

**CITY OF LEWISTON**  
**PLANNING BOARD MEETING**  
Monday, August 22, 2016 – 5:30 P.M.  
City Council Chambers – First Floor  
Lewiston City Building  
27 Pine Street, Lewiston, ME

## **AGENDA**

- I. ROLL CALL**
- II. ADJUSTMENTS TO THE AGENDA**
- III. CORRESPONDENCE**
- IV. MID-YEAR ELECTION OF OFFICERS:** Election of Vice Chairperson and Secretary
- V. PUBLIC HEARINGS:**
  - a) A proposal submitted by Stoneybrook Consultants, Inc. on behalf of Jamey Pittman to conditionally rezone the property at 117 Webster Street from the Neighborhood Conservation “A” district to the Downtown Residential district to allow accessory uses to support the existing commercial/multifamily dwelling at 111 Webster Street.
  - b) An application submitted by Sebago Technics on behalf of VIP, Inc. to create a 59 space parking lot at their facility located at 12 Lexington Street.
  - c) A request by Cathy E. B. Gray and Simeon A. Gray for a use determination to establish a year-round educational campground at 49 Old Farm Road, that primarily hosts children and homeschooled families to learn about the outdoors and nature related activities, as being substantially similar to and compatible with permitted or conditional uses in the Rural Agricultural (RA) district
  - d) A proposed amendment to Appendix A, Article V, Section 3(aa) of the Zoning and Land Use Code to allow the keeping of up to six chickens in residential zoning districts, with the exception of the Neighborhood Conservation “B” (NCB) district, on lots of no less than 30,000 square feet developed with single family detached dwellings including mobile homes on individual lots pursuant to the proposed provisions contained in Chapter 14, Article XIII, Sec 14-45 thru 14-53.
  - e) A proposed amendment to Appendix A, Article XI, Section 23, Space and Bulk Requirements, Net Lot Area Requirements of the Neighborhood Conservation “B” (NCB) district.

**VI. OTHER BUSINESS:**

- a) Request of the Planning Board to initiate an amendment to Article XIII of the Zoning and Land Use Code to adopt the Maine Department of Environmental Protection's Chapter 500 Stormwater Management rules.
- b) Any other business Planning Board Members may have relating to the duties of the Lewiston Planning Board.

**VII. READING OF THE MINUTES:** Motion to adopt the July 25, 2016 draft minutes

**VIII. ADJOURNMENT**

The City of Lewiston is an EOE. For more information please visit our website @ [www.lewistonmaine.gov](http://www.lewistonmaine.gov) and click on the Non-Discrimination Policy.



## CITY OF LEWISTON

### Department of Planning & Code Enforcement

**TO:** Planning Board  
**FROM:** David Hediger, City Planner  
**DATE:** August 18, 2016  
**RE:** August 22, 2016 Planning Board Agenda Item IV(a)

**A proposal submitted by Stoneybrook Consultants, Inc. on behalf of Jamey Pittman to conditionally rezone the property at 117 Webster Street from the Neighborhood Conservation "A" district to the Downtown Residential district to allow accessory uses to support the existing commercial/multifamily dwelling at 111 Webster Street.**

Jamey Pittman has submitted a petition to conditionally rezone the property at 117 Webster Street from the Neighborhood Conservation "A" district to the Downtown Residential (DR) district to allow accessory uses to support the existing commercial/multifamily dwelling at 111 Webster Street.

This vacant property consists of approximately 0.29 acres. Given the current zoning, the property is limited to construction of a single family dwelling. The petitioner is requesting the property be conditionally rezoned to the DR district to allow accessory uses to support the existing commercial/multifamily dwelling at 111 Webster Street. That property was conditionally rezoned by the Planning Board and City Council in 2015 from NCA to DR to support redevelopment of the property with eight dwelling units. The applicant has since purchased the abutting property at 117 Webster Street from the City in July 2016. Conditionally rezoning the property will allow the applicant to construct garages, storage units, or other accessory uses to support the multi-family use at 111 Webster Street and specifically not allow the right to add multifamily units or a single-family home.

With respect to the space and bulk standards, the applicant is proposing a split between the two districts and some modifications. The NCA provisions that will remain in place include front setback, minimum frontage, and maximum height. The DR provisions to be included are minimum lot size, minimum net lot area per dwelling unit (which is not applicable since additional dwelling units are not being allowed), minimum side and rear yard, and maximum impervious ratio. Modified provisions include front yard (20' versus the NCA's 15' to 20' and the DR having none), and side and rear setback (15' versus 10' to 30' in the NCA and DR).

Staff recommends the Planning Board provide a favorable recommendation for the City Council's consideration.

#### **ACTION NECESSARY**

Make a motion pursuant to Article VII, Section 4 and Article XVII, Section 5 of the Zoning and Land Use Code to send a favorable recommendation for the City Council's consideration based upon the proposal submitted by Stoneybrook Consultants, Inc. on behalf of Jamey Pittman to conditionally rezone the property at 117 Webster Street from the Neighborhood Conservation "A" district to the Downtown Residential district to allow accessory uses to support the existing commercial/multifamily dwelling at 111 Webster Street (including, if any, specific conditions raised by the Planning Board).



# Stoneybrook Consultants, Inc.

456 Buckfield Road  
Turner, Maine 04282  
(207) 514-7491 voice  
(207) 514-7492 fax

August 16, 2016

David Hediger, City Planner  
Department of Planning & Code Enforcement  
City of Lewiston  
27 Pine Street  
Lewiston, ME 04240-7201

Re: 117 Webster Street Apartments  
Conditional Rezoning Request

Dear David:

On behalf of Jamey Pittman (Pittman), we have submitted a Petition to amend the City of Lewiston Zoning and Land Use Code to Conditionally Rezone property located at 117 Webster Street. The Petition and attachments previously submitted explain our request to Conditionally Rezone the property to allow accessory uses to support the market rate apartments currently being constructed in the existing building located on the adjacent property at 111 Webster Street. That property was Conditionally Rezoned by the City last year.

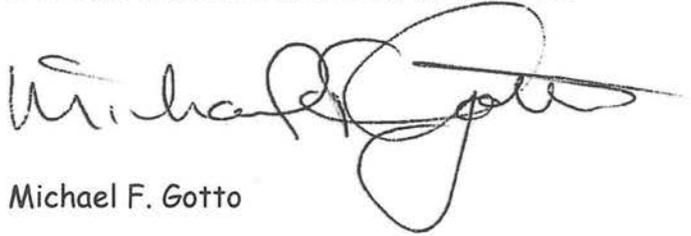
The property is located in the Neighborhood Conservation "A" (NCA) district where commercial uses and multi-family use is not allowed. With this Petition, we are seeking to Conditionally Rezone the property to the Downtown Residential (DR) district to allow accessory uses associated with commercial or multi-family development. This request is very similar to the previous request for the property at 111 Webster Street which was approved last year. We have attached a Comparison Chart, showing the changes proposed in the zoning requirements between these two districts, to support our request. You will note that the changes requested allow accessory uses to support the development at 111 Webster Street, but does not allow the right to add multi-family units or single-family homes on this property.

The purpose of this zoning request is to allow for driveway construction to serve the multi-family use at 111 Webster Street without larger setback requirements. While a driveway is allowed on the 117 Webster Street property, it is required to be no less than 22.5 from the property line. This zoning request would allow that drive to be closer to the property line. This zoning request would also allow for future use of this property to construct garages, storage units or other accessory uses to support the multi-family use at 111 Webster Street. Other than the driveway, already approved, no other construction is proposed on this property at this time.

We trust you will find this Petition acceptable for processing and we will plan to attend the next available meeting with the Planning Board or City Council to answer any additional questions you or they may have.

Respectfully Yours

STONEBROOK CONSULTANTS, INC.

A handwritten signature in black ink, appearing to read "Michael F. Gotto", written over a horizontal line.

Michael F. Gotto

cc: Jamey Pittman

Informational  
Land Use Comparison Chart

Land Use Table: All Zoning Districts 6.27.14	Neighborhood Conservation "A" NCA	Downtown Residential DR
<b>USES(15)(33)</b>		
Accessory use or structure	P	P
<b>Commercial-Service</b>		
Veterinary facilities excluding kennel and humane societies		
Veterinary facilities including kennel and humane societies		
Small day care facilities	P(22)	P
Day care centers		<del>P</del>
Day care centers accessory to public schools, religious facilities, multifamily or mixed res. developments, and mobile home park	C(22)	
Business and professional offices including research, experimental, testing laboratories, engineering, research, management and related services		P(9)
Restaurants		P(1)
Drinking Places		
Adult business establishments		
Hotels, motels, inns		E
Movie theaters except drive-in theaters		P
Places of indoor assembly, amusement or culture		
Art and crafts studios		P
Personal Services		P
Retail stores		P
Neighborhood retail stores		
Lumber and building materials dealer		
Gasoline service stations		
Gasoline service stations which are a part of and subordinate to a retail use		
New and used car dealers		
Recreational vehicle, mobile home dealers		
Equipment dealers and equipment repair		
Automotive Services including repair		
Registered dispensary (27)		

Registered primary caregivers engage in the cultivations of medical marijuana for two to five registered patients		
Tattoo Establishments		
<b>Industrial</b>		
Light industrial uses		
Industrial uses		
Building and construction contractors		
Fuel oil dealers and related facilities		
Wholesale sales, warehousing and distribution facilities and self-storage facilities		
Self-storage facilities		
Commercial solid waste disposal facilities		
Junkyards and auto graveyards		
Recycling and reprocessing facilities		
Private industrial/commercial developments (23)		
<b>Transportation</b>		
Airports or heliports		
Commercial parking facilities		€
Transit and ground transportation facilities		
Transportation facilities		
<b>Public and Utility</b>		
Pumping stations, standpipes or other water supply uses involving facilities located on or above the ground surface and towers for municipal use	P	P
Power transmission lines, substations, telephone exchanges, microwave towers or other public utility or communications use	C	C
Municipal buildings and facilities	C	P
Preservation of historic areas; emergency fire protection activities; bridges and public roadway		
Dams		
<b>Institutional</b>		
Religious facilities	P	P
Cemeteries	P	

Congregate care/assisted living facilities, institutions for the handicapped, nursing or convalescent homes, group care facilities		P
Hospitals, medical clinics		C
Museums, libraries, and non-profit art galleries and theaters		P
Academic institutions, including buildings or structures for classroom, administrative, laboratory, dormitories, art, theater, dining services, library, bookstores, athletic facilities and student recreational uses together with buildings accessory to the foregoing permitted principal buildings or structures		P
Civil and social organizations		
Public community meeting and civic function buildings including auditoriums		P
<b>Residential (8)</b>		
Single-family detached dwellings on individual residential lots	P	P(11)
Mobile homes on individual residential lots		
Two-family dwellings	P(37)	P(11)
Multifamily dwellings in accordance with the standards of Article XIII		P(11)
Single-family attached dwelling in accordance with the standards of Article XIII		P(11)
Mixed single-family residential developments in accordance with the standards of Article XIII		
Mixed residential developments in accordance with the standards of Article XIII		
Mixed use structures		P(11)
Lodging houses		P(11)
Home occupations	P	P
Bed and breakfast establishments as a home occupation	P	P
In-law apartments in accordance with the standards of Article XIII	P	P
Single-family cluster development		
Family day care home	P	P
Shelters		C
<b>Natural Resource</b>		

Agriculture		
Farm stands		
Forest management and timber harvesting activities in accordance with the standards of Article XIII	P	
Earth material removal		
Community gardens (20)	P	P
Water dependent uses, e.g. docks and marinas		
Non-residential structures for educational, scientific or nature interpretation purposes, containing a maximum floor area of not more than ten thousand (10,000) square feet		
<b>Recreation</b>		
Campgrounds		
Public or private facilities for nonintensive outdoor recreation	C	C
Commercial outdoor recreation and drive-in theaters		
Fitness and recreational sports centers as listed under NAICS Code 713940		

Informational  
Space and Bulk Comparison Chart

<b>Space and Bulk Table: All Zoning Districts 12.18.12</b>			
<b>Dimensional Requirements</b>	<b>Neighborhood Conservation "A" NCA</b>	<b>Downtown Residential DR</b>	<b>Proposed Conditional Downtown Residential DR</b>
<b>Minimum lot size with public sewer</b>			
Single family detached	7,500 s.f.		
Two-family dwellings	12,500 s.f.		
Single family cluster development	5 acres		
Multifamily dwellings			
Veterinary facilities	20,000 s.f.		
Other uses	20,000 s.f.		
All permitted uses		5,000 s.f.	5,000 s.f.
<b>Minimum lot size without public sewer</b>			
Single family detached	20,000 s.f.		
Two-family dwellings	20,000 s.f.		
Single family cluster development	5 acres		
Multifamily dwellings			
Veterinary facilities	40,000 s.f.		

Other uses	40,000 s.f.		
<b>Minimum net lot area per du with public sewer</b>			
Two-family dwellings	5,000 s.f.		
Multifamily dwellings			
All permitted uses		1,250 s.f.	1,250 s.f.
<b>Minimum net lot area per du without public sewer</b>			
Two-family dwellings	5,000 s.f.		
<b>Minimum frontage</b>			
Single family detached, mobile homes	75 ft.		
Two-family dwellings	125 ft.		
Single family cluster development (with multiple vehicular access)	200 ft. (50 ft.)		
Multifamily dwellings (with multiple vehicular access)			
Religious facilities	125 ft.		
Other uses	125 ft.		
All permitted uses		50 ft.	75 ft.
<b>Minimum front setback</b>			
Single family detached, mobile homes on individual lots	20 ft. (21,22)		
Two-family dwellings	20 ft. (21,22)		
Single family cluster development	50 ft.		
Multifamily dwellings			
Religious facilities	20 ft. (21,22)		
Other uses	20 ft. (21,22)		20 ft. (21, 22)
All permitted uses		None (22)	20 ft. (21, 22)
<b>Minimum front yard</b>			
Single family detached, mobile homes on individual lots	15 ft. (21)		
Two-family dwellings	15 ft. (21)		
Single family cluster development	50 ft.		
Multifamily dwellings			
Religious facilities	20 ft. (21)		
Other uses	20 ft. (21)		20 ft. (21)
All permitted uses		None (22)	20 ft. (21)
<b>Minimum side and rear setback</b>			
Single family detached, mobile homes on individual lots	10 ft.		
Two-family dwellings	10 ft.		
Single family cluster development	30 ft.		
Multifamily dwellings			
Religious facilities	30 ft.		
Other uses	30 ft.		15 ft. (21)
All permitted uses		10 ft.	15 ft. (21)
<b>Minimum side and rear yard</b>			
Single family detached, mobile homes on individual lots	10 ft.		
Two-family dwellings	10 ft.		
Single family cluster development	30 ft.		

Multifamily dwellings			
Religious facilities	30 ft. (16)		
Other uses	30 ft. (16)		10 ft.
All permitted uses		10 ft. required on one side	10 ft.
<b>Maximum height</b>			
Other permitted uses	35 ft.	60 ft.	35 ft.
<b>Ratios</b>			
Maximum lot coverage	0.40		
Maximum impervious coverage		0.75	0.75

**PETITION TO AMEND THE CITY OF LEWISTON**  
**ZONING AND LAND USE CODE**

Pursuant to Appendix A, Article XVII, Section 5 - Amendments of the City of Lewiston Zoning and Land Use Code, we the undersigned residents of the City of Lewiston, being eighteen (18) year of age or older, do hereby petition the City of Lewiston to conditionally rezone a portion of the property at 117 Webster Street from the Neighborhood Conservation (NCA) zoning district to the Downtown Residential (DR) zoning district as described in the exhibits attached hereto:

	SIGNATURE	PRINTED NAME	PHYSICAL STREET ADDRESS (No PO Boxes)	DATE
①	ROGER OBARD	Roger J. Russell	103 Webster Ave	7/27/16
②	[Signature]	Laura Lemley	98 Webster St.	7/27/16
③	[Signature]	ENRICO HERRING	98 WEBSTER ST.	7-27-16
④	[Signature]	SHERON HERRING	57 TALL PINES DR APT 5	7/27/16
⑤	[Signature]	Nicholas Meserve	89 Webster St #1	7/27/16
⑥	Bruce A. Cavanagh	BRUCE A. CAVANAGH	11 DOVE LANE	7/27/16
⑦	Lorraine A. Cavanagh	LORRAINE A. CAVANAGH	11 Dove Lane	7/27/16
⑧	[Signature]	Margaret Williams	35 Barton	7-27-16
⑨	[Signature]	RANDY BUCKLIN	21 GERMAINE	7-27-16
⑩	[Signature]	CAROLINE PEASE	22 Germaine	7-27-16
⑪	[Signature]	LAURIER P. PEASE	22 GERMAINE ST	7-27-16
⑫	Sandra Worthington	Sandra Worthington	28 Barron Ave	7/27/16
⑬	[Signature]	RICHARD COTE	25 GERMAINE	7/27/16
⑭	Rejeanne A. Cote	REJEANNE COTE	85 GERMAINE	7/27/16
⑮	Joseph R. Fournier	JOSEPH R. FOURNIER	100 CAMPUS RD	7/27/16
⑯	[Signature]	Celeste Onofri	15 Marquette Ave	7/27/16
⑰	[Signature]	Jan Corey	127 Webster St New	7/27/16
⑱	[Signature]	RITA PENNEY/T	30 Webster St	7/27/16
⑲	[Signature]	LISA L. UTTAMNEAN	36 Barron Ave	7/27/16
⑳	[Signature]	Paul Melanson	121 Webster St Lew	7/28/16

**CIRCULATOR'S VERIFICATION**

I hereby verify that I am the Circulator of this petition, that all the signatures to this petition were made in my presence, and to the best of my knowledge and belief, each signature is that of the person it purports to be, and each person is a resident of the City of Lewiston.

James Pittman  
Signature of Circulator

JAMES PITTMAN  
Printed Name of Circulator

7/28/16  
Date

**REGISTRAR'S CERTIFICATION**

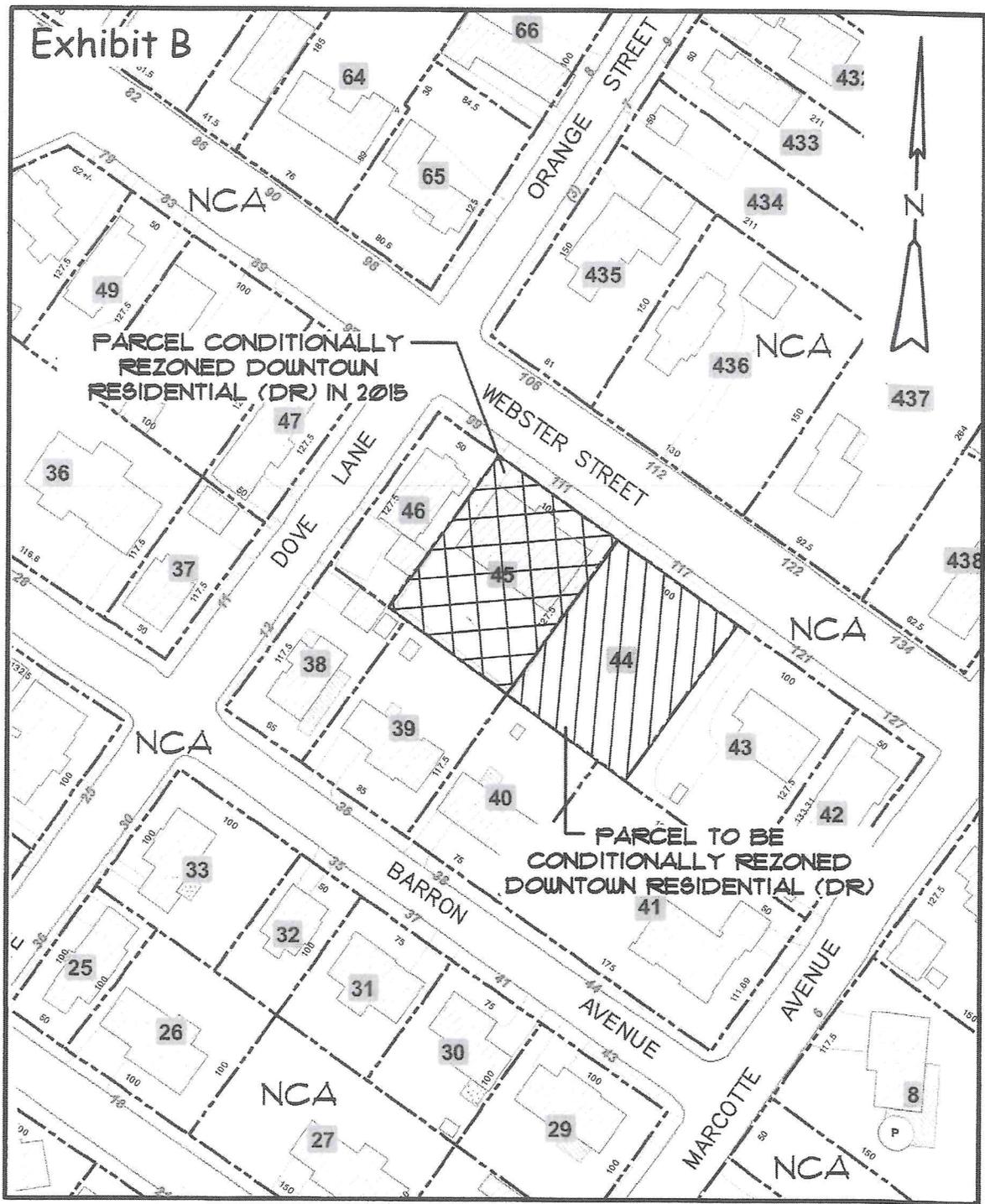
I hereby certify and verify that the names of all of the petitioners listed as valid appear on the voting list as registered voters in the City of Lewiston.

Total Valid: 19

Total Invalid: 1

Aur P. Lase, Rep.  
Signature of Registrar/Deputy Registrar

Date: 7/28/16



# PROPOSED ZONING MAP AMENDMENT

117 WEBSTER STREET - LEWISTON, MAINE  
 OWNER: JAMEY PITTMAN  
 SCALE: 1" = 100'  
 DATE OF GRAPHIC: JULY 27, 2016  
 SOURCE: CITY OF LEWISTON TAX MAP 174  
 PUBLICATION DATE: 2014

Stoneybrook  
 Consultants, Inc.

## AN ORDINANCE PERTAINING TO ZONING BOUNDARIES

### THE CITY OF LEWISTON HEREBY ORDAINS:

Appendix A of the Code of Ordinances of the City of Lewiston, Maine, is hereby amended as follows:

#### APPENDIX A ZONING AND LAND USE CODE ARTICLE IV. ESTABLISHMENT OF DISTRICTS

##### Sec. 1. Zoning Map

The "Official Zoning Map, City of Lewiston," adopted pursuant to this Section, is hereby amended by conditionally rezoning the parcel more fully described in Exhibit "A" attached hereto, and as shown on Exhibit "B," said parcel being located at 117 Webster Street, Lewiston, Maine, from the Neighborhood Conservation "A" (NCA) zoning district to the Downtown Residential (DR) zoning district.

#### REASONS FOR THE PROPOSED AMENDMENT

The reason for the proposed conditional rezoning of 117 Webster Street is to allow accessory uses to support the existing commercial building located on the abutting property at 111 Webster Street which was recently rezoned for market rate multifamily housing. This site has been vacant for many years. The proposed change would allow access, additional parking and construction of garage and/or storage units for the tenants of the market rate multifamily housing units. The conditional zoning request would reinforce residential uses in this residential neighborhood. Specifically, proponent would like to have the property, which is currently zoned for the Neighborhood Conservation "A" (NCA) zoning district, conditionally rezoned to the Downtown Residential (DR) zoning district to allow for the creation of accessory structures or uses to support the market rate multifamily dwellings at 111 Webster Street in addition to those uses currently allowed in the NCA.

#### CONFORMANCE WITH COMPREHENSIVE PLAN

1. Encourage and promote safe, affordable, decent housing opportunities for all Lewiston citizens (Housing Goal #1, Page 69).
2. Continue to allow a wide variety of housing types in all appropriate zones within the City (Housing - Strategy H, Page 71).
3. Encourage orderly growth and development in appropriate areas of the City, while protecting the City's rural character, making efficient use of public services and preventing development sprawl (Land Use Goal #1, page 123).

4. A sustainable community provides housing opportunities for all residents (Long Range Planning – Sustainable Communities, Page 130).
5. Provide incentives for adaptive reuse of building or infill construction (Long Range Planning Policy #3, Strategy A, page 134).
6. Encourage and promote affordable, decent housing opportunities for all Lewiston citizens and continue to allow a diverse range of housing types in the community (Long Range Planning Policy #5, page 135).

### CONDITIONAL REZONING AGREEMENT

The proponent requests that the official zoning map for the City be amended by deleting the subject property from the Neighborhood Conservation “A” (NCA) zoning district and conditionally rezoning the subject premises to the Downtown Residential (DR) zoning district, subject to the limitations more fully described below.

In compliance with the provisions of the Code, Article XVII, Section 5(g), the proponent hereby proposes the following conditions:

1. Land Use Table:

Allowed uses of the property shall include those uses which are presently permitted in the NCA district, and multifamily dwellings as a permitted use in the DR zoning district, as listed below and subject to the conditions contained herein.

<b>Land Use Table: All Zoning Districts</b>	Conditional Rezoning (DR) 117 Webster Street
<b>USES(15)(33)</b>	
Accessory use or structure	P
<b>Commercial-Service</b>	
Veterinary facilities excluding kennel and humane societies	
Veterinary facilities including kennel and humane societies	
Small day care facilities	P(22)
Day care centers	

Day care centers accessory to public schools, religious facilities, multifamily or mixed res. developments, and mobile home park	C(22)
Business and professional offices including research, experimental, testing laboratories, engineering, research, management and related services	
Restaurants	
Drinking Places	
Adult business establishments	
Hotels, motels, inns	
Movie theaters except drive-in theaters	
Places of indoor assembly, amusement or culture	
Art and crafts studios	
Personal Services	
Retail stores	
Neighborhood retail stores	
Lumber and building materials dealer	
Gasoline service stations	
Gasoline service stations which are a part of and subordinate to a retail use	
New and used car dealers	
Recreational vehicle, mobile home dealers	
Equipment dealers and equipment repair	
Automotive Services including repair	
Registered dispensary (27)	
Registered primary caregivers engage in the cultivations of medical marijuana for two to five registered patients	
Tattoo Establishments	
<b>Industrial</b>	
Light industrial uses	
Industrial uses	
Building and construction contractors	
Fuel oil dealers and related facilities	
Wholesale sales, warehousing and distribution facilities and self-storage facilities	
Self-storage facilities	
Commercial solid waste disposal facilities	

Junkyards and auto graveyards	
Recycling and reprocessing facilities	
Private industrial/commercial developments (23)	
<b>Transportation</b>	
Airports or heliports	
Commercial parking facilities	
Transit and ground transportation facilities	
Transportation facilities	
<b>Public and Utility</b>	
Pumping stations, standpipes or other water supply uses involving facilities located on or above the ground surface and towers for municipal use	P
Power transmission lines, substations, telephone exchanges, microwave towers or other public utility or communications use	C
Municipal buildings and facilities	C
Preservation of historic areas; emergency fire protection activities; bridges and public roadway	
Dams	
<b>Institutional</b>	
Religious facilities	P
Cemeteries	P
Congregate care/assisted living facilities, institutions for the handicapped, nursing or convalescent homes, group care facilities	
Hospitals, medical clinics	
Museums, libraries, and non-profit art galleries and theaters	
Academic institutions, including buildings or structures for classroom, administrative, laboratory, dormitories, art, theater, dining services, library, bookstores, athletic facilities and student recreational uses together with buildings accessory to the foregoing permitted principal buildings or structures	
Civil and social organizations	

Public community meeting and civic function buildings including auditoriums	
<b>Residential (8)</b>	
Single-family detached dwellings on individual residential lots	
Mobile homes on individual residential lots	
Two-family dwellings	
Multifamily dwellings in accordance with the standards of Article XIII	
Single-family attached dwelling in accordance with the standards of Article XIII	
Mixed single-family residential developments in accordance with the standards of Article XIII	
Mixed residential developments in accordance with the standards of Article XIII	
Mixed use structures	
Lodging houses	
Home occupations	P
Bed and breakfast establishments as a home occupation	P
In-law apartments in accordance with the standards of Article XIII	P
Single-family cluster development	
Family day care home	P
Shelters	
<b>Natural Resource</b>	
Agriculture	
Farm stands	
Forest management and timber harvesting activities in accordance with the standards of Article XIII	P
Earth material removal	
Community gardens (20)	P
Water dependent uses, e.g. docks and marinas	
Non-residential structures for educational, scientific or nature interpretation purposes, containing a maximum floor area of not more than ten thousand (10,000) square feet	

<b>Recreation</b>	
Campgrounds	
Public or private facilities for nonintensive outdoor recreation	C
Commercial outdoor recreation and drive-in theaters	
Fitness and recreational sports centers as listed under NAICS Code 713940	

Applicable footnotes:

- XII Sec. 22.  
(22) Accessory to public schools, religious facilities, multifamily or mixed residential developments and mobile home parks.

2. Space and Bulk Table:

Allowed space and bulk standards on the property shall include those standards which are presently permitted in the NCA and DR zoning district as modified and listed below, subject to the conditions contained herein.

<b>Dimensional Requirements</b>	<b>Downtown Residential DR</b>
<b>Minimum lot size with public sewer</b>	
Single family detached	
Two-family dwellings	
Single family cluster development	
Multifamily dwellings	
Veterinary facilities	
Other uses	
All permitted uses	5,000 s.f.
<b>Minimum lot size without public sewer</b>	
Single family detached	
Two-family dwellings	
Single family cluster development	
Multifamily dwellings	
Veterinary facilities	
Other uses	
<b>Minimum net lot area per du with public sewer</b>	
Two-family dwellings	
Multifamily dwellings	
All permitted uses	1,250 s.f.
<b>Minimum net lot area per du without public sewer</b>	
Two-family dwellings	
<b>Minimum frontage</b>	
Single family detached, mobile homes	
Two-family dwellings	

Single family cluster development (with multiple vehicular access)	
Multifamily dwellings (with multiple vehicular access)	
Religious facilities	
Other uses	
All permitted uses	75 ft.
<b>Minimum front setback</b>	
Single family detached, mobile homes on individual lots	
Two-family dwellings	
Single family cluster development	
Multifamily dwellings	
Religious facilities	
Other uses	20 ft. (21,22)
All permitted uses	20 ft. (21, 22)
<b>Minimum front yard</b>	
Single family detached, mobile homes on individual lots	
Two-family dwellings	
Single family cluster development	
Multifamily dwellings	
Religious facilities	
Other uses	20 ft. (21)
All permitted uses	20 ft. (21)
<b>Minimum side and rear setback</b>	
Single family detached, mobile homes on individual lots	
Two-family dwellings	
Single family cluster development	
Multifamily dwellings	
Religious facilities	
Other uses	15 ft. (21)
All permitted uses	15 ft. (21)
<b>Minimum side and rear yard</b>	
Single family detached, mobile homes on individual lots	
Two-family dwellings	
Single family cluster development	
Multifamily dwellings	
Religious facilities	
Other uses	10 ft.
All permitted uses	10 ft.
<b>Maximum height</b>	
Other permitted uses	35 ft.
<b>Ratios</b>	
Maximum lot coverage	
Maximum impervious coverage	0.75

Applicable Footnotes:

(21)

(22)

3. Notwithstanding the provisions under article XI, sections 1 through 14, district regulations, with respect to space and bulk standards for setbacks, yards, maximum lot coverage ratios, maximum impervious surface ratios, minimum open space ratios, and maximum building height, modifications of these standards may be granted pursuant to Article V, Section 3(v) and Article IX, subsections 3(9) through (11) if met and satisfied.

4. Violations of any of the conditions herein will constitute a violation of the Code.

5. The conditions described herein shall bind the proponent, its successors and assigns, and any person in possession or occupant of the subject premises, or any portion thereof, and shall inure to the benefit of and be enforceable by the City.

6. The proponent shall, at his own expense, record in the Androscoggin County Registry of Deeds a copy of the conditions within thirty (30) days following final approval of this proposal by the City. Such form of recording is to be in a form satisfactory to the City.

7. The conditions described herein shall run with the subject premises.

8. In addition to other remedies to which the City may be entitled under applicable provisions of statute or ordinance, if any party in possession of use of the subject premises fails or refuses to comply with any of the conditions imposed, any rezoning approved by the City in accordance with the conditions shall be of no force or effect. In that event, any use of the subject premises and any building or structures developed pursuant to the rezoning shall be immediately abated and brought into compliance with all applicable provisions of the Code with the same effect as if the rezoning had never occurred.

9. If any of the conditions are found by a court of competent jurisdiction to be invalid, such determination shall not invalidate any of the other conditions.

10. Any rezoning approved by the City conditionally shall be of no force or effect if the proponent fails or refuses to comply with conditions imposed.

11. Any allowed proposed use, addition, or expansion of the property deemed applicable to Article XIII, Section 2 of the Zoning and Land Use Code shall be subject to the applicable sections of Article XIII of the Zoning and Land Use Code, Development Review and Standards.

12. By submitting this proposal, the proponent agrees in writing to the conditions described herein.

---

Jamey Pittman, Proponent

On \_\_\_\_\_, 2015, personally appeared the above named Jamey Pittman and acknowledged the foregoing to be of his free act and deed.

---

Notary Public

My Commission Expires:

**MUNICIPAL QUITCLAIM DEED**  
**STATUTORY SHORT FORM**  
**TITLE 33, §775**

CITY OF LEWISTON, a body corporate and politic in Androscoggin County, Maine, with a mailing address of 27 Pine Street, Lewiston, ME 04240, for consideration paid, releases to JAMEY PITTMAN having a mailing address of 30 Taywood Road, Auburn, Maine 04210, a certain lot or parcel of land situated in the City of Lewiston, County of Androscoggin, and State of Maine, more particularly described in Exhibit A attached hereto and made a part hereof.

The said Inhabitants of the municipality of the City of Lewiston have caused this instrument to be signed in its corporate name by Edward A. Barrett, its City Administrator, duly authorized, this 7<sup>th</sup> day of July, 2016.

CITY OF LEWISTON



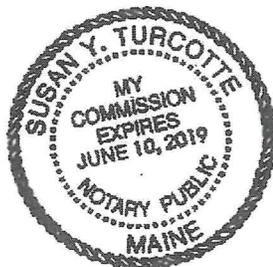
By: Edward A. Barrett  
Its: City Administrator

STATE OF MAINE  
COUNTY OF ANDROSCOGGIN

July 7, 2016

Personally appeared the above-named Edward A. Barrett, City Administrator for the City of Lewiston and acknowledged the above instrument to be his free act and deed and the free act and deed of the City of Lewiston.

Before me,



Susan Y. Turcotte  
Notary Public/Attorney-at-Law

Susan Y. Turcotte  
(Print Name)

**EXHIBIT A**

The land and buildings thereon in Lewiston, Androscoggin County, Maine, bounded and described as follows:

COMMENCING in the Southwesterly line of Webster Street at the Easterly corner of a parcel of land conveyed by the Franklin Company to Annie Ross by deed numbered 1664, dated November 14, 1924; thence in a Southeasterly direction by the said Southwester line of Webster Street about one hundred (100') feet to land conveyed by the Franklin Company to Armand Poliquin by deed numbered 1744, dated August 12, 1931; thence in a Southwesterly direction by land conveyed to the said Poliquin one hundred twenty-seven and five-tenths (127.5') feet to land conveyed by the Franklin company to Paul J. and Annette M. Fortier by deed numbered 1983, dated February 10, 1959; thence in the Northwesterly direction by land of the said Fortier and by land conveyed by the Franklin Company to Lucien J. Lebel by deed numbered 1982, dated January 9, 1959, one hundred (100') feet, more or less, to land conveyed to the said Ross; thence in a Northeasterly direction by land conveyed to the said Ross one hundred twenty-seven and five-tenths (127.5') feet to the point of beginning.

SUBJECT to the restrictions that no buildings erected thereon shall be placed nearer the line of Webster Street than twenty-five (25') feet.

NO building other than a dwelling house for occupancy of not more than two (2) families and only such garage or other outbuildings as may be appropriate for or incidental to the use of the occupants of such dwelling house shall be built on the lot hereby conveyed. No such house shall be occupied by more than two (2) families and no such house or buildings shall be built for or used in whole or in part as a store or for business purposes.

ALSO hereby conveying all rights, easements, privileges and appurtenances belonging to the premises hereinabove described.

Meaning and intending to convey the same property described in a Warranty Deed from Guildo O. Poliquin, Milio J. Poliquin, Sr., and Monita P. Collet to Jean Marie Paradis and Rita C. Paradis dated April 7, 1986, and recorded in the Androscoggin County Registry of Deeds in 1916, Page 55.

Maine Real Estate Transfer Tax Paid  
TINA M. CHOUINARD, REGISTER  
ANDROSCOGGIN COUNTY MAINE E-RECORDED



## CITY OF LEWISTON

### Department of Planning & Code Enforcement



**TO: Planning Board**  
**FROM: David Hediger, City Planner**  
**DATE: August 19, 2016**  
**RE: August 22, 2016 2016 Planning Board Agenda Item IV(b)**

**An application submitted by Sebago Technics on behalf of VIP, Inc. to create a 59 space parking lot at their facility located at 12 Lexington Street.**

Sebago Technics has submitted an application on behalf of VIP, Inc. to create a 59 space parking lot at their facility located at 12 Lexington Street. The proposed parking expansion will accommodate a new tenant that will use the existing warehouse for manufacturing and maintain the existing office space. This property of 8.36 acres is located in the Industrial (I) district in which said uses are allowed as a permitted use. The site consists of approximately 105,000 sf of warehouse and office space and 50,200 sf of impervious area.

The project is subject to the development review criteria of Article XIII, Section 4 of the Zoning and Land Use Code. The project is also subject to the City's delegated review authority for Site Law from DEP being a previously approved project exceeding 3 acres of impervious area. The application addresses both of these criteria. Staff has worked closely with the applicant and notes the following:

- The project meets all of the space and bulk standards for the I district.
- The project will disturb less than one acre of the site and create approximately 26,330 sf of new impervious area. Because the site is located in the urban impaired watershed of Hart Brook and is an amendment to a previously approved Site Law project, stormwater from the site must meet additional water quality provisions. While the site has been designed to treat the majority of stormwater, site limitations have restricted the full level of treatment required when located in an impaired watershed. Therefore, the applicant will be contributing \$7,805.79 towards the City's Compensation Fee Utilization Program (CFUP) for Hart Brook. The site improvements have been reviewed to the city's satisfaction.
  - The City of Lewiston recognizes that properties in the Hart Brook watershed may become subject to the Urban Impaired Stream standard contained in the Maine Department of Environmental Protection (DEP) Rule Chapter 500 Stormwater Management regulations. This standard requires that developers either (1) mitigate any adverse water quality impacts by improving the quality of stormwater runoff at an on-site or off-site location or (2) pay into a CFUP approved by the Maine DEP. To allow developers to pay a fee in lieu of providing off-site mitigation, the City established the Hart Brook Watershed Compensation Fund. Public Works will determine when sufficient funds have been collected to begin a project using the funds collected in the Hart Brook Watershed Compensation Fund.

- The applicant has acknowledged prior to the issuance of a certificate of occupancy, evidence of a final inspection of the storm water system shall be provided to the city by the designing engineer along with a written statement indicating that the storm water system and all site improvements have been completed in accordance with the approved plans.

Given the site's location in an impaired watershed, the review of this project is focused on city and state stormwater requirements. The applicant has addressed all of staff's concerns and has no additional comments at this time. Staff recommends approval of the proposed improvements.

**ACTION NECESSARY**

Make a motion that the application, submitted by Sebago Technics on behalf of VIP, Inc. to create a 59 space parking lot at their facility located at 12 Lexington, meets all of the necessary criteria contained in the Zoning and Land Use Code, including Article XIII, Section 4 of the Zoning and Land Use Code and that approval be granted (including, if any, specific conditions raised by the Planning Board or staff).



**AMMENDED SITE PLAN  
AND  
SITE LOCATION OF DEVELOPMENT  
APPLICATION**

To the

**CITY OF LEWISTON, MAINE**

for

**V.I.P. WAREHOUSE PARKING EXPANSION  
12 LEXINGTON STREET  
LEWISTON, MAINE**

Prepared For

**V.I.P, INC.  
12 Lexington Avenue  
Lewiston, ME 04240**

**Revised  
August 17, 2016**



August 16, 2016  
15124

Mr. David Hediger  
City Planner / Deputy Director, Planning and Code Enforcement  
City of Lewiston  
27 Pine Street  
Lewiston, Maine 04240

**Development Review Application – VIP Warehouse Parking Expansion**  
**Response to Staff Review**  
**12 Lexington Street, Lewiston, Maine**

Dear Dave:

On behalf of VIP, Inc. Sebago Technics is pleased to submit the attached documents prepared in response to staff review comments related to the Application for a Development Review for a 59 space parking lot expansion at the VIP Warehouse site at 12 Lexington Street.

The text of each comment is provided below for reference followed by our response. Revised documents are attached as noted. Included with this letter are nine copies of the complete application with 11 x 17 plans and four copies of the complete application with full sized plans. Thank you for your time and attention to this application.

**City Planner Comments dated August 11, 2016**

1. *Sheet 3, note 8: this note does not apply to this request.*

The note has been removed.

2. *Right, title and interest: please note, the deed references the need for the Lewiston Industrial Park to sign off on site improvements. This is not a City of Lewiston requirement, but the application should be aware.*

Noted the applicant is aware of the deed reference. The deed restriction has been released. Enclosed in the right title and interest section of the attached revised application is a copy of the recorded release documents.

3. *Curbing is proposed along the eastern edge of the proposed parking improvement in the area of existing gravel. This area appears to currently sheet flow toward the easterly*

*property line abutting 32 Lexington Street. The new grading and curbing suggest this will now be discharging at the of the curbed parking. Please review for any concerns of erosion or related issued with direct discharge to a localized point.*

No curbing is proposed along the easterly edge of the parking lot. Runoff from the proposed pavement sheet flows off the edge of pavement. Riprap protection is proposed where side slopes are steeper than 3H:1V.

4. *Lighting plan is referenced but not included in the application.*

A photometric plan of the proposed lighting attached.

5. *Plan references 30' mounting height for light poles. Staff recommends pole heights not exceed 20' in height.*

The pole heights will be set to 20' with shields to limit the lighting footprint outside the pavement.

6. *Project data in application, site tabulations on sheet 3, and stormwater management plan numbers for impervious area, etc. do not match. Please correct.*

The area tabulations have been revised. The correct tabulation is shown on the revised site plan. An updated stormwater plan is attached.

7. *Inspection of the storm water system shall be provided to the city by the designing engineer along with a final written statement indicating that the storm water system and all site improvements have been completed in accordance with the approved plans prior issuance of a certificate of occupancy.*

Noted, we anticipate that this will be required as a condition of approval. We have added this requirement as a note on the site plan.

#### **Public Works Department Comments Dated August 12, 2016**

1. *When was the existing gravel area constructed? Was this permitted under the expansion of the loading dock?*

The existing records of the approved development are limited. It is not clear if this was included in the original 1986 approval. The area was not addressed in the 2000 amended site plan approval.

Photographs from 1988 provided by the applicant show the area in part to be gravel surfaced in 1988. The stormwater management plan has been revised based on the assumption that the area was not permitted. Due to the elevation of the site and the proximity of wetlands in is not practicable to provide stormwater treatment for this area. The revised plan includes the

construction of a drip edge filter BMP to provide treatment for existing rooftop impervious area to meet the General Standards and the payment of a compensation fee to meet the Urban Impaired Stream compensation standards.

2. *Sheet 3 – Site Tabulations:*

- a. *The proposed impervious area site coverage calculation does not appear to be correct.*

The site area coverage calculations have been revised.

3. *Drip Edge Swale Detail:*

- a. *It appears based on the detail that the applicant is proposing to utilize the existing underdrain and foundation material rather than install a new underdrain and underdrain layer. Has the condition of this pipe and stone backfill been verified?*

The existing foundation drain was recently repaired by the applicant. The detail has been revised to include a new underdrain for the filter to address concerns related to the existing backfill material. A low permeability soil and fabric layer are proposed to minimize roofline drainage into the foundation drain. As noted in previous comments and in the revised detail notes. The design engineer will inspect the installation to confirm the backfill conditions,

4. *A detail for the outlet control structure should be added to the detail sheet.*

The stormwater management calculations and design of the outlet have been revised to model the outlet structure as a standard 4' diameter catch basin with a MDOT standard grate. (MDOT detail 604(05) Type B grate. Notes on the plans reflect this revision.

5. *Stormwater Management Plan:*

- a. *Section III. A – Was a site law modification completed for this existing gravel parking area?*

The existing records of the approved development are limited. It is not clear if this was included in the original 1986 approval. It was not addressed in the 2000 amended site plan approval.

Photographs from 1988 provided by the applicant show the area in part to be gravel surfaced in 1988. The stormwater management plan has been revised based on the assumption that the area was not permitted. Due to the elevation of the site and the proximity of wetlands in is not practicable to provide stormwater treatment for this area. The revised plan includes the construction of a drip edge filter BMP to provide treatment for existing impervious area to meet the General Standards and the payment of a compensation fee to meet the Urban Impaired stream standards.

b. *Section IX.A – 10 Year Storm Frequency is currently 4.6 in./hr for the City of Lewiston.*

The stormwater analysis has been revised to use the City Ordinance rainfall of 4.6" in place the current MDEP Chapter 500 rainfall depth of 4.3". Revised calculation and a revised stormwater management report are attached there is no significant change in the results of the analysis. The calculated peak rate of runoff is reduced in the post development condition for all storm events evaluated.

6. *Is the depth to groundwater level known? The proximity to the adjacent wetland may make and impermeable liner necessary.*

The details of the soil filter have been revised to include an impermeable liner if required. Test pits will be excavated and observed by the design engineer or his designee to determine groundwater conditions require a liner. Documentation of the test pits will be included in the engineer's inspection reports.

7. *Pretreatment with a sediment forebay or other method should be considered to prevent sediment from entering the underdrain filter.*

The existing terrain and proximity of wetlands limit the ability to include a forebay to contain the distributed flow into the soil filter. A vegetated swale and forebay is included in the upstream approach to the basin and at the downstream end of the basing were more concentrated flow may occur.

8. *A legal entity should be established with responsibility for inspecting and maintaining the underdrain filter and drip line filter.*

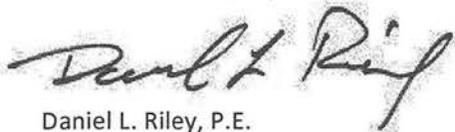
The applicant is the property owner and is responsible for maintenance of the proposed BMPs.

We request that the City review the application and schedule the application for hearing with the Planning Board for Development review and Site Location of Development Review under the City's Delegated Review Authority as soon as practicable.

Please contact me if you have any questions or require additional information.

Sincerely,

SEBAGO TECHNICS, INC.



Daniel L. Riley, P.E.  
Senior Project Manager

## Table of Contents

### Application & Title Right or Interest

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Cover Letter

Application for Development Review

- Application Form
- Checklist

Attachment 1          Development Review Standard Narrative

Attachment 2          Site Law Standard Narrative

Attachment 3          Right, Title and Interest

Attachment 4          Stormwater Management Plan

Attachment 5          Traffic Generation Memorandum

Attachment 6          Lighting Plan and Cut Sheets

Attachment 7          Site Plan Set



July 22, 2016  
15124

Mr. David Hediger  
City Planner / Deputy Director, Planning and Code Enforcement  
City of Lewiston  
27 Pine Street  
Lewiston, Maine 04240

**Development Review Application – VIP Warehouse Parking Expansion**  
**12 Lexington Street, Lewiston, Maine**

Dear Dave:

On behalf of VIP, Inc. Sebago Technics is pleased to submit the attached Application for a Development Review for a 59 space parking lot expansion at the VIP Warehouse site at 12 Lexington Street.

The proposed parking expansion will support a new tenant who will convert a portion of the warehouse to a manufacturing use and maintain the existing office use. The proposed project will disturb less than one acre of the site and will redevelop an existing gravel parking area and will create approximately 15,500 sf of new impervious area. The project plans include a new underdrained soil filter Best Management Practice to meet the applicable stormwater treatment standards.

The project site is identified as Lot 76 on Tax Map 123 and is located in the Industrial Zone. The existing development on the property is an approximately 105,000 sf office and warehouse building with 50,200 sf of existing paved and gravel areas for tractor trailer access, loading docks and parking. The initial development of the site received a Site Location of Development approval in MDEP Order #L-013158-25-A-N dated March 31, 1986 and received an amended plan approval from the City of Lewiston for a 2,000 sf loading dock expansion in June 2000.

V.I.P. operated an automobile part warehouse employing approximately 100 employees until 2012 when a change in the applicants business relocated the warehouse operations. During its peak operation parking on the site was insufficient for the number of employees.

The applicant's new tenant will utilize the building for as an office, warehouse and manufacturing facility employing between 70 and 100 employees in multiple shifts. The proposed parking expansion will be adequate for the use and will address deficiencies experienced during past operations. Most (50-70) of the employees will be relocating to the renovated building from a

nearby location approximately ¼ mile from the site resulting in no significant additional traffic associated with the new tenant. A traffic assessment is attached summarizing the traffic demand. The proposed demand does not increase traffic significantly when compared to the peak operation of the facility during the past 10 years and a traffic movement permit is not required.

In July 2016 the site received staff approval under a deminimus review for the rehabilitation of the existing parking areas in the front of the site and for the creation of new handicap parking spaces, bringing the total existing/approved parking spaces to 56. The proposed addition, will bring the total number of parking spaces on the site to 115 passenger vehicle spaces meeting the tenant's requirements.

Enclosed with this letter are the following documents:

- An application for Development Review
- Documentation of the Applicants right title and interest in the property including the current property deed to L&A Tire Company dated July 24, 1986 and a January 30, 1989 Articles of Amendment changing the Name of L&A Tire Company to V.I.P., Inc.
- Amended Site Plans of the property showing the proposed improvements and tabulating the land and development areas of the site.
- A Stormwater Management Plan
- Narratives and supporting documents addressing both the City's Development Review standards and the Applicable Site Law Standards
- Application fee.

Thank you for your time and attention to this application. We request that the City review the application and schedule the application for hearing with the Planning Board for Development review and Site Location of Development Review under the City's Delegated Review Authority as soon as practicable.

Please contact me if you have any questions or require additional information.

Sincerely,

SEBAGO TECHNICS, INC.



Daniel L. Riley, P.E.  
Senior Project Manager



# PROJECT DATA

The following information is required where applicable, in order to complete the application

## IMPERVIOUS SURFACE AREA/RATIO

Existing Total Impervious Area	<u>156,515</u>	sq. ft.
Proposed Total Paved Area	<u>13,500</u>	sq. ft.
Proposed Total Impervious Area	<u>170,015</u>	sq. ft.
Proposed Impervious Net Change	<u>13,500</u>	sq. ft.
Impervious surface ratio existing	<u>43.0</u>	% of lot area
Impervious surface ratio proposed	<u>46.7</u>	% of lot area

## BUILDING AREA/LOT COVERAGE

Existing Building Footprint	<u>105,129</u>	sq. ft.
Proposed Building Footprint	<u>105,129</u>	sq. ft.
Proposed Building Footprint Net change	<u>0</u>	sq. ft.
Existing Total Building Floor Area	<u>105,129</u>	sq. ft.
Proposed Total Building Floor Area	<u>105,129</u>	sq. ft.
Proposed Building Floor Area Net Change	<u>0</u>	sq. ft.
New Building	<u>no</u>	(yes or no)
Building Area/Lot coverage existing	<u>28.8</u>	% of lot area
Building Area/Lot coverage proposed	<u>28.8</u>	% of lot area

## ZONING

Existing	<u>Industrial</u>
Proposed, if applicable	<u>Same</u>

## LAND USE

Existing	<u>Office and warehouse</u>
Proposed	<u>Office, warehouse, manufacturing</u>

## RESIDENTIAL, IF APPLICABLE

Existing Number of Residential Units	<u>N/A</u>
Proposed Number of Residential Units	<u>                    </u>
Subdivision, Proposed Number of Lots	<u>                    </u>

## PARKING SPACES

Existing Number of Parking Spaces	<u>56</u>
Proposed Number of Parking Spaces	<u>115</u>
Required Number of Parking Spaces	<u>n/a</u>
Number of Handicapped Parking Spaces	<u>4</u>

## ESTIMATED COST OF PROJECT

## DELEGATED REVIEW AUTHORITY CHECKLIST

### SITE LOCATION OF DEVELOPMENT AND STORMWATER MANAGEMENT

Existing Impervious Area	<u>156,515</u>	sq. ft.
Proposed Disturbed Area	<u>40,000</u>	sq. ft.
Proposed Impervious Area	<u>15,500</u>	sq. ft.

- 1. If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with MDEP.*
- 2. If the proposed impervious area is greater than one acre including any impervious area created since 11/16/05, then the applicant shall apply for a MDEP Stormwater Management Permit, Chapter 500, with the City.*
- 3. If total impervious area (including structures, pavement, etc) is greater than 3 acres since 1971 but less than 7 acres, then the applicant shall apply for a Site Location of Development Permit with the City. If more than 7 acres then the application shall be made to MDEP unless determined otherwise.*
- 4. If the development is a subdivision of more than 20 acres but less than 100 acres then the applicant shall apply for a Site Location of Development Permit with the City. If more than 100 acres then the application shall be made to MDEP unless determined otherwise.*

### TRAFFIC ESTIMATE

Total traffic estimated in the peak hour-existing (Since July 1, 1997)	<u>55</u>	passenger car equivalents (PCE)
Total traffic estimated in the peak hour-proposed (Since July 1, 1997)	<u>82</u>	passenger car equivalents (PCE)

If the proposed increase in traffic exceeds 100 one-way trips in the peak hour then a traffic movement permit will be required.

### Zoning Summary

1. Property is located in the Industrial zoning district.

2. Parcel Area: 8.36 acres / \_\_\_\_\_ square feet(sf).

Regulations	<u>Required/Allowed</u>	<u>Provided</u>
Min Lot Area	<u>40,000 SF</u>	<u>/ 364,162</u>
Street Frontage	<u>100'</u>	<u>/ 1,004'</u>
Min Front Yard	<u>25'</u>	<u>/ 55'</u>
Min Rear Yard	<u>10'</u>	<u>/ 63'</u>
Min Side Yard	<u>10'</u>	<u>/ 45'</u>
Max. Building Height	<u>100'</u>	<u>/ Less than 100'</u>
Use Designation	<u>Office and warehouse / Office, warehouse and manufacturing</u>	
Parking Requirement	<u>1 space/ per square feet of floor area</u>	
Total Parking:	<u>56</u>	<u>/ 115</u>
Overlay zoning districts (if any):	<u>None</u>	<u>/ /</u>
Urban impaired stream watershed?	<u>YES If yes, watershed name <u>Hart Brook</u></u>	

## DEVELOPMENT REVIEW APPLICATION SUBMISSION

Submission shall include payment of fee and fifteen (15) complete packets containing the following materials:

1. Full size plans containing the information found in the attached sample plan checklist.
2. Application form that is completed and signed.
3. Cover letter stating the nature of the project.
4. All written submittals including evidence of right, title and interest.
5. Copy of the checklist completed for the proposal listing the material contained in the submitted application.

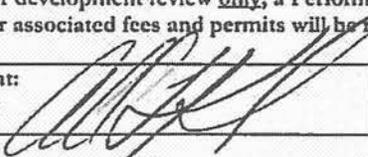
Refer to the application checklist for a detailed list of submittal requirements.

L/A's development review process and requirements have been made similar for convenience and to encourage development. Each City's ordinances are available online at their prospective websites:

Auburn: [www.auburnmaine.org](http://www.auburnmaine.org) under City Departments/ Planning and Permitting/Land Use Division/Zoning Ordinance  
Lewiston: <http://www.ci.lewiston.me.us/clerk/ordinances.htm> Refer to Appendix A of the Code of Ordinances

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, I certify that the City's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

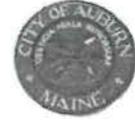
This application is for development review only; a Performance Guarantee, Inspection Fee, Building Permit Application and other associated fees and permits will be required prior to construction.

Signature of Applicant: <u>V.I.P., INC</u> By 	Date: <u>7/22/16</u>
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# Development Review Checklist

City of Auburn Planning and Permitting Department  
City of Lewiston Department of Planning and Code Enforcement



**THE FOLLOWING INFORMATION IS REQUIRED WHERE APPLICABLE TO BE SUBMITTED FOR AN APPLICATION TO BE COMPLETE**

PROJECT NAME: V.I.P Warehouse parking Expansion

PROPOSED DEVELOPMENT ADDRESS and PARCEL #: 12 Lexington Street (Map 123, Lot 76

Required Information		Check Submitted		Applicable Ordinance	
		Applicant	Staff	Lewiston	Auburn
<b>Site Plan</b>					
	Owner's Names/Address	X			
	Names of Development	X			
	Professionally Prepared Plan	X			
	Tax Map or Street/Parcel Number	X			
	Zoning of Property	X			
	Distance to Property Lines	X			
	Boundaries of Abutting land	X			
	Show Setbacks, Yards and Buffers	X			
	Airport Area of Influence (Auburn only)	N/A			
	Parking Space Calcs	N/A			
	Drive Openings/Locations	X			
	Subdivision Restrictions	N/A			
	Proposed Use	X			
	PB/BOA/Other Restrictions				
	Fire Department Review				
	Open Space/Lot Coverage	N/A			
	Lot Layout (Lewiston only)				
	Existing Building (s)	X			
	Existing Streets, etc.	X			
	Existing Driveways, etc.	X			
	Proposed Building(s)	N/A			
	Proposed Driveways	X			
<b>Landscape Plan</b>					
	Greenspace Requirements	N/A			
	Setbacks to Parking	N/A			
	Buffer Requirements	N/A			
	Street Tree Requirements	N/A			
	Screened Dumpsters	N/A			

	Additional Design Guidelines	N/A			
	Planting Schedule	N/A			
<b>Stormwater &amp; Erosion Control Plan</b>					
	Compliance w/ chapter 500	X			
	Show Existing Surface Drainage	X			
	Direction of Flow	X			
	Location of Catch Basins, etc.	X			
	Drainage Calculations	X			
	Erosion Control Measures	X			
	Maine Construction General Permit	X			
	Bonding and Inspection Fees				
	Post-Construction Stormwater Plan	X			
	Inspection/monitoring requirements				
	Third Party Inspections (Lewiston only)				
<b>Lighting Plan</b>					
	Full cut-off fixtures	N/A			
	Meets Parking Lot Requirements				
<b>Traffic Information</b>					
	Access Management	N/A			
	Signage	N/A			
	PCE - Trips in Peak Hour	N/A			
	Vehicular Movements	N/A			
	Safety Concerns	N/A			
	Pedestrian Circulation	N/A			
	Police Traffic	N/A			
	Engineering Traffic	N/A			
<b>Utility Plan</b>					
	Water	N/A			
	Adequacy of Water Supply	N/A			
	Water main extension agreement	N/A			
	Sewer	N/A			
	Available city capacity	N/A			
	Electric	N/A			
	Natural Gas	N/A			
	Cable/Phone	N/A			
<b>Natural Resources</b>					
	Shoreland Zone	N/A			
	Flood Plain	N/A			
	Wetlands or Streams	X			
	Urban Impaired Stream	X			
	Phosphorus Check	N/A			
	Aquifer/Groundwater Protection	N/A			
	Applicable State Permits	N/A			
	No Name Pond Watershed (Lewiston only)	N/A			
	Lake Auburn Watershed (Auburn	N/A			

	only)				
	Taylor Pond Watershed (Auburn only)	N/A			
<b>Right Title or Interest</b>					
	Verify	X			
	Document Existing Easements, Covenants, etc.	n/a			
<b>Technical &amp; Financial Capacity</b>					
	Cost Est./Financial Capacity				
	Performance Guarantee				
<b>State Subdivision Law</b>					
	Verify/Check	N/A			
	Covenants/Deed Restrictions	N/A			
	Offers of Conveyance to City	N/A			
	Association Documents	N/A			
	Location of Proposed Streets & Sidewalks	N/A			
	Proposed Lot Lines, etc.	N/A			
	Data to Determine Lots, etc.	N/A			
	Subdivision Lots/Blocks	N/A			
	Specified Dedication of Land	N/A			
<b>Additional Subdivision Standards</b>					
	Single-Family Cluster (Lewiston only)	N/A			
	Multi-Unit Residential Development (Lewiston only)	N/A			
	Mobile Home Parks	N/A			
	Private Commercial or Industrial Subdivisions (Lewiston only)	N/A			
	PUD (Auburn only)	N/A			
<b>A jpeg or pdf of the proposed site plan</b>		X			
<b>Final sets of the approved plans shall be submitted digitally to the City, on a CD or DVD, in AutoCAD format R 14 or greater, along with PDF images of the plans for archiving</b>					

# **Attachment 1**

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## **Development Review Narrative**

## Development Review Standards Narrative

The following information is provided to assist in the review of this project relative to the Approval Criteria found in Article 13 – Development Review Standards, Section 4 – Approval Criteria.

- a. *Utilization of the site:* The site is an existing office and warehouse facility constructed in 1986. The original approved site did not provide adequate parking for the number of employees historically utilizing the property. The proposed parking expansion will provide sufficient parking to address both historic and anticipated employee needs. The new parking area is in close proximity to the existing parking and the design minimized site disturbance and impacts. The proposed use is an allowed use in the zone. The proposed parking spaces have been sited to best utilize the parcels currently developed footprint.
- b. *Traffic Movement into and out of the development area:* The proposed project expands an existing parking on the site to accommodate the number of employees historically (within the last 5 years) employed at the site. The majority of the employees of the proposed tenant will be relocating from a building on Lexington Street within approximately ¼ mile of the site. The new tenant's employee count will be similar to the maximum number of staff employed at the site within the last 5 years. However, the new tenant will work multiple shifts distributing traffic throughout the day reducing impacts compared to the past peak use of the site.
- c. *Access to the site -* The plan maintains existing approved access points on the public roadway. The existing landscaped esplanade areas will be curbed to improve drainage conditions at the entrances and to prevent parking in esplanade areas within the right of way.
- d. *Internal vehicular circulation –* The additional parking spaces proposed have been sited to continue the existing parking pattern on the site with 90° spaces and 24-foot minimum aisle width. A bump out is proposed at the east end of the parking lot to pull into when maneuvering to a new at-grade overhead door at the east end of the building. A turn out is provided at terminus of the lot to provide an area for vehicles to back into when exiting the parking spaces at the end of the terminus of the lot.
- e. *Pedestrian circulation –* No internal pedestrian amenities are proposed as part of this application. Bituminous sidewalks exist on the south elevation of the building. A recently approved Deminimus Site Plan Amendment will allow for the construction of a new sidewalk and handicap accessible route into the building. Paved sidewalks will connect existing egress doors on the north elevation to the parking areas.

- f. *Stormwater management* – A stormwater management report is provided as Exhibit 4 of this Development Review Application submittal. The project includes the construction of a new stormwater quality Best Management Practice to provide treatment for runoff from the new impervious surfaces. The design redevelops existing impervious areas to the extent practicable to minimize impacts downstream of the project. No significant increase in runoff is anticipated upon completion of the project.
- g. *Erosion Control* – Erosion and Sedimentation control measures are depicted within the plan set in accordance with Maine DEP Best Management Practices.
- h. *Water supply* – No significant change in water usage is anticipated for this project.
- i. *Sewage Disposal* – No significant change in wastewater generation is anticipated for this project.
- j. *Utilities* – The proposed parking lot and new tenant will not require new utility services. Upgrades to the existing services, if required will be served via existing underground conduit. The proposed parking lot lighting will be served from the existing building.
- k. *Natural features* – Disturbance of the site has been minimized to the extent practicable and wooded areas abutting the proposed parking is retained screening the development from residential properties to the north.
- l. *Groundwater protection* – The proposed use of the site is not anticipated to impact groundwater.
- m. *Water and air pollution* – The proposed use of the site is not anticipated to generate significant air or water pollution.
- n. *Exterior Lighting* – Building and pole mounted fixtures are proposed within the parking lot to provide adequate lighting. Fixtures are full cutoff design and photometric plans have been prepared to minimize lighting levels at the property line.
- o. *Waste Disposal* – The building will utilize existing dumpster locations.
- p. *Lot Layout* – The development is located within an approved subdivision. There are no changes to the lot lines proposed.
- q. *Landscaping* – Landscaping is not proposed. Existing wooded vegetation will be maintained to the greatest extent possible and the adjacent to the proposed parking area. Esplanades along Lexington Street will be loamed and seeded to address impacts from former parking practices.
- r. *Shoreland relationship* – Not applicable.
- s. *Open space* – More than 50% of the lot remains as open space or undeveloped.
- t. *Technical and financial capacity* – The Applicant and Owner is V.I.P., Inc. V.I.P. and its predecessor corporation, developed and operated the site since 1986 including building expansions constructed in 2000. The owner and tenant have the technical and financial capacity to expand an existing parking facility.

- u. *Buffering* - To the greatest extent possible the existing wooded area between the developed area of the site and residential property to the north have been maintained. Approximately 280 feet of retained woodland existing between the development and the nearest residential abutter.
- v. *Compliance with district regulations – The proposed uses are allowed in the Industrial District.* The Space and Bulk Standards for the Industrial District have been observed and complied with as indicated in the Development Review Application.
- w. *Design consistent with performance standards* – The construction of the parking lot expansion shall comply with the applicable sections of the performance standards.

# **Attachment 2**

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## **Site Law Standard Narrative**

## Site Location of Development Standards Narrative

The following information is provided to assist in the City's review of Maine DEP Site Location of Development Act Standards under its Delegated review Authority.

### Section 1 Development Description

#### A. Narrative

The proposed parking expansion will support a new tenant who will convert a portion of the warehouse to a manufacturing use and maintain the existing office use. The proposed project will disturb less than one acre of the site and will redevelop an existing gravel parking area and will create approximately 15,500 sf of new impervious area. The project plans include a new underdrained soil filter Best Management Practice to meet the applicable stormwater treatment standards.

The project site is identified as Lot 76 on Tax Map 123 and is located in the Industrial Zone. The existing development on the property is an approximately 105,000 sf office and warehouse building with 50,200 sf of existing paved and gravel areas for tractor trailer access, loading docks and parking. The initial development of the site received a Site Location of Development approval in MDEP Order #L-013158-25-A-N dated March 31, 1986 and received an amended plan approval from the City of Lewiston for a 2,000 sf loading dock expansion in June 2000.

V.I.P. operated an automobile part warehouse employing approximately 100 employees until 2012 when a change in the applicants business relocated the warehouse operations. During its peak operation parking on the site was insufficient for the number of employees.

The applicant's new tenant will utilize the building for as an office, warehouse and manufacturing facility employing between 70 and 100 employees in multiple shifts. The proposed parking expansion will be adequate for the use and will address deficiencies experience during past operations. Most (50-70) of the employees will be relocating to the renovated building from a nearby location approximately ¼ mile from the site resulting in no significant additional traffic associated with the new tenant. A traffic assessment is attached summarizing the traffic demand. The proposed demand does not increase traffic significantly when compared to the peak operation of the facility during the past 10 years and a traffic movement permit is not required.

In July 2016 the site received staff approval under a de minimus review for the rehabilitation of the existing parking areas in the front of the site and for the creation of new handicap parking spaces, bringing the total existing/approved parking spaces to 56. The proposed addition, will bring the total number of parking spaces on the site to 115 passenger vehicle spaces meeting the tenant's requirements.

Less than 500 square feet of forested wetland of wetland impact is anticipated for this project. Impacts less than 4,300 sf fall below the threshold required for submittal of a Tier 1 NRPA permit application. .

The Site is connected to public water and sewer.

**B. Topographic Map**

A location map is provided on the plan set. The plans show the existing and proposed topography on the site.

**C. Construction Plan**

The applicant intends to begin construction on the project immediate upon receipt of all applicable local and state approvals, with an anticipated construction completion by November 1, 2016.

**D. Drawings**

All appropriate design drawings are contained within the attached plan set.

**Section 2**  
**Title, Right or Interest**

The record owner of the property is V.I.P., Inc. Documentation of the Applicants right title and interested in the property including the current property deed to L&A Tire Company dated July 24, 1986 and a January 30, 1989 Articles of Amendment changing the Name of L&A Tire Company to V.I.P., Inc. is included within the application package.

**Section 3**  
**Financial Capacity**

**A. Anticipated Project Costs**

It is estimated that the proposed project will cost approximately \$700,000.

**B. Financing**

This project is to be privately financed.

**Section 4**  
**Technical Ability**

**A. Prior Experience**

The Applicant and Owner is V.I.P., Inc. V.I.P. and its predecessor corporation, developed and operated the site since 1986 including building expansions constructed in 2000. The owner and tenant have the technical and financial capacity to expand an existing parking facility.

**B. Personnel**

Sebago Technics, Inc. has provided the Engineering and Permitting services in association with the project.

Resumes of key personnel can be provided upon request.

## **Section 5 Noise**

The proposed project is located in the Industrial Zone within the City of Lewiston, ME. The surrounding properties are predominately industrial and commercial facilities. The proposed expansion of the paved parking area of the site will not result in an additional noise impact to the area.

Noise during construction will be generated from vehicular traffic movement and back up alarms as required by OSHA. Warning signals and alarms are exempt under Section 375 §10.C.5 (n). Construction activities will occur during hours permitted by the City of Lewiston Ordinance and will comply with applicable State and Local standards for sound limits.

## **Section 6 Visual Quality and Scenic Character**

The proposed project will be in keeping with the visual quality and scenic character of the site and the surrounding area. The subject site is located within the industrial district of the City of Lewiston. The surrounding properties are predominately industrial and commercial facilities. The proposed pavement expansion is in keeping with the surrounding area.

Wooded areas of the site have been retained to the extent practicable to screen the site from residential properties to the north.

See the Site Plan within the attached plan set.

## **Section 7 Wildlife and Fisheries**

The Maine Department of Inland Fisheries and Wildlife (MDIF&W) was contacted to determine the presence of essential or significant wildlife habitat and fisheries habitat in or near the subject site. A copy of the MDIF&W determination will be forwarded when it is received.

## **Section 8 Historic Sites**

The Maine Historic Preservation Commission (MHPC) was contacted to determine if the proposed project would adversely impact any historic sites, historic structures, or archaeological sites in accordance with Section 106 of the National Historic Preservation Act. A copy of the MDIF&W determination will be forwarded when it is received.

**Section 9**  
**Unusual Natural Areas**

The Maine Natural Area Program was contacted to request a review of inventories for any lands that support rare and endangered plants, rare natural communities and ecosystems, and other natural communities and ecosystems in the vicinity of the subject site. A copy of the MDIF&W determination will be forwarded when it is received.

**Section 10**  
**Buffers**

**A. Visual Buffers**

No visual buffers are proposed for this project. Wooded areas of the site have been retained to maintain screening of the property from abutting residential properties to the north.

**B. Habitat Buffers**

No habitat buffers are proposed for this project.

**C. Stormwater Buffers**

No Stormwater Buffers are proposed for this project.

## Section 11 Soils

### A. Soil Survey Map and Report

A Class 'D' Medium Intensity Soil Survey published by the United States Department of Agriculture, Natural Resources Conservation Service for Androscoggin County, Maine, has been reviewed. The soil classification on the site from this source are discussed in the stormwater management report.

### B. Soil Survey Intensity Level by Development Type

The County Soil Survey is sufficient for this type of development.

### C. Geotechnical Information

Not Applicable

### D. Hydric Soils Mapping

The soil classification on the site from this source are discussed in the stormwater management report.

## **Section 12 Stormwater Management**

A stormwater management report has been prepared and is attached to the application form. The project includes stormwater treatment best management practices meeting the applicable Chapter 500 Stormwater management standards.

## **Section 13 Urban Impaired Stream Submissions**

The project is located in the Hart Brook Watershed. Hart Brook, also known as Dill Brook is identified as an Urban Impaired Stream in the Maine DEP Chapter 502 rules. Refer to the enclosed stormwater management report.

## **Section 14 Basic Standards**

### **Erosion & Sediment Control**

The project site design incorporates best management practices to minimize the potential for erosion and the transport of sediments from the construction activities. An Erosion and Sediment Control Plan has been prepared and includes provisions for inspection, maintenance, and winter erosion control measures. Specific erosion control measures and their associated construction details are included on the design plans for the proposed development.

The site contractor for the project will be responsible for the maintenance of all erosion and sedimentation control measures during the construction of the project, and the keeping of records. At a minimum, the appropriate and relevant activities for each of the erosion and sedimentation control measures will be performed on the prescribed schedule.

- A. Siltation fencing needs to be inspected every seven days or after a major rainfall event to assure that debris or sediments do not reduce the effectiveness of the system. Any breaches in the siltation fencing should be repaired immediately. Any sediment which leaves the project site must be removed immediately. Siltation fencing shall be repaired in accordance with installation instruction shown on the project plan set.
  
- B. Stabilized construction entrances shall be maintained in a condition which will prevent tacking or flowing of sediment onto public right-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 dropped washed or tracked onto public right-of-way must be removed immediately.

- C. Following the temporary and/or final seeding the contractor shall inspect the work area semimonthly until the seeding has been established. Established means a minimum 85%-90% of areas vegetated with vigorous growth. Reseeding shall be carried out by the contractor with follow-up inspections in the event of any failures until vegetation is adequately established.
- D. The contractor must install any added measures which may be necessary to control erosion/sedimentation from the site dependent on the site and actual weather conditions.
- E. Maintenance measures shall be applied as needed during the entire construction cycle. After each rainfall, snow storm or period of thawing and runoff or at least every seven days, the contractor shall perform a visual inspection of all installed erosion control measures. The contractor shall perform repairs as needed to allow continued and proper functioning of the erosion control measure. The contractor shall provide the necessary regulating agencies with written documentation describing dates of inspections and necessary follow up work to maintain erosion control measures meeting the requirements of the plan set.
- F. Care should be taken not to disturb erosion control measures during snowplowing. Any damage to erosion control measures during plowing should be repaired immediately.

The Erosion Control and Sedimentation Plan calls for permanent or temporary measures to be in place on any disturbed ground resulting from construction by use of riprap, seed, mulch, or other ground cover within one week from the time it was actively worked.

Specific measures to prevent erosion and sedimentation are noted above as part of this section and are more detailed in the Erosion and Sedimentation Control Plan. Emphasis is placed on the installation of sedimentation barriers and revegetation to minimize erosion potential from development activities during and after construction.

With incorporation of these measures, no significant impacts to off-site drainage are anticipated due to the development of the facility.

## Section 15 Groundwater

### Narrative

- Location: The subject site is not located over a significant sand and gravel aquifer. There are no high-yield bedrock wells or areas of potential bedrock recharge mapped for this site.
- Quantity: The project site is serviced by public water and sewer.

### Groundwater Protection Plan

The proposed project does not require a groundwater protection plan.

### Monitoring Plan

Not applicable: There are no monitoring wells existing or proposed as part of this project.

### Monitoring Well Installation Report

Not applicable: There are no monitoring wells proposed for this project.

## Section 16 Water Supply

### A. Off-Site Utility Company or Public Agency

Not Applicable: The existing facility is serviced by public water. The project involves the renovation an existing facility and expansion of parking. The proposed use of the facility will not significantly change historic utility demands.

### B. Subsurface Wastewater Disposal

Not applicable.

### C. Total Usage

Not Applicable: The proposed project will not result in an increase in water usage at the site.

**Section 17**  
**Wastewater Disposal**

**A. On-Site Subsurface Wastewater Disposal Systems**

Not applicable.

**B. Nitrate-Nitrogen Impact Assessment**

Not applicable.

**C. Municipal Facility or Utility Company Letter**

Not applicable: The proposed project involves the renovation of existing facilities paved parking area and will not result in a change of wastewater volume.

**D. Wastewater Discharge Information**

Not applicable. The proposed development will not discharge any liquid waste or sewage into any stream, river, pond, lake or other body of water.

**E. Storage or Treatment Lagoons**

Not applicable. The development proposal does not include any lagoons, impoundments, ponds, or similar structures for storage or treatment involving water or liquid waste other than solely stormwater.

**Section 18**  
**Solid Waste**

**A. Estimated Quantities of Solid Waste**

The proposed project will not result in an increase solid waste generated at the site. Solid waste will be managed at existing on site dumpsters.

**B. Off-Site Disposal of Construction/Demolition Debris**

Construction debris associated with construction will be the responsibility of the site contractor and will be removed of and disposed of off site at an appropriate facility.

**C. On-site Disposal of Wood Waste/Land Clearing Debris**

Not applicable. There will be no on site waste disposal.

**D. Special or Hazardous Waste**

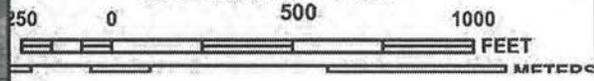
The proposed project should not result in the generation of any special or hazardous waste.

**Section 19**  
**Flooding**

The subject site is located on the Androscoggin County, Maine Flood Insurance Rate Map (FIRM), Community Panel Number 2301C0333E, Dated July 8, 2013. The development limits of the proposed project will remain outside any designated floodplain. See this section for a copy of the FIRM map.



MAP SCALE 1" = 500'



NFP  
 NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0333E

**FIRM**  
 FLOOD INSURANCE RATE MAP  
 ANDROSCOGGIN  
 COUNTY, MAINE  
 (ALL JURISDICTIONS)

PANEL 333 OF 470  
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
LEWISTON, CITY OF	230004	0333	E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



**MAP NUMBER**  
 23001C0333E  
**EFFECTIVE DATE**  
 JULY 8, 2013

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at [www.msc.fema.gov](http://www.msc.fema.gov)

**Section 20  
Blasting**

No Blasting is anticipated for the proposed project. In the event blasting is required a blasting plan will be submitted for approval.

**Section 21  
Air Emissions**

The proposed project is not anticipated to generate any significant air emission.

**Section 22  
Odors**

The proposed project will not result in the creation of any significant odors.

**Section 23  
Water Vapor**

Not applicable. The proposed project will not result in water vapor emissions.

**Section 24  
Sunlight**

The proposed project will not restrict access to direct sunlight for any structures utilizing solar energy.

**Section 25  
Notices**

**A. Evidence that Notice Sent**

Notifications of the project will be provided as part of the Planning Board review process.

**B. List of Abutters for Purposes of Notice**

<b>Map/Lot</b>	<b>Property Address</b>	<b>Owner Name/Address</b>
123/75	4 Trident Drive	Custom Metal, LLC 4 Trident Drive Lewiston, ME 04240
123/82	9 Lexington Street	Steel Service Center Inc. 1750 Lisbon Street Lewiston, ME 04240
123/59	717 Webster Street	Blanchette Moving & Storage Co. 32 Lexington Street Lewiston, ME 04240
123/83	7 Lexington Street	Richard/Norman Bilodeau & Rachel Bott 541 Lisbon Street Lewiston, ME 04240
123/73	4 Lexington Street	Pen Mor Printers, Inc P.O. Box 2003 Lewiston, ME 04241

# **Attachment 3**

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## **Right Title and Interest Documents**

12194

BOOK 1959 PAGE 0345

That LEWISTON INDUSTRIAL PARK, INC., a Maine corporation having a place of business in Lewiston, County of Androscoggin, State of Maine

(being hereinafter), for consideration paid, grants to L & A TIRE COMPANY, a Maine corporation having a place of business in said Lewiston

and

with Warranty Covenants

the land in said Lewiston, said County, State of Maine, and more particularly described as follows: 8.38 acres of land at the corner of Lexington Street and Trident Drive in said Lewiston, and described as Lots 2 and 4 on a Plan of Trident Park, Revision #1, dated November 21, 1984 and recorded in the Androscoggin County Registry of Deeds, Plan Book 31, Page 58.

The within Grantee by acceptance of this deed and as a part of the consideration hereto does hereby COVENANT and AGREE for itself, its successors and assigns, that it will hold said premises upon the following restrictions. Each of the restrictions shall be binding for a period of twenty-five (25) years from the date hereof, but during said period any or all of the said restrictions may be waived, abandoned, terminated or modified upon the written agreement of the Lewiston Industrial Park, Inc. (being the owner which originally imposed such restrictions and the owners or lessees of not less than seventy-five (75) percent of the land included within Lewiston Industrial Park, as shown on said plan, which land has been purchased and sold since June 1, 1975, the date of adoption of such restrictive covenants, and such waiver, abandonment, termination, or modification shall become effective when a copy thereof has been duly filed in the Androscoggin County Registry of Deeds.

(1) LAND USE: Said premises shall be used for industrial or commercial uses only, but the specific industrial or commercial use to be made of same must be approved in writing by the Directors of Lewiston Industrial Park, Inc. or its successors in title, such approval in no case to be unreasonably withheld. Execution and delivery of deed to within premises shall constitute conclusive proof of such approval as to the initial use thereof. Thereafter, no other use of said premises shall be made which would result in noxious emission of smoke or fumes or in excessive noise, or which would adversely affect the external appearance of said premises or any building thereon.

(2) SITE PLAN: No utility installations, no ditches, clearing, grading or construction of buildings shall be done until the Lewiston Industrial Park, Inc. approves a site plan showing location of structures, location of access roads or driveway, structure size, structure elevations and structure design, which approval shall not be unreasonably withheld. The Lewiston Industrial Park, Inc. will approve or disapprove such plan within thirty (30) days after they have received it. Approval or disapproval shall be in written form addressed to the developer stating, in the case of disapproval, the corporation's objections to such plan. Failure to approve or disapprove the site plan within thirty (30) days constitutes approval. Subsequent amendments to such plan must be approved by the Lewiston Industrial Park, Inc.

(3) MAXIMUM BUILDING AREA: No structure or aggregate of structures shall occupy more than one-third (1/3) of the lot area.

MAINE REAL ESTATE  
TRANSFER TAX PAID

(4) **BUILDING SETBACK:** No structure shall be located within seventy (70) feet of the front lot line, or within thirty (30) feet of the side and rear lot lines. For the purpose of these conditions, any street lot line shall be considered a front lot line. Building setback requirements in future in addition to conventional methods of modification may be modified by Lewiston Industrial Park, Inc. (or its successors or assigns) within the following limits for unique building requirements or for topographical reasons provided the consents of all abutting property owners be obtained in any such case; Setback with respect to front line may be reduced to fifty (50) feet and setback with respect to side and rear lot lines may be reduced to twenty (20) feet but in no case shall any setback be reduced below applicable zoning requirements of the City of Lewiston, Maine. \*

(5) **SIGNS:** Signs shall be restricted to identifying uses or articles produced or services rendered on the premises. Signs shall be limited to four (4) square feet of area for every foot of street frontage to a maximum of three hundred (300) square feet for each premises. Sign height shall be less than twenty (20) feet and no sign shall have animated display parts or flashing lights.

(6) **STORAGE:** All outdoor, above ground storage shall be screened from the street by either the building or substantially sight-imperious screen of planting or fencing. Vehicles regularly used in the operation of an approved industrial or commercial use shall not require screening.

(7) **LANDSCAPING:** Unused areas of the site shall be attractively landscaped with lawn, trees or shrubs and thereafter maintained in a well-kept condition.

(8) **PERFORMANCE STANDARDS:** All industry shall conform to minimum environmental quality standards as established by the State Department of Environmental Protection. Additionally, development shall comply with all State and municipal regulations, ordinances and laws.

(9) If, after two (2) years from the execution date of sale agreement on the property the purchaser shall not have begun in good faith the construction of an acceptable building upon said property, the Lewiston Industrial Park, Inc. shall have the option to refund the purchase price and enter into possession of said property and purchaser will reconvey any and all interest in said property by warranty deed free and clear of all encumbrances. Additionally, prior to any sale of said property within ten (10) years, the owner of such tract, its successors or assigns, shall notify the Lewiston Industrial Park, Inc. in writing, registered mail, of his intentions to sell, describing the premises to be sold and the Lewiston Industrial Park, Inc. shall have for thirty (30) days from the date of receipt of such notice, an option to purchase said property at the same price as shall have been offered for same on a bona fide basis. Failure, on the part of the Lewiston Industrial Park, Inc. within said thirty (30) day period to notify in writing, the owner, of its election to exercise said option shall free such owner to sell such premises to any person at any price. The term sale as used in this paragraph shall not include a conveyance made by the grantee herein to any member of his family or to a trust created for himself or any member of his family or to any corporation of which he or his spouse own at least twenty-five (25) percent of the outstanding stock and the term sale shall not include any mortgage given by any grantee on the premises herein conveyed, and further shall not include any foreclosure thereof by foreclosure sale, deed in lieu of foreclosure, or by any other lawful foreclosure proceeding, but after completion of any of the foregoing transaction, the above restriction will again apply.

\* NOTWITHSTANDING THE FOREGOING, setback requirement from Lexington Street may be reduced to sixty (60) feet to permit construction of an office portion (150 feet by 30 feet in dimension) of the main building on said premises in light of the topographical makeup of said premises and the unique length dimensions of said building (so as to break up building perspective for aesthetic reasons).

The grantor hereof is the only abutting owner of said premises and expressly consents to said change heraby. Blanchette Moving and Storage is not an abutting owner for purposes of these restrictions since the premises owned by it were purchased prior to imposition

of said restrictions on any part of said Trident Park and independently of same and said restrictions were not intended to apply to or benefit said Blanchette premises.

BOOK 1959-10347

IN WITNESS WHEREOF, the said LEWISTON INDUSTRIAL PARK, INC. has caused this instrument to be sealed with its corporate seal and signed in its corporate name by Bruce B. Rioux, its Treasurer thereunto duly authorized



*[Faint mirrored text from reverse side of page]*

Witnessed and attested this 22<sup>nd</sup> day of July 1986.  
LEWISTON INDUSTRIAL PARK, INC.  
by: *[Signature]*  
BRUCE B. RIOUX

The State of Maine

Androscoggin ss. July 22, 1986

Then personally appeared the above named Bruce B. Rioux, its free act and deed in said capacity, and acknowledged the foregoing instrument to be his corporation.

Before me, *[Signature]*  
Justice of the Peace - Attorney at Law - Notary Public  
GARY C. DYKE

ANDROSCOGGIN SS.  
RECEIVED JUL 24 1986  
AT 9 H. 01 M. A.M.

For Use By The Secretary of State

File No. ....

Fee Paid .....

C. B. ....

Date .....

STATE OF MAINE

ARTICLES OF AMENDMENT  
(Amendment by Shareholders  
Voting as One Class)

Pursuant to 13-A MRSA § 805 and 807, the undersigned corporation adopts these Articles of Amendment:

For Use By The Secretary of State

**FILED**

\_\_\_\_\_ 19 \_\_\_\_\_

Deputy Secretary of State

A True Copy When Attested  
By Signature

\_\_\_\_\_

Deputy Secretary of State

FIRST: All outstanding shares were entitled to vote on the following amendment as one class.

SECOND: The amendment set out in Exhibit A attached was adopted by the shareholders (Circle one)

A. at a meeting legally called and held on ~~the~~ January 30, 19 89.

THIRD: Shares outstanding and entitled to vote and shares voted for and against said amendment were:

Number of Shares Outstanding and Entitled to Vote	NUMBER Voted For	NUMBER Voted Against
360	360	0

FOURTH: If such amendment provides for exchange, reclassification or cancellation of issued shares, the manner in which this shall be effected is contained in Exhibit B attached if it is not set forth in the amendment itself.

FIFTH: (Complete if Exhibits do not give this information.) If the amendment changes the number or par values of authorized shares, the number of shares the corporation has authority to issue thereafter, is as follows:

Class	Series (If Any)	Number of Shares	Par Value (If Any)
-------	-----------------	------------------	--------------------

N/A

The aggregate par value of all such shares (of all classes and series) having par value is \$ N/A.  
The total number of all such shares (of all classes and series) without par value is N/A shares.

SIXTH: Address of the registered office in Maine: 54 Pine Street, Lewiston, Maine 04240  
(street, city and zip code)

**MUST BE COMPLETED FOR VOTE OF SHAREHOLDERS**

I certify that I have custody of the minutes showing the above action by the shareholders.

[Signature]  
(signature of clerk, secretary or assistant secretary)

L & A Tire Company  
(Name of Corporation - Typed or Printed)

By\* [Signature]  
(signature)

Paul A. Cote, Clerk  
(type or print name and capacity)

By\* \_\_\_\_\_  
(signature)

Dated: January 30, 1989

\_\_\_\_\_  
(type or print name and capacity)

\*In addition to any certification of custody of minutes this document **MUST** be signed by (1) the Clerk OR (2) the President or a vice-president AND the Secretary, an assistant secretary or other officer the bylaws designate as second certifying officer OR (3) if no such officers, a majority of the directors or such directors designated by a majority of directors then in office OR (4) if no directors, the holders, or such of them designated by the holders, of record of a majority of all outstanding shares entitled to vote thereon OR (5) the holders of all outstanding shares.

NOTE: This form should not be used if any class of shares is entitled to vote as a separate class for any of the reasons set out in §806, or because the articles so provide. For vote necessary for adoption see §805.

STATE OF MAINE

ANDROSCOGGIN, SS.

JANUARY 30, 1989

SPECIAL MEETING OF STOCKHOLDERS  
OF  
L & A TIRE COMPANY

A Special Meeting of Stockholders of L & A Tire Company was this day held at the offices of Isaacson & Raymond, 75 Park Street, Lewiston, Maine, at 10:30 in the forenoon.

The following Stockholders were present:

THOMAS O. AUGER  
MILDRED P. AUGER  
THOMAS J. AUGER  
CAROL AUGER SWEENEY  
NANCY AUGER HUNT

being all of the Stockholders and representing all of the stock issued and outstanding.

The meeting was called to order by Thomas O. Auger.

A Waiver of Notice of the meeting, signed by all of the Stockholders, was presented and ordered to be placed on file.

The Stockholders acknowledged that they had received written notice setting forth the amendment of the Articles of Incorporation of this Corporation proposed by the Board of Directors this date, wherein its corporate name would be changed from L & A Tire Company to V.I.P., Inc. The President, Thomas O. Auger, addressed the Stockholders briefly and reported on the change of corporate name proposed by the Board of Directors earlier in the morning. A brief discussion ensued, whereupon and upon motion duly made and seconded, it was unanimously

VOTED: That this Corporation amend its Articles of

EXHIBIT A

Incorporation by changing its name from L & A Tire Company to  
V.I.P., Inc.

There being no further business to come before the  
meeting,

On motion, it was

VOTED: To adjourn.

A TRUE RECORD

ATTEST: /S/ PAUL A. COTE  
CLERK

EXHIBIT A

ISAACSON & RAYMOND

ATTORNEYS AND COUNSELORS AT LAW

July 21, 2016

John Holden, Executive Director  
Lewiston Development Corporation  
P.O. Box 1188  
Lewiston, ME 04243-1188

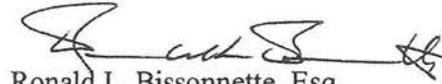
RE: Termination of Lewiston Industrial Park Covenants

Dear John:

Please find enclosed herewith the original Termination of Lewiston Industrial Park Covenants which was recorded on July 14, 2016 in the Androscoggin County Registry of Deeds in Book 9407, Page 321.

If you have any questions regarding the enclosed, please feel free to contact me. Thank you.

Sincerely,



Ronald L. Bissonnette, Esq.  
ISAACSON & RAYMOND, P.A.

RLB/eao  
Enclosure  
c: Michael L. Lane, Esq. (via e-mail w/enc.)

df\F:\Beth\CLIENTS\LDC\VIP 25 Forrestal\Letter toJohn Holden w.rec'd Termination.docx

RONALD L. BISSONNETTE

75 PARK STREET P.O. BOX 891 LEWISTON, ME 04243-0891  
TELEPHONE (207)795-5000 FAX (207)795-5014  
WWW.ISAACSONRAYMOND.COM  
E-MAIL: RBISSONNETTE@ISAACSONRAYMOND.COM

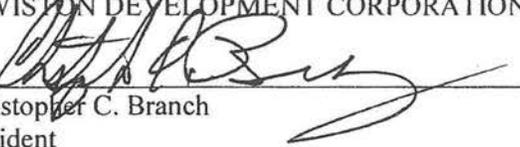
TERMINATION OF LEWISTON INDUSTRIAL PARK COVENANTS

LEWISTON DEVELOPMENT CORPORATION, a Maine corporation, successor by merger to LEWISTON INDUSTRIAL PARK, INC., and the undersigned, together being the owners or lessees of lots in the Lewiston Industrial Park comprising not less than seventy-five percent (75%) of the area covered by the Lewiston Industrial Park Covenants (the "Covenants"), a copy of which is annexed hereto, said lots having been conveyed or held subject to the Covenants, do hereby terminate the Covenants.

This Agreement may be signed on any number of counterparts with the same effect as if the signatures were on the same instrument.

Executed as of the 8<sup>th</sup> day of July, 2016, by Lewiston Development Corporation by its duly authorized officer.

LEWISTON DEVELOPMENT CORPORATION

By:   
Christopher C. Branch  
President

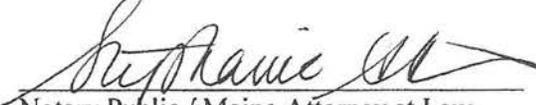
STATE OF MAINE  
COUNTY OF ANDROSCOGGIN

July 8, 2016

Personally appeared the above named Christopher C. Branch and acknowledged the foregoing to be his free act and deed in said capacity and the free act and deed of Lewiston Development Corporation,

Before me,

**SEAL**



Notary Public / ~~Maine Attorney at Law~~

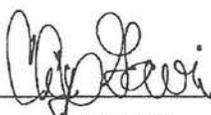
Print Name: \_\_\_\_\_

STEPHANIE A. LEWIS  
Notary Public, Maine

My Commission Expires December 15, 2019

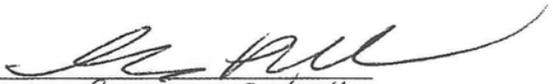
OWNER OF 51 WESTMINSTER STREET  
AND 61 WESTMINSTER

UNIVERSITY OF MAINE SYSTEM

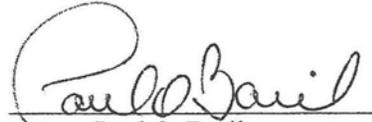
BY:  \_\_\_\_\_  
Name: ME Gavin  
Its: Chief General Services Officer

OWNER OF 75 WESTMINSTER STREET

AUBURN PLAZA, INC.

BY:   
Name: George Schelt  
Its: member

OWNER OF 66 WESTMINSTER STREET

  
Paul O. Baril

4-11-16

OWNER OF 29 LEXINGTON STREET

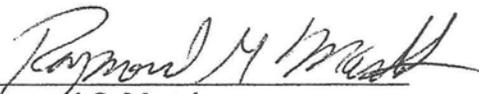
SENIOR OPERATIONS LLC

BY: Rick Jelley  
Name: Rick Tellez  
Its: CFO - SF Pathway

APR 25 2016

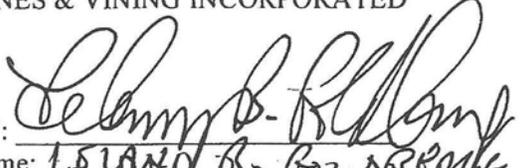
APR 20 2016

OWNER OF 34 LEXINGTON STREET

  
Raymond G. Martel

OWNER OF 765 WEBSTER STREET

JONES & VINING INCORPORATED

BY: 

Name: LEONARD B. BOARDMAN

Its: CEO

OWNER OF 14 FORRESTAL STREET

APR 20 2016

HIGH ST. ASSOCIATES

BY:   
Name: DD SAMAY MITEL  
Its: Partner

APR 20 2016

OWNER OF 20 FORRESTAL STREET

MID MAINE HOLDINGS LLC

BY: DP Walck  
Name: DAVID G. WALCK  
Its: CHAIRMAN

APR 20 2016

OWNER OF 26 FORRESTAL STREET

RAINBOW FEDERAL CREDIT UNION

  
~~James E. Macdonald~~  
Mark PAUL Sanson  
CEO-Rainbow FCU

OWNER OF 25 FORRESTAL STREET

LEWISTON INDUSTRIAL PARK, INC.

BY: 

Name: Christopher C. Branch

Its: President

OWNER OF 33 SARATOGA STREET,  
31 SARATOGA STREET, AND  
21 SARATOGA STREET

RECORDED  
JUN 06 2016

SAZERAC COMPANY

BY: *Kent J. Roussard*  
Name: KENT J. ROUSSARD  
Its: Secretary and Treasurer

APR 20 2016

OWNER OF 9 SARATOGA STREET

AUCOCISCO REAL ESTATE LLC

BY:   
Name: Therese Manton  
Its: President

OWNER OF 9 LEXINGTON STREET

STEEL SERVICE CENTER, INC.

BY: Robert A. Roy  
Name: Robert A. Roy  
Its: President

Steel Service Center Inc  
is now RARSSC. Same  
tax ID but name change only

APR 25 2016

EXHIBIT A

LEWISTON INDUSTRIAL PARK COVENANTS

\*\*\*\*\*

The within Grantee by acceptance of this deed and as a part of the consideration hereto does hereby COVENANT and AGREE for itself, its successors and assigns, that it will hold said premises upon the following conditions. Each of the conditions shall be binding in perpetuity; provided, however, that after twenty-five (25) years from the date hereof any one or all of them may be waived, abandoned, terminated or modified upon the written agreement of the Lewiston Industrial Park, Inc. and the owners or lessees of not less than seventy-five (75) percent of the area covered thereby, and such waiver, abandonment, termination, or modification shall become effective when a copy thereof has been duly filed in the Androscoggin County Registry of Deeds.

1) Land Use

Said premises shall be used for industrial or commercial uses only, but the specific industrial or commercial use to be made of same must be approved in writing by the directors of Lewiston Industrial Park, Inc. or its successor in title. Execution and delivery of deed to within premises shall constitute conclusive proof of such approval as to the initial use thereof. Thereafter, in the event of proposed change of specific use, written application shall be made to the directors of said Lewiston Industrial Park, Inc., or its successor in title for such written approval which shall not be unreasonably withheld. Employee density per acre of land shall not be less than 5 people.

2) Site Plan

No utility installations, no ditching, clearing, grading or construction of buildings shall be done until the Lewiston Industrial Park, Inc. approves a site plan showing location of structures, location of access roads or driveway, structure size, structure elevations, and structure design, which approval shall not be unreasonably withheld. The Lewiston Industrial Park, Inc. will approve or disapprove such plan within thirty (30) days after they have received it. Approval or disapproval shall be in written form addressed to the developer stating, in the case of disapproval, the Corporation's objections to such plan. Failure to approve or disapprove the site plan within thirty (30) days constitute approval. Subsequent amendments to such plan must be approved by the Lewiston Industrial Park, Inc.

3) Maximum Building Area

No structure or aggregate of structures shall occupy more than one third (1/3) of the lot area.

4) Building Setback

No structure shall be located within seventy-five (75) feet of the front lot line, or within thirty (30) feet of the side and rear lot lines. For the purpose of these conditions, any street lot line shall be considered a front lot line.

5) Signs

Signs shall be restricted to identifying uses or articles produced or services rendered on the premises. Signs shall be limited to four (4) square feet of area for every foot of street frontage to a maximum of three hundred (300) square feet for each premises. Sign height shall be less than twenty (20) feet, and no sign shall have animated display parts or flashing lights.

6) Storage

All outdoor, above-ground storage shall be screened from the street by either the building or a substantially sight-impervious screen of planting or fencing. Vehicles regularly used in the operation of an approved industrial or commercial use shall not require screening.

7) Landscaping

Unused areas of the site shall be attractively landscaped with lawn, trees, or shrubs and thereafter maintained in a well-kept condition.

8) Performance Standards

All industry shall conform to minimum environmental quality standards as established by the State Department of Environmental Protection. Additionally, development shall comply with all State and municipal regulations, ordinances, and laws.

- 9) If, after two (2) years from the execution date of sale agreement on the property, the purchaser shall not have begun in good faith the construction of an acceptable building upon said property, the Lewiston Industrial Park, Inc. shall have the option to refund the purchase price and enter into possession of said property and purchaser will reconvey any and all interest in said property by warranty deed free and clear of all encumbrances. Additionally, prior to any sale of said property, the owner of such tract, his heirs or its successors or assigns, shall notify the Lewiston Industrial Park, Inc. in writing, registered mail, of his intentions to sell, describing the premise to be sold, and the Lewiston Industrial Park, Inc. shall have for sixty (60) days from the date of receipt of such notice, an option to purchase said property at the same price as shall have been offered for same on a bona fide basis. Failure, on the part of the Lewiston Industrial Park, Inc. within said sixty (60) day period to notify in writing, the owner, of it election to exercise said option shall free such owner to sell such premises to any person at any price.

\*\*\*\*\*

(Revised January 30, 1974)

ANDROSCOGGIN COUNTY  
TINA M CHOUINARD  
REGISTER OF DEEDS

# **Attachment 4**

---

## **Stormwater Management Plan**



# **STORMWATER MANAGEMENT PLAN**

To

**City of Lewiston**

For

**V.I.P. WAREHOUSE PARKING EXPANSION  
12 LEXINGTON STREET  
LEWISTON, MAINE**

Prepared For

**V.I.P, INC.  
12 Lexington Avenue  
Lewiston, ME 04240**

**August 16, 2016**

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## EXECUTIVE SUMMARY

This stormwater management plan has been prepared to address the expansion of the parking area at 12 Lexington Street in Lewiston Maine and is identified as Lot 76 on Tax Map 123 and is located in the Industrial Zone. The existing development on the property is an approximately 105,000 sf office and warehouse building with 38,955 sf of existing pavement, 12,430 sf of existing gravel areas for tractor trailer access, loading docks and parking. This gravel area does not appear on approved plans on record with the City of Lewiston. Approximately 8,630 sf of this gravel area will be paved and is considered new impervious area for the purpose of this stormwater management plan. The remaining 3,800 sf of the existing gravel in the project area is to be removed and revegetated.

The initial development of the site received a Site Location of Development approval in MDEP Order #L-013158-25-A-N dated March 31, 1986 and received an amended plan approval from the City of Lewiston for a 2,000 sf loading dock expansion in June 2000.

The proposed parking expansion will support a new tenant who will convert a portion of the warehouse to a manufacturing use and maintain the existing office use. The proposed project will disturb less than one acre of the site and will redevelop an existing gravel parking area and will create approximately 26,330 sf of new paved area and 9,000 sf of disturbed landscaped area for a total of 35,330 sf of developed area.

As part of the stormwater management for the project a proposed underdrained filter basin will be installed to treat the runoff from the portions of the project's new impervious surfaces, in accordance with the City of Lewiston's Land Use Ordinance requirements and the Maine Department of Environmental Protection (MDEP) Chapter 500 stormwater management rules. The plan also includes adding treatment for runoff from existing rooftop runoff to meet the Chapter 500 General Standards.

The project is located in the Hart Brook Watershed and as a Site Location of Development project, it is required to meet the MDEP Chapter 502 Urban Impaired Stream Standards. The City of Lewiston has developed both a Watershed Management plan and an Urban Impaired Stream Compensation Fee Utilization Plan (CFUP) for the watershed. This plan proposes to meet the Urban Impaired Stream compensation/mitigation requirements through payment of a compensation fee calculated in accordance with the MDEP Chapter 501 Rules.

## STORMWATER MANAGEMENT PLAN

### V.I.P. Warehouse Parking Expansion 12 Lexington Street Lewiston, Maine

#### I. Introduction

This Stormwater Management Plan has been prepared to address the potential impacts associated with this project due to the proposed modification of stormwater runoff characteristics. The stormwater management controls that are outlined in this plan have been designed to best suit the proposed development and to comply with applicable regulatory requirements.

#### II. Existing Conditions

V.I.P, Inc.'s development on the property is an approximately 105,000 sf office and warehouse building with 38,955 of existing paved and 12,430 sf of gravel areas for tractor trailer access, loading docks and parking. The 12,430 sf of gravel parking is considered a new impervious area. 8,630 sf of this area will be paved and 3,800 sf will be removed.

##### A. Land Cover

The project site approximately 48% developed with paved parking, gravel parking and a warehouse building and landscaping. The expanded parking areas and landscaping areas will result in an increase of impervious land cover. If general existing drainage patterns are maintained.

##### B. Site Topography

Slopes on the site are moderate, with slopes ranging from 2% to 8% within the existing parking areas. Generally draining to the east. Rooftop runoff from the rear of the warehouse building runs to a riprap swale along the rear building drainage to a wetland area the east.

C. Surface Water Features

Wetlands occupy areas north and east of the project area. These wetlands are tributary to Hart Brook and Urban impaired Stream.

D. Soils

Soil characteristics were obtained from the Soil Conservation Service (SCS) Medium Intensity Soil Survey of Androscoggin County. Soils identified on the site (or within close proximity) are identified below in Table 1. For stormwater modeling purposes we have divided the site into sections according to the appropriate Hydrologic Soil Group (HSG) of either "A" or "D" for both the Pre and Post development models.

Soil Type	Symbol	HSG
Charlton fine sandy loam	CfC2	A
Charlton very stony fine	ChB	A
Charlton very stony fine	ChC	A
Scantic silt loam	ScA	D

The hydrologic soil group (HSG) designation is based on a rating of the relative permeability of a soil, with group "A" being extremely permeable such as coarse sand, to group "D" having low permeability such as clay.

E. Historic Flooding

There are no apparent flooding problems associated with this site. The Federal Emergency Management Agency does not identify a flood hazard area on the project site (FEMA Community Panel Number 2301C0333E, dated July 8, 2013 Androscoggin County Panel 333 of 470).

III. Proposed Development

The area of anticipated site improvements is developed with paved parking lots, gravel parking areas, a riprap lined drip edge swale and lawn areas. The project will expand the footprint of the existing paved parking area abutting the east and north side of the existing building, encompassing areas that are currently lawn, gravel or wooded areas.

The project will collect runoff from the proposed paved areas and direct it to a proposed grass lined soil filter Best Management Practice and discharge to adjacent wetlands generally maintaining existing runoff patterns.

The existing drip edge swale along the abutting roofline will be reconfigured in one of two alternatives based the selected Urban Impaired Stream compensation/mitigation alternatives. If payment of a compensation fee is made, the swale will be reconstructed to match its existing condition. If mitigation is selected, the swale will be reconstructed as a dripline filter BMP providing treatment to the roof runoff.

The project will generally maintain the existing drainage patterns of the site.

**A. Alterations to Land Cover**

The development will increase the site impervious area coverage by approximately 24,130 square feet, (0.55 acres). This net increase in impervious area is a result of various alterations of land cover including pervious landscape/lawn and wooded area converted to impervious paved surface area.

Approximately 33,130 sf (0.76 acre) of land will be disturbed during the construction of this development.

The project will include the paving of approximately 8,630 sf (0.2 ac) of existing gravel parking areas. This work is not subject to the Chapter 500 General Standards or Urban Impaired Stream Standards. Approximately 3,800 sf of existing gravel parking surface will be removed and revegetated.

**IV. Downstream Ponds and Waterbodies**

The site is tributary to Hart Brook, and Urban Impaired Stream, The City of Lewiston has developed a Watershed Management Plan and an Urban Impaired Stream Compensation Fee Utilization Plan (CFUP) in place for Hart Brook]

**V. Regulatory Requirements**

**A. City of Lewiston, Maine**

Article XIII, Appendix A, paragraph 4f of the City of Lewiston Code of Ordinances discusses the performance standards required for Stormwater Management for new development. As stated in this section, "All projects including one (1) acre or more of disturbed land shall meet the requirements of the Maine Stormwater Management Law, 38 M.R.S.A. Section 420-D, or its successor, and regulations promulgated there under, as amended." This ultimately refers to MDEP Chapter 500 regulations. These requirements are outlined below in Section B.

The existing development received a MDEP Site Location Permit L-013158-25-A-N dated March 31, 1986.

B. Maine Department of Environmental Protection (MDEP)

MDEP Rule Chapters 500 and 502 describe stormwater management requirements for new development projects. These rules describe performance standards divided into five major categories: Basic Standards, General Standards, Phosphorous Standards, Urban Impaired Stream Standards, and Flooding Standards. The following sections describe how this project will address these stormwater management performance standards.

Basic Standards: A project must meet basic standards if it disturbs an area greater than one (1) acre. As this development has an existing Site Location Permit, it is required to meet the basic standards. These standards include various erosion and sedimentation controls, inspection and maintenance procedures, and general housekeeping requirements. These performance standards have been addressed in two separate reports entitled "Erosion and Sedimentation Control Plan" and "Inspection, Maintenance, and Housekeeping Plan" (Attachments A and B respectively). Please refer to these plans for more detailed information.

General Standards: A project is subject to the general standards if it results in the creation of one (1) or more acres of impervious area or developed areas greater than five (5) acres. Though this project will create only 13,500 square feet of new impervious area it is subject to general standards as it is a modification of an existing Site Location Permit.

The General standards require that a minimum of 90% to 95% of all impervious areas and at least 80% of the proposed developed areas are designed to be tributary to stormwater BMPs. This standard can be reduced for redeveloped portions of the project. Standard BMPs have been defined by the MDEP and are described thoroughly in their publication Stormwater Management for Maine: Best Management Practices manual. The section of this Stormwater Management plan titled "Stormwater Management BMPs" describes the BMPs to be utilized on this project and specific design information for each BMP. Because this is an existing site that was permitted prior to the current water quality standards the project is required to provide stormwater quality treatment for the new impervious and developed areas area associated with the project.

Phosphorous Standards: Stormwater from this project is not tributary to a lake watershed and, therefore, is not subject to the phosphorus standards.

Urban Impaired Stream Standards: Stormwater from is tributary to an "Urban Impaired Stream" as defined by MDEP Chapter 502 and, as a Site Law Amendment project is subject to the urban impaired stream standards.

The urban Impaired Stream Standards require projects to mitigate the impact of existing

impervious areas either through the payment of compensation fees or through mitigation credits for providing stormwater quality treatment for existing, un-treated development as outlined in the MDEP Chapter 501 Rules for Stormwater Management Compensation Fees and Mitigation Credit.

Flooding Standards: The MDEP requires that projects creating impervious areas greater than three (3) acres, or developed areas greater than twenty (20) acres, address various flooding standards. As this project is a modification of an existing Site Location Permit the project is required to meet the flooding standard. The flooding standard requires that the stormwater management system for a project must detain, retain, or result in the infiltration of stormwater from the 24-hour storms of the 2-year, 10-year, and 25-year frequencies such that the peak flows of stormwater from the project site do not exceed the peak flows of stormwater prior to undertaking the project.

## **VI. Stormwater Management Best Management Practices (BMPs)**

The project proposes two (2) BMP to be utilized on the project to meet the Treatment standards. These BMPs have been designed based upon the criteria in the current edition of the MDEP publication, "Stormwater Management for Maine."

Due to the location of the existing parking and building adjacent to a wetland it is not practicable to provide treatment for 95% of the proposed parking impervious areas. In accordance with MDEP Chapter 500 Paragraph 4.C.(2)(a)(ii) the treatment level for the proposed impervious area has been reduced to 95.3%. In accordance with Paragraph 4.C.(2)(a)(ii), the treatment depth of runoff has been increased to 1.25" in the soil filter.

### **A. Underdrained Filtration Basin**

A delineation of the watershed area associated with the underdrain filtration basin is shown on the attached Post-Development watershed plan.

The MDEP General Standards require that a soil filter must detain and filter a runoff volume of at least 1.0" over the tributary impervious areas and 0.4" of runoff from the tributary non-impervious developed area. Water Quality Volume Calculations are presented in Attachment B

The underdrained filtration basin is designed to store water within the pond embankment area and slowly release the treatment volume through the filter media.

### **B. Dripline Filter Swale**

A dripline filter swale with a 3' bottom width and comprised of 12" of riprap over 6" of sand located over the existing building's foundation drain is proposed to provide treatment for approximately 21,600 sf or rooftop runoff.

## **VII. Stormwater Quality (General Standards) Analysis**

General Standard stormwater quality treatment calculations are presented in Attachment B. The proposed development includes approximately 0.55 acres of new paved parking and 0.19 acres of new landscaped area subject to the Chapter 500 General Standards.

The proposed design provides treatment to 150.3% of the proposed impervious area and 126% of the proposed developed area of the site requiring treatment. This is achieved by providing treatment for portions of the new paved areas in an underdrained soil filter BMP and by the installation of a drip edge drain to treat runoff from a portion the existing building's rooftop runoff along the edge of the proposed parking lot

Due to the location of the existing parking and building adjacent to a wetland it is not practicable to provide treatment for 95% of the proposed parking impervious areas. In accordance with MDEP Chapter 500 Paragraph 4.C.(2)(a)(ii) the treatment level for the proposed impervious area has been reduced to 90.3%. A corresponding increase in the treatment depth of runoff to 1.25" in the soil filter has been provided to meet the standard.

## **VIII. Urban Impaired Stream (Chapter 501) Analysis**

The new impervious and landscaped areas which are subject to the General Standards are also subject to the MDEP Chapter 501 Urban Impaired Stream Standards. These standards may be met either through payment of a compensation fee into an approved CFUP, or through mitigation activities to treat runoff from existing on site or offsite development.

Compensation fees and mitigation credit calculations are included in Attachment C.

### **A. Compensation Fee**

Payment of a compensation fee of \$7,805.79 calculated in accordance with MDEP Chapter 501 Section 2.A. Table 1.

B. Mitigation Credits

The proposed development requires 0.31 mitigation credits calculated in accordance with MDEP Chapter 501 Section 3.A. Table 1.

Mitigation through credits is not proposed.

IX. Peak Flow Analysis

The City of Lewiston of Ordinances requires that stormwater infrastructure to be designed to manage the 25-year design storm.” The MDEP flooding standard requires that infrastructure manage the 2-year, 10-year, and 25-year design storms. This section has been prepared to discuss the proposed modifications to peak flow rates as a result of the development and proposed BMPs.

A. Modeling Technique

The SCS TR-20 methodology was used to analyze pre-development and post-development conditions. A 24-hour, SCS Type III storm distribution for the 2, 10, and 25-year storm frequencies were used for analysis.

Land use cover, watershed delineations, flow paths, and hydrologic soils data were obtained using the following sources:

1. Topographic survey with 1’ contour intervals
2. State of Maine, Office of GIS data
3. Aerial photography
4. Field reconnaissance
5. Soil Conservation Service Medium Intensity Soil Survey for Androscoggin County.

The 24-hour rainfall values utilized in the hydrologic model are as follows.

Storm Frequency Precipitation (in./24 hr)	
2-year	3.0
10-year	4.6
25-year	5.4

B. Points of Interest

One Watershed Study Points (SP-1) has been established to evaluate pre-development and post- development runoff conditions.

Study Point SP-1 represents the location where stormwater runoff from developed area of the site discharges offsite across the easterly property line.

Subcatchments 1, 2, 3, 4, 5 (pre-development) and Subcatchments 10, 20, 30, 31, 40, 50 (post-development) are tributary to this Study Point in the model.

C. Pre and Post Development Analysis

The watershed areas and times of concentration of the post-development watersheds vary from the existing conditions based on the proposed site development and grading. Table-1 summarizes the results of the hydrologic analysis of the project under pre-development and post-development conditions.

Study Point	2-Year Storm		10-Year Storm		25-Year Storm	
	Pre (cfs)	Post (cfs)	Pre (cfs)	Post (cfs)	Pre (cfs)	Post (cfs)
SP1	2.96	2.90	7.18	6.91	10.33	9.90

D. Comparison

The results of the stormwater modeling at Study Points SP-1 indicates that the peak rate of runoff in the developed condition will be less than or equal to the pre-developed condition for the 2-year, 10-year, and 25-year storm events.

The project's water quality requirements are met through treating the runoff from an area of impervious area which exceeds the new impervious area for the project.

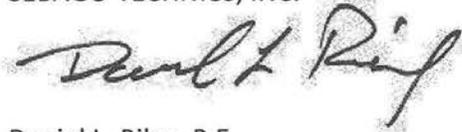
VIII. Conclusions

The proposed development has been designed to manage stormwater runoff through Best Management Practices approved by the MDEP. Post-development peak flow rates has been maintained or reduced from their corresponding pre-development levels. The project Meets the Chapter 500 General Standards for the new impervious and developed areas proposed and meets the Chapter 501 Urban impaired stream Standards through mitigation credits or payment of compensation fees.

Additionally, erosion and sedimentation controls along with associated maintenance and housekeeping methodology have been outlined meeting the Chapter 500 Basic Standards to prevent unreasonable impacts on the site and to the surrounding environment.

Prepared by,

SEBAGO TECHNICS, INC.

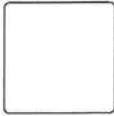


Daniel L. Riley, P.E.  
Senior Project Engineer



08-17-2016

DLR  
August 16, 2016

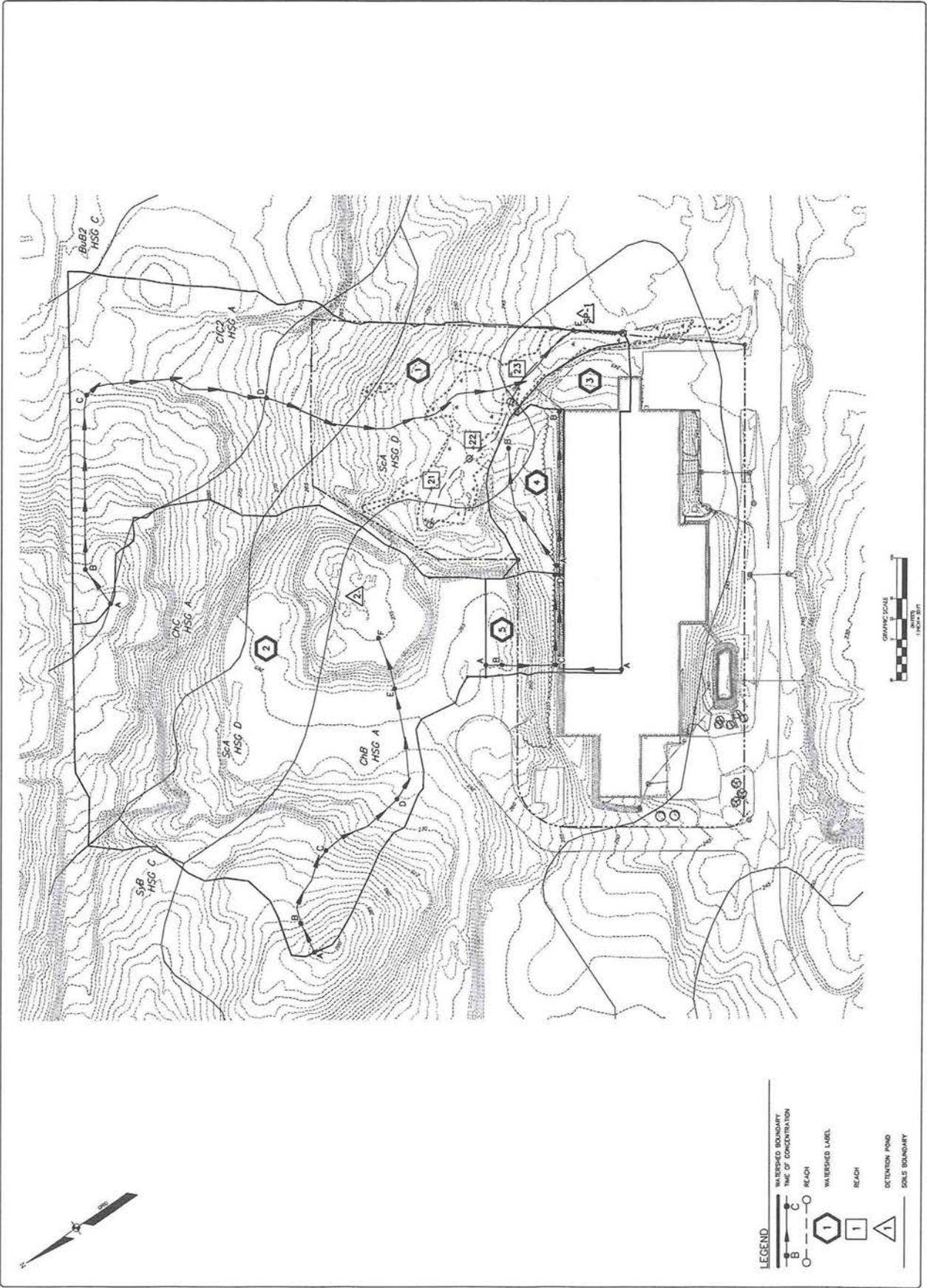


DESIGNED	CHECKED	DATE

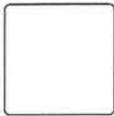
SEBAGO  
 T R E C H N I C S  
 75 JOHN BOWSER BL.  
 LEWISTON, ME 04240  
 TEL: 207-253-5454  
 FAX: 207-253-5454  
 WWW.SEBAGOTECHNICS.COM

15124SWP - PRE  
 V.P. WAREHOUSE PARKING EXPANSION  
 12 LEWISTON STREET  
 LEWISTON, MAINE  
 V.P. INC.  
 LEWISTON, MAINE 04240

PROJECT NO. 15124  
 SCALE 1" = 50'  
 SHEET 1 OF 2



15124SWP.dwg 1/24/18  
 LEWISTON, MAINE 04240  
 12 LEWISTON STREET  
 LEWISTON, MAINE  
 V.P. INC.  
 LEWISTON, MAINE 04240  
 PROJECT NO. 15124  
 SCALE 1" = 50'  
 SHEET 1 OF 2



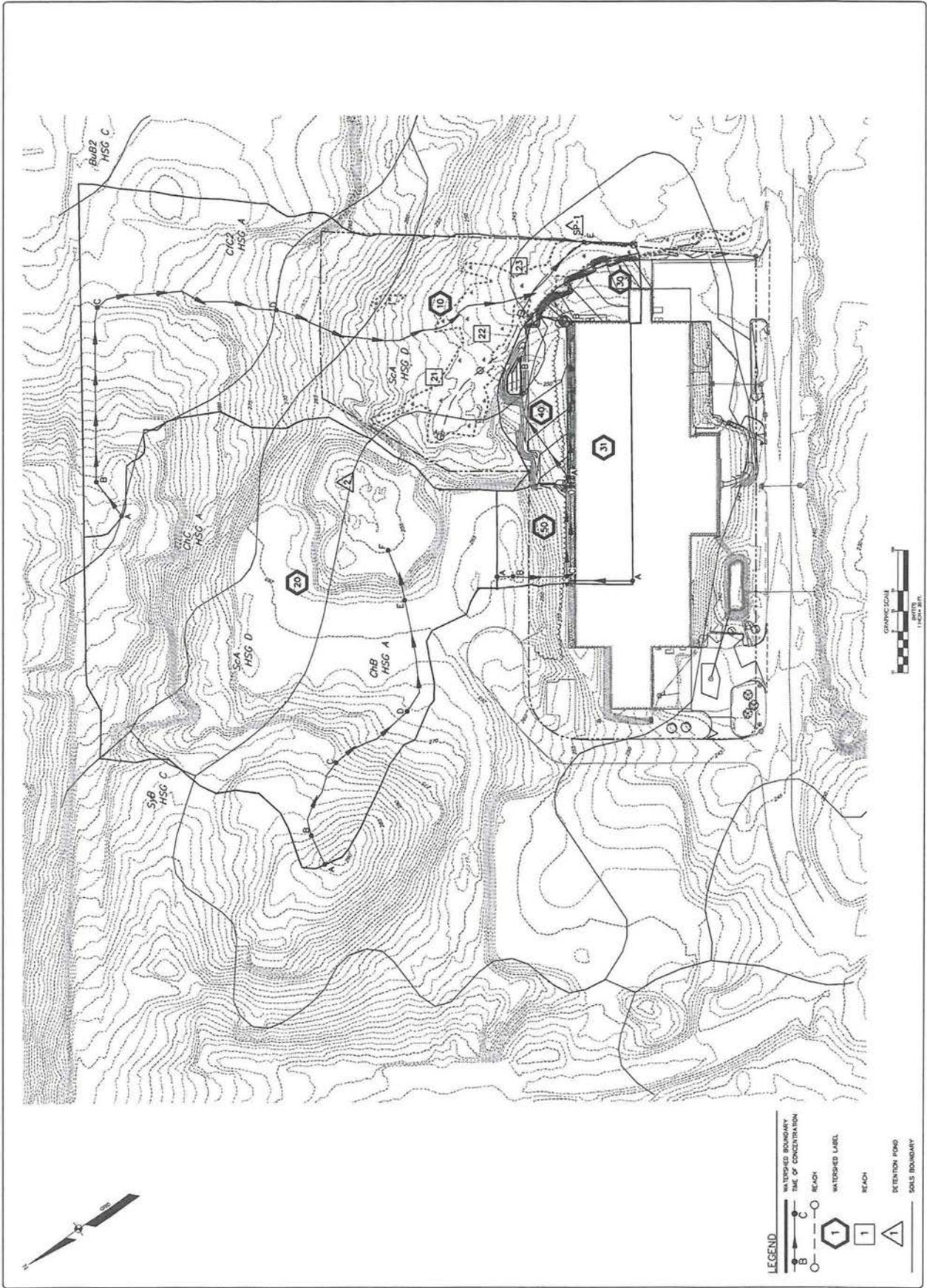
DESIGNED: [ ]  
 CHECKED: [ ]  
 DATE: [ ]

DATE: 7/22/16  
 ISSUED FOR CITY REVIEW  
 PROJECT NO. 15124

**SEBAGO**  
 T B C H N I D S  
 75 JOHN BROADWAY, 2ND FLOOR  
 NEWTON, MASS 02459  
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 WWW.SEBAGOENGINEERS.COM

15124SWP - POST  
 V.P. WAREHOUSE PARKING EXPANSION  
 12 LEXINGTON STREET  
 NEWTON, MASS 02459

PROJECT NO. 15124  
 SCALE 1" = 50'  
 SHEET 2 OF 2



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# **Attachment A**

**INSPECTION, MAINTENANCE AND HOUSEKEEPING PLAN**

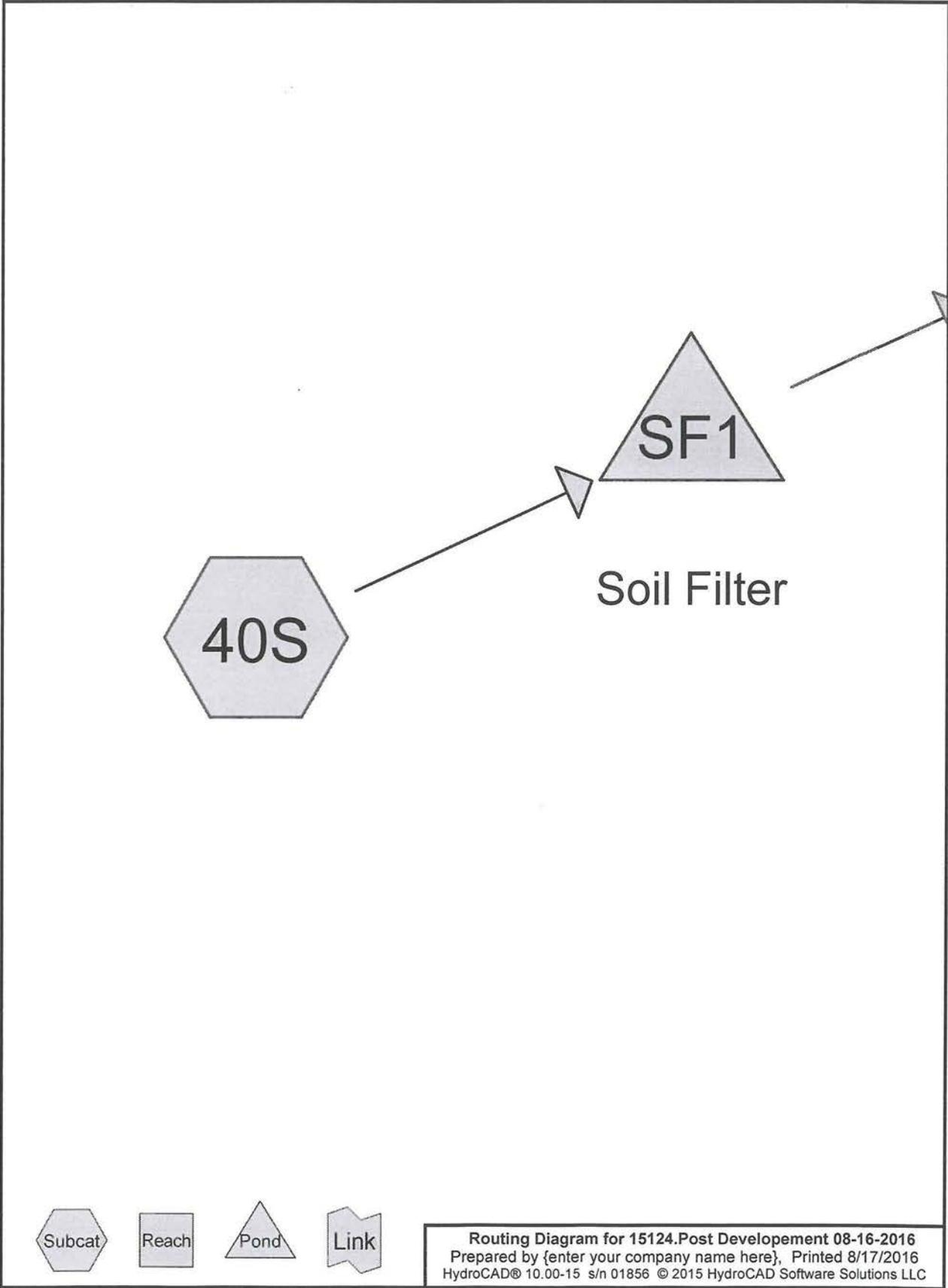
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# **Attachment B**

**STORMWATER QUALITY CALCULATIONS**

**TABLE 2 - 2016  
V.I.P. WAREHOUSE PARKING IMPROVEMENTS  
IMPERVIOUS AREA / DEVELOPED AREA  
TREATMENT SUMMARY**

Description*	New Impervious (S.F.)	Existing Impervious to Remain	New Landscaped (S.F.)	NEW IMPERVIOUS AREA (acre)	NEW LANDSCAPED AREA (acre)	Existing Impervious Receiving Treatment (Yes/No)	New Impervious Receiving Treatment (Yes/No)	IMP AREA TREATED	LANDSCAPED AREA TREATED	TREATMENT BMP	
WS-10	-	41,242	629	-	0.01	NO	NO	-	-		
	-	-	-					-	-		
WS-20	-	72,897	-	-	-	NO	NO	-	-		
WS-30	-	-	-					-	-		
WS-30	9,722	998	2,100	0.22	0.05	NO	NO	-	-		
WS-30	-	-	-	-	-	NO	NO	-	-		
WS-31	-	21,600	-	-	-	YES	NO	0.50	-	Area Treated by Drip Edge	
WS-31	-	14,225	-	-	-	NO	NO	-	-	Untreated existing roof	
WS-40	13,900	5,285	5,609	0.32	0.13	NO	YES	0.32	0.13	Soil Filter	
	-	-	-					-	-		
WS-50	-	3,632	656	-	0.02	NO	NO	-	-		
	0	-	-					-	-		
	23,622	159,877	8,995	0.54	0.21			0.81	0.13		
*SEE POST-DEVELOPMENT STORMWATER PLAN FOR DESCRIPTION LOCATIONS											
<b>TOTAL NEW IMPERVIOUS AREA</b>				<b>0.54</b>	<b>TOTAL NEW DEVELOPED AREA</b>				<b>0.75</b>		
<b>TOTAL NEW IMPERVIOUS AREA REQUIRING TREATMENT</b>				<b>0.52</b>	<b>TOTAL NEW DEVELOPED AREA REQUIRING TREATMENT</b>				<b>0.60</b>		
<b>TOTAL IMPERVIOUS AREA RECEIVING TREATMENT</b>				<b>0.81</b>	<b>TOTAL DEVELOPED AREA RECEIVING TREATMENT</b>				<b>0.94</b>		
<b>% OF IMPERVIOUS AREA RECEIVING TREATMENT</b>				<b>150.3%</b>	<b>% OF DEVELOPED AREA RECEIVING TREATMENT</b>				<b>126.0%</b>		



Subcat



Reach



Pond



Link

Routing Diagram for 15124.Post Development 08-16-2016  
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**Summary for Subcatchment 40S:**

Runoff = 0.61 cfs @ 12.09 hrs, Volume= 0.044 af, Depth= 1.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr CPV Rainfall=2.63"

Area (sf)	CN	Description
3,022	77	Woods, Good, HSG D
14,015	98	Paved parking, HSG A
2,851	30	Woods, Good, HSG A
1,670	39	>75% Grass cover, Good, HSG A
717	80	>75% Grass cover, Good, HSG D
22,275	81	Weighted Average
8,260		37.08% Pervious Area
14,015		62.92% Impervious Area

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

**Summary for Pond SF1: Soil Filter**

Inflow Area = 0.511 ac, 62.92% Impervious, Inflow Depth = 1.04" for CPV event  
 Inflow = 0.61 cfs @ 12.09 hrs, Volume= 0.044 af  
 Outflow = 0.01 cfs @ 20.51 hrs, Volume= 0.004 af, Atten= 98%, Lag= 505.1 min  
 Primary = 0.01 cfs @ 20.51 hrs, Volume= 0.004 af  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Peak Elev= 248.00' @ 20.51 hrs Surf.Area= 1,627 sf Storage= 1,766 cf

Plug-Flow detention time= 628.1 min calculated for 0.004 af (9% of inflow)  
 Center-of-Mass det. time= 468.1 min ( 1,317.9 - 849.8 )

Volume #1	Invert	Avail.Storage	Storage Description
	246.60'	3,692 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
246.60	880	0	0
247.00	1,102	396	396
248.00	1,624	1,363	1,759
249.00	2,242	1,933	3,692

Device	Routing	Invert	Outlet Devices
#1	Primary	244.60'	<b>15.0" Round Culvert</b> L= 56.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 244.60' / 244.32' S= 0.0050 ' / Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	248.00'	<b>1.2" x 21.0" Horiz. Orifice/Grate</b>

**15124.Post Development 08-16-2016**

Type III 24-hr CPV Rainfall=2.63"

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			X 10 rows C= 0.600 in 21.0" x 21.0" Grate (57% open area)
			Limited to weir flow at low heads
#3	Secondary	248.50'	<b>10.0' long x 3.0' breadth Broad-Crested Rectangular Weir</b>
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00
			2.50 3.00 3.50 4.00 4.50
			Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68
			2.72 2.81 2.92 2.97 3.07 3.32

**Primary OutFlow** Max=0.01 cfs @ 20.51 hrs HW=248.00' (Free Discharge)

↑1=Culvert (Passes 0.01 cfs of 9.17 cfs potential flow)

↑2=Orifice/Grate (Weir Controls 0.01 cfs @ 0.21 fps)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=246.60' (Free Discharge)

↑3=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)





CRUSHED STONE  
VOLUME



## 15124 Dripedge Sizing

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### Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
21,600	98	Impervious (roof) (90x240) (31)

**15124 Dripedge Sizing**

*Type III 24-hr WQV Sizing 1.21inch Rainfall=1.21"*

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

**Subcatchment31:**

Runoff Area=21,600 sf 100.00% Impervious Runoff Depth=1.00"  
Tc=5.0 min CN=98 Runoff=0.55 cfs 1,792 cf

**Pond DE31: CRUSHED STONE VOLUME**

Peak Elev=1.79' Storage=666 cf Inflow=0.55 cfs 1,792 cf  
Primary=0.06 cfs 1,792 cf Secondary=0.00 cfs 0 cf Outflow=0.06 cfs 1,792 cf

# 15124 Dripedge Sizing

Type III 24-hr WQV Sizing 1.21inch Rainfall=1.21"

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## Summary for Subcatchment 31:

Runoff = 0.55 cfs @ 12.07 hrs, Volume= 1,792 cf, Depth= 1.00"

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 WQV Sizing 1.21inch Rainfall=1.21"

Area (sf)	CN	Description
* 21,600	98	Impervious (roof) (90x240)
21,600		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, 5

## Summary for Pond DE31: CRUSHED STONE VOLUME

Inflow Area = 21,600 sf, 100.00% Impervious, Inflow Depth = 1.00" for WQV Sizing 1.21inch event  
 Inflow = 0.55 cfs @ 12.07 hrs, Volume= 1,792 cf  
 Outflow = 0.06 cfs @ 12.81 hrs, Volume= 1,792 cf, Atten= 90%, Lag= 44.0 min  
 Primary = 0.06 cfs @ 12.81 hrs, Volume= 1,792 cf  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs  
 Peak Elev= 1.79' @ 12.81 hrs Surf.Area= 877 sf Storage= 666 cf

Plug-Flow detention time= 98.3 min calculated for 1,790 cf (100% of inflow)  
 Center-of-Mass det. time= 98.2 min ( 879.0 - 780.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	2,182 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
0.00	720	0.0	0	0	720
0.10	720	40.0	29	29	730
0.50	720	40.0	115	144	768
1.50	720	40.0	288	432	863
3.00	1,680	100.0	1,750	2,182	1,839

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	2.410 in/hr Exfiltration over Wetted area
#2	Secondary	2.00'	3.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.06 cfs @ 12.81 hrs HW=1.79' (Free Discharge)  
 ↳1=Exfiltration (Exfiltration Controls 0.06 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)  
 ↳2=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

---

# Attachment C

URBAN IMPAIRED STREAM AND DRIPLINE FILTER CALCUALTIONS

**SEBAGO TECHNICS, INC.**

75 John Roberts Road Suite 1A

South Portland, Maine 04106

Tel. (207) 200-2100

JOB: 15124 - V.I.P. Warehouse Parking Improvements

SHEET NO. 1 OF 1

CALCULATED BY: GJH DATE: 7/21/2016

FILE NAME: PRNT DATE: 8/17/2016

**Urban Impaired Stream Mitigation Credits**

Task: Calculate Urban Impaired Stream Mitigation Credits MDEP Chapter 501 regulations

References 1. Maine DEP Chapter 501, Section 3.A Table 1 and Table 2

**Required Credits Per Table 1**

Type of Surface	Area (Acre)	Comp. Fee (per Acre)	Mit. Credit (per Acre)	Fee Required	Credit Required
Non Roof Impervious Area	0.58	\$12,500	0.5	\$7,289.26	0.29
Roof	0.00	\$5,000	0.2	\$0.00	0.00
Landscaped Area	0.21	\$2,500	0.1	\$516.53	0.02
Total				\$7,805.79	or 0.31 Credit Req'd.

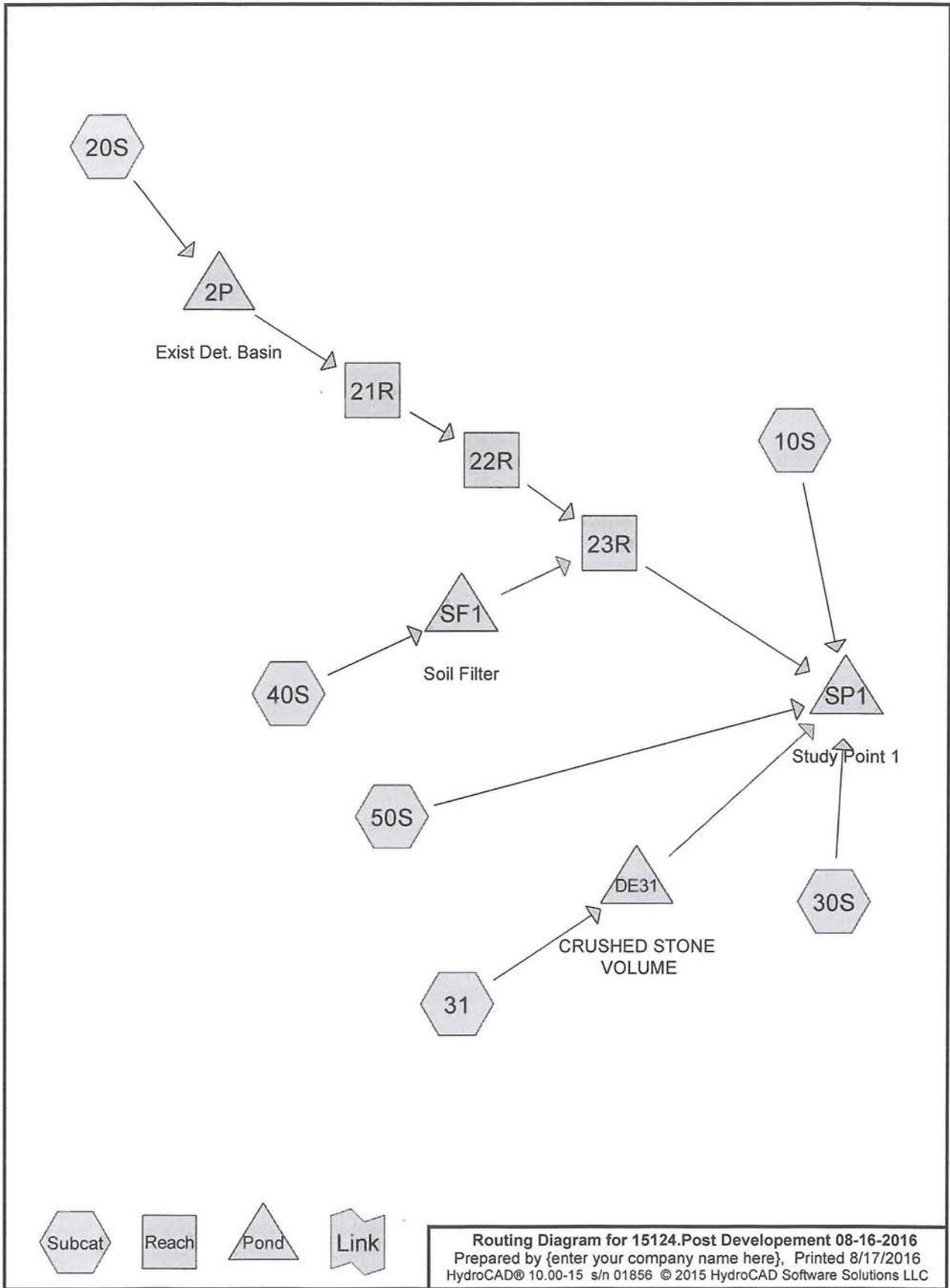
**Proposed Credits Per Table 2**

Mitigation Activity	Development Type	Area (Acre)	Credit Earned (per Acre)	Credits Earned Total
Retrofit at Gen. Standard Sizing	Roof	0.50	0.60	0.30

---

# **Attachment D**

**HYDROLOGIC MODELING**



Routing Diagram for 15124.Post Development 08-16-2016  
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**Area Listing (all nodes)**

Area (acres)	CN	Description (subcatchment-numbers)
2.707	39	>75% Grass cover, Good, HSG A (10S, 20S, 30S, 40S, 50S)
0.019	80	>75% Grass cover, Good, HSG D (30S, 40S)
0.496	98	Impervious (roof) (90x240) (31)
0.874	30	Meadow, non-grazed, HSG A (10S, 20S)
0.732	78	Meadow, non-grazed, HSG D (10S, 20S)
3.010	98	Paved parking, HSG A (10S, 20S, 30S, 40S, 50S)
0.630	98	Paved parking, HSG D (20S)
4.109	30	Woods, Good, HSG A (10S, 20S, 40S)
0.049	70	Woods, Good, HSG C (20S)
2.215	77	Woods, Good, HSG D (10S, 20S, 40S)
<b>14.840</b>	<b>60</b>	<b>TOTAL AREA</b>

**15124.Post Development 08-16-2016**

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**Soil Listing (all nodes)**

Area (acres)	Soil Group	Subcatchment Numbers
10.700	HSG A	10S, 20S, 30S, 40S, 50S
0.000	HSG B	
0.049	HSG C	20S
3.595	HSG D	10S, 20S, 30S, 40S
0.496	Other	31
<b>14.840</b>		<b>TOTAL AREA</b>

**Summary for Subcatchment 10S:**

Runoff = 0.46 cfs @ 12.48 hrs, Volume= 0.107 af, Depth= 0.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-year Rainfall=3.00"

Area (sf)	CN	Description
56,965	39	>75% Grass cover, Good, HSG A
41,242	98	Paved parking, HSG A
79,787	30	Woods, Good, HSG A
59,703	77	Woods, Good, HSG D
8,349	78	Meadow, non-grazed, HSG D
9,023	30	Meadow, non-grazed, HSG A
255,069	56	Weighted Average
213,827		83.83% Pervious Area
41,242		16.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	65	0.0460	0.21		<b>Sheet Flow, Sheet Flow A to B</b> Grass: Short n= 0.150 P2= 3.00"
1.3	270	0.0550	3.52		<b>Shallow Concentrated Flow, Shallow Flow B to C</b> Grassed Waterway Kv= 15.0 fps
1.6	290	0.0400	3.00		<b>Shallow Concentrated Flow, Shallow Flow C to D</b> Grassed Waterway Kv= 15.0 fps
6.5	530	0.0740	1.36		<b>Shallow Concentrated Flow, Shallow Flow E to F</b> Woodland Kv= 5.0 fps
14.5	1,155	Total			

**Summary for Subcatchment 20S:**

Runoff = 0.71 cfs @ 12.35 hrs, Volume= 0.141 af, Depth= 0.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-year Rainfall=3.00"

Area (sf)	CN	Description
2,123	70	Woods, Good, HSG C
33,741	77	Woods, Good, HSG D
96,353	30	Woods, Good, HSG A
27,424	98	Paved parking, HSG D
23,558	78	Meadow, non-grazed, HSG D
42,701	39	>75% Grass cover, Good, HSG A
45,473	98	Paved parking, HSG A
29,040	30	Meadow, non-grazed, HSG A
300,413	57	Weighted Average
227,516		75.73% Pervious Area
72,897		24.27% Impervious Area

**15124.Post Development 08-16-2016**

Type III 24-hr 2-year Rainfall=3.00"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.1000	0.27		<b>Sheet Flow, Sheet Flow A to B</b> Grass: Short n= 0.150 P2= 3.00"
0.5	125	0.0560	3.81		<b>Shallow Concentrated Flow, Shallow Flow B to C</b> Unpaved Kv= 16.1 fps
0.5	140	0.0700	4.26		<b>Shallow Concentrated Flow, Shallow Flow C to D</b> Unpaved Kv= 16.1 fps
1.2	175	0.0230	2.44		<b>Shallow Concentrated Flow, Shallow Flow E to F</b> Unpaved Kv= 16.1 fps
2.6	175	0.0500	1.12		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
7.9	665	Total			

**Summary for Subcatchment 30S:**

Runoff = 1.76 cfs @ 12.08 hrs, Volume= 0.130 af, Depth= 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-year Rainfall=3.00"

Area (sf)	CN	Description
26,755	98	Paved parking, HSG A
2,074	39	>75% Grass cover, Good, HSG A
94	80	>75% Grass cover, Good, HSG D
28,923	94	Weighted Average
2,168		7.50% Pervious Area
26,755		92.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry,</b>

**Summary for Subcatchment 31:**

Runoff = 1.44 cfs @ 12.08 hrs, Volume= 0.114 af, Depth= 2.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-year Rainfall=3.00"

Area (sf)	CN	Description
* 21,600	98	Impervious (roof) (90x240)
21,600		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, 6</b>

**Summary for Subcatchment 40S:**

Runoff = 0.78 cfs @ 12.09 hrs, Volume= 0.056 af, Depth= 1.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-year Rainfall=3.00"

Area (sf)	CN	Description
3,022	77	Woods, Good, HSG D
14,015	98	Paved parking, HSG A
2,851	30	Woods, Good, HSG A
1,670	39	>75% Grass cover, Good, HSG A
717	80	>75% Grass cover, Good, HSG D
22,275	81	Weighted Average
8,260		37.08% Pervious Area
14,015		62.92% Impervious Area

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

**Summary for Subcatchment 50S:**

Runoff = 0.01 cfs @ 12.50 hrs, Volume= 0.004 af, Depth= 0.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-year Rainfall=3.00"

Area (sf)	CN	Description
3,632	98	Paved parking, HSG A
14,507	39	>75% Grass cover, Good, HSG A
18,139	51	Weighted Average
14,507		79.98% Pervious Area
3,632		20.02% Impervious Area

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

**Summary for Reach 21R:**

Inflow Area = 6.897 ac, 24.27% Impervious, Inflow Depth = 0.25" for 2-year event  
 Inflow = 0.68 cfs @ 12.43 hrs, Volume= 0.141 af  
 Outflow = 0.35 cfs @ 13.40 hrs, Volume= 0.141 af, Atten= 48%, Lag= 58.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Max. Velocity= 0.06 fps, Min. Travel Time= 35.5 min  
 Avg. Velocity = 0.02 fps, Avg. Travel Time= 93.9 min

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Type III 24-hr 2-year Rainfall=3.00"

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Peak Storage= 756 cf @ 12.81 hrs

Average Depth at Peak Storage= 0.22'

Bank-Full Depth= 2.00' Flow Area= 128.0 sf, Capacity= 24.91 cfs

24.00' x 2.00' deep channel, n= 0.800 Sheet flow: Woods+dense brush

Side Slope Z-value= 20.0 '/' Top Width= 104.00'

Length= 120.0' Slope= 0.0083 '/'

Inlet Invert= 250.00', Outlet Invert= 249.00'



**Summary for Reach 22R:**

Inflow Area = 6.897 ac, 24.27% Impervious, Inflow Depth = 0.25" for 2-year event

Inflow = 0.35 cfs @ 13.40 hrs, Volume= 0.141 af

Outflow = 0.33 cfs @ 13.92 hrs, Volume= 0.141 af, Atten= 6%, Lag= 31.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Max. Velocity= 0.13 fps, Min. Travel Time= 14.0 min

Avg. Velocity = 0.05 fps, Avg. Travel Time= 36.0 min

Peak Storage= 281 cf @ 13.68 hrs

Average Depth at Peak Storage= 0.22'

Bank-Full Depth= 2.00' Flow Area= 52.0 sf, Capacity= 23.65 cfs

10.00' x 2.00' deep channel, n= 0.800 Sheet flow: Woods+dense brush

Side Slope Z-value= 8.0 '/' Top Width= 42.00'

Length= 110.0' Slope= 0.0455 '/'

Inlet Invert= 249.00', Outlet Invert= 244.00'



**Summary for Reach 23R:**

Inflow Area = 7.408 ac, 26.93% Impervious, Inflow Depth = 0.25" for 2-year event

Inflow = 0.33 cfs @ 13.92 hrs, Volume= 0.157 af

Outflow = 0.27 cfs @ 16.21 hrs, Volume= 0.157 af, Atten= 19%, Lag= 137.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Max. Velocity= 0.07 fps, Min. Travel Time= 51.6 min

Avg. Velocity = 0.03 fps, Avg. Travel Time= 121.8 min

**15124.Post Development 08-16-2016**

Type III 24-hr 2-year Rainfall=3.00"

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Peak Storage= 843 cf @ 15.35 hrs  
 Average Depth at Peak Storage= 0.22'  
 Bank-Full Depth= 2.00' Flow Area= 66.0 sf, Capacity= 16.73 cfs

15.00' x 2.00' deep channel, n= 0.800 Sheet flow: Woods+dense brush  
 Side Slope Z-value= 15.0 3.0 '/' Top Width= 51.00'  
 Length= 225.0' Slope= 0.0133 '/'  
 Inlet Invert= 243.00', Outlet Invert= 240.00'



**Summary for Pond 2P: Exist Det. Basin**

Inflow Area = 6.897 ac, 24.27% Impervious, Inflow Depth = 0.25" for 2-year event  
 Inflow = 0.71 cfs @ 12.35 hrs, Volume= 0.141 af  
 Outflow = 0.68 cfs @ 12.43 hrs, Volume= 0.141 af, Atten= 5%, Lag= 4.7 min  
 Primary = 0.68 cfs @ 12.43 hrs, Volume= 0.141 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Peak Elev= 254.03' @ 12.43 hrs Surf.Area= 6,152 sf Storage= 168 cf

Plug-Flow detention time= 4.5 min calculated for 0.141 af (100% of inflow)  
 Center-of-Mass det. time= 4.5 min ( 958.2 - 953.7 )

Volume	Invert	Avail.Storage	Storage Description
#1	254.00'	620,800 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
254.00	6,000	0	0
255.00	11,500	8,750	8,750
256.00	25,000	18,250	27,000
275.00	28,150	504,925	531,925
278.00	31,100	88,875	620,800

Device	Routing	Invert	Outlet Devices
#1	Primary	254.00'	<b>20.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

**Primary OutFlow** Max=0.23 cfs @ 12.43 hrs HW=254.03' (Free Discharge)  
 ↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 0.23 cfs @ 0.41 fps)

**Summary for Pond DE31: CRUSHED STONE VOLUME**

Inflow Area = 0.496 ac, 100.00% Impervious, Inflow Depth = 2.77" for 2-year event  
 Inflow = 1.44 cfs @ 12.08 hrs, Volume= 0.114 af  
 Outflow = 1.24 cfs @ 12.13 hrs, Volume= 0.114 af, Atten= 14%, Lag= 2.9 min  
 Primary = 0.07 cfs @ 12.13 hrs, Volume= 0.075 af  
 Secondary = 1.16 cfs @ 12.13 hrs, Volume= 0.039 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Peak Elev= 2.27' @ 12.13 hrs Surf.Area= 1,166 sf Storage= 1,156 cf

Plug-Flow detention time= 90.0 min calculated for 0.114 af (100% of inflow)  
 Center-of-Mass det. time= 90.0 min ( 847.8 - 757.8 )

Volume	Invert	Avail.Storage	Storage Description			
#1	0.00'	2,182 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
0.00	720	0.0	0	0	720	
0.10	720	40.0	29	29	730	
0.50	720	40.0	115	144	768	
1.50	720	40.0	288	432	863	
3.00	1,680	100.0	1,750	2,182	1,839	

Device	Routing	Invert	Outlet Devices							
#1	Primary	0.00'	<b>2.410 in/hr Exfiltration over Wetted area</b>							
#2	Secondary	2.00'	<b>3.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b>							
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60							
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63							

**Primary OutFlow** Max=0.07 cfs @ 12.13 hrs HW=2.27' (Free Discharge)  
 ↳1=Exfiltration (Exfiltration Controls 0.07 cfs)

**Secondary OutFlow** Max=1.16 cfs @ 12.13 hrs HW=2.27' (Free Discharge)  
 ↳2=Broad-Crested Rectangular Weir (Weir Controls 1.16 cfs @ 1.41 fps)

**Summary for Pond SF1: Soil Filter**

Inflow Area = 0.511 ac, 62.92% Impervious, Inflow Depth = 1.31" for 2-year event  
 Inflow = 0.78 cfs @ 12.09 hrs, Volume= 0.056 af  
 Outflow = 0.04 cfs @ 15.15 hrs, Volume= 0.016 af, Atten= 95%, Lag= 183.3 min  
 Primary = 0.04 cfs @ 15.15 hrs, Volume= 0.016 af  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Peak Elev= 248.01' @ 15.15 hrs Surf.Area= 1,633 sf Storage= 1,783 cf

Plug-Flow detention time= 393.6 min calculated for 0.016 af (28% of inflow)  
 Center-of-Mass det. time= 258.8 min ( 1,101.6 - 842.8 )

**15124.Post Developement 08-16-2016**

Type III 24-hr 2-year Rainfall=3.00"

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Volume	Invert	Avail.Storage	Storage Description
#1	246.60'	3,692 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
246.60	880	0	0
247.00	1,102	396	396
248.00	1,624	1,363	1,759
249.00	2,242	1,933	3,692

Device	Routing	Invert	Outlet Devices
#1	Primary	244.60'	<b>15.0" Round Culvert</b> L= 56.0' · RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 244.60' / 244.32' S= 0.0050 ' / Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	248.00'	<b>1.2" x 21.0" Horiz. Orifice/Grate</b> X 10 rows C= 0.600 in 21.0" x 21.0" Grate (57% open area) Limited to weir flow at low heads
#3	Secondary	248.50'	<b>10.0' long x 3.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

**Primary OutFlow** Max=0.04 cfs @ 15.15 hrs HW=248.01' (Free Discharge)

↑ **1=Culvert** (Passes 0.04 cfs of 9.19 cfs potential flow)

↑ **2=Orifice/Grate** (Weir Controls 0.04 cfs @ 0.39 fps)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=246.60' (Free Discharge)

↑ **3=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

**Summary for Pond SP1: Study Point 1**

Inflow Area = 14.840 ac, 27.87% Impervious, Inflow Depth = 0.41" for 2-year event  
 Inflow = 2.90 cfs @ 12.10 hrs, Volume= 0.512 af  
 Primary = 2.90 cfs @ 12.10 hrs, Volume= 0.512 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

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Type III 24-hr 10-year Rainfall=4.60"

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**Summary for Subcatchment 10S:**

Runoff = 3.36 cfs @ 12.25 hrs, Volume= 0.411 af, Depth= 0.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
56,965	39	>75% Grass cover, Good, HSG A
41,242	98	Paved parking, HSG A
79,787	30	Woods, Good, HSG A
59,703	77	Woods, Good, HSG D
8,349	78	Meadow, non-grazed, HSG D
9,023	30	Meadow, non-grazed, HSG A
255,069	56	Weighted Average
213,827		83.83% Pervious Area
41,242		16.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	65	0.0460	0.21		<b>Sheet Flow, Sheet Flow A to B</b> Grass: Short n= 0.150 P2= 3.00"
1.3	270	0.0550	3.52		<b>Shallow Concentrated Flow, Shallow Flow B to C</b> Grassed Waterway Kv= 15.0 fps
1.6	290	0.0400	3.00		<b>Shallow Concentrated Flow, Shallow Flow C to D</b> Grassed Waterway Kv= 15.0 fps
6.5	530	0.0740	1.36		<b>Shallow Concentrated Flow, Shallow Flow E to F</b> Woodland Kv= 5.0 fps
14.5	1,155	Total			

**Summary for Subcatchment 20S:**

Runoff = 5.39 cfs @ 12.13 hrs, Volume= 0.516 af, Depth= 0.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
2,123	70	Woods, Good, HSG C
33,741	77	Woods, Good, HSG D
96,353	30	Woods, Good, HSG A
27,424	98	Paved parking, HSG D
23,558	78	Meadow, non-grazed, HSG D
42,701	39	>75% Grass cover, Good, HSG A
45,473	98	Paved parking, HSG A
29,040	30	Meadow, non-grazed, HSG A
300,413	57	Weighted Average
227,516		75.73% Pervious Area
72,897		24.27% Impervious Area

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Type III 24-hr 10-year Rainfall=4.60"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.1000	0.27		<b>Sheet Flow, Sheet Flow A to B</b> Grass: Short n= 0.150 P2= 3.00"
0.5	125	0.0560	3.81		<b>Shallow Concentrated Flow, Shallow Flow B to C</b> Unpaved Kv= 16.1 fps
0.5	140	0.0700	4.26		<b>Shallow Concentrated Flow, Shallow Flow C to D</b> Unpaved Kv= 16.1 fps
1.2	175	0.0230	2.44		<b>Shallow Concentrated Flow, Shallow Flow E to F</b> Unpaved Kv= 16.1 fps
2.6	175	0.0500	1.12		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
7.9	665	Total			

**Summary for Subcatchment 30S:**

Runoff = 2.85 cfs @ 12.08 hrs, Volume= 0.217 af, Depth= 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
26,755	98	Paved parking, HSG A
2,074	39	>75% Grass cover, Good, HSG A
94	80	>75% Grass cover, Good, HSG D
28,923	94	Weighted Average
2,168		7.50% Pervious Area
26,755		92.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry,</b>

**Summary for Subcatchment 31:**

Runoff = 2.23 cfs @ 12.08 hrs, Volume= 0.180 af, Depth= 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
* 21,600	98	Impervious (roof) (90x240)
21,600		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, 6</b>

**Summary for Subcatchment 40S:**

Runoff = 1.58 cfs @ 12.09 hrs, Volume= 0.112 af, Depth= 2.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
3,022	77	Woods, Good, HSG D
14,015	98	Paved parking, HSG A
2,851	30	Woods, Good, HSG A
1,670	39	>75% Grass cover, Good, HSG A
717	80	>75% Grass cover, Good, HSG D
22,275	81	Weighted Average
8,260		37.08% Pervious Area
14,015		62.92% Impervious Area

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

**Summary for Subcatchment 50S:**

Runoff = 0.16 cfs @ 12.13 hrs, Volume= 0.020 af, Depth= 0.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
3,632	98	Paved parking, HSG A
14,507	39	>75% Grass cover, Good, HSG A
18,139	51	Weighted Average
14,507		79.98% Pervious Area
3,632		20.02% Impervious Area

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

**Summary for Reach 21R:**

Inflow Area = 6.897 ac, 24.27% Impervious, Inflow Depth = 0.90" for 10-year event  
Inflow = 4.50 cfs @ 12.21 hrs, Volume= 0.516 af  
Outflow = 3.00 cfs @ 12.78 hrs, Volume= 0.516 af, Atten= 33%, Lag= 34.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Max. Velocity= 0.11 fps, Min. Travel Time= 18.2 min  
Avg. Velocity = 0.03 fps, Avg. Travel Time= 72.7 min

Peak Storage= 3,280 cf @ 12.48 hrs  
 Average Depth at Peak Storage= 0.71'  
 Bank-Full Depth= 2.00' Flow Area= 128.0 sf, Capacity= 24.91 cfs

24.00' x 2.00' deep channel, n= 0.800 Sheet flow: Woods+dense brush  
 Side Slope Z-value= 20.0 ' / ' Top Width= 104.00'  
 Length= 120.0' Slope= 0.0083 ' / '  
 Inlet Invert= 250.00', Outlet Invert= 249.00'



**Summary for Reach 22R:**

Inflow Area = 6.897 ac, 24.27% Impervious, Inflow Depth = 0.90" for 10-year event  
 Inflow = 3.00 cfs @ 12.78 hrs, Volume= 0.516 af  
 Outflow = 2.85 cfs @ 13.00 hrs, Volume= 0.516 af, Atten= 5%, Lag= 13.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Max. Velocity= 0.26 fps, Min. Travel Time= 7.2 min  
 Avg. Velocity = 0.07 fps, Avg. Travel Time= 27.6 min

Peak Storage= 1,225 cf @ 12.88 hrs  
 Average Depth at Peak Storage= 0.71'  
 Bank-Full Depth= 2.00' Flow Area= 52.0 sf, Capacity= 23.65 cfs

10.00' x 2.00' deep channel, n= 0.800 Sheet flow: Woods+dense brush  
 Side Slope Z-value= 8.0 ' / ' Top Width= 42.00'  
 Length= 110.0' Slope= 0.0455 ' / '  
 Inlet Invert= 249.00', Outlet Invert= 244.00'



**Summary for Reach 23R:**

Inflow Area = 7.408 ac, 26.93% Impervious, Inflow Depth = 0.95" for 10-year event  
 Inflow = 3.02 cfs @ 13.00 hrs, Volume= 0.588 af  
 Outflow = 2.21 cfs @ 13.75 hrs, Volume= 0.588 af, Atten= 27%, Lag= 45.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Max. Velocity= 0.14 fps, Min. Travel Time= 26.1 min  
 Avg. Velocity = 0.04 fps, Avg. Travel Time= 89.8 min

Peak Storage= 3,460 cf @ 13.31 hrs  
 Average Depth at Peak Storage= 0.72'  
 Bank-Full Depth= 2.00' Flow Area= 66.0 sf, Capacity= 16.73 cfs

15.00' x 2.00' deep channel, n= 0.800 Sheet flow: Woods+dense brush  
 Side Slope Z-value= 15.0 3.0 '/' Top Width= 51.00'  
 Length= 225.0' Slope= 0.0133 '/'  
 Inlet Invert= 243.00', Outlet Invert= 240.00'



**Summary for Pond 2P: Exist Det. Basin**

Inflow Area = 6.897 ac, 24.27% Impervious, Inflow Depth = 0.90" for 10-year event  
 Inflow = 5.39 cfs @ 12.13 hrs, Volume= 0.516 af  
 Outflow = 4.50 cfs @ 12.21 hrs, Volume= 0.516 af, Atten= 16%, Lag= 4.4 min  
 Primary = 4.50 cfs @ 12.21 hrs, Volume= 0.516 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Peak Elev= 254.18' @ 12.21 hrs Surf.Area= 7,010 sf Storage= 1,194 cf

Plug-Flow detention time= 4.5 min calculated for 0.516 af (100% of inflow)  
 Center-of-Mass det. time= 4.5 min ( 899.2 - 894.6 )

Volume	Invert	Avail.Storage	Storage Description
#1	254.00'	620,800 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
254.00	6,000	0	0
255.00	11,500	8,750	8,750
256.00	25,000	18,250	27,000
275.00	28,150	504,925	531,925
278.00	31,100	88,875	620,800

Device	Routing	Invert	Outlet Devices
#1	Primary	254.00'	<b>20.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

**Primary OutFlow** Max=3.92 cfs @ 12.21 hrs HW=254.18' (Free Discharge)  
 ↳1=Broad-Crested Rectangular Weir (Weir Controls 3.92 cfs @ 1.07 fps)

**Summary for Pond DE31: CRUSHED STONE VOLUME**

Inflow Area = 0.496 ac, 100.00% Impervious, Inflow Depth = 4.36" for 10-year event  
 Inflow = 2.23 cfs @ 12.08 hrs, Volume= 0.180 af  
 Outflow = 2.02 cfs @ 12.12 hrs, Volume= 0.180 af, Atten= 10%, Lag= 2.3 min  
 Primary = 0.08 cfs @ 12.12 hrs, Volume= 0.093 af  
 Secondary = 1.94 cfs @ 12.12 hrs, Volume= 0.087 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Peak Elev= 2.39' @ 12.12 hrs Surf.Area= 1,238 sf Storage= 1,289 cf

Plug-Flow detention time= 78.1 min calculated for 0.180 af (100% of inflow)  
 Center-of-Mass det. time= 78.1 min ( 827.6 - 749.4 )

Volume #1	Invert	Avail.Storage	Storage Description			
	0.00'	2,182 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
0.00	720	0.0	0	0	720	
0.10	720	40.0	29	29	730	
0.50	720	40.0	115	144	768	
1.50	720	40.0	288	432	863	
3.00	1,680	100.0	1,750	2,182	1,839	

Device	Routing	Invert	Outlet Devices								
#1	Primary	0.00'	<b>2.410 in/hr Exfiltration over Wetted area</b>								
#2	Secondary	2.00'	<b>3.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b>								
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60								
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63								

**Primary OutFlow** Max=0.08 cfs @ 12.12 hrs HW=2.39' (Free Discharge)  
 ↳1=Exfiltration (Exfiltration Controls 0.08 cfs)

**Secondary OutFlow** Max=1.94 cfs @ 12.12 hrs HW=2.39' (Free Discharge)  
 ↳2=Broad-Crested Rectangular Weir (Weir Controls 1.94 cfs @ 1.67 fps)

**Summary for Pond SF1: Soil Filter**

Inflow Area = 0.511 ac, 62.92% Impervious, Inflow Depth = 2.63" for 10-year event  
 Inflow = 1.58 cfs @ 12.09 hrs, Volume= 0.112 af  
 Outflow = 0.79 cfs @ 12.25 hrs, Volume= 0.072 af, Atten= 50%, Lag= 9.5 min  
 Primary = 0.79 cfs @ 12.25 hrs, Volume= 0.072 af  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Peak Elev= 248.11' @ 12.25 hrs Surf.Area= 1,689 sf Storage= 1,935 cf

Plug-Flow detention time= 180.8 min calculated for 0.072 af (64% of inflow)  
 Center-of-Mass det. time= 77.2 min ( 899.9 - 822.6 )

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Type III 24-hr 10-year Rainfall=4.60"

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Volume	Invert	Avail.Storage	Storage Description
#1	246.60'	3,692 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
246.60	880	0	0
247.00	1,102	396	396
248.00	1,624	1,363	1,759
249.00	2,242	1,933	3,692

Device	Routing	Invert	Outlet Devices
#1	Primary	244.60'	<b>15.0" Round Culvert</b> L= 56.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 244.60' / 244.32' S= 0.0050 ' / Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	248.00'	<b>1.2" x 21.0" Horiz. Orifice/Grate</b> X 10 rows C= 0.600 in 21.0" x 21.0" Grate (57% open area) Limited to weir flow at low heads
#3	Secondary	248.50'	<b>10.0' long x 3.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

**Primary OutFlow** Max=0.79 cfs @ 12.25 hrs HW=248.11' (Free Discharge)

↑ **1=Culvert** (Passes 0.79 cfs of 9.36 cfs potential flow)

↑ **2=Orifice/Grate** (Weir Controls 0.79 cfs @ 1.06 fps)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=246.60' (Free Discharge)

↑ **3=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

**Summary for Pond SP1: Study Point 1**

Inflow Area = 14.840 ac, 27.87% Impervious, Inflow Depth = 1.15" for 10-year event  
 Inflow = 6.91 cfs @ 12.14 hrs, Volume= 1.417 af  
 Primary = 6.91 cfs @ 12.14 hrs, Volume= 1.417 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

**Summary for Subcatchment 10S:**

Runoff = 5.62 cfs @ 12.23 hrs, Volume= 0.612 af, Depth= 1.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
56,965	39	>75% Grass cover, Good, HSG A
41,242	98	Paved parking, HSG A
79,787	30	Woods, Good, HSG A
59,703	77	Woods, Good, HSG D
8,349	78	Meadow, non-grazed, HSG D
9,023	30	Meadow, non-grazed, HSG A
255,069	56	Weighted Average
213,827		83.83% Pervious Area
41,242		16.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	65	0.0460	0.21		<b>Sheet Flow, Sheet Flow A to B</b> Grass: Short n= 0.150 P2= 3.00"
1.3	270	0.0550	3.52		<b>Shallow Concentrated Flow, Shallow Flow B to C</b> Grassed Waterway Kv= 15.0 fps
1.6	290	0.0400	3.00		<b>Shallow Concentrated Flow, Shallow Flow C to D</b> Grassed Waterway Kv= 15.0 fps
6.5	530	0.0740	1.36		<b>Shallow Concentrated Flow, Shallow Flow E to F</b> Woodland Kv= 5.0 fps
14.5	1,155	Total			

**Summary for Subcatchment 20S:**

Runoff = 8.77 cfs @ 12.13 hrs, Volume= 0.761 af, Depth= 1.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
2,123	70	Woods, Good, HSG C
33,741	77	Woods, Good, HSG D
96,353	30	Woods, Good, HSG A
27,424	98	Paved parking, HSG D
23,558	78	Meadow, non-grazed, HSG D
42,701	39	>75% Grass cover, Good, HSG A
45,473	98	Paved parking, HSG A
29,040	30	Meadow, non-grazed, HSG A
300,413	57	Weighted Average
227,516		75.73% Pervious Area
72,897		24.27% Impervious Area

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Type III 24-hr 25-year Rainfall=5.40"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.1000	0.27		<b>Sheet Flow, Sheet Flow A to B</b> Grass: Short n= 0.150 P2= 3.00"
0.5	125	0.0560	3.81		<b>Shallow Concentrated Flow, Shallow Flow B to C</b> Unpaved Kv= 16.1 fps
0.5	140	0.0700	4.26		<b>Shallow Concentrated Flow, Shallow Flow C to D</b> Unpaved Kv= 16.1 fps
1.2	175	0.0230	2.44		<b>Shallow Concentrated Flow, Shallow Flow E to F</b> Unpaved Kv= 16.1 fps
2.6	175	0.0500	1.12		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
7.9	665	Total			

**Summary for Subcatchment 30S:**

Runoff = 3.39 cfs @ 12.08 hrs, Volume= 0.260 af, Depth= 4.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
26,755	98	Paved parking, HSG A
2,074	39	>75% Grass cover, Good, HSG A
94	80	>75% Grass cover, Good, HSG D
28,923	94	Weighted Average
2,168		7.50% Pervious Area
26,755		92.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry,</b>

**Summary for Subcatchment 31:**

Runoff = 2.62 cfs @ 12.08 hrs, Volume= 0.213 af, Depth= 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
* 21,600	98	Impervious (roof) (90x240)
21,600		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, 6</b>

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Type III 24-hr 25-year Rainfall=5.40"

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**Summary for Subcatchment 40S:**

Runoff = 2.00 cfs @ 12.09 hrs, Volume= 0.142 af, Depth= 3.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
3,022	77	Woods, Good, HSG D
14,015	98	Paved parking, HSG A
2,851	30	Woods, Good, HSG A
1,670	39	>75% Grass cover, Good, HSG A
717	80	>75% Grass cover, Good, HSG D
22,275	81	Weighted Average
8,260		37.08% Pervious Area
14,015		62.92% Impervious Area

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

**Summary for Subcatchment 50S:**

Runoff = 0.33 cfs @ 12.11 hrs, Volume= 0.032 af, Depth= 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
3,632	98	Paved parking, HSG A
14,507	39	>75% Grass cover, Good, HSG A
18,139	51	Weighted Average
14,507		79.98% Pervious Area
3,632		20.02% Impervious Area

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

**Summary for Reach 21R:**

Inflow Area = 6.897 ac, 24.27% Impervious, Inflow Depth = 1.32" for 25-year event

Inflow = 7.72 cfs @ 12.18 hrs, Volume= 0.761 af

Outflow = 5.05 cfs @ 12.67 hrs, Volume= 0.761 af, Atten= 35%, Lag= 29.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Max. Velocity= 0.13 fps, Min. Travel Time= 15.7 min

Avg. Velocity = 0.03 fps, Avg. Travel Time= 67.1 min

Peak Storage= 4,775 cf @ 12.41 hrs  
 Average Depth at Peak Storage= 0.93'  
 Bank-Full Depth= 2.00' Flow Area= 128.0 sf, Capacity= 24.91 cfs

24.00' x 2.00' deep channel, n= 0.800 Sheet flow: Woods+dense brush  
 Side Slope Z-value= 20.0 ' / ' Top Width= 104.00'  
 Length= 120.0' Slope= 0.0083 ' / '  
 Inlet Invert= 250.00', Outlet Invert= 249.00'



**Summary for Reach 22R:**

Inflow Area = 6.897 ac, 24.27% Impervious, Inflow Depth = 1.32" for 25-year event  
 Inflow = 5.05 cfs @ 12.67 hrs, Volume= 0.761 af  
 Outflow = 4.86 cfs @ 12.87 hrs, Volume= 0.761 af, Atten= 4%, Lag= 11.7 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Max. Velocity= 0.30 fps, Min. Travel Time= 6.2 min  
 Avg. Velocity = 0.07 fps, Avg. Travel Time= 25.6 min

Peak Storage= 1,797 cf @ 12.77 hrs  
 Average Depth at Peak Storage= 0.93'  
 Bank-Full Depth= 2.00' Flow Area= 52.0 sf, Capacity= 23.65 cfs

10.00' x 2.00' deep channel, n= 0.800 Sheet flow: Woods+dense brush  
 Side Slope Z-value= 8.0 ' / ' Top Width= 42.00'  
 Length= 110.0' Slope= 0.0455 ' / '  
 Inlet Invert= 249.00', Outlet Invert= 244.00'



**Summary for Reach 23R:**

Inflow Area = 7.408 ac, 26.93% Impervious, Inflow Depth = 1.40" for 25-year event  
 Inflow = 5.09 cfs @ 12.86 hrs, Volume= 0.863 af  
 Outflow = 3.90 cfs @ 13.50 hrs, Volume= 0.863 af, Atten= 23%, Lag= 37.9 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Max. Velocity= 0.17 fps, Min. Travel Time= 22.1 min  
 Avg. Velocity = 0.05 fps, Avg. Travel Time= 82.5 min

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Type III 24-hr 25-year Rainfall=5.40"

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Peak Storage= 5,172 cf @ 13.13 hrs  
 Average Depth at Peak Storage= 0.97'  
 Bank-Full Depth= 2.00' Flow Area= 66.0 sf, Capacity= 16.73 cfs

15.00' x 2.00' deep channel, n= 0.800 Sheet flow: Woods+dense brush  
 Side Slope Z-value= 15.0 3.0 '/' Top Width= 51.00'  
 Length= 225.0' Slope= 0.0133 '/'  
 Inlet Invert= 243.00', Outlet Invert= 240.00'



**Summary for Pond 2P: Exist Det. Basin**

Inflow Area = 6.897 ac, 24.27% Impervious, Inflow Depth = 1.32" for 25-year event  
 Inflow = 8.77 cfs @ 12.13 hrs, Volume= 0.761 af  
 Outflow = 7.72 cfs @ 12.18 hrs, Volume= 0.761 af, Atten= 12%, Lag= 3.3 min  
 Primary = 7.72 cfs @ 12.18 hrs, Volume= 0.761 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Peak Elev= 254.28' @ 12.18 hrs Surf.Area= 7,530 sf Storage= 1,882 cf

Plug-Flow detention time= 4.5 min calculated for 0.761 af (100% of inflow)  
 Center-of-Mass det. time= 4.5 min ( 885.2 - 880.7 )

Volume	Invert	Avail.Storage	Storage Description
#1	254.00'	620,800 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
254.00	6,000	0	0
255.00	11,500	8,750	8,750
256.00	25,000	18,250	27,000
275.00	28,150	504,925	531,925
278.00	31,100	88,875	620,800

Device	Routing	Invert	Outlet Devices
#1	Primary	254.00'	<b>20.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

**Primary OutFlow** Max=7.39 cfs @ 12.18 hrs HW=254.28' (Free Discharge)  
 ↳1=Broad-Crested Rectangular Weir (Weir Controls 7.39 cfs @ 1.33 fps)

**Summary for Pond DE31: CRUSHED STONE VOLUME**

Inflow Area = 0.496 ac, 100.00% Impervious, Inflow Depth = 5.16" for 25-year event  
 Inflow = 2.62 cfs @ 12.08 hrs, Volume= 0.213 af  
 Outflow = 2.38 cfs @ 12.12 hrs, Volume= 0.213 af, Atten= 9%, Lag= 2.2 min  
 Primary = 0.08 cfs @ 12.12 hrs, Volume= 0.100 af  
 Secondary = 2.30 cfs @ 12.12 hrs, Volume= 0.113 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Peak Elev= 2.43' @ 12.12 hrs Surf.Area= 1,269 sf Storage= 1,347 cf

Plug-Flow detention time= 74.2 min calculated for 0.213 af (100% of inflow)  
 Center-of-Mass det. time= 74.2 min ( 820.9 - 746.8 )

Volume #1	Invert	Avail.Storage	Storage Description			
	0.00'	2,182 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
0.00	720	0.0	0	0	720	
0.10	720	40.0	29	29	730	
0.50	720	40.0	115	144	768	
1.50	720	40.0	288	432	863	
3.00	1,680	100.0	1,750	2,182	1,839	

Device	Routing	Invert	Outlet Devices									
#1	Primary	0.00'	<b>2.410 in/hr Exfiltration over Wetted area</b>									
#2	Secondary	2.00'	<b>3.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b>									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63									

**Primary OutFlow** Max=0.08 cfs @ 12.12 hrs HW=2.43' (Free Discharge)  
 ↳1=Exfiltration (Exfiltration Controls 0.08 cfs)

**Secondary OutFlow** Max=2.30 cfs @ 12.12 hrs HW=2.43' (Free Discharge)  
 ↳2=Broad-Crested Rectangular Weir (Weir Controls 2.30 cfs @ 1.77 fps)

**Summary for Pond SF1: Soil Filter**

Inflow Area = 0.511 ac, 62.92% Impervious, Inflow Depth = 3.34" for 25-year event  
 Inflow = 2.00 cfs @ 12.09 hrs, Volume= 0.142 af  
 Outflow = 1.62 cfs @ 12.15 hrs, Volume= 0.102 af, Atten= 19%, Lag= 3.4 min  
 Primary = 1.62 cfs @ 12.15 hrs, Volume= 0.102 af  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Peak Elev= 248.17' @ 12.15 hrs Surf.Area= 1,730 sf Storage= 2,046 cf

Plug-Flow detention time= 151.7 min calculated for 0.102 af (72% of inflow)  
 Center-of-Mass det. time= 59.3 min ( 875.2 - 815.8 )

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Type III 24-hr 25-year Rainfall=5.40"

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Volume	Invert	Avail.Storage	Storage Description
#1	246.60'	3,692 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
246.60	880	0	0
247.00	1,102	396	396
248.00	1,624	1,363	1,759
249.00	2,242	1,933	3,692

Device	Routing	Invert	Outlet Devices
#1	Primary	244.60'	<b>15.0" Round Culvert</b> L= 56.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 244.60' / 244.32' S= 0.0050 ' / Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	248.00'	<b>1.2" x 21.0" Horiz. Orifice/Grate</b> X 10 rows C= 0.600 in 21.0" x 21.0" Grate (57% open area) Limited to weir flow at low heads
#3	Secondary	248.50'	<b>10.0' long x 3.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

**Primary OutFlow** Max=1.62 cfs @ 12.15 hrs HW=248.17' (Free Discharge)

↳ **1=Culvert** (Passes 1.62 cfs of 9.48 cfs potential flow)

↳ **2=Orifice/Grate** (Weir Controls 1.62 cfs @ 1.35 fps)

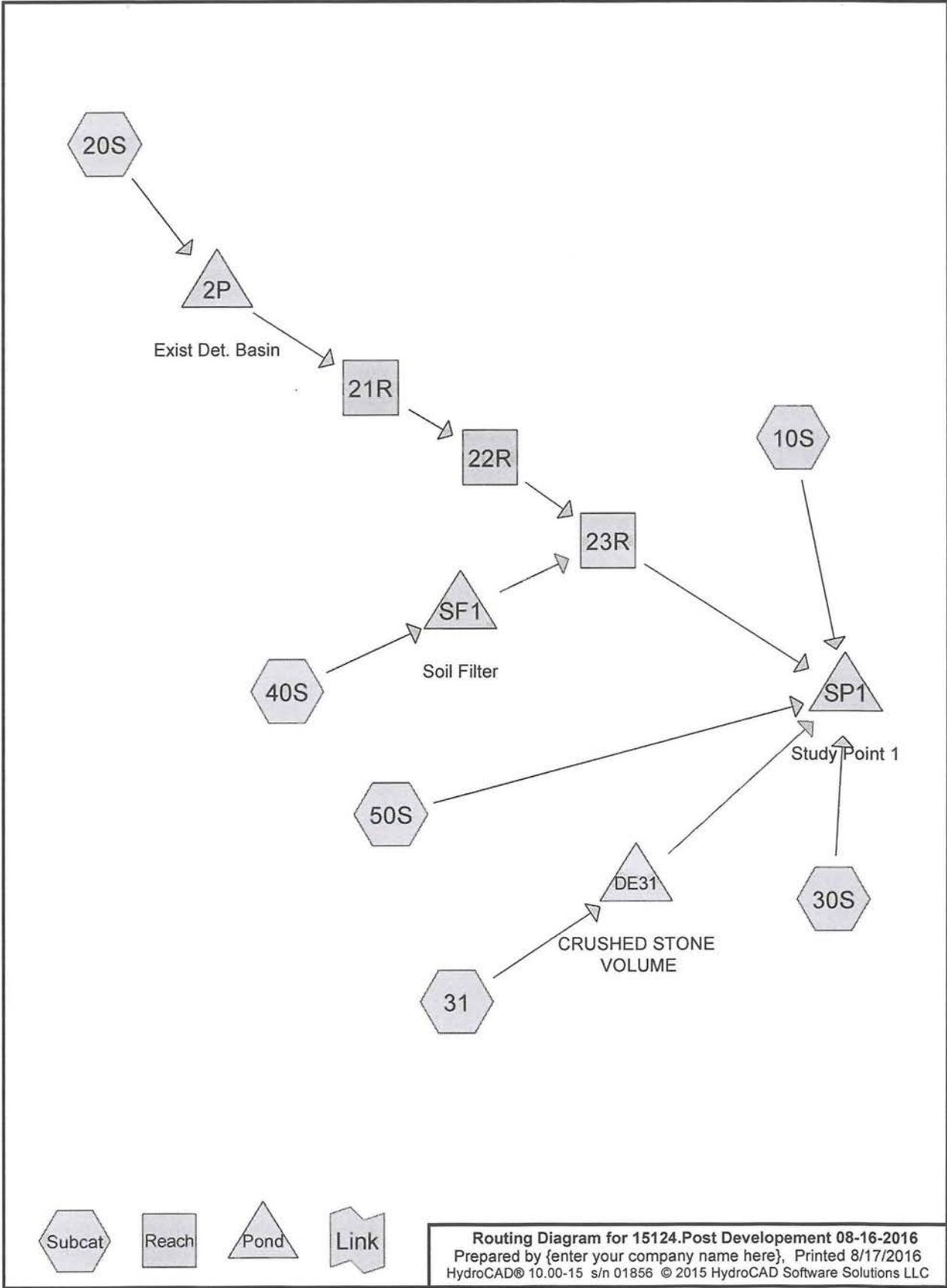
**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=246.60' (Free Discharge)

↳ **3=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

**Summary for Pond SP1: Study Point 1**

Inflow Area = 14.840 ac, 27.87% Impervious, Inflow Depth = 1.60" for 25-year event  
 Inflow = 9.89 cfs @ 12.15 hrs, Volume= 1.981 af  
 Primary = 9.89 cfs @ 12.15 hrs, Volume= 1.981 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs



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**Area Listing (all nodes)**

Area (acres)	CN	Description (subcatchment-numbers)
2.707	39	>75% Grass cover, Good, HSG A (10S, 20S, 30S, 40S, 50S)
0.019	80	>75% Grass cover, Good, HSG D (30S, 40S)
0.496	98	Impervious (roof) (90x240) (31)
0.874	30	Meadow, non-grazed, HSG A (10S, 20S)
0.732	78	Meadow, non-grazed, HSG D (10S, 20S)
3.010	98	Paved parking, HSG A (10S, 20S, 30S, 40S, 50S)
0.630	98	Paved parking, HSG D (20S)
4.109	30	Woods, Good, HSG A (10S, 20S, 40S)
0.049	70	Woods, Good, HSG C (20S)
2.215	77	Woods, Good, HSG D (10S, 20S, 40S)
<b>14.840</b>	<b>60</b>	<b>TOTAL AREA</b>

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**Soil Listing (all nodes)**

Area (acres)	Soil Group	Subcatchment Numbers
10.700	HSG A	10S, 20S, 30S, 40S, 50S
0.000	HSG B	
0.049	HSG C	20S
3.595	HSG D	10S, 20S, 30S, 40S
0.496	Other	31
<b>14.840</b>		<b>TOTAL AREA</b>

**Summary for Subcatchment 10S:**

Runoff = 0.46 cfs @ 12.48 hrs, Volume= 0.107 af, Depth= 0.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-year Rainfall=3.00"

Area (sf)	CN	Description
56,965	39	>75% Grass cover, Good, HSG A
41,242	98	Paved parking, HSG A
79,787	30	Woods, Good, HSG A
59,703	77	Woods, Good, HSG D
8,349	78	Meadow, non-grazed, HSG D
9,023	30	Meadow, non-grazed, HSG A
255,069	56	Weighted Average
213,827		83.83% Pervious Area
41,242		16.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	65	0.0460	0.21		<b>Sheet Flow, Sheet Flow A to B</b> Grass: Short n= 0.150 P2= 3.00"
1.3	270	0.0550	3.52		<b>Shallow Concentrated Flow, Shallow Flow B to C</b> Grassed Waterway Kv= 15.0 fps
1.6	290	0.0400	3.00		<b>Shallow Concentrated Flow, Shallow Flow C to D</b> Grassed Waterway Kv= 15.0 fps
6.5	530	0.0740	1.36		<b>Shallow Concentrated Flow, Shallow Flow E to F</b> Woodland Kv= 5.0 fps
14.5	1,155	Total			

**Summary for Subcatchment 20S:**

Runoff = 0.71 cfs @ 12.35 hrs, Volume= 0.141 af, Depth= 0.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-year Rainfall=3.00"

Area (sf)	CN	Description
2,123	70	Woods, Good, HSG C
33,741	77	Woods, Good, HSG D
96,353	30	Woods, Good, HSG A
27,424	98	Paved parking, HSG D
23,558	78	Meadow, non-grazed, HSG D
42,701	39	>75% Grass cover, Good, HSG A
45,473	98	Paved parking, HSG A
29,040	30	Meadow, non-grazed, HSG A
300,413	57	Weighted Average
227,516		75.73% Pervious Area
72,897		24.27% Impervious Area

**Summary for Subcatchment 10S:**

Runoff = 3.36 cfs @ 12.25 hrs, Volume= 0.411 af, Depth= 0.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
56,965	39	>75% Grass cover, Good, HSG A
41,242	98	Paved parking, HSG A
79,787	30	Woods, Good, HSG A
59,703	77	Woods, Good, HSG D
8,349	78	Meadow, non-grazed, HSG D
9,023	30	Meadow, non-grazed, HSG A
255,069	56	Weighted Average
213,827		83.83% Pervious Area
41,242		16.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	65	0.0460	0.21		<b>Sheet Flow, Sheet Flow A to B</b> Grass: Short n= 0.150 P2= 3.00"
1.3	270	0.0550	3.52		<b>Shallow Concentrated Flow, Shallow Flow B to C</b> Grassed Waterway Kv= 15.0 fps
1.6	290	0.0400	3.00		<b>Shallow Concentrated Flow, Shallow Flow C to D</b> Grassed Waterway Kv= 15.0 fps
6.5	530	0.0740	1.36		<b>Shallow Concentrated Flow, Shallow Flow E to F</b> Woodland Kv= 5.0 fps
14.5	1,155	Total			

**Summary for Subcatchment 20S:**

Runoff = 5.39 cfs @ 12.13 hrs, Volume= 0.516 af, Depth= 0.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
2,123	70	Woods, Good, HSG C
33,741	77	Woods, Good, HSG D
96,353	30	Woods, Good, HSG A
27,424	98	Paved parking, HSG D
23,558	78	Meadow, non-grazed, HSG D
42,701	39	>75% Grass cover, Good, HSG A
45,473	98	Paved parking, HSG A
29,040	30	Meadow, non-grazed, HSG A
300,413	57	Weighted Average
227,516		75.73% Pervious Area
72,897		24.27% Impervious Area

**15124.Post Developement 08-16-2016**

Type III 24-hr 10-year Rainfall=4.60"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.1000	0.27		<b>Sheet Flow, Sheet Flow A to B</b> Grass: Short n= 0.150 P2= 3.00"
0.5	125	0.0560	3.81		<b>Shallow Concentrated Flow, Shallow Flow B to C</b> Unpaved Kv= 16.1 fps
0.5	140	0.0700	4.26		<b>Shallow Concentrated Flow, Shallow Flow C to D</b> Unpaved Kv= 16.1 fps
1.2	175	0.0230	2.44		<b>Shallow Concentrated Flow, Shallow Flow E to F</b> Unpaved Kv= 16.1 fps
2.6	175	0.0500	1.12		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
7.9	665	Total			

**Summary for Subcatchment 30S:**

Runoff = 2.85 cfs @ 12.08 hrs, Volume= 0.217 af, Depth= 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
26,755	98	Paved parking, HSG A
2,074	39	>75% Grass cover, Good, HSG A
94	80	>75% Grass cover, Good, HSG D
28,923	94	Weighted Average
2,168		7.50% Pervious Area
26,755		92.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry,</b>

**Summary for Subcatchment 31:**

Runoff = 2.23 cfs @ 12.08 hrs, Volume= 0.180 af, Depth= 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
* 21,600	98	Impervious (roof) (90x240)
21,600		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, 6</b>

**Summary for Subcatchment 40S:**

Runoff = 1.58 cfs @ 12.09 hrs, Volume= 0.112 af, Depth= 2.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
3,022	77	Woods, Good, HSG D
14,015	98	Paved parking, HSG A
2,851	30	Woods, Good, HSG A
1,670	39	>75% Grass cover, Good, HSG A
717	80	>75% Grass cover, Good, HSG D
22,275	81	Weighted Average
8,260		37.08% Pervious Area
14,015		62.92% Impervious Area

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

**Summary for Subcatchment 50S:**

Runoff = 0.16 cfs @ 12.13 hrs, Volume= 0.020 af, Depth= 0.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
3,632	98	Paved parking, HSG A
14,507	39	>75% Grass cover, Good, HSG A
18,139	51	Weighted Average
14,507		79.98% Pervious Area
3,632		20.02% Impervious Area

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

**Summary for Reach 21R:**

Inflow Area = 6.897 ac, 24.27% Impervious, Inflow Depth = 0.90" for 10-year event  
Inflow = 4.50 cfs @ 12.21 hrs, Volume= 0.516 af  
Outflow = 3.00 cfs @ 12.78 hrs, Volume= 0.516 af, Atten= 33%, Lag= 34.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Max. Velocity= 0.11 fps, Min. Travel Time= 18.2 min  
Avg. Velocity = 0.03 fps, Avg. Travel Time= 72.7 min

Peak Storage= 3,280 cf @ 12.48 hrs  
Average Depth at Peak Storage= 0.71'  
Bank-Full Depth= 2.00' Flow Area= 128.0 sf, Capacity= 24.91 cfs

24.00' x 2.00' deep channel, n= 0.800 Sheet flow: Woods+dense brush  
Side Slope Z-value= 20.0 ' /' Top Width= 104.00'  
Length= 120.0' Slope= 0.0083 ' /'  
Inlet Invert= 250.00', Outlet Invert= 249.00'



**Summary for Reach 22R:**

Inflow Area = 6.897 ac, 24.27% Impervious, Inflow Depth = 0.90" for 10-year event  
Inflow = 3.00 cfs @ 12.78 hrs, Volume= 0.516 af  
Outflow = 2.85 cfs @ 13.00 hrs, Volume= 0.516 af, Atten= 5%, Lag= 13.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Max. Velocity= 0.26 fps, Min. Travel Time= 7.2 min  
Avg. Velocity = 0.07 fps, Avg. Travel Time= 27.6 min

Peak Storage= 1,225 cf @ 12.88 hrs  
Average Depth at Peak Storage= 0.71'  
Bank-Full Depth= 2.00' Flow Area= 52.0 sf, Capacity= 23.65 cfs

10.00' x 2.00' deep channel, n= 0.800 Sheet flow: Woods+dense brush  
Side Slope Z-value= 8.0 ' /' Top Width= 42.00'  
Length= 110.0' Slope= 0.0455 ' /'  
Inlet Invert= 249.00', Outlet Invert= 244.00'



**Summary for Reach 23R:**

Inflow Area = 7.408 ac, 26.93% Impervious, Inflow Depth = 0.95" for 10-year event  
Inflow = 3.02 cfs @ 13.00 hrs, Volume= 0.588 af  
Outflow = 2.21 cfs @ 13.75 hrs, Volume= 0.588 af, Atten= 27%, Lag= 45.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Max. Velocity= 0.14 fps, Min. Travel Time= 26.1 min  
Avg. Velocity = 0.04 fps, Avg. Travel Time= 89.8 min

Peak Storage= 3,460 cf @ 13.31 hrs  
 Average Depth at Peak Storage= 0.72'  
 Bank-Full Depth= 2.00' Flow Area= 66.0 sf, Capacity= 16.73 cfs

15.00' x 2.00' deep channel, n= 0.800 Sheet flow: Woods+dense brush  
 Side Slope Z-value= 15.0 3.0 '/' Top Width= 51.00'  
 Length= 225.0' Slope= 0.0133 '/'  
 Inlet Invert= 243.00', Outlet Invert= 240.00'



**Summary for Pond 2P: Exist Det. Basin**

Inflow Area = 6.897 ac, 24.27% Impervious, Inflow Depth = 0.90" for 10-year event  
 Inflow = 5.39 cfs @ 12.13 hrs, Volume= 0.516 af  
 Outflow = 4.50 cfs @ 12.21 hrs, Volume= 0.516 af, Atten= 16%, Lag= 4.4 min  
 Primary = 4.50 cfs @ 12.21 hrs, Volume= 0.516 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Peak Elev= 254.18' @ 12.21 hrs Surf.Area= 7,010 sf Storage= 1,194 cf

Plug-Flow detention time= 4.5 min calculated for 0.516 af (100% of inflow)  
 Center-of-Mass det. time= 4.5 min ( 899.2 - 894.6 )

Volume	Invert	Avail.Storage	Storage Description
#1	254.00'	620,800 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
254.00	6,000	0	0
255.00	11,500	8,750	8,750
256.00	25,000	18,250	27,000
275.00	28,150	504,925	531,925
278.00	31,100	88,875	620,800

Device	Routing	Invert	Outlet Devices
#1	Primary	254.00'	<b>20.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

**Primary OutFlow** Max=3.92 cfs @ 12.21 hrs HW=254.18' (Free Discharge)  
 ↳1=Broad-Crested Rectangular Weir (Weir Controls 3.92 cfs @ 1.07 fps)

**Summary for Pond DE31: CRUSHED STONE VOLUME**

Inflow Area = 0.496 ac, 100.00% Impervious, Inflow Depth = 4.36" for 10-year event  
 Inflow = 2.23 cfs @ 12.08 hrs, Volume= 0.180 af  
 Outflow = 2.02 cfs @ 12.12 hrs, Volume= 0.180 af, Atten= 10%, Lag= 2.3 min  
 Primary = 0.08 cfs @ 12.12 hrs, Volume= 0.093 af  
 Secondary = 1.94 cfs @ 12.12 hrs, Volume= 0.087 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Peak Elev= 2.39' @ 12.12 hrs Surf.Area= 1,238 sf Storage= 1,289 cf

Plug-Flow detention time= 78.1 min calculated for 0.180 af (100% of inflow)  
 Center-of-Mass det. time= 78.1 min ( 827.6 - 749.4 )

Volume #1	Invert 0.00'	Avail.Storage 2,182 cf	Storage Description Custom Stage Data (Conic) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
0.00	720	0.0	0	0	720	
0.10	720	40.0	29	29	730	
0.50	720	40.0	115	144	768	
1.50	720	40.0	288	432	863	
3.00	1,680	100.0	1,750	2,182	1,839	

Device	Routing	Invert	Outlet Devices								
#1	Primary	0.00'	<b>2.410 in/hr Exfiltration over Wetted area</b>								
#2	Secondary	2.00'	<b>3.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b>								
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60								
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63								

**Primary OutFlow** Max=0.08 cfs @ 12.12 hrs HW=2.39' (Free Discharge)  
 ↳1=Exfiltration (Exfiltration Controls 0.08 cfs)

**Secondary OutFlow** Max=1.94 cfs @ 12.12 hrs HW=2.39' (Free Discharge)  
 ↳2=Broad-Crested Rectangular Weir (Weir Controls 1.94 cfs @ 1.67 fps)

**Summary for Pond SF1: Soil Filter**

Inflow Area = 0.511 ac, 62.92% Impervious, Inflow Depth = 2.63" for 10-year event  
 Inflow = 1.58 cfs @ 12.09 hrs, Volume= 0.112 af  
 Outflow = 0.79 cfs @ 12.25 hrs, Volume= 0.072 af, Atten= 50%, Lag= 9.5 min  
 Primary = 0.79 cfs @ 12.25 hrs, Volume= 0.072 af  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Peak Elev= 248.11' @ 12.25 hrs Surf.Area= 1,689 sf Storage= 1,935 cf

Plug-Flow detention time= 180.8 min calculated for 0.072 af (64% of inflow)  
 Center-of-Mass det. time= 77.2 min ( 899.9 - 822.6 )

Volume	Invert	Avail.Storage	Storage Description
#1	246.60'	3,692 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
246.60	880	0	0
247.00	1,102	396	396
248.00	1,624	1,363	1,759
249.00	2,242	1,933	3,692

Device	Routing	Invert	Outlet Devices
#1	Primary	244.60'	<b>15.0" Round Culvert</b> L= 56.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 244.60' / 244.32' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	248.00'	<b>1.2" x 21.0" Horiz. Orifice/Grate</b> X 10 rows C= 0.600 in 21.0" x 21.0" Grate (57% open area) Limited to weir flow at low heads
#3	Secondary	248.50'	<b>10.0' long x 3.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

**Primary OutFlow** Max=0.79 cfs @ 12.25 hrs HW=248.11' (Free Discharge)

↳ **1=Culvert** (Passes 0.79 cfs of 9.36 cfs potential flow)

↳ **2=Orifice/Grate** (Weir Controls 0.79 cfs @ 1.06 fps)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=246.60' (Free Discharge)

↳ **3=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

### Summary for Pond SP1: Study Point 1

Inflow Area = 14.840 ac, 27.87% Impervious, Inflow Depth = 1.15" for 10-year event  
 Inflow = 6.91 cfs @ 12.14 hrs, Volume= 1.417 af  
 Primary = 6.91 cfs @ 12.14 hrs, Volume= 1.417 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

**Summary for Subcatchment 10S:**

Runoff = 5.62 cfs @ 12.23 hrs, Volume= 0.612 af, Depth= 1.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
56,965	39	>75% Grass cover, Good, HSG A
41,242	98	Paved parking, HSG A
79,787	30	Woods, Good, HSG A
59,703	77	Woods, Good, HSG D
8,349	78	Meadow, non-grazed, HSG D
9,023	30	Meadow, non-grazed, HSG A
255,069	56	Weighted Average
213,827		83.83% Pervious Area
41,242		16.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	65	0.0460	0.21		<b>Sheet Flow, Sheet Flow A to B</b> Grass: Short n= 0.150 P2= 3.00"
1.3	270	0.0550	3.52		<b>Shallow Concentrated Flow, Shallow Flow B to C</b> Grassed Waterway Kv= 15.0 fps
1.6	290	0.0400	3.00		<b>Shallow Concentrated Flow, Shallow Flow C to D</b> Grassed Waterway Kv= 15.0 fps
6.5	530	0.0740	1.36		<b>Shallow Concentrated Flow, Shallow Flow E to F</b> Woodland Kv= 5.0 fps
14.5	1,155	Total			

**Summary for Subcatchment 20S:**

Runoff = 8.77 cfs @ 12.13 hrs, Volume= 0.761 af, Depth= 1.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
2,123	70	Woods, Good, HSG C
33,741	77	Woods, Good, HSG D
96,353	30	Woods, Good, HSG A
27,424	98	Paved parking, HSG D
23,558	78	Meadow, non-grazed, HSG D
42,701	39	>75% Grass cover, Good, HSG A
45,473	98	Paved parking, HSG A
29,040	30	Meadow, non-grazed, HSG A
300,413	57	Weighted Average
227,516		75.73% Pervious Area
72,897		24.27% Impervious Area

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Type III 24-hr 25-year Rainfall=5.40"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.1000	0.27		<b>Sheet Flow, Sheet Flow A to B</b> Grass: Short n= 0.150 P2= 3.00"
0.5	125	0.0560	3.81		<b>Shallow Concentrated Flow, Shallow Flow B to C</b> Unpaved Kv= 16.1 fps
0.5	140	0.0700	4.26		<b>Shallow Concentrated Flow, Shallow Flow C to D</b> Unpaved Kv= 16.1 fps
1.2	175	0.0230	2.44		<b>Shallow Concentrated Flow, Shallow Flow E to F</b> Unpaved Kv= 16.1 fps
2.6	175	0.0500	1.12		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
7.9	665	Total			

**Summary for Subcatchment 30S:**

Runoff = 3.39 cfs @ 12.08 hrs, Volume= 0.260 af, Depth= 4.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
26,755	98	Paved parking, HSG A
2,074	39	>75% Grass cover, Good, HSG A
94	80	>75% Grass cover, Good, HSG D
28,923	94	Weighted Average
2,168		7.50% Pervious Area
26,755		92.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry,</b>

**Summary for Subcatchment 31:**

Runoff = 2.62 cfs @ 12.08 hrs, Volume= 0.213 af, Depth= 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
* 21,600	98	Impervious (roof) (90x240)
21,600		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, 6</b>

**Summary for Subcatchment 40S:**

Runoff = 2.00 cfs @ 12.09 hrs, Volume= 0.142 af, Depth= 3.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
3,022	77	Woods, Good, HSG D
14,015	98	Paved parking, HSG A
2,851	30	Woods, Good, HSG A
1,670	39	>75% Grass cover, Good, HSG A
717	80	>75% Grass cover, Good, HSG D
22,275	81	Weighted Average
8,260		37.08% Pervious Area
14,015		62.92% Impervious Area

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

**Summary for Subcatchment 50S:**

Runoff = 0.33 cfs @ 12.11 hrs, Volume= 0.032 af, Depth= 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
3,632	98	Paved parking, HSG A
14,507	39	>75% Grass cover, Good, HSG A
18,139	51	Weighted Average
14,507		79.98% Pervious Area
3,632		20.02% Impervious Area

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

**Summary for Reach 21R:**

Inflow Area = 6.897 ac, 24.27% Impervious, Inflow Depth = 1.32" for 25-year event  
Inflow = 7.72 cfs @ 12.18 hrs, Volume= 0.761 af  
Outflow = 5.05 cfs @ 12.67 hrs, Volume= 0.761 af, Atten= 35%, Lag= 29.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Max. Velocity= 0.13 fps, Min. Travel Time= 15.7 min  
Avg. Velocity = 0.03 fps, Avg. Travel Time= 67.1 min

Peak Storage= 4,775 cf @ 12.41 hrs  
Average Depth at Peak Storage= 0.93'  
Bank-Full Depth= 2.00' Flow Area= 128.0 sf, Capacity= 24.91 cfs

24.00' x 2.00' deep channel, n= 0.800 Sheet flow: Woods+dense brush  
Side Slope Z-value= 20.0 ' / ' Top Width= 104.00'  
Length= 120.0' Slope= 0.0083 ' / '  
Inlet Invert= 250.00', Outlet Invert= 249.00'



**Summary for Reach 22R:**

Inflow Area = 6.897 ac, 24.27% Impervious, Inflow Depth = 1.32" for 25-year event  
Inflow = 5.05 cfs @ 12.67 hrs, Volume= 0.761 af  
Outflow = 4.86 cfs @ 12.87 hrs, Volume= 0.761 af, Atten= 4%, Lag= 11.7 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Max. Velocity= 0.30 fps, Min. Travel Time= 6.2 min  
Avg. Velocity = 0.07 fps, Avg. Travel Time= 25.6 min

Peak Storage= 1,797 cf @ 12.77 hrs  
Average Depth at Peak Storage= 0.93'  
Bank-Full Depth= 2.00' Flow Area= 52.0 sf, Capacity= 23.65 cfs

10.00' x 2.00' deep channel, n= 0.800 Sheet flow: Woods+dense brush  
Side Slope Z-value= 8.0 ' / ' Top Width= 42.00'  
Length= 110.0' Slope= 0.0455 ' / '  
Inlet Invert= 249.00', Outlet Invert= 244.00'



**Summary for Reach 23R:**

Inflow Area = 7.408 ac, 26.93% Impervious, Inflow Depth = 1.40" for 25-year event  
Inflow = 5.09 cfs @ 12.86 hrs, Volume= 0.863 af  
Outflow = 3.90 cfs @ 13.50 hrs, Volume= 0.863 af, Atten= 23%, Lag= 37.9 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Max. Velocity= 0.17 fps, Min. Travel Time= 22.1 min  
Avg. Velocity = 0.05 fps, Avg. Travel Time= 82.5 min

**15124.Post Development 08-16-2016**

Type III 24-hr 25-year Rainfall=5.40"

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Peak Storage= 5,172 cf @ 13.13 hrs  
 Average Depth at Peak Storage= 0.97'  
 Bank-Full Depth= 2.00' Flow Area= 66.0 sf, Capacity= 16.73 cfs

15.00' x 2.00' deep channel, n= 0.800 Sheet flow: Woods+dense brush  
 Side Slope Z-value= 15.0 3.0 '/' Top Width= 51.00'  
 Length= 225.0' Slope= 0.0133 '/'  
 Inlet Invert= 243.00', Outlet Invert= 240.00'



**Summary for Pond 2P: Exist Det. Basin**

Inflow Area = 6.897 ac, 24.27% Impervious, Inflow Depth = 1.32" for 25-year event  
 Inflow = 8.77 cfs @ 12.13 hrs, Volume= 0.761 af  
 Outflow = 7.72 cfs @ 12.18 hrs, Volume= 0.761 af, Atten= 12%, Lag= 3.3 min  
 Primary = 7.72 cfs @ 12.18 hrs, Volume= 0.761 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Peak Elev= 254.28' @ 12.18 hrs Surf.Area= 7,530 sf Storage= 1,882 cf

Plug-Flow detention time= 4.5 min calculated for 0.761 af (100% of inflow)  
 Center-of-Mass det. time= 4.5 min ( 885.2 - 880.7 )

Volume	Invert	Avail.Storage	Storage Description
#1	254.00'	620,800 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
254.00	6,000	0	0
255.00	11,500	8,750	8,750
256.00	25,000	18,250	27,000
275.00	28,150	504,925	531,925
278.00	31,100	88,875	620,800

Device	Routing	Invert	Outlet Devices
#1	Primary	254.00'	<b>20.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

**Primary OutFlow** Max=7.39 cfs @ 12.18 hrs HW=254.28' (Free Discharge)  
 ↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 7.39 cfs @ 1.33 fps)

**Summary for Pond DE31: CRUSHED STONE VOLUME**

Inflow Area = 0.496 ac, 100.00% Impervious, Inflow Depth = 5.16" for 25-year event  
 Inflow = 2.62 cfs @ 12.08 hrs, Volume= 0.213 af  
 Outflow = 2.38 cfs @ 12.12 hrs, Volume= 0.213 af, Atten= 9%, Lag= 2.2 min  
 Primary = 0.08 cfs @ 12.12 hrs, Volume= 0.100 af  
 Secondary = 2.30 cfs @ 12.12 hrs, Volume= 0.113 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Peak Elev= 2.43' @ 12.12 hrs Surf.Area= 1,269 sf Storage= 1,347 cf

Plug-Flow detention time= 74.2 min calculated for 0.213 af (100% of inflow)  
 Center-of-Mass det. time= 74.2 min ( 820.9 - 746.8 )

Volume	Invert	Avail.Storage	Storage Description			
#1	0.00'	2,182 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
0.00	720	0.0	0	0	720	
0.10	720	40.0	29	29	730	
0.50	720	40.0	115	144	768	
1.50	720	40.0	288	432	863	
3.00	1,680	100.0	1,750	2,182	1,839	

Device	Routing	Invert	Outlet Devices							
#1	Primary	0.00'	<b>2.410 in/hr Exfiltration over Wetted area</b>							
#2	Secondary	2.00'	<b>3.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b>							
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60							
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63							

**Primary OutFlow** Max=0.08 cfs @ 12.12 hrs HW=2.43' (Free Discharge)  
 ↳1=Exfiltration (Exfiltration Controls 0.08 cfs)

**Secondary OutFlow** Max=2.30 cfs @ 12.12 hrs HW=2.43' (Free Discharge)  
 ↳2=Broad-Crested Rectangular Weir (Weir Controls 2.30 cfs @ 1.77 fps)

**Summary for Pond SF1: Soil Filter**

Inflow Area = 0.511 ac, 62.92% Impervious, Inflow Depth = 3.34" for 25-year event  
 Inflow = 2.00 cfs @ 12.09 hrs, Volume= 0.142 af  
 Outflow = 1.62 cfs @ 12.15 hrs, Volume= 0.102 af, Atten= 19%, Lag= 3.4 min  
 Primary = 1.62 cfs @ 12.15 hrs, Volume= 0.102 af  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Peak Elev= 248.17' @ 12.15 hrs Surf.Area= 1,730 sf Storage= 2,046 cf

Plug-Flow detention time= 151.7 min calculated for 0.102 af (72% of inflow)  
 Center-of-Mass det. time= 59.3 min ( 875.2 - 815.8 )

**15124.Post Developement 08-16-2016**

Type III 24-hr 25-year Rainfall=5.40"

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Volume	Invert	Avail.Storage	Storage Description
#1	246.60'	3,692 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
246.60	880	0	0
247.00	1,102	396	396
248.00	1,624	1,363	1,759
249.00	2,242	1,933	3,692

Device	Routing	Invert	Outlet Devices
#1	Primary	244.60'	<b>15.0" Round Culvert</b> L= 56.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 244.60' / 244.32' S= 0.0050 ' / Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	248.00'	<b>1.2" x 21.0" Horiz. Orifice/Grate</b> X 10 rows C= 0.600 in 21.0" x 21.0" Grate (57% open area) Limited to weir flow at low heads
#3	Secondary	248.50'	<b>10.0' long x 3.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

**Primary OutFlow** Max=1.62 cfs @ 12.15 hrs HW=248.17' (Free Discharge)

↳ **1=Culvert** (Passes 1.62 cfs of 9.48 cfs potential flow)

↳ **2=Orifice/Grate** (Weir Controls 1.62 cfs @ 1.35 fps)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=246.60' (Free Discharge)

↳ **3=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

**Summary for Pond SP1: Study Point 1**

Inflow Area = 14.840 ac, 27.87% Impervious, Inflow Depth = 1.60" for 25-year event  
 Inflow = 9.89 cfs @ 12.15 hrs, Volume= 1.981 af  
 Primary = 9.89 cfs @ 12.15 hrs, Volume= 1.981 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

**15124.Post Development 08-16-2016**

Type III 24-hr 2-year Rainfall=3.00"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.1000	0.27		<b>Sheet Flow, Sheet Flow A to B</b> Grass: Short n= 0.150 P2= 3.00"
0.5	125	0.0560	3.81		<b>Shallow Concentrated Flow, Shallow Flow B to C</b> Unpaved Kv= 16.1 fps
0.5	140	0.0700	4.26		<b>Shallow Concentrated Flow, Shallow Flow C to D</b> Unpaved Kv= 16.1 fps
1.2	175	0.0230	2.44		<b>Shallow Concentrated Flow, Shallow Flow E to F</b> Unpaved Kv= 16.1 fps
2.6	175	0.0500	1.12		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
7.9	665	Total			

**Summary for Subcatchment 30S:**

Runoff = 1.76 cfs @ 12.08 hrs, Volume= 0.130 af, Depth= 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-year Rainfall=3.00"

Area (sf)	CN	Description
26,755	98	Paved parking, HSG A
2,074	39	>75% Grass cover, Good, HSG A
94	80	>75% Grass cover, Good, HSG D
28,923	94	Weighted Average
2,168		7.50% Pervious Area
26,755		92.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry,</b>

**Summary for Subcatchment 31:**

Runoff = 1.44 cfs @ 12.08 hrs, Volume= 0.114 af, Depth= 2.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-year Rainfall=3.00"

Area (sf)	CN	Description
* 21,600	98	Impervious (roof) (90x240)
21,600		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry, 6</b>

**15124.Post Development 08-16-2016**

Type III 24-hr 2-year Rainfall=3.00"

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**Summary for Subcatchment 40S:**

Runoff = 0.78 cfs @ 12.09 hrs, Volume= 0.056 af, Depth= 1.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-year Rainfall=3.00"

Area (sf)	CN	Description
3,022	77	Woods, Good, HSG D
14,015	98	Paved parking, HSG A
2,851	30	Woods, Good, HSG A
1,670	39	>75% Grass cover, Good, HSG A
717	80	>75% Grass cover, Good, HSG D
22,275	81	Weighted Average
8,260		37.08% Pervious Area
14,015		62.92% Impervious Area

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

**Summary for Subcatchment 50S:**

Runoff = 0.01 cfs @ 12.50 hrs, Volume= 0.004 af, Depth= 0.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-year Rainfall=3.00"

Area (sf)	CN	Description
3,632	98	Paved parking, HSG A
14,507	39	>75% Grass cover, Good, HSG A
18,139	51	Weighted Average
14,507		79.98% Pervious Area
3,632		20.02% Impervious Area

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

**Summary for Reach 21R:**

Inflow Area = 6.897 ac, 24.27% Impervious, Inflow Depth = 0.25" for 2-year event  
Inflow = 0.68 cfs @ 12.43 hrs, Volume= 0.141 af  
Outflow = 0.35 cfs @ 13.40 hrs, Volume= 0.141 af, Atten= 48%, Lag= 58.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Max. Velocity= 0.06 fps, Min. Travel Time= 35.5 min  
Avg. Velocity = 0.02 fps, Avg. Travel Time= 93.9 min

**15124.Post Development 08-16-2016**

Type III 24-hr 2-year Rainfall=3.00"

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Peak Storage= 756 cf @ 12.81 hrs  
Average Depth at Peak Storage= 0.22'  
Bank-Full Depth= 2.00' Flow Area= 128.0 sf, Capacity= 24.91 cfs

24.00' x 2.00' deep channel, n= 0.800 Sheet flow: Woods+dense brush  
Side Slope Z-value= 20.0 ' ' Top Width= 104.00'  
Length= 120.0' Slope= 0.0083 ' '  
Inlet Invert= 250.00', Outlet Invert= 249.00'



**Summary for Reach 22R:**

Inflow Area = 6.897 ac, 24.27% Impervious, Inflow Depth = 0.25" for 2-year event  
Inflow = 0.35 cfs @ 13.40 hrs, Volume= 0.141 af  
Outflow = 0.33 cfs @ 13.92 hrs, Volume= 0.141 af, Atten= 6%, Lag= 31.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Max. Velocity= 0.13 fps, Min. Travel Time= 14.0 min  
Avg. Velocity = 0.05 fps, Avg. Travel Time= 36.0 min

Peak Storage= 281 cf @ 13.68 hrs  
Average Depth at Peak Storage= 0.22'  
Bank-Full Depth= 2.00' Flow Area= 52.0 sf, Capacity= 23.65 cfs

10.00' x 2.00' deep channel, n= 0.800 Sheet flow: Woods+dense brush  
Side Slope Z-value= 8.0 ' ' Top Width= 42.00'  
Length= 110.0' Slope= 0.0455 ' '  
Inlet Invert= 249.00', Outlet Invert= 244.00'



**Summary for Reach 23R:**

Inflow Area = 7.408 ac, 26.93% Impervious, Inflow Depth = 0.25" for 2-year event  
Inflow = 0.33 cfs @ 13.92 hrs, Volume= 0.157 af  
Outflow = 0.27 cfs @ 16.21 hrs, Volume= 0.157 af, Atten= 19%, Lag= 137.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
Max. Velocity= 0.07 fps, Min. Travel Time= 51.6 min  
Avg. Velocity = 0.03 fps, Avg. Travel Time= 121.8 min

**15124.Post Development 08-16-2016**

Type III 24-hr 2-year Rainfall=3.00"

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Peak Storage= 843 cf @ 15.35 hrs  
 Average Depth at Peak Storage= 0.22'  
 Bank-Full Depth= 2.00' Flow Area= 66.0 sf, Capacity= 16.73 cfs

15.00' x 2.00' deep channel, n= 0.800 Sheet flow: Woods+dense brush  
 Side Slope Z-value= 15.0 3.0 ' Top Width= 51.00'  
 Length= 225.0' Slope= 0.0133 '/  
 Inlet Invert= 243.00', Outlet Invert= 240.00'



**Summary for Pond 2P: Exist Det. Basin**

Inflow Area = 6.897 ac, 24.27% Impervious, Inflow Depth = 0.25" for 2-year event  
 Inflow = 0.71 cfs @ 12.35 hrs, Volume= 0.141 af  
 Outflow = 0.68 cfs @ 12.43 hrs, Volume= 0.141 af, Atten= 5%, Lag= 4.7 min  
 Primary = 0.68 cfs @ 12.43 hrs, Volume= 0.141 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Peak Elev= 254.03' @ 12.43 hrs Surf.Area= 6,152 sf Storage= 168 cf

Plug-Flow detention time= 4.5 min calculated for 0.141 af (100% of inflow)  
 Center-of-Mass det. time= 4.5 min ( 958.2 - 953.7 )

Volume	Invert	Avail.Storage	Storage Description
#1	254.00'	620,800 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
254.00	6,000	0	0
255.00	11,500	8,750	8,750
256.00	25,000	18,250	27,000
275.00	28,150	504,925	531,925
278.00	31,100	88,875	620,800

Device	Routing	Invert	Outlet Devices
#1	Primary	254.00'	<b>20.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

**Primary OutFlow** Max=0.23 cfs @ 12.43 hrs HW=254.03' (Free Discharge)  
 1=Broad-Crested Rectangular Weir (Weir Controls 0.23 cfs @ 0.41 fps)

**Summary for Pond DE31: CRUSHED STONE VOLUME**

Inflow Area = 0.496 ac, 100.00% Impervious, Inflow Depth = 2.77" for 2-year event  
 Inflow = 1.44 cfs @ 12.08 hrs, Volume= 0.114 af  
 Outflow = 1.24 cfs @ 12.13 hrs, Volume= 0.114 af, Atten= 14%, Lag= 2.9 min  
 Primary = 0.07 cfs @ 12.13 hrs, Volume= 0.075 af  
 Secondary = 1.16 cfs @ 12.13 hrs, Volume= 0.039 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Peak Elev= 2.27' @ 12.13 hrs Surf.Area= 1,166 sf Storage= 1,156 cf

Plug-Flow detention time= 90.0 min calculated for 0.114 af (100% of inflow)  
 Center-of-Mass det. time= 90.0 min ( 847.8 - 757.8 )

Volume	Invert	Avail.Storage	Storage Description			
#1	0.00'	2,182 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
0.00	720	0.0	0	0	720	
0.10	720	40.0	29	29	730	
0.50	720	40.0	115	144	768	
1.50	720	40.0	288	432	863	
3.00	1,680	100.0	1,750	2,182	1,839	

Device	Routing	Invert	Outlet Devices							
#1	Primary	0.00'	<b>2.410 in/hr Exfiltration over Wetted area</b>							
#2	Secondary	2.00'	<b>3.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b>							
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60							
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63							

**Primary OutFlow** Max=0.07 cfs @ 12.13 hrs HW=2.27' (Free Discharge)  
 ↰1=Exfiltration (Exfiltration Controls 0.07 cfs)

**Secondary OutFlow** Max=1.16 cfs @ 12.13 hrs HW=2.27' (Free Discharge)  
 ↰2=Broad-Crested Rectangular Weir (Weir Controls 1.16 cfs @ 1.41 fps)

**Summary for Pond SF1: Soil Filter**

Inflow Area = 0.511 ac, 62.92% Impervious, Inflow Depth = 1.31" for 2-year event  
 Inflow = 0.78 cfs @ 12.09 hrs, Volume= 0.056 af  
 Outflow = 0.04 cfs @ 15.15 hrs, Volume= 0.016 af, Atten= 95%, Lag= 183.3 min  
 Primary = 0.04 cfs @ 15.15 hrs, Volume= 0.016 af  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Peak Elev= 248.01' @ 15.15 hrs Surf.Area= 1,633 sf Storage= 1,783 cf

Plug-Flow detention time= 393.6 min calculated for 0.016 af (28% of inflow)  
 Center-of-Mass det. time= 258.8 min ( 1,101.6 - 842.8 )

**15124.Post Development 08-16-2016**

Type III 24-hr 2-year Rainfall=3.00"

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Volume	Invert	Avail.Storage	Storage Description
#1	246.60'	3,692 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
246.60	880	0	0
247.00	1,102	396	396
248.00	1,624	1,363	1,759
249.00	2,242	1,933	3,692

Device	Routing	Invert	Outlet Devices
#1	Primary	244.60'	<b>15.0" Round Culvert</b> L= 56.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 244.60' / 244.32' S= 0.0050 ' S= 0.0050 ' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	248.00'	<b>1.2" x 21.0" Horiz. Orifice/Grate</b> X 10 rows C= 0.600 in 21.0" x 21.0" Grate (57% open area) Limited to weir flow at low heads
#3	Secondary	248.50'	<b>10.0' long x 3.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

**Primary OutFlow** Max=0.04 cfs @ 15.15 hrs HW=248.01' (Free Discharge)

↑1=Culvert (Passes 0.04 cfs of 9.19 cfs potential flow)

↑2=Orifice/Grate (Weir Controls 0.04 cfs @ 0.39 fps)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=246.60' (Free Discharge)

↑3=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

**Summary for Pond SP1: Study Point 1**

Inflow Area = 14.840 ac, 27.87% Impervious, Inflow Depth = 0.41" for 2-year event  
 Inflow = 2.90 cfs @ 12.10 hrs, Volume= 0.512 af  
 Primary = 2.90 cfs @ 12.10 hrs, Volume= 0.512 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

# **Attachment 5**

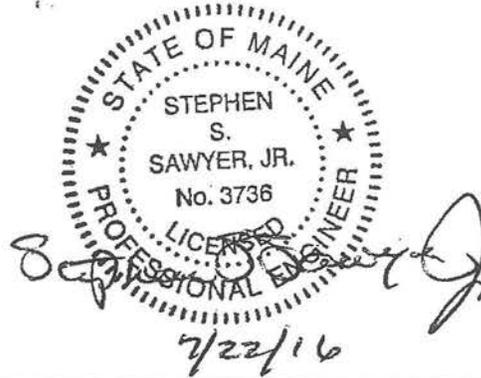
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## **Traffic Generation**

## Memorandum

15124

To: Dan Riley  
From: Steve Sawyer  
Date: July 22, 2016  
Subject: Traffic Generation  
12 Lexington Street, Lewiston Maine



Per your request, we have completed Trip Generation calculations for the proposed manufacturing tenant in Lewiston at 12 Lexington Street. It is our understanding that a manufacturing tenant is moving from a nearby location to the proposed location.

### Traffic Generation

We received information from the proposed tenant regarding their employees and planned shift schedule. They reported that they intend to have three shifts in total throughout the day. The estimated weekday shift times and approximate number of employees is detailed below:

1 <sup>st</sup> Shift	6:00 AM – 2:30 PM	64 employees
2 <sup>nd</sup> Shift	2:45 PM – 11:15 PM	18 employees
3 <sup>rd</sup> Shift	11:30 PM – 5:45 AM	16 employees

The trip generation for the proposed site can be estimated from the above shift information and employee estimates. The AM Peak Hour of the generator would be from 5:30 AM to 6:30 AM which includes 80 total trip ends comprised of 64 employees arriving for the 1<sup>st</sup> shift and 16 employees leaving from the 3<sup>rd</sup> shift. The PM Peak Hour would be from 2:15 PM to 3:15 PM, 82 total trip ends including 64 employees leaving from 1<sup>st</sup> shift and the 18 employees arriving for 2<sup>nd</sup> shift. It is worth noting that both the AM and PM Peak Hours are offset from the peak hours of the adjacent street which typically is between the hours of 6:00 AM to 8:00 AM and 4:00 PM to 6:00 PM.

It is also our understanding that depending on demand the manufacturing tenant may also work on weekends. These shifts may be the standard weekday 8-hour shifts or may be modified 6-hour shifts with the 1<sup>st</sup> shift being from 5AM to 11AM and a 2<sup>nd</sup> shift from 11:00 AM to 5:00 PM. This would lead to the Weekend Peak Hour being 82 total trip ends including 64 employees leaving from 1<sup>st</sup> shift and the 18 employees arriving for 2<sup>nd</sup> shift. The weekend peak hour will be at 11:00 AM or 2:45 PM depending on the shift schedule.

Using the 9<sup>th</sup> Edition of ITE's Trip Generation Manual we have estimated the following trip generation for the pre-existing land uses that were previously located on this site, including warehouse and office space, and the results are included within Tables 1 and 2 respectively located below. The ITE Land Use Code 150 – Warehouse and Land Use Code 715 Single Tenant Office Building was selected and these trip generation estimates are based on the estimated number of employees of these previous uses. There is a lack of data for weekend trip generation due to a lack of studies that ITE collected to determine estimated weekend trip generation. ITE assumed that the Single Tenant Office Building was not open on the weekends and that the Warehouse had a limited weekend staff.

**Table 1 – Pre-existing Trip Generation  
Land Use Code 150 – Warehouse  
(60 Employees)**

<i>Time Period</i>	<i>Trip Generation Rate (trips/ Employee)</i>	<i>Total Trips</i>
AM Peak Hour of Generator	0.55/Employee	33
PM Peak Hour of Generator	0.58/Employee	35
Saturday Peak Hour of Generator	0.10/Employee	6

**Table 2 – Pre-existing Trip Generation  
Land Use Code 715 – Single Tenant Office Building  
(40 Employees)**

<i>Time Period</i>	<i>Trip Generation Rate (trips/ Employee)</i>	<i>Total Trips</i>
AM Peak Hour of Generator	0.53/Employee	21
PM Peak Hour of Generator	0.51/Employee	20
Saturday Peak Hour of Generator	0.00/Employee	0

Table 3 below shows the current estimated trip generation for the proposed site minus the estimated trip generation from the pre-existing uses. The estimated net peak hour trip generation does not trigger the threshold for a MaineDOT Traffic Movement Permit of 100 trips.

**Table 3  
Net Trip Generation**

<i>Time Period</i>	<i>Net Total</i>
AM Peak Hour of Generator	26
PM Peak Hour of Generator	27
Saturday Peak Hour of Generator	76

# Attachment 6

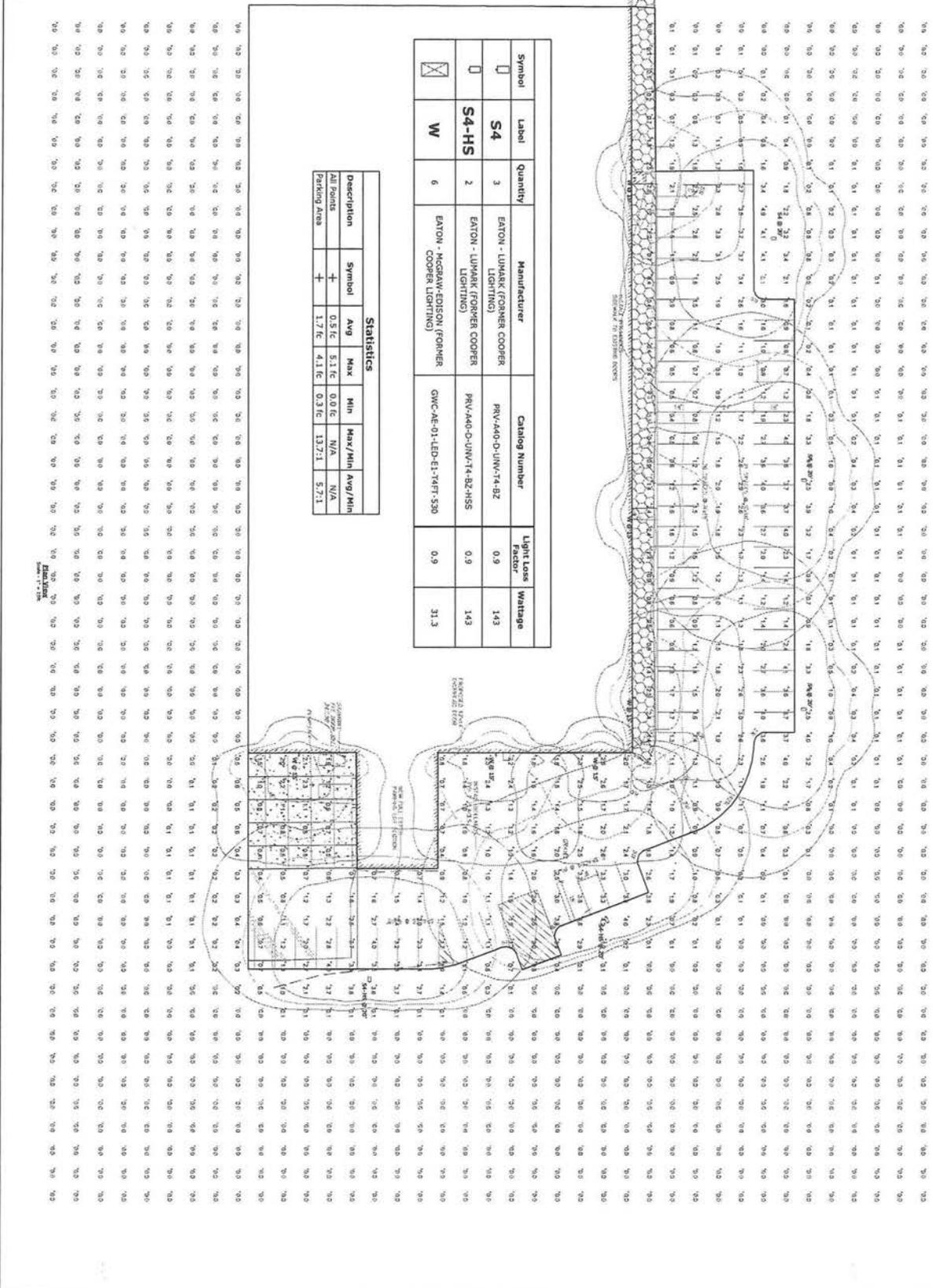
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## Lighting



# VIP Warehouse REV1 Lewiston, ME

Designer: **CH2M HILL**  
 Date: **01/20/2016**  
 Scale: **1/8" = 1'-0"**  
 Drawing No.: **15071**  
 1 of 1



Symbol	Label	Quantity	Manufacturer	Catalog Number	Light Loss Factor	Wattage
□	S4	3	EATON - LUMARK (FORMER COOPER LIGHTING)	PRV-440-D-LUM-14-BZ	0.9	143
□	S4-HS	2	EATON - LUMARK (FORMER COOPER LIGHTING)	PRV-440-D-LUM-14-BZ-HSS	0.9	143
⊗	W	6	EATON - MCGRAW-EDISON (FORMER COOPER LIGHTING)	GWC-AE-01-LED-E1-174FT-530	0.9	31.3

## DESCRIPTION

The Prevail LED area, site luminaire combines optical performance, energy efficiency and long term reliability in an advanced, patent pending modern design. Utilizing the latest LED technology, the Prevail luminaire delivers unparalleled uniformity resulting in greater pole spacing. A versatile mount standard arm facilitates ease of installation for both retrofit and new installations. With energy savings greater than 62%, the Prevail fixture replaces 150-400W metal halide fixtures in general area lighting applications such as parking lots, walkways, roadways and building areas.

Catalog #		Type
Project		
Comments		Date
Prepared by		

## SPECIFICATION FEATURES

### Construction

Construction is comprised of a heavy-duty, single-piece die-cast aluminum housing. The LED drivers are mounted in direct contact with the casting to promote low operating temperature and long life. The die-cast aluminum door is tethered to provide easy access to the driver if replacement is required. A one-piece silicone gasket seals the door to the fixture housing. The optics is mounted on a versatile, aluminum plate that dissipates heat from the LEDs resulting in longer life of the fixture. The fixture is IP66 and 3G vibration rated (ANSI C136.31) to insure strength of construction and longevity in the selected application.

### Optics

Precision molded, high efficiency optics are precisely designed to shape the distribution, maximizing efficiency and application spacing. Available in Type II, III, IV and V distributions with lumen packages ranging from 6,100 to 15,100 nominal lumens. Light engine configurations consist of 1 or 2 high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L92/60,000 hours at 25°C) per IESNA TM-21. For the ultimate level of spill light control, an optional house side shield accessory can be field or factory installed.

### Electrical

LED drivers are mounted to the fixture for optimal heat sinking and ease of maintenance. Thermal management incorporates both conduction and convection to transfer heat rapidly away from the LED source for optimal efficiency and light output. Class 1 electronic drivers have a power factor >90%, THD <20%, and an expected life of 100,000 hours with <1% failure rate. Available in 120-277V 50/60Hz, 347V 60Hz or 480V 60Hz operation. 480V is compatible for use with 480V Wye systems only. 10kV/10 kA surge protection standard. 0-10V dimming driver is standard with leads external to the fixture to accommodate controls capability such as dimming and occupancy. Suitable for ambient temperatures from -40°C to 40°C. Optional 50°C HA (high ambient) available. Standard NEMA 3-PIN twistlock photocontrol receptacle and NEMA 7-PIN twistlock photocontrol receptacles are available as options.

### Controls

The Prevail LED luminaire control options are designed to be simple and cost-effective ASHRAE and California Title 24 compliant solutions. The ANSI C136.41 compliant NEMA 7-PIN receptacle enables wireless dimming when used with compatible photocontrol. An integrated dimming and occupancy sensor is a standalone control option available in on/off (MSP) and bi-level dimming

(MSP/DIM) operation. The optional LumaWatt system is best described as a peer-to-peer wireless network of luminaire-integral sensors that operate in accordance with programmable profiles. Each sensor is capable of motion and photo sensing, metering power consumption and wireless communication.

### Mounting

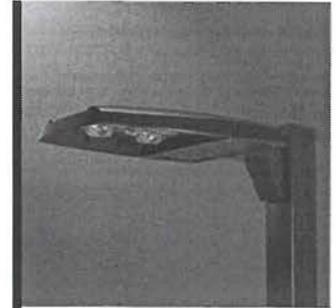
Standard pole mount arm is bolted directly to the pole and the fixture slides onto the arm and locks in place with a bolt facilitating quick and easy installation. The versatile, patent pending, standard mount arm accommodates multiple drill patterns ranging from 1-1/2" to 4-7/8". Removal of the door on the standard mounting arm enables wiring of the fixture without having to access the driver compartment. A knock-out on the standard mounting arm enables round pole mounting. Wall mount and mast arm mounting options are available. Mast arm adapter fits 2-3/8" O.D. tenon.

### Finish

Housing and cast parts finished in five-stage super TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Standard color is bronze. Additional colors available in white, grey, black, dark platinum and graphite metallic.

### Warranty

Five-year warranty.



## PRV PREVAIL

LED

AREA / SITE / ROADWAY  
LUMINAIRE



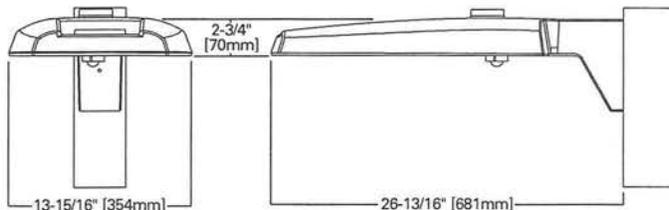
**CERTIFICATION DATA**  
UL and cUL Wet Location Listed  
IP66-Rated  
3G Vibration Rated  
ISO 9001  
DesignLights Consortium™ Qualified\*

**ENERGY DATA**  
Electronic LED Driver  
0.9 Power Factor  
<20% Total Harmonic Distortion  
120-277V/50 and 60Hz,  
347V/60Hz, 480V/60Hz  
-40°C Minimum Temperature Rating  
+40°C Ambient Temperature Rating

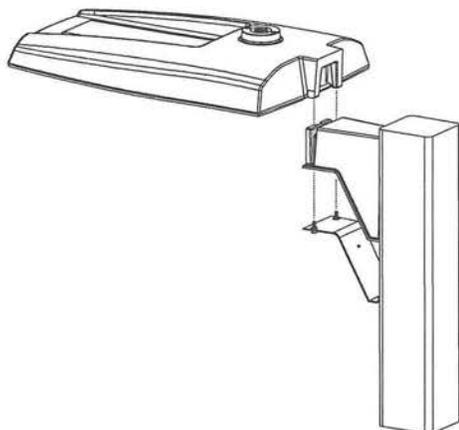
**EPA**  
Effective Projected Area (Sq. Ft.): 0.75

**SHIPPING DATA**  
Approximate Net Weight:  
20 lbs. (9.09 kgs.)

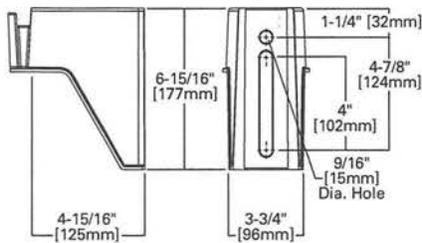
## DIMENSIONS



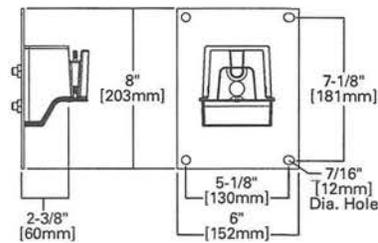
**VERSATILE MOUNT SYSTEM**



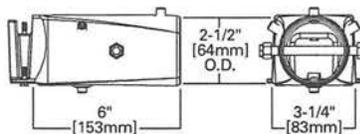
**POLE MOUNT ARM**



**WALL MOUNT**



**MAST ARM MOUNT**



**MOUNTING CONFIGURATIONS AND EPAS**

Wall Mount

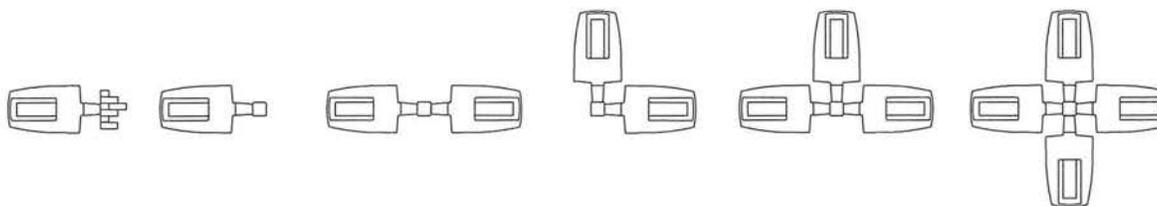
Arm Mount Single  
EPA 0.75

Arm Mount 2 @ 180°  
EPA 1.50

Arm Mount 2 @ 90°  
EPA 1.50

Arm Mount 3 @ 90°  
EPA 2.25

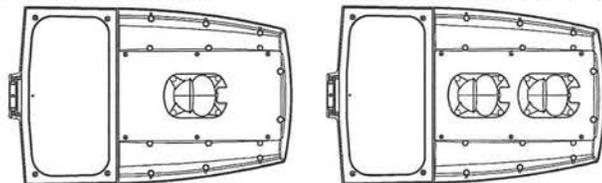
Arm Mount 4 @ 90°  
EPA 3.00



**OPTICAL CONFIGURATIONS**

A15 (6,100 Nominal Lumens)

A25/A40 (10,200/15,100 Nominal Lumens)



**POWER AND LUMENS**

Light Engine	A15	A25	A40	
Nominal Power (Watts)	57W	87W	143W	
Input Current @ 120V (A)	0.49	0.76	1.23	
Input Current @ 277V (A)	0.22	0.35	0.54	
Input Current @ 347V (A)	0.18	0.28	0.45	
Input Current @ 480V (A)	0.13	0.21	0.33	
Type II	Lumens	6,139	10,204	15,073
	BUG Rating	B1-U0-G1	B2-U0-G2	B3-U0-G3
Type III	Lumens	6,192	10,292	15,203
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3
Type IV	Lumens	6,173	10,261	15,157
	BUG Rating	B1-U0-G3	B2-U0-G3	B2-U0-G4
Type V	Lumens	6,393	10,627	15,697
	BUG Rating	B3-U0-G3	B4-U0-G3	B4-U0-G4

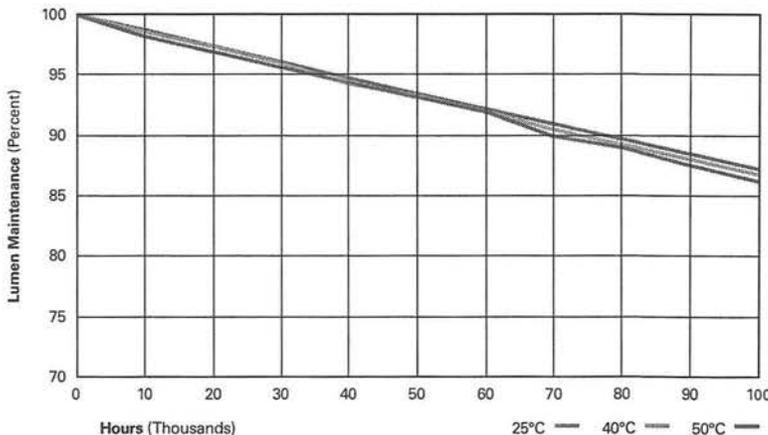
NOTE: Lumen output for standard bronze fixture color. Different housing colors impact lumen output. IES files for the non-standard colors are available upon request.

**LUMEN MAINTENANCE**

Ambient Temperature	25,000 Hours*	50,000 Hours*	60,000 Hours*	Theoretical 100,000 Hours	Theoretical L70 (Hours)*
25°C	> 96%	> 93%	> 92%	> 87%	> 260,000
40°C	> 96%	> 93%	> 92%	> 87%	> 255,000
50°C	> 95%	> 92%	> 91%	> 86%	> 250,000

**LUMEN MULTIPLIER**

Ambient Temperature	Lumen Multiplier
10°C	1.02
15°C	1.01
25°C	1.00
40°C	0.99



**ORDERING INFORMATION**

Sample Number: PRV-A25-D-UNV-T3-SA-BZ

Product Family <sup>1,2</sup>	Light Engine <sup>3</sup>	Driver <sup>4</sup>	Voltage	Distribution	Mounting	Color <sup>6</sup>
PRV=Prevail	A15=(1 LED) 6,100 Nominal Lumens A25=(2 LEDs) 10,200 Nominal Lumens A40=(2 LEDs) 15,100 Nominal Lumens	D=Dimming (0-10V)	UNV=Universal (120-277V) 347=347V 480=480V <sup>5</sup>	T2=Type II T3=Type III T4=Type IV T5=Type V	SA=Standard Versatile Arm MA=Mast Arm WM=Wall Mount Arm	AP=Grey BZ=Bronze (Standard) BK=Black DP=Dark Platinum GM=Graphite Metallic WH=White
Options (Add as Suffix)				Accessories (Order Separately) <sup>11</sup>		
7030=70 CRI / 3000K CCT <sup>7</sup> 7050=70 CRI / 5000K CCT <sup>7</sup> 10K=10kV/10kA UL 1449 Fused Surge Protective Device DIMRF-LW=LumaWatt Wireless Sensor, Wide Lens for 8' - 16' Mounting Height <sup>8,9</sup> DIMRF-LN=LumaWatt Wireless Sensor, Narrow Lens for 16' - 40' Mounting Height <sup>8,9</sup> MSP/DIM-L12=Integrated Sensor for Dimming Operation, 8' - 12' Mounting Height MSP/DIM-L30=Integrated Sensor for Dimming Operation, 12' - 30' Mounting Height MSP-L12=Integrated Sensor for ON/OFF Operation, 8' - 12' Mounting Height MSP-L30=Integrated Sensor for ON/OFF Operation, 12' - 30' Mounting Height PER=NEMA 3-PIN Twistlock Photocontrol Receptacle <sup>10</sup> PER7=NEMA 7-PIN Twistlock Photocontrol Receptacle <sup>10</sup> HSS=House Side Shield HA=50°C High Ambient Temperature				PRVWM-XX=Wall Mount Kit PRVMA-XX=Mast Arm Mounting Kit PRVSA-XX=Standard Arm Mounting Kit HS/VERD=House Side Shield MA1010-XX=Single Tenon Adapter for 3-1/2" O.D. Tenon MA1011-XX=2@180° Tenon Adapter for 3-1/2" O.D. Tenon MA1012-XX=3@120° Tenon Adapter for 3-1/2" O.D. Tenon MA1013-XX=4@90° Tenon Adapter for 3-1/2" O.D. Tenon MA1014-XX=2@90° Tenon Adapter for 3-1/2" O.D. Tenon MA1015-XX=2@120° Tenon Adapter for 3-1/2" O.D. Tenon MA1016-XX=3@90° Tenon Adapter for 3-1/2" O.D. Tenon MA1017-XX=Single Tenon Adapter for 2-3/8" O.D. Tenon MA1018-XX=2@180° Tenon Adapter for 2-3/8" O.D. Tenon MA1019-XX=3@120° Tenon Adapter for 2-3/8" O.D. Tenon MA1045-XX=4@90° Tenon Adapter for 2-3/8" O.D. Tenon MA1048-XX=2@90° Tenon Adapter for 2-3/8" O.D. Tenon MA1049-XX=3@90° Tenon Adapter for 2-3/8" O.D. Tenon MA1191-XX=2@120° Tenon Adapter for 2-3/8" O.D. Tenon OA/RA1013=Photocontrol Shorting Cap OA/RA1014=NEMA Photocontrol - 120V OA/RA1016=NEMA Photocontrol - Multi-Tap 105-285V OA/RA1027=NEMA Photocontrol - 480V OA/RA1201=NEMA Photocontrol - 347V ISHH-01=Integrated Sensor Programming Remote		

**NOTES:**

- Customer is responsible for engineering analysis to confirm pole and fixture compatibility for all applications. Refer to installation instructions IB500002EN and pole white paper WP513001EN for additional support information.
- DesignLights Consortium™ Qualified and classified for both DLC Standard and DLC Premium, refer to [www.designlights.org](http://www.designlights.org) for details.
- Standard 4000K CCT and 70 CRI.
- Consult factory for driver surge protection values.
- Only for use with 480V Wye systems. Per NEC, not for use with ungrounded systems, impedance grounded systems or corner grounded systems (commonly known as Three Phase Three Wire Delta, Three Phase High Leg Delta and Three Phase Corner Grounded Delta systems).
- Different housing colors impact lumen output. IES files for the non-standard colors are available upon request.
- Extended lead times apply. Use dedicated IES files for 3000K and 5000K when performing layouts. These files are published on the Prevail luminaire product page on the website.
- LumaWatt wireless sensors are factory installed and require network components RF-EM-1, RF-GW-1 and RF-ROUT-1 in appropriate quantities. See website for LumaWatt application information.
- LumaWatt wireless system is not available with photocontrol receptacle (Not needed).
- Not available with MSP or DIMRF options.
- Replace XX with paint color.

**STOCK ORDERING INFORMATION**

Stock Sample Number: PRVS-A25-UNV-T3

Product Family	Light Engine	Voltage	Distribution	Options (Add as Suffix)
PRVS=Prevail	A15=(1 LED) 6,100 Nominal Lumens A25=(2 LEDs) 10,200 Nominal Lumens A40=(2 LEDs) 15,100 Nominal Lumens	UNV=Universal (120-277V) 347=347V	T3=Type III T4=Type IV	MSP/DIM-L30=Integrated Sensor for Dimming Operation, Maximum 30' Mounting Height

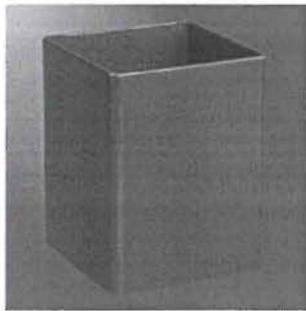
NOTE: Bronze only, 4000K CCT, 120-277V, 347V, standard mounting arm, standard non-fused 10kV MOV and 0-10V dimming.



Eston  
1121 Highway 74 South  
Peachtree City, GA 30269  
P: 770-486-4800  
[www.eaton.com/lighting](http://www.eaton.com/lighting)

Specifications and dimensions subject to change without notice.

# Steel Poles



## SSS SQUARE STRAIGHT STEEL

Catalog #		Type
Project		
Comments		Date
Prepared by		

### FEATURES

- ASTM Grade steel base plate with ASTM A366 base cover
- Hand hole assembly 3" x 5" on 5" and 6" pole; and 2" x 4" on 4" pole
- 10'-39' mounting heights
- Drilled or tenon (specify)

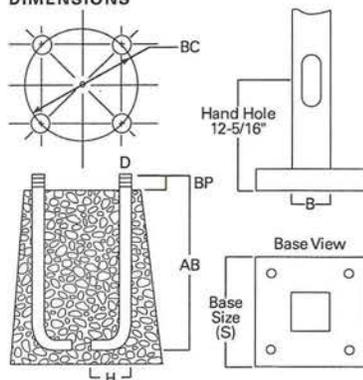
### ORDERING INFORMATION

SAMPLE NUMBER: SSS5A20SFM1XG

Product Family	Shaft Size (Inches) <sup>1</sup>	Wall Thickness (Inches)	Mounting Height (Feet)	Base Type	Finish	Mounting Type	Number and Location of Arms	Arm Lengths (Feet)	Options (Add as Suffix)
SSS-Square Straight Steel	4=4" 5=5" 6=6"	A=0.120" M=0.188" X=0.250"	10=10' 15=15' 20=20' 25=25' 30=30' 35=35' 39=39'	S=Square Steel Base	F=Dark Bronze G=Galvanized Steel J=Summit White K=Carbon Bronze L=Dark Platinum P=Primer Powder Coat R=Hartford Green S=Silver T=Graphite Metallic V=Grey W=White X=Custom Color Y=Black	2=2-3/8" O.D. Tenon (4" Long) 3=3-1/2" O.D. Tenon (5" Long) 4=4" O.D. Tenon (6" Long) 5=3" O.D. Tenon (4" Long) 6=2-3/8" O.D. Tenon (6" Long) 7=4" O.D. Tenon (10" Long)	1=Single 2=2 at 180° 3=Triple <sup>2</sup> 4=4 at 90° 5=2 at 90° X=None	X=None	A=1/2" Tapped Hub (Specify location desired) B=3/4" Tapped Hub (Specify location desired) C=Convenience Outlet <sup>3</sup> E=GFCI Convenience Outlet <sup>3</sup> G=Ground Lug H=Additional Hand Hole <sup>4</sup> L=Drilled for Bumper Glitter V=Vibration Dampener

NOTES: 1. All shaft sizes nominal. 2. Square poles are 3 at 90°, round poles are 3 at 120°. 3. Outlet is located 4' above base and on same side of pole as hand hole, unless specified otherwise. Receptacle not included, provision only. 4. Additional hand hole is located 12" below pole top and 90° from standard hand hole location, unless otherwise specified.

### DIMENSIONS



**WARNING:** Customer is responsible for engineering analysis to confirm pole and fixture compatibility for all applications. Refer to pole white paper WP513001EN for additional support information. Before installing, make sure proper anchor bolts and templates are obtained. The use of unauthorized accessories such as banners, signs, cameras or pennants for which the pole was not designed voids the pole warranty and may result in pole failure causing serious injury or property damage. Information regarding total loading capacity can be supplied upon request. The pole warranty is void unless poles are used and installed as a complete pole and luminaire combination. This warranty specifically excludes failure as the result of a third party act or omission, misuse, unanticipated uses, fatigue failure or similar phenomena resulting from induced vibration, harmonic oscillation or resonance associated with movement of air currents around the product.

Specifications and dimensions subject to change without notice. Consult your lighting representative at Eaton or visit [www.eaton.com/lighting](http://www.eaton.com/lighting) for available options, accessories and ordering information.

Effective Projected Area (At Pole Top)

Mounting Height (Feet)	Catalog Number <sup>1,2</sup>	Wall Thickness (Inches)	Base Square <sup>3</sup> (Inches)	Bolt Circle Diameter (Inches)	Anchor Bolt Projection <sup>3</sup> (Inches)	Shaft Size <sup>3</sup> (Inches)	Anchor Bolt Diameter x Length x Hook (Inches)	Net Weight (Pounds)	Maximum Effective Projected Area (Square Feet) <sup>4</sup>				Max. Fixture Load - Includes Bracket (Pounds)
									80 mph	90 mph	100 mph	110 mph	
MH			S	BC	BP	B	D x AB x H						
10	SSS4A10S	0.120	10-1/2	11	4-1/2	4	3/4 x 25 x 3	85	30.0	22.0	17.0	13.0	100
15	SSS4A15S	0.120	10-1/2	11	4-1/2	4	3/4 x 25 x 3	118	15.0	11.5	8.7	6.5	100
20	SSS4A20S	0.120	10-1/2	11	4-1/2	4	3/4 x 25 x 3	150	8.7	5.9	3.9	2.5	150
20	SSS5A20S	0.120	10-1/2	11	4-1/2	5	3/4 x 25 x 3	183	15.4	11.1	7.9	5.5	150
25	SSS4A25S	0.120	10-1/2	11	4-1/2	4	3/4 x 25 x 3	181	3.7	1.7	0.3	--	200
25	SSS5A25S	0.120	10-1/2	11	5	5	3/4 x 25 x 3	222	9.3	6.0	3.5	1.6	200
25	SSS6A25S	0.120	12-1/2	12-1/2	5	6	1 x 36 x 4	284	9.9	6.1	3.5	1.2	200
30	SSS5A30S	0.120	10-1/2	11	4-1/2	5	3/4 x 25 x 3	260	4.7	2.1	--	--	200
30	SSS5M30S	0.188	10-1/2	11	4-1/2	5	3/4 x 25 x 3	392	10.4	6.4	3.5	1.5	200
30	SSS6A30S	0.120	12-1/2	12-1/2	5	6	1 x 36 x 4	330	4.3	1.4	--	--	200
30	SSS6M30S	0.188	12-1/2	12-1/2	5	6	1 x 36 x 4	489	19.0	13.0	8.7	5.6	200
35	SSS5M35S	0.188	10-1/2	11	4-1/2	5	3/4 x 25 x 3	453	5.8	2.8	--	--	200
35	SSS6M35S	0.188	12-1/2	12-1/2	5	6	1 x 36 x 4	564	12.8	7.2	3.7	1.0	200
35	SSS6X35S	0.250	12-1/2	12-1/2	5	6	1 x 36 x 4	738	16.5	11.0	6.8	3.5	200
39	SSS6M39S	0.188	12-1/2	12-1/2	5	6	1 x 36 x 4	618	7.3	3.0	--	--	300
39	SSS6X39S	0.250	12-1/2	12-1/2	5	6	1 x 36 x 4	816	13.0	7.0	3.7	0.8	300

Effective Projected Area (Two Feet Above Pole Top)

Mounting Height (Feet)	Catalog Number <sup>1,2</sup>	Wall Thickness (Inches)	Base Square <sup>3</sup> (Inches)	Bolt Circle Diameter (Inches)	Anchor Bolt Projection <sup>3</sup> (Inches)	Shaft Size <sup>3</sup> (Inches)	Anchor Bolt Diameter x Length x Hook (Inches)	Net Weight (Pounds)	Maximum Effective Projected Area (Square Feet) <sup>4</sup>				Max. Fixture Load - Includes Bracket (Pounds)
									80 mph	90 mph	100 mph	110 mph	
MH			S	BC	BP	B	D x AB x H						
10	SSS4A10S	0.120	10-1/2	11	4-1/2	4	3/4 x 25 x 3	85	23.0	17.5	14.0	11.0	100
15	SSS4A15S	0.120	10-1/2	11	4-1/2	4	3/4 x 25 x 3	118	13.4	10.0	7.5	5.7	100
20	SSS4A20S	0.120	10-1/2	11	4-1/2	4	3/4 x 25 x 3	150	7.6	5.2	3.4	2.1	150
20	SSS5A20S	0.120	10-1/2	11	4-1/2	5	3/4 x 25 x 3	183	13.8	9.9	7.1	4.9	150
25	SSS4A25S	0.120	10-1/2	11	4-1/2	4	3/4 x 25 x 3	181	3.4	1.6	0.3	--	200
25	SSS5A25S	0.120	10-1/2	11	5	5	3/4 x 25 x 3	222	8.5	5.5	3.2	1.5	200
25	SSS6A25S	0.120	12-1/2	12-1/2	5	6	1 x 36 x 4	284	9.1	5.8	3.0	1.2	200
30	SSS5A30S	0.120	10-1/2	11	4-1/2	5	3/4 x 25 x 3	260	1.8	--	--	--	200
30	SSS5M30S	0.188	10-1/2	11	4-1/2	5	3/4 x 25 x 3	392	9.6	5.9	1.9	0.2	200
30	SSS6A30S	0.120	12-1/2	12-1/2	5	6	1 x 36 x 4	330	4.1	1.3	--	--	200
30	SSS6M30S	0.188	12-1/2	12-1/2	5	6	1 x 36 x 4	489	18.5	12.5	8.4	5.3	200
35	SSS5M35S	0.188	10-1/2	11	4-1/2	5	3/4 x 25 x 3	453	5.5	2.4	--	--	200
35	SSS6M35S	0.188	12-1/2	12-1/2	5	6	1 x 36 x 4	564	11.8	7.0	3.5	1.0	200
35	SSS6X35S	0.250	12-1/2	12-1/2	5	6	1 x 36 x 4	738	16.0	10.5	6.4	3.4	200
39	SSS6M39S	0.188	12-1/2	12-1/2	5	6	1 x 36 x 4	618	7.0	2.4	--	--	300
39	SSS6X39S	0.250	12-1/2	12-1/2	5	6	1 x 36 x 4	816	12.0	6.7	3.0	0.5	300

NOTES:

1. Catalog number includes pole with hardware kit. Anchor bolts not included. Before installing, make sure proper anchor bolts and templates are obtained.
2. Tenon size or machining for rectangular arms must be specified. Hand hole position relative to drill location.
3. Shaft size, base square, anchor bolts and projections may vary slightly. All dimensions nominal.
4. EPAs based on shaft properties with wind normal to flat. EPAs calculated using base wind velocity as indicated plus 30% gust factor.

## DESCRIPTION

The Galleon™ wall and pedestrian LED luminaire's appearance is complementary with the Galleon area and site luminaire bringing a modern architectural style to lighting applications. Flexible mounting options accommodate wall surfaces, pole, and mast arm applications allowing it to be offered as a pedestrian or site lighting, solution. The Galleon family of LED products deliver exceptional performance with patented, high-efficiency AccuLED Optics™, providing uniform and energy conscious lighting for parking lots, building and security lighting applications.

## SPECIFICATION FEATURES

### Construction

Driver enclosure thermally isolated from optics for optimal thermal performance. Heavy wall aluminum housing die-cast with integral external heat sinks to provide superior structural rigidity and an IP66 rated housing. Overall construction passes a 1.5G vibration test to ensure mechanical integrity.

### Optics

Choice of thirteen patented, high-efficiency AccuLED Optics. The optics are precisely designed to shape the distribution maximizing efficiency and application spacing. AccuLED Optics create consistent distributions with the scalability to meet customized application requirements. Offered standard in 4000K (+/- 275K) CCT and minimum 70 CRI. Optional 3000K, 5000K and 6000K CCT. Greater than 90%

lumen maintenance expected at 60,000 hours. Available in standard 1A drive current and optional 530mA and 700mA drive currents.

### Electrical

LED drivers are mounted for ease of maintenance. 120-277V 50/60Hz, 347V or 480V 60Hz operation. 480V is compatible for use with 480V Wye systems only. Drivers are provided standard with 0-10V dimming. An optional Eaton proprietary surge protection module is available and designed to withstand 10kV of transient line surge. The Galleon Wall LED luminaire is suitable for operation in -30°C to 40°C ambient environments. For applications with ambient temperatures exceeding 40°C, specify the HA (High Ambient) option.

### Mounting

In addition to wall mounting, the innovative quick mounting arm attaches to new or existing 4-5" round or square poles with 1-1/2" to 4-7/8" drilling patterns without re-drilling. Optional mast arm adapter fits horizontal 2-3/8" tenon.

### Finish

Housing finished in super durable TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Standard colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available. Consult the McGraw-Edison Architectural Colors brochure for the complete selection.

### Warranty

Five-year warranty.

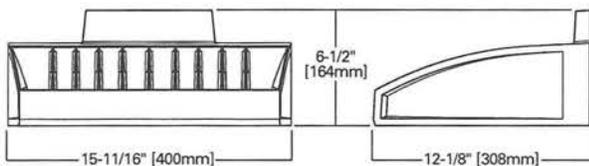


## GWC GALLEON WALL AND PEDESTRIAN LUMINAIRE

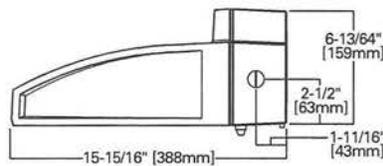
1-2 Light Squares  
Solid State LED

WALL AND POLE MOUNT LUMINAIRE

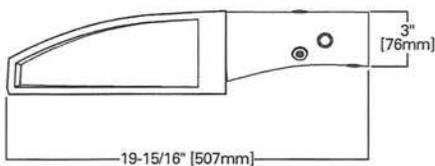
## DIMENSIONS



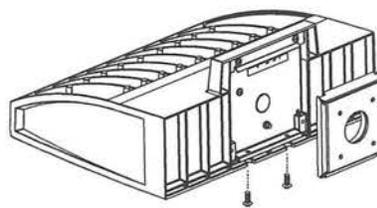
## BATTERY BACKUP AND THRU-BRANCH BACK BOX



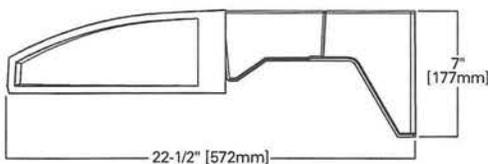
## MAST ARM MOUNT



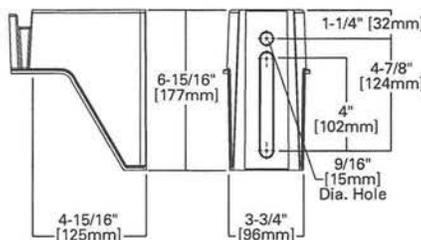
## HOOK-N-LOCK MOUNTING



## QUICK MOUNT ARM (OVERALL DIMENSIONS)



## QUICK MOUNT ARM (POLE MOUNTING DETAILS)



## CERTIFICATION DATA

UL/cUL Listed  
LM79 / LM80 Compliant  
IP66 Housing  
ISO 9001  
DesignLights Consortium™ Qualified\*

## ENERGY DATA

Electronic LED Driver  
>0.9 Power Factor  
<20% Total Harmonic Distortion  
120-277V/50 & 60Hz, 347V/60Hz, 480V/60Hz  
-30°C Minimum Temperature  
40°C Ambient Temperature Rating

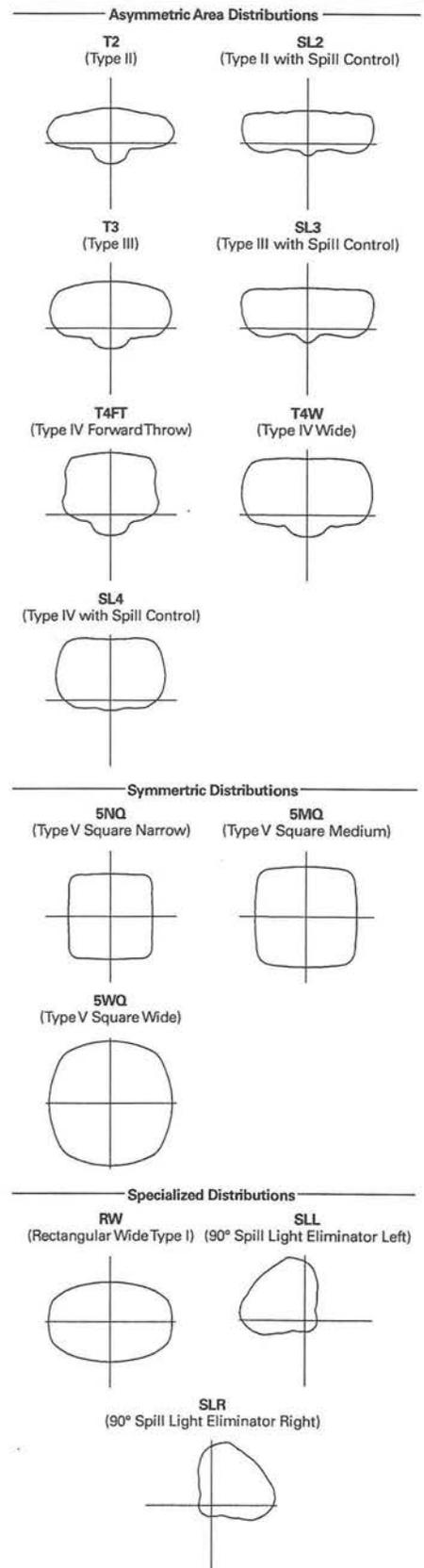
## SHIPPING DATA

Approximate Net Weight:  
27 lbs. (12.2 kgs.)

**POWER AND LUMENS**

Number of Light Squares	1			2			
	530mA	700mA	1A	530mA	700mA	1A	
Drive Current	530mA	700mA	1A	530mA	700mA	1A	
Power (Watts)	29W	39W	56W	58W	77W	112W	
Input Current @ 120V (mA)	270	350	510	490	650	960	
Input Current @ 208V (mA)	160	210	300	280	380	560	
Input Current @ 240V (mA)	140	180	260	250	330	480	
Input Current @ 277V (mA)	120	160	230	210	280	420	
Power (Watts)	36W	46W	68W	65W	83W	123W	
Input Current @ 347V (mA)	110	140	200	190	240	360	
Input Current @ 480V (mA)	320	410	580	550	700	1,040	
<b>Optics</b>							
T2	Lumens	3,195	4,000	5,472	6,297	7,881	10,783
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B2-U0-G2
T3	Lumens	3,228	4,041	5,528	6,362	7,963	10,894
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2	B2-U0-G2
T4FT	Lumens	3,237	4,051	5,543	6,378	7,983	10,922
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2	B2-U0-G2
T4W	Lumens	3,190	3,992	5,462	6,285	7,867	10,763
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2	B2-U0-G2
5MQ	Lumens	3,405	4,262	5,831	6,710	8,398	11,490
	BUG Rating	B2-U0-G1	B2-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G2	B3-U0-G2
5WQ	Lumens	3,455	4,324	5,917	6,809	8,522	11,659
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G2	B3-U0-G2	B4-U0-G2
5NQ	Lumens	3,319	4,154	5,684	6,540	8,186	11,200
	BUG Rating	B2-U0-G0	B2-U0-G0	B2-U0-G1	B2-U0-G1	B3-U0-G1	B3-U0-G1
SL2	Lumens	3,120	3,905	5,343	6,149	7,696	10,529
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B2-U0-G2	B2-U0-G2
SL3	Lumens	3,152	3,945	5,397	6,211	7,773	10,635
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G2
SL4	Lumens	3,037	3,801	5,200	5,984	7,490	10,247
	BUG Rating	B0-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G2
SLL/SLR	Lumens	2,751	3,444	4,711	5,422	6,786	9,284
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2
RW	Lumens	3,250	4,068	5,565	6,404	8,016	10,967
	BUG Rating	B2-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3

**OPTICAL DISTRIBUTIONS**



**LUMEN MAINTENANCE**

Ambient Temperature	TM-21 Lumen Maintenance (60,000 Hours)	Theoretical L70 (Hours)
25°C	> 94%	> 350,000
40°C	> 93%	> 250,000
50°C	> 90%	> 170,000

\* 50°C lumen maintenance data applies to 530mA and 700mA drive currents.

**LUMEN MULTIPLIER**

Ambient Temperature	Lumen Multiplier
0°C	1.02
10°C	1.01
25°C	1.00
40°C	0.99
50°C	0.97

**COLOR TEMPERATURE**

Color Temperature (CCT)	Color Rendering Index (CRI)	Multiplier
3000	70	0.91
4000	70	1.00
5000	70	1.03
5700	70	1.03

ORDERING INFORMATION

Sample Number: GWC-AE-02-LED-E1-T3-GM

Product Family <sup>1</sup>	Light Engine	Number of Light Squares <sup>2</sup>	Lamp Type	Voltage	Distribution	Color	Mounting Options
GWC=Galleon Wall	AE=1A Drive Current	01=1 02=2 <sup>3</sup>	LED=Solid State Light Emitting Diodes	E1=120-277V 347=347V <sup>4</sup> 480=480V <sup>4,5</sup>	T2=Type II T3=Type III T4FT=Type IV Forward Throw T4W=Type IV Wide SL2=Type II w/Spill Control SL3=Type III w/Spill Control SL4=Type IV w/Spill Control SLL=90° Spill Light Eliminator Left SLR=90° Spill Light Eliminator Right RW=Rectangular Wide Type I 5NQ=Type V Square Narrow 5MQ=Type V Square Medium 5WQ=Type V Square Wide	AP=Grey BZ=Bronze BK=Black DP=Dark Platinum GM=Graphite Metallic WH=White CC=Custom Color <sup>6</sup>	[BLANK]=Surface Mount MA=2-3/8" Mast Arm <sup>7,8</sup> QM=Quick Mount Arm for Round or Square Pole <sup>7,9</sup>
Options (Add as Suffix)					Accessories (Order Separately)		
530=Drive Current Factory Set to 530mA 700=Drive Current Factory Set to 700mA UPL=Uplight Housing <sup>10</sup> P=Button Type Photocontrol (120, 208, 240 or 277V) R=NEMA Twistlock Photocontrol Receptacle PER7=NEMA 7-PIN Twistlock Photocontrol Receptacle <sup>11,12</sup> LCF=Light Square Trim Plate Painted to Match Housing <sup>14</sup> 7030=70 CRI / 3000K <sup>15</sup> 7050=70 CRI / 5000K <sup>15</sup> 7060=70 CRI / 6000K <sup>15</sup> L90=Optics Rotated 90° Left R90=Optics Rotated 90° Right DIMRF-LW=LumaWatt Wireless Sensor, Wide Lens for 8' - 16' Mounting Height <sup>16,17,18</sup> DIMRF-LN=LumaWatt Wireless Sensor, Narrow Lens for 16' - 40' Mounting Height <sup>16,17,19</sup> MS-LXX=Motion Sensor for On/Off Operation <sup>19,20</sup> MS/DIM-LXX=Motion Sensor for Dimming Operation <sup>18,19,20</sup> DIM=0-10V Dimming Drivers <sup>11,21</sup> HSS=Factory Installed House Side Shield <sup>22</sup> HA=50°C High Ambient <sup>23</sup> F=Single Fused (120, 277 or 347V. Must Specify Voltage) FF=Double Fused (208, 240 or 480V. Must Specify Voltage) 10K=10kV Surge Module DALI=DALI Driver <sup>24</sup> CE=CE Marking and Small Terminal Block <sup>25</sup> MT=Factory Installed Mesh Top					OA/RA1013=Photocontrol Shorting Cap OA/RA1016=NEMA Photocontrol - Multi-Tap 105-285V OA/RA1201=NEMA Photocontrol - 347V OA/RA1027=NEMA Photocontrol - 480V MA1252=10kV Circuit Module Replacement MA1059X=Thru-branch Back Box (Must Specify Color) FSIR-100=Wireless Configuration Tool for Occupancy Sensor <sup>20</sup>		

NOTES:

- DesignLight Consortium™ Qualified. Refer to [www.designlights.org](http://www.designlights.org) Qualified Products List under Family Models for details.
- Standard 4000K CCT and minimum 70 CRI.
- Two light squares with BBB or CWB options uses two drivers and limited to 25°C, 120-277V only.
- Requires the use of a step down transformer.
- Only for use with 480V Wye systems. Per NEC, not for use with ungrounded systems, impedance grounded systems or corner grounded systems (commonly known as Three Phase Three Wire Delta, Three Phase High Leg Delta and Three Phase Corner Grounded Delta systems).
- Custom colors are available. Setup charges apply. Paint chip samples required. Extended Lead times apply.
- Customer is responsible for engineering analysis to confirm pole and fixture compatibility for all applications. Refer to our white paper WP513001EN for additional support information.
- Mast arm adapter factory installed (2-3/8" O.D. arm only). Suitable for 3G vibration.
- Quick mount arm adapter is factory installed. Pole mounting bracket shipped in box. Suitable for 1.5G. Fits square and round pole up to 6" O.D.
- Surface mount only. Not available with back box, SL-series distributions or twistlock photocontrol receptacle.
- Cannot be used with other control options.
- Compatible with standard 3-PIN photocontrols, 5-PIN or 7-PIN ANSI controls.
- Not available with HA option. Operates a single light square only. Cold weather option operates -20°C to +40°C, standard 0°C to +40°C. Backbox is non-IP rated.
- Not available with HSS option.
- Extended lead times apply. Use dedicated IES files when performing layouts.
- LumaWatt wireless sensors are factory installed only requiring network components RF-EM-1, RF-GW-1 and RF-ROUT-1 in appropriate quantities. See [www.eaton.com/lighting](http://www.eaton.com/lighting) for LumaWatt application information.
- Bronze sensor is shipped with Bronze fixtures. White sensor shipped on all other housing color options.
- Replace LXX with mounting height in feet for proper lens selection (e.g., L8=8' mounting height). L8, L20 and L40 are available options.
- Includes integral photosensor.
- The FSIR-100 configuration tool is required to adjust parameters including high and low modes, sensitivity, time delay, cutoff and more. Consult your lighting representative at Eaton for more information.
- Low voltage control lead brought out 18" outside fixture.
- Only for use with SL2, SL3 and SL4 distributions. The light square trim plate is painted black when the HSS option is selected.
- Not available with BBB and CWB options.
- Only available with BBB or CWB in single light square. HA option available for single light square only.
- CE is not available with the DIMRF, MS, MS/X, MS/DIM, P, R or PER7 options. Available in 120-277V only.

Coming soon

Options (Add as Suffix)
BBB=Battery Pack with Back Box <sup>3,11,13</sup>
CWB=Cold Weather Battery Pack with Back Box <sup>3,11,13</sup>



Eaton  
 1121 Highway 74 South  
 Peachtree City, GA 30269  
 P: 770-486-4800  
[www.eaton.com/lighting](http://www.eaton.com/lighting)

Specifications and dimensions subject to change without notice.

# V.I.P. WAREHOUSE PARKING EXPANSION

12 LEXINGTON STREET  
LEWISTON, MAINE

APPLICANT:

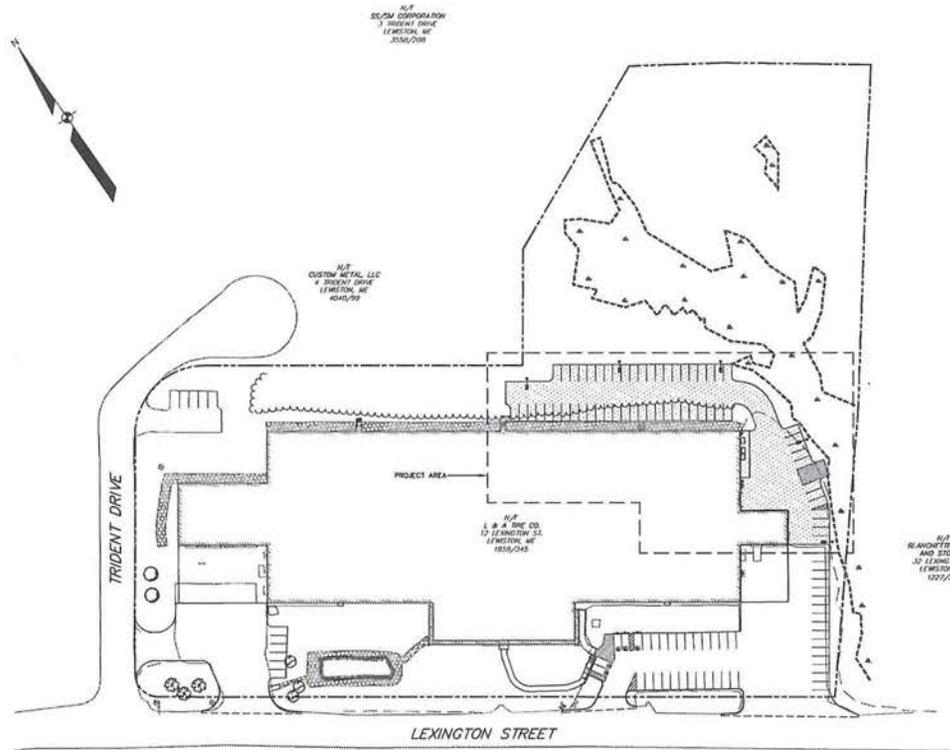
V.I.P. INC.

12 LEXINGTON STREET  
LEWISTON, MAINE 04240

ENGINEER/SURVEYOR:

**SEBAGO**  
T E C H N I C S

WWW.SEAGOTECHNICS.COM  
75 John Roberts Rd. Suite 1A South Portland, ME 04106 Tel. 207-200-2100  
290 Seaboard Rd. Suite B Lewiston, ME 04240 Tel. 207-783-5658



SHEET INDEX

SHEET TITLE
1 COVER SHEET
2 EXISTING CONDITIONS PLAN
3 OVERALL SITE PLAN
4 SITE PLAN
5 GRADING AND UTILITY PLAN
6 EROSION & SEDIMENT CONTROL PLAN
7 DETAILS
8 DETAILS

SCALE: 1" = 60'

ISSUED FOR CITY REVIEW  
NOT FOR CONSTRUCTION

REVISED THROUGH 08-17-16

12/12/2016 8:48:12 AM





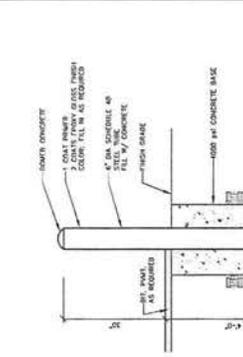




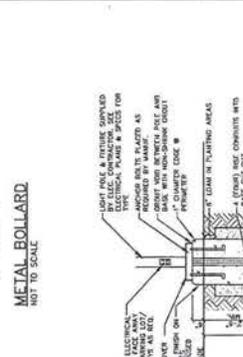




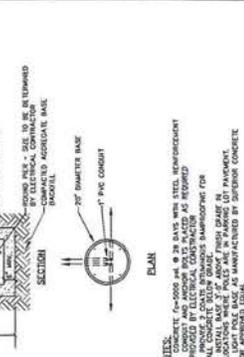
TYPICAL PAVEMENT JOINT  
NOT TO SCALE



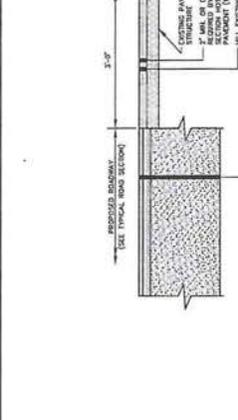
METAL BOLLARD  
NOT TO SCALE



TYPICAL PARKING LOT SECTION  
NOT TO SCALE



BITUMINOUS SIDEWALK  
NOT TO SCALE



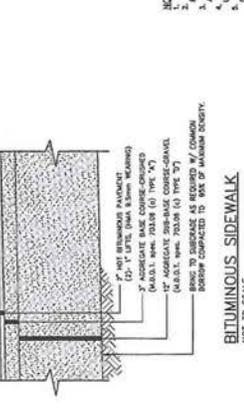
SIDE SLOPE RIPRAP  
NOT TO SCALE



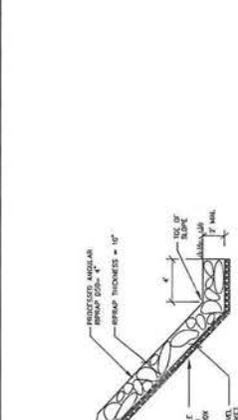
TYPICAL RIPRAP APRON  
NOT TO SCALE



STONE CHECK DAM  
NOT TO SCALE



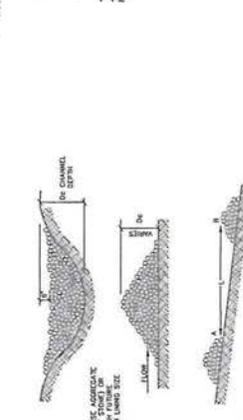
GRASSED SWALE  
NOT TO SCALE



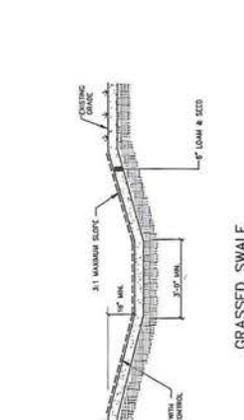
RIPRAP APRON  
NOT TO SCALE



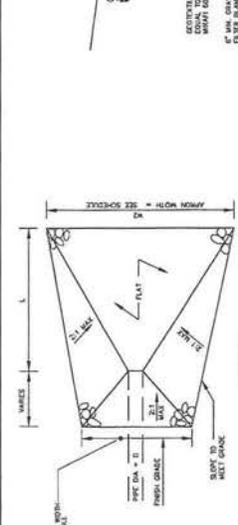
TYPICAL RIPRAP APRON SCHEDULE  
NOT TO SCALE



CATCH BASIN  
NOT TO SCALE



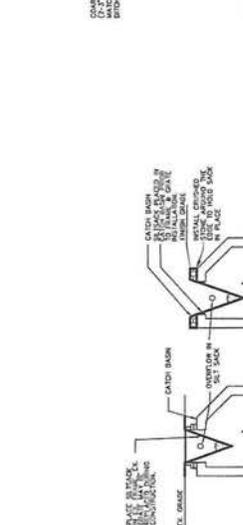
SILT SACK PROTECTION  
NOT TO SCALE



CATCH BASIN PROTECTION DETAIL  
NOT TO SCALE



NOTES  
NOT TO SCALE

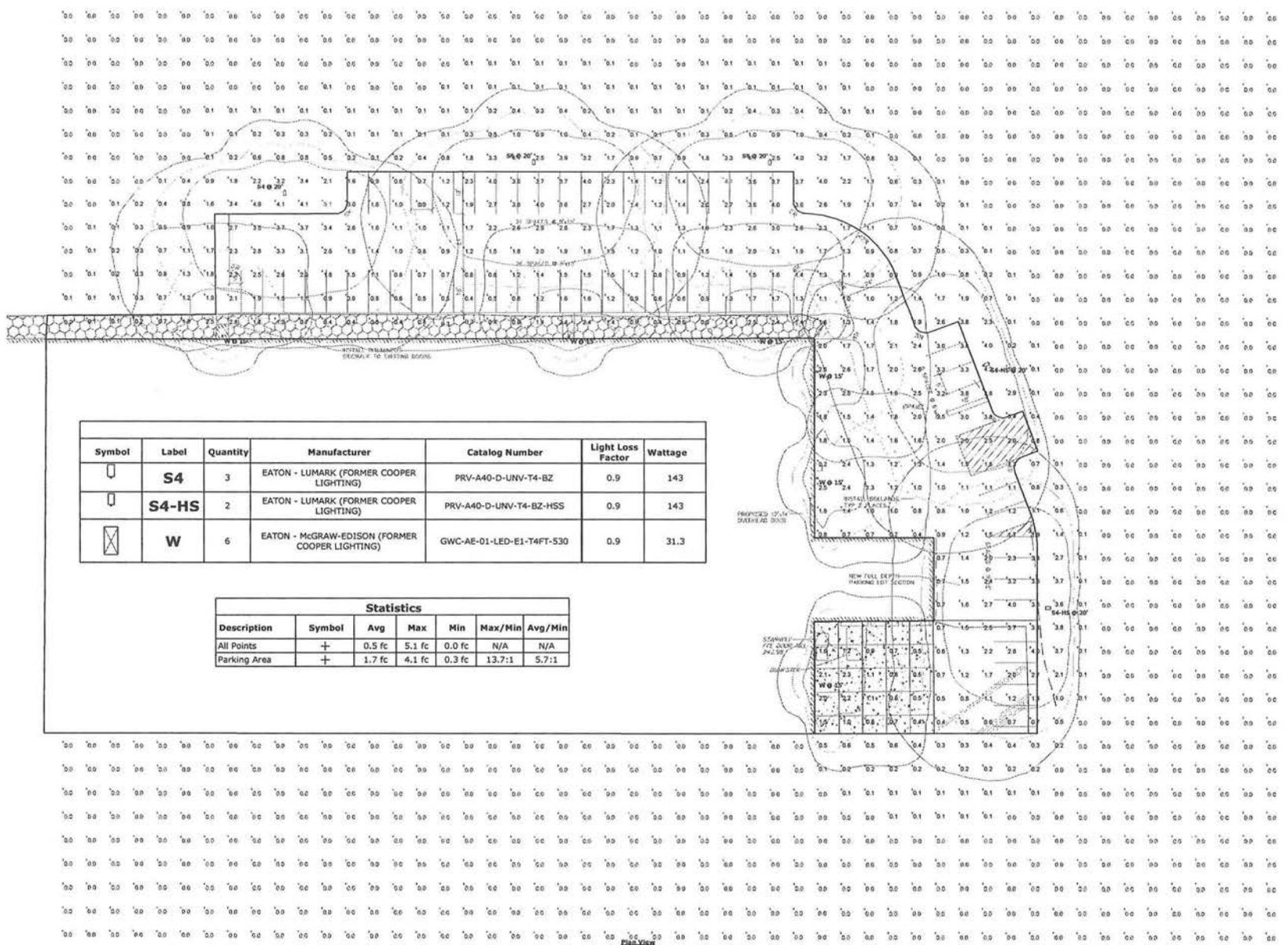


NEW INSTALLATION  
NOT TO SCALE



EXISTING BASIN  
NOT TO SCALE





Symbol	Label	Quantity	Manufacturer	Catalog Number	Light Loss Factor	Wattage
	<b>S4</b>	3	EATON - LUMARK (FORMER COOPER LIGHTING)	PRV-A40-D-UNV-T4-BZ	0.9	143
	<b>S4-HS</b>	2	EATON - LUMARK (FORMER COOPER LIGHTING)	PRV-A40-D-UNV-T4-BZ-HSS	0.9	143
	<b>W</b>	6	EATON - MCGRAW-EDISON (FORMER COOPER LIGHTING)	GWC-AE-01-LED-EI-T4FT-530	0.9	31.3

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
All Points	+	0.5 fc	5.1 fc	0.0 fc	N/A	N/A
Parking Area	+	1.7 fc	4.1 fc	0.3 fc	13.7:1	5.7:1



## CITY OF LEWISTON

### Department of Planning & Code Enforcement

**TO: Planning Board**  
**FROM: David Hediger, City Planner**  
**DATE: August 18, 2016**  
**RE: August 22, 2016 Planning Board Agenda Item IV(c)**

**A request by Cathy E. B. Gray and Simeon A. Gray for a use determination to establish a year-round educational campground at 49 Old Farm Road, that primarily hosts children and homeschooled families to learn about the outdoors and nature related activities, as being substantially similar to and compatible with permitted or conditional uses in the Rural Agricultural (RA) district.**

Cathy E. B. Gray and Simeon A. Gray have submitted a request for a use determination to establish a year-round educational campground at 49 Old Farm Road that primarily hosts children and homeschooled families to learn about the outdoors and nature related activities as being substantially similar to and compatible with permitted or conditional uses in the Rural Agricultural (RA). Article V, Section 3(g) of the Zoning and Land Use Code states a use which is not specifically listed as a permitted or conditional use shall be regulated as a conditional use if...the planning board...determines that the proposed use is substantially similar to and compatible with permitted or conditional uses in that district.

This property of approximately 45 acres consists of applicant's single family home. The property is largely wooded with streams, wetlands, and small fields. The applicant is proposing to have camp sites solely for the purpose of hosting children and their families to learn about a variety of outdoor and nature related activities, including outdoor survival, native tree identification, water ecology, land conservation, wildlife safety, archery, wild edibles, nature preservation, firearm safety, ethical hunting practices, and traditional crafts such as blacksmithing and basket weaving. Classes may also be offered that support self-sustainable and homestead living, like how to raise and care for dairy goats, chickens, and vegetable gardens. The activities will also be available as day programs.

Given the variety of uses proposed, staff is of the opinion the offerings are not specifically listed as a permitted or conditional uses in the RA district. However, they may be considered similar to allowed uses including campgrounds, public or private facilities for nonintensive outdoor recreation, and agriculture. The applicant has specifically referenced these permitted and conditional uses and how their proposed educational campground is substantially similar.

At this time, staff has recommended the applicant limit their request to the Planning Board for a use determination. The Board will likely have questions or concerns regarding the specific offerings or site improvements associated with the proposed use. However, the Board should focus their discussion on the allowed uses in the RA and a determination if the applicants use is substantially similar. Upon a favorable determination that their proposed use is substantially similar to and compatible with permitted or conditional uses in the RA district, the applicant will need to return to the Planning Board for development review approval. At that time, the

applicant would need to provide specifics addressing the conditional use criteria contained in Article X and the development review criteria of Article XIII. Issues that will need to be addressed include, but are not limited to: the number and location of camp sites, size and location of structures, design of privies, possible need for DEP permits, site access, hours of operation, noise level requirements, etc.

Upon review of the allowed uses in the RA district, staff is of the opinion the applicant's proposed use of 49 Old Farm Road is substantially similar to and compatible with permitted or conditional uses in the RA district; specifically, campgrounds, public or private facilities for nonintensive outdoor recreation, and agriculture. Attached is a listing of all permitted and conditional uses allowed in the RA district for the Board's consideration.

#### **ACTION NECESSARY**

Make a motion pursuant to Article VII, Section 4 and Article V, Section 3(g) of the Zoning and Land Use Code Article XVII, Section 5 of the Zoning and Land Use Code, finding that the request by Cathy E. B. Gray and Simeon A. Gray for a use determination to establish a year-round educational campground 49 Old Farm Road, that primarily hosts children and homeschooled families to learn about the outdoors and nature related activities, is substantially similar to and compatible with permitted or conditional uses in the Rural Agricultural (RA) district and that said use shall be regulated as a conditional use subject to Planning Board approval.

Cathy E. B. Gray  
Simeon A. Gray  
49 Old Farm Rd.  
Lewiston, Maine 04240

July 5, 2016

City of Lewiston Planning Board  
27 Pine St.  
Lewiston, Maine 04240

Dear Members of the Planning Board,

I am writing to you today to request that permission be granted for our property, located at the address above, to operate a business that is very similar to current permitted or conditional uses in the Rural Agricultural Zone.

We propose that the business we would like to operate, called Back To Creation Survival School, will be a licensed, year-round educational campground. It will primarily host inner-city Lewiston/Auburn children and homeschooled families from surrounding towns on our property to learn about all things outdoor related. We plan to have camping sites solely for the purpose of hosting overnight those kids and their families staying on our property to learn about such things as: outdoor survival, native tree identification, water ecology, land conservation, wildlife safety, archery, wild edibles, nature preservation, firearm safety, ethical hunting practices, traditional crafts such as blacksmithing and basket weaving, and similar educational tracks. Incorporated into the program will include classes that support self-sustainable and homestead living, like how to raise and care for dairy goats, chickens, and vegetable gardens. In addition to overnight opportunities, we will offer day courses. We will educate students in all aspects of Minimal Impact Camping and also including LNT (Leave No Trace) Curriculum principles.

The Business will be run by Simeon and myself with help from my family. My son, Simeon A. Gray, has many certifications and qualifications to teach the above principles and curricula. He is a graduate of the Junior Maine Guide Program (through the Dept. of IF&W), a Wilderness First Responder, Project WET (water ecology) certified, USA Level 1 Archery Instructor, National 4H Shooting Sports Archery RSO, and is passionate about working with youth to counteract Nature Deficit Disorder (NDD). He was recognized for his volunteer work on the Crescent Lake Watershed Association erosion control project that was managed by FB Environmental. He also has several years of experience volunteering with youth through the University of Maine Cooperative Extension. I have many years of experience working with youth as a Home School Educator as well as a long-time volunteer working with youth in science with National 4H. Additionally, I have approximately 20 years of organizational and administration experience through various venues.

Our property is roughly 45 acres with it being mostly wooded. It is an ideal location for local public-schooled kids that might find it difficult to get to some of Maine's other wonderful Outdoor Schools that are located more than an hour away from the L/A area. We are located in an R/A zone which does allow for similar businesses, but not exactly defined such as we are looking for.

In APPENDIX A – ZONING AND LAND USE CODE ARTICLE II. DEFINITIONS for the City of Lewiston, the definitions for Camping, Public or Private Non-intensive Outdoor Recreation, Community Gardens, and Agriculture (which are all either permitted or conditional uses in the R/A Zone) are:

- *“Campground means a plot of ground upon which two or more campsites are located and maintained for occupancy by tents, camper trailers or other recreational vehicles as temporary living quarters for recreational, educational or vacation purposes.”*

This use is the most similar to our business plan. We want to offer outdoor education in a camping environment.

- *"Nonintensive outdoor recreation means outdoor recreational uses that involve minimal structural development or regrading of the terrain but which, if properly designed, neither cause nor are subject to serious damage from flooding or soil erosion. Examples of nonintensive recreational uses include, but are not limited to, golf courses, tennis courts, playing fields, ice skating rinks, and boat docks."*

Back To Creation Survival School is based on minimal impact on the land and land conservation. Therefore, it is important to our family to keep things as natural as is possible with minimal intrusion. We will also comply with Campground Standards, as referenced in Article XII, Section 12, Campground Standards. Our proposed campsites are located approximately 150 feet from property boundaries and will be outside of the high-water mark for the stream located near the campsites. Additionally, each campsite will meet the square footage requirement of a minimum of 2,500 square feet for outside of shoreland area. Each campsite will include an outdoor privy that meets requirements as per Maine State Plumbing Codes.

- *"Community garden means the use of a lot(s) or a portion thereof for the purpose of growing vegetables, flowers and/or other cultivated plants which are intended for consumption and/or use primarily by the surrounding neighborhood as regulated under Article XII, section 4."*
- *"Agriculture means the cultivation of the soil, production of crops, including crops in commercial greenhouses, and raising and keeping of livestock, including animal husbandry, orchards, truck gardens, plant nurseries, poultry and other nondomestic animals, bees, the use of manure and fertilizers, the processing of agricultural products."*

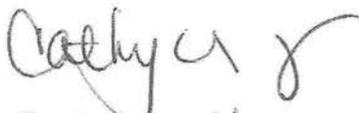
Our self-sustaining program will require gardens and raising livestock. Food will be prepared from what is grown right on our property. It will be an important part of teaching self-sustainable living to observe and help care for the animals and gardens on the property, as well as wild edibles in the woods.

The developing of our property will primarily be pole barns and temporary structures with the exception of composting outhouses, which will be approved by the Plumbing Inspector. Most of the developing will be clearing of trails and small primitive camp sites. There will be no "hook-ups" available, as this is counter-productive to our desire for low impact education.

Article V, Section 3(g) of the Zoning and Land Use Code states: a use which is not specifically listed as a permitted or conditional use shall be regulated as a conditional use if the board of appeals or the planning board, reviewing a major development under Article XIII, determines that the proposed use is substantially similar to and compatible with permitted or conditional uses in that district. We believe that the mission and purpose of Back To Creation Survival School is substantially similar to and compatible with the descriptions listed above. The "educational purpose" as stated in the Campground description could allow for many of the classes we have listed such as: outdoor survival, native tree identification, water ecology, land conservation, wildlife safety, wild edibles, and nature preservation.

We respectfully request that consideration be made to allow this conservation and educational opportunity for the youth and families in the greater L/A area and would be a great benefit to the city of Lewiston. Upon approval of finding that it is substantially similar to current uses, we then request a conditional use permit of approval based upon the criteria on the following pages.

Kindest Regards,

  
Simeon Gray

Cathy E. B. Gray

Simeon Gray

### WARRANTY DEED

**JACQUELINE GUAY**, of Lewiston, County of Androscoggin, State of Maine, for consideration paid, grants to **CATHY GRAY** and **BRIAN L. GRAY**, both of 125 Moody Road, Lisbon, County of Androscoggin, State of Maine, with **WARRANTY COVENANTS**, *as joint tenants*, the land with the buildings thereon situated in Lewiston, County of Androscoggin, State of Maine, bounded and described as follows:

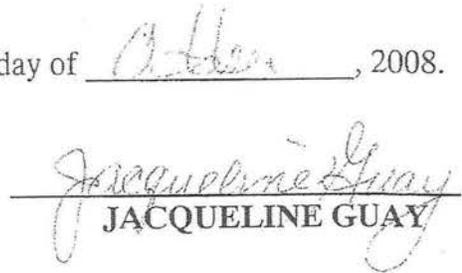
Certain parcels or lots of land, with the buildings thereon, situated on the Hamel Road, so-called, in said Lewiston, and being the same conveyed to Arthur Martineau by Mary Hamel et al. by quitclaim deed dated May 1, 1916, recorded at Androscoggin Registry of Deeds, Book 263, Page 168; and also the same premises conveyed to Arthur Martineau by Harry A. Bryant by warranty deed dated November 25, 1924, recorded in said Registry of Deeds in Book 349, Page 9.

Being the same premises conveyed to Grantor and David P. Dostie by warranty deed of David P. Dostie dated June 6, 2002 and recorded in said Registry of Deeds in Book 5016, Page 211 and to Grantor by warranty deed of David P. Dostie dated April 20, 2004 and recorded in the said Registry of Deeds in Book 7083, Page 186.

WITNESS my hand and seal this 24<sup>th</sup> day of October, 2008.

MAINE REAL ESTATE  
TRANSFER TAX PAID

  
WITNESS

  
**JACQUELINE GUAY**

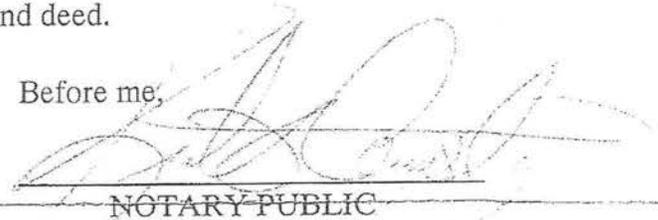
STATE OF MAINE

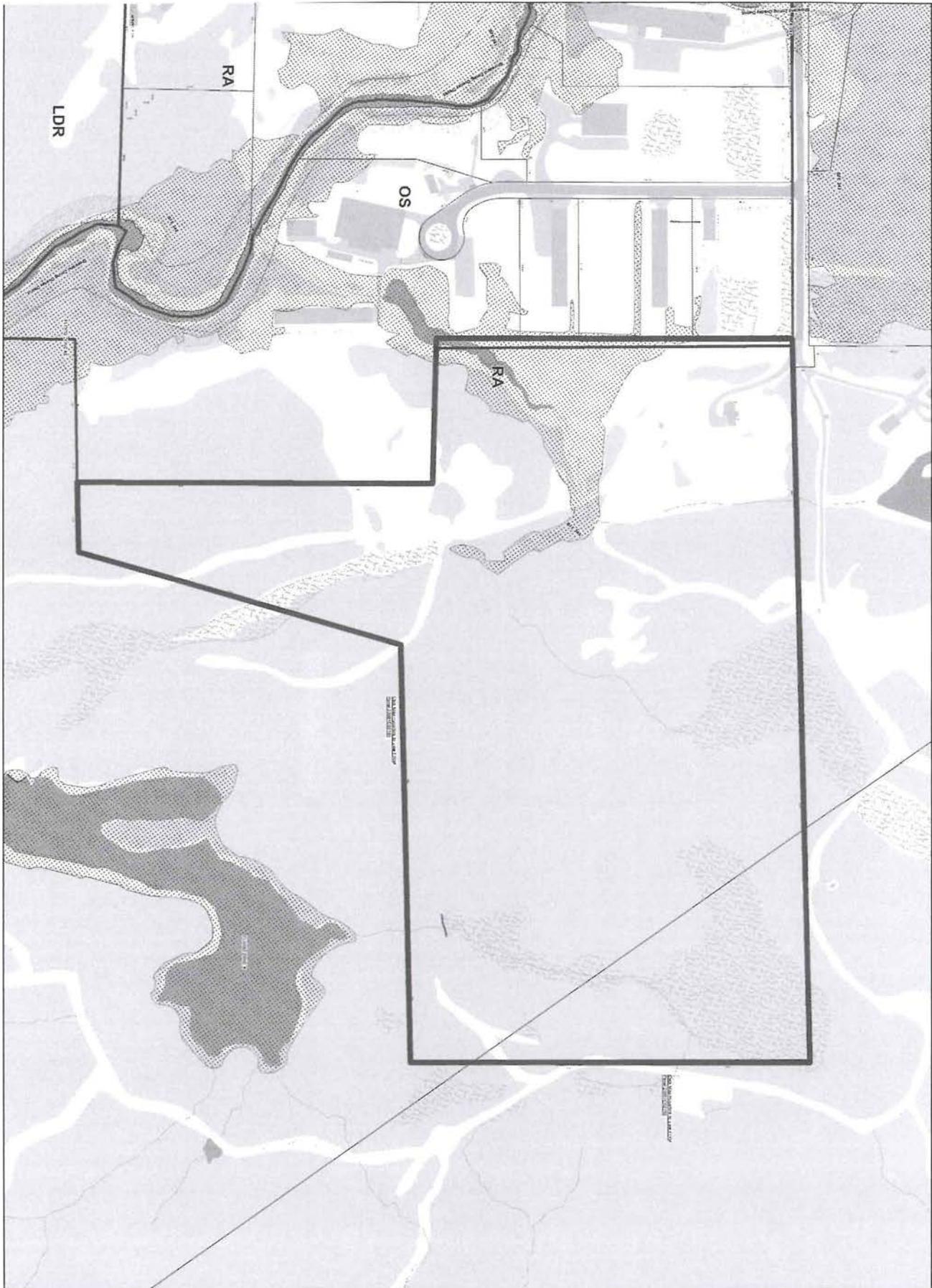
ANDROSCOGGIN, SS.

October 19, 2008

Personally appeared the above named **Jacqueline Guay** and acknowledged the foregoing instrument to be her free act and deed.

Before me,

  
NOTARY PUBLIC



August 2016  
Scale: 1" = 125'



Land Use Table: All Zoning Districts 05.05.16	Rural Agricultural (RA)
<b>USES(15)(33)</b>	
Accessory use or structure	P
<b>Commercial-Service</b>	
Veterinary facilities excluding kennels and humane societies	
Veterinary facilities including kennels and humane societies	C
Small day care facilities	C
Day care centers	C
Day care centers accessory to public schools, religious facilities, multifamily or mixed res. developments, and mobile home parks	
Business and professional offices including research, experimental, testing laboratories, engineering, research, management and related services	
Restaurants	
Drinking places	
Adult business establishments	
Hotels, motels, inns	
Movie theaters except drive-in theaters	
Places of indoor assembly, amusement or culture	
Art and crafts studios	
Personal Services	
Retail stores	
Neighborhood retail stores	
Lumber and building materials dealer	
Gasoline service stations	
Gasoline service stations which are a part of and subordinate to a retail use	
New and used car dealers	
Recreational vehicle, mobile home dealers	
Equipment dealers and equipment repair	
Automotive services including repair	
Registered dispensary(27)	
Registered primary caregivers engaged in the cultivations of medical marijuana for two to five registered patients.	
Tattoo Establishments	
<b>Industrial</b>	
Light industrial uses	
Industrial uses	
Building and construction contractors	
Fuel oil dealers and related facilities	
Wholesale sales, warehousing and distribution facilities and self-storage facilities	
Self storage facilities	
Commercial solid waste disposal facilities	
Junkyards and auto graveyards	
Recycling and reprocessing facilities	
Private industrial/commercial developments(23)	
<b>Transportation</b>	
Airports or heliports	C
Commercial parking facilities	

Transit and ground transportation facilities	
Transportation facilities	
<b>Public and Utility</b>	
Pumping stations, standpipes or other water supply uses involving facilities located on or above the ground surface and towers for municipal use	P
Power transmission lines, substations, telephone exchanges, microwave towers or other public utility or communications use	C
Municipal buildings and facilities	C
Preservation of historic areas; emergency and fire protection activities; bridges and public roadways	
Dams	
<b>Land Use Table: All Zoning Districts 05.05.16</b>	<b>Rural Agricultural (RA)</b>
<b>Institutional</b>	
Religious facilities	P
Cemeteries	P
Congregate care/assisted living facilities, institutions for the handicapped, nursing or convalescent homes, group care facilities	
Hospitals, medical clinics,	
Museums, libraries, and non-profit art galleries and theaters	
Academic institutions, including buildings or structures for classroom, administrative, laboratory, dormitories, art, theater, dining services, library, bookstores, athletic facilities and student recreational uses, together with buildings accessory to the foregoing permitted principal buildings or structures,	
Civic and social organizations	
Public community meeting and civic function buildings including auditoriums	
<b>Residential</b>	
Single-family detached dwellings on individual residential lots	P(8)
Mobile homes on individual residential lots	P(8)
Two-family dwellings	
Multifamily dwellings in accordance with the standards of Article XIII	
Single-Family attached dwelling in accordance with the standards of Article XIII	C
Mixed single-family residential developments in accordance with the standards of Article XIII	C
Mixed residential developments in accordance with the standards of Article XIII	
Mixed use structures	
Lodging houses	
Home occupations	P
Bed and breakfast establishments as a home occupation	P
In-law apartments in accordance with the standards of Article XII	P
Single family cluster development	P
Family day care home	P
Shelters	

Dormitories	
<b>Natural Resource</b>	
Agriculture	P(8)
Farm Stands	P
Forest management and timber harvesting activities in accordance with the standards of Article XIII	P
Earth material removal	C
Community gardens(20)	P
Water dependent uses, e.g. docks and marinas	
Non-residential structures for educational, scientific or nature interpretation purposes, containing a maximum floor area of not more than ten thousand (10,000) square feet	
<b>Recreation</b>	
Campgrounds	C
Public or private facilities for nonintensive outdoor recreation	C
Commercial outdoor recreation and drive-in theaters	
Fitness and recreational sports centers as listed under NAICS Code 713940	



## CITY OF LEWISTON

### Department of Planning & Code Enforcement

**TO: Planning Board**  
**FROM: David Hediger, City Planner**  
**DATE: August 18, 2016**  
**RE: August 22, 2016 Planning Board Agenda Item IV(d)**

**A proposed amendment to Appendix A, Article V, Section 3(aa) of the Zoning and Land Use Code to allow the keeping of up to six chickens in residential zoning districts, with the exception of the Neighborhood Conservation "B" (NCB) district, on lots of no less than 30,000 square feet developed with single family detached dwellings, including mobile homes on individual lots pursuant to the proposed provisions contained in Chapter 14, Article XIII, Sec 14-45 thru 14-53.**

On July 19, 2016 the City Council voted in support of a proposed amendment concerning the keeping of chickens in residential zoning districts and that the matter be referred to the Planning Board for their review and recommendation.

On April 25, 2016 the Planning Board voted 6-1 to send an unfavorable recommendation for the City Council's consideration a proposed amendment submitted by Shelly Suzuki to allow for the keeping of up to six chickens in residential zoning districts on lots of no less than 20,000 square feet developed with single family detached dwellings including mobile homes on individual lots. Since then, the City Council has discussed the matter on three separate occasions, recommending changes from that initially proposed by Mrs. Suzuki.

Similar to the initial amendment proposed by the Mrs. Suzuki, the proposed amendment by the City Council involves Article V, Section 3(aa) of the Zoning and Land Use Code, over which the Planning Board has jurisdiction in providing a recommendation. The amendment also includes performance standards contained in Chapter 14 Animals, Article VII. Keeping of Non-Domestic Animals, Division 4. Keeping of Chickens on Lots Developed with Single Family Detached Dwellings Including Mobile Homes on Individual Lots. These provisions are located in the Code of Ordinances and are outside the purview of the Planning Board. Should Article V, Section 3(aa) be adopted by the Council, the provisions contained in Chapter 14, Article VII, Division 4 would be considered for adoption by the City Council. Said provisions would be administered by the Animal Control Officer. While the Board's authority is limited to the proposed amendment language of Article V, Section 3(aa) of the Zoning and Land Use Code, staff recommends the Board consider reviewing and providing a recommendation on the proposed language found Chapter 14, Article VII, Division 4 of the Code of Ordinances for the City Council's consideration.

The proposed changes, as recommended by the City Council, include:

- Allowing the keeping of up to six chickens in residential zoning districts, with the exception of the Neighborhood Conservation "B" (NCB) district. Permitted residential districts include Rural-Agricultural (RA), Low Density Residential (LDR), Suburban Residential (SR), Medium Density Residential (MDR), and the Neighborhood

Conservation "A" (NCA). This is a Zoning and Land Use Code provision administered by Planning and Code Enforcement.

- A minimum lot size requirement of 30,000 square feet. This is a Zoning and Land Use Code provision administered by Planning and Code Enforcement.
- The keeping of chickens shall require the issuance of a use permit as per Appendix A, Article V, Section 5 of the Zoning and Land Use Code. The issuance of a use permit will include any permitting required for enclosures referenced in Sec. 14-49. Enclosures. This provision is found in Chapter 14 administered by Planning and Code Enforcement and the Animal Control Officer.
- Setback requirements that henhouses, fenced areas, and enclosures shall not be closer than twenty (20) feet to any property line. Chickens also must be kept only in the rear or side yard behind the principle structure of the lot and on the property of the owner. This provision is found in Chapter 14 administered by Planning and Code Enforcement and the Animal Control Officer.

Upon receipt of recommendation from the Planning Board, the Council will take final action on the Suzuki amendment and the proposed amendments the Council has provided to the Board.

#### **ACTIONS NECESSARY:**

##### **Zoning and Land Use Amendment**

Make a motion pursuant to Article VII, Sections 3 and 4 of the Zoning and Land Use Code to send a favorable recommendation for the City Council's consideration a proposed amendment to Article V, Section 3(aa) of the Zoning and Land Use Code to allow the keeping of up to six chickens in residential zoning districts, with the exception of the Neighborhood Conservation "B" (NCB) district, on lots of no less than 30,000 square feet developed with single family detached dwellings, including mobile homes on individual lots

##### **Code of Ordinances Amendment**

Make a motion pursuant to send a favorable recommendation for the City Council's consideration an amendment to the Code of Ordinances Chapter 14 Animals, Article VII. Keeping of Non-Domestic Animals, Division 4. Keeping of Chickens on Lots Developed with Single Family Detached Dwellings Including Mobile Homes on Individual Lots.



## CITY OF LEWISTON

### Department of Planning & Code Enforcement

**TO: City Council Members**  
**Mayor Robert E. Macdonald**  
**FROM: David Hediger, City Planner**  
**DATE: July 7, 2016**  
**RE: Proposed Ordinance for Keeping Chickens**

The council held workshops on May 24<sup>th</sup> and June 28<sup>th</sup>, 2016 to discuss a petition filed by Shelly Suzuki, of 16 Champlain Avenue to allow the keeping of six chickens on lots developed with a single family detached dwelling on individual lots. Councilor's raised concerns with minimum lot size requirements, whether the keeping of chickens should be limited to specific zoning districts, the need for a license or permit, and if there should be increased setback requirements.

#### **Proposed ordinance per City Council workshop discussions**

Staff has prepared an amendment for the Council's consideration based upon comments received at their workshops.

- Minimum lot size requirements:
  - The current minimum lot size is three acres limited to the Rural Agricultural (RA) district.
  - The Suzuki's proposed a minimum lot size of 20,000 square feet on lots in residential districts, including the Rural-Agricultural (RA), Low Density Residential (LDR), Suburban Residential (SR), Medium Density Residential (MDR), Neighborhood Conservation "A" (NCA), and Neighborhood Conservation "B" (NCB).
  - The proposed ordinance requires a minimum lots size of 20,000 square feet.
    - The Council was split on lot size requirements, with some looking to increase the minimum lot size to 30,000 square feet.
- Allow chickens in specific zoning districts:
  - The keeping of chickens is currently limited to the RA district.
  - The Suzuki amendment would allow the keeping of chickens in the following residential districts: RA, LDR, SR, MDR, NCA, and NCB.
  - The proposed ordinance would allow the keeping of chickens in the following residential districts: RA, LDR, SR, MDR, NCA, and NCB.
    - Some Councilor's remained concerned with allowing chickens in NCA and NCB districts, regardless of the proposed minimum lot size requirements.
      - In the NCA district, there are approximately 380 lots between 20,000 to 29,999 square feet; 381 lots 30,000 square feet or larger.
      - In the NCB district, there are approximate four lots between 20,000 to 29,999 square feet; 15 lots 30,000 square feet or larger.
    - Though not previously discussed with the Council, staff suggests consideration for existing single family homes in non-residential districts meeting the minimum lot size requirements be allowed to keep chickens;

specifically, in the Industrial (I), Urban Enterprise (UE), Office Service (OS), Highway Business (HB), Community Business (CB), and Office Residential (OR) districts.

- Licensing and permits:
  - The Suzuki amendment did not reference the need for a permit or license.
  - The proposed ordinance requires that a one-time use permit (currently, \$40) must be obtained, which will also serve as the building permit for any enclosures (i.e. fencing, coops, etc.).
    - Most Councilor's recommended the need for permitting or licensing; however, some Councilor's questioned the fee or the need for a permit. Currently, someone who wants to raise chickens (in the RA district) would be required to get a permit for an ancillary structure on their property (the chicken coop) and one for the fencing around it. This would run \$50 plus, depending on the size of the coop. Under the proposal, the use permit would replace all necessary permits and would actually cost less at \$40. Under either scenario, the property would also have to be reviewed to ensure that the property met the lot size requirement and applicable setbacks.
- Setback requirements:
  - The Suzuki amendment required that chickens shall be kept only in the rear or side yard behind the principle structure of the lot and must be kept on the property of the owner. Chicken henhouses, fenced areas, and enclosures shall not be closer than ten (10) feet to any property line.
  - The proposed ordinance requires henhouses, fenced areas, and enclosures shall not be closer than twenty (20) feet to any property line. It also requires chickens be kept only in the rear or side yard behind the principle structure of the lot and on the property of the owner.

At this time, the Council is being asked to make on motion on the proposed ordinance, to be followed by a recommendation from the Planning Board. Upon receipt of the Board's recommendation, the Council would then hold a hearing to vote on adoption of a proposed ordinance.

Staff will be available at the meeting for additional discussion.



**Legend**

-  vac or single family RA Lots 3 ac plus
-  vac or single family 10,000 sf to 19,999 sf
-  vac or single family 20,000 sf to 29,000 sf
-  vac or single family 30,000 sf or greater
-  Property Records
-  Zoning Districts

**Parcel Zoning, Size Relationship  
Ordinance Consideration  
for Domestic Chickens**



Date: 6/1/2016



07/19/2016

**AN ORDINANCE PERTAINING TO THE ZONING AND LAND USE CODE  
THE CITY OF LEWISTON HEREBY ORDAINS:**

Appendix A of the Code of Ordinances of the City of Lewiston, Maine is hereby amended as follows:

**APPENDIX A  
ZONING AND LAND USE CODE  
ARTICLE V. ADMINISTRATION AND ENFORCEMENT**

**Sec. 3. General provisions.**

(aa) Notwithstanding the provisions under Article XI, Section 23 of this Code, the keeping of up to six chickens is permitted in residential zoning districts, with the exception of the Neighborhood Conservation "B" (NCB) district, on lots of no less than 30,000 square feet developed with single family detached dwellings including mobile homes on individual lots pursuant to the provisions contained in Chapter 14, Article XIII, Sec 14-45 thru 14-53.

**REASONS FOR THE PROPOSED AMENDMENT**

In the City of Lewiston, the keeping of chicken is limited to properties located in the Rural Agricultural (RA) district on lots of at least three acres. There has been an interest by citizens to keep domesticated chickens in zoning districts other than the RA.

The proposed amendment to Article V, Section 3(aa) of the Zoning and Land Use Code allows for the keeping of up to six chickens permitted in all residential zoning districts on lots developed with single family detached dwellings including mobile homes on individual lots pursuant to the provisions contained below in Chapter 14, Article XIII, Sec 14-45 thru 14-52.

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**AN ORDINANCE PERTAINING TO THE KEEPING OF CHICKENS IN THE  
CITY OF LEWISTON HEREBY ORDAINS:**

**Chapter 14 Animals  
Article VII. Keeping of Non-Domestic Animals  
Division 3. Other Animals**

**Sec. 14-31. Keeping of fowl, rabbits and guinea pigs.**

Fowl, rabbits and guinea pigs must be kept indoors, or if outdoors, in a secure pen or enclosure. Litter and droppings from these animals must be collected and disposed of in accordance with the provisions of section 14-41, disposal of excrement in general, shall specifically apply to the disposal of excrement of fowl, rabbits, and guinea pigs. Provided, however, that the provisions of this section and section 14-41 shall not apply to ducks or other waterfowl inhabiting natural or manmade water courses or bodies of water.

**Division 4. Keeping of Chickens on Lots Developed with Single Family Detached Dwellings Including Mobile Homes on Individual Lots.**

**Sec. 14-45. Purpose**

The purpose of this article is to provide standards for the keeping of domesticated chickens. It is intended to enable residents to keep a small number of female chickens on a non-commercial basis while creating standards and requirements that ensure that domesticated chickens do not adversely impact the neighborhood surrounding the property on which the chickens are kept. The provisions of this section are not to preclude other sections of Chapter 14 as applicable.

**Sec. 14-47. Number and type of chickens allowed.**

- (a) The maximum number of chickens allowed is six (6) per lot developed with a single family dwelling.
- (b) Only female chickens are allowed. There is no restriction on chicken species.
- (c) Chickens must be purchased from an approved source such as the National Poultry Improvement Plan (i.e. hatcheries that participate in the National Poultry Improvement Plan).
- (d) This provision shall not apply to allowed agricultural uses.

**Sec. 14-48. Non-commercial use only.**

Chickens shall be kept as pets and for personal use only; no person shall sell eggs or engage in chicken breeding or fertilizer production for commercial purposes. The slaughtering of chickens is prohibited.

**Sec. 14-49. Enclosures.**

- (a) Chickens must be kept in a fenced area or enclosure at all times. Enclosures must be clean, dry, and odor-free, kept in a neat and sanitary condition, in a manner that will not disturb the use of neighboring lots due to noise, odor or other adverse impact. The free ranging of chickens is not allowed.
- (b) Chickens shall be secured within a henhouse during non-daylight hours.
  - (1) Henhouses are not allowed to be attached or located in any part of a dwelling unit. The henhouse shall be enclosed on all sides and shall have a roof and doors. The henhouse must be well-maintained.
- (c) Chickens shall be kept only in the rear or side yard behind the principle structure of the lot and must be kept on the property of the owner. Chicken henhouses, fenced areas, and enclosures shall not be closer than twenty (20) feet to any property line.

**Sec. 14-50. Odor and noise impacts.**

The keeping of chickens authorized under this section shall not create a nuisance and shall be conducted in a manner that does not disturb the use of adjacent properties. Odors from chickens, chicken manure, or other chicken-related substances shall not be perceptible at the property boundaries. Perceptible noise from chickens shall not be loud enough at the property boundaries to disturb persons of reasonable sensitivity.

**Sec. 14-51. Predators, rodents, insects, and parasites.**

The property owner and/or chicken owner shall take all necessary action to reduce the attraction of predators and rodents and the potential infestation of insects and parasites.

Chickens found to be infested with insects and parasites that may result in unhealthy conditions to human habitation may be removed by the City, through the animal control officer, or any other designee, and the cost of the same shall be borne by the property owner and/or chicken owner.

**Sec. 14-52. Permit requirements.**

The keeping of chickens authorized under this section shall require the issuance of a use permit as per Appendix A, Article V, Section 5 of the Zoning and Land Use Code. The issuance of a use permit will include any permitting required for enclosures referenced in Sec. 14-49. Enclosures.

**Sec. 14-53. Separability.**

In the event that any section, subsection or portion of this article shall be declared by any competent court to be invalid for any reason, such decision shall not be deemed to affect the validity of any other section, subsection or portion of this article.



## CITY OF LEWISTON

### Department of Planning & Code Enforcement

**TO:** Planning Board  
**FROM:** David Hediger, City Planner  
**DATE:** August 18, 2016  
**RE:** August 22, 2016 Planning Board Agenda Item IV(e)

**A proposed amendment to Appendix A, Article XI, Section 23, Space and Bulk Requirements, Net Lot Area Requirements of the Neighborhood Conservation “B” (NCB) district.**

On July 19, 2016 the City Council voted in support of a proposed amendment concerning changes to the net lot area per dwelling unit calculation in the NCB district and that the matter be referred to the Planning Board for their review and recommendation.

The current provisions for determining net lot area involves a calculation that is time consuming and does not represent current density of neighborhoods in the NCB district. In order to undertake the calculation, staff must determine the number of units that existed in 1987, calculate the 1987 average lot area per dwelling unit and inflate the area by 120%. This calculation reduces the number of new units allowed by 20%.

The proposed amendment to the net lot area per dwelling unit calculation shall be the average lot area per dwelling unit of impacted properties utilizing current dwelling unit density versus inflating the density that existed in December 1987. This calculation will better allow for development of new buildings or the replacement, reuse or conversion of existing buildings to conform to the type and density of housing existing within the immediate neighborhood. Reference should be made Director of Planning and Code Enforcement, Gil Arsenault’s memorandum to the City Council dated July 16, 2016.

Staff supports the adoption of the proposed amendment as a step toward helping property owners determine allowed densities in the NCB district with a less complicated calculation reflective of the average of the current densities in those neighborhoods.

#### **ACTION NECESSARY**

Make a motion pursuant to Article VII, Sections 3 and 4 of the Zoning and Land Use Code to send a favorable recommendation for the City Council’s consideration to adopt a proposed amendment to Article XI, Section 23, Space and Bulk Requirements, Net Lot Area Requirements of the Neighborhood Conservation “B” (NCB) district.

# MEMORANDUM

TO: Mayor Robert E. Macdonald  
Members of the City Council  
FR: Gildace J. Arsenault, Director of Planning and Code Enforcement  
RE: Neighborhood Conservation “B” District – Amendment to the Net Lot Area per Dwelling Unit Calculation  
DT: July 16, 2016

## Background

On June 21, 2016, the City Council conducted a workshop to discuss the minimum net lot area per dwelling unit requirements for the Neighborhood Conservation “B” District (NCB). The space and bulk regulations for the NCB district do not provide a set number for the minimum net lot area per dwelling unit. The following calculation must be undertaken for each and every property in the NCB district to determine net lot area per dwelling unit:

*The required minimum lot area per dwelling unit for any residential use in the NCB district shall be 120 percent of the average lot area per dwelling unit of impacted properties as of the date of adoption of this Code. The maximum number of dwelling units that can be placed on a parcel in the district shall be figured by the following procedures: The total lot area of all developed impacted properties shall be calculated. In determining the total area of the impacted properties, the tax records of the City of Lewiston shall be used unless the applicant or the owner of an impacted property presents definitive evidence to the contrary. The total number of legally existing dwelling units as of the date of adoption of this Code shall be calculated. The total lot area shall be multiplied by 120 percent and then divided by the total number of dwelling units existing on the impacted properties. This figure divided into the lot area of the subject parcel yields the total dwelling units which can be placed on the lot. If less than 50 percent of the impacted properties are in residential use, the minimum lot area per dwelling unit shall be the greater of: (1) One thousand five hundred square feet per dwelling unit; or (2) The minimum area derived by the procedure outlined above.*

Note the definition of an impacted property means a lot which has frontage on the same street(s) as the lot in question and lies, in whole or in part, within five hundred (500) feet of any property line of the subject lot.

As mentioned at the June 21<sup>st</sup> workshop, this calculation is time consuming and does not represent current density. In order to undertake the calculation, staff must determine the number of units that existed in 1987, calculate the 1987 average lot area per dwelling unit and inflate the area by 120%. This calculation reduces the number of new units allowed by 20%. It should also be noted that, notwithstanding the minimum net lot area per

dwelling unit requirements, density is also limited by other provisions of the Zoning and Land Use Code such as the following space and bulk standards: minimum front setback, minimum front yard, side and rear setback, side and rear yards and maximum lot coverage. The biggest factor that limits the redevelopment and development of lots in the NCB district rests with parking requirements as parking consumes a tremendous amount of land area. Depending upon the number of bedrooms, five to seven parking spaces would be required to construct a new three-unit apartment building. The land area occupied for such parking could consume approximately 2,500 square feet to 3,400 square feet of lot area. A building foot print for a three-unit three story building would likely consume another 1,200 square feet of lot area. Regardless of density provisions, it is not likely that more than a three-unit building could be constructed on a 5,000 square foot lot in the NCB.

If adopted, the proposed amendment to the net lot area per dwelling unit calculation will utilize current day dwelling unit density versus inflating the density that existed in December 1987. Staff does not expect that the change in the calculation will have an adverse impact on the NCB district. This calculation will better allow for development of new buildings or the replacement, reuse or conversion of existing buildings to conform to the type and density of housing existing within the immediate neighborhood.

**AN ORDINANCE PERTAINING TO NEIGHBORHOOD  
CONSERVATION "B" (NCB) ZONING DISTRICT DENSITY**

**THE CITY OF LEWISTON HEREBY ORDAINS:**

Appendix A of the code of ordinances of the City of Lewiston, Maine is hereby amended as follows:

**APPENDIX A  
ZONING AND LAND USE CODE  
ARTICLE XI. DISTRICT REGULATIONS**

**Sec. 7. Neighborhood conservation "B" district (NCB).**

(a) *Statement of purpose.* The purpose of the neighborhood conservation "B" district is to promote the stability and improvement of older multifamily residential neighborhoods by requiring the development of new buildings or the replacement, reuse or conversion of existing buildings to conform to the type and density of housing existing within the immediate neighborhood. The standards of the district allow multifamily housing while encouraging the upgrading of this housing stock.

**Sec. 23. Space and Bulk Requirements**

*Space and Bulk Table* - Lots in each District shall meet or exceed the following minimum space and bulk standards as noted in the Space and Bulk Standards Table.

<b>Dimensional Requirements (13)</b>	<b>Neighborhood Conservation B (NCB)</b>
<b>Minimum net lot area per dwelling unit with public sewer</b>	
Single family detached	
Single family attached	
Two-family dwellings	
Mixed single family residential development (14)	
Mixed residential development (14)	
Multifamily dwellings	
Mixed use structures	
All permitted residential uses	120% of average (26) 1,500 sf

Space and Bulk Table: NCB Density Amendment 05.31.16

Dimensional Requirements (13)	Neighborhood Conservation B (NCB)
<b>Minimum net lot area per dwelling unit with public sewer</b>	
Single family detached	
Single family attached	
Two-family dwellings	
Mixed single family residential development (14)	
Mixed residential development (14)	
Multifamily dwellings	
Mixed use structures	
All permitted residential uses	120% of average (26) 1,500 sf

*Space and Bulk Table Notes*

(26) The required minimum lot area per dwelling unit for any residential use in the neighborhood conservation "B" district shall be ~~120 percent of the average lot area per dwelling unit of impacted properties as of the date of adoption of this Code.~~ The maximum number of dwelling units that can be placed on a parcel in the district shall be figured by the following procedures: The total lot area of all developed impacted properties shall be calculated. In determining the total area of the impacted properties, the tax records of the City of Lewiston shall be used unless the applicant or the owner of an impacted property presents definitive evidence to the contrary. The total number of legally existing dwelling units ~~as of the date of adoption of this Code~~ shall be calculated. The total lot area shall be ~~multiplied by 120 percent and then~~ divided by the total number of dwelling units existing on the impacted properties. This figure divided into the lot area of the subject parcel yields the total dwelling units which can be placed on the lot. If less than 50 percent of the impacted properties are in residential use, the minimum lot area per dwelling unit shall be the greater of: (1) One thousand five hundred square feet per dwelling unit; or (2) The minimum area derived by the procedure outlined above.

**REASONS FOR PROPOSED AMENDMENT**

The current provisions for determining net lot area involve a calculation that is time consuming and does not represent current density of neighborhoods in the NCB district. In order to undertake the calculation, staff must determine the number of units that existed in 1987, calculate the 1987 average lot area per dwelling unit and inflate the area by 120%. This calculation reduces the number of new units allowed by 20%. The proposed amendment to the net lot area per dwelling unit calculation shall be the average lot area per dwelling unit of impacted properties utilizing current dwelling unit density versus inflating the density that existed in December 1987. This calculation will better allow for development of new buildings or the replacement, reuse or conversion of existing buildings to conform to the type and density of housing existing within the immediate neighborhood.

## **CONFORMANCE WITH COMPREHENSIVE PLAN**

The City Council hereby determines that the changes to the Zoning and Land Use Code are in conformance with the 1997 Comprehensive Plan for the following reasons:

1. Review development review, permitting, and licensing policies and practices to see where they can be streamlined in order to better service the development community (1997 Plan, Economy, Policy 1, Strategy B and C).
2. Encourage orderly growth and development in appropriate areas of the City, while protecting the City's rural character, making efficient use of public services and preventing development sprawl (1997 Plan, Land Use, Goals, #1).
3. Continue to allow a wide range of housing types in Zoning (Long Range Planning, Policy 5, Strategy A).

The City Council hereby determines that the changes to the Zoning and Land Use Code are in conformance with the Draft 2016 Comprehensive Plan for the following reasons:

1. Strengthen neighborhoods & expand housing choice: provide a greater range of housing choices to meet the needs of young adults, families, retirees, seniors, immigrants, refugees, and people of different income levels. Housing types should include small-houses, multi-family buildings, live-work units, accessory dwelling units, and single-family homes. A more intentional and diversified housing strategy is critical to the City's quality of life and the economic growth (p. 116).
2. G-5 Infill Growth Sector: Infill Growth Sectors are areas that are mostly or fully built-out in the City's historic development pattern but that still have vacant or underutilized land. Additional growth and development in these areas is desirable due to the presence of existing infrastructure. The plan envisions that most residential and non-residential development over the next ten years will occur in this growth sector. All of these should be rezoned as character-based districts to more easily enable context-appropriate investment in the City center (p. 125).
3. Simplify the rules making it easier to develop or redevelop buildings in a way that respects the character of the neighborhood. Encourage reinvestment in older higher density residential neighborhoods by allowing full utilization of existing buildings and flexible parking requirements (p. 128).
4. Continue to provide and enhance incentive programs for new infill mixed-income housing downtown, requiring a mix of quality subsidized, affordable, and market-rate units (p.173).





## CITY OF LEWISTON

### Department of Planning & Code Enforcement

**TO: Planning Board**  
**FROM: David Hediger, City Planner**  
**DATE: August 18, 2016**  
**RE: August 22, 2016 Planning Board Agenda Item V(a)**

**Request of the Planning Board to initiate an amendment to Article XIII of the Zoning and Land Use Code to adopt the Maine Department of Environmental Protection's Chapter 500 Stormwater Management rules.**

On August 12, 2015 an amendment to Maine DEP's Stormwater Management Rule (also known as Chapter 500 Rules) became effective. The changes include, but are not limited to, providing additional options for when treatment is required of stormwater, providing credits for Low Impact Development (LID), establishing new standards for the redevelopment of existing sites, and providing updates to best management practices associated with stormwater management.

DEP has granted delegated review authority to the City for reviewing projects subject to the Site Location of Development Act (Site Law; essentially projects involving 3 to 7 acres of development activity) and capacity for reviewing and issuing permits subject to state Stormwater Management Rules. With the new rule changes adopted by the State, the city must amend the applicable sections of the Zoning and Land Use Code referencing these new provisions. Failure to do so puts the City at risk of losing its delegated review authority and capacity for review certain sized projects. Maintaining this authority from DEP is welcomed by property owners and developers, as the City is able to provide an expedited and less costly review of projects

Staff is request the Planning Board initiate a proposed amendment to the Zoning and Land Use Code for staff to amendment the appropriate sections of Code to reference the newly adopted Maine Department of Environmental Protection's Chapter 500 Stormwater Management rules.

#### **ACTION NECESSARY**

Make a motion pursuant to Article VII, Section 4 and Article XVII, Section 5 of the Zoning and Land Use Code directing staff to prepare a proposed amendment to the Zoning and Land Use Code to reference the newly adopted Maine Department of Environmental Protection's Chapter 500 Stormwater Management rules.

# What are the 2015 Changes to Maine's Stormwater Management Laws?

## ***In a Nutshell: What is New in Chapter 500?***

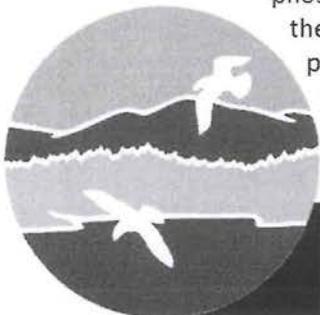
*For each bullet point, the related Chapter 500 rule section is cited in parentheses:*

### ***General Standards:***

- The Department provides for reduced stormwater treatment levels if the remaining land is set aside from development. (4(C)(2)(a)(iii))
- The redevelopment standards were revised to provide greater clarification and as a way to incentivize redeveloping existing properties. (4(C)(2)(d))
- The storage volume requirement for wetponds was increased by 33%. (4(C)(3)(a))
- Innovative stormwater treatment measures are allowed provided that they perform at least as well as conventional measures. (4(C)(3)(e))
- A new low impact development (LID) credit is introduced. Eligible projects can use the credit to reduce the developed area requiring treatment by up to 20%. (4(C)(4))
- The portion of a road crossing a wetland is not required to meet the general standards provided its design allows wetland flow under the road. (4(C)(5)(e))
- Runoff from sloped, non-asphalt roofs of non-industrial facilities needs to be treated for thermal impact and for channel protection only. (4(C)(5)(f))

### ***Phosphorus Standard:***

- If an applicant can demonstrate that a project meets the site allocation contrary to the standard phosphorus export calculation results, the Department may decide that the phosphorus standard is met. (4(D)(3))



The Maine Department of Environmental Protection's Chapter 500 Stormwater Management rules underwent a revision in 2015, its first revision in four years. The changes are intended to provide greater flexibility while encouraging the use of innovation stormwater design and low impact development techniques to help address climate change. One notable change was that the "Compensation and Mitigation Credit" section was removed from Chapter 500, and released as a new stand-alone chapter, Chapter 501.

### ***Sensitive Watersheds:***

- Permittees may be required to hire a Department-approved inspector to oversee construction projects in the watersheds of lakes most at risk or urban impaired streams. (10(A))

### ***Inspection, Maintenance and Housekeeping:***

- Permittees are asked to retain their stormwater inspection and maintenance logs for a minimum of five years after the completion of permanent stabilization. (Appendix B(2)(d))
- Authorized and unauthorized non-stormwater discharges were identified to more closely align with federal stormwater regulations. (Appendix C(6 & 7))

### ***Infiltration Systems:***

- The infiltration basins must be designed to drain completely within a 24 to 48-hour period. (Appendix D(4)(a))
- In certain cases, the Department may require:
  - \* Groundwater quality monitoring to determine the effectiveness of any infiltration system. (Appendix D(4)(a))
  - \* A "mounding analysis" demonstrating that the water table will be below the bottom of an infiltration system within 48 hours after the end of a storm event. (Appendix D(4)(d))

### ***Vegetated Soil Filters:***

- Liners are required on all vegetated soil filters unless certain site conditions are met. (Appendix E(4)(a)(iii))

### ***Buffers:***

- An alternative buffer design is provided for residential subdivision lots to meet either the general standards or the phosphorus standard using compensation. (Appendix F(7))

The full text of the current Chapter 500 Rules can be accessed at: <http://www.maine.gov/dep/land/stormwater/storm.html>

### ***In a Nutshell: What is New in Chapter 501?***

For each bullet point, the related Chapter 501 rule section is cited in parentheses:

#### ***Urban Impaired Streams:***

- The compensation fees were increased to more closely reflect the actual cost of mitigation projects. (3(A)(1))
  - \* Non-roof impervious area: \$12,500 per acre
  - \* Roof: \$5,000 per acre
  - \* Landscaped area: \$2,500 per acre
- Mitigation credits are defined for an expanded group of developments, including different parking lot types. (3(A)(3))

#### ***Phosphorus Standards:***

- A project can earn credits by treating the following off-site phosphorus sources if they are determined to be significant by the Department: (3(C)(2))
  - \* Roads: Credits can be earned by paving them
  - \* Chronic erosion sites: Credits can be earned by repairing them

Credits that can be earned by treating other phosphorus sources are decided on a case-by-case basis.

- An applicant can pay a compensation fee in lieu of reducing phosphorous export beyond a project's allotment provided that the phosphorous export from the proposed development site has already been reduced by at least 60%. The maximum compensation fee is \$25,000 per pound of

phosphorus export. Compensation fees are prorated such that less compensation fee is paid for projects achieving a higher reduction in phosphorus export. The compensation fee option is unavailable: (3(C)(3))

- \* For projects or portions of projects that are residential subdivisions or roads within residential subdivisions, unless the project is using only wooded or meadow buffers and associated level spreaders and ditch turnouts to address the remaining phosphorus export reduction required to meet the projects phosphorus allocation.
- \* Unless a mitigation project is identified and approved by the Department in the same watershed.

The full text of the current Chapter 501 Rules can be accessed at: <http://www.maine.gov/dep/land/stormwater/storm.html>

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For more information on Maine's stormwater management rules, please contact staff in one of our four regional offices:

Augusta, Main Office and Central Maine Regional Office  
(Mail) 17 State House Station, Augusta, Maine 04333-0017

(Physical) 28 Tyson Drive, Augusta, Maine 04333-0017  
(207)287-7688 • (800)452-1942 • FAX (207)287-7826

Bangor, Eastern Maine Regional Office  
106 Hogan Road, Bangor, Maine 04401  
(207)941-4570 • (888)769-1137 • FAX (207)941-4584

Portland, Southern Maine Regional Office  
312 Canco Road, Portland, Maine 04103  
(207)822-6300 • (888)769-1036 • FAX (207)822-6303

Presque Isle, Northern Maine Regional Office  
1235 Central Drive, Presque Isle, Maine 04769  
(207)764-0477 • (888)769-1053 • FAX (207)760-3143

CITY OF LEWISTON  
PLANNING BOARD MEETING  
MINUTES FOR July 25, 2016

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**I. ROLL CALL:** The meeting was held in the City Council Chambers on the first floor of City Hall and was called to order at 5:35 p.m. Chairperson Bruce Damon chaired the meeting.

**Members in Attendance:** Bruce Damon, Walter Hill, Normand Anctil, Sandra Marquis, Paul Madore, Pauline Gudas and Michael Marcotte

**Associate Members Present:** Sonia Taylor

**Associate Members Absent:** Zachary Pettengill

**Staff Present:** Gil Arsenault, Director of Planning and Code and Deb Nichols, Administrative Assistant

**II. ADJUSTMENT TO THE AGENDA:** None.

**III. CORRESPONDENCE:** Mike Gotto of Stoneybrook Consultants provided correspondence to the Board which addressed the concerns of Public Works. A note from Ryan Barnes of LPW was also submitted which stated the revised plans have been reviewed and the previous condition of approval from Public Works has been removed.

**IV. MID-YEAR ELECTION OF OFFICERS: Election of Vice Chairperson and Secretary**

The following motion was made:

**MOTION:** by **Walter Hill** to elect Pauline Gudas as Vice Chairperson. Second by Sandra Marquis.

**VOTED:** 3 - 3

The following motion was made:

**MOTION:** by **Paul Madore** to elect Michael Marcotte as Vice Chairperson. Second by Sonia Taylor.

**VOTED:** 3 – 3

No action was taken. The Board agreed to revisit at their next meeting.

**V. PUBLIC HEARING:**

a) An application submitted by Stoneybrook Consultants on behalf of GRE, LLC for the expansion of a self-storage facility located at 51 Mount Hope Avenue. Mike Marcotte recused himself from participation due to a preexisting contractual relationship. Sonia Taylor was designated a voting member.

Gil summarized the application. He noted Ryan Barnes of LPW reviewed the recently revised plans and the drainage issues have now been resolved. Mike

Gotto distributed the revision for the Board's review. He referenced the plan and summarized the applicant's proposal. He discussed the water easements. Five buildings will be built in two phases. The first phase will include stormwater improvements and gravel. Bruce asked about the size of the lot. It is 2.39 acres. Normand asked if the project effects the sewer easement. It does not. A detention pond is needed as it does not drain directly into the river. Paul asked if it was a wetland area. There are two wetland areas but their small size allows for the lot to be developed. Normand asked about lighting. There will be security lights attached to the buildings. They are cut off fixtures as specified in the code. The area is gated and fenced and will be accessed by a key code. Renters can access the storage at any time of day or night. An estimate of traffic at peak hour on a Saturday may generate 8 trips, or 4 cars in and out. Sonia asked about the proximity of homes to the development. Mike said the nearest mobile home is 100 feet away. Sonia also asked if there was a need for this facility in this area. Mike said his client owns majority of other storage units in the area and they are 100% full. Normand asked about the number of units. There are 194 storage units ranging in size from 5' x 5' to 10' x 30'.

Public comments: No one spoke in support of the project. Jon Plourde, an attorney with Skelton Taintor & Abbott spoke about concerns regarding the project. He distributed photos to the Board. He said the traffic assessment is inadequate. He does not believe the increased traffic will be convenient or safe. He expressed concern because both LLCs are owned by Gendron. He said he observed traffic making use of the existing yard to access the property and felt the existing roadway is the best entrance, not the proposed access. He said the traffic report does not address the mobile home park citizen concerns, such as the lack of breakdown lanes or shoulders for walking traffic. The park is for age 55+ and is quiet and peaceful. Storage renters will likely use the cul de sac in the park to turn their vehicles around. He referred to the photos he took this morning and said the road is not well maintained. The lack of buffering is a concern. Mike Gotto said there is no need to buffer. Attorney Plourde talked about transition of use in the code and said this is why buffering is required. He said there is the potential for a creeping subdivision because the two LLCs are owned by one owner. He said the potential DDOT lot development has not been discussed and asked for a more comprehensive review of both lots. He requested the application be tabled until the applicant can address these concerns.

Bruce asked about the current traffic generated by Geiger Brothers. This is unknown. Bruce also said the majority of the damage to the road is caused by existing use, not by proposed use. Attorney Plourde said the traffic study does not take into account how the residents of the park use the road. Paul asked about future development plans. He expressed concern about the lack of phase two details or future use of the second portion of the property. Walter disclosed he had a friendly relationship with an attorney who is associated with Skelton Taintor & Abbott. Helena Mercier has lived on Mt. Hope Ave. for 28 years. She

said there is no need for another storage facility. She was against the removal of trees. She said the proposal will generate more noise, traffic, people and vehicles all hours of the day and there will be no sidewalks for safety. She said the project would have a major negative impact on their lives. Richard Brown lives at 14 Mount Hope Ave. which is close to the road. He said the lighting is very bright. He is also concerned about security cameras and his privacy. He said vegetation is important because he does not want to look at storage buildings and said other storage areas are overgrown and not taken care of. Betty Olsen is a resident in the park. She said it is country living and there is no need for more business on Mt. Hope Ave. She said a better road is needed.

Bruce closed the public portion of the meeting.

Mike Gotto responded to concerns. He said there is no planned subdivision of this lot and the plan for Phase Two is to relocate EZ Rentall to the site. He said a comprehensive traffic study has been done which addressed safety and site distances. The amount of traffic is minimal compared to the mobile home park traffic. He is not aware there is a need for buffering. He said commercial development is supposed to be located in this zone. Gil said mobile home parks are not permitted in this zone, but this park is an existing lawfully non-conforming use. Mike said city staff have seen his plans and are in favor. He said the goal of the project is to separate the storage business from the future development of the other portion of the lot. Dave Gendron is the owner of both LLCs. Walter wants a buffer as a lighting filter. He said the Planning Board is responsible for making sure the proposal meets the guidelines in the zone and must look at the zoning and the matrix to make sure they are an approved use. He agreed the other entrance is not practical. Mike said he was not previously aware of the lighting or tree issue, but they will do their best to address these concerns. Pauline asked about the border on the left. Mike said fencing and a lawn will be installed. Pauline said Mr. Gendron is not obligated to make the property beautiful. Gene from Geiger said they would like to keep the area as remote and as green as possible. Normand noted the location of the entrance on the plan and asked why. Mike said it was for future development and also for drainage issues. Paul said he does a lot of business with EZ Rentall and has a storage unit and said there is heavy traffic in this area. He said it is smart to include a buffer. Mike said the project allows for green space. Paul said Mr. Gendron takes good care of properties. Gil said the Planning Board has to make decisions based on the code and from his position this project is in compliance.

The following motion was made:

**MOTION:** by **Walter Hill** that the application submitted by Stoneybrook Consultants, Inc. on behalf of GRE, LLC for the construction of a new self-storage facility at 51 Mount Hope Avenue meets all of the necessary criteria contained in the Zoning and Land Use Code, including Article XIII, Section 4 of the Zoning and Land Use Code and that approval be granted based on the following conditions:

No certificate of occupancy shall be issued for this site until evidence has been provided that easements from LAWPCA for the site's stormwater improvement have been recorded; no certificate of occupancy shall be issued for this site until evidence of the MS4 stormwater maintenance performance guarantee agreement has been recorded; and prior to the issuance of a certificate of occupancy, evidence of a final inspection of the storm water system shall be provided to the city by the designing engineer along with a written statement indicating that the storm water system and all site improvements have been completed in accordance with the approved plans. Second by **Normand Anctil**.

Comments: Sandra suggested an open dialog with neighbors be held in the future.

**VOTED: 7-0 (Passed)**

#### **VI. OTHER BUSINESS:**

Mike Marcotte asked about UE and how much of the city is designated as this. Gil was not sure but explained it is a mixed use zone. Mike also said the Pierce Place project is close to the side of the road and the setbacks should be reviewed. He is also concerned with bedroom windows located on street level. Bruce asked for an update on the comp plan status. Gill said the Council is very close, possibly by the end of summer.

**VII. READING OF MINUTES:** Adoption of the July 11, 2016 draft minutes.

The following motion was made:

**MOTION:** by **Normand Anctil** to accept the July 11, 2016 draft minutes as presented. Second by Walter Hill.

**VOTED: 7-0 (Passed)**

**VIII: ADJOURNMENT:** The following motion was made to adjourn.

**MOTION:** by **Pauline Gudas** that this meeting adjourns at 7:15 p.m. Second by Sandra Marquis.

**VOTED: 7-0 (Passed)**

The next regularly scheduled meeting is for Monday, August 8, 2016 at 5:30 p.m.

Respectfully submitted:

Michael Marcotte, Secretary