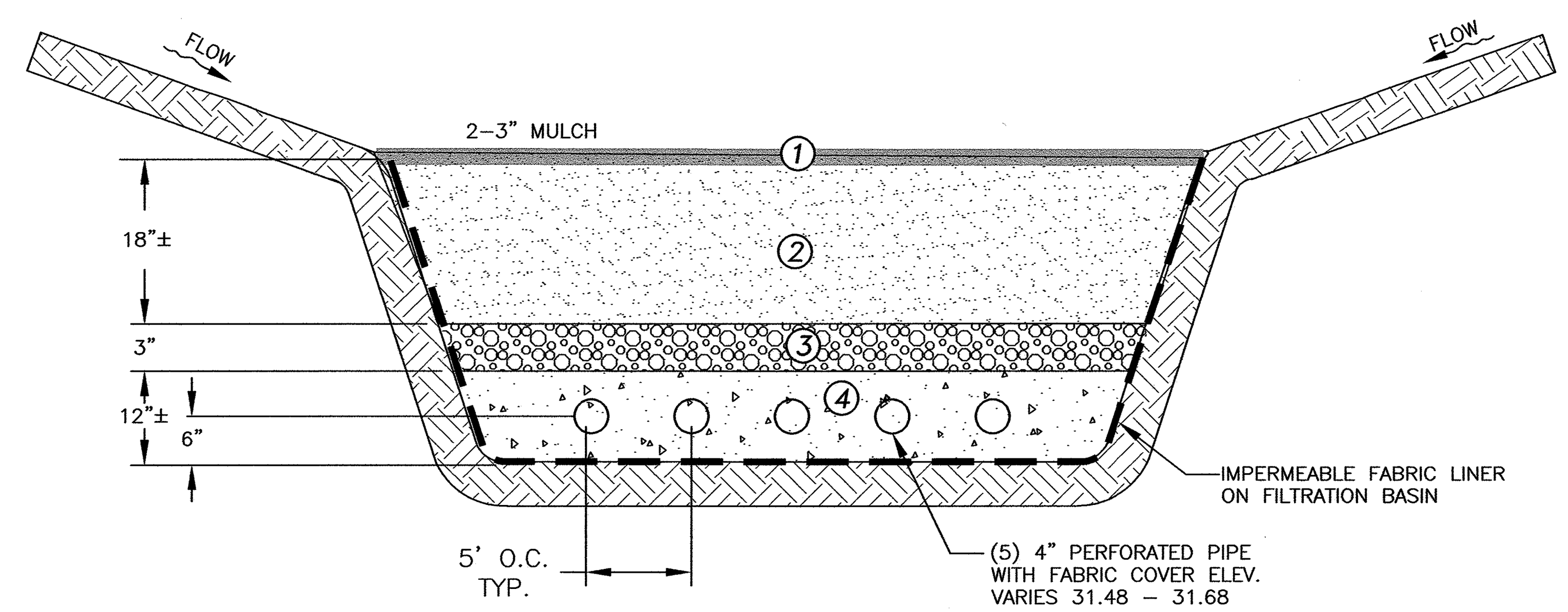
FILTRATION CONSTRUCTION INSPECTION

INSPECT EACH LAYER OF CONSTRUCTION: CONTACT THE DESIGN ENGINEER FOR INSPECTIONS DURING THE CONSTRUCTION PROCESS. CALL FOR INSPECTION BEFORE FILLING EXCAVATION WITH STONE, PEA STONE AND MULCH.

FILTRATION MAINTENANCE

SOILS: VISUALLY INSPECT AND REPAIR EROSION MONTHLY. USE SMALL STONES TO STABILIZE EROSION ALONG DRAINAGE PATHS. CHECK THE pH ONCE OR TWICE A YEAR. APPLY AN ALKALINE PRODUCT, SUCH AS LIMESTONE, IF NEEDED.

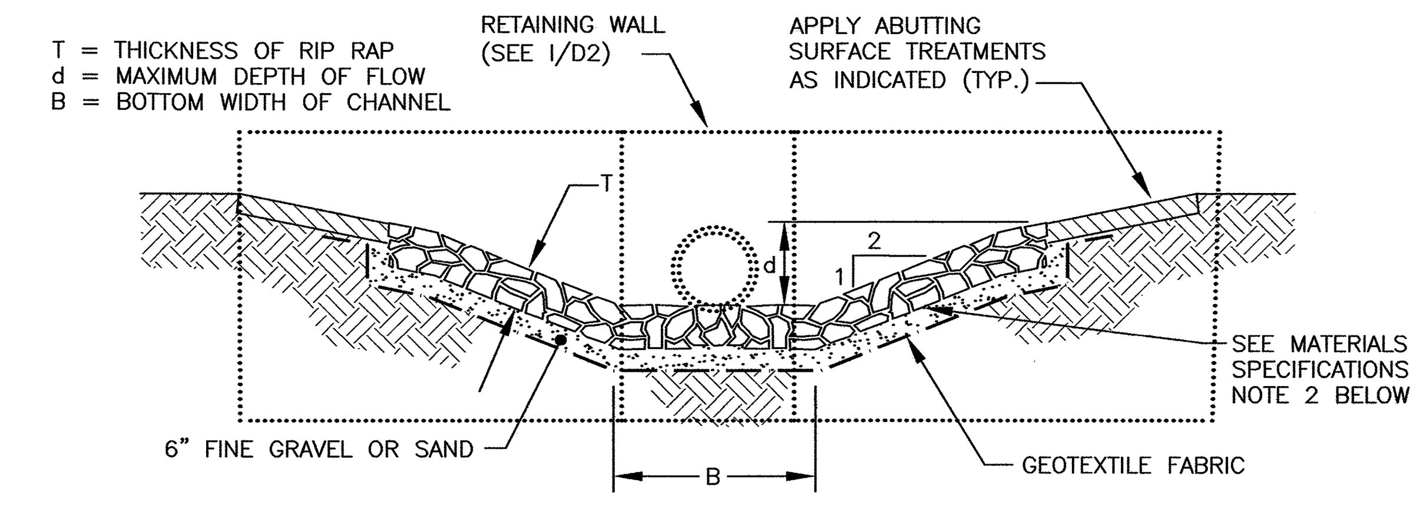
IF FILTRATION BASIN FAILS TO EMPTY 72 AFTER A RAINFALL, THE BASIN SHALL BE INSPECTED. IF AFTER INSPECTION IT IS DETERMINED THAT THE ENGINEERED SOIL HAS CLOGGED, THE ENGINEERED SOIL SHALL BE REPLACED. IN THE EVENT OF SOIL REPLACEMENT IN THE FILTRATION BASIN, AN AIRSPADE SHALL BE USED, TO CAREFULLY REMOVE THE SOILS SURROUNDING THE TREE ROOTS. TREE ROOTS ARE TO BE PROTECTED FROM DRYING OUT DURING THE PLACEMENT OF NEW SOILS AND NEW SOILS ARE TO BE REPLACED IMMEDIATELY UPON EXPOSING THE ROOT SYSTEMS.



F / C3 UNDERDRAINED FILTRATION BASIN

NTS

T = THICKNESS OF RIP RAP
d = MAXIMUM DEPTH OF FLOW
B = BOTTOM WIDTH OF CHANNEL



TYPICAL CROSS–SECTION

MATERIALS SPECIFICATIONS:

1. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF THE MAINE STORMWATER MANAGEMENT BMP MANUAL FOR ROCK RIP RAP.
2. ANCHOR PINS FOR FABRIC SHALL MEET THE REQUIREMENTS OF THE MANUFACTURER OF THE FABRIC.
3. RIP RAP SHALL BE A WELL GRADED MIX OF DURABLE ANGULAR OR SUBANGULAR STONES. FLAT ROCKS SHALL NOT BE USED FOR RIP RAP.

CONSTRUCTION SPECIFICATIONS:

1. THE SUBGRADE FOR THE RIP RAP SHALL BE CLEARED AND GRUBBED TO REMOVE ALL ROOTS, VEGETATION, AND DEBRIS AND PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
2. THE THICKNESS OF THE RIP RAP LAYER (T) SHALL BE 2.25 TIMES THE ROCK d_{50} AS DETERMINED BY THE METHOD IN BEST MANAGEMENT PRACTICE FOR ROCK RIP RAP.
3. GEOTEXTILE FABRIC SHALL BE PROTECTED FROM PUNCTURES OR TEARING DURING PLACEMENT OF THE ROCK RIP RAP BY PLACING A CUSHION OF SAND OR FINE GRAVEL OVER THE FABRIC. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC, SHALL BE A MINIMUM OF 12 INCHES.
4. STONE FOR RIP RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT DISPLACEMENT OF THE UNDERLYING MATERIALS. HAND PLACEMENT MAY BE REQUIRED TO PREVENT DAMAGE TO ANY PERMANENT STRUCTURES.
5. VOIDS IN RIP RAP SHOULD BE FILLED WITH SMALLS AND SMALLER ROCKS.

G / C3 RIP RAP LINED OUTLET

NTS

RIPRAP GRADATION TABLE

RIPRAP – 6"

% OF WEIGHT SMALLER THAN THE GIVEN SIZE	SIZE OF STONE RANGE IN INCHES
d100	12
d50	5.7 TO 6.9
d15	3.7 TO 5.2

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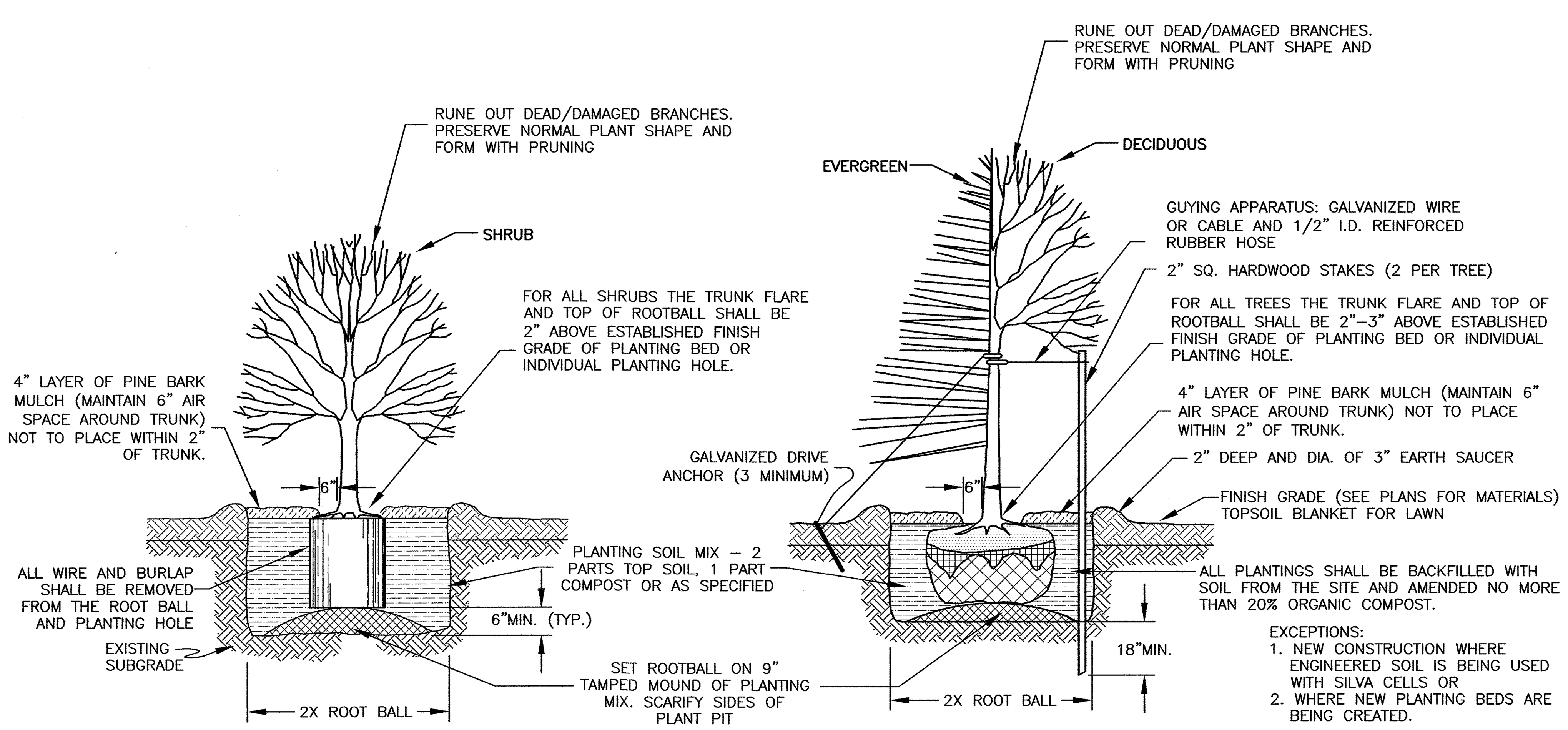
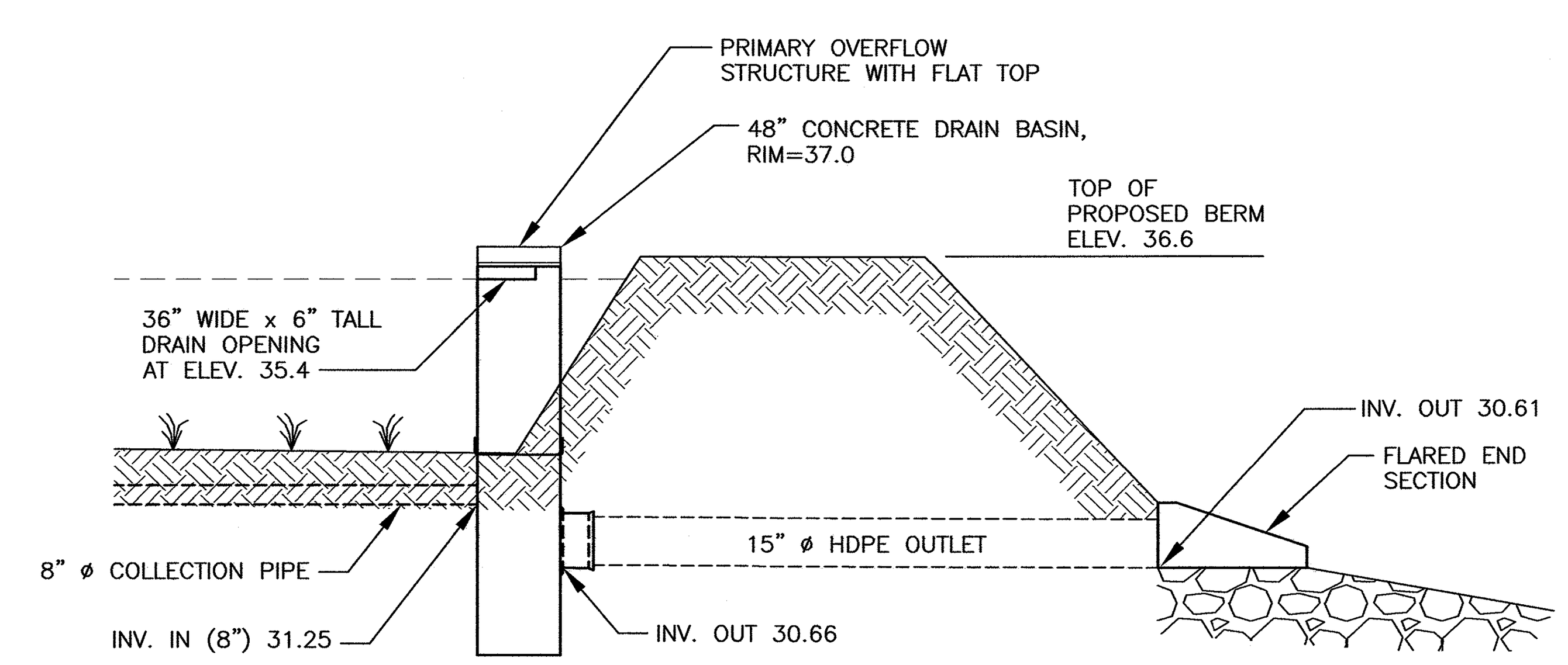


E / C5 SHRUB & TREE PLANTING DETAIL

NTS

(SHRUB PLANTING DETAIL APPLIES TO EVERGREEN AND DECIDUOUS SHRUBS)



H / C3 FILTRATION BASIN PRIMARY OUTLET

NTS

THE STORAGE BARN OF KITTERY DANA AVENUE KITTERY, MAINE

NO.	DESCRIPTION	DATE
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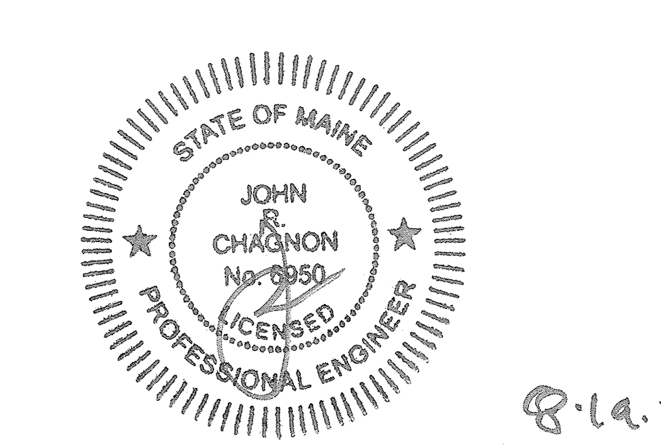

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DETAILS D2

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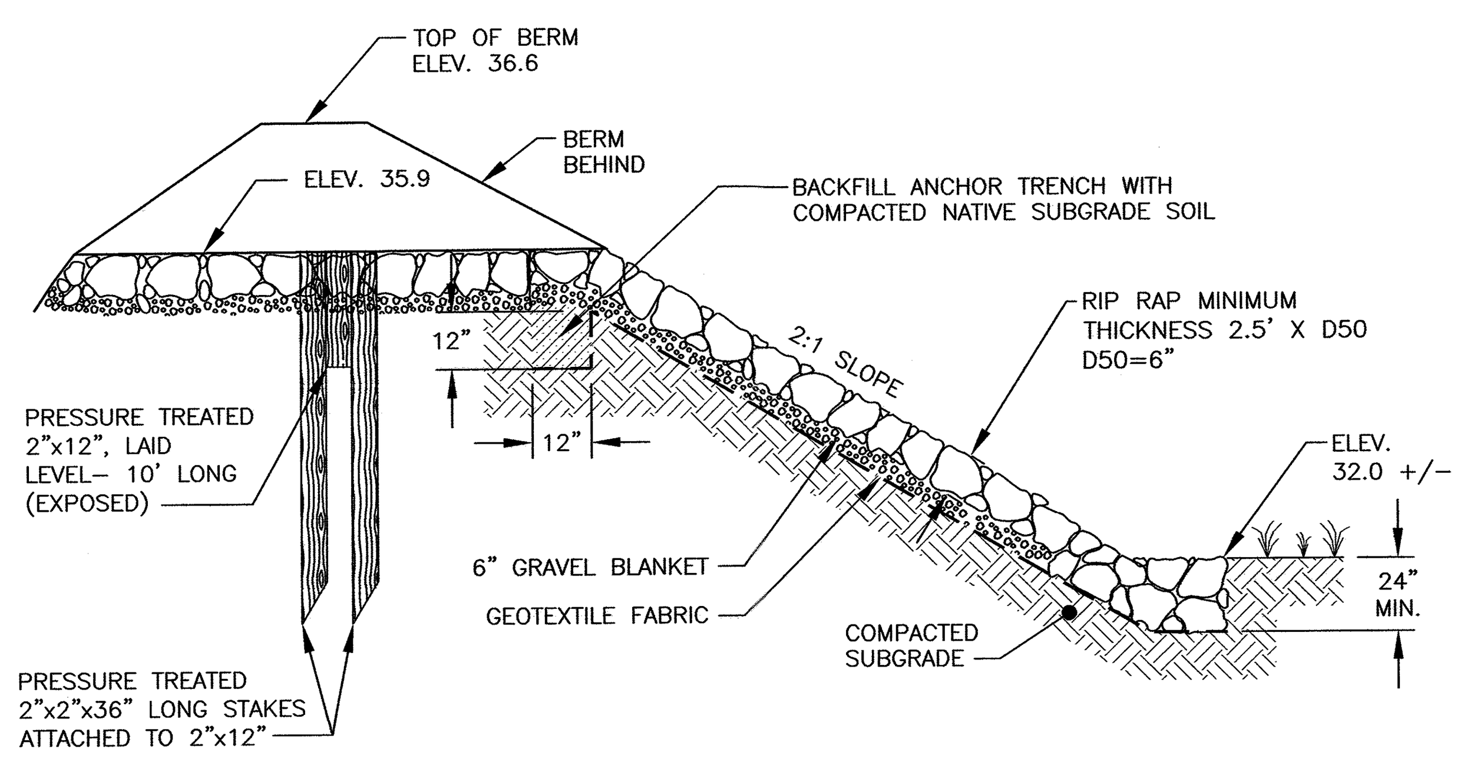
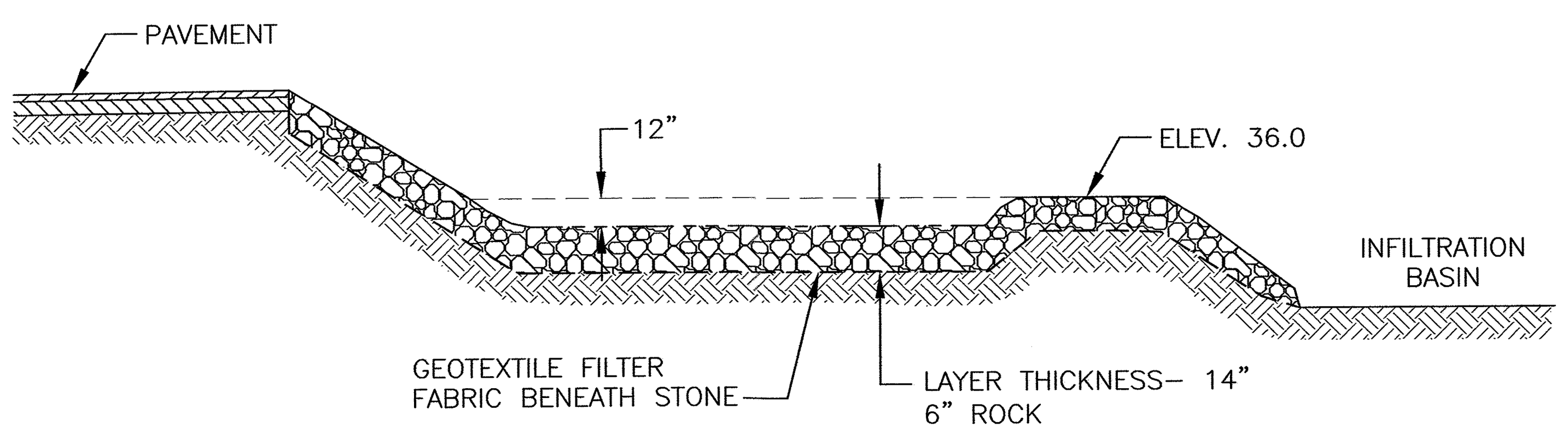


I / C3 EMERGENCY SPILLWAY SECTION
NTS

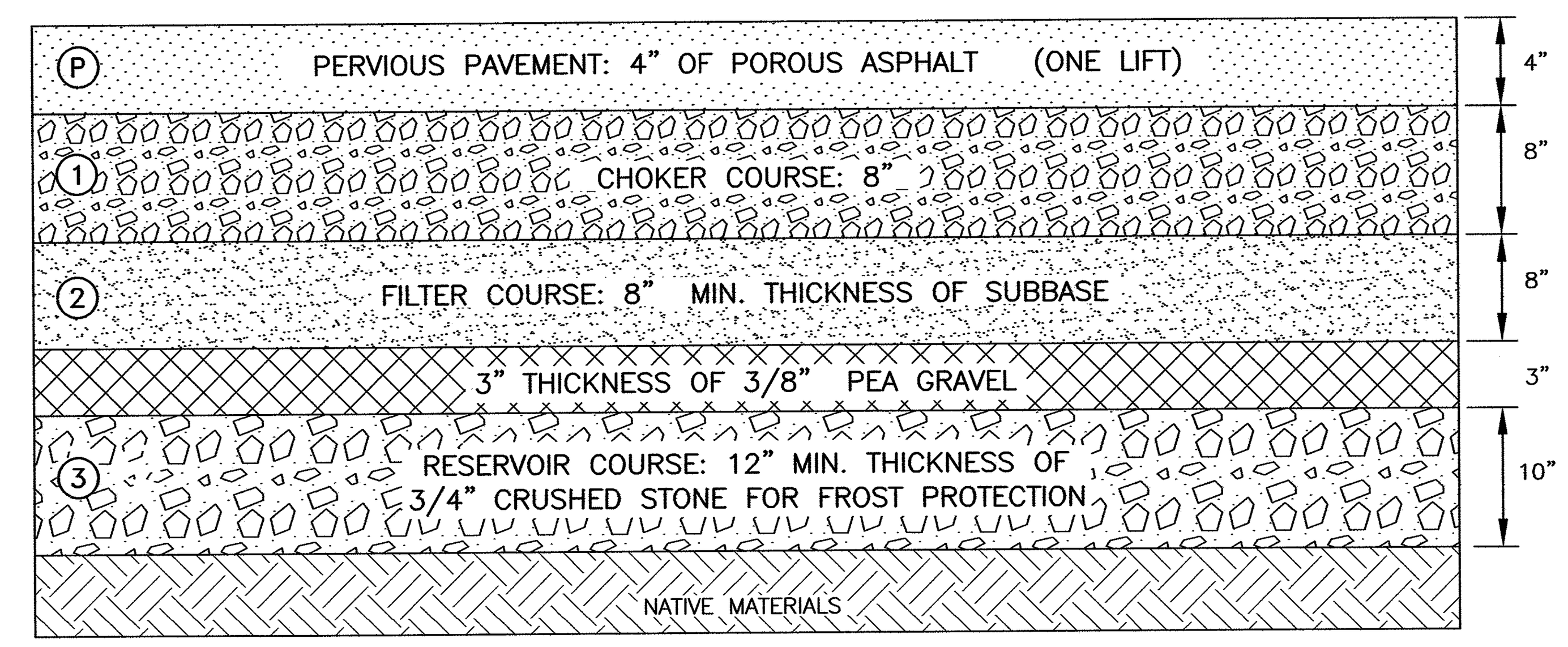


LONGITUDINAL SECTION

J / C3 SEDIMENT FOREBAY
NTS

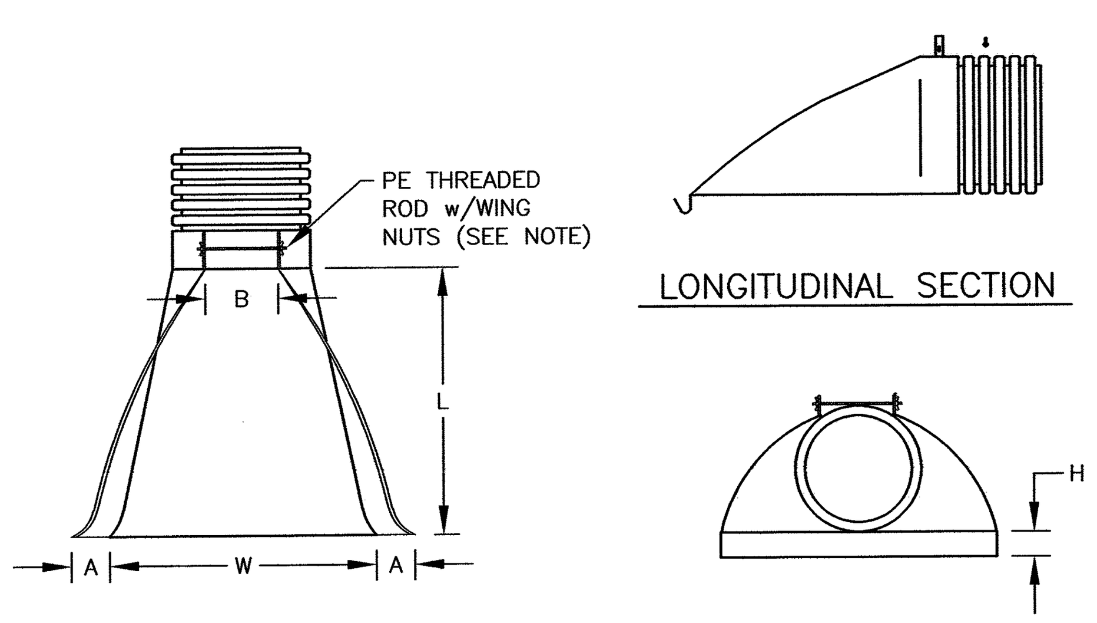
AASHTO GRADATION TABLE					
①		②		③	
CHOKER COURSE AASHTO NO. 57/67*		TABLE 7.7.3 FOR SPECIFICATIONS FOR AGGREGATE (MDOT 703.01)		RESERVOIR COURSE (AASHTO NO.3)**	
SIEVE SIZE	PASSING BY WEIGHT (%)	SIEVE SIZE	PASSING BY WEIGHT (%)	SIEVE SIZE	PASSING BY WEIGHT (%)
1.5" (37.5 mm)	100	3/8"	100	2.5" (63mm)	100
1" (25 mm)	95-100	#4	95-100	2" (50mm)	90-100
1/2" (12.5mm)	10-30	#8	80-100	1-1/2" (37.5mm)	35-70
No. 4 (4.75mm)	0-10	#16	50-85	1" (25 mm)	0-15
No. 8 (2.36mm)	0-5	#30	25-60	1/2" (12.5mm)	0-5
		#60	10-30		
		#100	2-10		
		#200	0-5 ***		

* ALTERNATE GRADATIONS (E.G. AASHTO No. 37) MAY BE ACCEPTED UPON ENGINEER'S APPROVAL
** ALTERNATE GRADATIONS (E.G. AASHTO No. 6) MAY BE ACCEPTED UPON ENGINEER'S APPROVAL
*** 8-10% IS PREFERRED



MATERIAL FOR THE CHOKER COURSE AND RESERVOIR COURSE SHALL HAVE THE AASHTO NO.57 AND AASHTO NO.3 GRADATIONS, RESPECTIVELY, AS SPECIFIED IN TABLE. IF THE AASHTO NO.3 GRADATION CANNOT BE MET, AASHTO NO. 5 IS ACCEPTABLE WITH APPROVAL OF THE ENGINEER. AASHTO NO 3 IS ALSO SUITABLE FOR THE CHOKER COURSE.

L / C2 POROUS PAVEMENT SYSTEM DETAILS
NTS

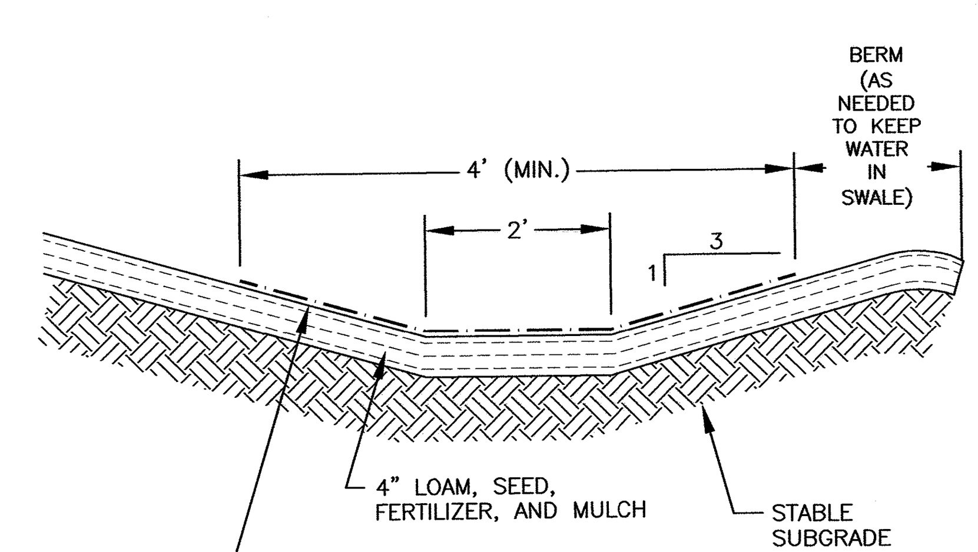


LONGITUDINAL SECTION

PART NO.	PIPE SIZE	A	B (MAX.)	H	L	W
1210-NP	12"	6.5"	10"	6.5"	25"	29"
1510-NP	15"	6.5"	10"	6.5"	25"	29"
1810-NP	18"	7.5"	15"	6.5"	32"	35"
2410-NP	24"	7.5"	18"	6.5"	36"	45"
3012-NP	30"	10.5"	N/A	7.0"	53"	68"
3612-NP	36"	10.5"	N/A	7.0"	53"	68"

NOTE: PE THREADED ROD W/WING NUTS PROVIDED FOR END SECTIONS 12"-24", 30" & 36" END SECTIONS TO BE WELDED TO PIPE PER MANUFACTURERS RECOMMENDATIONS.

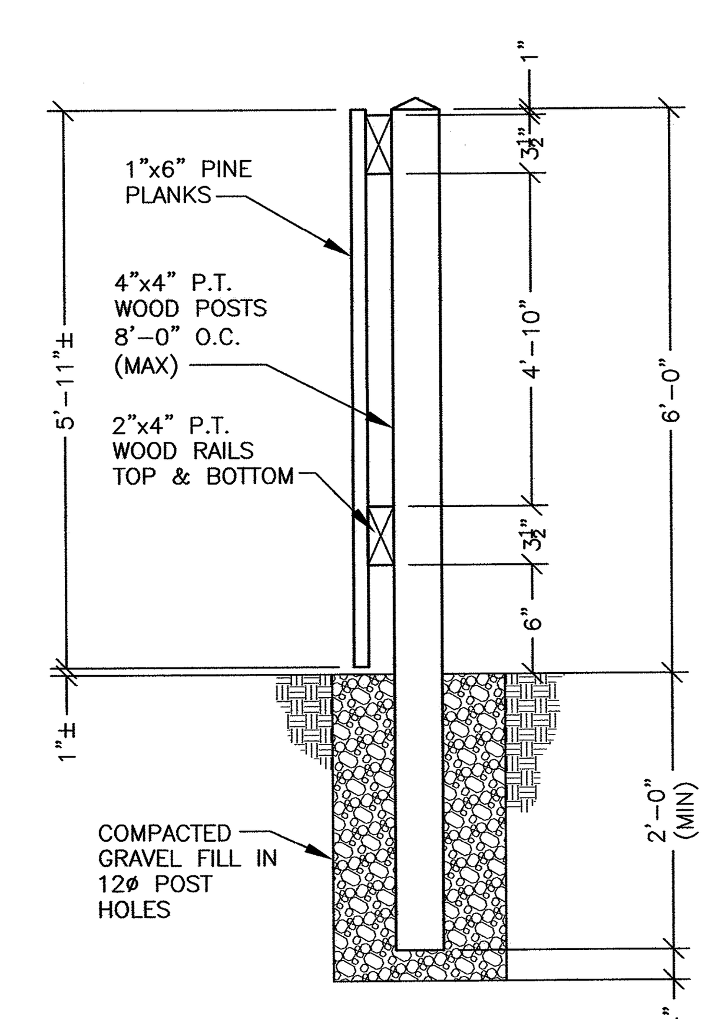
K / C3 FLARED END SECTION
BY ADVANCED DRAINAGE SYSTEM (ADS)
NTS



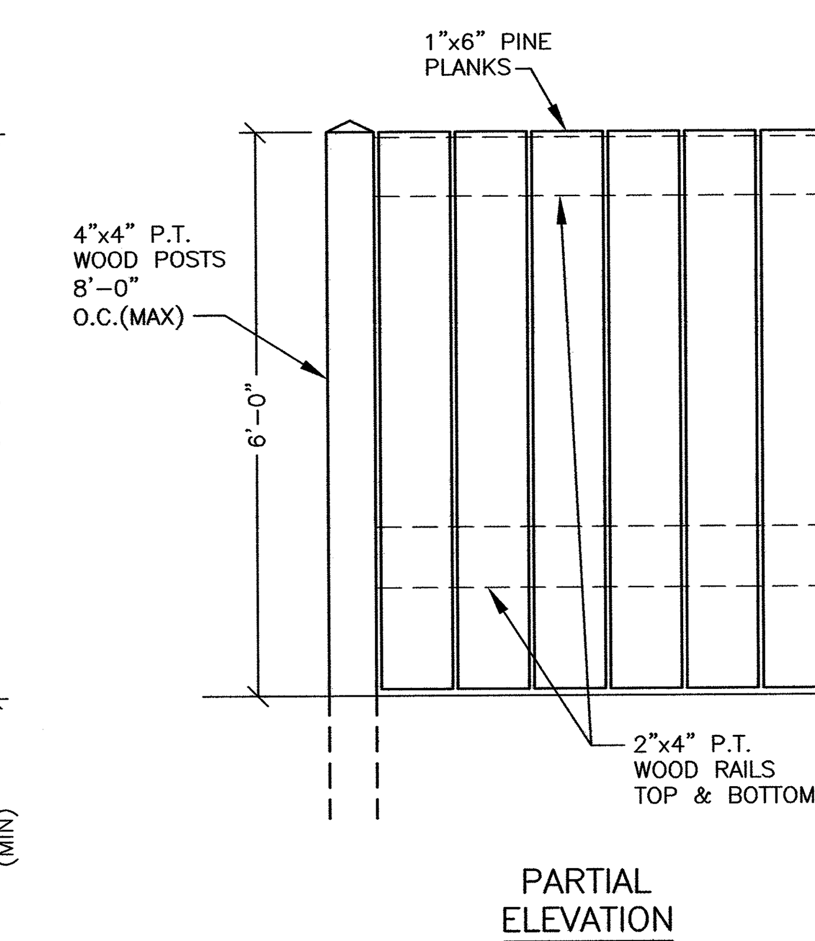
CROSS SECTION

*VEGETATED SWALE TO BE SEEDED WITH TICKLESEED/ROUGH BENTGRASS (AGROSTIS SCABRA), VIRGINIA WILD RYE (ELYMUS VIRGINIUS) AND LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM) SPREAD THROUGHOUT.

M / C3 VEGETATED SWALE
NTS



SECTION @ TYP. POST



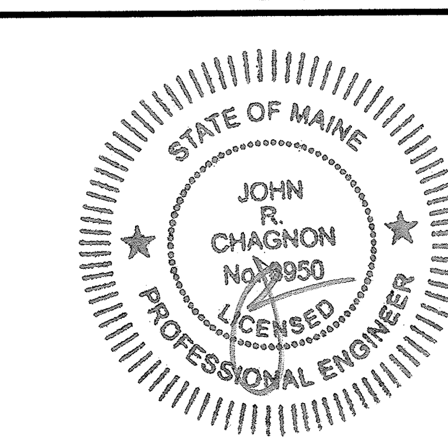
PARTIAL ELEVATION

N / C2 WOOD FENCE DETAILS
NTS

THE STORAGE BARN OF KITTERY
DANA AVENUE
KITTERY, MAINE

NO.	DESCRIPTION	DATE
0	ISSUED FOR APPROVAL	8/19/21

REVISIONS



SCALE: AS SHOWN | APRIL 2021

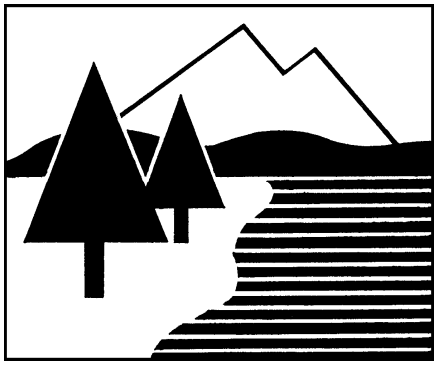
DETAILS | D3

FB 193 PG 1 | 1548

DRAINAGE ANALYSIS

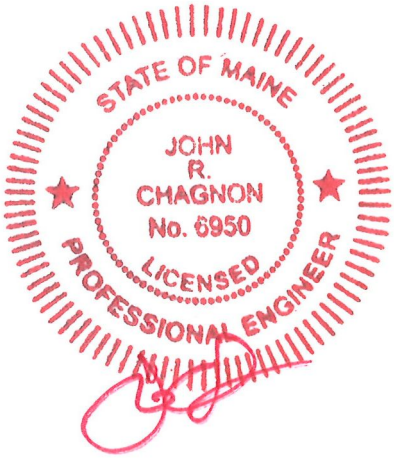
THE STORAGE BARN OF KITTERY

2 DANA AVENUE, KITTERY, ME



FOR
DOW HIGHWAY PROPERTIES, LLC

19 AUGUST 2021



Ambit Engineering, Inc.
Civil Engineers and Land Surveyors
200 Griffin Road, Unit 3
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E-mail: jrc@ambitengineering.com
(Ambit Job Number 1548.01)

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Proposed Subcatchment Plan	W2

EXECUTIVE SUMMARY

This drainage analysis examines the pre-development (existing) and post-development (proposed) stormwater drainage patterns for the proposed construction of storage units and associated site improvements at 2 Dana Avenue in Kittery, ME. The site area is shown on the Town of Kittery Assessor's Tax Map 21 as Lot 7. The project proposes to redevelop the existing mobile home park into a storage unit facility with associated pavement. The redevelopment of storage unit facility will increase the impervious surface area from the site, which will increase the potential for surface runoff.

The proposed development drains into a nearby wetland buffer. Therefore, development has the potential to impact this resource and stormwater treatment must be provided. Also, the rules require not increasing stormwater runoff to adjacent properties, and the site must be designed in a manner to minimize that occurrence. Resultant from that proximity, special consideration was given to the placement of all stormwater treatment practices.
The runoff from the new impermeable surfaces will be diverted into a filtration basin, also permeable pavement will be utilized. The filtration basin will increase the storage of stormwater on-site and decrease the peak flow rate to the adjacent resource.

The hydrologic modeling utilized for this analysis uses the "Precipitation Frequency Estimate" values for rainfall from The National Oceanic and Atmospheric Administration (NOAA) as currently required by the Maine DEP.

INTRODUCTION / PROJECT DESCRIPTION

This drainage report is designed to assist the owner, planning board, contractor, regulatory reviewer, and others in understanding the impact of the proposed development project on local surface water runoff and quality. The project site is shown on the Town of Kittery, Maine, as Assessor's Tax Map 21, Lot 7.

Bounding the site to the north is Dana Avenue followed by a mobile home park. On the west is the Harold L. Dow Highway, followed by commercial property. To the east is residential property. To the south, an I-95 on-ramp. A vicinity map is included in the Appendix to this report.

The proposed development will construct a new storage unit facility, and other associated improvements such as parking and landscaping.

This report includes information about the existing site and the proposed development necessary to analyze stormwater runoff and to design any required treatment. The report includes maps of pre-development and post-development watersheds, sub-catchment areas and calculations of runoff. The report will provide a narrative of the stormwater runoff and describe numerically and graphically the surface water runoff patterns for this site. Proposed stormwater management, treatment structures, and methods will also be described, as well as erosion and sediment control practices. To fully understand the proposed site development the reader should also review a complete site plan set in addition to this report.

METHODOLOGY

The project proposes to direct the runoff from most of the proposed buildings and parking lot into a filtration basin. Also, impermeable pavement treatment will be used. The runoff flows through the systems and is discharged in the buffer of a local wetland. Water will be directed through the proposed treatment systems before discharge. Excess flow from major storm events from the proposed buildings and parking lot will be routed through a high flow bypass before being discharged into the nearby wetland buffer.

The storm events used for the peak discharge calculations in this report are the 2-year, 10-year and 25-year (24-hour) storms. The 50-year storm was used to calculate any additional needed conveyance measures. Watershed basin boundaries have been delineated using topographic maps prepared by Ambit Engineering and field observations to confirm.

SITE SPECIFIC INFORMATION

Based on the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), Soil Survey of York County, Maine, the site is made up of three soil types:

CoC – Colton gravelly sandy loam, 8 to 15 percent slopes, drained with a typical depth to restrictive feature of more than 80 inches. The provided HSG was class A.

Sc – Scantic silt loam, 0 to 3 percent slopes, depth of water table 0 to 12 inches. The provided HSG was class D.

Ur – Urban land, the assumed HSG was class D.

Ambit Engineering did an investigation of the site and determined that the site was predominantly fill with restrictive features and dense clay underneath. Contrary to the grading of a class A soil as determined by the soil report, it was determined that the soil was more characteristic of a type C soil.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) number 2301710004C (effective date July 5, 1984), the development portion of the project site is located in Zone C and is determined to be outside of the 0.2% annual chance floodplain. A copy of the FIRM map is included in the Appendix.

PRE-DEVELOPMENT DRAINAGE

The majority of the existing site drains via overland flow directly from the developed site, into the wetland on the south edge of the lot. In the pre-development condition, the site has been analyzed as four subcatchments (ES1, ES2, ES3, and ES4) based on localized topography and discharge location. The subcatchment (ES1) contains a small area on the northern edge of the property, and is the only section of the property that drains into the local stormwater infrastructure on Dana Avenue (DP1). The other subcatchments (ES2,

ES3, and ES4) all drain to the adjacent swale, flowing to Chickering Creek (DP2). Subcatchments ES2, ES3, and ES4 flow into the swale on site to the west, south, and south-east respectively. While ES3 and ES4 could be considered the same subcatchment, they were separated into two distinct subcatchments, for ease of calculation purposes.

Table 1: Pre-Development Watershed Basin Summary

Watershed Basin ID	Basin Area (SF)	Tc (MIN)	CN	10-Year Runoff (CFS)	25-Year Runoff (CFS)	To Design Point
ES1	6138	5.0	79	0.51	0.69	DP1
ES2	19286	5.0	81	1.69	2.28	DP2
ES3	64168	8.5	83	5.38	7.12	DP2
ES4	36678	5.0	83	3.42	4.52	DP2

POST-DEVELOPMENT DRAINAGE

In the post-development condition, the site has been analyzed as six separate subcatchments (PS1, PS2, PS3, PS3a, PS3b, and PS4). Subcatchments PS1 and PS2 share similar spaces and outlets to ES1and ES2 respectively, but are both reduced in size. Subcatchment PS4 remains unchanged from ES4. Subcatchment ES3 is subdivided into subcatchments PS3, PS3a, and PS3b for the post-development analysis. PS3b contains all area contributing to the porous pavement treatment. PS3a contains all additional impervious surface of the proposed design that is not contributing to the porous pavement, as well as contributing area to the filtration basin. PS3 contains all other area that would have contributed to the ES3 drainage point in the pre-development analysis.

Table 2: Post-Development Watershed Basin Summary

Watershed Basin ID	Basin Area (SF)	Tc (MIN)	CN	10-Year Runoff (CFS)	25-Year Runoff (CFS)	Design Point
PS1	1860	5.0	86	0.19	0.24	DP1
PS2	14286	5.0	80	1.22	1.65	DP2
PS3	26236	5.0	80	2.24	3.03	DP2

PS3a	32988	11.6	92	3.07	3.87	DP2
PS3b	15391	5.2	98	1.84	2.27	DP2
PS4	36709	5.0	83	3.42	4.52	DP2

Table 3 shows a summary of the comparison between pre-developed flows and post-developed flows for the design points.

Table 3: Pre-Development to Post-Development Comparison

	Q2 (CFS)		**Q10 (CFS)**		**Q25 (CFS)**		
Design Point	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Description**
DP1	0.23	0.10	0.51	0.19	0.69	0.24	Dana Ave.
DP2	5.01	4.50	10.22	9.35	13.53	13.42	Chickering Creek

Note that all drainage points of interest experience lower or equal peak flows.

OFFSITE INFRASTRUCTURE CAPACITY

DP1 flows to Town storm drainage. Flow to that point is reduced. Otherwise, retention and routing to the final destination of the stormwater is done on-site. The small area draining to Dana Avenue is shrunken and peak discharges from the area are lowered. The drainage going to DP1, the large wetland area off site, will be ultimately discharged through a stone apron, as to spread the flow path and dissipate the energy in the stormwater.

EROSION AND SEDIMENT CONTROL PRACTICES

The erosion potential for this site as it exists is moderate due to the presence of gravel areas that are highly erodible. During construction, the major potential for erosion is wind and stormwater runoff. The contractor will be required to inspect and maintain all necessary erosion control measures, as well as installing any additional measures as required. All erosion control practices shall conform to the “Maine Stormwater Management Design Manual, Technical Design Manual Volume III.” Some examples of

erosion and sediment control measures to be utilized for this project during construction may include:

- Silt Soxx located at the toe of disturbed slopes
- Catch Basin Filters
- Stabilized construction entrance at access point to the site
- Temporary mulching and seeding for disturbed areas
- Spraying water over disturbed areas to minimize wind erosion

After construction, permanent stabilization will be accomplished by permanent seeding, landscaping, and surfacing the access drives and parking areas with asphalt paving and other areas with concrete walkways.

CONCLUSION

The proposed development has been designed to minimize the impacts to neighboring properties and to the adjacent wetland resources. The addition of a filtration basin is sufficient to offset peak flows as required. Erosion and sediment control practices will be implemented for both the temporary condition during construction and for final stabilization after construction. Therefore, there are no negative impacts to downstream receptors or adjacent properties anticipated as a result of this project. There is also no negative impact to the Town of Kittery's adjacent wetland resources.

REFERENCES

1. Town of Kittery, ME. Land Use and Development Code, Amended 01-11-2021.
2. Maine Department of Environmental Protection, *Maine Stormwater Management Design Manual (Volumes I-III)*, March 2016.
3. HydroCAD Software Solution, LLC. *HydroCAD Stormwater Modeling System Version 10.0* copyright 2013.

APPENDIX A

VICINITY (TAX) MAP

THIS MAP IS FOR ASSESSMENT PURPOSES. IT IS NOT VALID FOR LEGAL DESCRIPTION OR CONVEYANCE.

THE HORIZONTAL DATUM IS THE MAINE STATE PLANE COORDINATE SYSTEM, NAD 83.

ORIGINAL MAPPING BY JOHN E. O'DONNELL & ASSOCIATES, NEW GLOUCESTER, MAINE.

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LEGEND

PARCEL NUMBER 16
PARCEL ACREAGE 0.25
RECORD DIMENSION . . . . . 100'
STREET ADDRESS NUMBER 28
SUBDIVISION LOT NUMBER . . . . . (4)

RIGHT OF WAY/ACCESS
COMMON OWNERSHIP
WATER

N

FEET 100 50 0 100 200 300
METERS 25 12.5 0 25 50 75
SCALE: 1" = 100'

REVISED TO: APRIL 1, 2020

PROPERTY MAPS
KITTERY
MAINE

INDEX DIAGRAM

MAP NO.
21

APPENDIX B

TABLES, CHARTS, ETC.

NOAA Atlas 14, Volume 10, Version 3
Location name: Kittery, Maine, USA*
Latitude: 43.1083°, Longitude: -70.7481°
Elevation: 33.82 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.307** (0.233-0.405)	**0.370** (0.280-0.488)	**0.473** (0.357-0.626)	**0.558** (0.419-0.743)	**0.675** (0.493-0.937)	**0.763** (0.548-1.08)	**0.855** (0.600-1.25)	**0.959** (0.640-1.44)	**1.11** (0.716-1.71)	**1.23** (0.780-1.94)
10-min	**0.435** (0.330-0.574)	**0.524** (0.397-0.692)	**0.669** (0.505-0.888)	**0.790** (0.593-1.05)	**0.956** (0.699-1.33)	**1.08** (0.777-1.53)	**1.21** (0.850-1.78)	**1.36** (0.908-2.03)	**1.57** (1.02-2.43)	**1.75** (1.11-2.75)
15-min	**0.512** (0.388-0.675)	**0.617** (0.467-0.814)	**0.788** (0.594-1.04)	**0.930** (0.699-1.24)	**1.13** (0.822-1.56)	**1.27** (0.914-1.80)	**1.43** (1.00-2.09)	**1.60** (1.07-2.39)	**1.85** (1.20-2.86)	**2.05** (1.30-3.24)
30-min	**0.688** (0.522-0.908)	**0.830** (0.628-1.10)	**1.06** (0.801-1.41)	**1.25** (0.941-1.67)	**1.52** (1.11-2.11)	**1.72** (1.23-2.43)	**1.93** (1.35-2.83)	**2.17** (1.45-3.24)	**2.51** (1.62-3.89)	**2.80** (1.77-4.41)
60-min	**0.865** (0.655-1.14)	**1.04** (0.790-1.38)	**1.34** (1.01-1.77)	**1.58** (1.19-2.10)	**1.91** (1.40-2.66)	**2.16** (1.56-3.07)	**2.42** (1.71-3.57)	**2.73** (1.82-4.09)	**3.18** (2.05-4.91)	**3.55** (2.25-5.59)
2-hr	**1.15** (0.879-1.51)	**1.40** (1.07-1.84)	**1.80** (1.37-2.38)	**2.14** (1.61-2.83)	**2.60** (1.91-3.60)	**2.94** (2.13-4.17)	**3.31** (2.35-4.88)	**3.75** (2.51-5.59)	**4.42** (2.86-6.81)	**4.99** (3.17-7.84)
3-hr	**1.36** (1.04-1.78)	**1.66** (1.26-2.17)	**2.14** (1.63-2.81)	**2.54** (1.92-3.35)	**3.09** (2.29-4.28)	**3.50** (2.55-4.96)	**3.94** (2.81-5.82)	**4.48** (3.01-6.67)	**5.31** (3.44-8.16)	**6.02** (3.83-9.43)
6-hr	**1.77** (1.36-2.30)	**2.17** (1.66-2.82)	**2.82** (2.15-3.67)	**3.35** (2.55-4.40)	**4.09** (3.04-5.64)	**4.64** (3.40-6.54)	**5.24** (3.75-7.70)	**5.96** (4.02-8.84)	**7.08** (4.61-10.9)	**8.04** (5.13-12.6)
12-hr	**2.23** (1.72-2.88)	**2.75** (2.12-3.56)	**3.60** (2.77-4.67)	**4.31** (3.30-5.62)	**5.28** (3.94-7.23)	**6.00** (4.41-8.41)	**6.78** (4.88-9.91)	**7.73** (5.23-11.4)	**9.19** (6.00-14.0)	**10.4** (6.68-16.2)
24-hr	**2.63** (2.04-3.38)	**3.31** (2.56-4.25)	**4.40** (3.41-5.68)	**5.32** (4.09-6.89)	**6.57** (4.94-8.99)	**7.49** (5.55-10.5)	**8.51** (6.19-12.5)	**9.79** (6.64-14.4)	**11.8** (7.74-18.0)	**13.6** (8.73-21.1)
2-day	**2.94** (2.29-3.74)	**3.77** (2.94-4.82)	**5.14** (4.00-6.59)	**6.28** (4.86-8.09)	**7.84** (5.95-10.7)	**8.97** (6.72-12.6)	**10.3** (7.57-15.2)	**12.0** (8.14-17.6)	**14.8** (9.75-22.5)	**17.4** (11.2-26.9)
3-day	**3.19** (2.50-4.05)	**4.10** (3.20-5.21)	**5.58** (4.35-7.12)	**6.81** (5.28-8.74)	**8.50** (6.47-11.6)	**9.72** (7.31-13.7)	**11.1** (8.25-16.5)	**13.0** (8.86-19.1)	**16.2** (10.7-24.6)	**19.2** (12.4-29.6)
4-day	**3.44** (2.70-4.36)	**4.38** (3.44-5.56)	**5.92** (4.63-7.54)	**7.20** (5.59-9.22)	**8.95** (6.83-12.2)	**10.2** (7.70-14.3)	**11.7** (8.68-17.3)	**13.7** (9.31-20.0)	**17.0** (11.2-25.8)	**20.1** (13.0-31.0)
7-day	**4.17** (3.28-5.25)	**5.16** (4.06-6.51)	**6.78** (5.32-8.59)	**8.12** (6.34-10.3)	**9.97** (7.63-13.5)	**11.3** (8.53-15.8)	**12.8** (9.55-18.8)	**14.9** (10.2-21.7)	**18.4** (12.2-27.7)	**21.6** (14.0-33.1)
10-day	**4.86** (3.84-6.10)	**5.88** (4.64-7.40)	**7.56** (5.95-9.54)	**8.94** (7.00-11.4)	**10.9** (8.31-14.6)	**12.2** (9.24-16.9)	**13.8** (10.2-20.1)	**15.9** (10.9-23.1)	**19.3** (12.8-29.1)	**22.4** (14.5-34.3)
20-day	**6.88** (5.47-8.60)	**8.01** (6.36-10.0)	**9.85** (7.79-12.4)	**11.4** (8.95-14.4)	**13.5** (10.3-17.9)	**15.0** (11.3-20.4)	**16.7** (12.2-23.7)	**18.7** (12.9-27.0)	**21.7** (14.5-32.5)	**24.3** (15.8-37.1)
30-day	**8.55** (6.82-10.6)	**9.76** (7.77-12.2)	**11.7** (9.31-14.7)	**13.4** (10.5-16.8)	**15.6** (11.9-20.5)	**17.3** (13.0-23.3)	**19.1** (13.9-26.6)	**21.0** (14.6-30.2)	**23.7** (15.8-35.4)	**25.9** (16.9-39.5)
45-day	**10.6** (8.50-13.2)	**11.9** (9.53-14.8)	**14.0** (11.2-17.5)	**15.8** (12.5-19.8)	**18.2** (14.0-23.8)	**20.1** (15.1-26.8)	**22.0** (15.9-30.2)	**23.8** (16.6-34.1)	**26.3** (17.6-39.1)	**28.2** (18.4-42.9)
60-day	**12.4** (9.92-15.3)	**13.7** (11.0-17.0)	**16.0** (12.8-19.9)	**17.8** (14.2-22.3)	**20.4** (15.6-26.5)	**22.4** (16.8-29.7)	**24.3** (17.6-33.3)	**26.2** (18.3-37.4)	**28.6** (19.2-42.4)	**30.3** (19.8-46.0)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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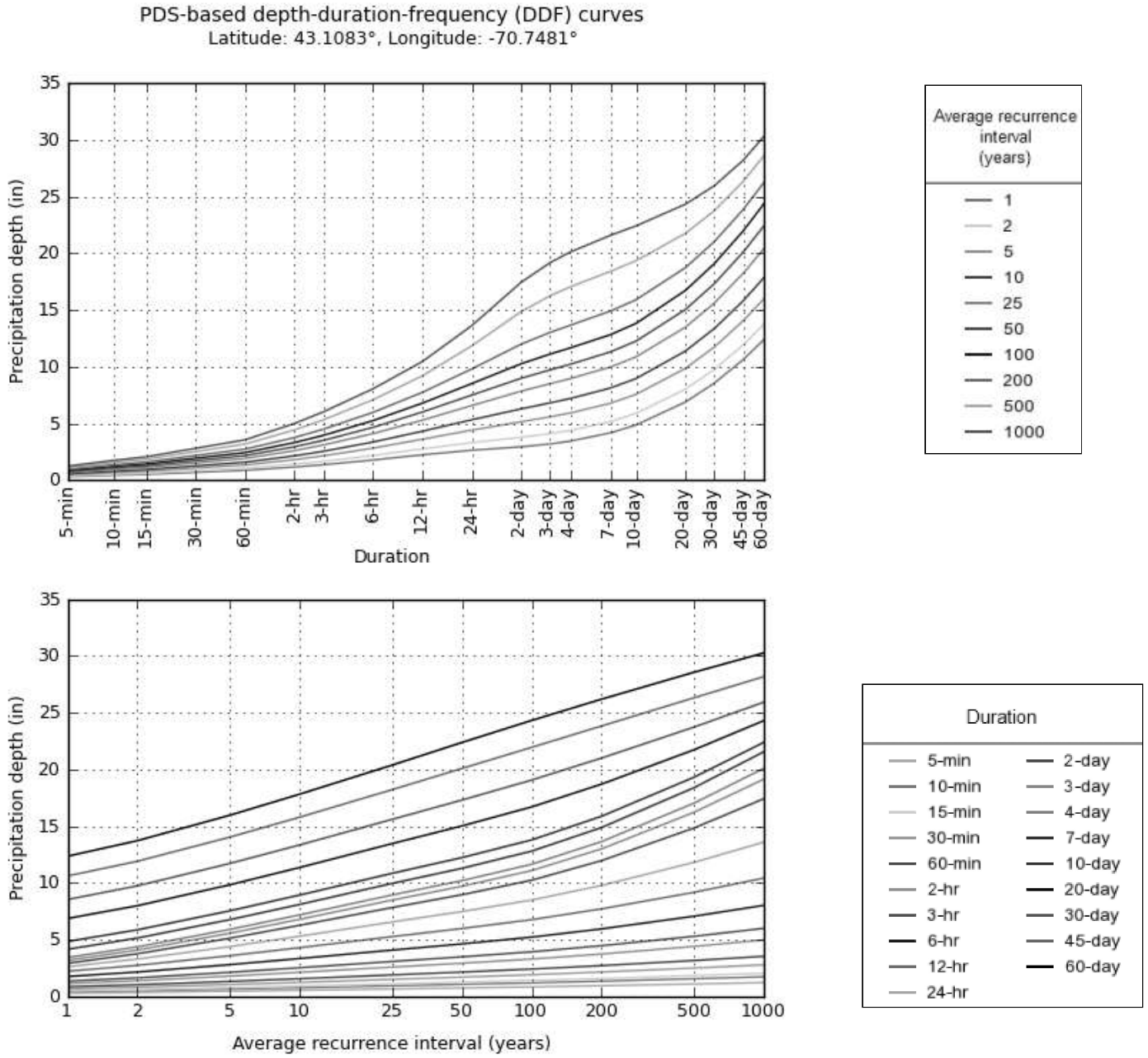
PF graphical



NOAA Atlas 14, Volume 10, Version 3

Created (GMT): Tue Aug 17 17:51:18 2021

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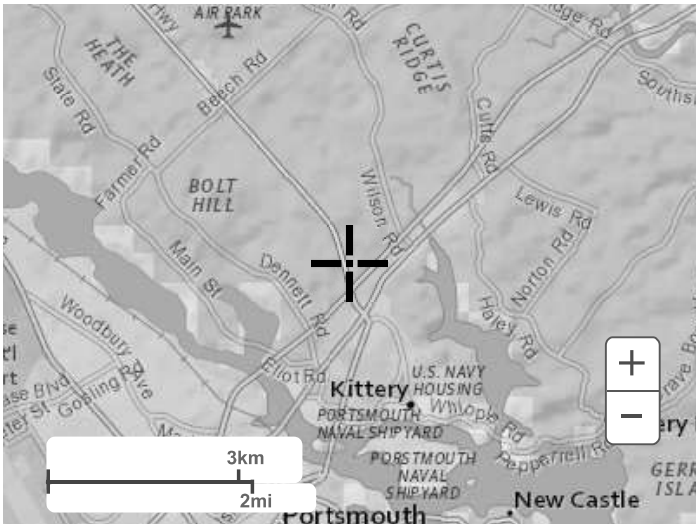
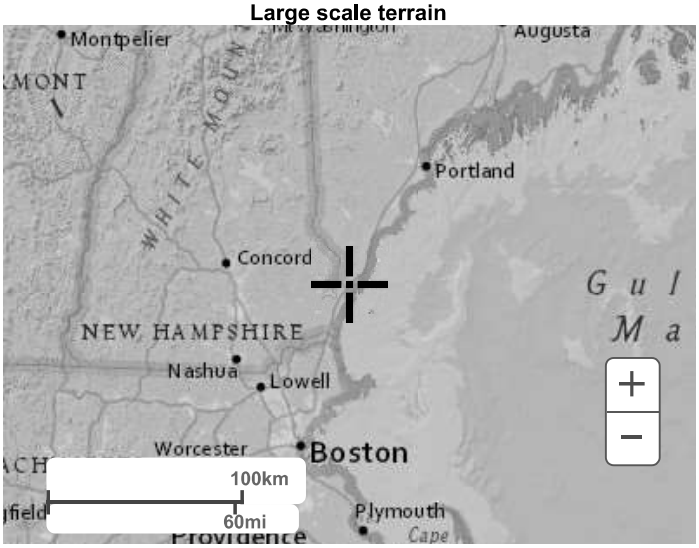
Maps & aerials

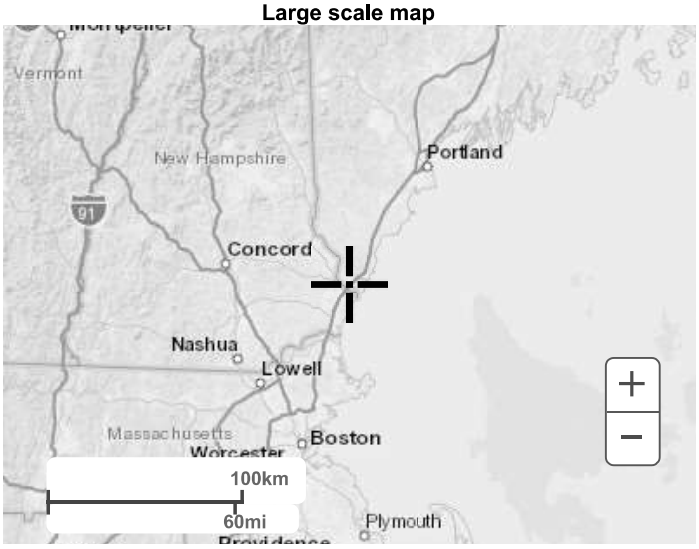
Small scale terrain



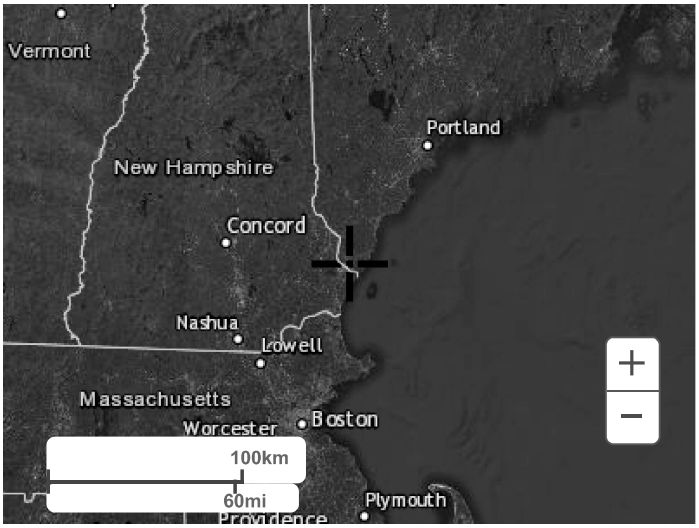
Large scale terrain



Large scale map



Large scale aerial



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National Weather Service
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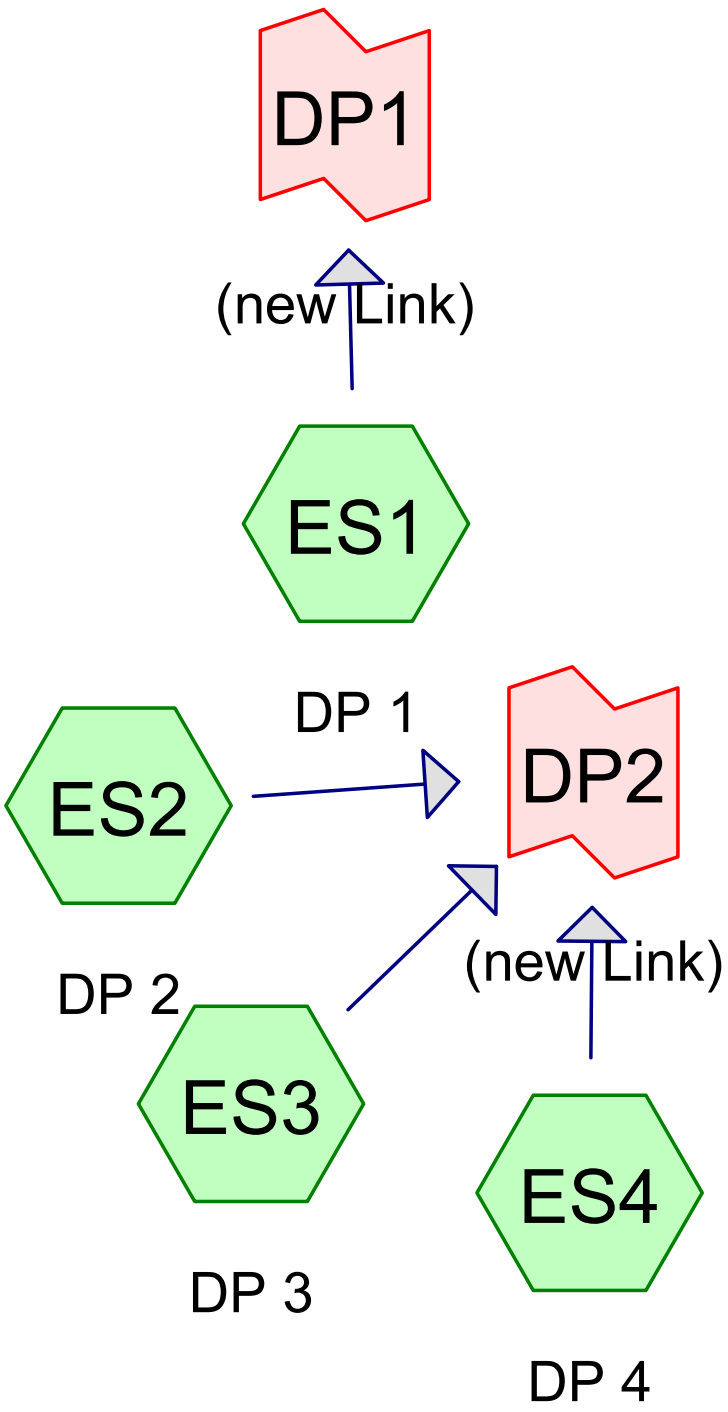
Disclaimer

APPENDIX C

HYDROCAD DRAINAGE

ANALYSIS CALCULATIONS



Subcat Reach Pond Link

Routing Diagram for 2021-07-29 Existing Conditions David T
Prepared by {enter your company name here}, Printed 8/18/2021

Project Notes

Defined 5 rainfall events from output (19) IDF
Defined 5 rainfall events from PF_Depth_English_PDS IDF

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type III 24-hr		Default	24.00	1	3.31	2
2	10-yr	Type III 24-hr		Default	24.00	1	5.32	2
3	25-yr	Type III 24-hr		Default	24.00	1	6.57	2
4	50-yr	Type III 24-hr		Default	24.00	1	7.49	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.207	74	>75% Grass cover, Good, HSG C (ES1, ES2, ES3, ES4)
0.292	80	>75% Grass cover, Good, HSG D (ES2, ES3, ES4)
0.404	98	Paved parking, HSG C (ES1, ES2, ES3, ES4)
0.026	98	Paved parking, HSG D (ES2, ES3)
0.296	98	Roofs, HSG C (ES1, ES2, ES3, ES4)
0.025	98	Roofs, HSG D (ES2, ES3, ES4)
0.149	98	Water Surface, 0% imp, HSG C (ES3, ES4)
0.053	98	Water Surface, 0% imp, HSG D (ES2, ES3, ES4)
0.308	70	Woods, Good, HSG C (ES2, ES3, ES4)
0.138	77	Woods, Good, HSG D (ES2, ES3, ES4)
2.899	**82**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
2.365	HSG C	ES1, ES2, ES3, ES4
0.534	HSG D	ES2, ES3, ES4
0.000	Other	
2.899		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	1.207	0.292	0.000	1.499	>75% Grass cover, Good	ES1, ES2, ES3, ES4
0.000	0.000	0.404	0.026	0.000	0.430	Paved parking	ES1, ES2, ES3, ES4
0.000	0.000	0.296	0.025	0.000	0.322	Roofs	ES1, ES2, ES3, ES4
0.000	0.000	0.149	0.053	0.000	0.202	Water Surface, 0% imp	ES2, ES3, ES4
0.000	0.000	0.308	0.138	0.000	0.446	Woods, Good	ES2, ES3, ES4
0.000	**0.000**	**2.365**	**0.534**	**0.000**	**2.899**	**TOTAL AREA**	

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment ES1: DP 1 Runoff Area=6,138 sf 22.01% Impervious Runoff Depth>1.31"
Tc=5.0 min CN=79 Runoff=0.23 cfs 0.015 af

Subcatchment ES2: DP 2 Runoff Area=19,286 sf 10.72% Impervious Runoff Depth>1.44"
Tc=5.0 min CN=81 Runoff=0.81 cfs 0.053 af

Subcatchment ES3: DP 3 Runoff Area=64,168 sf 30.03% Impervious Runoff Depth>1.58"
Flow Length=418' Slope=0.0286 '/' Tc=8.5 min CN=83 Runoff=2.65 cfs 0.194 af

Subcatchment ES4: DP 4 Runoff Area=36,678 sf 27.41% Impervious Runoff Depth>1.58"
Tc=5.0 min CN=83 Runoff=1.68 cfs 0.111 af

Link DP1: (new Link) Inflow=0.23 cfs 0.015 af
Primary=0.23 cfs 0.015 af

Link DP2: (new Link) below 1,000.00 cfs Inflow=5.01 cfs 0.358 af
Primary=5.01 cfs 0.358 af Secondary=0.00 cfs 0.000 af

Total Runoff Area = 2.899 ac Runoff Volume = 0.373 af Average Runoff Depth = 1.55"
74.07% Pervious = 2.147 ac 25.93% Impervious = 0.752 ac

Summary for Subcatchment ES1: DP 1

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.23 cfs @ 12.08 hrs, Volume= 0.015 af, Depth> 1.31"
Routed to Link DP1 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.31"

Area (sf)	CN	Description
1,095	98	Paved parking, HSG C
4,787	74	>75% Grass cover, Good, HSG C
256	98	Roofs, HSG C
6,138	79	Weighted Average
4,787		77.99% Pervious Area
1,351		22.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment ES2: DP 2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.81 cfs @ 12.08 hrs, Volume= 0.053 af, Depth> 1.44"
Routed to Link DP2 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.31"

Area (sf)	CN	Description
744	98	Paved parking, HSG C
83	70	Woods, Good, HSG C
6,021	74	>75% Grass cover, Good, HSG C
1,195	98	Roofs, HSG C
5,018	77	Woods, Good, HSG D
119	98	Paved parking, HSG D
1,892	98	Water Surface, 0% imp, HSG D
4,204	80	>75% Grass cover, Good, HSG D
10	98	Roofs, HSG D
19,286	81	Weighted Average
17,218		89.28% Pervious Area
2,068		10.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment ES3: DP 3

Runoff = 2.65 cfs @ 12.12 hrs, Volume= 0.194 af, Depth> 1.58"
Routed to Link DP2 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.31"

Area (sf)	CN	Description
23,964	74	>75% Grass cover, Good, HSG C
10,127	98	Paved parking, HSG C
10,629	70	Woods, Good, HSG C
1,250	98	Paved parking, HSG C
6,877	98	Roofs, HSG C
5,079	98	Water Surface, 0% imp, HSG C
7	80	>75% Grass cover, Good, HSG D
68	77	Woods, Good, HSG D
252	98	Water Surface, 0% imp, HSG D
9	98	Roofs, HSG D
1,006	98	Paved parking, HSG D
4,900	74	>75% Grass cover, Good, HSG C
64,168	83	Weighted Average
44,899		69.97% Pervious Area
19,269		30.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	418	0.0286	0.82		**Lag/CN Method,**

Summary for Subcatchment ES4: DP 4

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.68 cfs @ 12.08 hrs, Volume= 0.111 af, Depth> 1.58"
Routed to Link DP2 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.31"

Area (sf)	CN	Description
12,923	74	>75% Grass cover, Good, HSG C
4,383	98	Paved parking, HSG C
2,694	70	Woods, Good, HSG C
4,583	98	Roofs, HSG C
1,433	98	Water Surface, 0% imp, HSG C
8,501	80	>75% Grass cover, Good, HSG D
916	77	Woods, Good, HSG D
157	98	Water Surface, 0% imp, HSG D
1,088	98	Roofs, HSG D
36,678	83	Weighted Average
26,624		72.59% Pervious Area
10,054		27.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Link DP1: (new Link)

Inflow Area = 0.141 ac, 22.01% Impervious, Inflow Depth > 1.31" for 2-yr event
Inflow = 0.23 cfs @ 12.08 hrs, Volume= 0.015 af
Primary = 0.23 cfs @ 12.08 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP2: (new Link)

Inflow Area = 2.758 ac, 26.13% Impervious, Inflow Depth > 1.56" for 2-yr event
Inflow = 5.01 cfs @ 12.10 hrs, Volume= 0.358 af
Primary = 5.01 cfs @ 12.10 hrs, Volume= 0.358 af, Atten= 0%, Lag= 0.0 min
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment ES1: DP 1 Runoff Area=6,138 sf 22.01% Impervious Runoff Depth>2.88"
Tc=5.0 min CN=79 Runoff=0.51 cfs 0.034 af

Subcatchment ES2: DP 2 Runoff Area=19,286 sf 10.72% Impervious Runoff Depth>3.06"
Tc=5.0 min CN=81 Runoff=1.69 cfs 0.113 af

Subcatchment ES3: DP 3 Runoff Area=64,168 sf 30.03% Impervious Runoff Depth>3.25"
Flow Length=418' Slope=0.0286 '/' Tc=8.5 min CN=83 Runoff=5.38 cfs 0.399 af

Subcatchment ES4: DP 4 Runoff Area=36,678 sf 27.41% Impervious Runoff Depth>3.25"
Tc=5.0 min CN=83 Runoff=3.42 cfs 0.228 af

Link DP1: (new Link) Inflow=0.51 cfs 0.034 af
Primary=0.51 cfs 0.034 af

Link DP2: (new Link) below 1,000.00 cfs Inflow=10.22 cfs 0.740 af
Primary=10.22 cfs 0.740 af Secondary=0.00 cfs 0.000 af

Total Runoff Area = 2.899 ac Runoff Volume = 0.774 af Average Runoff Depth = 3.20"
74.07% Pervious = 2.147 ac 25.93% Impervious = 0.752 ac

Summary for Subcatchment ES1: DP 1

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.51 cfs @ 12.08 hrs, Volume= 0.034 af, Depth> 2.88"
Routed to Link DP1 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.32"

Area (sf)	CN	Description
1,095	98	Paved parking, HSG C
4,787	74	>75% Grass cover, Good, HSG C
256	98	Roofs, HSG C
6,138	79	Weighted Average
4,787		77.99% Pervious Area
1,351		22.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment ES2: DP 2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.69 cfs @ 12.08 hrs, Volume= 0.113 af, Depth> 3.06"
Routed to Link DP2 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.32"

Area (sf)	CN	Description
744	98	Paved parking, HSG C
83	70	Woods, Good, HSG C
6,021	74	>75% Grass cover, Good, HSG C
1,195	98	Roofs, HSG C
5,018	77	Woods, Good, HSG D
119	98	Paved parking, HSG D
1,892	98	Water Surface, 0% imp, HSG D
4,204	80	>75% Grass cover, Good, HSG D
10	98	Roofs, HSG D
19,286	81	Weighted Average
17,218		89.28% Pervious Area
2,068		10.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment ES3: DP 3

Runoff = 5.38 cfs @ 12.12 hrs, Volume= 0.399 af, Depth> 3.25"
Routed to Link DP2 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.32"

Area (sf)	CN	Description
23,964	74	>75% Grass cover, Good, HSG C
10,127	98	Paved parking, HSG C
10,629	70	Woods, Good, HSG C
1,250	98	Paved parking, HSG C
6,877	98	Roofs, HSG C
5,079	98	Water Surface, 0% imp, HSG C
7	80	>75% Grass cover, Good, HSG D
68	77	Woods, Good, HSG D
252	98	Water Surface, 0% imp, HSG D
9	98	Roofs, HSG D
1,006	98	Paved parking, HSG D
4,900	74	>75% Grass cover, Good, HSG C
64,168	83	Weighted Average
44,899		69.97% Pervious Area
19,269		30.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	418	0.0286	0.82		**Lag/CN Method,**

Summary for Subcatchment ES4: DP 4

[49] Hint: Tc<2dt may require smaller dt

Runoff = 3.42 cfs @ 12.07 hrs, Volume= 0.228 af, Depth> 3.25"
Routed to Link DP2 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.32"

Area (sf)	CN	Description
12,923	74	>75% Grass cover, Good, HSG C
4,383	98	Paved parking, HSG C
2,694	70	Woods, Good, HSG C
4,583	98	Roofs, HSG C
1,433	98	Water Surface, 0% imp, HSG C
8,501	80	>75% Grass cover, Good, HSG D
916	77	Woods, Good, HSG D
157	98	Water Surface, 0% imp, HSG D
1,088	98	Roofs, HSG D
36,678	83	Weighted Average
26,624		72.59% Pervious Area
10,054		27.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Link DP1: (new Link)

Inflow Area = 0.141 ac, 22.01% Impervious, Inflow Depth > 2.88" for 10-yr event
Inflow = 0.51 cfs @ 12.08 hrs, Volume= 0.034 af
Primary = 0.51 cfs @ 12.08 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP2: (new Link)

Inflow Area = 2.758 ac, 26.13% Impervious, Inflow Depth > 3.22" for 10-yr event
Inflow = 10.22 cfs @ 12.10 hrs, Volume= 0.740 af
Primary = 10.22 cfs @ 12.10 hrs, Volume= 0.740 af, Atten= 0%, Lag= 0.0 min
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment ES1: DP 1 Runoff Area=6,138 sf 22.01% Impervious Runoff Depth>3.93"
Tc=5.0 min CN=79 Runoff=0.69 cfs 0.046 af

Subcatchment ES2: DP 2 Runoff Area=19,286 sf 10.72% Impervious Runoff Depth>4.14"
Tc=5.0 min CN=81 Runoff=2.28 cfs 0.153 af

Subcatchment ES3: DP 3 Runoff Area=64,168 sf 30.03% Impervious Runoff Depth>4.35"
Flow Length=418' Slope=0.0286 '/' Tc=8.5 min CN=83 Runoff=7.12 cfs 0.534 af

Subcatchment ES4: DP 4 Runoff Area=36,678 sf 27.41% Impervious Runoff Depth>4.35"
Tc=5.0 min CN=83 Runoff=4.52 cfs 0.306 af

Link DP1: (new Link) Inflow=0.69 cfs 0.046 af
Primary=0.69 cfs 0.046 af

Link DP2: (new Link) below 1,000.00 cfs Inflow=13.53 cfs 0.992 af
Primary=13.53 cfs 0.992 af Secondary=0.00 cfs 0.000 af

Total Runoff Area = 2.899 ac Runoff Volume = 1.039 af Average Runoff Depth = 4.30"
74.07% Pervious = 2.147 ac 25.93% Impervious = 0.752 ac

Summary for Subcatchment ES1: DP 1

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.69 cfs @ 12.08 hrs, Volume= 0.046 af, Depth> 3.93"
Routed to Link DP1 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.57"

Area (sf)	CN	Description
1,095	98	Paved parking, HSG C
4,787	74	>75% Grass cover, Good, HSG C
256	98	Roofs, HSG C
6,138	79	Weighted Average
4,787		77.99% Pervious Area
1,351		22.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment ES2: DP 2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 2.28 cfs @ 12.07 hrs, Volume= 0.153 af, Depth> 4.14"
Routed to Link DP2 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.57"

Area (sf)	CN	Description
744	98	Paved parking, HSG C
83	70	Woods, Good, HSG C
6,021	74	>75% Grass cover, Good, HSG C
1,195	98	Roofs, HSG C
5,018	77	Woods, Good, HSG D
119	98	Paved parking, HSG D
1,892	98	Water Surface, 0% imp, HSG D
4,204	80	>75% Grass cover, Good, HSG D
10	98	Roofs, HSG D
19,286	81	Weighted Average
17,218		89.28% Pervious Area
2,068		10.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment ES3: DP 3

Runoff = 7.12 cfs @ 12.12 hrs, Volume= 0.534 af, Depth> 4.35"
Routed to Link DP2 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.57"

Area (sf)	CN	Description
23,964	74	>75% Grass cover, Good, HSG C
10,127	98	Paved parking, HSG C
10,629	70	Woods, Good, HSG C
1,250	98	Paved parking, HSG C
6,877	98	Roofs, HSG C
5,079	98	Water Surface, 0% imp, HSG C
7	80	>75% Grass cover, Good, HSG D
68	77	Woods, Good, HSG D
252	98	Water Surface, 0% imp, HSG D
9	98	Roofs, HSG D
1,006	98	Paved parking, HSG D
4,900	74	>75% Grass cover, Good, HSG C
64,168	83	Weighted Average
44,899		69.97% Pervious Area
19,269		30.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	418	0.0286	0.82		**Lag/CN Method,**

Summary for Subcatchment ES4: DP 4

[49] Hint: Tc<2dt may require smaller dt

Runoff = 4.52 cfs @ 12.07 hrs, Volume= 0.306 af, Depth> 4.35"
Routed to Link DP2 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.57"

Area (sf)	CN	Description
12,923	74	>75% Grass cover, Good, HSG C
4,383	98	Paved parking, HSG C
2,694	70	Woods, Good, HSG C
4,583	98	Roofs, HSG C
1,433	98	Water Surface, 0% imp, HSG C
8,501	80	>75% Grass cover, Good, HSG D
916	77	Woods, Good, HSG D
157	98	Water Surface, 0% imp, HSG D
1,088	98	Roofs, HSG D
36,678	83	Weighted Average
26,624		72.59% Pervious Area
10,054		27.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Link DP1: (new Link)

Inflow Area = 0.141 ac, 22.01% Impervious, Inflow Depth > 3.93" for 25-yr event
Inflow = 0.69 cfs @ 12.08 hrs, Volume= 0.046 af
Primary = 0.69 cfs @ 12.08 hrs, Volume= 0.046 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP2: (new Link)

Inflow Area = 2.758 ac, 26.13% Impervious, Inflow Depth > 4.32" for 25-yr event
Inflow = 13.53 cfs @ 12.10 hrs, Volume= 0.992 af
Primary = 13.53 cfs @ 12.10 hrs, Volume= 0.992 af, Atten= 0%, Lag= 0.0 min
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment ES1: DP 1 Runoff Area=6,138 sf 22.01% Impervious Runoff Depth>4.73"
Tc=5.0 min CN=79 Runoff=0.83 cfs 0.056 af

Subcatchment ES2: DP 2 Runoff Area=19,286 sf 10.72% Impervious Runoff Depth>4.96"
Tc=5.0 min CN=81 Runoff=2.70 cfs 0.183 af

Subcatchment ES3: DP 3 Runoff Area=64,168 sf 30.03% Impervious Runoff Depth>5.18"
Flow Length=418' Slope=0.0286 '/' Tc=8.5 min CN=83 Runoff=8.40 cfs 0.635 af

Subcatchment ES4: DP 4 Runoff Area=36,678 sf 27.41% Impervious Runoff Depth>5.18"
Tc=5.0 min CN=83 Runoff=5.33 cfs 0.364 af

Link DP1: (new Link) Inflow=0.83 cfs 0.056 af
Primary=0.83 cfs 0.056 af

Link DP2: (new Link) below 1,000.00 cfs Inflow=15.98 cfs 1.182 af
Primary=15.98 cfs 1.182 af Secondary=0.00 cfs 0.000 af

Total Runoff Area = 2.899 ac Runoff Volume = 1.238 af Average Runoff Depth = 5.12"
74.07% Pervious = 2.147 ac 25.93% Impervious = 0.752 ac

Summary for Subcatchment ES1: DP 1

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.83 cfs @ 12.07 hrs, Volume= 0.056 af, Depth> 4.73"
Routed to Link DP1 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=7.49"

Area (sf)	CN	Description
1,095	98	Paved parking, HSG C
4,787	74	>75% Grass cover, Good, HSG C
256	98	Roofs, HSG C
6,138	79	Weighted Average
4,787		77.99% Pervious Area
1,351		22.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment ES2: DP 2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 2.70 cfs @ 12.07 hrs, Volume= 0.183 af, Depth> 4.96"
Routed to Link DP2 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=7.49"

Area (sf)	CN	Description
744	98	Paved parking, HSG C
83	70	Woods, Good, HSG C
6,021	74	>75% Grass cover, Good, HSG C
1,195	98	Roofs, HSG C
5,018	77	Woods, Good, HSG D
119	98	Paved parking, HSG D
1,892	98	Water Surface, 0% imp, HSG D
4,204	80	>75% Grass cover, Good, HSG D
10	98	Roofs, HSG D
19,286	81	Weighted Average
17,218		89.28% Pervious Area
2,068		10.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment ES3: DP 3

Runoff = 8.40 cfs @ 12.12 hrs, Volume= 0.635 af, Depth> 5.18"
Routed to Link DP2 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=7.49"

Area (sf)	CN	Description
23,964	74	>75% Grass cover, Good, HSG C
10,127	98	Paved parking, HSG C
10,629	70	Woods, Good, HSG C
1,250	98	Paved parking, HSG C
6,877	98	Roofs, HSG C
5,079	98	Water Surface, 0% imp, HSG C
7	80	>75% Grass cover, Good, HSG D
68	77	Woods, Good, HSG D
252	98	Water Surface, 0% imp, HSG D
9	98	Roofs, HSG D
1,006	98	Paved parking, HSG D
4,900	74	>75% Grass cover, Good, HSG C
64,168	83	Weighted Average
44,899		69.97% Pervious Area
19,269		30.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	418	0.0286	0.82		**Lag/CN Method,**

Summary for Subcatchment ES4: DP 4

[49] Hint: Tc<2dt may require smaller dt

Runoff = 5.33 cfs @ 12.07 hrs, Volume= 0.364 af, Depth> 5.18"
Routed to Link DP2 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=7.49"

Area (sf)	CN	Description
12,923	74	>75% Grass cover, Good, HSG C
4,383	98	Paved parking, HSG C
2,694	70	Woods, Good, HSG C
4,583	98	Roofs, HSG C
1,433	98	Water Surface, 0% imp, HSG C
8,501	80	>75% Grass cover, Good, HSG D
916	77	Woods, Good, HSG D
157	98	Water Surface, 0% imp, HSG D
1,088	98	Roofs, HSG D
36,678	83	Weighted Average
26,624		72.59% Pervious Area
10,054		27.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Link DP1: (new Link)

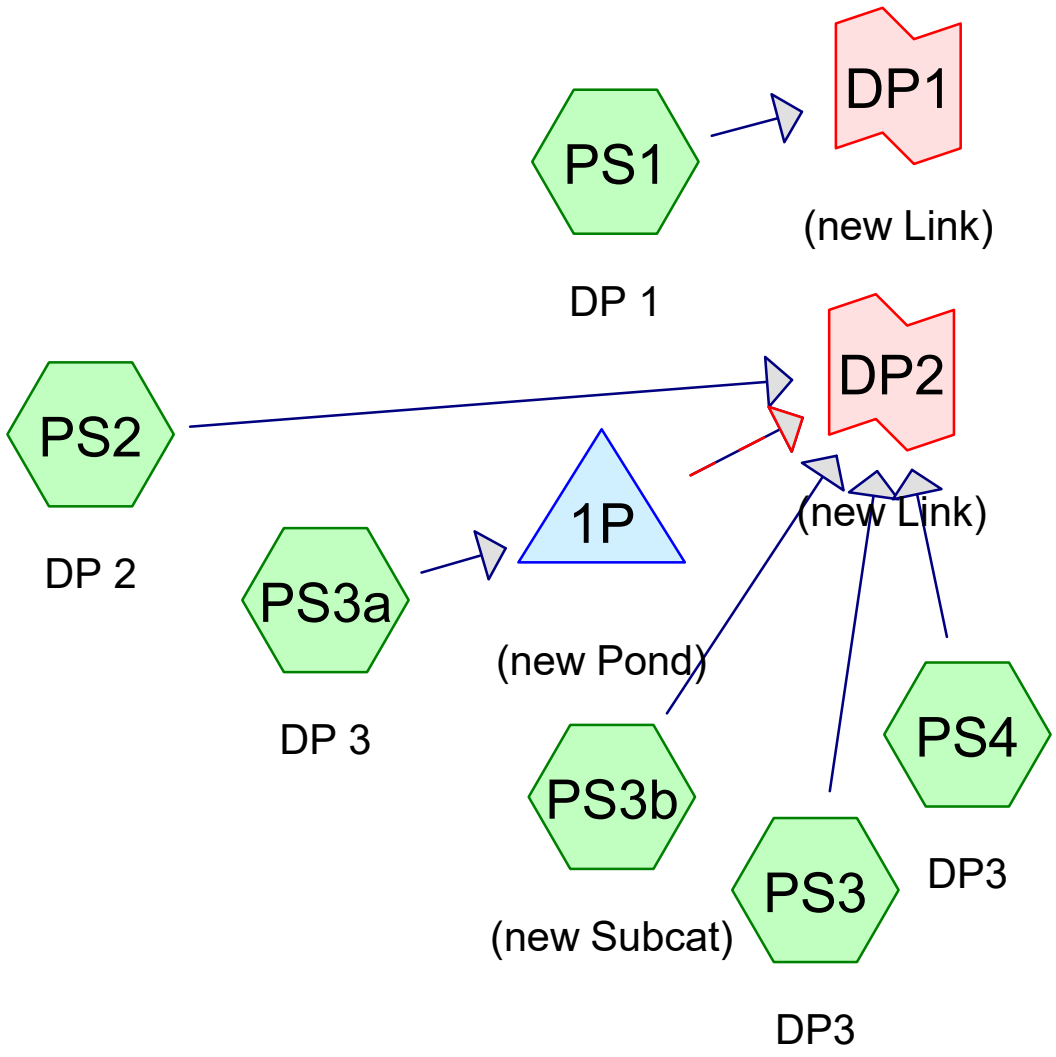
Inflow Area = 0.141 ac, 22.01% Impervious, Inflow Depth > 4.73" for 50-yr event
Inflow = 0.83 cfs @ 12.07 hrs, Volume= 0.056 af
Primary = 0.83 cfs @ 12.07 hrs, Volume= 0.056 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link DP2: (new Link)

Inflow Area = 2.758 ac, 26.13% Impervious, Inflow Depth > 5.14" for 50-yr event
Inflow = 15.98 cfs @ 12.10 hrs, Volume= 1.182 af
Primary = 15.98 cfs @ 12.10 hrs, Volume= 1.182 af, Atten= 0%, Lag= 0.0 min
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs



Subcat Reach Pond Link

Routing Diagram for 2021-07-29 Proposed Conditions David T
Prepared by {enter your company name here}, Printed 8/18/2021

Project Notes

Defined 5 rainfall events from output (19) IDF
Defined 5 rainfall events from PF_Depth_English_PDS IDF

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type III 24-hr		Default	24.00	1	3.31	2
2	10-yr	Type III 24-hr		Default	24.00	1	5.32	2
3	25-yr	Type III 24-hr		Default	24.00	1	6.57	2
4	50-yr	Type III 24-hr		Default	24.00	1	7.49	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.800	74	>75% Grass cover, Good, HSG C (PS1, PS2, PS3, PS3a, PS4)
0.297	80	>75% Grass cover, Good, HSG D (PS2, PS3, PS4)
0.693	98	Paved parking, HSG C (PS1, PS3, PS3a, PS4)
0.023	98	Paved parking, HSG D (PS3a)
0.121	98	Roofs, HSG C (PS3, PS4)
0.025	98	Roofs, HSG D (PS4)
0.149	98	Water Surface, 0% imp, HSG C (PS3, PS4)
0.052	98	Water Surface, 0% imp, HSG D (PS2, PS3, PS4)
0.064	70	Woods, Good, HSG C (PS2, PS4)
0.138	77	Woods, Good, HSG D (PS2, PS3, PS4)
0.211	72	Woods/grass comb., Good, HSG C (PS3)
0.353	98	possible permeable pavement area (PS3b)
2.926	**86**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
2.038	HSG C	PS1, PS2, PS3, PS3a, PS4
0.535	HSG D	PS2, PS3, PS3a, PS4
0.353	Other	PS3b
2.926		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchm Numbers
0.000	0.000	0.800	0.297	0.000	1.096	>75% Grass cover, Good	
0.000	0.000	0.693	0.023	0.000	0.716	Paved parking	
0.000	0.000	0.121	0.025	0.000	0.146	Roofs	
0.000	0.000	0.149	0.052	0.000	0.202	Water Surface, 0% imp	
0.000	0.000	0.064	0.138	0.000	0.202	Woods, Good	
0.000	0.000	0.211	0.000	0.000	0.211	Woods/grass comb., Good	
0.000	0.000	0.000	0.000	0.353	0.353	possible permeable pavement area	
0.000	**0.000**	**2.038**	**0.535**	**0.353**	**2.926**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	1P	-1.00	-1.10	40.0	0.0025	0.013	0.0	15.0	0.0

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PS1: DP 1 Runoff Area=1,860 sf 52.04% Impervious Runoff Depth=1.93"
Tc=5.0 min CN=86 Runoff=0.10 cfs 0.007 af

Subcatchment PS2: DP 2 Runoff Area=14,286 sf 0.00% Impervious Runoff Depth=1.49"
Tc=5.0 min CN=80 Runoff=0.57 cfs 0.041 af

Subcatchment PS3: DP3 Runoff Area=26,236 sf 6.49% Impervious Runoff Depth=1.49"
Tc=5.0 min CN=80 Runoff=1.04 cfs 0.075 af

Subcatchment PS3a: DP 3 Runoff Area=32,988 sf 75.19% Impervious Runoff Depth=2.46"
Flow Length=448' Slope=0.0087 '/' Tc=11.6 min CN=92 Runoff=1.76 cfs 0.155 af

Subcatchment PS3b: (new Subcat) Runoff Area=15,391 sf 100.00% Impervious Runoff Depth=3.08"
Flow Length=150' Slope=0.0040 '/' Tc=5.2 min CN=98 Runoff=1.13 cfs 0.091 af

Subcatchment PS4: DP3 Runoff Area=36,709 sf 27.39% Impervious Runoff Depth=1.70"
Tc=5.0 min CN=83 Runoff=1.68 cfs 0.119 af

Pond 1P: (new Pond) Peak Elev=1.53' Storage=2,722 cf Inflow=1.76 cfs 0.155 af
Primary=0.59 cfs 0.155 af Secondary=0.00 cfs 0.000 af Outflow=0.59 cfs 0.155 af

Link DP1: (new Link) below 1,000.00 cfs Inflow=0.10 cfs 0.007 af
Primary=0.10 cfs 0.007 af Secondary=0.00 cfs 0.000 af

Link DP2: (new Link) below 1,000.00 cfs Inflow=4.50 cfs 0.480 af
Primary=4.50 cfs 0.480 af Secondary=0.00 cfs 0.000 af

Total Runoff Area = 2.926 ac Runoff Volume = 0.487 af Average Runoff Depth = 2.00"
58.49% Pervious = 1.712 ac 41.51% Impervious = 1.215 ac

Summary for Subcatchment PS1: DP 1

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.10 cfs @ 12.08 hrs, Volume= 0.007 af, Depth= 1.93"
Routed to Link DP1 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.31"

Area (sf)	CN	Description
892	74	>75% Grass cover, Good, HSG C
968	98	Paved parking, HSG C
1,860	86	Weighted Average
892		47.96% Pervious Area
968		52.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment PS2: DP 2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.57 cfs @ 12.08 hrs, Volume= 0.041 af, Depth= 1.49"
Routed to Link DP2 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.31"

Area (sf)	CN	Description
4,357	80	>75% Grass cover, Good, HSG D
1,874	98	Water Surface, 0% imp, HSG D
5,035	77	Woods, Good, HSG D
2,937	74	>75% Grass cover, Good, HSG C
83	70	Woods, Good, HSG C
14,286	80	Weighted Average
14,286		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment PS3: DP3

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.04 cfs @ 12.08 hrs, Volume= 0.075 af, Depth= 1.49"
Routed to Link DP2 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.31"

Area (sf)	CN	Description
252	98	Water Surface, 0% imp, HSG D
17	80	>75% Grass cover, Good, HSG D
68	77	Woods, Good, HSG D
5,078	98	Water Surface, 0% imp, HSG C
9,909	74	>75% Grass cover, Good, HSG C
9,210	72	Woods/grass comb., Good, HSG C
685	98	Roofs, HSG C
1,017	98	Paved parking, HSG C
26,236	80	Weighted Average
24,534		93.51% Pervious Area
1,702		6.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment PS3a: DP 3

Runoff = 1.76 cfs @ 12.16 hrs, Volume= 0.155 af, Depth= 2.46"
Routed to Pond 1P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.31"

Area (sf)	CN	Description
982	98	Paved parking, HSG D
23,821	98	Paved parking, HSG C
8,185	74	>75% Grass cover, Good, HSG C
32,988	92	Weighted Average
8,185		24.81% Pervious Area
24,803		75.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	448	0.0087	0.65		**Lag/CN Method,**

Summary for Subcatchment PS3b: (new Subcat)

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.13 cfs @ 12.07 hrs, Volume= 0.091 af, Depth= 3.08"
Routed to Link DP2 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.31"

	Area (sf)	CN	Description
*	15,391	98	possible permeable pavement area
	15,391		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	150	0.0040	0.48		**Lag/CN Method,**

Summary for Subcatchment PS4: DP3

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.68 cfs @ 12.08 hrs, Volume= 0.119 af, Depth= 1.70"
Routed to Link DP2 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.31"

Area (sf)	CN	Description
8,550	80	>75% Grass cover, Good, HSG D
12,911	74	>75% Grass cover, Good, HSG C
2,694	70	Woods, Good, HSG C
1,427	98	Water Surface, 0% imp, HSG C
4,583	98	Roofs, HSG C
4,382	98	Paved parking, HSG C
919	77	Woods, Good, HSG D
155	98	Water Surface, 0% imp, HSG D
1,088	98	Roofs, HSG D
36,709	83	Weighted Average
26,656		72.61% Pervious Area
10,053		27.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Pond 1P: (new Pond)

Inflow Area = 0.757 ac, 75.19% Impervious, Inflow Depth = 2.46" for 2-yr event
Inflow = 1.76 cfs @ 12.16 hrs, Volume= 0.155 af
Outflow = 0.59 cfs @ 12.53 hrs, Volume= 0.155 af, Atten= 67%, Lag= 22.5 min
Primary = 0.59 cfs @ 12.53 hrs, Volume= 0.155 af
Routed to Link DP2 : (new Link)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link DP2 : (new Link)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 1.53' @ 12.53 hrs Surf.Area= 2,301 sf Storage= 2,722 cf

Plug-Flow detention time= 214.5 min calculated for 0.155 af (100% of inflow)
Center-of-Mass det. time= 214.5 min (1,016.2 - 801.7)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	3,868 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	1,247	0	0
2.00	2,621	3,868	3,868

Device	Routing	Invert	Outlet Devices
#1	Primary	-1.00'	**15.0" Round Culvert** L= 40.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= -1.00' / -1.10' S= 0.0025 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	1.90'	**9.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 1	0.00'	**2.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#4	Device 1	1.40'	**3.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=0.58 cfs @ 12.53 hrs HW=1.53' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.58 cfs of 7.32 cfs potential flow)
  ├─**3=Exfiltration** (Exfiltration Controls 0.11 cfs)
  └─**4=Sharp-Crested Rectangular Weir** (Weir Controls 0.48 cfs @ 1.20 fps)

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

Summary for Link DP1: (new Link)

Inflow Area = 0.043 ac, 52.04% Impervious, Inflow Depth = 1.93" for 2-yr event
Inflow = 0.10 cfs @ 12.08 hrs, Volume= 0.007 af
Primary = 0.10 cfs @ 12.08 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Link DP2: (new Link)

Inflow Area = 2.884 ac, 41.36% Impervious, Inflow Depth = 2.00" for 2-yr event
Inflow = 4.50 cfs @ 12.08 hrs, Volume= 0.480 af
Primary = 4.50 cfs @ 12.08 hrs, Volume= 0.480 af, Atten= 0%, Lag= 0.0 min
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PS1: DP 1 Runoff Area=1,860 sf 52.04% Impervious Runoff Depth=3.77"
Tc=5.0 min CN=86 Runoff=0.19 cfs 0.013 af

Subcatchment PS2: DP 2 Runoff Area=14,286 sf 0.00% Impervious Runoff Depth=3.17"
Tc=5.0 min CN=80 Runoff=1.22 cfs 0.087 af

Subcatchment PS3: DP3 Runoff Area=26,236 sf 6.49% Impervious Runoff Depth=3.17"
Tc=5.0 min CN=80 Runoff=2.24 cfs 0.159 af

Subcatchment PS3a: DP 3 Runoff Area=32,988 sf 75.19% Impervious Runoff Depth=4.40"
Flow Length=448' Slope=0.0087 '/' Tc=11.6 min CN=92 Runoff=3.07 cfs 0.278 af

Subcatchment PS3b: (new Subcat) Runoff Area=15,391 sf 100.00% Impervious Runoff Depth=5.08"
Flow Length=150' Slope=0.0040 '/' Tc=5.2 min CN=98 Runoff=1.84 cfs 0.150 af

Subcatchment PS4: DP3 Runoff Area=36,709 sf 27.39% Impervious Runoff Depth=3.47"
Tc=5.0 min CN=83 Runoff=3.42 cfs 0.243 af

Pond 1P: (new Pond) Peak Elev=1.79' Storage=3,343 cf Inflow=3.07 cfs 0.278 af
Primary=2.48 cfs 0.278 af Secondary=0.00 cfs 0.000 af Outflow=2.48 cfs 0.278 af

Link DP1: (new Link) below 1,000.00 cfs Inflow=0.19 cfs 0.013 af
Primary=0.19 cfs 0.013 af Secondary=0.00 cfs 0.000 af

Link DP2: (new Link) below 1,000.00 cfs Inflow=9.35 cfs 0.917 af
Primary=9.35 cfs 0.917 af Secondary=0.00 cfs 0.000 af

Total Runoff Area = 2.926 ac Runoff Volume = 0.930 af Average Runoff Depth = 3.81"
58.49% Pervious = 1.712 ac 41.51% Impervious = 1.215 ac

Summary for Subcatchment PS1: DP 1

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.19 cfs @ 12.07 hrs, Volume= 0.013 af, Depth= 3.77"
Routed to Link DP1 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.32"

Area (sf)	CN	Description
892	74	>75% Grass cover, Good, HSG C
968	98	Paved parking, HSG C
1,860	86	Weighted Average
892		47.96% Pervious Area
968		52.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment PS2: DP 2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.22 cfs @ 12.08 hrs, Volume= 0.087 af, Depth= 3.17"
Routed to Link DP2 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.32"

Area (sf)	CN	Description
4,357	80	>75% Grass cover, Good, HSG D
1,874	98	Water Surface, 0% imp, HSG D
5,035	77	Woods, Good, HSG D
2,937	74	>75% Grass cover, Good, HSG C
83	70	Woods, Good, HSG C
14,286	80	Weighted Average
14,286		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment PS3: DP3

[49] Hint: Tc<2dt may require smaller dt

Runoff = 2.24 cfs @ 12.08 hrs, Volume= 0.159 af, Depth= 3.17"
Routed to Link DP2 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.32"

Area (sf)	CN	Description
252	98	Water Surface, 0% imp, HSG D
17	80	>75% Grass cover, Good, HSG D
68	77	Woods, Good, HSG D
5,078	98	Water Surface, 0% imp, HSG C
9,909	74	>75% Grass cover, Good, HSG C
9,210	72	Woods/grass comb., Good, HSG C
685	98	Roofs, HSG C
1,017	98	Paved parking, HSG C
26,236	80	Weighted Average
24,534		93.51% Pervious Area
1,702		6.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment PS3a: DP 3

Runoff = 3.07 cfs @ 12.16 hrs, Volume= 0.278 af, Depth= 4.40"
Routed to Pond 1P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.32"

Area (sf)	CN	Description
982	98	Paved parking, HSG D
23,821	98	Paved parking, HSG C
8,185	74	>75% Grass cover, Good, HSG C
32,988	92	Weighted Average
8,185		24.81% Pervious Area
24,803		75.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	448	0.0087	0.65		**Lag/CN Method,**

Summary for Subcatchment PS3b: (new Subcat)

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.84 cfs @ 12.07 hrs, Volume= 0.150 af, Depth= 5.08"
Routed to Link DP2 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.32"

	Area (sf)	CN	Description
*	15,391	98	possible permeable pavement area
	15,391		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	150	0.0040	0.48		**Lag/CN Method,**

Summary for Subcatchment PS4: DP3

[49] Hint: Tc<2dt may require smaller dt

Runoff = 3.42 cfs @ 12.07 hrs, Volume= 0.243 af, Depth= 3.47"
Routed to Link DP2 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.32"

Area (sf)	CN	Description
8,550	80	>75% Grass cover, Good, HSG D
12,911	74	>75% Grass cover, Good, HSG C
2,694	70	Woods, Good, HSG C
1,427	98	Water Surface, 0% imp, HSG C
4,583	98	Roofs, HSG C
4,382	98	Paved parking, HSG C
919	77	Woods, Good, HSG D
155	98	Water Surface, 0% imp, HSG D
1,088	98	Roofs, HSG D
36,709	83	Weighted Average
26,656		72.61% Pervious Area
10,053		27.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Pond 1P: (new Pond)

Inflow Area = 0.757 ac, 75.19% Impervious, Inflow Depth = 4.40" for 10-yr event
Inflow = 3.07 cfs @ 12.16 hrs, Volume= 0.278 af
Outflow = 2.48 cfs @ 12.25 hrs, Volume= 0.278 af, Atten= 19%, Lag= 5.8 min
Primary = 2.48 cfs @ 12.25 hrs, Volume= 0.278 af
Routed to Link DP2 : (new Link)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link DP2 : (new Link)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 1.79' @ 12.25 hrs Surf.Area= 2,480 sf Storage= 3,343 cf

Plug-Flow detention time= 156.5 min calculated for 0.278 af (100% of inflow)
Center-of-Mass det. time= 156.6 min (942.6 - 786.0)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	3,868 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	1,247	0	0
2.00	2,621	3,868	3,868

Device	Routing	Invert	Outlet Devices
#1	Primary	-1.00'	**15.0" Round Culvert** L= 40.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= -1.00' / -1.10' S= 0.0025 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	1.90'	**9.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 1	0.00'	**2.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#4	Device 1	1.40'	**3.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=2.47 cfs @ 12.25 hrs HW=1.79' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 2.47 cfs of 7.91 cfs potential flow)
  ├─**3=Exfiltration** (Exfiltration Controls 0.11 cfs)
  └─**4=Sharp-Crested Rectangular Weir** (Weir Controls 2.36 cfs @ 2.05 fps)

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

Summary for Link DP1: (new Link)

Inflow Area = 0.043 ac, 52.04% Impervious, Inflow Depth = 3.77" for 10-yr event
Inflow = 0.19 cfs @ 12.07 hrs, Volume= 0.013 af
Primary = 0.19 cfs @ 12.07 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Link DP2: (new Link)

Inflow Area = 2.884 ac, 41.36% Impervious, Inflow Depth = 3.82" for 10-yr event
Inflow = 9.35 cfs @ 12.09 hrs, Volume= 0.917 af
Primary = 9.35 cfs @ 12.09 hrs, Volume= 0.917 af, Atten= 0%, Lag= 0.0 min
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PS1: DP 1 Runoff Area=1,860 sf 52.04% Impervious Runoff Depth=4.95"
Tc=5.0 min CN=86 Runoff=0.24 cfs 0.018 af

Subcatchment PS2: DP 2 Runoff Area=14,286 sf 0.00% Impervious Runoff Depth=4.30"
Tc=5.0 min CN=80 Runoff=1.65 cfs 0.118 af

Subcatchment PS3: DP3 Runoff Area=26,236 sf 6.49% Impervious Runoff Depth=4.30"
Tc=5.0 min CN=80 Runoff=3.03 cfs 0.216 af

Subcatchment PS3a: DP 3 Runoff Area=32,988 sf 75.19% Impervious Runoff Depth=5.63"
Flow Length=448' Slope=0.0087 '/' Tc=11.6 min CN=92 Runoff=3.87 cfs 0.355 af

Subcatchment PS3b: (new Subcat) Runoff Area=15,391 sf 100.00% Impervious Runoff Depth=6.33"
Flow Length=150' Slope=0.0040 '/' Tc=5.2 min CN=98 Runoff=2.27 cfs 0.186 af

Subcatchment PS4: DP3 Runoff Area=36,709 sf 27.39% Impervious Runoff Depth=4.62"
Tc=5.0 min CN=83 Runoff=4.52 cfs 0.325 af

Pond 1P: (new Pond) Peak Elev=1.89' Storage=3,591 cf Inflow=3.87 cfs 0.355 af
Primary=3.40 cfs 0.355 af Secondary=0.00 cfs 0.000 af Outflow=3.40 cfs 0.355 af

Link DP1: (new Link) below 1,000.00 cfs Inflow=0.24 cfs 0.018 af
Primary=0.24 cfs 0.018 af Secondary=0.00 cfs 0.000 af

Link DP2: (new Link) below 1,000.00 cfs Inflow=13.42 cfs 1.200 af
Primary=13.42 cfs 1.200 af Secondary=0.00 cfs 0.000 af

Total Runoff Area = 2.926 ac Runoff Volume = 1.217 af Average Runoff Depth = 4.99"
58.49% Pervious = 1.712 ac 41.51% Impervious = 1.215 ac

Summary for Subcatchment PS1: DP 1

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.24 cfs @ 12.07 hrs, Volume= 0.018 af, Depth= 4.95"
Routed to Link DP1 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.57"

Area (sf)	CN	Description
892	74	>75% Grass cover, Good, HSG C
968	98	Paved parking, HSG C
1,860	86	Weighted Average
892		47.96% Pervious Area
968		52.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment PS2: DP 2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.65 cfs @ 12.07 hrs, Volume= 0.118 af, Depth= 4.30"
Routed to Link DP2 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.57"

Area (sf)	CN	Description
4,357	80	>75% Grass cover, Good, HSG D
1,874	98	Water Surface, 0% imp, HSG D
5,035	77	Woods, Good, HSG D
2,937	74	>75% Grass cover, Good, HSG C
83	70	Woods, Good, HSG C
14,286	80	Weighted Average
14,286		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment PS3: DP3

[49] Hint: Tc<2dt may require smaller dt

Runoff = 3.03 cfs @ 12.07 hrs, Volume= 0.216 af, Depth= 4.30"
Routed to Link DP2 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.57"

Area (sf)	CN	Description
252	98	Water Surface, 0% imp, HSG D
17	80	>75% Grass cover, Good, HSG D
68	77	Woods, Good, HSG D
5,078	98	Water Surface, 0% imp, HSG C
9,909	74	>75% Grass cover, Good, HSG C
9,210	72	Woods/grass comb., Good, HSG C
685	98	Roofs, HSG C
1,017	98	Paved parking, HSG C
26,236	80	Weighted Average
24,534		93.51% Pervious Area
1,702		6.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment PS3a: DP 3

Runoff = 3.87 cfs @ 12.16 hrs, Volume= 0.355 af, Depth= 5.63"
Routed to Pond 1P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.57"

Area (sf)	CN	Description
982	98	Paved parking, HSG D
23,821	98	Paved parking, HSG C
8,185	74	>75% Grass cover, Good, HSG C
32,988	92	Weighted Average
8,185		24.81% Pervious Area
24,803		75.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	448	0.0087	0.65		**Lag/CN Method,**

Summary for Subcatchment PS3b: (new Subcat)

[49] Hint: Tc<2dt may require smaller dt

Runoff = 2.27 cfs @ 12.07 hrs, Volume= 0.186 af, Depth= 6.33"
Routed to Link DP2 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.57"

	Area (sf)	CN	Description
*	15,391	98	possible permeable pavement area
	15,391		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	150	0.0040	0.48		**Lag/CN Method,**

Summary for Subcatchment PS4: DP3

[49] Hint: Tc<2dt may require smaller dt

Runoff = 4.52 cfs @ 12.07 hrs, Volume= 0.325 af, Depth= 4.62"
Routed to Link DP2 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.57"

Area (sf)	CN	Description
8,550	80	>75% Grass cover, Good, HSG D
12,911	74	>75% Grass cover, Good, HSG C
2,694	70	Woods, Good, HSG C
1,427	98	Water Surface, 0% imp, HSG C
4,583	98	Roofs, HSG C
4,382	98	Paved parking, HSG C
919	77	Woods, Good, HSG D
155	98	Water Surface, 0% imp, HSG D
1,088	98	Roofs, HSG D
36,709	83	Weighted Average
26,656		72.61% Pervious Area
10,053		27.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Pond 1P: (new Pond)

Inflow Area = 0.757 ac, 75.19% Impervious, Inflow Depth = 5.63" for 25-yr event
Inflow = 3.87 cfs @ 12.16 hrs, Volume= 0.355 af
Outflow = 3.40 cfs @ 12.22 hrs, Volume= 0.355 af, Atten= 12%, Lag= 4.0 min
Primary = 3.40 cfs @ 12.22 hrs, Volume= 0.355 af
Routed to Link DP2 : (new Link)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link DP2 : (new Link)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 1.89' @ 12.22 hrs Surf.Area= 2,547 sf Storage= 3,591 cf

Plug-Flow detention time= 138.0 min calculated for 0.355 af (100% of inflow)
Center-of-Mass det. time= 138.2 min (917.9 - 779.7)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	3,868 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	1,247	0	0
2.00	2,621	3,868	3,868

Device	Routing	Invert	Outlet Devices
#1	Primary	-1.00'	**15.0" Round Culvert** L= 40.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= -1.00' / -1.10' S= 0.0025 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	1.90'	**9.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 1	0.00'	**2.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#4	Device 1	1.40'	**3.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=3.35 cfs @ 12.22 hrs HW=1.89' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 3.35 cfs of 8.12 cfs potential flow)
  ├─**3=Exfiltration** (Exfiltration Controls 0.12 cfs)
  └─**4=Sharp-Crested Rectangular Weir** (Weir Controls 3.23 cfs @ 2.28 fps)

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

Summary for Link DP1: (new Link)

Inflow Area = 0.043 ac, 52.04% Impervious, Inflow Depth = 4.95" for 25-yr event
Inflow = 0.24 cfs @ 12.07 hrs, Volume= 0.018 af
Primary = 0.24 cfs @ 12.07 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Link DP2: (new Link)

Inflow Area = 2.884 ac, 41.36% Impervious, Inflow Depth = 4.99" for 25-yr event
Inflow = 13.42 cfs @ 12.09 hrs, Volume= 1.200 af
Primary = 13.42 cfs @ 12.09 hrs, Volume= 1.200 af, Atten= 0%, Lag= 0.0 min
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PS1: DP 1 Runoff Area=1,860 sf 52.04% Impervious Runoff Depth=5.84"
Tc=5.0 min CN=86 Runoff=0.28 cfs 0.021 af

Subcatchment PS2: DP 2 Runoff Area=14,286 sf 0.00% Impervious Runoff Depth=5.15"
Tc=5.0 min CN=80 Runoff=1.97 cfs 0.141 af

Subcatchment PS3: DP3 Runoff Area=26,236 sf 6.49% Impervious Runoff Depth=5.15"
Tc=5.0 min CN=80 Runoff=3.61 cfs 0.258 af

Subcatchment PS3a: DP 3 Runoff Area=32,988 sf 75.19% Impervious Runoff Depth=6.54"
Flow Length=448' Slope=0.0087 '/' Tc=11.6 min CN=92 Runoff=4.46 cfs 0.413 af

Subcatchment PS3b: (new Subcat) Runoff Area=15,391 sf 100.00% Impervious Runoff Depth=7.25"
Flow Length=150' Slope=0.0040 '/' Tc=5.2 min CN=98 Runoff=2.59 cfs 0.213 af

Subcatchment PS4: DP3 Runoff Area=36,709 sf 27.39% Impervious Runoff Depth=5.49"
Tc=5.0 min CN=83 Runoff=5.33 cfs 0.386 af

Pond 1P: (new Pond) Peak Elev=1.94' Storage=3,714 cf Inflow=4.46 cfs 0.413 af
Primary=3.88 cfs 0.411 af Secondary=0.24 cfs 0.002 af Outflow=4.12 cfs 0.413 af

Link DP1: (new Link) below 1,000.00 cfs Inflow=0.28 cfs 0.021 af
Primary=0.28 cfs 0.021 af Secondary=0.00 cfs 0.000 af

Link DP2: (new Link) below 1,000.00 cfs Inflow=15.93 cfs 1.411 af
Primary=15.93 cfs 1.411 af Secondary=0.00 cfs 0.000 af

Total Runoff Area = 2.926 ac Runoff Volume = 1.432 af Average Runoff Depth = 5.87"
58.49% Pervious = 1.712 ac 41.51% Impervious = 1.215 ac

Summary for Subcatchment PS1: DP 1

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.28 cfs @ 12.07 hrs, Volume= 0.021 af, Depth= 5.84"
Routed to Link DP1 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=7.49"

Area (sf)	CN	Description
892	74	>75% Grass cover, Good, HSG C
968	98	Paved parking, HSG C
1,860	86	Weighted Average
892		47.96% Pervious Area
968		52.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment PS2: DP 2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.97 cfs @ 12.07 hrs, Volume= 0.141 af, Depth= 5.15"
Routed to Link DP2 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=7.49"

Area (sf)	CN	Description
4,357	80	>75% Grass cover, Good, HSG D
1,874	98	Water Surface, 0% imp, HSG D
5,035	77	Woods, Good, HSG D
2,937	74	>75% Grass cover, Good, HSG C
83	70	Woods, Good, HSG C
14,286	80	Weighted Average
14,286		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment PS3: DP3

[49] Hint: Tc<2dt may require smaller dt

Runoff = 3.61 cfs @ 12.07 hrs, Volume= 0.258 af, Depth= 5.15"
Routed to Link DP2 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=7.49"

Area (sf)	CN	Description
252	98	Water Surface, 0% imp, HSG D
17	80	>75% Grass cover, Good, HSG D
68	77	Woods, Good, HSG D
5,078	98	Water Surface, 0% imp, HSG C
9,909	74	>75% Grass cover, Good, HSG C
9,210	72	Woods/grass comb., Good, HSG C
685	98	Roofs, HSG C
1,017	98	Paved parking, HSG C
26,236	80	Weighted Average
24,534		93.51% Pervious Area
1,702		6.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment PS3a: DP 3

Runoff = 4.46 cfs @ 12.16 hrs, Volume= 0.413 af, Depth= 6.54"
Routed to Pond 1P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=7.49"

Area (sf)	CN	Description
982	98	Paved parking, HSG D
23,821	98	Paved parking, HSG C
8,185	74	>75% Grass cover, Good, HSG C
32,988	92	Weighted Average
8,185		24.81% Pervious Area
24,803		75.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	448	0.0087	0.65		**Lag/CN Method,**

Summary for Subcatchment PS3b: (new Subcat)

[49] Hint: Tc<2dt may require smaller dt

Runoff = 2.59 cfs @ 12.07 hrs, Volume= 0.213 af, Depth= 7.25"
Routed to Link DP2 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=7.49"

	Area (sf)	CN	Description
*	15,391	98	possible permeable pavement area
	15,391		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	150	0.0040	0.48		**Lag/CN Method,**

Summary for Subcatchment PS4: DP3

[49] Hint: Tc<2dt may require smaller dt

Runoff = 5.33 cfs @ 12.07 hrs, Volume= 0.386 af, Depth= 5.49"
Routed to Link DP2 : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=7.49"

Area (sf)	CN	Description
8,550	80	>75% Grass cover, Good, HSG D
12,911	74	>75% Grass cover, Good, HSG C
2,694	70	Woods, Good, HSG C
1,427	98	Water Surface, 0% imp, HSG C
4,583	98	Roofs, HSG C
4,382	98	Paved parking, HSG C
919	77	Woods, Good, HSG D
155	98	Water Surface, 0% imp, HSG D
1,088	98	Roofs, HSG D
36,709	83	Weighted Average
26,656		72.61% Pervious Area
10,053		27.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Pond 1P: (new Pond)

Inflow Area = 0.757 ac, 75.19% Impervious, Inflow Depth = 6.54" for 50-yr event
Inflow = 4.46 cfs @ 12.16 hrs, Volume= 0.413 af
Outflow = 4.12 cfs @ 12.21 hrs, Volume= 0.413 af, Atten= 8%, Lag= 3.3 min
Primary = 3.88 cfs @ 12.21 hrs, Volume= 0.411 af
Routed to Link DP2 : (new Link)
Secondary = 0.24 cfs @ 12.21 hrs, Volume= 0.002 af
Routed to Link DP2 : (new Link)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 1.94' @ 12.21 hrs Surf.Area= 2,580 sf Storage= 3,714 cf

Plug-Flow detention time= 128.1 min calculated for 0.412 af (100% of inflow)
Center-of-Mass det. time= 128.4 min (904.4 - 776.0)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	3,868 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	1,247	0	0
2.00	2,621	3,868	3,868

Device	Routing	Invert	Outlet Devices
#1	Primary	-1.00'	**15.0" Round Culvert** L= 40.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= -1.00' / -1.10' S= 0.0025 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	1.90'	**9.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 1	0.00'	**2.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#4	Device 1	1.40'	**3.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=3.84 cfs @ 12.21 hrs HW=1.94' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 3.84 cfs of 8.22 cfs potential flow)
  ├─**3=Exfiltration** (Exfiltration Controls 0.12 cfs)
  └─**4=Sharp-Crested Rectangular Weir** (Weir Controls 3.72 cfs @ 2.40 fps)

Secondary OutFlow Max=0.21 cfs @ 12.21 hrs HW=1.94' TW=0.00' (Dynamic Tailwater)
└─**2=Sharp-Crested Rectangular Weir** (Weir Controls 0.21 cfs @ 0.63 fps)

Summary for Link DP1: (new Link)

Inflow Area = 0.043 ac, 52.04% Impervious, Inflow Depth = 5.84" for 50-yr event
Inflow = 0.28 cfs @ 12.07 hrs, Volume= 0.021 af
Primary = 0.28 cfs @ 12.07 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Link DP2: (new Link)

Inflow Area = 2.884 ac, 41.36% Impervious, Inflow Depth = 5.87" for 50-yr event
Inflow = 15.93 cfs @ 12.08 hrs, Volume= 1.411 af
Primary = 15.93 cfs @ 12.08 hrs, Volume= 1.411 af, Atten= 0%, Lag= 0.0 min
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Primary outflow = Inflow below 1,000.00 cfs, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

APPENDIX D

SOIL SURVEY INFORMATION

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for York County, Maine

July 27, 2021

Custom Soil Resource Report
Soil Map

Map Scale: 1:956 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 10 20 40 60

Feet
0 45 90 180 270

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

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: York County, Maine
Survey Area Data: Version 19, May 29, 2020

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

Date(s) aerial images were photographed: Dec 31, 2009—Sep 9, 2017

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CoC	Colton gravelly sandy loam, 8 to 15 percent slopes	1.8	77.2%
Sc	Scantic silt loam, 0 to 3 percent slopes	0.4	16.7%
Ur	Urban land	0.1	6.1%
Totals for Area of Interest		**2.4**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The

delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

York County, Maine

CoC—Colton gravelly sandy loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2yjg3
Elevation: 10 to 2,000 feet
Mean annual precipitation: 31 to 65 inches
Mean annual air temperature: 36 to 52 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Colton and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Colton

Setting

Landform: Kames, eskers
Landform position (two-dimensional): Backslope, summit
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy-skeletal glaciofluvial deposits

Typical profile

Oe - 0 to 4 inches: moderately decomposed plant material
E - 4 to 6 inches: gravelly sandy loam
Bs - 6 to 14 inches: gravelly loamy sand
BC - 14 to 24 inches: very gravelly coarse sand
C - 24 to 65 inches: extremely gravelly coarse sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.42 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water capacity: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Adams

Percent of map unit: 10 percent

Landform: Outwash deltas
Landform position (two-dimensional): Backslope, summit
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Sheepscot

Percent of map unit: 3 percent
Landform: Outwash deltas
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Croghan

Percent of map unit: 2 percent
Landform: Outwash deltas
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Sc—Scantic silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2slv3
Elevation: 10 to 900 feet
Mean annual precipitation: 33 to 60 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Scantic and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Scantic

Setting

Landform: Marine terraces, river valleys
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glaciomarine deposits

Typical profile

Ap - 0 to 9 inches: silt loam

Bg1 - 9 to 16 inches: silty clay loam
Bg2 - 16 to 29 inches: silty clay
Cg - 29 to 65 inches: silty clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: D
Hydric soil rating: Yes

Minor Components

Lamoine

Percent of map unit: 8 percent
Landform: River valleys, marine terraces
Landform position (three-dimensional): Riser, rise
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Biddeford

Percent of map unit: 3 percent
Landform: Marine terraces, river valleys
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave, linear
Ecological site: F144BY002ME - Marine Terrace Depression
Hydric soil rating: Yes

Buxton

Percent of map unit: 2 percent
Landform: Marine terraces, river valleys
Landform position (three-dimensional): Riser, rise
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Roundabout

Percent of map unit: 2 percent
Landform: River valleys, marine terraces
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Ur—Urban land

Map Unit Setting

National map unit symbol: 9k6x
Elevation: 10 to 2,200 feet
Mean annual precipitation: 30 to 50 inches
Mean annual air temperature: 37 to 46 degrees F
Frost-free period: 70 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Linear
Across-slope shape: Linear

Typical profile

H1 - 0 to 6 inches: variable

Properties and qualities

Slope: 0 to 8 percent
Drainage class: Moderately well drained
Depth to water table: About 24 to 72 inches
Available water capacity: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Minor Components

Scantic

Percent of map unit: 2 percent
Landform: Coastal plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Sulfihemists

Percent of map unit: 2 percent
Landform: Salt marshes

Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Adams

Percent of map unit: 2 percent
Landform: Outwash plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Buxton

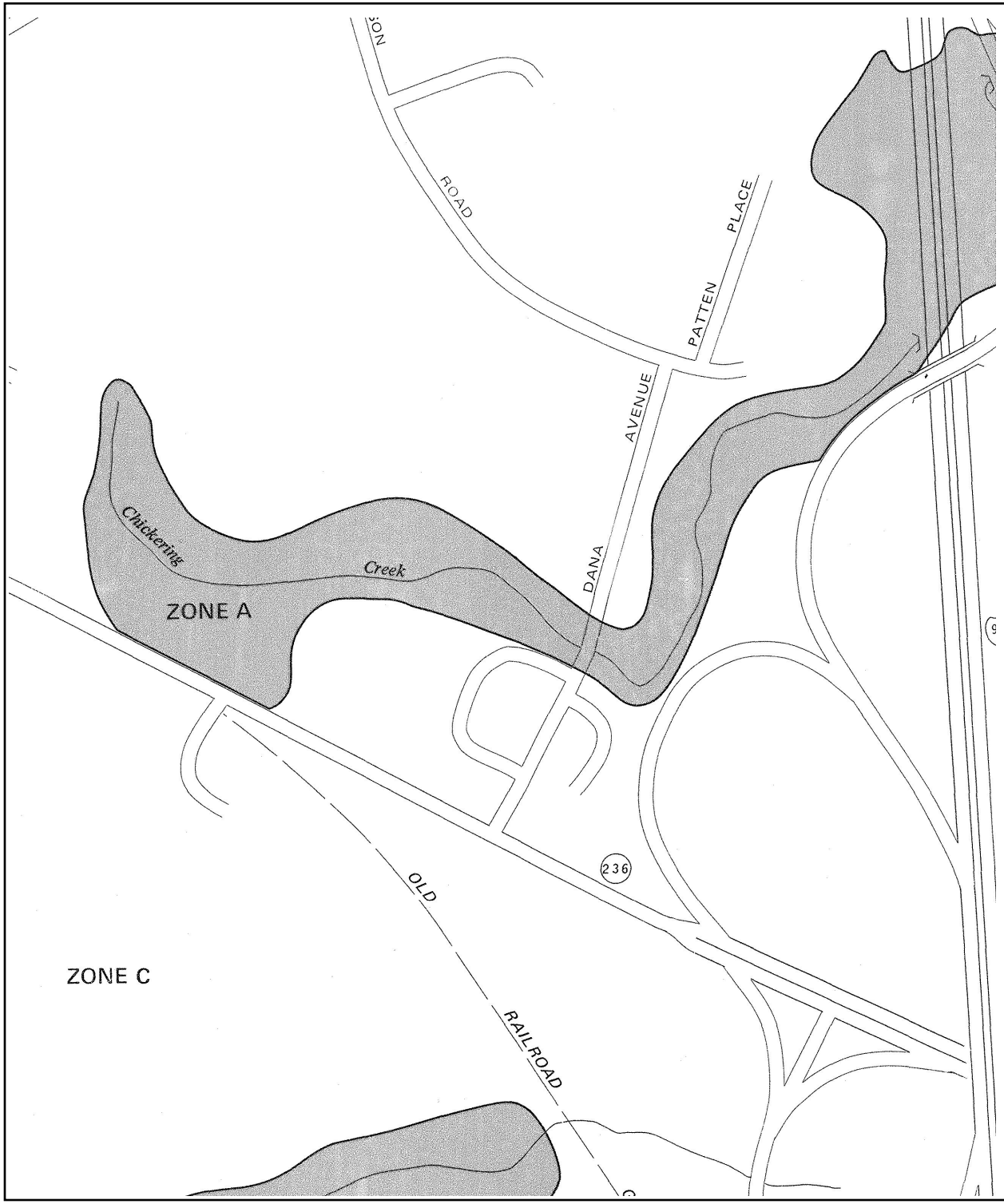
Percent of map unit: 2 percent
Landform: Coastal plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Croghan

Percent of map unit: 2 percent
Landform: Outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

APPENDIX E

FEMA FIRM MAP



APPROXIMATE SCALE

400 0 400 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

TOWN OF
KITTERY, MAINE
YORK COUNTY

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

COMMUNITY-PANEL NUMBER
230171 0004 C

EFFECTIVE DATE:
JULY 5, 1984

Federal Emergency Management Agency

APPENDIX F

INSPECTION & MAINTENANCE PLAN

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors

INSPECTION & LONG-TERM MAINTENANCE PLAN
FOR
THE STORAGE BARN OF KITTERY

2 DANA AVENUE
KITTERY, ME

Introduction

The intent of this plan is to provide Dow Highway Properties, LLC (herein referred to as "owner") with a list of procedures that document the inspection and maintenance requirements of the stormwater management system for this development. Specifically, the filtration basin, permeable pavement, and associated structures on the project site (collectively referred to as the "Stormwater Management System"). The contact information for the owner shall be kept current, and if there is a change of ownership of the property this plan must be transferred to the new owner.

The following inspection and maintenance program is necessary to keep the stormwater management system functioning properly and will help in maintaining a high quality of stormwater runoff to minimize potential environmental impacts. By following the enclosed procedures, the owner will be able to maintain the functional design of the stormwater management system and maximize its ability to remove sediment and other contaminants from site generated stormwater runoff.

Annual Report

The owner shall prepare an annual Inspection & Maintenance Report. The report shall include a summary of the system's maintenance and repair by transmission of the Inspection & Maintenance Log and other information as required. A copy of the report shall be delivered annually to the Kittery Code Enforcement Officer, if required.

Inspection & Maintenance Checklist/Log

The following pages contain the Stormwater Management System Inspection & Maintenance Requirements and a blank copy of the Stormwater Management System Inspection & Maintenance Log. These forms are provided to the owner as a guideline for performing the inspection and maintenance of the Stormwater Management System. This is a guideline and should be periodically reviewed for conformance with current practice and standards.

Stormwater Management System Components

The Stormwater Management System is designed to mitigate both the quantity and quality of site-generated stormwater runoff. As a result, the design includes the following elements:

Non-Structural BMPs

Non-Structural best management practices (BMP's) include temporary and permanent measures that typically require less labor and capital inputs and are intended to provide protection against erosion of soils. Examples of non-structural BMP's on this project include but are not limited to:

- Temporary and Permanent mulching
- Temporary and Permanent grass cover
- Shrubs and ground covers
- Miscellaneous landscape plantings
- Dust control
- Tree protection
- Topsoiling
- Sediment barriers
- Stabilized construction entrance

Structural BMPs

Structural BMP's are more labor and capital-intensive structures or installations that require more specialized personnel to install. Examples on this project include but are not limited to:

- Permeable pavement
- Filtration basin
- Sediment forebay
- Grassed Swale

Inspection and Maintenance Requirements

The following summarizes the inspection and maintenance requirements for the various BMP's that may be found on this project.

1. **Grassed areas:** After each rain event of 0.5" or more during a 24-hour period, inspect grassed areas for signs of disturbance, such as erosion. If damaged areas are discovered, immediately repair the damage. Repairs may include adding new topsoil, lime, seed, fertilizer, and mulch.
2. **Plantings**: Planting and landscaping (trees, shrubs) shall be monitored bi-monthly during the first year to insure viability and vigorous growth. Replace dead or dying vegetation with new stock and adjust the conditions that caused the dead or dying vegetation. During dryer times of the year, provide weekly watering or irrigation during the establishment period of the first year. Make the necessary adjustments to ensure long-term health of the vegetated covers, i.e., provide more

permanent mulch or compost or other means of protection.

3. **Storm Drain and Catch Basin Inlets/Outlets:** Monitor drain inlets and outlet aprons for excessive accumulation of sediments or missing stone/riprap. Remove sediments as required to maintain filtering capabilities of the stone—replace missing riprap.
4. **Filtration Basin:** After installation of the filter/detention basins, perform the following inspections on an annual basis:

    a. Monitor for excessive or concentrated accumulations of debris, or excessive erosion below the various pipe inlets. Remove debris as required and replace or augment inlet fabric strips.
    b. Monitor the outfall structure for problems with uneven flow or clogged pipes. Repair or remove clogs as required.
    c. After significant rainfalls, monitor pond surface for ponding of water. If water remains flooded over the surface 24 hours after a 1" rainfall, then investigate the cause, if not related to pipe/drain blockage, then excavate and replace filter media.
    d. Monitor vegetation on pond and replace dead or dying vegetation as required.
    e. Monitor rodent screens and repair or replace as required.
    f. Monitor side slopes of ponds for damage or erosion—repair, as necessary.
5. **Porous Pavers:** After placement of the porous pavers, inspect the area for signs that rainfall is flowing through the surface and not running off of the surface. Sweep and / or vacuum as needed.

Pollution Prevention

The following pollution prevention activities shall be undertaken to minimize potential impacts on stormwater runoff quality. The Contractor is responsible for all activities during construction. The Owner is responsible thereafter.

Spill Procedures

Any discharge of waste oil or other pollutant shall be reported immediately to the New Hampshire Department of Environmental Services (NHDES). The Contractor/Owner will be responsible for any incident of groundwater contamination resulting from the improper discharge of pollutants to the stormwater system and may be required by NHDES to remediate incidents that may impact groundwater quality. If the property ownership is transferred, the new owner will be informed of the legal responsibilities associated with operation of the stormwater system, as indicated above.

Sanitary Facilities

Sanitary facilities shall be provided during all phases of construction.

Material Storage

No on site trash facility is provided. The customers are required to remove trash from the site. Hazardous material storage is prohibited.

Material Disposal

All waste material, trash, sediment, and debris shall be removed from the site and disposed of in accordance with applicable local, state, and federal guidelines and regulations. Removed sediments shall be if necessary dewatered prior to disposal.

Snow & Ice Management for Standard Asphalt and Walkways

Snow storage will be located such that no direct untreated discharges are possible to receiving waters from the storage site. Snow storage areas have been shown on the Site Plan. Salt storage areas shall be covered and located such that no direct discharges are possible to receiving waters from the storage site. Salt and sand shall be used as minimally as possible.

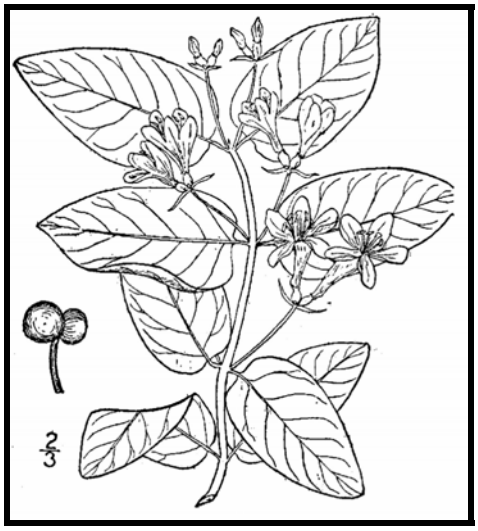
Invasive Species

Monitor the Stormwater Management System for signs of invasive species growth. If caught early, their eradication is much easier. The most likely places where invasions start is in wetter, disturbed soils or detention ponds. Species such as phragmites and purple loose-strife are common invaders in these wetter areas. If they are found, the owner shall refer to the fact-sheet created by the University of New Hampshire Cooperative Extension or contact a wetlands scientist with experience in invasive species control to implement a plan of action for eradication. Measures that do not require the application of chemical herbicides should be the first line of defense.

University of New Hampshire Cooperative Extension

Methods for Disposing Non-Native Invasive Plants

Prepared by the Invasives Species Outreach Group, volunteers interested in helping people control invasive plants. Assistance provided by the Piscataquog Land Conservancy and the NH Invasives Species Committee. Edited by Karen Bennett, Extension Forestry Professor and Specialist.



Tatarian honeysuckle
Lonicera tatarica
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 3: 282.

Non-native invasive plants crowd out natives in natural and managed landscapes. They cost taxpayers billions of dollars each year from lost agricultural and forest crops, decreased biodiversity, impacts to natural resources and the environment, and the cost to control and eradicate them.

Invasive plants grow well even in less than desirable conditions such as sandy soils along roadsides, shaded wooded areas, and in wetlands. In ideal conditions, they grow and spread even faster. There are many ways to remove these non-native invasives, but once removed, care is needed to dispose the removed plant material so the plants don't grow where disposed.

Knowing how a particular plant reproduces indicates its method of spread and helps determine the appropriate disposal method. Most are spread by seed and are dispersed by wind, water, animals, or people. Some reproduce by vegetative means from pieces of stems or roots forming new plants. Others spread through both seed and vegetative means.

Because movement and disposal of viable plant parts is restricted (see NH Regulations), viable invasive parts can't be brought to most transfer stations in the state. Check with your transfer station to see if there is an approved, designated area for invasives disposal. This fact sheet gives recommendations for rendering plant parts non-viable.

Control of invasives is beyond the scope of this fact sheet. For information about control visit www.nhinvasives.org or contact your UNH Cooperative Extension office.

New Hampshire Regulations

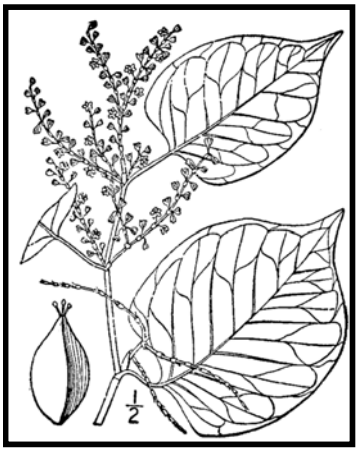
Prohibited invasive species shall only be disposed of in a manner that renders them nonliving and nonviable. (Agr. 3802.04)

No person shall collect, transport, import, export, move, buy, sell, distribute, propagate or transplant any living and viable portion of any plant species, which includes all of their cultivars and varieties, listed in Table 3800.1 of the New Hampshire prohibited invasive species list. (Agr 3802.01)

How and When to Dispose of Invasives?

To prevent seed from spreading remove invasive plants before seeds are set (produced). Some plants continue to grow, flower and set seed even after pulling or cutting. Seeds can remain viable in the ground for many years. If the plant has flowers or seeds, place the flowers and seeds in a heavy plastic bag "head first" at the weeding site and transport to the disposal site. The following are general descriptions of disposal methods. See the chart for recommendations by species.

Burning: Large woody branches and trunks can be used as firewood or burned in piles. For outside burning, a written fire permit from the local forest fire warden is required unless the ground is covered in snow. Brush larger than 5 inches in diameter can't be burned. Invasive plants with easily airborne seeds like black swallow-wort with mature seed pods (indicated by their brown color) shouldn't be burned as the seeds may disperse by the hot air created by the fire.



Japanese knotweed
Polygonum cuspidatum
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 1: 676.

Bagging (solarization): Use this technique with softer-tissue plants. Use heavy black or clear plastic bags (contractor grade), making sure that no parts of the plants poke through. Allow the bags to sit in the sun for several weeks and on dark pavement for the best effect.

Tarping and Drying: Pile material on a sheet of plastic and cover with a tarp, fastening the tarp to the ground and monitoring it for escapes. Let the material dry for several weeks, or until it is clearly nonviable.

Chipping: Use this method for woody plants that don't reproduce vegetatively.

Burying: This is risky, but can be done with watchful diligence. Lay thick plastic in a deep pit before placing the cut up plant material in the hole. Place the material away from the edge of the plastic before covering it with more heavy plastic. Eliminate as much air as possible and toss in soil to weight down the material in the pit. Note that the top of the buried material should be at least three feet underground. Japanese knotweed should be at least 5 feet underground!

Drowning: Fill a large barrel with water and place soft-tissue plants in the water. Check after a few weeks and look for rotted plant material (roots, stems, leaves, flowers). Well-rotted plant material may be composted. A word of caution- seeds may still be viable after using this method. Do this before seeds are set. This method isn't used often. Be prepared for an awful stink!

Composting: Invasive plants can take root in compost. Don't compost any invasives unless you know there is no viable (living) plant material left. Use one of the above techniques (bagging, tarping, drying, chipping, or drowning) to render the plants nonviable before composting. Closely examine the plant before composting and avoid composting seeds.

Be diligent looking for seedlings for *years* in areas where removal and disposal took place.

Suggested Disposal Methods for Non-Native Invasive Plants

This table provides information concerning the disposal of removed invasive plant material. If the infestation is treated with herbicide and left in place, these guidelines don't apply. Don't bring invasives to a local transfer station, unless there is a designated area for their disposal, or they have been rendered non-viable. This listing includes wetland and upland plants from the New Hampshire Prohibited Invasive Species List. The disposal of aquatic plants isn't addressed.

<table>
<tr><th>Woody Plants</th><th>Method of Reproducing</th><th>Methods of Disposal</th></tr>
<tr><td rowspan="2">Norway maple
(Acer platanoides)
European barberry
(Berberis vulgaris)
Japanese barberry
(Berberis thunbergii)
autumn olive
(Elaeagnus umbellata)
burning bush
(Euonymus alatus)
Morrow's honeysuckle
(Lonicera morrowii)
Tatarian honeysuckle
(Lonicera tatarica)
showy bush honeysuckle
(Lonicera x bella)
common buckthorn
(Rhamnus cathartica)
glossy buckthorn
(Frangula alnus)</td><td rowspan="2">Fruit and Seeds
  </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Use as firewood.
▪ Make a brush pile.
▪ Chip.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip once all fruit has dropped from branches.
▪ Leave resulting chips on site and monitor.</td></tr>
<tr><td rowspan="2">oriental bittersweet
(Celastrus orbiculatus)
multiflora rose
(Rosa multiflora)</td><td rowspan="2">Fruits, Seeds, Plant Fragments
  </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Make a brush pile.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip – only after material has fully dried (1 year) and all fruit has dropped from branches. Leave resulting chips on site and monitor.</td></tr>
</table>

Non-Woody Plants	Method of Reproducing	Methods of Disposal
garlic mustard *(Alliaria petiolata)* spotted knapweed *(Centaurea maculosa)* ▪ Sap of related knapweed can cause skin irritation and tumors. Wear gloves when handling. black swallow-wort *(Cynanchum nigrum)* ▪ May cause skin rash. Wear gloves and long sleeves when handling. pale swallow-wort *(Cynanchum rossicum)* giant hogweed *(Heracleum mantegazzianum)* ▪ Can cause major skin rash. Wear gloves and long sleeves when handling. dame's rocket *(Hesperis matronalis)* perennial pepperweed *(Lepidium latifolium)* purple loosestrife *(Lythrum salicaria)* Japanese stilt grass *(Microstegium vimineum)* mile-a-minute weed *(Polygonum perfoliatum)*	**Fruits and Seeds** 	**Prior to flowering** Depends on scale of infestation Small infestation ▪ Pull or cut plant and leave on site with roots exposed. Large infestation ▪ Pull or cut plant and pile. (You can pile onto or cover with plastic sheeting). ▪ Monitor. Remove any re-sprouting material. **During and following flowering** Do nothing until the following year or remove flowering heads and bag and let rot. Small infestation ▪ Pull or cut plant and leave on site with roots exposed. Large infestation ▪ Pull or cut plant and pile remaining material. (You can pile onto plastic or cover with plastic sheeting). ▪ Monitor. Remove any re-sprouting material.
common reed (*Phragmites australis*) Japanese knotweed *(Polygonum cuspidatum)* Bohemian knotweed *(Polygonum x bohemicum)*	**Fruits, Seeds, Plant Fragments** Primary means of spread in these species is by plant parts. Although all care should be given to preventing the dispersal of seed during control activities, the presence of seed doesn't materially influence disposal activities.	**Small infestation** ▪ Bag all plant material and let rot. ▪ Never pile and use resulting material as compost. ▪ Burn. **Large infestation** ▪ Remove material to unsuitable habitat (dry, hot and sunny or dry and shaded location) and scatter or pile. ▪ Monitor and remove any sprouting material. ▪ Pile, let dry, and burn.

January 2010

FILTRATION BASIN MAINTENANCE SHEET

INSPECTION REQUIREMENTS		
ACTION TAKEN	**FREQUENCY**	**MAINTENANCE REQUIREMENTS**
-Inspect trench for the occurrence of sediment, trash, debris, or structural damage.	Yearly and following major storm events	*-Ensure that sediments do not enter and plug inlet. Remove sediments, trash, and debris, as necessary.* *-Repair outlet structures and appurtenances, as necessary.*
-Check to see if trench drains within 24 to 48 hours of rainfall. *-Check vegetation health.*	Annually	*-If system does not drain within 24 to 48 hours of a rainfall event, consult a qualified professional about restoration of function of the dry well.* *-Vegetation should be maintained and pruned.* *-Dead or diseased vegetation should be*
-Monitor sediment accumulation in forebay and inlet swale	Yearly	*-Replace dead or dying vegetation* *-Remove sediments when required*

MAINTENANCE LOG	
PROJECT NAME	
INSPECTOR NAME	**INSPECTOR CONTACT INFO**
DATE OF INSPECTION	**REASON FOR INSPECTION** ☐LARGE STORM EVENT ☐PERIODIC CHECK-IN
IS CORRECTIVE ACTION NEEDED? ☐YES ☐NO	**DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE**
DATE OF MAINTENANCE	**PERFORMED BY**
NOTES	

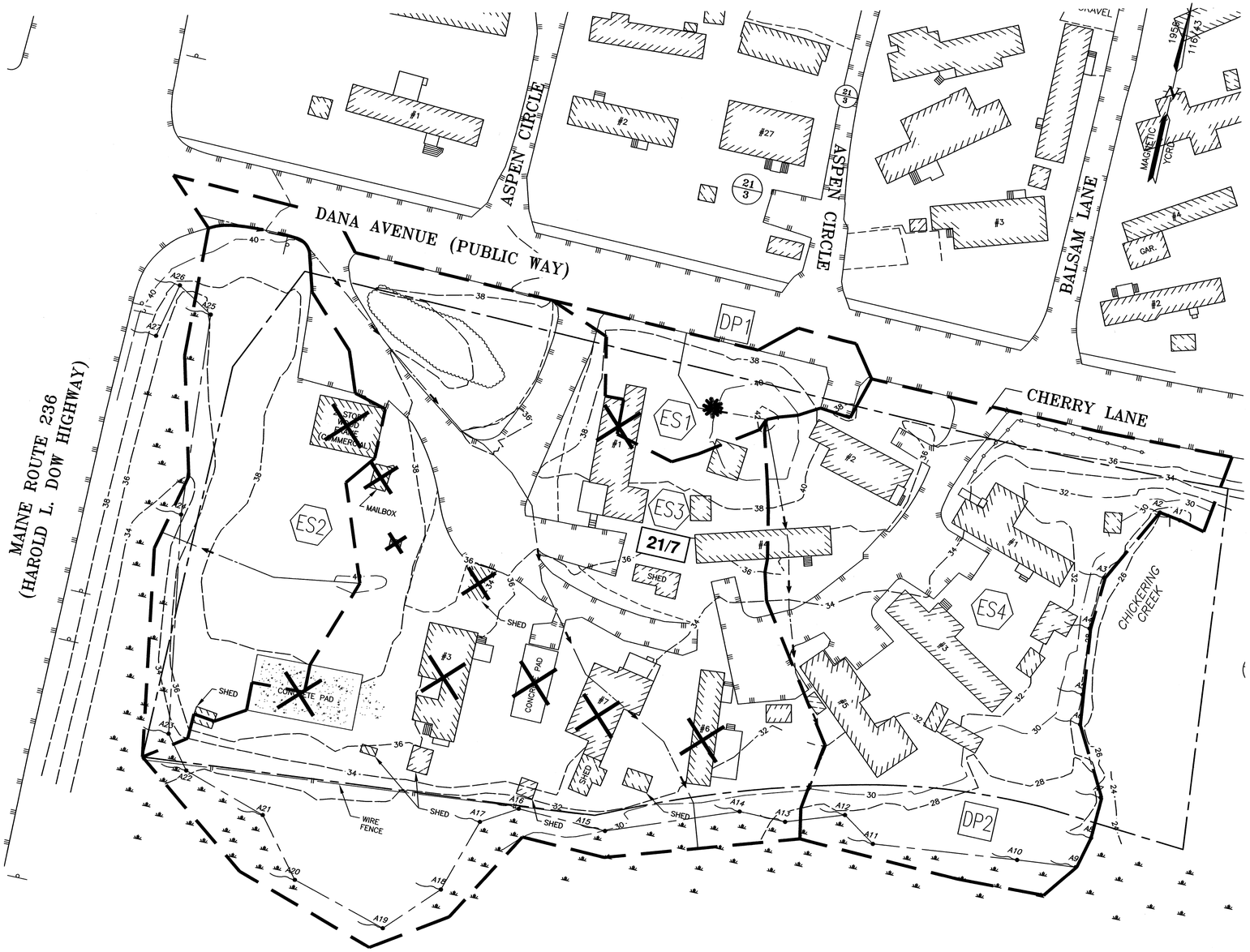
PERMEABLE PAVER MAINTENANCE SHEET

INSPECTION REQUIREMENTS		
ACTION TAKEN	**FREQUENCY**	**MAINTENANCE REQUIREMENTS**
-Inspect trench for the occurrence of sediment, trash, debris, or structural damage. *-Check pavement for surface ponding*	Bi-Yearly and frequently in first few months following construction	*-Ensure that sediments do not enter and plug pavement. Remove sediments, trash, and debris, as necessary.* *-Repair outlet structures and appurtenances, as necessary.* *-Vacuum pavement at least twice annually.* *-Prevent vehicles with muddy wheels from accessing permeable pavement.*
-No winter sanding permitted *-Minimize application of salt*	Continuous practice	*-Vegetation should be maintained and pruned.* *-Dead or diseased vegetation should be removed, as well as any invasive species.*

MAINTENANCE LOG	
PROJECT NAME	
INSPECTOR NAME	**INSPECTOR CONTACT INFO**
DATE OF INSPECTION	**REASON FOR INSPECTION** ☐LARGE STORM EVENT ☐PERIODIC CHECK-IN
IS CORRECTIVE ACTION NEEDED? ☐YES ☐NO	**DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE**
DATE OF MAINTENANCE	**PERFORMED BY**
NOTES	

LEGEND

EXISTING	PROPOSED	
D	D	STORM DRAIN
X X	X X	SILT FENCE
100	100	CONTOUR
97x3	98x0	SPOT ELEVATION
		EDGE OF PAVEMENT (EP)
		SUBCATCHMENT LINE
6	600	SUBCATCHMENT NUMBER
1234	1234	AREA IN SQUARE FEET
WOODS	WOODS	DESCRIPTION OF COVER
6	600	POND (DESIGN MODEL)
6	600	REACH (DESIGN MODEL)
		DRAINAGE VECTOR
		EDGE OF WOODS / TREES
CB	CB	CATCH BASIN
DMH	DMH	DRAIN MANHOLE
W	W	WELL
EL.	EL.	ELEVATION
EP	EP	EDGE OF PAVEMENT
FF	FF	FINISHED FLOOR
INV	INV	INVERT
TBM	TBM	TEMPORARY BENCH MARK
TYP	TYP	TYPICAL
		Tc PATH
HSG	HSG	HYDROLGIC SOIL GROUP
SCF	SCF	SHALLOW CONCENTRATED FLOW
SF	SF	SHEET FLOW
CHANNEL	CHANNEL	CHANNEL FLOW
DP1	DP1	DESIGN POINT



GRAPHIC SCALE

30 0 50 100 120 FEET

10 5 0 10 20 30 METERS

AMBIT ENGINEERING, INC.
Civil Engineers & Land Surveyors
200 Griffin Road – Unit 3
Portsmouth, N.H. 03801-7114
Tel (603) 430-9282
Fax (603) 436-2315

NOTES:

1) THIS PLAN IS INTENDED FOR RUNOFF ANALYSIS ONLY AND SHALL NOT BE USED FOR CONSTRUCTION.

2) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.

3) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.

4) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "MAINE STORMWATER MANUAL, VOLUME 3, BMP TECHNICAL DESIGN MANUAL" DURING CONSTRUCTION. (MEDEP MAY 2016).

THE STORAGE BARN OF KITTERY
DANA AVENUE
KITTERY, MAINE

NO.	DESCRIPTION	DATE
0	ISSUED FOR APPROVAL	8/19/21

REVISIONS

STATE OF MAINE
JOHN R. CHAGNON
No. 6950
LICENSED
PROFESSIONAL ENGINEER

8.19.21

SCALE: 1" = 30' 8/19/21

PLAN OF EXISTING SUBCATCHMENTS **W1**

1548.01

LEGEND

EXISTING	PROPOSED	
D	D	STORM DRAIN
X X	X X	SILT FENCE
100	100	CONTOUR
97x3	98x0	SPOT ELEVATION
		EDGE OF PAVEMENT (EP)
		SUBCATCHMENT LINE
6	600	SUBCATCHMENT NUMBER
1234 WOODS	1234 WOODS	AREA IN SQUARE FEET DESCRIPTION OF COVER
6	600	POND (DESIGN MODEL)
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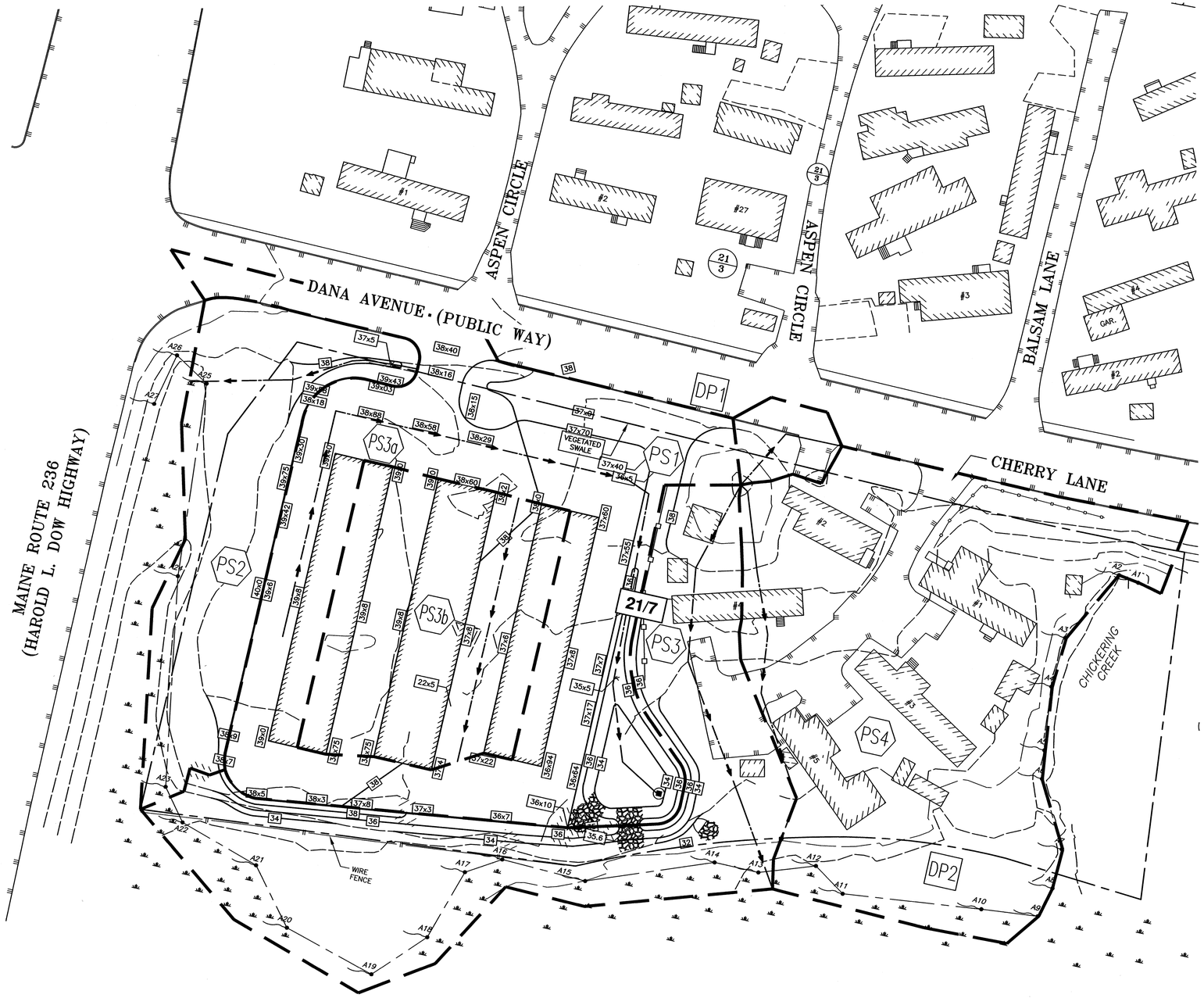

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THE STORAGE BARN OF KITTERY
DANA AVENUE
KITTERY, MAINE

NO.	DESCRIPTION	DATE
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REVISIONS

STATE OF MAINE
JOHN R. CHAGNON
No. 9350
LICENSED PROFESSIONAL ENGINEER

8.19.21

SCALE: 1" = 30' 8/19/21

PLAN OF PROPOSED SUBCATCHMENTS

W2

1548.01