



*Gorrill-Palmer  
Consulting  
Engineers, Inc.*

Perham Street Parking  
Augusta, Maine

Major Development Review  
Prepared For

Maine Governmental Facilities  
Authority

November 2014

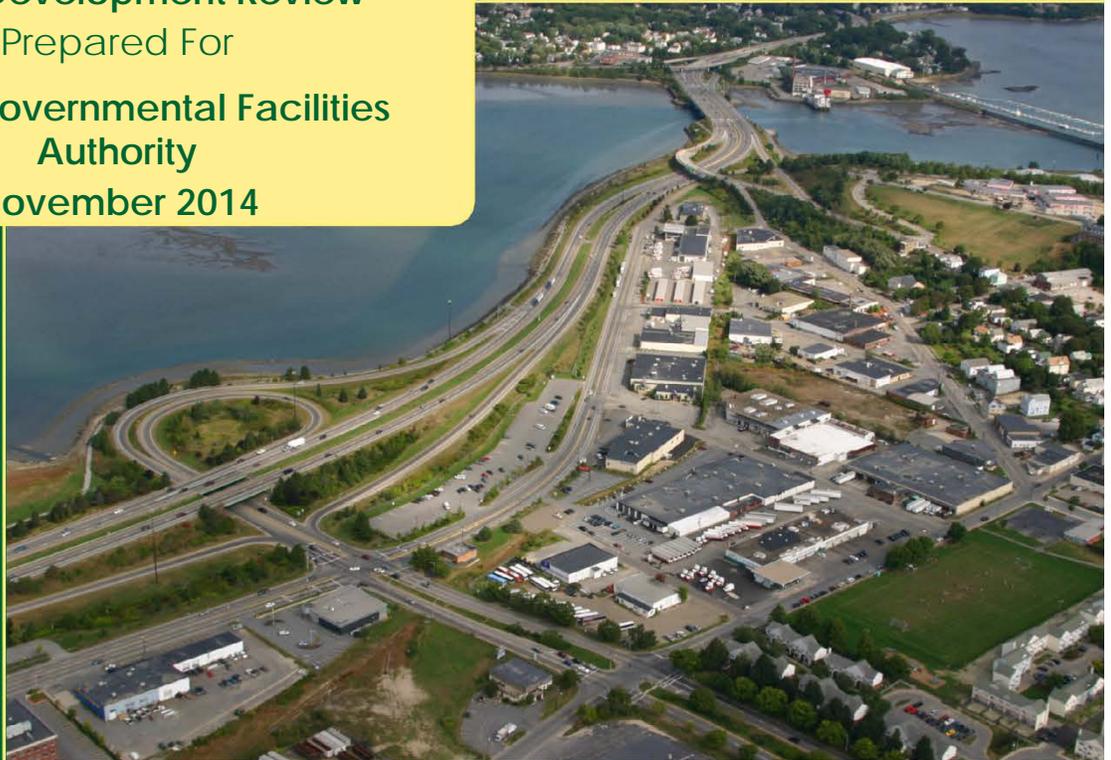
Traffic Engineering

- Impact Studies
- Corridor Studies
- Parking Studies
- Pedestrian Studies
- Roadway Design
- Peer Review
- Traffic Calming

Civil Engineering

- Site Plan Design
- Stormwater  
Management
- Erosion Control
- Utility Design
- Permitting
- Feasibility Studies

15 Shaker Rd.  
PO Box 1237  
Gray, ME 04039  
207-657-6910



November 7, 2014

Mr. Matt Nazar,  
Deputy Director of Development Services  
City of Augusta  
16 Cony Street  
Augusta, ME 04330-5298

Subject: Proposed Parking Lot  
Perham Street, Augusta  
Major Development Application

Dear Matt:

Gorrill-Palmer Consulting Engineers, Inc., with PDT Architects and Terrence J. DeWan Landscape Architects, has been retained by Maine Governmental Facilities Authority Judicial Branch to prepare plans and permit applications for a parking lot located at Perham Street in Augusta, Maine. The proposed parking lot contains 92 parking spaces. See Location Map following this page for site location.

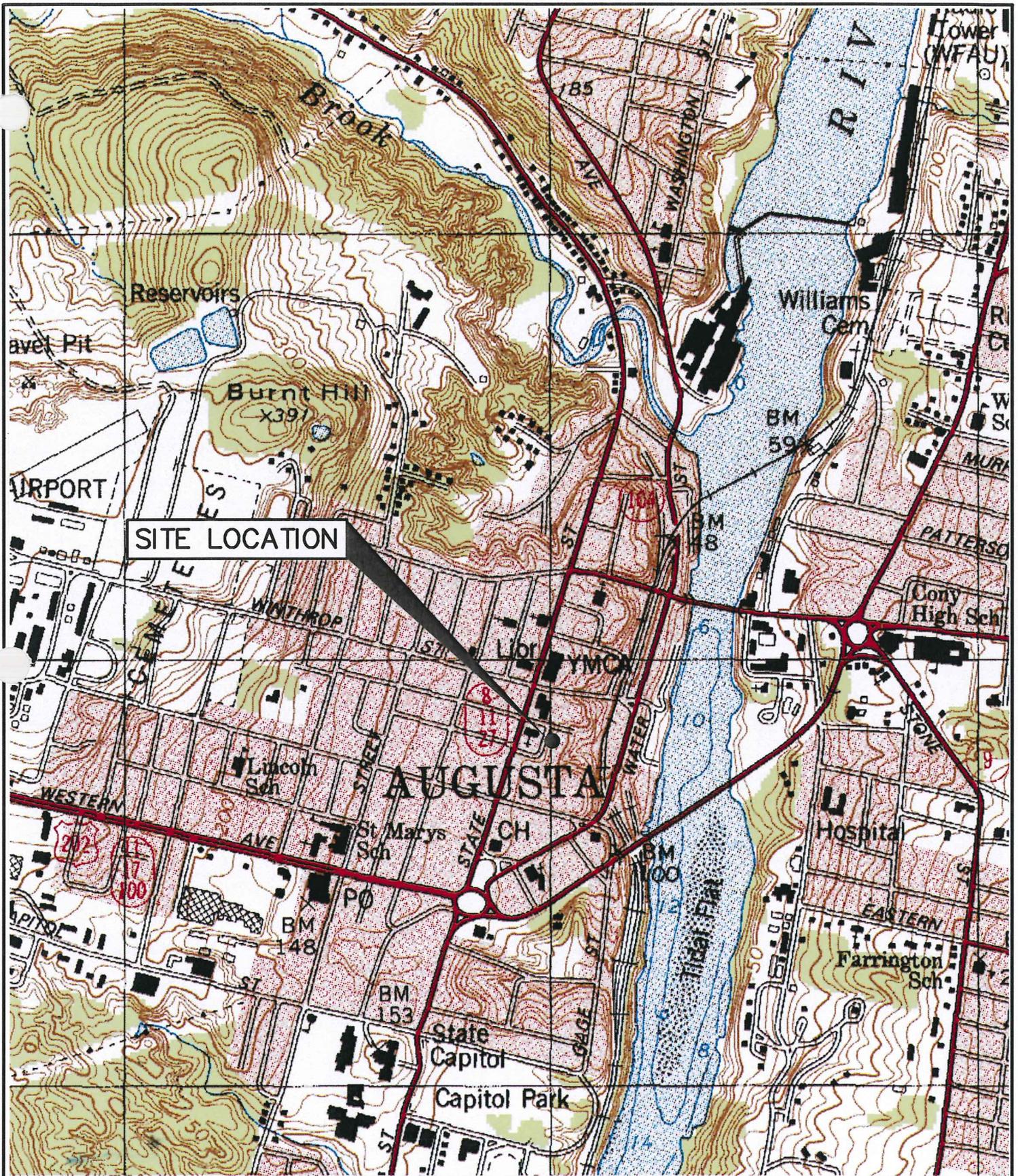
The applicant is currently seeking Major Development Review from the City of Augusta, and a Stormwater Permit from the Maine Department of Environmental Protection (Maine DEP) for the proposed development. Eleven copies of this letter and four full size and seven reduced size copies of the plans are enclosed. This letter provides the information requested in the Land Use Ordinance under Appendix A, Section 4.4.1.

### Project Description

At this time, the Maine Governmental Facilities Authority has retained Gorrill Palmer, to prepare plans and permit applications for the redevelopment of Perham Street as a parking area. The Maine Governmental Facilities Authority will use these spaces to supplement those constructed as part of the Courthouse project. The site is currently developed with Perham Street and four residential house lots. There are no apparent wetlands onsite. The proposed development will require the demolition of the house lots as well as Perham Street. The project site is located in the BP zoning district. The four house lots are identified on the City Tax Map 33, Lots 230, 231, 232, and 233.

A copy of the Existing Conditions Plan is included in the plan set.

The following table presents the existing and proposed groundcover for the project site.



U.S.G.S. Location Map  
 Augusta Parking Lot - Augusta, Maine  
 U.S.G.S. Augusta, Maine -7.5 Minute Series (Topographic)

Design: JWA	Date: JULY 2014
Draft: CG	Job No.: 2569.01
Checked: DER	Scale: None
File Name: 2569-01-LOCATION.dwg	

**GP** Gorrill-Palmer Consulting Engineers, Inc.  
*Engineering Excellence since 1998*

PO Box 1237  
 15 Shaker Road  
 Gray, ME 04039  
 207-657-6910  
 FAX: 207-657-6912  
 E-Mail: mailbox@gorrillpalmer.com

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Groundcover – Parking Development Site		
	Existing (acre)	Proposed (acre)
Impervious Roof	0.15	0
Impervious Non-Roof	0.22	0.60
Vegetated	0.34	0.11
Net Increase In Impervious Area		0.23

The following sections provide the information requested in the Land Use Ordinance under Appendix A, Section 4.4.1.

**(1) Pollution**

- (a) The parking lot elevation ranges from elevation 119 to elevation 111.6, the site is not located within the mapped FEMA 100-year floodplain.
- (b) The proposed use of the site will not require sanitary service, and will not discharge to the site.
- (c) The runoff from the developed area of the site will enter the stormdrain system of the newly constructed Court House. The Court House stormdrain system has excess capacity to treat the increase in impervious area of the proposed project.
- (d) The runoff from a portion of the developed area of the site will be treated prior to being discharged from the site to the existing municipal storm drain system.
- (e) The proposed use of the site will not require water service.

**(2) Sufficient Water**

Not Applicable, project will not require water service.

**(3) Municipal Water Supply**

Not Applicable, project will not require water service.

**(4) Soil Erosion**

An Erosion and Sedimentation Control Plan, conforming to Maine DEP Best Management Practices, is included in Attachment K.

**(5) Highway or Public Road Congestion**

The proposed parking lot will not generate traffic flow and will not increase highway or public road congestion.

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**(6) Sewage Waste Disposal**

Not Applicable, project will not require sanitary service.

**(7) Municipal Solid Waste and Sewage Waste Disposal**

Sanitary sewer service will not be required for this site. Solid waste will not be generated through the use of this site.

**(8) Aesthetic, Cultural and Natural Values**

Terrence J. DeWan Landscape Architects, prepared a landscaping plan to enhance the development and screen the site from adjacent uses. The landscaping plan is included in the plan set.

The Maine Department of Inland Fisheries & Wildlife (MDIFW) was contacted as part of the Courthouse project and stated that there were no essential habitats or significant wildlife habitats within the project area. The letter dated July 11, 2012 is located in Attachment H.

**(9) Conformity with City Ordinance and Plans**

The proposed site is located in the BD district. A parking lot is a permitted use. The proposed project will be in conformance with the BD district requirements contained in the City's land use ordinance.

**(10) Financial and Technical Capacity**

The Maine governmental Facilities Authority Judicial Branch has available funding to support the proposed project. The design team has adequate technical capacity to construct the project. Attachments C and D contain the financial and technical capacity information.

**(11) Surface Waters. Outstanding River Segments**

Not Applicable, the project is not in the watershed of a pond or lake, or within 250 feet of any wetland, great pond, or river.

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**(12) Groundwater**

The site is not located within a mapped Sand & Gravel Aquifer, the stormwater runoff will be treated as required by MDEP prior to discharge. See Attachment I for the Sand and Gravel aquifer map for this site.

**(13) Flood Areas**

The site is not located within a mapped FEMA 100-year floodplain. See Attachment E.

**(14) Freshwater Wetlands**

There are no wetlands located on the project site.

**(15) River, Stream or Brook**

Not Applicable, there are no rivers, streams, or brooks within or abutting the proposed project site.

**(16) Stormwater**

Subsurface chambers are proposed to provide detention of stormwater runoff in order to limit the post development peak runoff rate for the 2- and 25-year storms to predevelopment levels. See Attachment J for the Stormwater Report for this project.

**(17) Access to Direct Sunlight**

Not Applicable, the project is an at grade parking lot.

**(18) Title 38 M.R.S.A.**

This project is not required to meet the Site Location of Development standards that are referenced in this section; however, those sections which are applicable to this project are addressed in the sections above.

**(19) Spaghetti Lots**

Not Applicable

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**(20) Lighting**

Site lighting is proposed to be full-cutoff luminaries. Information on the pole-mounted light fixtures and site lighting plan are included in Attachment L.

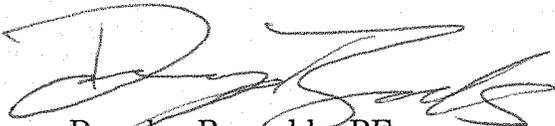
**Conclusion**

As required by the Ordinance, Gorrill-Palmer Consulting Engineers, Inc. on behalf of the Maine Governmental Facilities Authority Judicial Branch has submitted the enclosed information for Major Development Review. The project team looks forward to meeting with the City Planning Board to review this project.

Please feel free to contact our office with any questions you may have or if additional information is needed.

Sincerely,

Gorrill-Palmer Consulting Engineers, Inc.



Douglas Reynolds, PE  
Senior Engineer

Enclosure

Copy: Philip Johnston, MGFA  
Alan Kuniholm, PDT  
Sarah Witte, DeWan

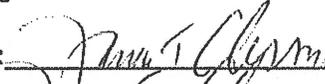
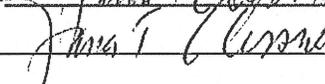
## Index: Proposed Parking Lot

<u>Section</u>	<u>Item</u>
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B	Abutter's List/Tax Maps
C	Financial Capacity
D	Technical Ability
E	Flood Map
F	Title/Right/Interest
G	Ability to Serve Letters
H	Issues of Significance
I	Sand/Gravel Aquifer/Soils
J	Stormwater Management Plan
K	Erosion/Sediment Control Plan
L	Lighting
M	Site Plans

# Section

# A

**City of Augusta**  
**Development Review Application**  
 Bureau of Planning, Department of Development Services

<b>Address of Proposed development:</b> Perham Street		
<b>Zone(s):</b> BP		
<b>Project Name:</b> Parking Lot		
<b>Existing Building (sq. ft.):</b> 6,318	<b>Proposed Building (sq. ft.):</b> 0	
<b>Existing Impervious (sq. ft.):</b> 9,656	<b>Proposed Impervious (sq. ft.):</b> 26,226	
<b>Proposed Total Disturbed Area of the Site:</b> 0.71 acres		
Proposed disturbance of greater than one acre requires a Chapter 500, Stormwater Management Permit from the Maine Department of Environmental Protection (DEP).		
<b>Owner's Name/Address:</b> Maine Governmental Facilities Authority P.O. Box 2268 Augusta, ME 04330-2268  <b>Phone #:</b> 207-622-9386 <b>Cell #:</b> <b>e-mail:</b>	<b>Applicant's Name/Address:</b> Maine Governmental Facilities Authority P.O. Box 2268 Augusta, Me 04330-2268  <b>Phone #:</b> 207-622-9386 <b>Cell #:</b> <b>e-mail:</b>	<b>Consultant's Name/Address:</b> Gorrill-Palmer Consulting Engineers, Inc. P.O. Box 1237 Gray, ME 04039  <b>Phone #:</b> 207-657-6910 <b>Cell #:</b> 207-415-5903 <b>e-mail:</b> apalmer@gorrillpalmer.com
<b>Tax Map #:</b> 33  <b>Lot #:</b> 233, 232, 231, 230	<b>Lot Size (acres):</b> 0.71  <b>Frontage (Feet):</b> NA	<b>Form for Evidence of Standing</b> (deed, purchase and sale agreement, other):  See Attachment F
<b><u>For Staff Use</u></b>		
<b>Fee Calculation:</b> Major Development max fee is \$4,000; Minor Development max fee is \$1,000 <b>Major Development:</b> \$2,000 + (number of sq ft over 25,000 x \$0.15) = <b>Minor Development:</b> \$250 + (number of sq ft over 5,000 x \$0.15) = <b>All Development:</b> Number of Abutters x (1oz First Class postage fee + \$0.15) = <b>Total Fee:</b>		
<b>Signatures</b>		
<b>Applicant:</b> 	<b>Date:</b> 10/30/14	
<b>Owner:</b> 	<b>Date:</b> 10/30/14	
<b>Agent:</b> _____	<b>Date:</b> _____	

**Checklist.** The checklist below must be completed by the applicant. The required material or a written waiver request must be provided.

<b>Information Required on Plan(s)</b> See Augusta Land Use Ordinance for greater detail	<b>Included</b>	<b>Waiver Requested</b>
a. Name of Site Plan (Sec 4.5.2.1 of the Land Use Ordinance)	Sec. M	
b. Owner(s) name and address (4.5.2.2)	App Form	
c. Deed reference to subject parcel (4.5.2.3)	Sec. F	
d. Engineer's name, address, signature and seal (4.5.2.4)	Sec. M	
e. Surveyor's name, address, signature and seal (4.5.2.5)	Sec. M	
f. Scale, both in graphic and written form (4.5.2.6)	Sec. M	
g. Date and Revision box (4.5.2.7)	Sec.M	
h. Zoning designation(s) (4.5.2.8)	Cov Letter	
i. North Arrow (true and magnetic, dated or grid) (4.5.2.9)	Sec. M	
j. Ownership, location and present use of abutting land (4.5.2.11)	Sec. B	
k. Location map (4.5.2.12)	Cov Letter	
l. Streets, existing & proposed, with curve data (4.5.2.13 & 4.6.2.5)	Sec. M	
m. Drainage and erosion control (4.5.2.14)	Sec K, M	
n. Utilities, existing and proposed (4.5.2.15)	Sec. M	
o. Topography, 2 foot contours (4.5.2.16)	Sec. M	
p. Parcel boundaries and dimensions (4.5.2.17)	Sec. M	
q. Proposed Use of the property (4.5.2.18)	Sec. M	
r. Proposed public or common areas (4.5.2.19)	Sec. M	
s. Boundary Survey and associated information (4.5.2.20)	Sec. M	
t. Traffic controls, off-street parking and facilities (4.5.2.21)	Sec. M	
u. Proposed fire protection plans or needs (4.5.2.22)	N/A	
v. Landscaping and buffering (4.5.2.23)	Sec. M	
w. Outdoor lighting plan (4.5.2.24)	Sec. M	
x. Freshwater wetlands (4.4.1.14)	N/A	
y. River, stream or brook (4.4.1.15)	N/A	
<b>Information Required in Written Project Narrative</b> See Augusta Land Use Ordinance for greater detail	<b>Included</b>	<b>Waiver Requested</b>
a. Pollution – Undue water or air pollution (4.4.1.1)	Cov Letter	
b. Water – Sufficient potable water (4.4.1.2)	Cov Letter	
c. Municipal Water – is there adequate supply (4.4.1.3)	Cov Letter	
d. Soil Erosion – unreasonable soil erosion (4.4.1.4)	Sec. K	
e. Road congestion and safety (4.4.1.5 & 4.5.2.21)	N/A	
f. Sewage waste disposal – adequate provisions (4.4.1.6)	Cov Letter	
g. Solid waste – adequate provisions (4.4.1.7)	Cov Letter	
h. Aesthetic, cultural, and natural values (4.4.1.8)	Sec. H	
i. Conformity with city ordinances and plans (4.4.1.9)	Cov Letter	
j. Financial and technical ability (4.4.1.10)	Sec. C, D	
k. Surface water, shoreland, outstanding rivers (4.4.1.11)	N/A	
l. Ground water – negative impact (4.4.1.12)	Sec. J	
m. Flood areas (4.4.1.13)	N/A	
n. Freshwater wetlands – description of impact (4.4.1.14)	N/A	
o. Stormwater – management plans (4.4.1.16)	Sec. J	
p. Access to direct sunlight (4.4.1.17)	Cov Letter	
q. State Permits – description of requirements (4.4.1.18)	Cov Letter	
r. Outdoor lighting – description of lighting plans (4.4.1.20)	Sec. L, M	

<b>Additional Information Required in Written Narrative</b> See Augusta Land Use Ordinance for greater detail  <b>Where the items below duplicate the items above, identical responses are permitted and encouraged.</b>	<b>Included</b>	<b>Waiver Requested</b>
s. Neighborhood Compatibility – description per ordinance (6.3.4.1)	Cov Letter	
t. Compliance with Plans and Policies (6.3.4.2)	Cov Letter	
u. Traffic Pattern, Flow, and Volume analysis (6.3.4.3)	N/A	
v. Public facilities – Utilities including stormwater (6.3.4.4)	Sec. G, J, M	
w. Resource protection and the environment (6.3.4.5)	Sec. I, J, K	
x. Performance Standards (6.3.4.6)	Cov Letter	
y. Financial and Technical Ability (6.3.4.7)	Sec. C, D	

### Application Materials

The application materials that are required for a complete application are listed below:

<b>Paper Copies</b>	<b>Included</b>	<b>Waiver Requested</b>
11 copies of the application form and narrative	x	
11 copies of the deed, Purchase & Sale agreement, or other document to show standing	x	
3 copies of any stormwater report	x	
2 copies of any traffic report	N/A	
7 reduced-sized copies of the complete plan set on 11" x 17" size paper	x	
4 full-sized copies of the complete plan set on ANSI D or E size paper	x	
11 copies of a letter authorizing the agent to represent the applicant	N/A	
Payment in full of application fee (Note: an abutter notification fee will be assessed after the application is determined to be complete. The fee is \$0.15 plus the cost of first class postage for each abutter that will be notified as required by the ordinance.)	x	
<b>Electronic Copy</b>		
1 CD that includes each of the application documents in Adobe PDF format	x	

#### **For Official Use:**

\$ \_\_\_\_\_ Application Fee Paid. Received By (Initials): \_\_\_\_\_ Date: \_\_\_\_\_

\$ \_\_\_\_\_ Abutter Notification Fee Paid. Received By (Initials): \_\_\_\_\_ Date: \_\_\_\_\_

**Section  
B**

**SECTION B**  
**ABUTTER'S LIST**

**B.1 Description**

As part of the application process, notification to abutters is required.

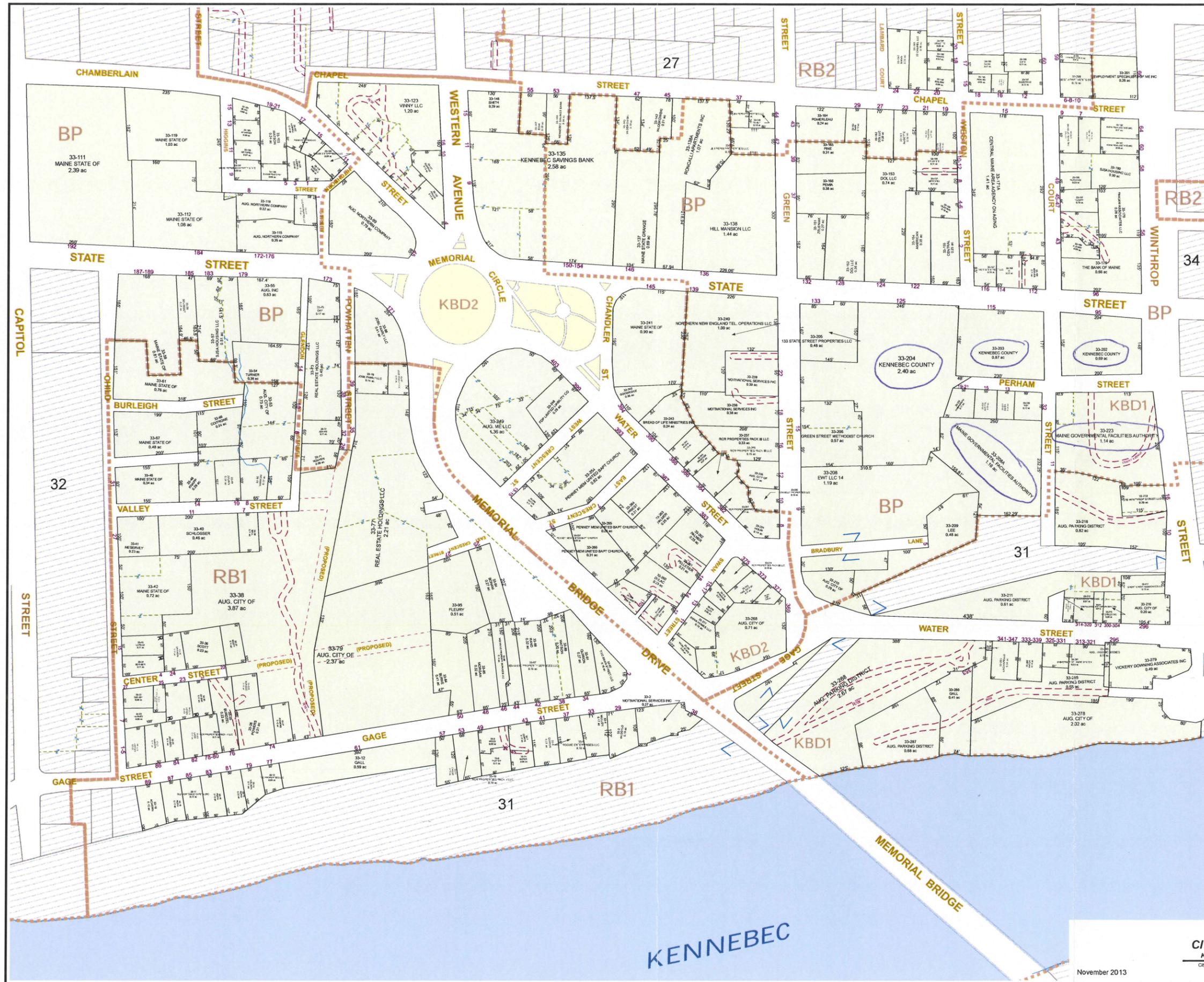
**B.2 Supporting Documentation**

Enclosed is the abutter's list associated with this project.

**Abutters List  
Perham Street Parking  
Augusta, Maine  
JN 2569.01**

**DIRECT ABUTTERS:**

<b>Map/Lot</b>	<b>Abutter</b>
33/202	KENNEBEC COUNTY STATE ST AUGUSTA, ME 04330
33/203	KENNEBEC COUNTY STATE ST AUGUSTA, ME 04330
33/204	KENNEBEC COUNTY STATE ST AUGUSTA, ME 04330
33/208A	MAINE GOVERNMENTAL FACILITIES AUTHORITY P.O. BOX 2268 AUGUSTA, ME 04338-2268
33/223	MAINE GOVERNMENTAL FACILITIES AUTHORITY P.O. BOX 2268 AUGUSTA, ME 04338-2268



Map 33

- Zoning
- Cemeteries
- Historical Lines
- Proposed Roads
- Private ROW
- Streams
- Median Strips / Circles
- Sublots
- Parcels
- Wetland
- Kennebec River
- Tie-in
- Sublots Annotation

# Section C

**SECTION C**  
**FINANCIAL CAPACITY**

**C.1 Description**

As part of the application process, provision of the financial capacity of the Applicant is required.

**C.2 Supporting Documentation**

Enclosed is a statement of financial capacity for this project.

STATE OF MAINE

—  
IN THE YEAR OF OUR LORD  
TWO THOUSAND AND TWELVE

—  
S.P. 566 - L.D. 1667

**An Act To Clarify Authorization for a Court Facilities Bond**

Be it enacted by the People of the State of Maine as follows:

Sec. 1. PL 2009, c. 213, Pt. WWWW, §2 is amended to read:

**Sec. WWWW-2. Issuance of securities; Maine Governmental Facilities Authority.** Pursuant to the Maine Revised Statutes, Title 4, section 1606, subsections 1 and 2, the Maine Governmental Facilities Authority is authorized to issue securities in its own name in an amount up to \$67,500,000 for the purpose of paying the costs associated with the construction of a new courthouse in Augusta, the renovation of a courthouse in Dover-Foxcroft ~~and~~, planning for and construction of court facilities upgrades in Machias and, if there are remaining funds, planning for other court facilities.

# Section

# D

**SECTION D**  
**TECHNICAL ABILITY**

**D.1 Description**

The Maine Governmental Facilities Authority has retained Gorrill-Palmer Consulting Engineers, Inc. to prepare plans and permit applications for the proposed project. Alton Palmer, PE, is the principal in charge of this project.

Gorrill-Palmer is the lead consultant relative to site design and local/state permitting. The project team consists of the following consultants:

<u>Consultant</u>	<u>Responsibility</u>
Gorrill-Palmer, Consulting Engineers, Inc.	Site Layout Site Lighting Transportation Permitting
Thayer Engineering Company	Survey
PDT Architects	Architecture and Building Design
Terrence J. DeWan & Associates	Landscape Architecture

Gorrill-Palmer has prepared design plans and obtained permits for numerous private, public and institutional sector efforts since 1998. The site design and permitting for the adjacent courthouse was prepared by Gorrill-Palmer.

**D.2 Supporting Documentation**

The resumes for the Principals of each firm associated with this effort are enclosed.

# Alton M. Palmer

P.E.

Founder and Senior Vice President, Gorrill-Palmer

## Education

- University of Connecticut, B.S. Civil Engineering, 1984

## Registrations

- ME #6251

## Affiliations

- Member, MEREDA, Legislative Committee
- Past Member, Board of Trustees, Central Maine Adaptive Sports
- Past Chairperson and Member, Town of Gray Planning Board
- Past Member, Board of Directors, SAD #15
- Past Member, Board of Trustees of the Gray News

## Presentations

- Guest Speaker at Four MDEP Workshops on Biofilters and Biofilter Media
- Guest Speaker at IECA Northeast Chapter Annual Meeting – Engineer's Perspective – Development of Stormwater Pollution Prevention Plans

## Experience

- 27 years in private practice

## Experience: Site Evaluation, Design and Permitting

### ❖ Elementary Schools, South Portland, Maine

Directed the civil/site design and permitting efforts for the redevelopment of four elementary schools. Kaler and Small School involved complete reconstruction of these facilities, while Brown and Dyer Schools involved an addition/renovation to the existing school facilities. All projects required full site plan review permitting through the City of South Portland and various levels of stormwater permitting through the Maine Department of Environmental Protection.

### ❖ County Emergency Facility, Windham, Maine

Managed the site feasibility study for expansion of the Cumberland County Emergency Management Facility off High Street in Windham to accommodate a regional communications center. By removing the existing overburden on the existing bunker, a concept was developed to add the second floor to address the growing communications need for the County, as well as dispatch for a number of member communities.

### ❖ District Court, Lewiston, Maine:

Oversaw the design of the exterior improvements and utility renewal for the redevelopment of the Frye Block Music Hall to serve as the new District Court House. The exterior improvements needed to reflect the history and heritage of the building, as well as honoring the downtown redevelopment goals of the City. .

### ❖ Other Design and Permitting Experience Includes:

- Maine Mall Revitalization, South Portland
- Biddeford Crossing, 600,000 sf of structure, Biddeford
- Augusta Crossing, 450,000 sf of structure, Augusta
- Philbrook Avenue Stormwater Enhancement Project, South Portland
- Nashua Landing, 595,000 sf of structure
- Lowe's, Auburn
- Spring Harbor Hospital, Westbrook/Portland
- Mt. Blue Middle School, Farmington
- MaineDOT Maintenance Garages, 5 Locations
- Multi-Modal Facility, Trenton
- McConkey Road Gravel Pit, Gray
- Legrow Road Gravel Pit, Gray
- Town Hall, Gray
- Municipal Bus Maintenance Facility, South Portland
- Hunter Road Municipal Field Complex, Freeport
- Chebeague Transportation Parking Lot, Cumberland
- Public Works Complex Master Plan, Windham
- NorthBrook Business & Industry Campus, Gray



**Gorrill-Palmer**  
**Consulting Engineers, Inc.**  
*Engineering Excellence since 1998*



## Alan G. Kuniholm, AIA, LEED AP

Maine Licensed Architect

Principal

49 Dartmouth Street  
Portland, Maine 04101  
207.775.1059  
fax 207 775 2694  
e-mail: kuniholm@pdtarchs.com  
www.pdtarchs.com

Alan is an award-winning designer with 32 years of experience and specialties in courthouse design, energy efficiency, and sensitive responses to historic architecture.

He has worked on four Maine district courthouse projects, two as principal-in-charge, and has earned a reputation for tireless and flexible leadership under budget constraints and historic guidelines.

Two of AIA's state-funded projects, Lewiston District Court and Maine Criminal Justice Academy, won Statewide Historic Preservation Honor Awards from Maine Preservation.

Alan was principal-in-charge of the LEED-Silver Education Center at the University of Maine Farmington, which opened in January 2007 and is saving 75% of the energy costs of a similar

### EDUCATION

Kansas State University, Manhattan, Kansas, Bachelor of Architecture, 1978  
Kansas State University, College of Engineering, Manhattan, Kansas, 1978-1979  
University of Massachusetts, Amherst, School of Engineering, 1972-74  
Harvard University, Graduate School of Design, *The New American Courthouse*, 2010

### PRACTICE

PDT Architects (was Portland Design Team)  
Principal, 1994-present  
Project Architect/Manager, 1984-1994

### REGISTRATIONS

LEED Accredited Professional, 2002  
NCARB Certificate N<sup>o</sup>45376, 1994  
Maine, N<sup>o</sup>2133, 1995; Massachusetts, N<sup>o</sup>5991, 1984; New Hampshire, N<sup>o</sup>2350, 1995; Rhode Island, N<sup>o</sup>2371, 1997

### PRESENTATIONS

Creative Economy Conference panelist, UMaine Augusta, 2012  
Maine Green Schools Symposium panelist & tour leader, Maine USGBC, 2011  
"Sustainable Features of Brunswick's H.B. Stowe Elementary School," Maine Section, American Society of Civil Engineers, 2010  
"Greening Rental Office Space" panel, Maine Businesses for Sustainability Workshop, 2010  
"Building Smart: Sustainability and Brownfields Redevelopment" panel, Maine Brownfields Conference, 2010  
"The Benefits of Building Green" panel, Greening Higher Education, NEBHE, 2009  
Presenter on geothermal and solar systems,

"Alternative Energies" panel, SMPS, 2009.  
"How Will We Bring Green Buildings to Our Communities" panel, Juice: Powering the Creative Economy conference, 2007  
"Geothermal Heating and Cooling Systems," Nat. Assoc. of State Facilities Administrators, 2007 East Regional Conference  
Commencement speaker, University of Maine Farmington, 2007  
Co-presenter, "Geothermal System Warms the New UMF Education Center," Renewable Energy Solutions Forum, Western Maine Legislative Caucus, 2007  
"50 Sewall Street: Maine's First LEED Core & Shell Office Building," Council on the Environment, AIA Maine, 2006  
"Going Green: Developing for Tomorrow" panel, MEREDA, 2006  
"Case Studies in Green Building: New College of Education for UMF," Green Building Forum, Coastal Enterprises, 2004  
"UMF's New College of Education: A Case Study," Maine Chapter, USGBC, 2004  
"Applications of the LEED Protocol to the UMF Project," Maine Chapter, CSI, 2003

### PUBLIC SERVICE

Vice President, Portland Society of Architects, 2011-present  
Green Schools Advocate, U.S. Green Building Council, Maine Chapter, 2007-08  
Founding member, Maine Chapter, U.S. Green Building Council. Board of Directors, 2003-06. Secretary, Board of Directors, 2005-06.  
Member, Task Force for Alternative Delivery, Maine Bureau of General Services, 2001

### AWARDS

American School & University Architectural Portfolio, 2003: Citation, Works in Progress category: *Education Center, University of Maine Farmington*  
Statewide Historic Preservation Honor Award, Maine Preservation: 2002, *Maine Criminal Justice Academy*; 2003, *Lewiston District Courthouse*



Architecture ■ Interior Design ■ Planning

**TERRENCE J. DEWAN, ASLA****Principal**

Terry DeWan has over 40 years of professional experience in landscape architecture, visual resource assessment, site planning, design guidelines, community development. His experience includes work with communities, state agencies, private developers, utility companies, and the forest products industry in New England. He has written numerous studies on community planning, visual impacts, recreation planning, water access, and highway corridor redevelopment.

*Maine Licensed Landscape Architect #6*

**EDUCATION**

BSLA, State University of New York, School of Environmental Sciences and Forestry, cum laude

**PROFESSIONAL EMPLOYMENT**

1988-Present	TJD&A, Yarmouth, ME Principal
1977-1988	Mitchell-DeWan Associates Portland, ME Partner
1976-1977	Center for Natural Areas, South Gardiner, Maine Landscape Architect
1973-1976	Moriece and Gary of Maine, Portland, ME Landscape Architect
1971-1973	The Architects Workshop Philadelphia, PA VISTA/Landscape Architect
1969-1970	Rocky Mountain Development Council, Helena, Montana, VISTA Volunteer
1970-1971	Peter G. Rolland and Associates, Rye, NY

**PROFESSIONAL AFFILIATIONS**

Maine State Board for Licensure of Architects, Landscape Architects, and Interior Designers, 1986-present

LAAB: Landscape Architectural Accreditation Board, CLARB representative  
Public Art Committee, Maine Arts Commission  
Portland Public Arts Committee  
American Planning Association  
Maine Association of Planners  
CLARB: Council of Landscape Architects  
Registration Boards: Landscape Architect  
Registration Exam writer and grader;  
Strategic Planning Committee  
Congress for the New Urbanism

**SELECTED PROJECT EXPERIENCE**

**Bethel Pathway, Bethel, Maine.** A multi-use pathway along the Androscoggin River.

**Beth Condon Memorial Pathway, Yarmouth, Maine.** A multi-use pathway parallel to Route One, that is a link in the East Coast Greenway.

**A Revitalization Plan for Maine Street, Brunswick, Maine.**

**Shoreway Access Plan, Portland, Maine.** Thirty miles of trails linking Portland's waterfronts and neighborhoods.

**Interpretive, Access and Facilities Plan, Wells National Estuarine Research Reserve.**

**Spring Point Shoreway, South Portland, Maine.** A mile-long oceanfront park.

**AWARDS AND DISTINCTIONS**

*Council of Landscape Architects Registration Boards. Presidents Awards.*

*Boston Society of Landscape Architects Excellence Award for outstanding professional practitioner.*

Merit Award for Planning: 'From the River to the Bay' A Parks, Recreation, and Open Space Plan for Brunswick, Maine.

*American Society of Landscape Architects Merit Award for Communications:*

Los Angeles River Greenway.  
Chattahoochee River Greenway, Atlanta.

*Vermont Planners Association, Project of the Year Award: Transit Oriented Design Guidelines for Chittenden County.*

# Section

# E

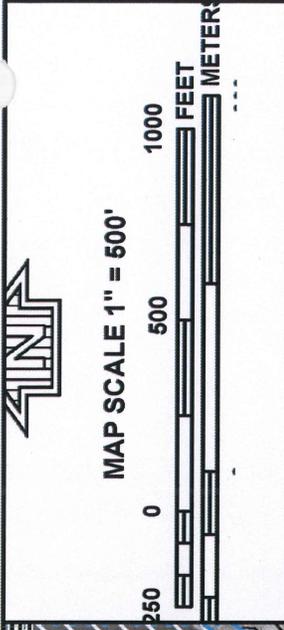
**SECTION E**  
**FLOOD MAP**

**E.1 Description**

The Federal Emergency Management Agency (FEMA) compiles flood mapping for insurance and other information. This Section contains a FEMA flood map as part of the application.

**E.2 Supporting Documentation**

The FEMA flood map is enclosed.



**NATIONAL FLOOD INSURANCE PROGRAM**

**PANEL 0509D**

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

**PANEL 509 OF 775**  
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

**CONTAINS:**

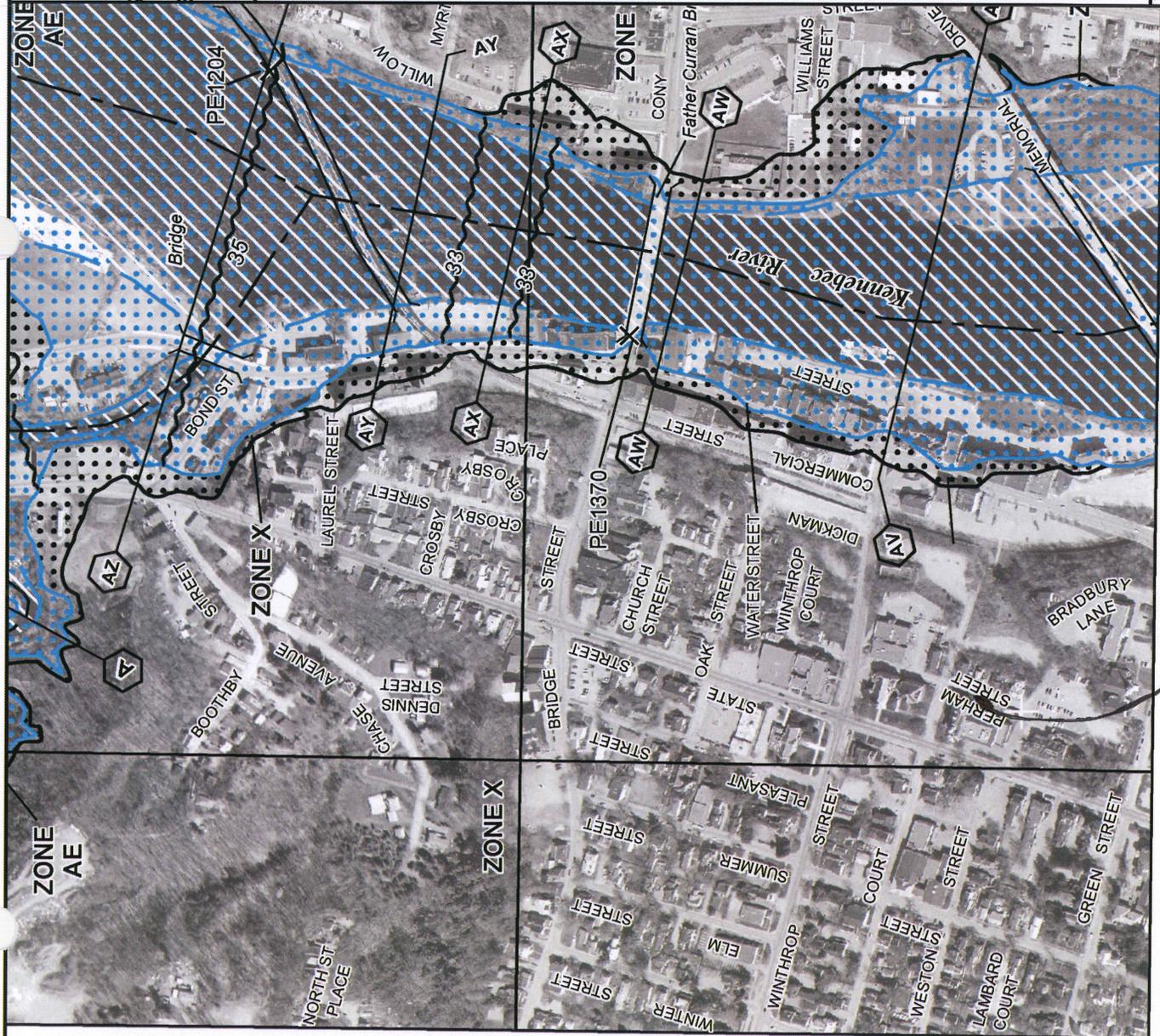
COMMUNITY	NUMBER	PANEL	SUFFIX
AUGUSTA, CITY OF	230067	0509	D

**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**  
**23011C0509D**

**EFFECTIVE DATE**  
**JUNE 16, 2011**

**Federal Emergency Management Agency**

*PROJECT LOCATION*

931000 M

45°  
 9° 46' 52.5"

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

# F

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**SECTION F**  
**TITLE, RIGHT OR INTEREST**

**F.1 Description**

As part of the application process, provision of the title, right or interest is required.

**F.2 Supporting Documentation**

Enclosed is a letter from the Kennebec County Commissioners stating their willingness to provide easements for the proposed project.

Enclosed are the Deeds and Option Agreements for the affected properties. The following list contains the affected properties and title status.

Property Status	
Tax Map/Lot #	Status
33/230	Option Agreement Dated October 8, 2014
33/231	Warranty Deed Dated September 10, 2014
33/232	Warranty Deed Dated October 6, 2014
33/233	Warranty Deed Dated September 10, 2014

County  
Commissioners

Kennebec County  
Courthouse



125 State Street  
Augusta, Maine 04330

Tel: 207-622-0971

Fax: 207-623-4083

November 5, 2014

Matt Nazar

Director of Development Services

City of Augusta

16 Cony Street

Augusta, Maine 04330

Dear Matt:

I am writing to confirm Kennebec County's support and cooperation in the development of the Perham Street parking lot project in conjunction with the development of the new Capital Judicial Center. As you know we have devoted considerable time and resources towards the successful development of this project at this site in the City of Augusta.

In support of this project Kennebec County will:

- Allow a temporary grading/construction easement along the western edge of Perham Street,
- Allow access through the county parking lot at the southern end of Perham Street,
- Kennebec County will allow any necessary easements and encroachments necessary for the development of the parking lot at the Perham Street location.

Kennebec County pledges its full cooperation with MGFA and the Maine Judicial System in support of this project.

Sincerely,

Robert Devlin, County Administrator

District 1

Beverly C. Dagggett  
16 Pine Street, Augusta, Maine 04330  
Res.: 207-622-9053

District 2

Nancy G. Rines  
P.O. Box 68, South Gardiner, Maine 04359  
Res.: 207-582-1844

District 3

George M. Jabar II  
1 Center Street, Waterville, Maine 04901  
Res.: 207-873-0781

OPTION AGREEMENT

THIS OPTION AGREEMENT ("Agreement") is made this 8th day of October, 2014 ("Effective Date") by and between Gregory Roy of Gardiner, Kennebec County, Maine ("Seller") whose mailing address is 389 Costello Road, Gardiner, Maine 04345 and KENNEBEC COUNTY, a body corporate and politic organized and existing under the laws of the State of Maine with a mailing address of 125 State Street, Augusta, Maine 04330 ("Buyer"). Seller, for One Dollar and other valuable consideration receipt of which is hereby acknowledged, grants to Buyer an option ("Option") to purchase the Seller's land located at 32 Court Street, Augusta, Kennebec County, Maine, as described in that certain deed recorded in the Kennebec County Registry of Deeds in Book 5918, Page 112 (the "Property").

Said Option is granted SUBJECT TO the following terms and conditions:

- 1. Option Period and Exercise. The initial term of this Option shall commence on the Effective Date and shall run through January 1, 2015. This Option may be exercised by Buyer as to the Property at any time prior to expiration of this Option by written notice addressed to Seller, sent by certified mail, return receipt requested, or by reputable overnight delivery carrier, to such address for Seller listed in the first paragraph of this Agreement.

Upon Buyer's timely exercise of the Option to purchase the Property and if this Agreement has not otherwise terminated, this Option shall constitute an agreement of purchase and sale, SUBJECT TO the following terms:

- a. Purchase Price. The "Purchase Price" for the Property shall be [REDACTED]

- b. Closing. The Closing of the sale shall take place no more than ninety (90) days from Buyer's exercise of this Option, unless delayed by the mutual agreement of Seller and Buyer or as otherwise provided herein.
- c. Form of Deed. The conveyance shall be by a duly executed and acknowledged warranty deed ("Deed") naming Buyer as grantee, sufficient under Maine law to convey to Buyer good and merchantable fee simple title to the Property. The Property shall be conveyed free and clear of all encumbrances except for existing public utility easements and building and zoning restrictions on use of the Property.
- d. Title. If Buyer finds title to the Property not to be good and marketable, then the Closing may be delayed for not more than thirty (30) days in order for Seller to cure the defect or defects. In the event that Seller does not cure the defect or defects, then Buyer may terminate this Agreement and receive back Buyer's Option consideration and deposit or accept such title as Seller can convey, at Buyer's Option, but in either event, Seller shall have no further liability or obligation to Buyer.
- e. Possession. Full possession of the Property, free of tenants, is to be delivered to Buyer at the time of delivery of the Deed. The Property will then be in substantially the same condition as on the date hereof. The risk of loss or damage to the Property by fire or other casualty is assumed by Seller until transfer of title. In the event of damage by fire or other casualty, Buyer may elect to terminate this Agreement and receive back the amount of any payments heretofore made pursuant to this Option.
- f. Prorations and Adjustments. Municipal real estate taxes assessed for the municipal fiscal year in which the Closing takes place shall be prorated between the Buyer and the Seller as of the Closing date. Any other assessments or charges levied against the Property shall be paid by Seller. Seller shall pay all charges for preparation of the Deed and for preparation and recording of any documents necessary to remove any encumbrances from record title to the Property. Buyer shall pay the costs of any title examination or title insurance, and the recording of the Deed. Seller and Buyer shall each pay their respective statutory share of the State of Maine transfer tax.
- g. Default. If Buyer shall fail or refuse to accept conveyance in accordance with the terms of this Option, then Seller shall retain all payments made by Buyer hereunder as liquidated damages, and all other obligations of either party under this Option shall cease. In the event Seller fails to tender the Deed described above or otherwise fails to fulfill any of Seller's obligations hereunder, then Buyer in its discretion shall be relieved of any further obligation and shall receive back any funds paid as consideration for this Option, or shall be entitled to specific enforcement of Seller's obligations in court.

- h. Right of Entry. Seller grants to Buyer and Buyer's duly authorized agents, the right, during the period of this Option and at any reasonable and convenient time within said period and upon reasonable advance notice to the Seller, to enter in and upon the Property to inspect and to make such surveys, tests, including soil and water tests, or measurements thereof as they deem necessary at Buyer's expense. It is understood and agreed that said Property shall not be damaged or left in a disorderly or unsightly condition from such activity, for breach of which, Buyer shall be responsible for repairing the damage or removing the disorderly or unsightly condition.
- i. Broker's Commission. Each party represents to the other that they have not dealt with any real estate broker nor is there any broker's commission due in connection with Buyer's purchase of the Property. In the event that a broker claims such a commission, the party having contact with said broker shall be responsible for satisfying such claim for commission.
- j. General Provisions. Buyer shall be permitted to assign its rights and obligations under this Agreement without the consent of Seller. Seller shall be permitted to assign its rights and obligations under this Agreement with the prior written consent of Buyer. This Agreement shall inure to the benefit of and be binding upon the parties hereto and their respective heirs, personal representatives, successors and permitted assigns. This Agreement constitutes the entire agreement between the parties, supersedes all prior negotiations and understandings between them, and shall not be altered or amended except by a written amendment signed by the parties hereto. This Agreement may be simultaneously executed in any number of counterparts, each of which when duly executed and delivered shall be an original; but such counterparts shall constitute but one and the same agreement. If any provision of this Agreement is found to be invalid or unenforceable, such finding shall not affect the validity or enforceability of any other provision hereof. This Agreement shall be interpreted, construed and enforced in accordance with and governed by the laws of the State of Maine. Any notices required by this Agreement shall be in writing and shall be personally delivered or sent by first class certified mail, return receipt requested, with postage prepaid, to the parties' addresses set forth above. Either party may change such address for notice. All notices which are so addressed and paid for shall be deemed effective when personally delivered, or, if mailed, on the earlier of receipt or two (2) days after deposit thereof in the U.S. Mail. Time is of the essence of this Agreement and all acts required to be done and performed by the parties hereto, including the proper tender of each of the sums required by the terms hereof to be paid. The words or words appearing at the commencement of the sections and subsections of this Agreement are included only as a guide to the contents thereof and are not to be considered as controlling, enlarging or restricting the language or meaning of those sections or subsections. This Agreement has been reviewed by both parties. No stricter construction or interpretation of the terms hereof shall be applied against either party as the drafter hereof. The Buyer and Seller represent and warrant to the other that each

has the full right, power and authority to execute this Agreement and perform their respective obligations under this Agreement. For purposes of this Agreement, "notice" shall mean written notice delivered in accordance with this section. For purposes of this Agreement, "includes" and "including" means "without limitation"; and "or" includes "and".

[Signature Page Follows]

IN WITNESS WHEREOF, the parties have executed this Agreement, in duplicate, as of the dates indicated below.

Witness:

*[Handwritten signature]*  
\_\_\_\_\_

*[Handwritten signature]*  
Gregory B. Roy

*[Handwritten signature]*  
\_\_\_\_\_

Kennebec County  
By: *[Handwritten signature]*  
Name: Robert G. Devlin  
Title: Kennebec County  
Administrator



WHEN RECORDED RETURN TO:

(2) VERRILL DANA, LLP  
One Portland Square  
Portland, ME 04112-0586  
Attention: David L. Galgay, Jr.

**TRANSFER  
TAX  
PAID**

WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS, that JAMES W. OSIER, of Augusta, Maine ("Grantor"), in consideration of One Dollar (\$1.00) and other valuable consideration paid by MAINE GOVERNMENTAL FACILITIES AUTHORITY, a body corporate and politic and a public instrumentality of the State of Maine, whose mailing address is 127 Community Drive, P.O. Box 2268, Augusta, Maine 04338-2268 ("Grantee"), the receipt whereof is hereby acknowledged, does hereby remise, release, bargain, sell and convey with WARRANTY COVENANTS unto the said Grantee, its successors and assigns forever, all of its right, title and interest in and to the real estate located in the City of Augusta, County of Kennebec and State of Maine, as more particularly described on Exhibit A attached hereto.

IN WITNESS WHEREOF, the undersigned has caused this instrument to be executed as of September 10, 2014.

WITNESS:

Sharon L. Graham

James W. Osier  
James W. Osier

STATE OF MAINE  
COUNTY OF Kennebec

September 10, 2014

Personally appeared before me the above-named James W. Osier, and acknowledged the foregoing to be his free act and deed.

Before me,  
David L. Galgay Jr.  
Notary Public

Name:  
Commission Expires **DAVID L. GALGAY JR.**  
NOTARY PUBLIC, MAINE  
MY COMMISSION EXPIRES DECEMBER 22, 2020

Exhibit A

A certain lot or parcel of land of rectangular form, with the buildings and improvements thereon, lying generally easterly of and front on Perham Street (once known as Weston Place), in Augusta, County of Kennebec and State of Maine, being the same premises described in deed from Mary O. Scanlon and Patrick Scanlon to Thomas J. Lynch, , dated September 10, 1907 and recorded in the Kennebec County Registry of Deeds in Book 484, Page 39, the specific description of said lot or parcel being given in said deed as follows, to wit:

Book 484, Page 39 – description shown: “Beginning in the southwest corner of land owned by Harriet A. Holmes, formerly owned by John M. and Mariah Plummer; thence running southerly on the east line of said Perham Street forty-five (45) feet to land formerly owned by said Thomas J. Lynch; thence running easterly on the north line of said Thomas J. Lynch’s land seventy-five (75) feet to land formerly owned by Patrick Lynch, deceased; thence running northerly on the west line of said Patrick Lynch’s land a distance of forty-five (45) feet to the southeast corner of land of said Harriet A. Holmes; thence running westerly on the south line of said Harriet A. Holmes’ land a distance of seventy-five (75) feet to the point of beginning.”

Meaning and intending to convey the same premises described in a Warranty Deed from Linda Tschamler and Vincent Tschamler to James W. Osier dated November 30, 2001 and recorded in Book 6727, Page 184 of the Kennebec County Registry of Deeds.

**WHEN RECORDED RETURN TO:**

**VERRILL DANA, LLP**  
One Portland Square  
Portland, ME 04112-0586  
Attention: David L. Galgay, Jr.

**WARRANTY DEED**

KNOW ALL MEN BY THESE PRESENTS, that DANIEL R. AYOTTE, SR., of Augusta, Maine ("Grantor"), in consideration of One Dollar (\$1.00) and other valuable consideration paid by MAINE GOVERNMENTAL FACILITIES AUTHORITY, a body corporate and politic and a public instrumentality of the State of Maine, whose mailing address is 127 Community Drive, P.O. Box 2268, Augusta, Maine 04338-2268 ("Grantee"), the receipt whereof is hereby acknowledged, does hereby remise, release, bargain, sell and convey with WARRANTY COVENANTS unto the said Grantee, its successors and assigns forever, all of its right, title and interest in and to the real estate located in the City of Augusta, County of Kennebec and State of Maine, as more particularly described on Exhibit A attached hereto.

IN WITNESS WHEREOF, the undersigned has caused this instrument to be executed as of October 6, 2014.

WITNESS:

Lucille M. Ayotte Daniel R. Ayotte, Sr.  
Daniel R. Ayotte, Sr.

STATE OF MAINE  
COUNTY OF Cumberland

October 6, 2014

Personally appeared before me the above-named Daniel R. Ayotte, Sr., and acknowledged the foregoing to be his free act and deed.

Before me,

Jude A. Cluff  
Notary Public  
Name:  
Commission Expiration:

**JUDE A. CLUFF**  
NOTARY PUBLIC, MAINE  
MY COMMISSION EXPIRES OCTOBER 27, 2020

Exhibit A

A certain lot or parcel of land with the buildings thereon situated in said Augusta on the west side of the Kennebec River and on the east side of Perham Street, bounded and described as follows:

Bounded on the west by said Perham Street; on the north by land formerly owned by Mary Scanlon and formerly occupied by Patrick Scanlon; on the east by land formerly of Patrick Lynch, later of Thomas J. Lynch; on the south by land now or formerly of the Gowen heirs; said lot having a frontage of about fifty-five (55) feet and a depth of about seventy-five (75) feet.

Being the same premises conveyed to Daniel R. Ayotte, Sr., by warranty deed from William A. Lambert dated October 28, 1982 and recorded in Book 2523, Page 111 of the Kennebec County Registry of Deeds.



WHEN RECORDED RETURN TO:

3

VERRILL DANA, LLP  
 One Portland Square  
 Portland, ME 04112-0586  
Attention: David L. Galgay, Jr.

**TRANSFER  
 TAX  
 PAID**

WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS, that BENOIT D. THIBAUDEAU and BARBARA I. THIBAUDEAU, of Augusta, Maine ("Grantor"), in consideration of One Dollar (\$1.00) and other valuable consideration paid by MAINE GOVERNMENTAL FACILITIES AUTHORITY, a body corporate and politic and a public instrumentality of the State of Maine, whose mailing address is 127 Community Drive, P.O. Box 2268, Augusta, Maine 04338-2268 ("Grantee"), the receipt whereof is hereby acknowledged, does hereby remise, release, bargain, sell and convey with WARRANTY COVENANTS unto the said Grantee, its successors and assigns forever, all of its right, title and interest in and to the real estate located in the City of Augusta, County of Kennebec and State of Maine, as more particularly described on Exhibit A attached hereto.

IN WITNESS WHEREOF, the undersigned have caused this instrument to be executed as of September 10, 2014.

WITNESS:

Sharon L. Latham

Benoit D. Thibaudreau  
 Benoit D. Thibaudreau

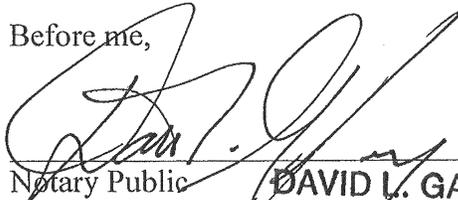
Sharon L. Latham

Barbara I. Thibaudreau  
 Barbara I. Thibaudreau

STATE OF MAINE  
COUNTY OF Kennebec

September 10, 2014

Personally appeared before me the above-named Benoit D. Thibaudeau, and acknowledged the foregoing to be his free act and deed.

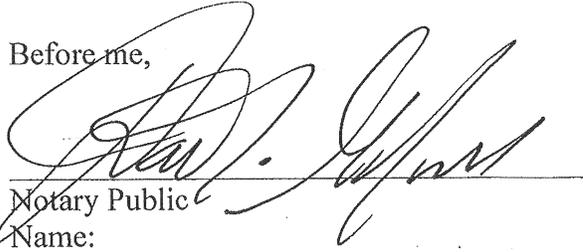
Before me,  


Notary Public **DAVID L. GALGAY JR.**  
Name:  
Commission Expiration: NOTARY PUBLIC, MAINE  
MY COMMISSION EXPIRES DECEMBER 22, 2020

STATE OF MAINE  
COUNTY OF Kennebec

September 10, 2014

Personally appeared before me the above-named Barbara I. Thibaudeau, and acknowledged the foregoing to be her free act and deed.

Before me,  


Notary Public  
Name:  
Commission Expiration: **DAVID L. GALGAY JR.**  
NOTARY PUBLIC, MAINE  
MY COMMISSION EXPIRES DECEMBER 22, 2020

Exhibit A

A certain lot or parcel of land with the buildings thereon situated in said Augusta on the east side of Perham Street and formerly known as Weston Place bounded and described as follows, to wit:

On the east by land now or formerly owned by the late Patrick Lynch and measuring thereon about seventy-five (75) feet; on the west by Perham Street and there measuring about fifty-five (55) feet; on the north by land now or formerly owned by Thomas J. Lynch and measuring about seventy (70) feet; on the south by land now or formerly owned by Percy V. Hill.

Being the same premises conveyed to Benoit D. Thibaudeau and Barbara I. Thibaudeau by deed from Celia M. Jamison, formerly Celia Tubbiolo, dated April 1972 and recorded in Book 1578, Page 56 of the Kennebec County Registry of Deeds.

# Section

# G

**SECTION G**  
**ABILITY TO SERVE**

**G.1 Description**

This project is required to demonstrate that its requirements for power, water, sewer and solid waste can all be met upon completion of the project.

**G.2 Supporting Documentation**

Since the proposed project is a parking lot, the site will not generate wastewater or solid waste. There will be no water demand for the project. Electrical service for the proposed lighting is anticipated to be provided from the recently constructed courthouse.

Due to the reasons stated above, Ability to Serve letters have not been obtained for this project.

# **Section**

# **H**

**SECTION H**  
**ISSUES OF SIGNIFICANCE**

**H.1 Description**

This project is required to address potential issues of significance, ranging from historic properties to protected species. Since the proposed project is adjacent to the courthouse site, the responses from the resource agencies for the courthouse project are included in this section to demonstrate that the proposed project will have no detrimental impacts on natural resources or areas of historical or archeological significance.

**H.2 Supporting Documentation**

Enclosed in this section are responses to letters requesting information regarding:

- Threatened/Endangered/Special Status Species
- Rare and Exemplary Features
- Rare or Endangered Species, Natural Communities, or Registered Critical Areas
- Rare and Exemplary Botanical Features
- Structures or areas with Historical, Architectural or Archeological Significance

Since the proposed site is adjacent to the courthouse site, it is believed that these responses apply to the proposed project area.

2569/D



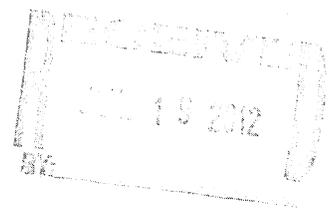
PAUL R. LEPAGE  
GOVERNOR

STATE OF MAINE  
DEPARTMENT OF  
INLAND FISHERIES & WILDLIFE  
284 STATE STREET  
41 STATE HOUSE STATION  
AUGUSTA ME 04333-0041

CHANDLER E. WOODCOCK  
COMMISSIONER

July 11, 2012

Al Palmer  
PO Box 1237, 15 Shaker Road  
Gray, ME 04039



**RE: Information Request - Winthrop Street Courthouse, Augusta**

Dear Al Palmer:

Per your request received July 03, 2012, we have reviewed current MDIFW information for known locations of Endangered, Threatened, and Special Concern species; designated Essential and Significant Wildlife Habitats; and Fisheries Habitat concerns within the vicinity of *Winthrop Street Courthouse Project* in Augusta.

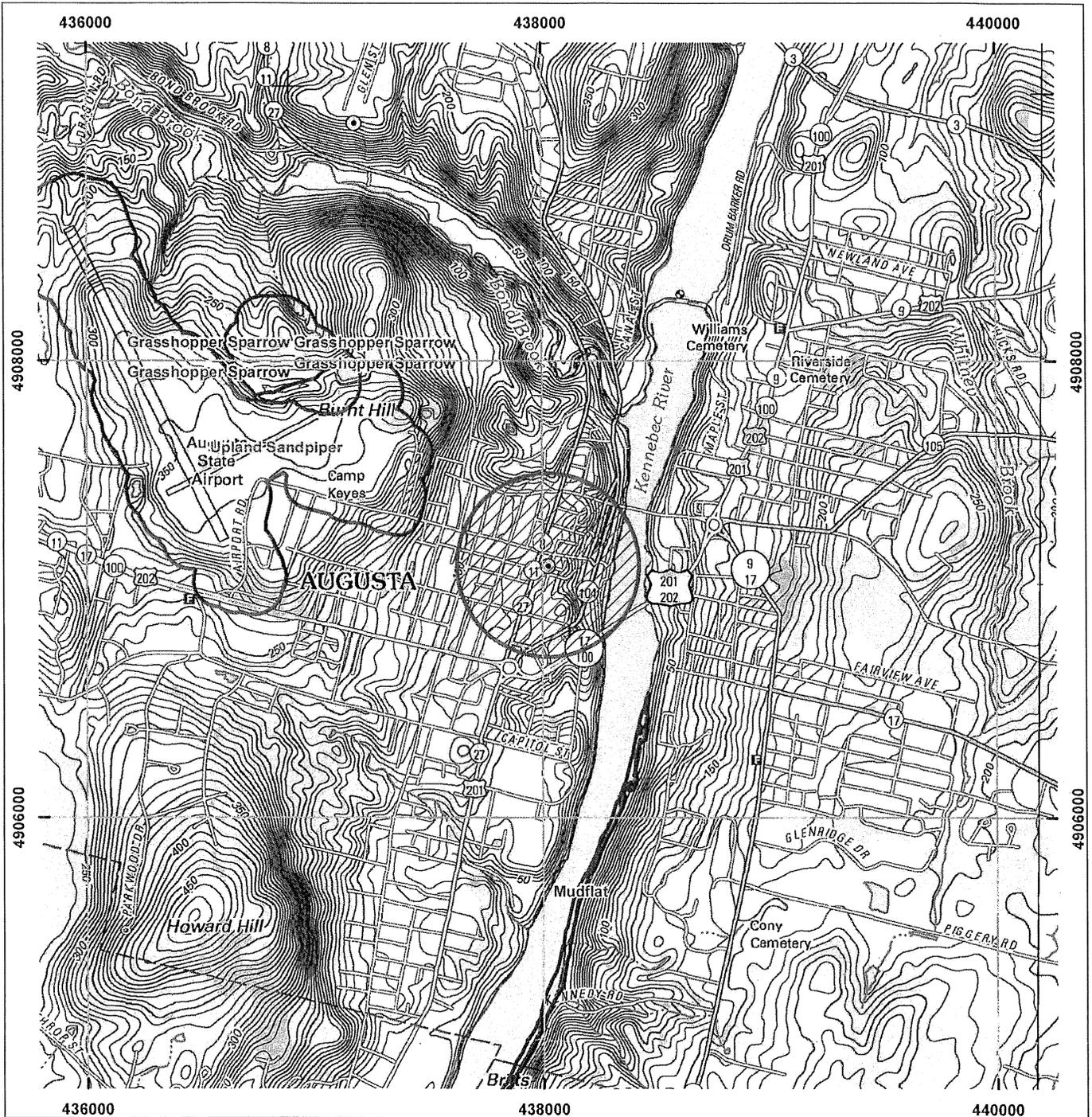
Our information indicates no locations of Endangered, Threatened, or Special Concern species within the project area. Additionally, our Department has not mapped any Essential or Significant Wildlife Habitats or Fisheries Habitats that would be directly affected by your project.

This consultation review has been conducted specifically for known MDIF&W jurisdictional features and should not be interpreted as a comprehensive review for the presence of other regulated features that may occur in this area. Prior to the start of any future site disturbance we recommend additional consultation with the municipality, and other state resource agencies including the Maine Natural Areas Program and Maine Department of Environmental Protection in order to avoid unintended protected resource disturbance.

Please feel free to contact my office if you have any questions regarding this information, or if I can be of any further assistance.

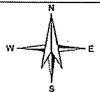
Best regards,

Steve Walker  
Acting Environmental Review Coordinator

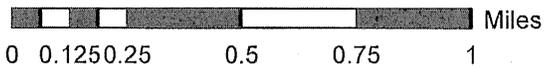


## Environmental Review of Fish and Wildlife Observations and Priority Habitats

Project Name: Winthrop Street Courthouse (Version 1)



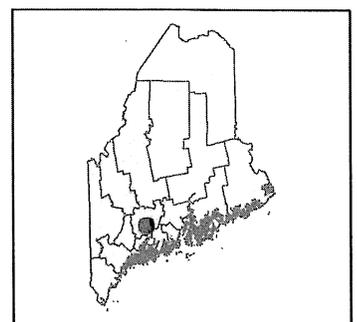
Maine Department of  
Inland Fisheries and Wildlife



Projection: UTM, NAD83, Zone 19N

Date: 7/11/2012

ProjectPoints	Deer Winter Area	Roseate Tern
ProjectLines	LURC p-fw	Piping Plover/Least Tern
ProjectPolys	Cooperative DWAs	Aquatic ETSc (2.5 mi review)
ProjectSearchAreas	Seabird Nesting Islands	Rare Mussels (5 mi review)
	Shorebird Areas	A and B List Ponds
	Inland Waterfowl/Wading Bird	Arctic Charr Habitat
	Shoreland Zoning_lwwh	E. Brook Trout Joint Venture Subwatershed Classification
	Tidal Waterfowl/Wading Bird	Redfin Pickerel/Swamp Darter Habitats (buffer100ft)
	Significant Vernal Pools	Special Concern-occupied habitats(100ft buffer)
	Environmental Review Polygons	Wild Lake Trout Habitats

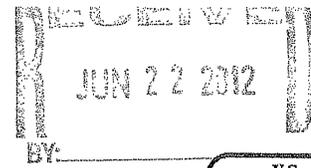




# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Ecological Services  
Maine Field Office  
17 Godfrey Drive, Suite 2  
Orono, Maine 04473  
207/866-3344 Fax: 207/866-3351



June 15, 2012

Al Palmer  
Gorrill-Palmer Consulting Engineers, Inc.  
P.O. Box 1237  
Gray, Maine 04039

Dear Mr. Palmer:

Thank you for your letter dated June 6, 2012 requesting information or recommendations from the U.S. Fish and Wildlife Service (Service). This letter provides the Service's response pursuant to section 7 of the Endangered Species Act (ESA), as amended (16 U.S.C. 1531-1543), Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d, 54 Stat. 250) and the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667d).

**Project Name/Location:** Proposed Courthouse - Augusta, Maine

**Log Number:** 05E1ME00-2012-SL-0205

### Federally Listed Species

#### Atlantic salmon

This project occurs within the range of the Gulf of Maine Distinct Population Segment (GOM DPS) of Atlantic salmon (*Salmo salar*) in Maine, a federally endangered species under the joint jurisdiction of the Service and the National Marine Fisheries Service (NMFS) (74 FR 29344; June 19, 2009). The Atlantic salmon GOM DPS encompasses all naturally spawned and conservation hatchery populations of anadromous Atlantic salmon whose freshwater range occurs in the watersheds from the Androscoggin River northward along the Maine coast to the Dennys River and wherever these fish occur in the estuarine and marine environment. Also included in the GOM DPS are all associated conservation hatchery populations used to supplement these natural populations. Excluded are landlocked Atlantic salmon and those salmon raised in commercial hatcheries for aquaculture.

The proposed project site also occurs within a HUC-10 watershed (Kennebec River at Merrymeeting Bay) that has been designated as critical habitat for Atlantic salmon by NMFS (74

FR 39907; August 10, 2009). Critical habitat is designated to include all perennial rivers, streams, and estuaries and lakes connected to the marine environment within the designated watershed.

For Atlantic salmon and its critical habitat, NMFS and the Service share consultation responsibilities under section 7 of the ESA. The Service generally handles projects in the freshwater component of the salmon's habitat and NMFS handles projects in the marine and estuarine environment (generally below the head of tide).

Please note that under section 7 of the ESA, it is the Federal action agency's responsibility to determine if a project may affect a federally listed species. For example, if the project receives Federal funding or needs a Federal permit, those actions may provide a "nexus" for section 7 consultation under the ESA<sup>1</sup>. If the Federal action agency determines that a project would have "no effect" on a listed species or critical habitat, they do not need to seek the concurrence of the Service and there is no need for section 7 consultation. If the Federal agency determines that a project "may affect" a listed species or its critical habitat, then consultation pursuant to section 7 of the ESA should be initiated. Please note, however, that there is no provision under section 7 for consultation after a project has already been completed.

Based on the information currently available to us, no other federally listed species under the jurisdiction of the Service are known to occur in the project area.

## **Other Protected Species**

### **Bald and Golden Eagles**

Occasional, transient bald eagles (*Haliaeetus leucocephalus*) may occur in the area. Based on the information currently available to us, there are recorded bald eagles nesting sites in the vicinity of the proposed project. The bald eagle was removed from the Federal threatened list on August 9, 2007 and is now protected from take under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. "Take" means to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb. The term "disturb" under the Bald and Golden Eagle Protection Act was recently defined within a final rule published in the *Federal Register* on June 5, 2007 (72 Fed. Reg. 31332). "Disturb" means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available; 1) injury to an eagle; 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior; or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.

Further information on bald eagle delisting and their protection can be found at:

(<http://www.fws.gov/migratorybirds/baldeagle.htm>). Please consult with our new national bald eagle guidelines, which can found at:

(<http://www.fws.gov/migratorybirds/issues/BaldEagle/NationalBaldEagleManagementGuidelines.pdf>). These Guidelines are voluntary and were prepared to help landowners, land managers

---

<sup>1</sup> section 7 consultation, however, is only necessary when a Federal agency takes a *discretionary* action (e.g., an agency has a choice of whether or not to fund or permit a particular project).

and others meet the intent of the Eagle Act and avoid disturbing bald eagles. If you believe this project will result in taking or disturbing bald or golden eagles, please contact our office for further guidance. We encourage early and frequent consultations to avoid take of eagles

We have not reviewed this project for State-threatened and endangered wildlife, wildlife species of special concern, and significant wildlife habitats protected under the Maine Natural Resources Protection Act. I recommend that you contact the Maine Department of Inland Fisheries and Wildlife

Maine Department of Inland Fisheries and Wildlife  
284 State Street  
State House Station 41  
Augusta, Maine 04333  
Telephone: 207/287-5258

I recommend that you contact the Maine Natural Areas Program for additional information on state-threatened and endangered plant species, plant species of special concern, and rare natural communities.

Maine Natural Areas Program  
Department of Conservation  
93 State House Station  
Augusta, Maine 04333  
Telephone: 207/287-8046

If you have any questions regarding bald eagles, please contact Mark McCollough, endangered species biologist, at: [Mark\\_McCollough@fws.gov](mailto:Mark_McCollough@fws.gov) or by telephone at 207/866-3344 Ext.115.

If you have any questions regarding Atlantic salmon, please contact Wende Mahaney, fish and wildlife biologist, at: [Wende\\_Mahaney@fws.gov](mailto:Wende_Mahaney@fws.gov) or by telephone at 207/866-3344 Ext. 118.

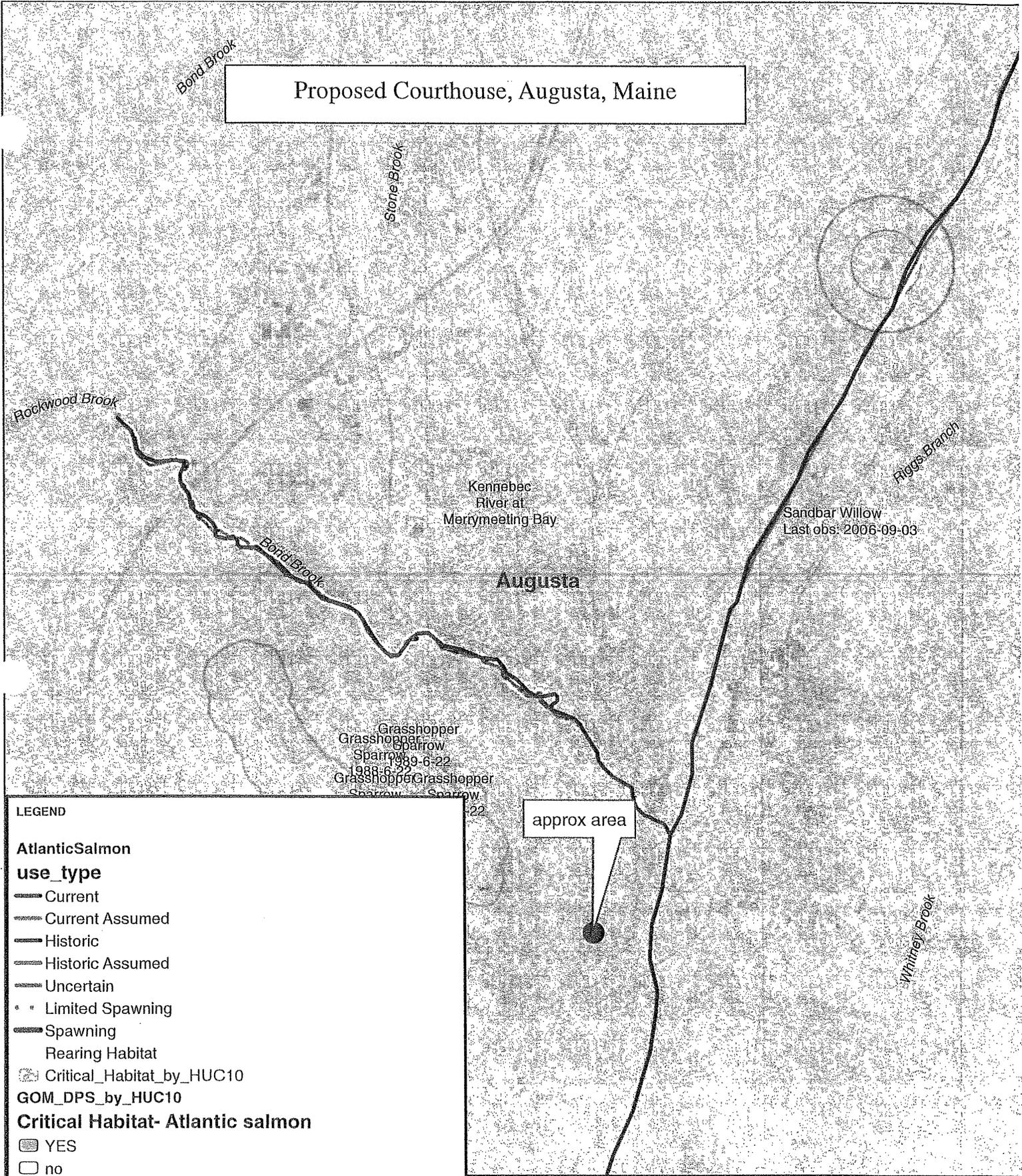
Sincerely,



Laury Zicari  
Field Supervisor  
Maine Field Office

Enclosure

# Proposed Courthouse, Augusta, Maine



**LEGEND**

**AtlanticSalmon**

**use\_type**

- Current
- Current Assumed
- Historic
- Historic Assumed
- Uncertain
- Limited Spawning
- Spawning
- Rearing Habitat

**Critical\_Habitat\_by\_HUC10**

**GOM\_DPS\_by\_HUC10**

**Critical Habitat- Atlantic salmon**

- YES
- no

**GOM\_DPS**

**agle nests(active) w/ buffers 5-2011**

**type**

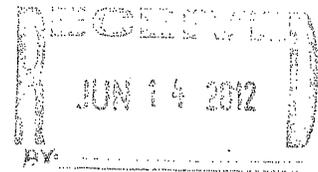
- 400m
- BE-GE Prot Act 200m
- ▲ Eagle nests 5-2011
- ETSC-Endangered, Threatened, Special Concern 5-2011

approx area

Area of detail



STATE OF MAINE  
DEPARTMENT OF CONSERVATION  
93 STATE HOUSE STATION  
AUGUSTA, MAINE  
04333-0093



PAUL R. LEPAGE  
GOVERNOR

WILLIAM H. BEARDSLEY  
COMMISSIONER

June 8, 2012

Al Palmer  
Gorrill-Palmer Consulting Engineers, Inc.  
15 Shaker Rd.  
Gray, ME 04039

Re: Rare and exemplary botanical features in proximity to: Proposed Courthouse, Winthrop Street, Augusta Maine

Dear Mr. Palmer:

I have searched the Natural Areas Program's Biological and Conservation Data System files in response to your request received June 8, 2012 for information on the presence of rare or unique botanical features documented from the vicinity of the project site in Augusta, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. Based on the information in our files and the landscape context of this project, there is a low probability that rare or significant botanical features occur at this project location.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

The Natural Areas Program is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. The Natural Areas Program welcomes coordination with individuals or organizations proposing environmental alteration, or conducting environmental assessments. If, however, data provided by the Natural Areas Program are to be published in any form, the Program should be informed at the outset and credited as the source.

Letter to Al Palmer  
Comments RE: Courthouse, Augusta  
June 8, 2012  
Page 2 of 2

The Natural Areas Program has instituted a fee structure of \$75.00 an hour to recover the actual cost of processing your request for information. You will receive an invoice for \$150.00 for our services.

Thank you for using the Natural Areas Program in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Program or about rare or unique botanical features on this site.

Sincerely,

A handwritten signature in black ink, appearing to read "Don Cameron", with a long, sweeping horizontal line extending to the right.

Don Cameron  
Ecologist  
Maine Natural Areas Program  
207-287-8041  
[don.s.cameron@maine.gov](mailto:don.s.cameron@maine.gov)



AUL R. LEPAGE  
GOVERNOR

MAINE HISTORIC PRESERVATION COMMISSION  
55 CAPITOL STREET  
65 STATE HOUSE STATION  
AUGUSTA, MAINE  
04333

EARLE G. SHETLEWORTH, JR.  
DIRECTOR

July 9, 2012

Mr. Alan Kuniholm  
PDT Architects  
49 Danforth Street  
Portland, ME 04101

Project: MHPC# 0973-12 - Kennebec County Courthouse expansion project  
Town: Augusta, ME

Dear Mr. Kuniholm:

In response to your recent request, I have reviewed the information received June 6, 13, 18, and July 5 and 9, 2012 to initiate consultation on the above referenced project. The Commission is providing advisory comments pursuant to the City of Augusta's local ordinance requirements and planning board review. In addition to the documents received from your office, the Commission has reviewed the application materials for the July 10, 2012 planning board meeting, which have been posted on the City of Augusta's website.

The design drawings indicate that the expansion of the Kennebec County Courthouse will include a proposed new building, which will be connected to the existing historic courthouse building via a connector on the second floor. As you know, the existing historic courthouse building is a contributing building in the National Register listed Winthrop Street Historic District and was also individually listed in the National Register of Historic Places in 1974. This historic building is significant in the areas of law and architecture. The area where the new building will be constructed is not located within the boundaries of the historic district. Please see the enclosed map.

In general, according to *The Secretary of the Interior's Standards for the Treatment of Historic Properties*, the new building and its connector appear to be appropriate and compatible with the existing historic building in terms of materials, size, scale, proportion, and massing.

However, the Commission is concerned that sufficient funding has not been allocated for the preservation and repair of the existing historic courthouse building. It is our understanding that the proposed expansion project will only include life safety and accessibility improvements, some electrical and functional improvements in the Superior Court Room, and minimal repair to the rest of the existing historic building. It is also our understanding that the exterior envelope of this building is presently being compromised by water infiltration that is severe in several areas. As you know, water infiltration will eventually deteriorate and destroy historic building materials

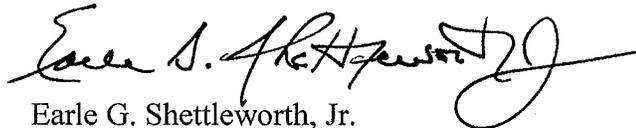
July 9, 2012

beyond repair. Loss of any historic fabric on this building would be harmful to its integrity. In view of the functional values of the historic Superior Court Room and related spaces in the overall program of the new facility, it would seem that all necessary repairs to protect the building envelope should be made at this time. At minimum, we recommend that the project budget include repairs to the existing roof as soon as possible, as well as other necessary exterior repairs to ensure the building is water tight. The existing non-historic windows and doors should also be replaced with compatible windows and doors that are historically accurate, water tight, and energy efficient.

The Commission would appreciate the opportunity to continue consultation with your office as this project moves forward. We are particularly interested in reviewing any proposed work which will have direct impact on the existing historic building as well as the connector element between the existing and the new buildings. It is our understanding that the scope of work for the existing historic building has not been fully prepared at this time and is not shown in the planning board application materials.

Please feel free to contact Robin Reed of our staff if we can be of further assistance in this matter.

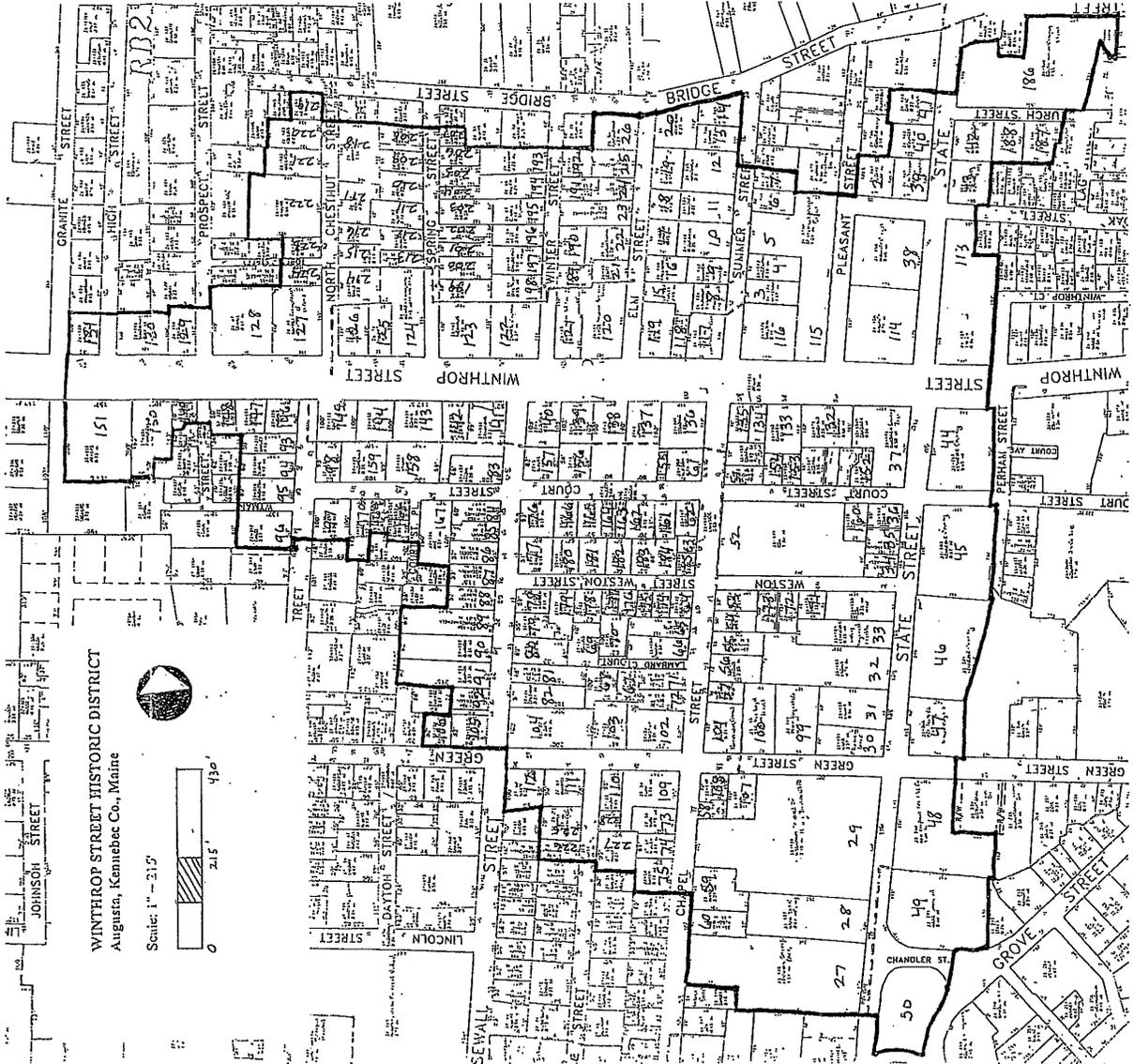
Sincerely,



Earle G. Shettleworth, Jr.  
Director and State Historic Preservation Officer

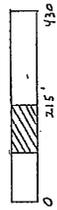
enc.

cc. Matthew Nazar, City of Augusta



**WINTHROP STREET HISTORIC DISTRICT**  
 Augusta, Kennebec Co., Maine

Scale: 1" = 215'



# Section

# I

**SECTION I**  
**SOIL RESOURCE MAPPING**

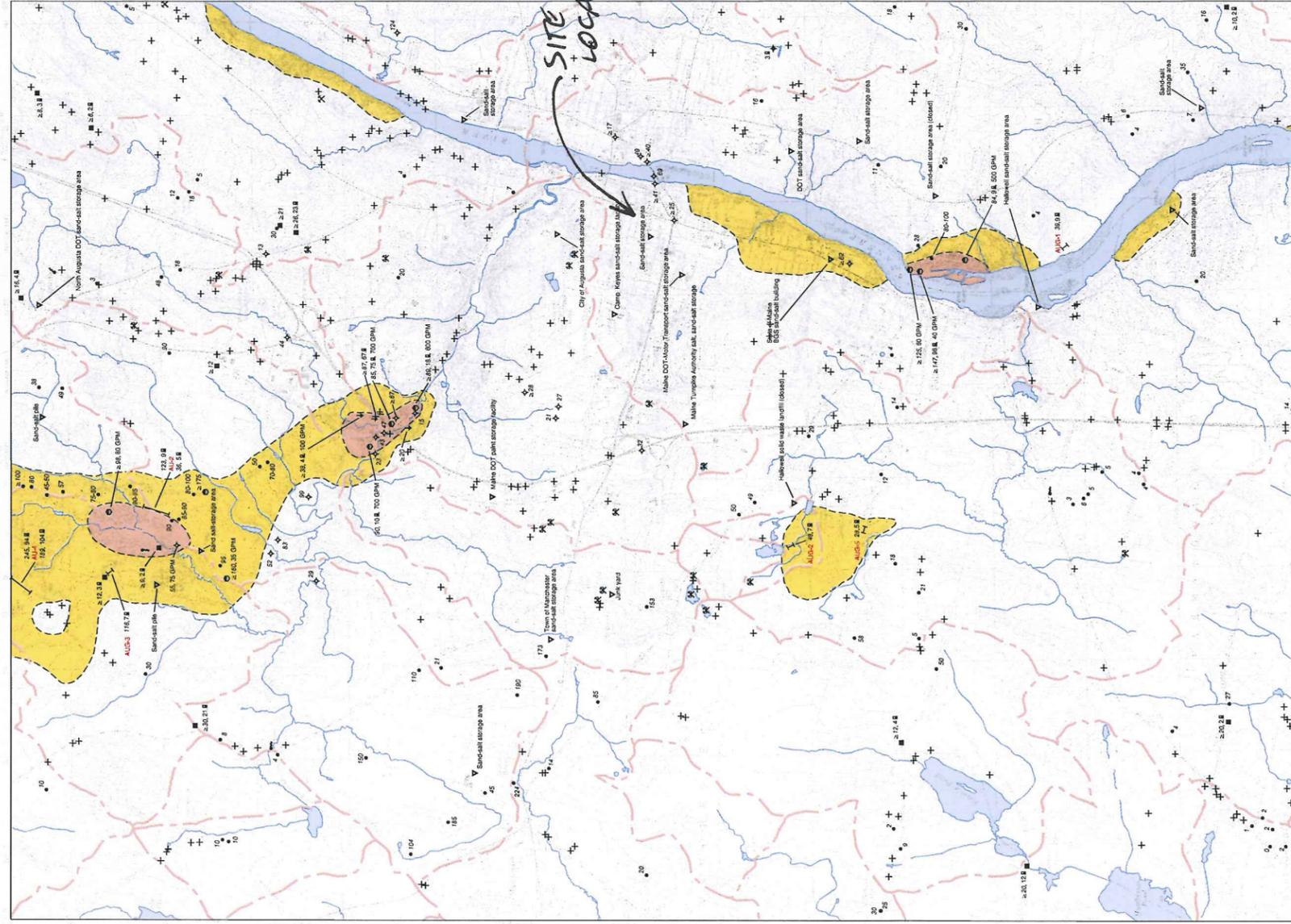
**I.1 Description**

As part of the application process, provision of soils mapping is required.

**I.2 Supporting Documentation**

Enclosed is Sand and Gravel map and the NRCS-based soils mapping associated with this project.

# Significant Sand and Gravel Aquifers



Boundary boundaries modified from: Holmes, A. L., and Jackson, E. M. (compilers), 1984. Hydrogeologic data on aquifers and gravel deposits in the Augusta Quadrangle, Maine. Maine Geological Survey, Open-File Map 85-24, scale 1:50,000. July 17, 1985. Well inventory data from U.S. Geological Survey, Hydrologic Reports, and additional data collected by Maine Geological Survey field assistants during the 1985 field season. Drainage basins boundaries modified by U.S. Geological Survey, Water Resources Division, Atlantic City, New Jersey, from Maine Geological Survey Hydrologic Water Inventory.

### SIGNIFICANT SAND AND GRAVEL AQUIFERS

(yields greater than 10 gallons per minute)

Approximate boundary of surficial deposits with significant saturated thickness where potential ground-water yield is moderate to excellent. Surficial deposits with good to excellent potential ground-water yield; yields generally greater than 50 gallons per minute on a properly constructed well. Surficial deposits with moderate to good potential ground-water yield; yields generally greater than 10 gallons per minute on a properly constructed well. Areas with moderate to low or no potential ground-water yield (includes thin glacial sand and gravel deposits, certain deposits, alluvium swamps, and areas with moderate to low potential ground-water yield).

### LESS FAVORABLE AQUIFER CHARACTERISTICS

(yields less than 10 gallons per minute)

Areas with moderate to low or no potential ground-water yield (includes thin glacial sand and gravel deposits, certain deposits, alluvium swamps, and areas with moderate to low potential ground-water yield).

### OTHER SOURCES OF INFORMATION

1. Tupper, D. H., Williams, J. S., Tolman, A. L., and Pickett, G. C., Jr., 1985. Hydrogeologic map of the Augusta Quadrangle, Maine. Maine Geological Survey, Hydrologic Report 85-24, scale 1:50,000. July 17, 1985.
2. Locke, D. B., 1979. Surficial geology of the Augusta quadrangle, Maine. Maine Geological Survey Open-File Map 79-71.
3. Thompson, W. B., 1977. Reconnaissance surficial geology of the Augusta 15 quadrangle, Maine. Maine Geological Survey, Open-File Map 77-2.
4. Cawell, W. B., 1987. Great water handbook for the state of Maine, Second Edition. Maine Geological Survey, Bulletin 53, 151 p.
5. Thompson, W. B., 1979. Surficial geology: handbook for coastal Maine. Maine Geological Survey, 66 p. (not for print).
6. Keswell, D. L., 1987. Glaciers and glacial: A guide to Maine's landscape and geology. Down East Books, Camden, Maine, 249 p.
7. Thompson, W. B., and Burns, H. W., Jr., 1985. Surficial geologic map of Maine. Maine Geological Survey, scale 1:50,000.

### SEISMIC-LINE INFORMATION

Profile for 12-clined seismic line is shown in Figure 1 of Open-File Map 85-24. Length of 12-clined seismic line as shown on the map is to scale. All single-clined lines ranged from 80 to 300 feet long and are not shown to scale.

- 85 Depth to bedrock, in feet below land surface (based on calculations)
  - 12.5 Depth to water level, in feet below land surface.
  - MAP-7 251, 23.5 Ticks show seismic line, with depth to bedrock and depth to water shown at each end of the line. In feet below land surface.
  - 69, 12.5 Single-clined seismic line, with depth to bedrock and depth to water shown at each end of the line. In feet below land surface.
  - 72, 12.5 Unless otherwise indicated, data shown above the line-identifier non refers to the northern end of the seismic line.
- The letter identifier for this is an abbreviation for its geographic location. If the letter is a 12-clined line, it is followed by a number (see MAP-7, 4). If the letter is a single-clined line, it is followed by a number (see MAP-7, 4). D. H. Tupper, "Three-clined seismic interpretation by D. H. Tupper and G. D. Neal."

### GEOLOGIC AND WELL INFORMATION

- 80 Depth to bedrock, in feet below land surface on boring depth or trial
  - 81 Penetration depth of boring; 2 to 100 feet to minimum depth to bedrock based on boring depth or trial
  - 82 Depth to water level in feet below land surface (observed in well, spring, test boring, pit, or seismic line)
  - 83 Gravel pit (overburden thickness noted in feet, e.g., 3-17)
  - 84 Quarry
  - 4 GPM Yield (flow) of well or spring in gallons per minute (GPM)
  - 1 Spring, with general direction of flow
  - 1 Drilled overburden well
  - 2 Dug well
  - 3 Observation well (project well if labeled; nonproject well if unlabeled)
  - 4 Test boring (project boring if labeled; nonproject boring if unlabeled)
  - 5 Driven point
  - 6 Test pit
  - 7 Drilled bedrock well
  - 8 Potential point source of ground-water contamination
  - 9 Bedrock outcrop
- Surface-water drainage-basin boundary: surface-water divide, generally non reported in ground-water divides. Horizontal direction of ground-water flow generally is away from divide and toward surface-water bodies.

# Augusta Quadrangle, Maine

Compiled by  
**Craig D. Nell**  
Preliminary aquifer boundaries mapped by:  
**Daniel B. Locke**  
Cartographic design and editing by:  
**Robert G. Harrimaney**  
**Robert D. Tucker**  
**Bennett J. Wilson, Jr.**  
State Geologist  
Maine Department of Environmental Protection.

Open-File No. 99-33  
1999

**Maine Geological Survey**  
Address: 22 State House Station, Augusta, Maine 04333  
Telephone: 507-297-2801 E-mail: mgos@maine.gov  
Internet Page: http://www.maine.gov/mgeos/index.html

### WHAT IS AN AQUIFER?

Aquifers are geologic units that store and transmit water. They are typically composed of sand, gravel, and other coarse-grained materials. The ability of an aquifer to store and transmit water depends on its porosity and permeability. Porosity is the amount of open space in a rock, and permeability is the ability of a rock to allow water to flow through it. Aquifers are important sources of water for many communities and industries. They are also important for maintaining the water table, which is the level to which water will rise in a well. The water table is a key indicator of the health of an aquifer. If the water table is falling, it may indicate that the aquifer is being over-pumped or that there is a leak in the system. Understanding the characteristics of an aquifer is essential for managing its resources and protecting them from contamination.

### POROSIY AND PERMEABILITY

The diagram at right is an enlarged view of a section of the diagram above. Note that the pores between the grains in an aquifer, the more pore spaces there are, the more water the aquifer can store. Permeability depends on the size of the spaces between the grains. If the spaces are large, water can flow through them easily. If the spaces are small, water cannot flow through them. The diagram shows a cross-section of an aquifer with various pore spaces and grain sizes. It illustrates how the arrangement of grains and the size of the spaces between them affect the aquifer's ability to store and transmit water. This is a key concept in understanding how aquifers work and how they can be managed.

### HOW ARE AQUIFERS MAPPED?

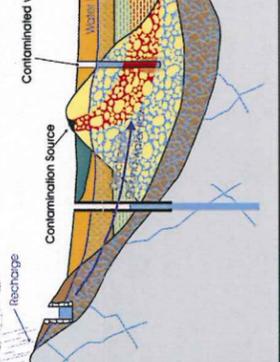
When mapping and gravel aquifers, geologists use a variety of techniques. They may use aerial photography, ground-penetrating radar, and other remote sensing technologies. They may also use direct observation and sampling of aquifers. The diagram shows a cross-section of an aquifer with various pore spaces and grain sizes. It illustrates how the arrangement of grains and the size of the spaces between them affect the aquifer's ability to store and transmit water. This is a key concept in understanding how aquifers work and how they can be managed.

### GROUND-WATER FLOW AND CONTAMINATION

Ground water is replenished or recharged by surface water and precipitation. It moves through the ground in a slow, steady flow. Contamination of ground water can occur from a variety of sources, including landfills, industrial sites, and agricultural operations. The diagram shows a cross-section of an aquifer with various pore spaces and grain sizes. It illustrates how the arrangement of grains and the size of the spaces between them affect the aquifer's ability to store and transmit water. This is a key concept in understanding how aquifers work and how they can be managed.

### HOW TO USE THIS MAP

This map is intended to provide information about the location and characteristics of significant sand and gravel aquifers in the Augusta Quadrangle, Maine. It is not intended to be used as a legal document or as a basis for making decisions about land use or other matters. The map is based on the best available information at the time it was prepared. It may not reflect changes in the aquifer system since it was prepared. For more information, contact the Maine Geological Survey.



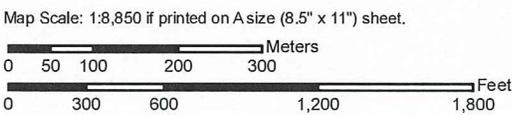
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This map is intended to provide information about the location and characteristics of significant sand and gravel aquifers in the Augusta Quadrangle, Maine. It is not intended to be used as a legal document or as a basis for making decisions about land use or other matters. The map is based on the best available information at the time it was prepared. It may not reflect changes in the aquifer system since it was prepared. For more information, contact the Maine Geological Survey.

Custom Soil Resource Report  
Soil Map (Augusta Courthouse, Augusta, Maine)



*PROJECT  
LOCATION*



## MAP INFORMATION

Map Scale: 1:8,850 if printed on A size (8.5" x 11") sheet.  
 The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

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

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
 Coordinate System: UTM Zone 19N NAD83

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

Soil Survey Area: Kennebec County, Maine  
 Survey Area Data: Version 11, Jul 27, 2009

Date(s) aerial images were photographed: Data not available.

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

## MAP LEGEND

- |                               |                        |                              |                     |
|-------------------------------|------------------------|------------------------------|---------------------|
|                               | Area of Interest (AOI) |                              | Very Stony Spot     |
|                               | Soils                  |                              | Wet Spot            |
|                               | Soil Map Units         |                              | Other               |
| <b>Special Point Features</b> |                        |                              |                     |
|                               | Blowout                | <b>Special Line Features</b> |                     |
|                               | Borrow Pit             |                              | Gully               |
|                               | Clay Spot              |                              | Short Steep Slope   |
|                               | Closed Depression      |                              | Other               |
|                               | Gravel Pit             | <b>Political Features</b>    |                     |
|                               | Gravelly Spot          |                              | Cities              |
|                               | Landfill               | <b>Water Features</b>        |                     |
|                               | Lava Flow              |                              | Streams and Canals  |
|                               | Marsh or swamp         | <b>Transportation</b>        |                     |
|                               | Mine or Quarry         |                              | Rails               |
|                               | Miscellaneous Water    |                              | Interstate Highways |
|                               | Perennial Water        |                              | US Routes           |
|                               | Rock Outcrop           |                              | Major Roads         |
|                               | Saline Spot            |                              | Local Roads         |
|                               | Sandy Spot             |                              |                     |
|                               | Severely Eroded Spot   |                              |                     |
|                               | Sinkhole               |                              |                     |
|                               | Slide or Slip          |                              |                     |
|                               | Sodic Spot             |                              |                     |
|                               | Spoil Area             |                              |                     |
|                               | Stony Spot             |                              |                     |

## Map Unit Legend (Augusta Courthouse, Augusta, Maine)

Kennebec County, Maine (ME011)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BuB2	Buxton silt loam, 3 to 8 percent slopes, eroded	150.3	33.7%
CF	Cut and fill land	4.3	1.0%
Ha	Hadley silt loam	0.4	0.1%
HfC	Hartland very fine sandy loam, 8 to 15 percent slopes	5.4	1.2%
HfD	Hartland very fine sandy loam, 15 to 25 percent slopes	23.9	5.4%
HkB	Hinckley gravelly sandy loam, 3 to 8 percent slopes	2.5	0.6%
HkC	Hinckley gravelly sandy loam, 8 to 15 percent slopes	0.3	0.1%
HkD	Hinckley gravelly sandy loam, 15 to 30 percent slopes	2.9	0.7%
HrC	Hollis fine sandy loam, 8 to 15 percent slopes	3.8	0.8%
HrD	Hollis fine sandy loam, 15 to 25 percent slopes	10.8	2.4%
ML	Made land	13.4	3.0%
SkB	Scio very fine sandy loam, 3 to 8 percent slopes	7.9	1.8%
SuC2	Suffield silt loam, 8 to 15 percent slopes, eroded	109.6	24.6%
SuD2	Suffield silt loam, 15 to 25 percent slopes, eroded	24.3	5.4%
SuE2	Suffield silt loam, 25 to 45 percent slopes, eroded	35.0	7.9%
W	Water bodies	51.1	11.5%
<b>Totals for Area of Interest</b>		<b>445.8</b>	<b>100.0%</b>

## Map Unit Descriptions (Augusta Courthouse, Augusta, Maine)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named

# Section

# J

# STORMWATER MANAGEMENT

## **I. Overview**

Under the City of Augusta Technical Standards Handbook Section 6.1.2.1.2, Stormwater management plans shall show means whereby the peak discharge for the developed site shall not exceed the peak discharge for the undeveloped site for the 2 and 25 year storms.

## **II. Introduction**

Gorrill-Palmer Consulting Engineers, Inc., with PDT Architects and Terrence J. DeWan Landscape Architects, has been retained by the Maine Governmental Facilities Authority Judicial Branch to prepare plans and permit applications for a new parking lot located at Perham Street in Augusta, Maine. The proposed parking lot contains 92 parking spaces.

Figure 1 is a map showing the project location. The developer is currently seeking Site Plan Approval from the City of Augusta and a Stormwater Management Permit modification from the Maine Department of Environmental Protection for the proposed development. This narrative contains the general stormwater management measures, which are appropriate for the parking lot development.

## **III. Development Description**

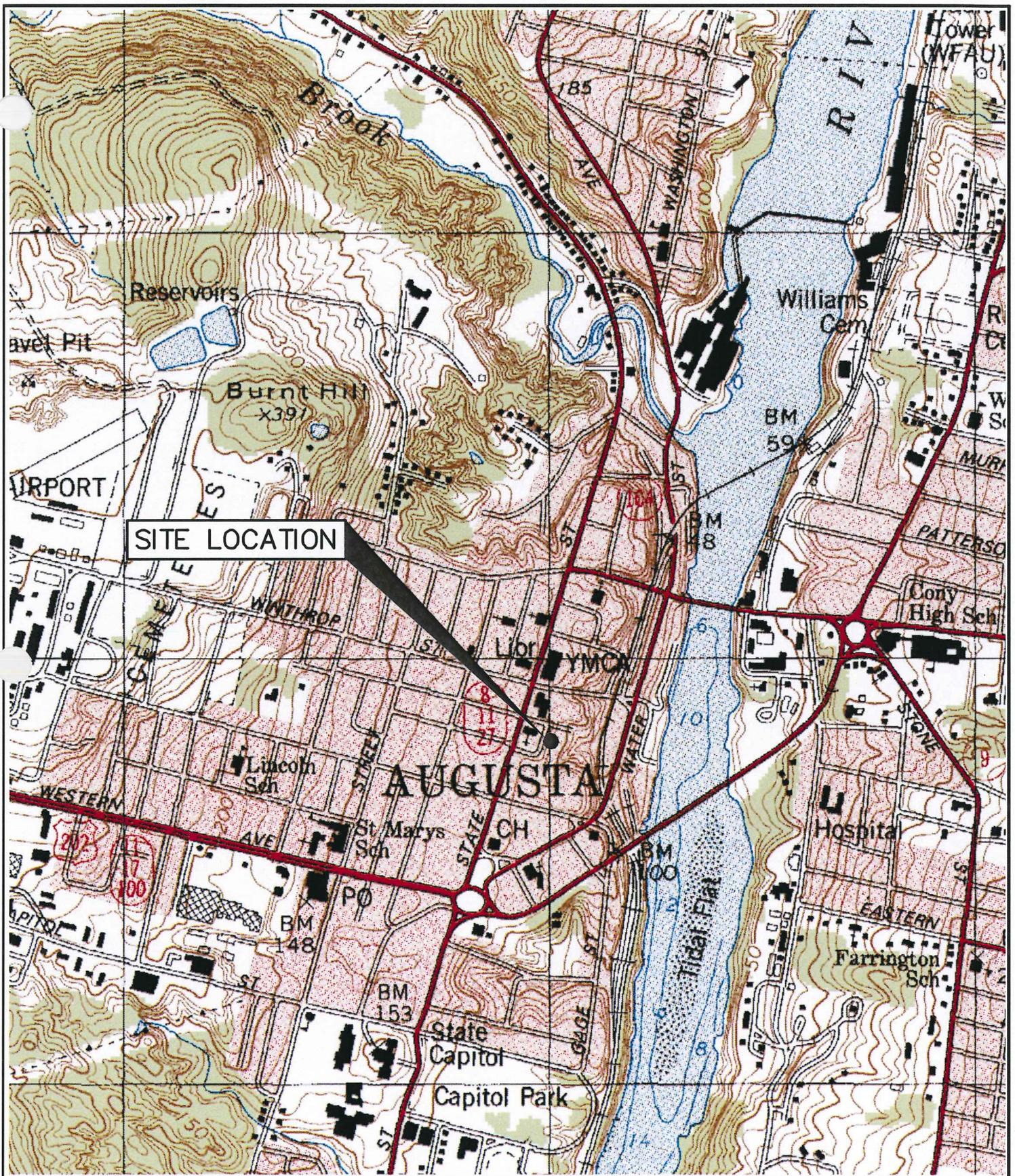
At this time, the Maine Governmental Facilities Authority has retained Gorrill Palmer, to prepare plans and permit applications for the redevelopment of Perham Street as a parking area. The Maine Governmental Facilities Authority will use these spaces to supplement those constructed as part of the courthouse project. The site is currently developed with Perham Street and four residential house lots. There are no apparent wetlands onsite. The proposed development will require the demolition of the house lots as well as Perham Street. The project site is located in the BP zoning district. The four house lots are identified on the City Tax Map 33, Lots 230, 231, 232, and 233. Abutting uses to the sites include an existing courthouse and jail.

The development of the building and associated infrastructure will create approximately 0.23 acres of new non-vegetated surface. The overall disturbed area is approximately 0.71 acres.

The project site is not located within the watershed of an Urban Impaired Stream. Stormwater runoff from the project area flows to the stormdrain system of the newly constructed courthouse, and into the municipal stormwater system which discharges to the Kennebec River. Since the project site is adjacent to the courthouse site and is being developed by the same entity, it is assumed that the parking lot development will require a modification to the MDEP Stormwater Permit issued for the courthouse project.

The MDEP Basic Standard will be met as presented in the Erosion and Sedimentation Control report for this project and in Section X of this report.

Runoff from the parking lot will enter a stormdrain system which will connect to the stormdrain system of the courthouse project. The stormdrain system for the courthouse project was designed to meet MDEP General Standards as well as treatment standards requested by the City of Augusta, and LEED Standards. As a result of meeting the City and LEED standards, the treatment system was oversized based upon MDEP standards. The courthouse project was a redevelopment of an area with impervious cover in existence as of 11/16/05. The proposed parking lot project is also a redevelopment project. Assuming the total new impervious area of 0.47 acres from the combined development requires treatment, the required treatment volume would be 1,706 cf. The treatment volume provided for the courthouse project is 4,482 cf as presented in the Stormwater Management Report for the courthouse project; therefore the existing



U.S.G.S. Location Map  
 Augusta Parking Lot - Augusta, Maine  
 U.S.G.S. Augusta, Maine -7.5 Minute Series (Topographic)

Design: JWA	Date: JULY 2014
Draft: CG	Job No.: 2569.01
Checked: DER	Scale: None
File Name: 2569-01-LOCATION.dwg	

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*Engineering Excellence since 1998*

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treatment provided for the courthouse project is adequate for treatment of the increased impervious area of the parking lot project.

Stormwater detention is proposed for the parking lot project in order to comply with the City of Augusta requirements for peak runoff control.

#### **IV. Surface Water**

There are no lakes located on, adjacent to or downstream of the project site.

#### **V. General Topography**

The proposed developed area slopes to the east with slopes ranging from 3% in Perham Street to 50% at the rear of the residential lots.

#### **VI. Flooding**

The site is not located within a mapped FEMA 100-year floodplain.

#### **VII. Natural Drainage Ways**

The project as currently proposed does not include alteration of any natural drainage ways.

#### **VIII. Alterations to Land Cover**

Changes in land cover will include removal of vegetation, roof and paved areas through portions of the project site and the addition of paved surfaces, lawn, and landscaped areas.

#### **IX. Stormwater Management Control**

The Maine Department of Environmental Protection rules and regulations regarding stormwater concentrate on four stormwater management objectives:

- Effective Pollutant Removal
- Cooling
- Channel Protection
- Flood Control

These objectives may be met either directly by providing BMP's that manage and treat the runoff after it has been created, or indirectly by incorporating low impact development site planning concepts to minimize production and contamination of runoff by maximizing infiltration and evapotranspiration.

##### **IX.1 Current Treatment Methods**

The project requires a modification of an MDEP Stormwater Permit for a Stormwater Management Law project including redevelopment. For a project that includes redevelopment of impervious area that was in existence as of November 16, 2005, the redevelopment of that impervious area is not required to meet General standards provided the department determines that the new use of the existing impervious area is not likely to increase stormwater impacts resulting from the proposed project's stormwater runoff beyond the level of impact already

caused by the runoff from the existing impervious area. The following presents the existing and proposed uses of the three project lots.

The following table presents the existing and proposed groundcover for the project site.

Table 1		
Groundcover – Parking Development Site		
	Existing (acre)	Proposed (acre)
Impervious Roof	0.15	0
Impervious Non-Roof	0.22	0.60
Vegetated	0.34	0.11
Net Increase In Impervious Area		0.23

Since the project site is adjacent to the courthouse site and is being developed by the same entity, it is assumed that the parking lot development will require a modification to the Stormwater Permit issued for the courthouse project. The following table lists the combined areas for the courthouse project and the proposed parking lot project.

Table 2			
Combined Project			
	Courthouse (acre)	Parking Lot (acre)	Total (acre)
New Impervious Area	0.24	0.23	0.47
Total Impervious Area	1.54	0.60	2.14
Disturbed Area	2.28	0.71	2.99
Impervious Non-Roof Area	-0.16	0.38	0.22

Runoff from the parking lot will enter a stormdrain system which will connect to the stormdrain system of the courthouse project. The stormdrain system for the courthouse project was designed to meet MDEP General Standards as well as, treatment standards requested by the City of Augusta, and LEED Standards. As a result of meeting the City and LEED standards, the treatment system was oversized based upon MDEP standards. The courthouse project was a redevelopment of an area with impervious cover in existence as of 11/16/05. The proposed parking lot project is also a redevelopment project. Assuming the total new impervious area of 0.47 acres from the combined development requires treatment, the required treatment volume would be 1,706 cf. The treatment volume provided for the courthouse project is 4,482 cf as presented in the Stormwater Management Report for the courthouse project. The following is our interpretation of the requirements for the proposed parking lot project under Chapter 500.

1. The proposed project will require a modification to the Stormwater Management Permit issued for the courthouse project.
2. Since the proposed project is a redevelopment project, the new impervious area will require water quality treatment.
3. The courthouse project provides 4,482 cf of water quality treatment volume, and the required treatment volume for the combined project is 1,706 cf; therefore no additional water quality treatment is required.

## IX.2 City of Augusta Peak Control

Under the City of Augusta Technical Standards Handbook Section 6.1.2.1.2, Stormwater management plans shall show means whereby the peak discharge for the developed site shall not

exceed the peak discharge for the undeveloped site for the 2 and 25 year storms. Subsurface detention chambers are proposed to control post development runoff to predevelopment levels. The following presents the proposed peak runoff control for this project.

The stormwater management study provides an analysis of predevelopment and post development stormwater runoff rates.

The medium intensity soil map from the Natural Resources Conservation Service was used to identify onsite and offsite soils. The project site is comprised of hydrologic soil type D. An excerpt from the Medium Intensity Soil Survey follows this page.

The SCS TR-20 methodology was employed by Gorrill-Palmer Consulting Engineers, Inc. to analyze predevelopment and post development conditions. A 24-hour, SCS Type III storm distribution for the two, and twenty-five-year storm frequencies were used for analysis. The corresponding rainfall amounts for these storms are 3.0" and 5.1" respectively.

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

- Augusta 7.5 Minute Quadrangle Maps published by the U.S.G.S.
- Aerial and On-site topographic survey with 2' contour intervals prepared by Thayer Engineering Company.
- Field Reconnaissance.
- NRCS Medium Intensity Soil Survey for Kennebec County.

#### **Predevelopment Conditions**

The drainage study analyzes the watersheds in the predevelopment condition as depicted on the Predevelopment Watershed Map contained in Attachment A.

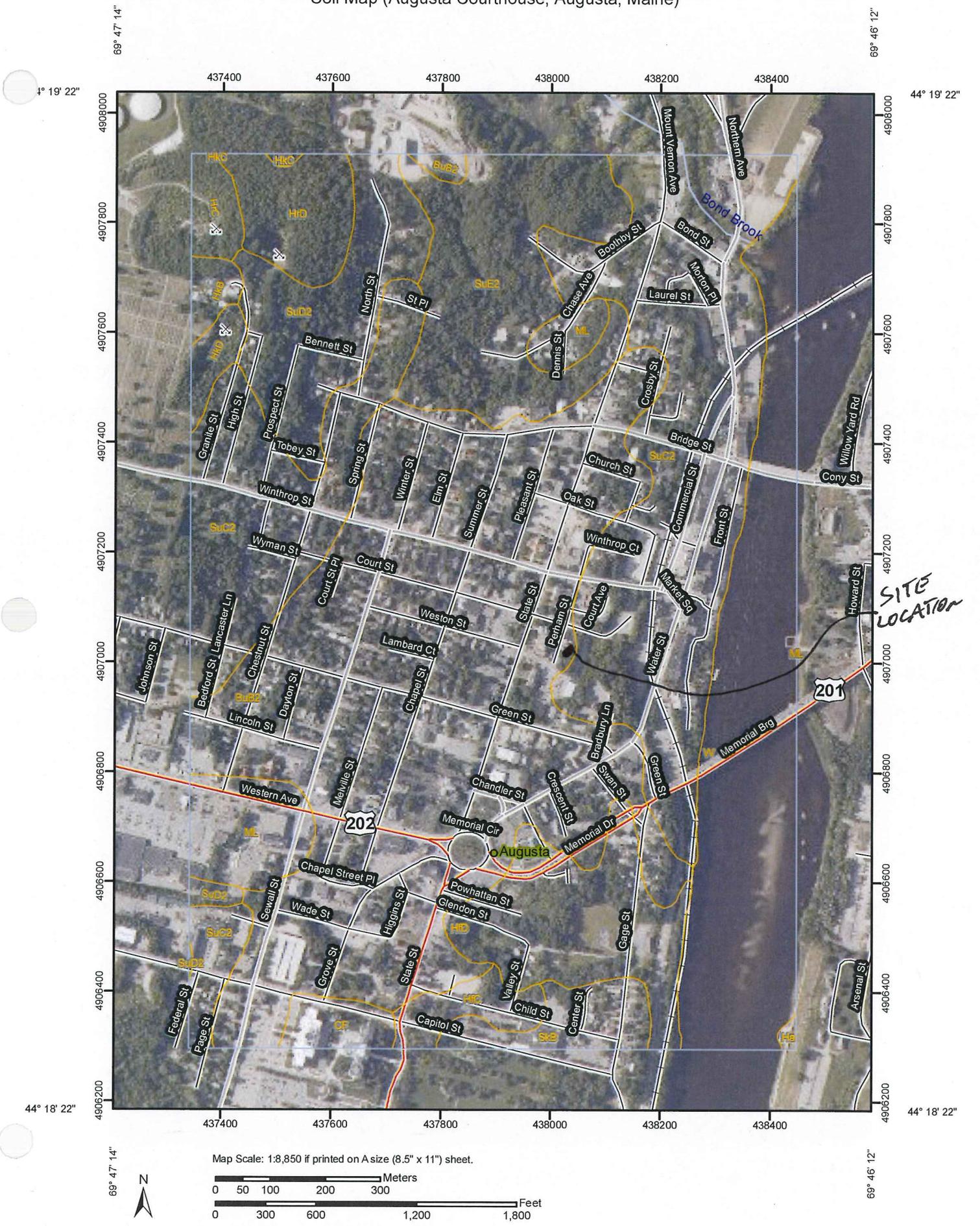
The predevelopment condition was analyzed as three subcatchments with three points of interest (POI).

Subcatchment 1 is the northerly section of Perham Street and adjacent properties which are tributary to the stormdrain system in Court Street designated as POI 1.

Subcatchment 2 is the central portion of Perham Street and adjacent properties which is tributary to the stormdrain system of the recently constructed courthouse. The courthouse catch basin is POI 2.

Subcatchment 3 is the westerly portion of Perham Street tributary to an existing catch basin designated as POI 3.

Custom Soil Resource Report  
Soil Map (Augusta Courthouse, Augusta, Maine)



## MAP LEGEND

	Area of Interest (AOI)		Very Stony Spot
	Soils		Wet Spot
	Soil Map Units		Other
<b>Special Point Features</b>			
	Blowout		Special Line Features
	Borrow Pit		Gully
	Clay Spot		Short Steep Slope
	Closed Depression		Other
	Gravel Pit	<b>Political Features</b>	
	Gravelly Spot		Cities
	Landfill	<b>Water Features</b>	
	Lava Flow		Streams and Canals
	Marsh or swamp	<b>Transportation</b>	
	Mine or Quarry		Rails
	Miscellaneous Water		Interstate Highways
	Perennial Water		US Routes
	Rock Outcrop		Major Roads
	Saline Spot		Local Roads
	Sandy Spot		
	Severely Eroded Spot		
	Sinkhole		
	Slide or Slip		
	Sodic Spot		
	Spoil Area		
	Stony Spot		

## MAP INFORMATION

Map Scale: 1:8,850 if printed on A size (8.5" x 11") sheet.  
 The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

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

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
 Coordinate System: UTM Zone 19N NAD83

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

Soil Survey Area: Kennebec County, Maine  
 Survey Area Data: Version 11, Jul 27, 2009

Date(s) aerial images were photographed: Data not available.

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

## Map Unit Legend (Augusta Courthouse, Augusta, Maine)

Kennebec County, Maine (ME011)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BuB2	Buxton silt loam, 3 to 8 percent slopes, eroded	150.3	33.7%
CF	Cut and fill land	4.3	1.0%
Ha	Hadley silt loam	0.4	0.1%
HfC	Hartland very fine sandy loam, 8 to 15 percent slopes	5.4	1.2%
HfD	Hartland very fine sandy loam, 15 to 25 percent slopes	23.9	5.4%
HkB	Hinckley gravelly sandy loam, 3 to 8 percent slopes	2.5	0.6%
HkC	Hinckley gravelly sandy loam, 8 to 15 percent slopes	0.3	0.1%
HkD	Hinckley gravelly sandy loam, 15 to 30 percent slopes	2.9	0.7%
HrC	Hollis fine sandy loam, 8 to 15 percent slopes	3.8	0.8%
HrD	Hollis fine sandy loam, 15 to 25 percent slopes	10.8	2.4%
ML	Made land	13.4	3.0%
SkB	Scio very fine sandy loam, 3 to 8 percent slopes	7.9	1.8%
SuC2	Suffield silt loam, 8 to 15 percent slopes, eroded	109.6	24.6%
SuD2	Suffield silt loam, 15 to 25 percent slopes, eroded	24.3	5.4%
SuE2	Suffield silt loam, 25 to 45 percent slopes, eroded	35.0	7.9%
W	Water bodies	51.1	11.5%
<b>Totals for Area of Interest</b>		<b>445.8</b>	<b>100.0%</b>

## Map Unit Descriptions (Augusta Courthouse, Augusta, Maine)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named

Table 3 presents the peak flow rates at the points of interest in the predevelopment condition.

<b>Table 3– Predevelopment Peak Flow Rates</b>		
Point of Interest	Peak Flows (cfs)	
	2 Year	25 Year
1	0.68	1.27
2	1.27	2.61
3	0.25	0.47

Copies of the calculations for the predevelopment condition are included in Attachment B.

**Post Development Condition**

Analysis for the post development condition consists of determining post development peak flows and limiting the post development flows to predevelopment levels. The predevelopment point of interest remains the same in the post development condition. The subcatchments have changed to reflect the proposed construction.

The post development condition was analyzed as four subcatchments with three points of interest (POI).

Subcatchment 1 includes portions of the entrance drives and parking lot which are tributary to POI 1.

Subcatchment 2A is the portion of the parking lot that is tributary to the proposed subsurface detention chambers. The outflow from the chambers is tributary to POI 2.

Subcatchment 2B is the portion of the parking lot directly tributary to POI 2.

Subcatchment 3 is the post development area tributary to POI 3.

A watershed map for the post development condition is attached to this section as Drawing W2 in Attachment A.

Table 4 presents the post development flows without detention.

<b>Table 4– Post Development Peak Flow Rates without detention</b>		
Point of Interest	Peak Flows (cfs)	
	2 Year	25 Year
1	0.43	0.75
2	2.37	4.18
3	0.02	0.05

A comparison of pre and post development flow without detention is presented in the following table.

Peak Flows (cfs)						
	POI 1		POI 2		POI 3	
	Pre	Post	Pre	Post	Pre	Post
2 Year	0.68	0.43	1.27	2.37	0.25	0.02
25 Year	1.27	0.75	2.61	4.18	0.47	0.05

As can be seen in Table 5, detention is required for the tributary area to POI 2. The peak flow to POI 1 and POI 3 is reduced due to a reduction in tributary area.

Subsurface detention is proposed using Stormtech SC-740 chambers. An outlet control structure with two orifices will control the outflow from the chambers. The runoff will enter the chambers through an isolator row which will provide some water quality treatment through the removal of sediment from the runoff.

The following table presents the performance of the subsurface system.

	Storm Event	
	2-Year	25-Year
	Peak Inflow (cfs)	1.92
Peak Outflow (cfs)	0.95	2.02
Stage (Max. Elevation)	108.16	109.78
Storage (cf)	672	1,223
Depth above lower orifice (ft)	1.66	3.28

The pond calculations are included in Attachment B.

The following table presents a comparison of predevelopment and post development peak flow with detention.

Peak Flows (cfs)						
	POI 1		POI 2		POI 3	
	Pre	Post	Pre	Post	Pre	Post
2 Year	0.68	0.43	1.27	1.27	0.25	0.02
25 Year	1.27	0.75	2.61	2.60	0.47	0.05

### **IX.3 Conclusion – Quantity Control**

As can be seen from Table 7 above, the peak post-development flow is less than or equal to the peak pre-development flow for the 2- and 25-year storm. Therefore the project will not have a detrimental effect to downstream properties.

#### **IX.4 Construction BMPs**

Additional water quality treatment will be provided during construction by best management practices (BMP). Standard BMPs to be employed include siltation fencing around the downslope construction perimeter, and erosion control fabrics applied to slopes prior to revegetation.

#### **X. Maintenance of Facilities**

The stormwater facilities will be maintained by the Applicant, Maine Governmental Facilities Authority Judicial Branch: attention Jeffrey Henthorn, Director of Court Facilities, Maine District Court, P.O. Box 1345, Lewiston, ME 04243-1345.. The contract documents will require the contractor to designate a person responsible for maintenance of the sedimentation control features during construction as required by the Erosion Control Report. Long-term operation/maintenance recommended for the stormwater facilities is presented below. A standard inspection report is included as Attachment C.

The responsible party may contract with such professionals, as may be necessary in order to comply with this provision and may rely on the advice of such professionals in carrying out its duty hereunder, provided, that the following operation and maintenance procedures are hereby established as a minimum for compliance with this section.

##### **Inspection and Maintenance Frequency and Corrective Measures:**

The following areas, facilities, and measures will be inspected and the identified deficiencies will be corrected. Clean-out must include the removal and legal disposal of any accumulated sediments and debris.

##### **Catch Basins:**

Inspect catch basins 2 times per year (preferably in Spring and Fall) to ensure that the catch basins are working in their intended fashion and that they are free of debris. Clean structures when sediment depths reach 12" from invert of outlet. If the basin outlet is designed with a hood to trap floatable materials (i.e. Snout), check to ensure watertight seal is working. At a minimum, remove floating debris and hydrocarbons at the time of the inspection.

##### **Subsurface detention chambers:**

Inspect chambers per manufacturer's recommendation. At a minimum inspect chambers 2 times per year (preferably in Spring and Fall) to ensure that the structures are working in their intended fashion and that they are free of debris. Remove sediment from Isolator row when depth of sediment reaches 3 inches.

##### **Vegetated Areas:**

Inspect slopes and embankments early in the growing season to identify active or potential erosion problems. Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows. The facilities will be inspected after major storms and any identified deficiencies will be corrected.

##### **Ditches, Swales and other Open Stormwater Channels:**

Inspect 2 times per year (preferably in Spring and Fall) to ensure they are working in their intended fashion and that they are free of sediment and debris. Remove any obstructions to flow, including accumulated sediments and debris and vegetated growth. Repair any erosion of the ditch lining. Vegetated ditches will be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity. Any woody vegetation growing through riprap linings

must also be removed. Repair any slumping side slopes as soon as practicable. If the ditch has a riprap lining, replace riprap on areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged. Correct any erosion of the channel's bottom or sideslopes. The facilities will be inspected after major storms and any identified deficiencies will be corrected.

**Roadways and Parking Surfaces:** Clear accumulations of winter sand in parking lots and along roadways at least once a year, preferably in the spring. Accumulations on pavement may be removed by pavement sweeping. Accumulations of sand along road shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader.

### **Recertification**

As part of the Stormwater Permit, the applicant is required to meet the standards in Appendix B of the Chapter 500 Rules. Appendix B states that a project must submit a certification of the following to the department within three months of the expiration of each five-year interval from the date of issuance of the permit.

- (a) Identification and repair of erosion problems. All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.
- (b) Inspection and repair of stormwater control system. All aspects of the stormwater control system have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the system, or portions of the system.
- (c) Maintenance. The erosion and stormwater maintenance plan for the site is being implemented as written, or modifications to the plan have been submitted to and approved by the department, and the maintenance log is being maintained.

### **Housekeeping**

As part of the Stormwater Permit, the applicant is required to meet the standards in Appendix C of the Chapter 500 Rules. The following procedures are hereby established as a minimum for compliance with this section. For further information on the procedures listed below, refer to Chapter 500 rules – Appendix C.

#### **Spill Prevention:**

Appropriate spill prevention, containment, and response planning/implementation shall be used to prevent pollutants from being discharged from materials on site.

#### **Groundwater Protection:**

During construction, hazardous materials with the potential to contaminate groundwater shall not be stored or handled in areas of the site which drain to an infiltration area.

#### **Fugitive Sediment and Dust:**

Appropriate measures shall be taken to ensure that activities do not result in noticeable erosion of the soils and water and/or calcium chloride shall be used to ensure that activities do not result in fugitive dust emissions during or after construction.

#### **Debris and Other Materials:**

Litter, construction debris, and chemicals exposed to stormwater must be prevented from becoming a pollutant source.

**Trench or Foundation De-watering:**

Water collected through the process of trenching and/or de-watering must be removed from the ponded area, and must be spread through natural wooded buffers or other areas that are specifically designed to collect the maximum amount of sediment possible.

**Non-stormwater Discharges:**

Identify and prevent contamination by non-stormwater discharges.

**XII. Attachments**

Attached to this section are the following items:

Attachment A – Watershed Maps

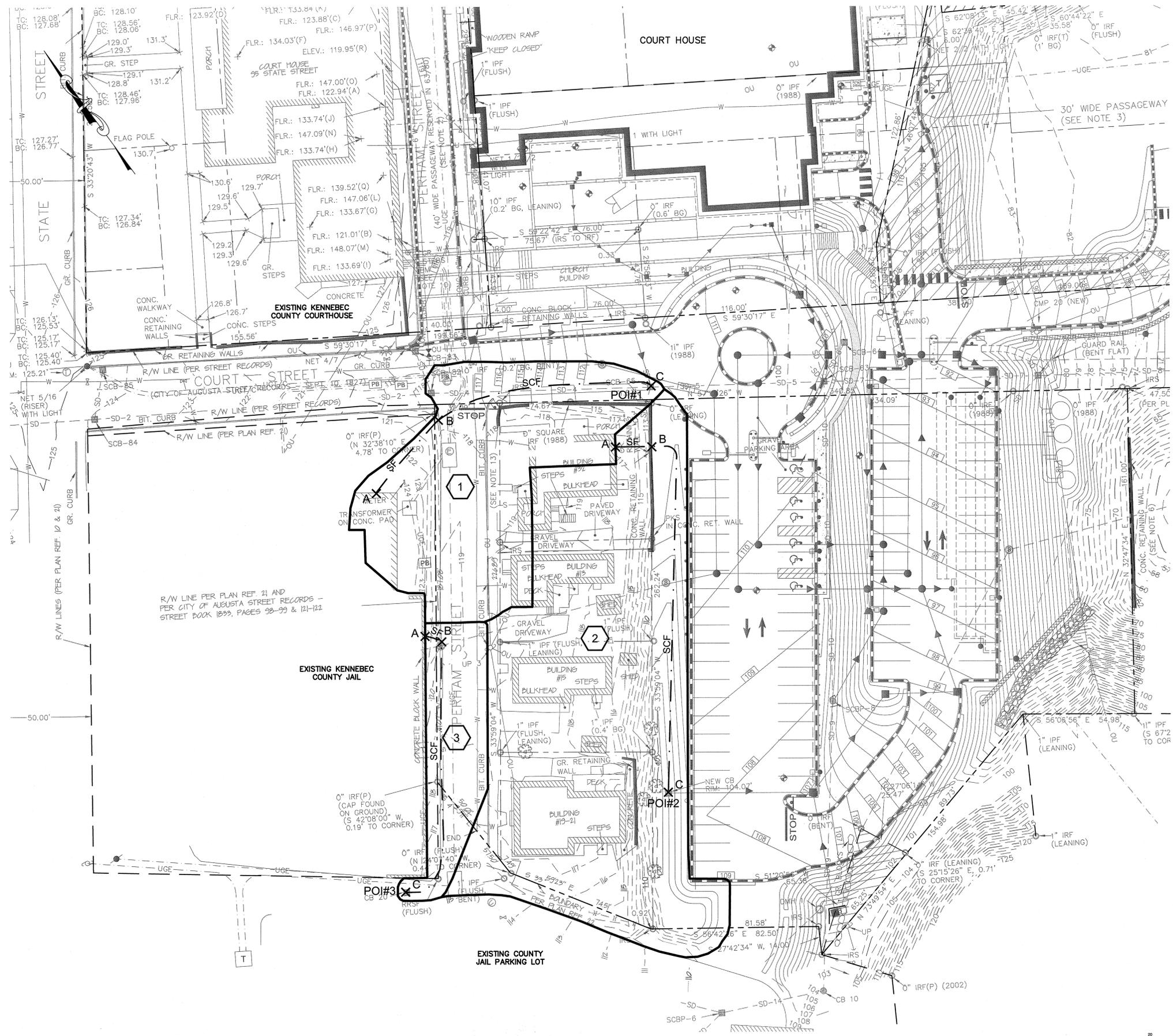
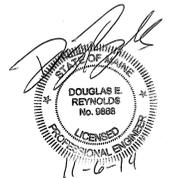
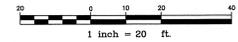
Attachment B – TR-20 Calculations

Attachment C – Inspection Report

ATTACHMENT A  
WATERSHED MAPS

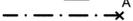
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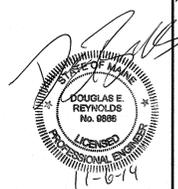
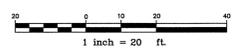
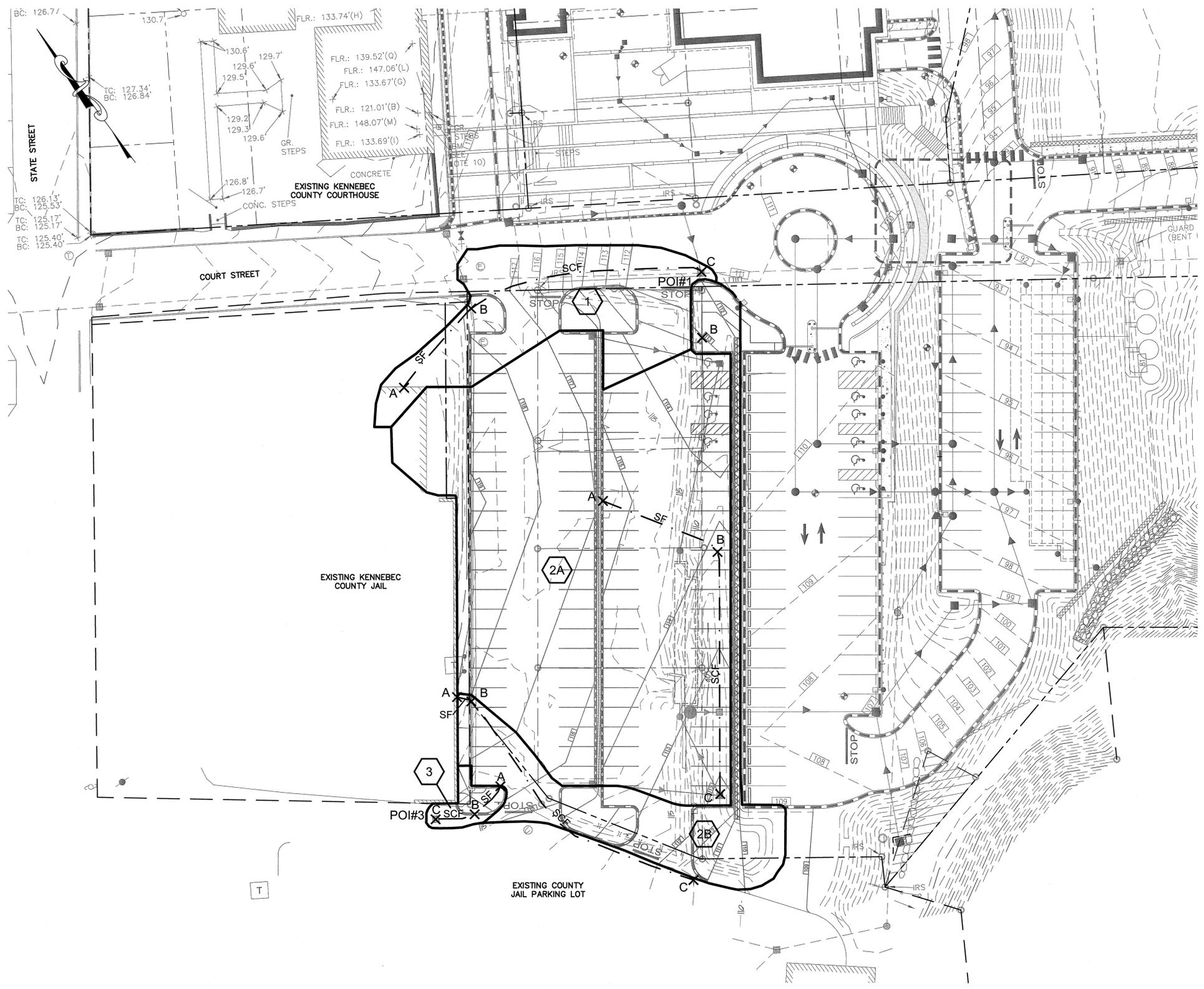
- SUBCATCHMENT AREA
- TIME OF CONCENTRATION FLOW PATH
- WATERSHED BOUNDARY
- WETLAND BOUNDARY
- SHEET FLOW
- PIPE FLOW
- SHALLOW CONCENTRATED FLOW
- CHANNEL FLOW
- POINT OF INTEREST
- REACH



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**LEGEND**

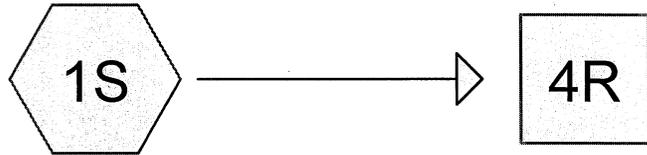
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-  TIME OF CONCENTRATION FLOW PATH
-  WATERSHED BOUNDARY
-  WETLAND BOUNDARY
-  SHEET FLOW
-  PIPE FLOW
-  SHALLOW CONCENTRATED FLOW
-  CHANNEL FLOW
-  POINT OF INTEREST
-  REACH



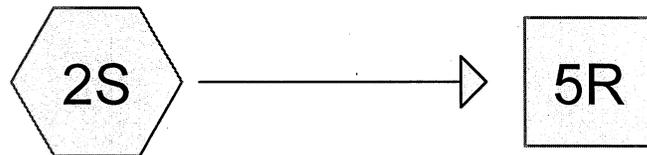
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ATTACHMENT B

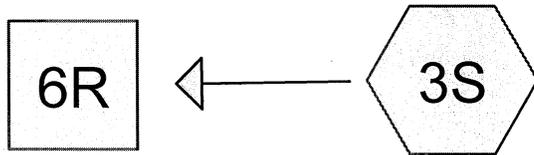
TR-20 CALCULATIONS



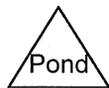
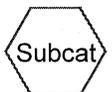
POI 1



POI 2



POI 3



pre 7-8-12

Type III 24-hr 2 YEAR STORM Rainfall=3.00"

Prepared by Gorrill-Palmer Consulting Engineers, Inc

Printed 11/4/2014

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Page 1

Time span=2.00-25.00 hrs, dt=0.01 hrs, 2301 points

Runoff by SCS TR-20 method, UH=SCS

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

**Subcatchment 1S:** Runoff Area=11,320 sf 66.29% Impervious Runoff Depth=2.16"  
Flow Length=160' Tc=4.7 min CN=92 Runoff=0.68 cfs 0.047 af

**Subcatchment 2S:** Runoff Area=23,756 sf 39.38% Impervious Runoff Depth=1.74"  
Flow Length=196' Tc=2.4 min CN=87 Runoff=1.27 cfs 0.079 af

**Subcatchment 3S:** Runoff Area=3,644 sf 71.02% Impervious Runoff Depth=2.25"  
Flow Length=143' Tc=1.4 min CN=93 Runoff=0.25 cfs 0.016 af

**Reach 4R: POI 1** Inflow=0.68 cfs 0.047 af  
Outflow=0.68 cfs 0.047 af

**Reach 5R: POI 2** Inflow=1.27 cfs 0.079 af  
Outflow=1.27 cfs 0.079 af

**Reach 6R: POI 3** Inflow=0.25 cfs 0.016 af  
Outflow=0.25 cfs 0.016 af

**Total Runoff Area = 0.889 ac Runoff Volume = 0.142 af Average Runoff Depth = 1.91"**  
**49.77% Pervious = 0.442 ac 50.23% Impervious = 0.446 ac**

pre 7-8-12

Type III 24-hr 25 YEAR STORM Rainfall=5.10"

Prepared by Gorrill-Palmer Consulting Engineers, Inc

Printed 11/4/2014

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Page 2

Time span=2.00-25.00 hrs, dt=0.01 hrs, 2301 points

Runoff by SCS TR-20 method, UH=SCS

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

**Subcatchment 1S:** Runoff Area=11,320 sf 66.29% Impervious Runoff Depth=4.19"  
Flow Length=160' Tc=4.7 min CN=92 Runoff=1.27 cfs 0.091 af

**Subcatchment 2S:** Runoff Area=23,756 sf 39.38% Impervious Runoff Depth=3.66"  
Flow Length=196' Tc=2.4 min CN=87 Runoff=2.61 cfs 0.166 af

**Subcatchment 3S:** Runoff Area=3,644 sf 71.02% Impervious Runoff Depth=4.30"  
Flow Length=143' Tc=1.4 min CN=93 Runoff=0.47 cfs 0.030 af

**Reach 4R: POI 1** Inflow=1.27 cfs 0.091 af  
Outflow=1.27 cfs 0.091 af

**Reach 5R: POI 2** Inflow=2.61 cfs 0.166 af  
Outflow=2.61 cfs 0.166 af

**Reach 6R: POI 3** Inflow=0.47 cfs 0.030 af  
Outflow=0.47 cfs 0.030 af

**Total Runoff Area = 0.889 ac Runoff Volume = 0.287 af Average Runoff Depth = 3.87"**  
**49.77% Pervious = 0.442 ac 50.23% Impervious = 0.446 ac**

**Summary for Subcatchment 1S:**

Runoff = 1.27 cfs @ 12.07 hrs, Volume= 0.091 af, Depth= 4.19"

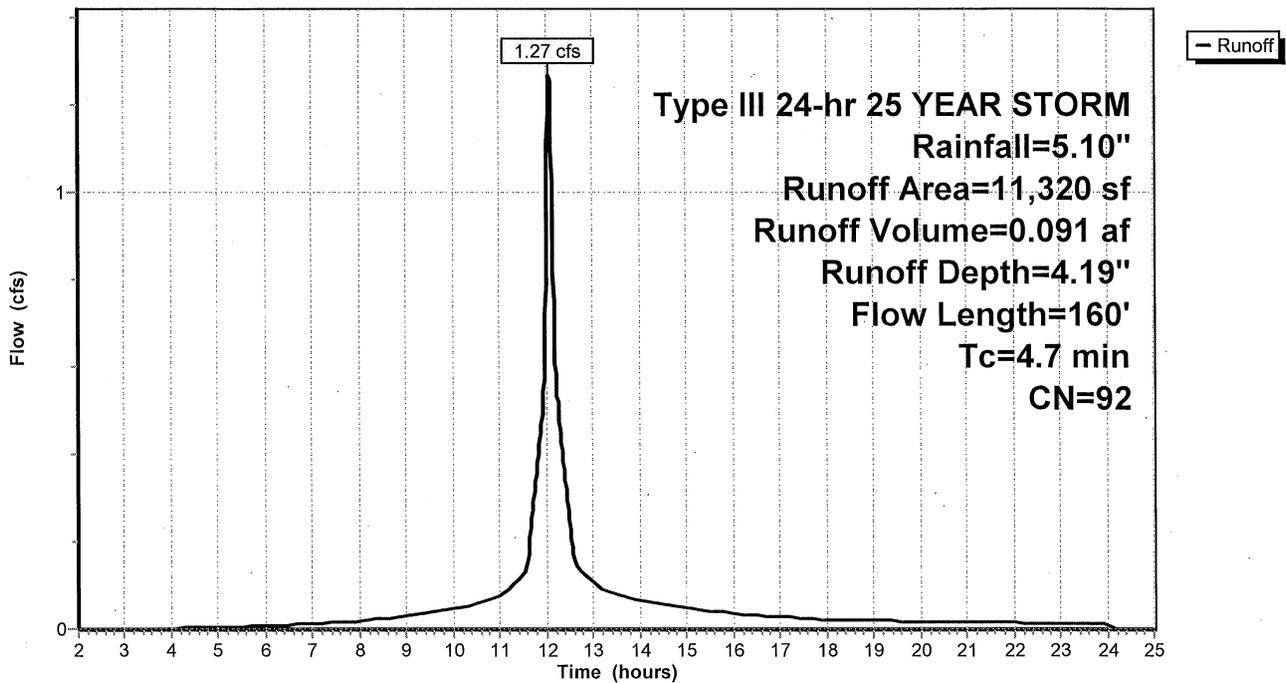
Runoff by SCS TR-20 method, UH=SCS, Time Span= 2.00-25.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25 YEAR STORM Rainfall=5.10"

Area (sf)	CN	Description
7,504	98	Paved parking & roofs
3,816	80	>75% Grass cover, Good, HSG D
11,320	92	Weighted Average
3,816		Pervious Area
7,504		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4	50	0.1000	0.19		Sheet Flow, A-B Grass: Dense n= 0.240 P2= 3.00"
0.3	110	0.1100	6.73		Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
4.7	160	Total			

**Subcatchment 1S:**

Hydrograph



pre 7-8-12

Type III 24-hr 25 YEAR STORM Rainfall=5.10"

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### Summary for Subcatchment 2S:

Runoff = 2.61 cfs @ 12.04 hrs, Volume= 0.166 af, Depth= 3.66"

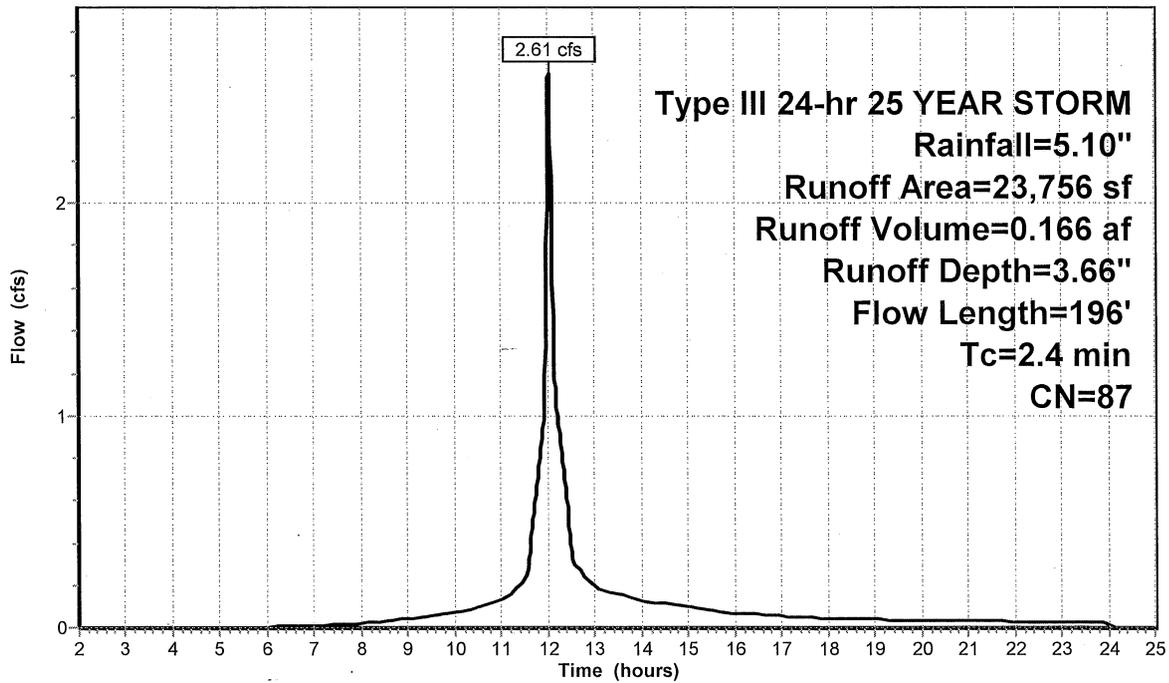
Runoff by SCS TR-20 method, UH=SCS, Time Span= 2.00-25.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25 YEAR STORM Rainfall=5.10"

Area (sf)	CN	Description
9,356	98	Paved parking & roofs
14,400	80	>75% Grass cover, Good, HSG D
23,756	87	Weighted Average
14,400		Pervious Area
9,356		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	16	0.5000	0.28		<b>Sheet Flow, A-B</b> Grass: Dense n= 0.240 P2= 3.00"
1.5	180	0.0170	1.96		<b>Shallow Concentrated Flow, B-C</b> Grassed Waterway Kv= 15.0 fps
2.4	196	Total			

### Subcatchment 2S:

Hydrograph



pre 7-8-12

Type III 24-hr 25 YEAR STORM Rainfall=5.10"

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### Summary for Subcatchment 3S:

Runoff = 0.47 cfs @ 12.02 hrs, Volume= 0.030 af, Depth= 4.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 2.00-25.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25 YEAR STORM Rainfall=5.10"

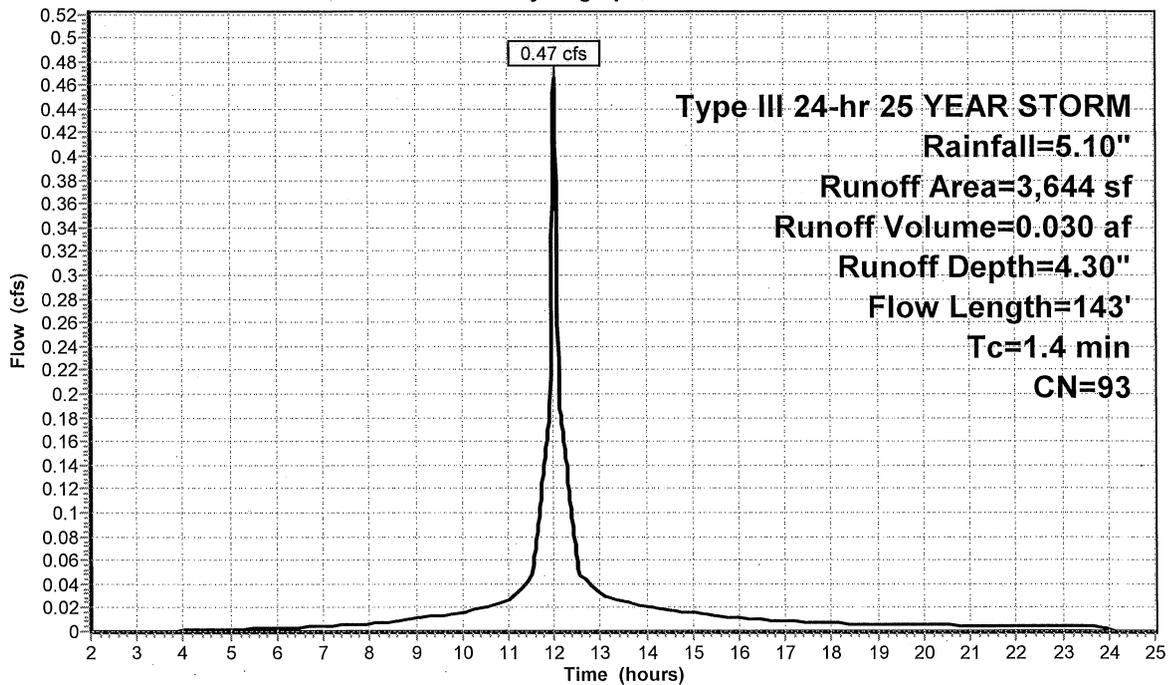
Area (sf)	CN	Description
2,588	98	Paved parking & roofs
1,056	80	>75% Grass cover, Good, HSG D
3,644	93	Weighted Average
1,056		Pervious Area
2,588		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	8	0.3000	0.20		<b>Sheet Flow, A-B</b> Grass: Dense n= 0.240 P2= 3.00"
0.7	135	0.0250	3.21		<b>Shallow Concentrated Flow, B-C</b> Paved Kv= 20.3 fps
1.4	143	Total			

### Subcatchment 3S:

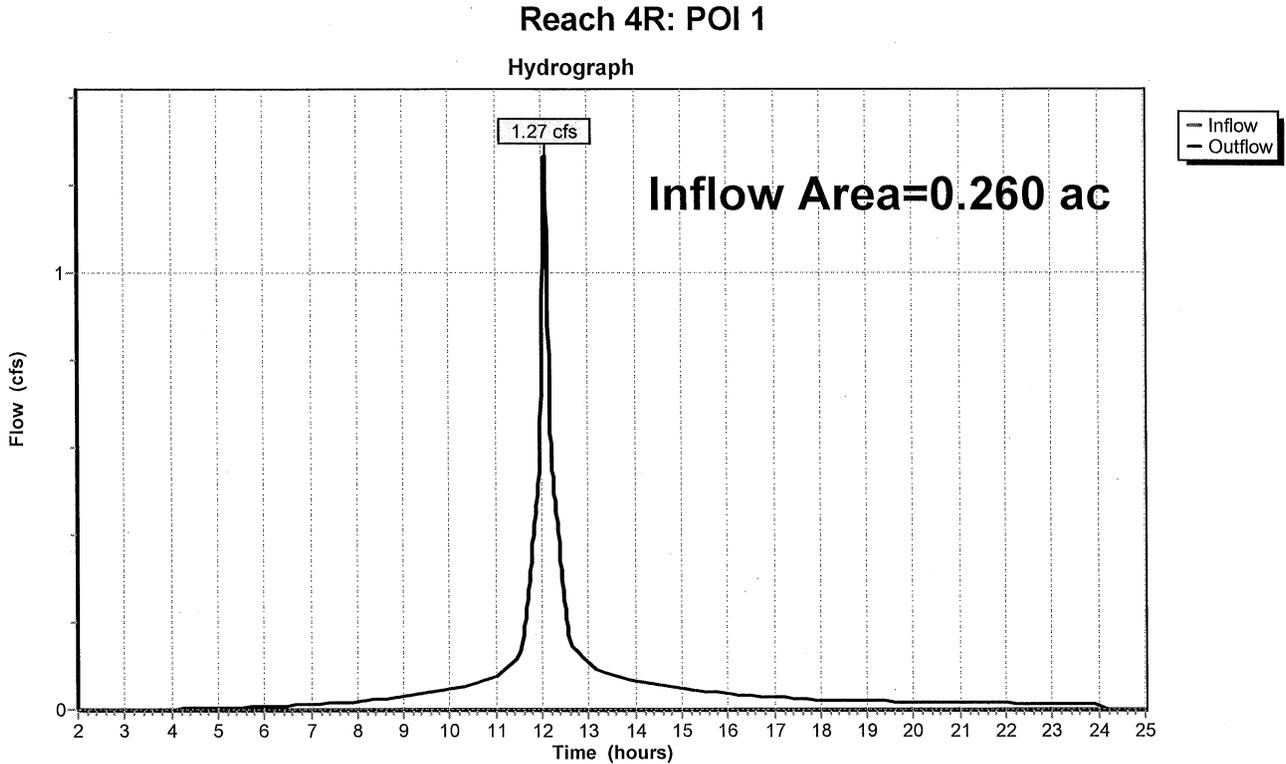
Hydrograph



### Summary for Reach 4R: POI 1

Inflow Area = 0.260 ac, 66.29% Impervious, Inflow Depth = 4.19" for 25 YEAR STORM event  
Inflow = 1.27 cfs @ 12.07 hrs, Volume= 0.091 af  
Outflow = 1.27 cfs @ 12.07 hrs, Volume= 0.091 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-25.00 hrs, dt= 0.01 hrs



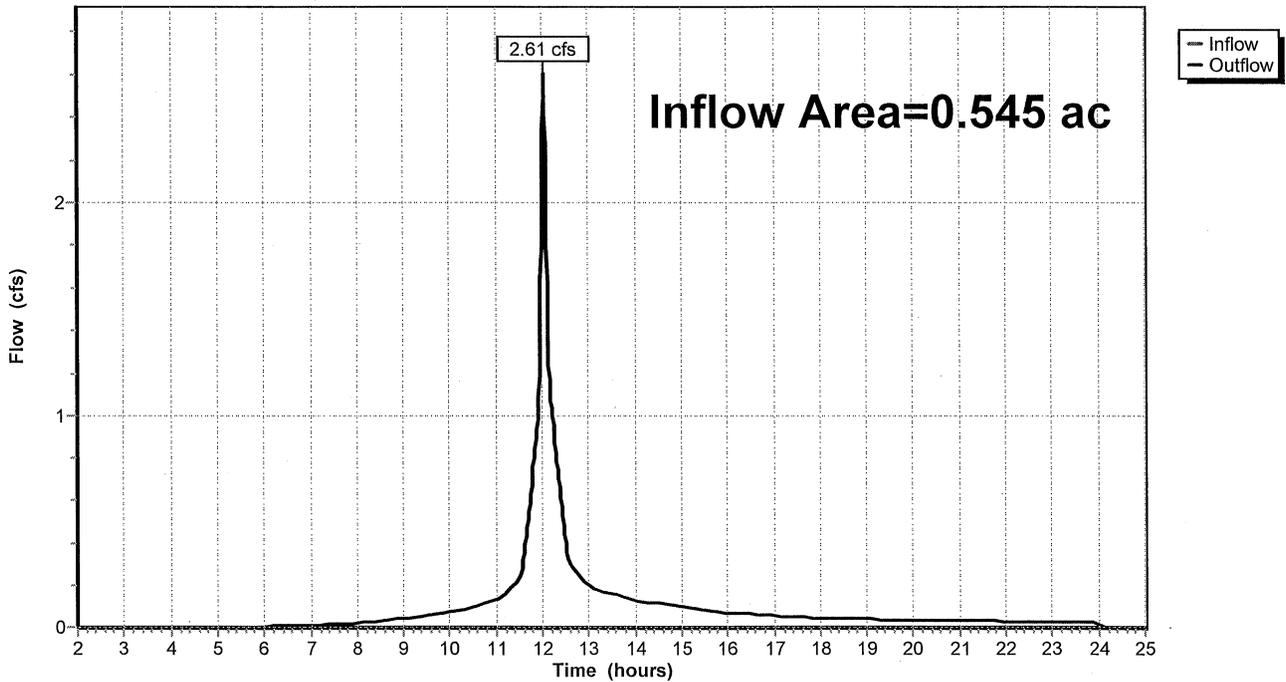
### Summary for Reach 5R: POI 2

Inflow Area = 0.545 ac, 39.38% Impervious, Inflow Depth = 3.66" for 25 YEAR STORM event  
Inflow = 2.61 cfs @ 12.04 hrs, Volume= 0.166 af  
Outflow = 2.61 cfs @ 12.04 hrs, Volume= 0.166 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 2.00-25.00 hrs, dt= 0.01 hrs

### Reach 5R: POI 2

Hydrograph



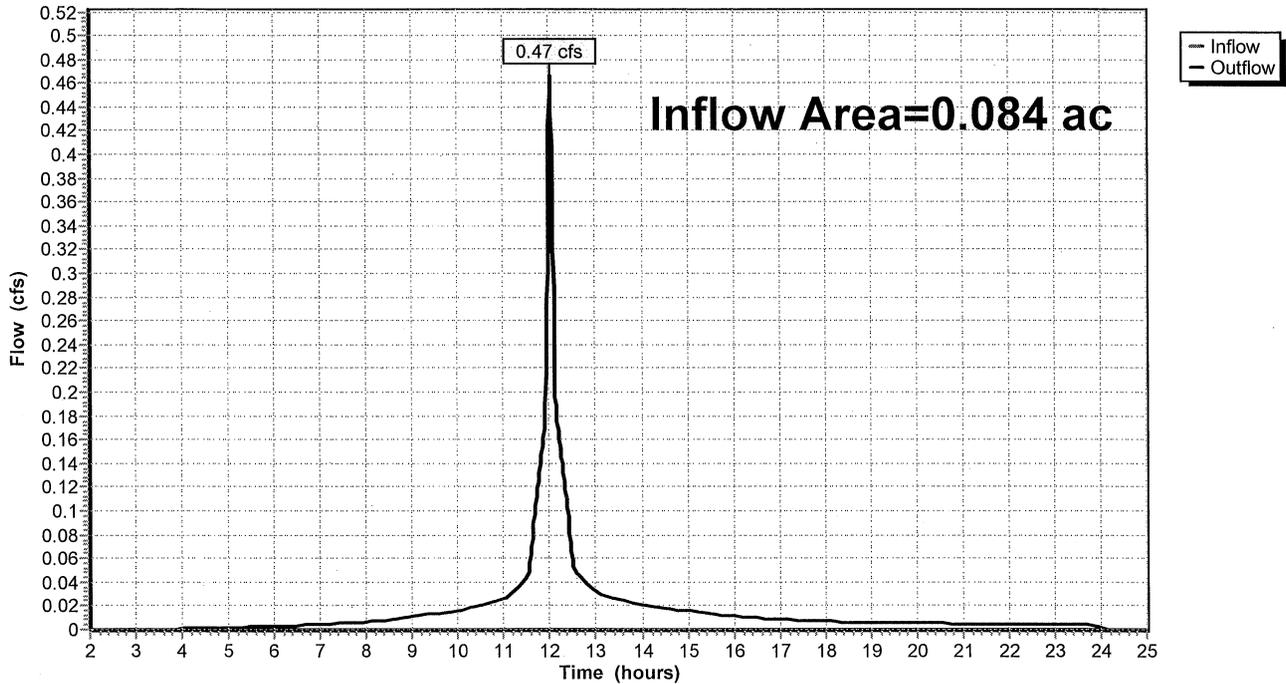
### Summary for Reach 6R: POI 3

Inflow Area = 0.084 ac, 71.02% Impervious, Inflow Depth = 4.30" for 25 YEAR STORM event  
Inflow = 0.47 cfs @ 12.02 hrs, Volume= 0.030 af  
Outflow = 0.47 cfs @ 12.02 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min

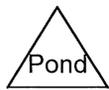
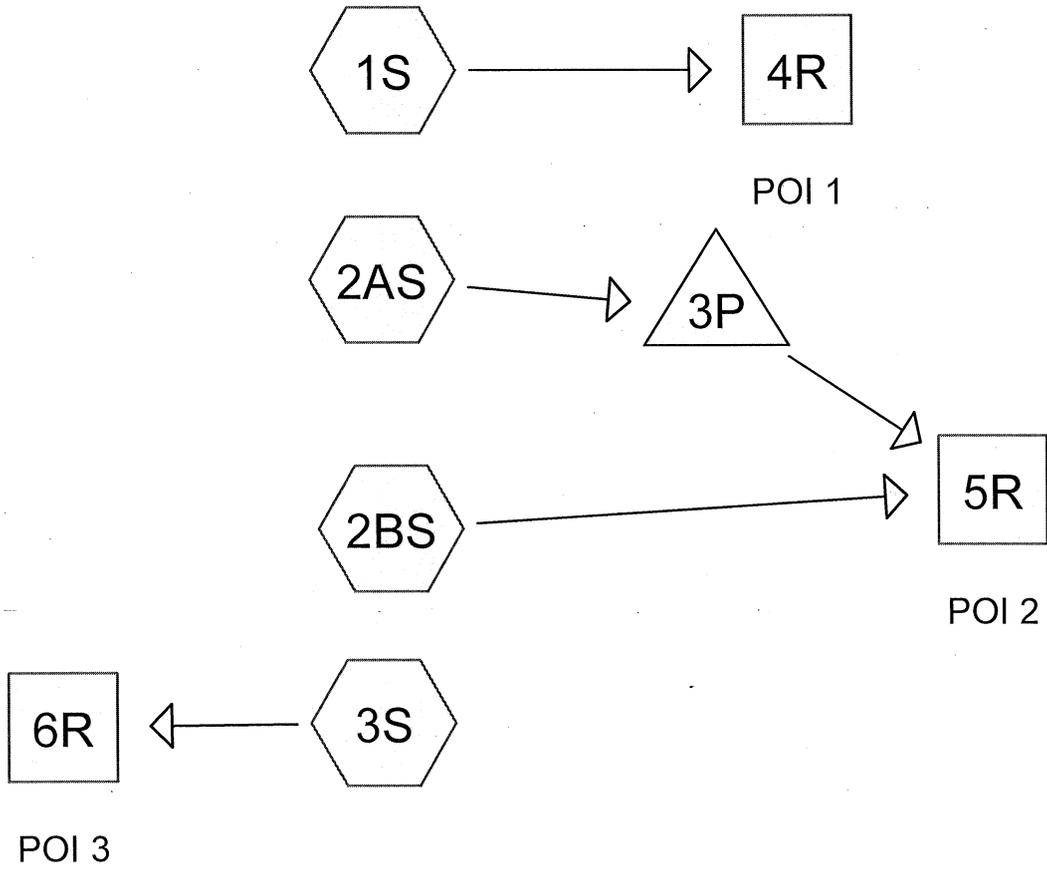
Routing by Stor-Ind+Trans method, Time Span= 2.00-25.00 hrs, dt= 0.01 hrs

### Reach 6R: POI 3

Hydrograph







post 7-8-12

Type III 24-hr 2 YEAR STORM Rainfall=3.00"

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Time span=0.00-40.00 hrs, dt=0.01 hrs, 4001 points

Runoff by SCS TR-20 method, UH=SCS

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

<b>Subcatchment 1S:</b>	Runoff Area=6,364 sf 89.20% Impervious Runoff Depth=2.55" Flow Length=160' Tc=4.7 min CN=96 Runoff=0.43 cfs 1,353 cf
<b>Subcatchment 2AS:</b>	Runoff Area=24,980 sf 94.08% Impervious Runoff Depth=2.66" Flow Length=173' Tc=1.6 min CN=97 Runoff=1.92 cfs 5,534 cf
<b>Subcatchment 2BS:</b>	Runoff Area=6,904 sf 58.81% Impervious Runoff Depth=2.07" Flow Length=144' Tc=1.3 min CN=91 Runoff=0.45 cfs 1,192 cf
<b>Subcatchment 3S:</b>	Runoff Area=472 sf 27.97% Impervious Runoff Depth=1.59" Flow Length=32' Tc=2.3 min CN=85 Runoff=0.02 cfs 62 cf
<b>Reach 4R: POI 1</b>	Inflow=0.43 cfs 1,353 cf Outflow=0.43 cfs 1,353 cf
<b>Reach 5R: POI 2</b>	Inflow=1.27 cfs 6,725 cf Outflow=1.27 cfs 6,725 cf
<b>Reach 6R: POI 3</b>	Inflow=0.02 cfs 62 cf Outflow=0.02 cfs 62 cf
<b>Pond 3P:</b>	Peak Elev=108.16' Storage=672 cf Inflow=1.92 cfs 5,534 cf Outflow=0.95 cfs 5,534 cf

**Total Runoff Area = 38,720 sf Runoff Volume = 8,141 cf Average Runoff Depth = 2.52"**  
**13.82% Pervious = 5,351 sf 86.18% Impervious = 33,369 sf**

Time span=0.00-40.00 hrs, dt=0.01 hrs, 4001 points

Runoff by SCS TR-20 method, UH=SCS

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

Subcatchment 1S: Runoff Area=6,364 sf 89.20% Impervious Runoff Depth=4.63"  
Flow Length=160' Tc=4.7 min CN=96 Runoff=0.75 cfs 2,456 cf

Subcatchment 2AS: Runoff Area=24,980 sf 94.08% Impervious Runoff Depth=4.75"  
Flow Length=173' Tc=1.6 min CN=97 Runoff=3.33 cfs 9,881 cf

Subcatchment 2BS: Runoff Area=6,904 sf 58.81% Impervious Runoff Depth=4.08"  
Flow Length=144' Tc=1.3 min CN=91 Runoff=0.86 cfs 2,347 cf

Subcatchment 3S: Runoff Area=472 sf 27.97% Impervious Runoff Depth=3.46"  
Flow Length=32' Tc=2.3 min CN=85 Runoff=0.05 cfs 136 cf

Reach 4R: POI 1 Inflow=0.75 cfs 2,456 cf  
Outflow=0.75 cfs 2,456 cf

Reach 5R: POI 2 Inflow=2.60 cfs 12,228 cf  
Outflow=2.60 cfs 12,228 cf

Reach 6R: POI 3 Inflow=0.05 cfs 136 cf  
Outflow=0.05 cfs 136 cf

Pond 3P: Peak Elev=109.78' Storage=1,223 cf Inflow=3.33 cfs 9,881 cf  
Outflow=2.02 cfs 9,881 cf

Total Runoff Area = 38,720 sf Runoff Volume = 14,821 cf Average Runoff Depth = 4.59"  
13.82% Pervious = 5,351 sf 86.18% Impervious = 33,369 sf

post 7-8-12

Type III 24-hr 25 YEAR STORM Rainfall=5.10"

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### Summary for Subcatchment 1S:

Runoff = 0.75 cfs @ 12.07 hrs, Volume= 2,456 cf, Depth= 4.63"

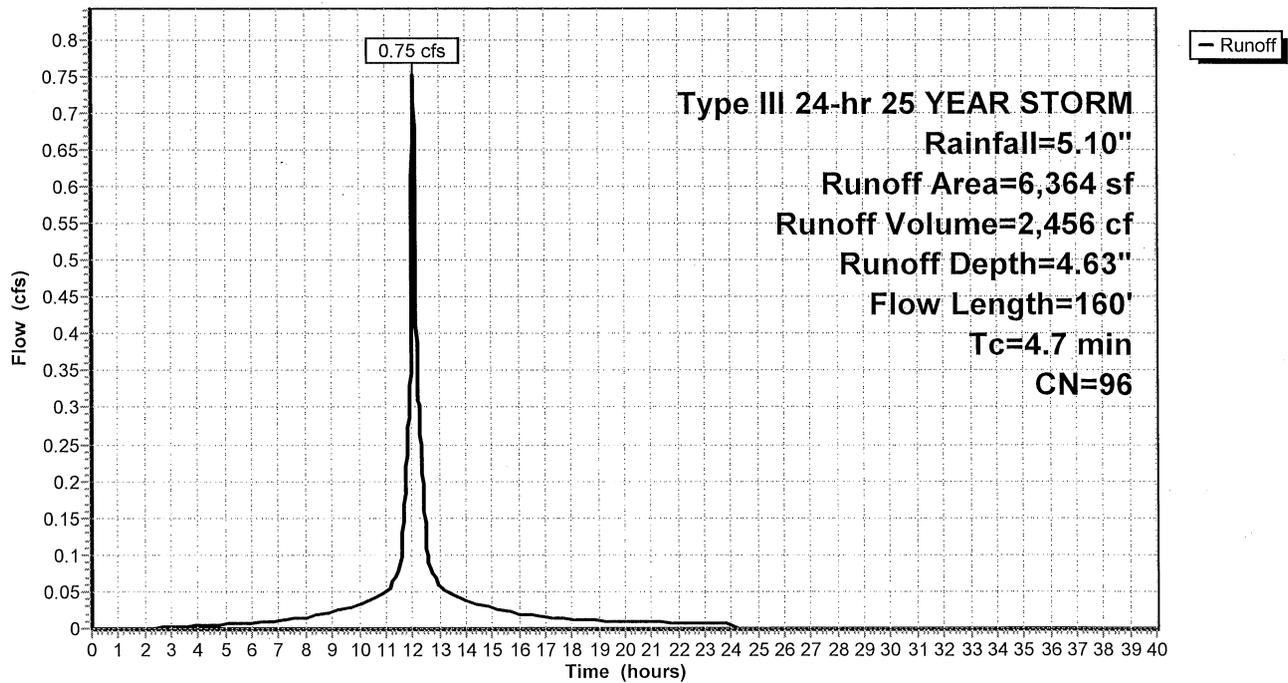
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-40.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25 YEAR STORM Rainfall=5.10"

Area (sf)	CN	Description
5,677	98	Paved parking & roofs
687	80	>75% Grass cover, Good, HSG D
6,364	96	Weighted Average
687		Pervious Area
5,677		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4	50	0.1000	0.19		<b>Sheet Flow, A-B</b> Grass: Dense n= 0.240 P2= 3.00"
0.3	110	0.1100	6.73		<b>Shallow Concentrated Flow, B-C</b> Paved Kv= 20.3 fps
4.7	160	Total			

### Subcatchment 1S:

Hydrograph



**Summary for Subcatchment 2AS:**

Runoff = 3.33 cfs @ 12.02 hrs, Volume= 9,881 cf, Depth= 4.75"

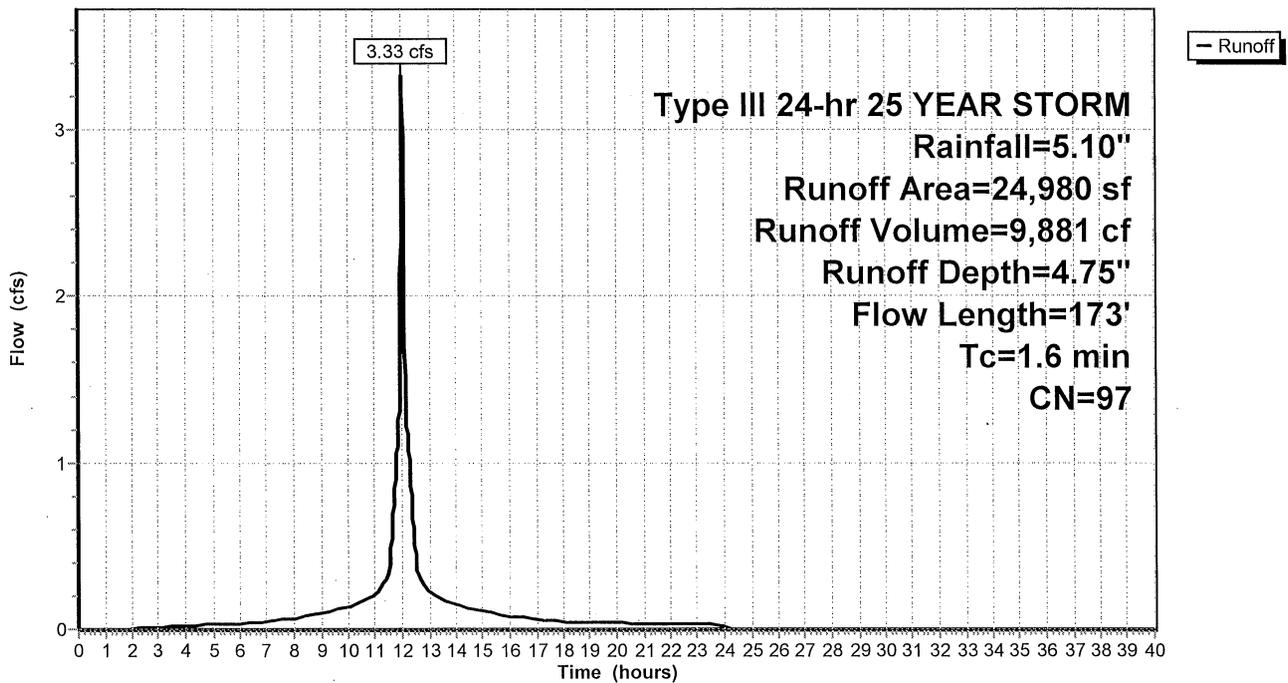
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-40.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25 YEAR STORM Rainfall=5.10"

Area (sf)	CN	Description
23,500	98	Paved parking & roofs
1,480	80	>75% Grass cover, Good, HSG D
24,980	97	Weighted Average
1,480		Pervious Area
23,500		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	63	0.0400	1.60		<b>Sheet Flow, A-B</b> Smooth surfaces n= 0.011 P2= 3.00"
0.9	110	0.0110	2.13		<b>Shallow Concentrated Flow, B-C</b> Paved Kv= 20.3 fps
1.6	173	Total			

**Subcatchment 2AS:**

Hydrograph



**Summary for Subcatchment 2BS:**

Runoff = 0.86 cfs @ 12.02 hrs, Volume= 2,347 cf, Depth= 4.08"

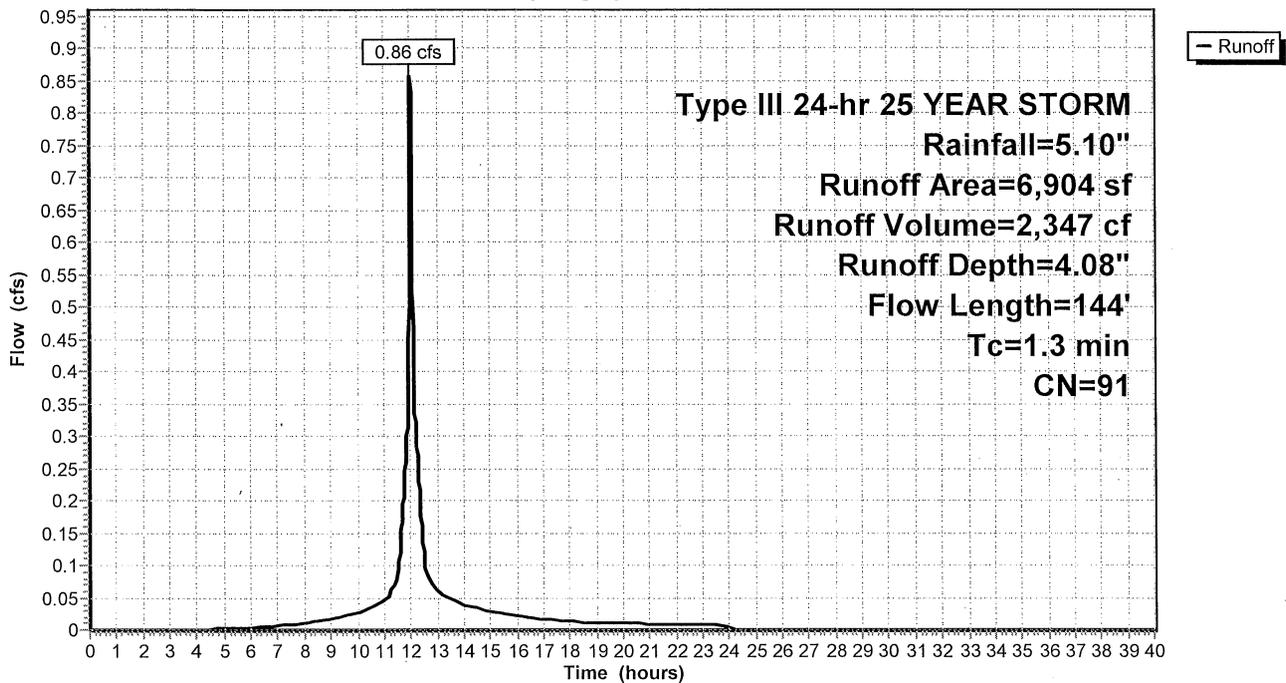
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-40.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25 YEAR STORM Rainfall=5.10"

Area (sf)	CN	Description
4,060	98	Paved parking & roofs
2,844	80	>75% Grass cover, Good, HSG D
6,904	91	Weighted Average
2,844		Pervious Area
4,060		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	7	0.1600	0.15		<b>Sheet Flow, A-B</b> Grass: Dense n= 0.240 P2= 3.00"
0.5	137	0.0580	4.89		<b>Shallow Concentrated Flow, B-C</b> Paved Kv= 20.3 fps
1.3	144	Total			

**Subcatchment 2BS:**

Hydrograph



post 7-8-12

Type III 24-hr 25 YEAR STORM Rainfall=5.10"

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### Summary for Subcatchment 3S:

Runoff = 0.05 cfs @ 12.03 hrs, Volume= 136 cf, Depth= 3.46"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-40.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25 YEAR STORM Rainfall=5.10"

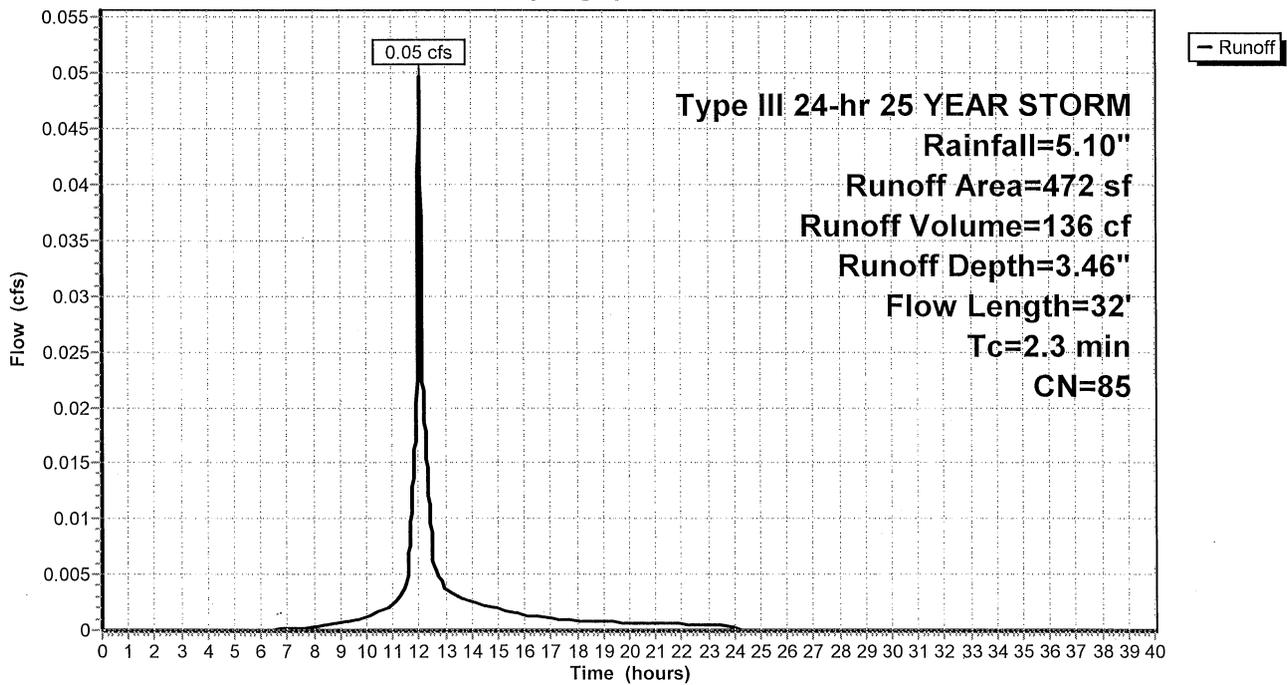
Area (sf)	CN	Description
132	98	Paved parking & roofs
340	80	>75% Grass cover, Good, HSG D
472	85	Weighted Average
340		Pervious Area
132		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	16	0.0625	0.12		<b>Sheet Flow, A-B</b> Grass: Dense n= 0.240 P2= 3.00"
0.1	16	0.0250	3.21		<b>Shallow Concentrated Flow, B-C</b> Paved Kv= 20.3 fps
2.3	32	Total			

### Subcatchment 3S:

Hydrograph



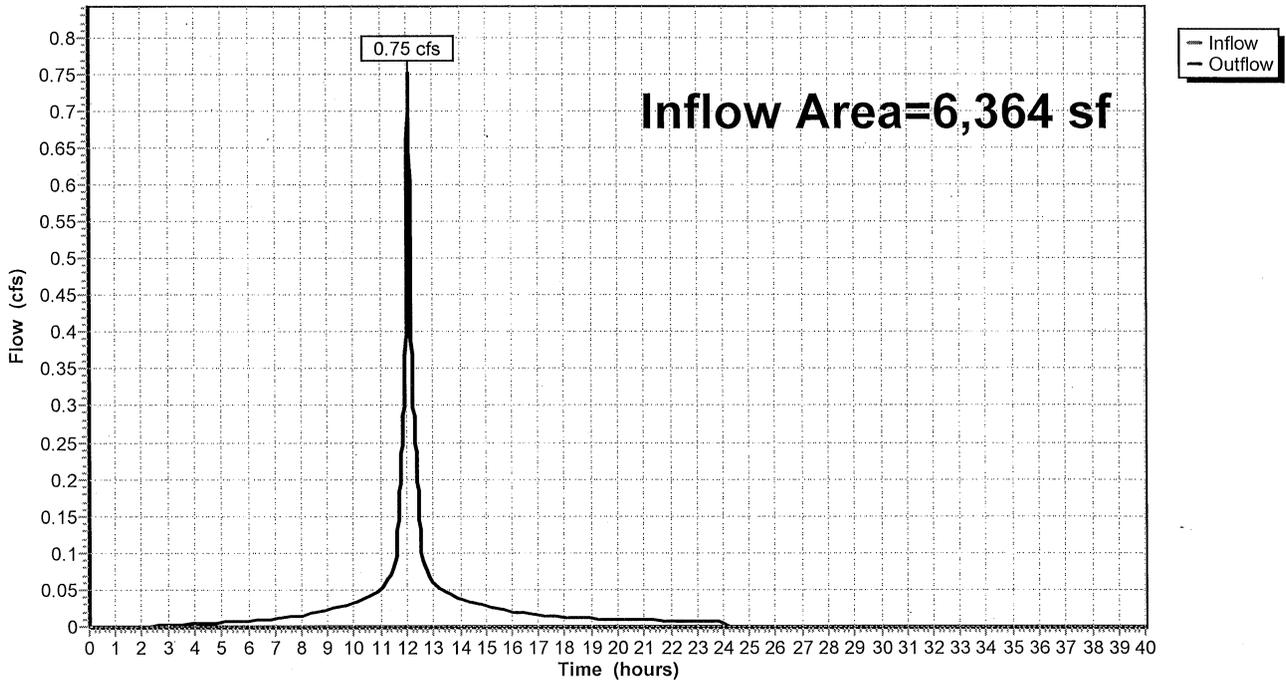
### Summary for Reach 4R: POI 1

Inflow Area = 6,364 sf, 89.20% Impervious, Inflow Depth = 4.63" for 25 YEAR STORM event  
Inflow = 0.75 cfs @ 12.07 hrs, Volume= 2,456 cf  
Outflow = 0.75 cfs @ 12.07 hrs, Volume= 2,456 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-40.00 hrs, dt= 0.01 hrs

### Reach 4R: POI 1

Hydrograph



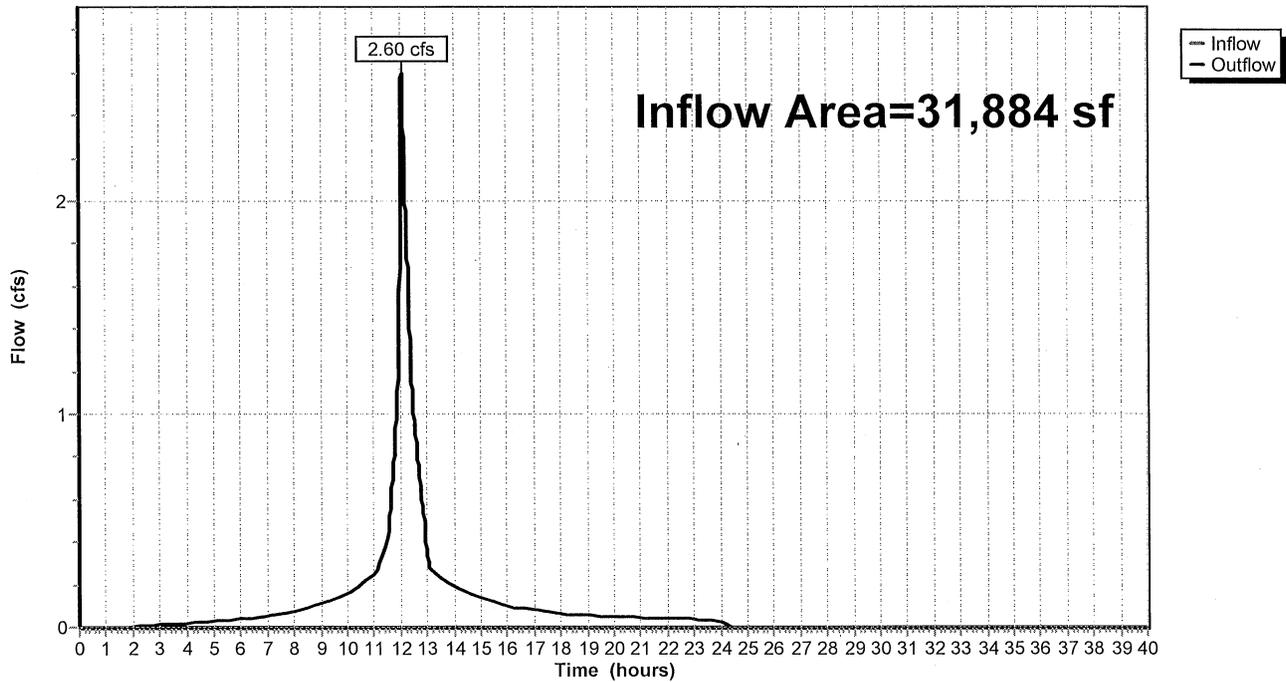
### Summary for Reach 5R: POI 2

Inflow Area = 31,884 sf, 86.44% Impervious, Inflow Depth = 4.60" for 25 YEAR STORM event  
Inflow = 2.60 cfs @ 12.06 hrs, Volume= 12,228 cf  
Outflow = 2.60 cfs @ 12.06 hrs, Volume= 12,228 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-40.00 hrs, dt= 0.01 hrs

### Reach 5R: POI 2

Hydrograph



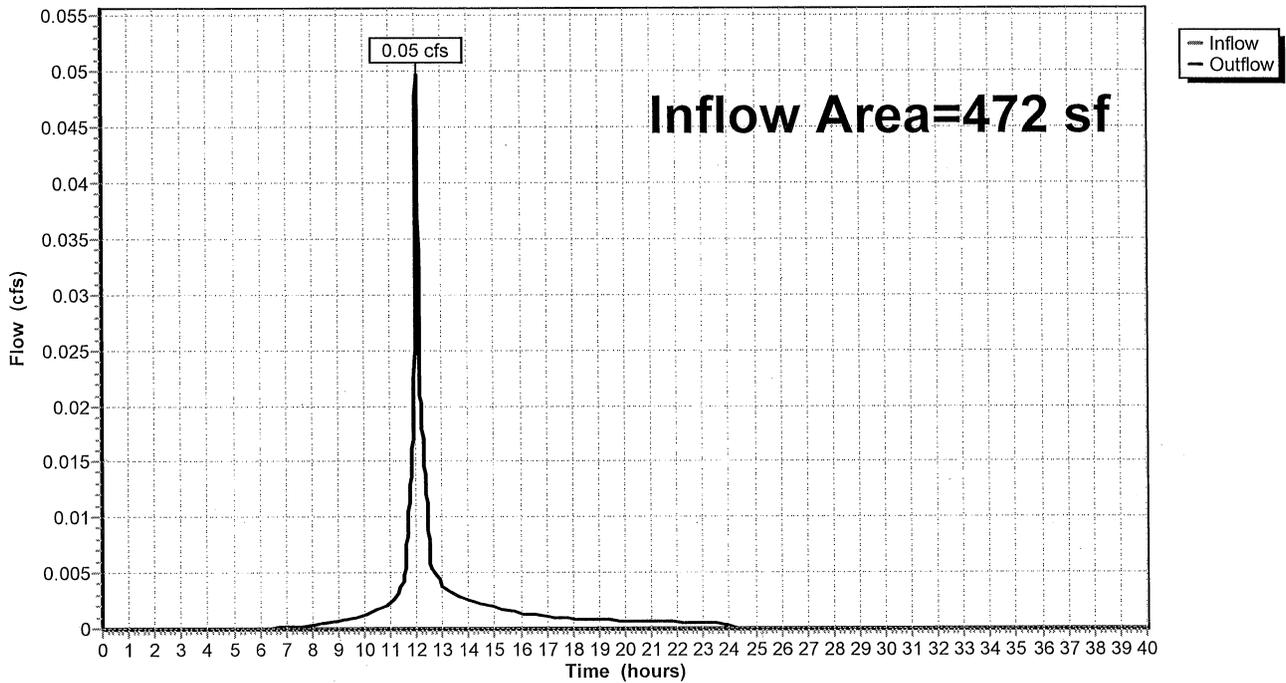
### Summary for Reach 6R: POI 3

Inflow Area = 472 sf, 27.97% Impervious, Inflow Depth = 3.46" for 25 YEAR STORM event  
Inflow = 0.05 cfs @ 12.03 hrs, Volume= 136 cf  
Outflow = 0.05 cfs @ 12.03 hrs, Volume= 136 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-40.00 hrs, dt= 0.01 hrs

### Reach 6R: POI 3

Hydrograph



**Summary for Pond 3P:**

Inflow Area = 24,980 sf, 94.08% Impervious, Inflow Depth = 4.75" for 25 YEAR STORM event  
 Inflow = 3.33 cfs @ 12.02 hrs, Volume= 9,881 cf  
 Outflow = 2.02 cfs @ 12.10 hrs, Volume= 9,881 cf, Atten= 39%, Lag= 4.3 min  
 Primary = 2.02 cfs @ 12.10 hrs, Volume= 9,881 cf

Routing by Stor-Ind method, Time Span= 0.00-40.00 hrs, dt= 0.01 hrs  
 Peak Elev= 109.78' @ 12.10 hrs Surf.Area= 575 sf Storage= 1,223 cf

Plug-Flow detention time= 9.0 min calculated for 9,881 cf (100% of inflow)  
 Center-of-Mass det. time= 8.9 min ( 760.1 - 751.3 )

Volume	Invert	Avail.Storage	Storage Description
#1	106.50'	493 cf	4.75'W x 7.12'L x 3.50'H Prismaoid x 17 2,012 cf Overall - 781 cf Embedded = 1,231 cf x 40.0% Voids
#2	107.00'	781 cf	44.6"W x 30.0"H x 7.12'L StormTech SC-740 x 17 Inside #1
		1,274 cf	Total Available Storage

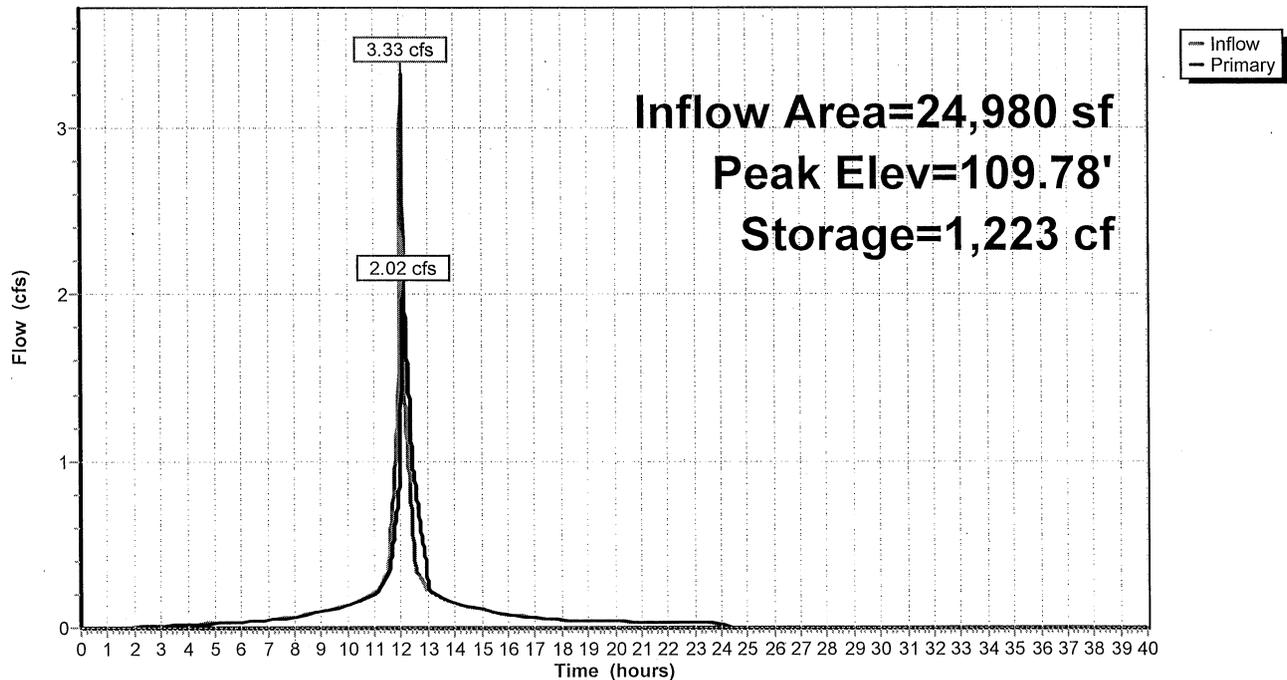
Device	Routing	Invert	Outlet Devices
#1	Primary	106.50'	5.5" Vert. Orifice/Grate C= 0.600
#2	Primary	108.20'	4.5" Vert. Orifice/Grate C= 0.600

**Primary OutFlow** Max=2.01 cfs @ 12.10 hrs HW=109.78' (Free Discharge)

- 1=Orifice/Grate (Orifice Controls 1.39 cfs @ 8.41 fps)
- 2=Orifice/Grate (Orifice Controls 0.63 cfs @ 5.68 fps)

**Pond 3P:**

Hydrograph



ATTACHMENT C

STORMWATER MAINTENANCE LOG

## STORMWATER INSPECTION LOG

### **Inspection and Maintenance Frequency and Corrective Measures:**

The following areas, facilities, and measures will be inspected and the identified deficiencies will be corrected. Clean-out must include the removal and legal disposal of any accumulated sediments and debris.

### **Catch Basins:**

Inspect catch basins 2 times per year (preferably in Spring and Fall) to ensure that the catch basins are working in their intended fashion and that they are free of debris. Clean structures when sediment depths reach 12" from invert of outlet. If the basin outlet is designed with a hood to trap floatable materials (i.e. Snout), check to ensure watertight seal is working. At a minimum, remove floating debris and hydrocarbons at the time of the inspection.

### **Subsurface detention chambers:**

Inspect chambers per manufacturer's recommendation. At a minimum inspect chambers 2 times per year (preferably in Spring and Fall) to ensure that the structures are working in their intended fashion and that they are free of debris. Remove sediment from Isolator row when depth of sediment reaches 3 inches.

### **Vegetated Areas:**

Inspect slopes and embankments early in the growing season to identify active or potential erosion problems. Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows. The facilities will be inspected after major storms and any identified deficiencies will be corrected.

### **Ditches, Swales and other Open Stormwater Channels:**

Inspect 2 times per year (preferably in Spring and Fall) to ensure they are working in their intended fashion and that they are free of sediment and debris. Remove any obstructions to flow, including accumulated sediments and debris and vegetated growth. Repair any erosion of the ditch lining. Vegetated ditches will be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity. Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable. If the ditch has a riprap lining, replace riprap on areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged. Correct any erosion of the channel's bottom or sideslopes. The facilities will be inspected after major storms and any identified deficiencies will be corrected.

**Roadways and Parking Surfaces:** Clear accumulations of winter sand in parking lots and along roadways at least once a year, preferably in the spring. Accumulations on pavement may be removed by pavement sweeping. Accumulations of sand along road shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader. Repair potholes and other roadway obstructions and hazards. Plowing and sanding of paved areas shall be performed as necessary to maintain vehicular traffic safety.

**Perham Street Parking Lot  
Inspection Worksheet**

Personnel:  
Date:

Structure	Condition	Depth of Sediment	Inspection Comments	Maintenance Required
CB1				
CB2				
CB3				
CB4				
DMH1				
DMH2				
SWALES VEGETATED AREAS ROADWAYS / PARKING SUBSURFACE CHAMBERS				

# Section K

## EROSION AND SEDIMENTATION CONTROL

### **14.1 Overview**

Chapter 500, Stormwater management, requires that applications for approval demonstrate that the developer has made adequate provision for controlling erosion and sedimentation.

### **14.2 Introduction**

Gorrill-Palmer Consulting Engineers, Inc., with PDT Architects and Terrence J. DeWan Landscape Architects, has been retained by the Administrative Office of the Courts for the State of Maine to prepare plans and permit applications for a parking lot located at Perham, Street in Augusta, Maine. The proposed parking lot contains 92 parking spaces. The proposed construction will occur on four lots which have been previously developed and on Perham Street. Figure 1 is a map showing the project location. The developer is currently seeking Site Plan Approval from the City of Augusta and a Stormwater Management Permit modification from the Maine Department of Environmental Protection for the proposed development. This narrative contains the constructability, planning and erosion control measures appropriate for the site.

### **14.3 Narrative**

#### **14.3.1 Existing Conditions and Soil Types**

The proposed site is in the City of Augusta in the proximity of Perham Street. The site is identified on the City Tax Map 33, Lots 230, 231, 232, and 233. The parking lot is proposed to be constructed on the four lots and the section of Perham Street abutting the lots. The lots are developed with residential housing and driveways. The existing developed area will be demolished and replaced by the proposed parking lot. Abutting uses to the sites include an existing courthouse and jail.

The proposed developed area slopes to the east with slopes ranging from 3% in Perham Street to 50% at the rear of the residential lots.

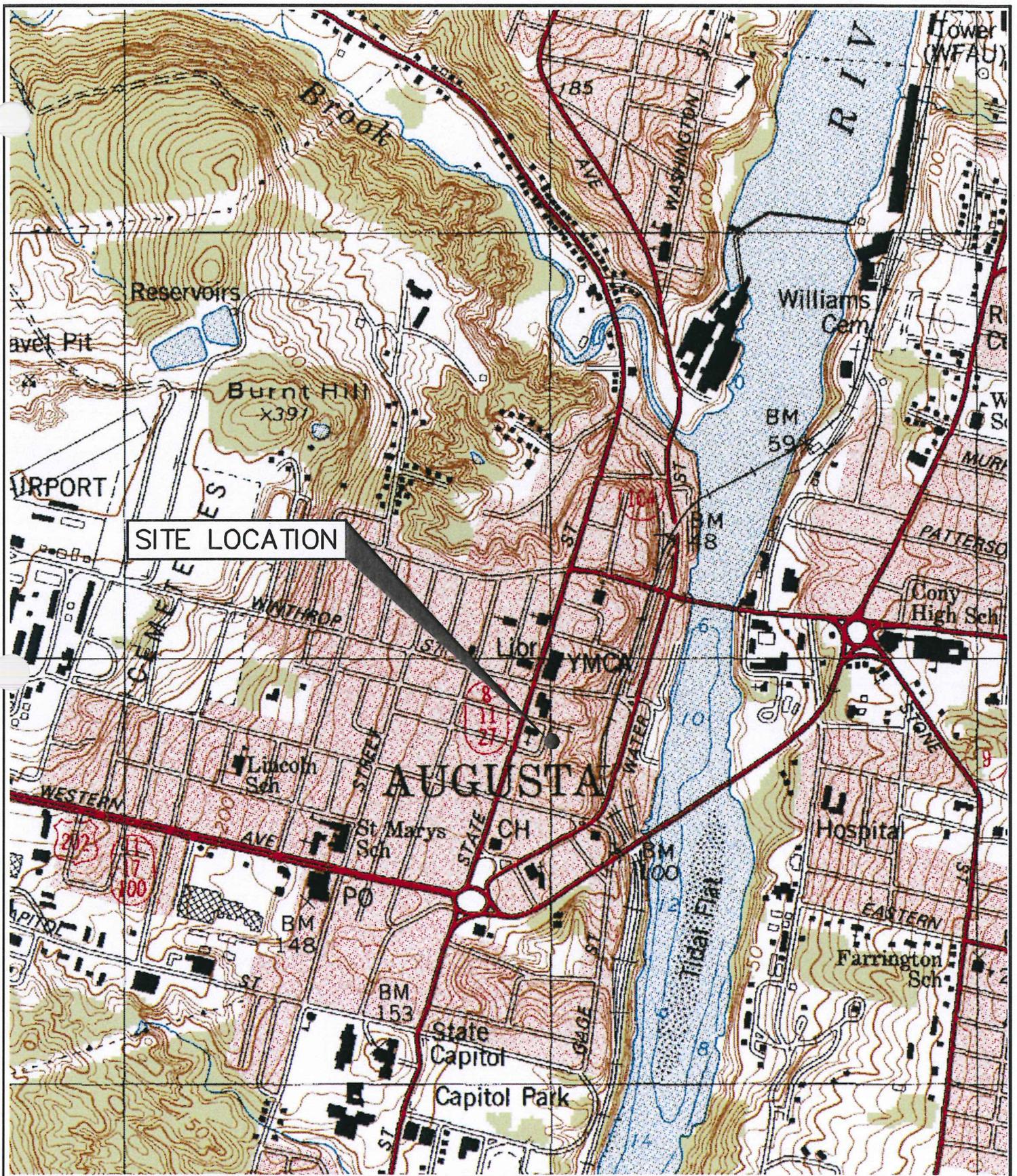
A medium intensity soil map from the Natural Resources Conservation Service delineates the onsite soils and follows this page. The susceptibility of soils to erosion is indicated on a relative "K" scale of values over a range of 0.02 to 0.69, where higher values are indicative of more erodible soils. The following table lists the soils found on site and their K values:

K VALUE		
Type	Subsurface	Substratum
Buxton	0.49	0.49

Based on a review of the K Values, the on-site soils have a moderate susceptibility to erosion.

#### **14.3.2 Existing Erosion Problems**

Gorrill-Palmer Consulting Engineers, Inc. is not aware of any existing erosion problems on the project site.



U.S.G.S. Location Map  
 Augusta Parking Lot - Augusta, Maine  
 U.S.G.S. Augusta, Maine -7.5 Minute Series (Topographic)

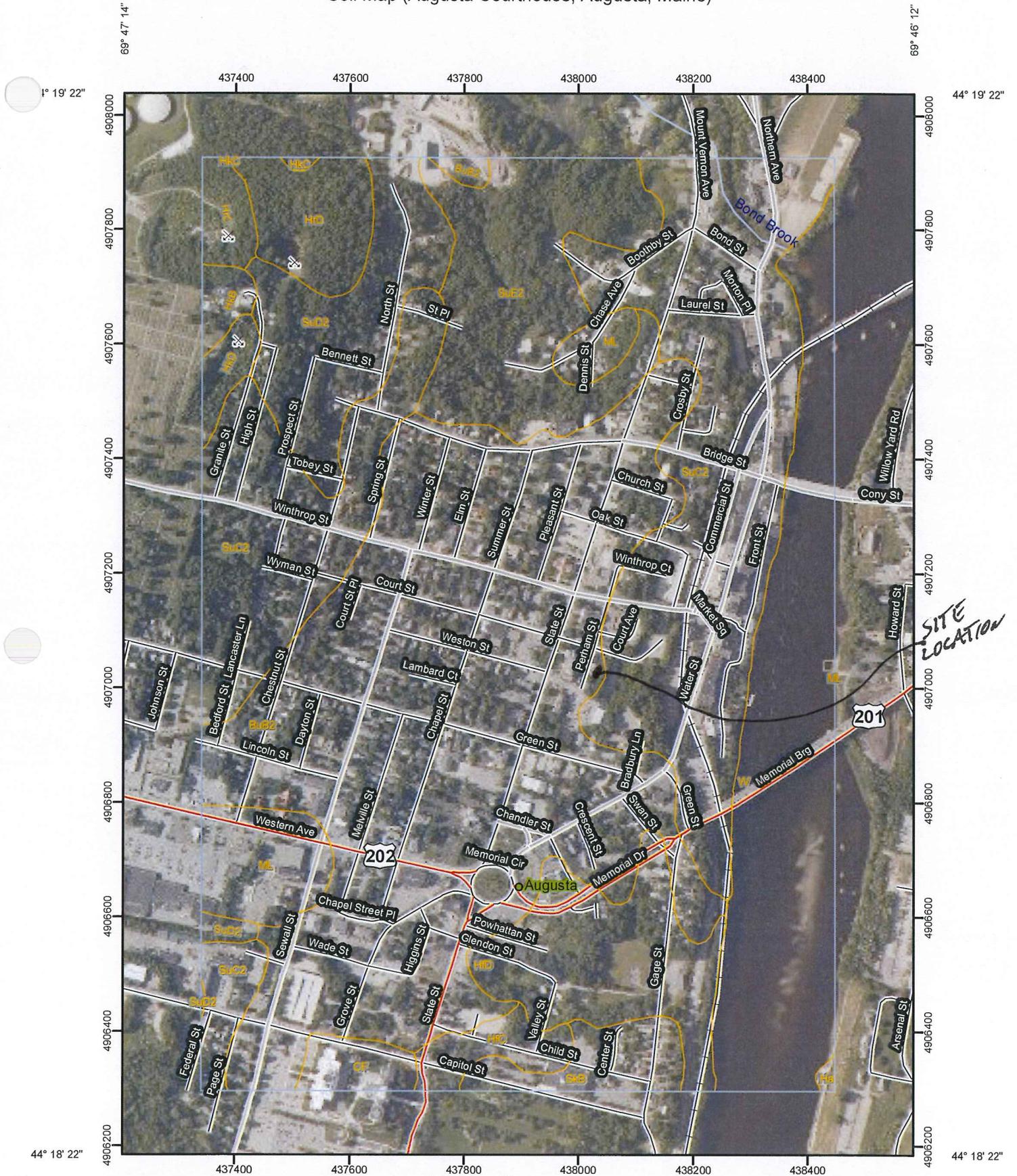
Design: JWA	Date: JULY 2014
Draft: CG	Job No.: 2569.01
Checked: DER	Scale: None
File Name: 2569-01-LOCATION.dwg	

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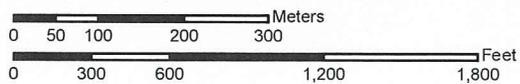
# Custom Soil Resource Report

## Soil Map (Augusta Courthouse, Augusta, Maine)



*SITE LOCATION*

Map Scale: 1:8,850 if printed on A size (8.5" x 11") sheet.



69° 47' 14"

69° 46' 12"

44° 18' 22"

44° 18' 22"

## MAP LEGEND

 Area of Interest (AOI)	 Very Stony Spot
 Soils	 Wet Spot
	 Other
	<b>Special Line Features</b>
 Blowout	 Gully
 Borrow Pit	 Short Steep Slope
 Clay Spot	 Other
 Closed Depression	<b>Political Features</b>
 Gravel Pit	 Cities
 Gravelly Spot	<b>Water Features</b>
 Landfill	 Streams and Canals
 Lava Flow	<b>Transportation</b>
 Marsh or swamp	 Rails
 Mine or Quarry	 Interstate Highways
 Miscellaneous Water	 US Routes
 Perennial Water	 Major Roads
 Rock Outcrop	 Local Roads
 Saline Spot	
 Sandy Spot	
 Severely Eroded Spot	
 Sinkhole	
 Slide or Slip	
 Sodic Spot	
 Spoil Area	
 Stony Spot	

## MAP INFORMATION

Map Scale: 1:8,850 if printed on A size (8.5" x 11") sheet.  
 The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

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

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
 Coordinate System: UTM Zone 19N NAD83

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

Soil Survey Area: Kennebec County, Maine  
 Survey Area Data: Version 11, Jul 27, 2009

Date(s) aerial images were photographed: Data not available.

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

## Map Unit Legend (Augusta Courthouse, Augusta, Maine)

Kennebec County, Maine (ME011)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BuB2	Buxton silt loam, 3 to 8 percent slopes, eroded	150.3	33.7%
CF	Cut and fill land	4.3	1.0%
Ha	Hadley silt loam	0.4	0.1%
HfC	Hartland very fine sandy loam, 8 to 15 percent slopes	5.4	1.2%
HfD	Hartland very fine sandy loam, 15 to 25 percent slopes	23.9	5.4%
HkB	Hinckley gravelly sandy loam, 3 to 8 percent slopes	2.5	0.6%
HkC	Hinckley gravelly sandy loam, 8 to 15 percent slopes	0.3	0.1%
HkD	Hinckley gravelly sandy loam, 15 to 30 percent slopes	2.9	0.7%
HrC	Hollis fine sandy loam, 8 to 15 percent slopes	3.8	0.8%
HrD	Hollis fine sandy loam, 15 to 25 percent slopes	10.8	2.4%
ML	Made land	13.4	3.0%
SkB	Scio very fine sandy loam, 3 to 8 percent slopes	7.9	1.8%
SuC2	Suffield silt loam, 8 to 15 percent slopes, eroded	109.6	24.6%
SuD2	Suffield silt loam, 15 to 25 percent slopes, eroded	24.3	5.4%
SuE2	Suffield silt loam, 25 to 45 percent slopes, eroded	35.0	7.9%
W	Water bodies	51.1	11.5%
<b>Totals for Area of Interest</b>		<b>445.8</b>	<b>100.0%</b>

## Map Unit Descriptions (Augusta Courthouse, Augusta, Maine)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named

### **14.3.3 Critical Areas**

Critical areas on the site that will need special attention regarding erosion control are fill areas, cut areas, and perimeter side slopes. Steep side slopes throughout the site may require additional measures to prevent erosion.

### **14.3.4 Protected Natural Resources**

No protected natural resources occur onsite.

### **14.3.5 Erosion Control Measures and Site Stabilization**

The primary points that are emphasized by the Erosion and Sedimentation Control Plan to be implemented for this project are as follows:

- ◆ Development of a careful construction sequence.
- ◆ Rapid revegetation of denuded areas to minimize the duration of soil exposure.
- ◆ Rapid stabilization of drainage paths to avoid rill and gully erosion.
- ◆ The use of on-site measures to capture sediment (sedimentation basins, silt fence, etc.)

The following temporary and permanent erosion and sedimentation control devices will be implemented as part of the site development. These devices shall be installed as indicated on the plans or as described within this report. For further reference, see the latest edition of the Maine Erosion and Sediment Control BMPS.

#### **A. Dewatering**

Water from construction trench dewatering shall pass first through a filter bag or secondary containment structure (e.g. hay bale lined pool) prior to discharge. The discharge site shall be selected to avoid flooding, icing, and sediment discharges to a protected resource. In no case shall the filter bag or containment structure be located within 50 feet of a protected natural resource.

#### **B. Inspection and Monitoring**

Maintenance measures shall be applied as needed during the entire construction season. After each rainfall, snow storm or period of thawing and runoff, the site contractor shall perform a visual inspection of all installed erosion control measures and perform repairs as needed to insure their continuous function. Following the temporary and/or final seeding and mulching, the contractor shall in the spring inspect and repair any damages and/or unestablished spots. Established vegetative cover means a minimum of 90% of areas vegetated with vigorous growth.

#### **C. Temporary Erosion Control Measures**

The following measures are planned as temporary erosion/sedimentation control measures during construction:

1. Crushed stone-stabilized construction entrance shall be placed at the entrance of the site off Court Street.

2. Siltation fence or wood waste compost berms shall be installed downstream of any disturbed areas to trap runoff-borne sediments until grass areas are revegetated. The silt fence and/or wood waste compost berms shall be installed per the details provided in this package and inspected at least once a week and before and immediately after a storm event of 0.5 inches or greater, and at least daily during prolonged rainfall. Low spots along the silt fence shall be inspected after every rainfall. Repairs shall be made if there are any signs of erosion or sedimentation below the fence or berm line. If there are signs of undercutting at the center or the edges, or impounding of large volumes of water behind the fence or berm, the barrier shall be replaced with a stone check dam. Silt shall be removed from low points after every storm.

3. Straw mulch including hydroseeding is intended to provide cover for denuded or seeded areas until revegetation is established. Mulch placed between April 15th and October 15th on slopes of less than 15 percent shall be anchored by applying water; mulch placed on slopes of equal to or steeper than 15 percent shall be covered by a fabric netting and anchored with staples in accordance with manufacturer's recommendation. Fabric netting and staples shall be used on disturbed areas within 50' of lakes, streams, and wetlands regardless of the upstream slope. Mulch placed between October 15th and April 15th on slopes equal to or steeper than 8 percent shall be covered with a fabric netting and anchored with staples in accordance with the manufacturer's recommendations. Slopes steeper than 3:1 and equal to or flatter than 2:1, which are to be revegetated, shall receive curlex blankets by American Excelsior or equal. Slopes steeper than 2:1 shall receive riprap as noted on the plans. The mulch application rate for both temporary and permanent seeding is 75 lbs per 1000 sf as identified in Attachment A of this section. Mulch shall not be placed over snow. Mulch shall be applied to disturbed existing soils, which have not received other treatment such as 6" of type D gravel or 6" of crushed stone, within 7 days of disturbance, prior to any rain storm and prior to a work shutdown of 48 or more hours including weekends.

4. Temporary stockpiles of stumps, grubblings, or common excavation will be protected as follows:

- a) Temporary stockpiles shall not be located within 100 feet of any wetlands which will not be disturbed and shall be located away from drainage swales.
- b) Stockpiles shall be stabilized within 7 days by either temporarily seeding the stockpile by a hydroseed method containing an emulsified mulch tackifier or by covering the stockpile with mulch, such as straw, or erosion control mix.
- c) Stockpiles shall be surrounded by sedimentation barrier at the time of formation.

5. For work, which is conducted between October 15<sup>th</sup> and April 15<sup>th</sup> of any calendar year, all denuded areas, shall be covered with mulch or erosion control mix, applied at twice the normal application rate and anchored with a fabric netting. The time period for applying mulch shall be limited to 2 days for all areas.

6. The surrounding roadway infrastructure shall be swept to control mud and dust as necessary. Additional stone shall be added to the stabilized construction entrance to minimize the tracking of material off the site and onto the surrounding roadways.
7. During grubbing operations stone check dams shall be installed at any evident concentrated flow discharge points and as directed on the Erosion Control Plans.
8. Silt fencing with a minimum stake spacing of 6 feet should be used, unless the fence is supported by wire fence reinforcement of minimum 14 gauge and with a maximum mesh spacing of 6 inches, in which case stakes may be spaced a maximum of 10 feet apart. The bottom of the fence shall be anchored.
9. Wood waste compost/bark berms may be used in lieu of siltation fencing. Berms shall be removed and spread in a layer not to exceed 3" thick once upstream areas are completed and a 90% catch of vegetation is attained.
10. Storm drain catch basin inlet protection shall be provided through the use of double protection consisting of stone sediment barriers and approved sediment bags (such as Silt Sack). Installation details are provided in the plan set. The barriers shall be inspected after each rainfall and repairs made as necessary. Sediment shall be removed and the barrier restored to its original dimensions when the sediment has accumulated to ½ the design depth of the barrier. The barrier shall be removed when the tributary drainage area has been stabilized.
11. Water and/or calcium chloride shall be furnished and applied in accordance with MDOT specifications – Section 637 – Dust Control.
12. Loam and seed is intended to serve, as the primary permanent revegetative measure for all denuded areas not provided with other erosion control measures, such as riprap. Application rates are provided in Attachment A of this section. Seeding shall not occur over snow.

**D. Permanent Erosion Control Measures**

The following permanent erosion control measures have been designed as part of the Erosion/Sedimentation Control Plan:

1. All areas disturbed during construction, but not subject to other restoration (paving, riprap, etc.) will be loamed, limed, fertilized, mulched, and seeded. Fabric netting, anchored with staples, shall be placed over the mulch in areas as noted in **Temporary Erosion Control Measures** paragraph 3 of this report. All areas within 100 feet of an undisturbed wetland shall be mulched prior to any predicted rain event regardless of the 48 hour window. Native topsoil shall be stockpiled and reused for final restoration when it is of sufficient quality.
2. Catch basins shall be provided with sediment sumps and inlet hoods (the Snout) for all outlet pipes that are 18" in diameter or less.

## 14.5 Implementation Schedule

**The following construction sequence shall be required to insure the effectiveness of the erosion and sedimentation control measures are optimized:**

It is anticipated that construction of the parking lot and related infrastructure will commence in Winter of 2015 and be completed by Spring of 2015.

Note: For all grading activities, the contractor shall exercise extreme caution not to overexpose the site by limiting the disturbed area.

1. Install perimeter silt fence and/or wood waste berms prior to demolition.
2. Install Construction Entrance adjacent to Court Street.
3. Install catch basin sedimentation barriers as shown on Grading, Drainage, and Erosion Control Plans.
4. Commence demolition of residential properties and Perham Street.
5. Clear and grub site. Install stone check dams at any evident concentrated flow discharge points.
6. Commence construction of parking lot to subgrade.
7. Commence installation of drainage appurtenances.
8. Continue earthwork and grading to subgrade as necessary for construction.
9. Commence construction of subsurface stormwater storage system.
10. Install light pole foundations and light poles.
11. Complete remaining earthwork operations.
12. Complete installation of catch basins and appurtenances.
13. Install sub-base and base gravel within parking fields, walkways, and all driveways.
14. Install curbing in parking fields, driveways, and along the streets as needed.
15. Install base course paving for parking area.
16. Loam, lime, fertilize, seed and mulch disturbed areas and complete all landscaping.
17. Install surface course paving for parking area. Stripe per plan.
18. Once the site is stabilized and a 90% catch of vegetation has been obtained, remove all temporary erosion control measures.

19. Remove sediment from the stormdrain system and the isolator rows of the subsurface system.
20. Touch up loam and seed.

Note: All denuded areas not subject to final paving, riprap, or gravel shall be revegetated.

Prior to construction of the project, the contractor shall submit to the owner a schedule for the completion of the work, which will satisfy the following criteria:

1. The above construction sequence should generally be completed in the specified order; however, several separate items may be constructed simultaneously. Work must also be scheduled or phased to reduce the extent of the exposed areas as specified below. The intent of this sequence is to provide for erosion control and to have structural measures such as silt fence and construction entrances in place before large areas of land are denuded.
2. The work shall be conducted in sections which shall:
  - a) Limit the amount of exposed area to those areas in which work is expected to be undertaken during the proceeding 30 days.
  - b) Revegetate disturbed areas as rapidly as possible. All areas shall be permanently stabilized within 7 days of final grading or before a storm event; or temporarily stabilized within 48 hours of initial disturbance of soil for areas within 100 feet of an undisturbed wetland and 7 days for all other areas. Areas within 100 feet of an undisturbed wetland shall be mulched prior to any predicted rain event regardless of the 48 hour window.
  - c) Incorporate planned inlets and drainage system as early as possible into the construction phase. The ditches shall be immediately lined or revegetated as soon as their installation is complete.

#### **14.6 Erosion, Sedimentation and Stabilization Control Plan**

Erosion and Sedimentation Control Plans are included in the plan set.

#### **14.7 Details and Specifications**

Erosion and Sedimentation details, notes, and specifications are included in the plan set.

#### **14.8 Winter Stabilization Plan**

The winter construction period is from November 1 through April 15. If the construction site is not stabilized with pavement, a road gravel base, 75% mature vegetation cover or riprap by November 15 then the site needs to be protected with over-winter stabilization. An area considered open is any area not stabilized with pavement; vegetation, mulching, erosion control mats, riprap or gravel base on a road.

Winter excavation and earthwork shall be completed such that any area left exposed can be controlled by the contractor. Limit the exposed area to those areas in which work is expected to be under taken during the proceeding 15 days and that can be mulched in one day prior to any snow event.

All areas shall be considered to be denuded until the subbase gravel is installed in roadway/parking areas or the areas of future loam and seed have been loamed, seeded and mulched. Hay and straw mulch rate shall be a minimum of 150 lbs./1,000 s.f. (3 tons/acre) and shall be properly anchored.

The contractor shall install any added measures which may be necessary to control erosion/sedimentation from the site dependent upon the actual site and weather conditions. Continuation of earthwork operations on additional areas shall not begin until the exposed soil surface on the area being worked has been stabilized, in order to minimize areas without erosion control protection.

#### **14.8.1 Soil Stockpiles**

Stockpiles of soil or subsoil shall be mulched for over winter protection with hay or straw at twice the normal rate or at 150 lbs/1,000 s.f. (3 tons per acre) or with a four-inch layer of woodwaste erosion control mix. This shall be done within 24 hours of stocking and re-established prior to any rainfall or snowfall. Any soil stockpile shall not be placed (even covered with hay or straw) within 100 feet from any natural resources.

#### **14.8.2 Natural Resource Protection**

Any areas within 100 feet from any natural resources, if not stabilized with a minimum of 75% mature vegetation catch, shall be mulched by December 1 and anchored with plastic netting or protected with erosion control mats. During winter construction, a double line of sediment barriers (i.e. silt fence backed with hay bales or erosion control mix) shall be placed between any natural resource and the disturbed area. Projects crossing the natural resource shall be protected a minimum distance of 100 feet on either side from the resource. Existing projects not stabilized by December 1 shall be protected with the second line of sediment barrier to ensure functionality during the spring thaw and rains.

#### **14.8.3 Sediment Barriers**

During frozen conditions, sediment barriers shall consist of wood waste filter berms as frozen soils prevent proper installation of hay bales and silt fence.

#### **14.8.4 General Mulching**

An area shall be considered denuded until areas of future loam and seed have been loamed, seeded and mulched. Straw mulch shall be applied at a rate of 150 lb. per 1,000 square feet or 3 tons/acre (twice the normal accepted rate of 75-lbs./1,000 s.f. or 1.5 tons/acre) and shall be properly anchored. Mulch shall not be spread on top of snow. The snow shall be removed down to a one-inch depth or less prior to application. After each day of final grading, the area shall be properly stabilized with anchored straw or erosion control matting. An area shall be considered to have been stabilized when exposed surfaces have been either mulched with straw or hay at a rate of 150 lb. per 1,000 square feet (3 tons/acre) and adequately anchored such that the ground surface is not visible through the mulch.

Between the dates of November 1 and April 15, all mulch shall be anchored by peg line, mulch netting, asphalt emulsion chemical, or wood cellulose fiber. When ground surface is not visible through the mulch then cover is sufficient. After November 1<sup>st</sup>, mulch and anchoring of all bare soil shall occur at the end of each final grading workday.

#### **14.8.5 Slope and Ditch Mulching**

Slopes shall not be left exposed for any extended time of work suspension unless fully mulched and anchored with peg and netting or with erosion control blankets. Mulching shall be applied at a rate of 230 lbs/1,000 s.f. on all slopes greater than 8%.

Mulch netting shall be used to anchor mulch in all drainage ways with a slope greater than 3% for slopes exposed to direct winds and for all other slopes greater than 8%. Erosion control blankets shall be used in lieu of mulch in all drainage ways with slopes greater than 8%. Erosion control mix can be used to substitute erosion control blankets on all slopes except ditches.

#### **14.8.6 Seeding**

Between the dates of October 15 and April 1<sup>st</sup>, loam or seed will not be required. During periods of above freezing temperatures finished areas shall be fine graded and either protected with mulch or temporarily seeded and mulched until such time as the final treatment can be applied. If the date is after November 1<sup>st</sup> and if the exposed area has been loamed, final graded with a uniform surface, then the area may be dormant seeded at a rate of 3 times higher than specified for permanent seed and then mulched. Dormant seeding may be selected to be placed prior to the placement of mulch and fabric netting anchored with staples. If dormant seeding is used for the site, all disturbed areas shall receive 4" of loam and seed at an application rate of 5 lbs/1,000 s.f. All areas seeded during the winter shall be inspected in the spring for adequate catch. All areas insufficiently vegetated (less than 75% catch) shall be revegetated by replacing loam, seed and mulch. If dormant seeding is not used for the site, all disturbed areas shall be revegetated in the spring.

### **14.9 Standards for Timely Stabilization of Construction Sites During Winter**

#### **14.9.1 Ditches and Channels**

The Contractor shall construct and stabilize all stone-lined ditches and channels on the site by November 15. The Contractor shall construct and stabilize all grass-lined ditches and channels on the site by September 1. If the Contractor fails to stabilize a ditch or channel to be grass-lined by September 1, then the Contractor will take one of the following actions to stabilize the ditch for late fall and winter.

Install a sod lining in the ditch -- The Contractor shall line the ditch with properly installed sod by October 1. Proper installation includes the Contractor pinning the sod onto the soil with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, watering the sod to promote root growth into the disturbed soil, and anchoring the sod with jute or plastic mesh to prevent the sod strips from sloughing during flow conditions.

Install a stone lining in the ditch --The Contractor shall line the ditch with stone riprap by November 15. The Contractor shall hire a registered professional engineer to determine the stone size and lining thickness needed to withstand the anticipated flow velocities and flow

depths within the ditch. If necessary, the Contractor shall regrade the ditch prior to placing the stone lining so to prevent the stone lining from reducing the ditch's cross-sectional area.

#### **14.9.2 Disturbed Slopes**

The Contractor shall construct and stabilize stone-covered slopes by November 15. The Contractor shall seed and mulch all slopes to be vegetated by September 1. The department shall consider any area having a grade greater than 15% to be a slope. If the Contractor fails to stabilize any slope to be vegetated by September 1, then the Contractor shall take one of the following actions to stabilize the slope for late fall and winter.

Stabilize the soil with temporary vegetation and erosion control mats -- By September 1 the Contractor shall seed the disturbed slope with winter rye at a seeding rate of 3 pounds per 1,000 square feet and apply erosion control mats over the mulched slope. The Contractor shall monitor growth of the rye over the next 30 days. If the rye fails to grow at least three inches or cover at least 75% of the disturbed slope by November 1, then the Contractor shall cover the slope with a layer of woodwaste compost as described in item iii of this standard or with stone riprap as described in item iv of this standard.

Stabilize the slope with sod -- The Contractor shall stabilize the disturbed slope with properly installed sod by September 1. Proper installation includes the Contractor pinning the sod onto the slope with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil. The Contractor shall not use late-season sod installation to stabilize slopes having a grade greater than 33% (3H:1V).

Stabilize the slope with woodwaste compost -- The Contractor shall place a six-inch layer of woodwaste compost on the slope by November 15. Prior to placing the woodwaste compost, the Contractor shall remove any snow accumulation on the disturbed slope. The Contractor shall not use woodwaste compost to stabilize slopes having grades greater than 50% (2H:1V) or having groundwater seeps on the slope face.

Stabilize the slope with stone riprap -- The Contractor shall place a layer of stone riprap on the slope by November 15. The Contractor shall hire a registered professional engineer to determine the stone size needed for stability and to design a filter layer for underneath the riprap.

#### **14.9.3 Disturbed Soils**

By September 15 the Contractor shall seed and mulch all disturbed soils on areas having a slope less than 15%. If the Contractor fails to stabilize these soils by this date, then the Contractor shall take one of the following actions to stabilize the soil for late fall and winter.

Stabilize the soil with temporary vegetation -- By September 1 the Contractor shall seed the disturbed soil with winter rye at a seeding rate of 3 pounds per 1000 square feet, lightly mulch the seeded soil with hay or straw at 75 pounds per 1000 square feet, and anchor the mulch with plastic netting. The Contractor shall monitor growth of the rye over the next 30 days. If the rye fails to grow at least three inches or cover at least 75% of the disturbed soil before November 1, then the Contractor shall mulch the area for over-winter protection as described below.

Stabilize the soil with sod -- The Contractor shall stabilize the disturbed soil with properly installed sod by September 15. Proper installation includes the Contractor pinning the sod onto

the soil with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil.

Stabilize the soil with mulch -- By November 15 the Contractor shall mulch the disturbed soil by spreading hay or straw at a rate of at least 150 pounds per 1000 square feet on the area so that no soil is visible through the mulch. Prior to applying the mulch, the Contractor shall remove any snow accumulation on the disturbed area. Immediately after applying the mulch, the Contractor will anchor the mulch with plastic netting to prevent wind from moving the mulch off the disturbed soil.

#### **14.10 Maintenance of Facilities**

The stormwater facilities will be maintained by the Applicant, Maine Governmental Facilities Authority: attention Jeffrey Henthorn, Director of Court Facilities, Maine District Court, P.O. Box 1345, Lewiston, ME 04243-1345. The contract documents will require the contractor to designate a person responsible for maintenance of the sedimentation control features during construction as required by the Erosion Control Report. Long-term operation/maintenance recommended for the stormwater facilities is presented below.

The responsible party may contract with such professionals, as may be necessary in order to comply with this provision and may rely on the advice of such professionals in carrying out its duty hereunder, provided, that the following operation and maintenance procedures are hereby established as a minimum for compliance with this section.

##### **Inspection and Maintenance Frequency and Corrective Measures:**

The following areas, facilities, and measures will be inspected and the identified deficiencies will be corrected. Clean-out must include the removal and legal disposal of any accumulated sediments and debris.

##### **Catch Basins:**

Inspect catch basins 2 times per year (preferably in Spring and Fall) to ensure that the catch basins are working in their intended fashion and that they are free of debris. Clean structures when sediment depths reach 12" from invert of outlet. If the basin outlet is designed with a hood to trap floatable materials (i.e. Snout), check to ensure watertight seal is working. At a minimum, remove floating debris and hydrocarbons at the time of the inspection.

##### **Subsurface detention chambers:**

Inspect chambers per manufacturer's recommendation. At a minimum inspect chambers 2 times per year (preferably in Spring and Fall) to ensure that the structures are working in their intended fashion and that they are free of debris. Remove sediment from Isolator row when depth of sediment reaches 3 inches.

##### **Vegetated Areas:**

Inspect slopes and embankments early in the growing season to identify active or potential erosion problems. Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows. The facilities will be inspected after major storms and any identified deficiencies will be corrected.

### **Ditches, Swales and other Open Stormwater Channels:**

Inspect 2 times per year (preferably in Spring and Fall) to ensure they are working in their intended fashion and that they are free of sediment and debris. Remove any obstructions to flow, including accumulated sediments and debris and vegetated growth. Repair any erosion of the ditch lining. Vegetated ditches will be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity. Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable. If the ditch has a riprap lining, replace riprap on areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged. Correct any erosion of the channel's bottom or sideslopes. The facilities will be inspected after major storms and any identified deficiencies will be corrected.

**Roadways and Parking Surfaces:** Clear accumulations of winter sand in parking lots and along roadways at least once a year, preferably in the spring. Accumulations on pavement may be removed by pavement sweeping. Accumulations of sand along road shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader.

### **Recertification**

As part of the Stormwater Permit, the applicant is required to meet the standards in Appendix B of the Chapter 500 Rules. Appendix B states that a project must submit a certification of the following to the department within three months of the expiration of each five-year interval from the date of issuance of the permit.

- (a) Identification and repair of erosion problems. All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.
- (b) Inspection and repair of stormwater control system. All aspects of the stormwater control system have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the system, or portions of the system.
- (c) Maintenance. The erosion and stormwater maintenance plan for the site is being implemented as written, or modifications to the plan have been submitted to and approved by the department, and the maintenance log is being maintained.

### **Housekeeping**

As part of the Stormwater Permit, the applicant is required to meet the standards in Appendix C of the Chapter 500 Rules. The following procedures are hereby established as a minimum for compliance with this section. For further information on the procedures listed below, refer to Chapter 500 rules – Appendix C.

#### **Spill Prevention:**

Appropriate spill prevention, containment, and response planning/implementation shall be used to prevent pollutants from being discharged from materials on site.

#### **Groundwater Protection:**

During construction, hazardous materials with the potential to contaminate groundwater shall not be stored or handled in areas of the site which drain to an infiltration area.

**Fugitive Sediment and Dust:**

Appropriate measures shall be taken to ensure that activities do not result in noticeable erosion of the soils and water and/or calcium chloride shall be used to ensure that activities do not result in fugitive dust emissions during or after construction.

**Debris and Other Materials:**

Litter, construction debris, and chemicals exposed to stormwater must be prevented from becoming a pollutant source.

**Trench or Foundation De-watering:**

Water collected through the process of trenching and/or de-watering must be removed from the ponded area, and must be spread through natural wooded buffers or other areas that are specifically designed to collect the maximum amount of sediment possible.

**Non-stormwater Discharges:**

Identify and prevent contamination by non-stormwater discharges.

**14.13 Conclusion**

The Applicant has provided temporary and permanent erosion control measures and specified a sequence of construction as measures to minimize erosion and sedimentation.

**14.14 Attachments**

- Attachment A - Seeding Plan
- Attachment B - Inspection Report
- Attachment C - Sample Inspection Log

ATTACHMENT A

SEEDING PLAN

SEEDING PLAN

Project: Parking Lot

Site Location: Perham Street, Augusta, ME

Permanent Seeding                       Temporary Seeding

1. Instruction on preparation of soil: Prepare a good seed bed for planting method used.
2. Apply lime as follows: \_\_\_\_\_ # / acres, OR 138 # /M Sq. Ft.
3. Fertilize with \_\_\_\_\_ pounds of \_\_\_\_\_ N-P-K/ac. OR 13.8 pounds of 10-10-10 N-P-K/M Sq. Ft.
4. Method of applying lime and fertilizer: Spread and work into the soil before seeding.
5. Seed with the following mixture:
  - 50% Winter Rye
  - 50% Annual Rye

6. Mulching instructions: Apply at the rate of \_\_\_\_\_ per acre, OR 75 pounds per M. Sq. Ft.

	<u>Amount</u>	<u>Unit # Tons. Etc.</u>
7. TOTAL LIME	138	#/1000 sq. ft.
8. TOTAL FERTILIZER	13.8	#/1000 sq. ft.
9. TOTAL SEED	1.03	#/1000 sq. ft.
10. TOTAL MULCH	75	#/1000 sq. ft.
11. TOTAL other materials, seeds, etc.		

12. REMARKS

Spring seeding is recommended; however, late summer (prior to September 1) seeding can be made. Permanent seeding should be made prior to August 5 or as a dormant seeding after the first killing frost and before the first snowfall. If seeding cannot be done within these seeding dates, temporary seeding and mulching shall be used to protect the site. Permanent seeding shall be delayed until the next recommended seeding period.

## SEEDING PLAN

Project:     Parking Lot    

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Site Location: Perham Street, Augusta, ME

Permanent Seeding                       Temporary Seeding

1. Instruction on preparation of soil: Prepare a good seed bed for planting method used.
2. Apply lime as follows: \_\_\_\_\_ # / acres, OR 138 # /M Sq. Ft.
3. Fertilize with \_\_\_\_\_ pounds of \_\_\_\_\_ N-P-K/ac. OR 18.4 pounds of 10-20-20 N-P-K/M Sq. Ft.
4. Method of applying lime and fertilizer: Spread and work into the soil before seeding.
5. Seed with the following mixture:
  - 40% Creeping Red Fescue
  - 30% Charger II Perennial Ryegrass
  - 20% KenBlue Kentucky Bluegrass
  - 10% Tiffany Chewings Fescue
6. Mulching instructions: Apply at the rate of \_\_\_\_\_ per acre, OR 75 pounds per M. Sq. Ft.

	<u>Amount</u>	<u>Unit # Tons. Etc.</u>
7. TOTAL LIME	138	#/1000 sq. ft.
8. TOTAL FERTILIZER	18.4	#/1000 sq. ft.
9. TOTAL SEED	1.03	#/1000 sq. ft.
10. TOTAL MULCH	75	#/1000 sq. ft.
11. TOTAL other materials, seeds, etc.		
12. REMARKS		

Spring seeding is recommended, however, late summer (prior to September 1) seeding can be made. Permanent seeding should be made prior to August 5 or as a dormant seeding after the first killing frost and before the first snowfall. If seeding cannot be done within these seeding dates, temporary seeding and mulching shall be used to protect the site. Permanent seeding shall be delayed until the next recommended seeding period.

ATTACHMENT B  
INSPECTION REPORT

**STORMWATER POLLUTION PREVENTION PLAN**

**INSPECTION REPORT**

**PROJECT INFORMATION**

Project Name:            Parking Lot  
Address:                 Perham Street  
                                 Augusta, Maine

**CONTRACTOR/SUBCONTRACTOR INFORMATION**

Inspector Name: \_\_\_\_\_  
Firm: \_\_\_\_\_  
Title: \_\_\_\_\_  
Qualifications: \_\_\_\_\_

**INSPECTION SUMMARY**

Date of Inspection: \_\_\_\_\_

Major Observations: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

THE FACILITY IS IN COMPLIANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN WITH THE FOLLOWING EXCEPTIONS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

ACTIONS NECESSARY TO BRING FACILITY INTO COMPLIANCE:

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REQUIRED MODIFICATIONS TO STORMWATER POLLUTION PREVENTION PLAN  
(MUST BE IMPLEMENTED WITHIN 7 DAYS OF INSPECTION):

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CERTIFICATION STATEMENT:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the systems, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

---

Signature

---

Typed Name

---

Title

---

Date

ATTACHMENT C

INSPECTION LOG

## STORMWATER INSPECTION LOG

### **Inspection and Maintenance Frequency and Corrective Measures:**

The following areas, facilities, and measures will be inspected and the identified deficiencies will be corrected. Clean-out must include the removal and legal disposal of any accumulated sediments and debris.

### **Catch Basins:**

Inspect catch basins 2 times per year (preferably in Spring and Fall) to ensure that the catch basins are working in their intended fashion and that they are free of debris. Clean structures when sediment depths reach 12" from invert of outlet. If the basin outlet is designed with a hood to trap floatable materials (i.e. Snout), check to ensure watertight seal is working. At a minimum, remove floating debris and hydrocarbons at the time of the inspection.

### **Subsurface detention chambers:**

Inspect chambers per manufacturer's recommendation. At a minimum inspect chambers 2 times per year (preferably in Spring and Fall) to ensure that the structures are working in their intended fashion and that they are free of debris. Remove sediment from Isolator row when depth of sediment reaches 3 inches.

### **Vegetated Areas:**

Inspect slopes and embankments early in the growing season to identify active or potential erosion problems. Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows. The facilities will be inspected after major storms and any identified deficiencies will be corrected.

### **Ditches, Swales and other Open Stormwater Channels:**

Inspect 2 times per year (preferably in Spring and Fall) to ensure they are working in their intended fashion and that they are free of sediment and debris. Remove any obstructions to flow, including accumulated sediments and debris and vegetated growth. Repair any erosion of the ditch lining. Vegetated ditches will be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity. Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable. If the ditch has a riprap lining, replace riprap on areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged. Correct any erosion of the channel's bottom or sideslopes. The facilities will be inspected after major storms and any identified deficiencies will be corrected.

**Roadways and Parking Surfaces:** Clear accumulations of winter sand in parking lots and along roadways at least once a year, preferably in the spring. Accumulations on pavement may be removed by pavement sweeping. Accumulations of sand along road shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader. Repair potholes and other roadway obstructions and hazards. Plowing and sanding of paved areas shall be performed as necessary to maintain vehicular traffic safety.

## Perham Street Parking Lot Inspection Worksheet

Personnel: \_\_\_\_\_

Date: \_\_\_\_\_

Structure	Condition	Depth of Sediment	Inspection Comments	Maintenance Required
CB1				
CB2				
CB3				
CB4				
DMH1				
DMH2				
SWALES VEGETATED AREAS				
ROADWAYS / PARKING				
SUBSURFACE CHAMBERS				

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# Section L

**SECTION L**  
**LIGHTING**

**L.1 Description**

As part of this submission, the lighting plans are enclosed in Section M. The lighting is designed to be in compliance with local and state requirements, as well as meeting the needs of anticipated operations at the proposed parking lot.

**L.2 Supporting Documentation**

Enclosed in Section M, along with the various other plans is the Site Lighting Plan. Catalog sheets for the lights are included in this Section.



# D-Series Size 1 LED Area Luminaire

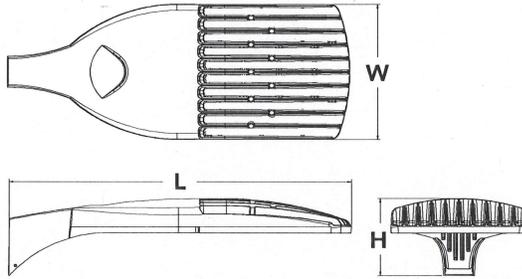


Catalog Number
Notes
Type

d"series

## Specifications

EPA:	1.2 ft <sup>2</sup> (0.11 m <sup>2</sup> )
Length:	33" (83.8 cm)
Width:	13" (33.0 cm)
Height:	7-1/2" (19.0 cm)
Weight (max):	27 lbs (12.2 kg)



## Introduction

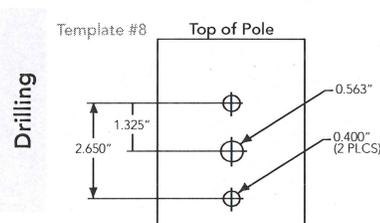
The modern styling of the D-Series is striking yet unobtrusive - making a bold, progressive statement even as it blends seamlessly with its environment.

The D-Series distills the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire. The outstanding photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. It is ideal for replacing 100 – 400W metal halide in pedestrian and area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

## Ordering Information

EXAMPLE: DSX1 LED 60C 1000 40K T3M MVOLT SPA DDBXD

Series	LEDs	Drive current	Color temperature	Distribution	Voltage	Mounting	Control options	Other options	Finish (required)					
DSX1 LED	Forward optics	530 530 mA	30K 3000 K (80 CRI min.)	T1S Type I short	MVOLT <sup>3</sup>	Shipped included	Shipped installed	Shipped installed	DDBXD Dark bronze					
		700 700 mA	40K 4000 K (70 CRI min.)	T2S Type II short	120 <sup>3</sup>					SPA Square pole mounting	PER NEMA twist-lock receptacle only (no controls) <sup>7</sup>	HS House-side shield <sup>14</sup>	DBLXD Black	
		1000 1000 mA (1 A)	50K 5000 K (70 CRI)	T2M Type II medium	208 <sup>3</sup>					RPA Round pole mounting	DMG 0-10V dimming driver (no controls) <sup>8</sup>	WTB Utility terminal block <sup>15</sup>	DNAXD Natural aluminum	
	Rotated optics <sup>1</sup>	60C 60 LEDs (two engines)	1000 1000 mA (1 A)	AMBPC Amber phosphor converted <sup>2</sup>	T3S Type III short	240 <sup>3</sup>	WBA Wall bracket	DCR Dimmable and controllable via ROAM <sup>®</sup> (no controls) <sup>9</sup>	SF Single fuse (120, 277, 347V) <sup>16</sup>	DDBTXD Textured dark bronze				
					T3M Type III medium	277 <sup>3</sup>					SPUMBA Square pole universal mounting adaptor <sup>5</sup>	DS Dual switching <sup>10,11</sup>	DF Double fuse (208, 240, 480V) <sup>16</sup>	DBLBXD Textured black
					T4M Type IV medium	347 <sup>3</sup>					RPUMBA Round pole universal mounting adaptor <sup>5</sup>	PIR Motion sensor, 8-15' mounting height <sup>12</sup>	L90 Left rotated optics <sup>17</sup>	DNATXD Textured natural aluminum
	60C 60 LEDs (two engines)	60C 60 LEDs (two engines)	1000 1000 mA (1 A)	AMBPC Amber phosphor converted <sup>2</sup>	TFTM Forward throw medium	480 <sup>3</sup>	Shipped separately <sup>6</sup>	BL30 Bi-level switched dimming, 30% <sup>11,13</sup>	R90 Right rotated optics <sup>17</sup>	DDBTXD Textured dark bronze				
					T5VS Type V very short						KMA8 Mast arm mounting bracket adaptor (specify finish)	PIRH Motion sensor, 15-30' mounting height <sup>12</sup>		
					T5S Type V short									
					T5M Type V medium									
					T5W Type V wide									



DSX1 shares a unique drilling pattern with the AERIS™ family. Specify this drilling pattern when specifying poles, per the table below.

DM19AS	Single unit	DM29AS	2 at 90°*
DM28AS	2 at 180°	DM39AS	3 at 90°*
DM49AS	4 at 90°*	DM32AS	3 at 120°**

Example: SSA 20 4C DM19AS DDBXD

Visit Lithonia Lighting's [Pole Selector](#) to see our wide selection of poles, accessories and educational tools.

\*Round pole top must be 3.25" O.D. minimum.  
\*\*For round pole mounting (RPA) only.

## Tenon Mounting Slipfitter\*\*

Tenon O.D.	Single Unit	2 at 180°	2 at 90°	3 at 120°	3 at 90°	4 at 90°
2-3/8"	AST20-190	AST20-280	AST20-290	AST20-320	AST20-390	AST20-490
2-7/8"	AST25-190	AST25-280	AST25-290	AST25-320	AST25-390	AST25-490
4"	AST35-190	AST35-280	AST35-290	AST35-320	AST35-390	AST35-490

## NOTES

- Rotated optics only available with 60C.
- AMBPC only available with 530mA or 700mA.
- MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Specify 120, 208, 240 or 277 options only when ordering with fusing (SF, DF options).
- Not available with single board, 530mA product (30C 530, or 60C 530 DS). Not available with DCR, BL30 or BL50.
- Available as a separate combination accessory: PUMBA (finish) U.
- Must be ordered as a separate accessory; see Accessories information. For use with 2-3/8" mast arm (not included).
- Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Not available with DS option.
- DMG option for 347v or 480v requires 1000mA.
- Specifies a ROAM<sup>®</sup> enabled luminaire with 0-10V dimming capability; PER option required. Not available with 347 or 480V. Additional hardware and services required for ROAM<sup>®</sup> deployment; must be purchased separately. Call 1-800-442-6745 or email: [sales@roomservices.net](mailto:sales@roomservices.net). N/A with BL30, BL50, DS, PIR or PIRH.
- Requires 40C or 60C. Provides 50/50 luminaire operation via two independent drivers on two separate circuits. N/A with PER, DCR, WTB, PIR, or PIRH.
- Requires an additional switched circuit.
- PIR specifies the Sensor Switch SBGR-10 ODF control; PIRH specifies the Sensor Switch SBGR-10 ODF control; see [Sensor Switch Guide](#) for details. Dimming driver standard. Not available with DS or DCR.
- Dimming driver standard. MVOLT only. Not available with DCR.
- Also available as a separate accessory; see Accessories information.
- WTB not available with DS.
- Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
- Available with 60 LEDs (60C option) only.
- Requires luminaire to be specified with PER option. Ordered and shipped as a separate line item from Acuity Brands Control.

## Accessories

Ordered and shipped separately.

DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) <sup>18</sup>
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) <sup>18</sup>
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) <sup>18</sup>
SC U	Shorting cap <sup>14</sup>
DSX1HS 30C U	House-side shield for 30 LED unit
DSX1HS 40C U	House-side shield for 40 LED unit
DSX1HS 60C U	House-side shield for 60 LED unit
PUMBA DDBXD U*	Square and round pole universal mounting bracket adaptor (specify finish)
KMA8 DDBXD U	Mast arm mounting bracket adaptor (specify finish) <sup>5</sup>

For more control options, visit [30](#) and [30A](#) online.



# Performance Data

## Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Actual performance may differ as a result of end-user environment and application. Actual wattage may differ by +/- 8% when operating between 120-480V +/-10%. Contact factory for performance data on any configurations not shown here.

LEDs	Drive Current (mA)	System Watts	Dist. Type	30K (3000 K, 80 minimum CRI)					40K (4000 K, 70 minimum CRI)					50K (5000 K, 70 CRI)				
				Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
				30 LEDs section														
30C (30 LEDs)	700 mA	68 W	T1S	5,290	1	0	1	78	6,524	2	0	2	96	7,053	2	0	2	104
			T2S	5,540	1	0	1	81	6,833	2	0	2	100	7,387	2	0	2	109
			T2M	5,360	1	0	2	79	6,611	2	0	2	97	7,147	2	0	2	105
			T3S	5,479	1	0	1	81	6,757	1	0	2	99	7,305	2	0	2	107
			T3M	5,452	1	0	2	80	6,724	2	0	2	99	7,269	2	0	2	107
			T4M	5,461	1	0	2	80	6,736	2	0	2	99	7,282	2	0	2	107
			TFTM	5,378	1	0	2	79	6,633	1	0	2	98	7,171	1	0	2	105
			T5VS	5,708	2	0	0	84	7,040	3	0	0	104	7,611	3	0	1	112
			T5S	5,639	2	0	0	83	6,955	2	0	0	102	7,519	3	0	0	111
	T5M	5,710	3	0	1	84	7,042	3	0	1	104	7,613	3	0	2	112		
	T5W	5,551	3	0	1	82	6,847	3	0	2	101	7,401	3	0	2	109		
	1000 mA	105 W	T1S	7,229	2	0	2	69	9,168	2	0	2	87	9,874	2	0	2	94
			T2S	7,572	2	0	2	72	9,603	2	0	2	91	10,342	2	0	2	98
			T2M	7,325	2	0	2	70	9,291	2	0	2	88	10,005	2	0	3	95
			T3S	7,488	2	0	2	71	9,496	2	0	2	90	10,227	2	0	2	97
			T3M	7,451	2	0	2	71	9,450	2	0	2	90	10,177	2	0	2	97
			T4M	7,464	2	0	2	71	9,467	2	0	2	90	10,195	2	0	2	97
			TFTM	7,351	1	0	2	70	9,323	2	0	2	89	10,040	2	0	3	96
T5VS			7,801	3	0	1	74	9,894	3	0	1	94	10,655	3	0	1	101	
T5S			7,803	3	0	2	74	9,774	3	0	1	93	10,526	3	0	1	100	
T5M	7,707	3	0	0	73	9,897	3	0	2	94	10,658	4	0	2	102			
T5W	7,586	3	0	2	72	9,621	4	0	2	92	10,363	4	0	2	99			
40 LEDs section																		
40C (40 LEDs)	700 mA	89 W	T1S	6,876	2	0	2	77	8,639	2	0	2	97	9,345	2	0	2	105
			T2S	7,202	2	0	2	81	9,049	2	0	2	102	9,788	2	0	2	110
			T2M	6,968	2	0	2	78	8,755	2	0	2	98	9,469	2	0	3	106
			T3S	7,122	2	0	2	80	8,948	2	0	2	101	9,679	2	0	2	109
			T3M	7,088	2	0	2	80	8,905	2	0	2	100	9,632	2	0	2	108
			T4M	7,100	2	0	2	80	8,920	2	0	2	100	9,649	2	0	2	108
			TFTM	6,992	1	0	2	79	8,785	2	0	2	99	9,502	2	0	2	107
			T5VS	7,421	3	0	0	83	9,323	3	0	1	105	10,085	3	0	1	113
			T5S	7,331	3	0	0	82	9,210	3	0	1	103	9,962	3	0	1	112
	T5M	7,423	3	0	2	83	9,326	3	0	2	105	10,087	4	0	2	113		
	T5W	7,216	3	0	2	81	9,066	4	0	2	102	9,807	4	0	2	110		
	1000 mA	138 W	T1S	9,521	2	0	2	69	11,970	2	0	2	87	12,871	3	3	0	93
			T2S	9,972	2	0	2	72	12,558	3	0	3	91	13,481	3	0	3	98
			T2M	9,648	2	0	3	70	12,149	3	0	3	88	13,043	3	0	3	95
			T3S	9,862	2	0	2	71	12,418	2	0	2	90	13,331	2	0	2	97
			T3M	9,814	2	0	2	71	12,358	3	0	3	90	13,267	3	0	3	96
			T4M	9,831	2	0	2	71	12,379	2	0	3	90	13,290	2	0	3	96
			TFTM	9,681	2	0	2	70	12,191	2	0	3	88	13,087	2	0	3	95
T5VS			10,275	3	0	1	74	12,937	3	0	1	94	13,890	4	0	1	101	
T5S			10,150	3	0	1	74	12,782	3	0	1	93	13,721	3	0	1	99	
T5M	10,278	4	0	2	74	12,942	4	0	2	94	13,894	4	0	2	101			
T5W	9,991	4	0	2	72	12,582	4	0	2	91	13,507	4	0	2	98			
60 LEDs section																		
60C (60 LEDs)	700 mA	131 W	T1S	10,226	2	0	2	78	12,871	3	0	3	98	13,929	3	0	3	106
			T2S	10,711	2	0	2	82	13,481	3	0	3	103	14,589	3	0	3	111
			T2M	10,363	2	0	3	79	13,043	3	0	3	100	14,115	3	0	3	108
			T3S	10,592	2	0	2	81	13,331	2	0	2	102	14,427	3	0	3	110
			T3M	10,541	2	0	2	80	13,267	3	0	3	101	14,357	3	0	3	110
			T4M	10,559	2	0	2	81	13,290	2	0	3	101	14,382	3	0	3	110
			TFTM	10,398	2	0	3	79	13,087	2	0	3	100	14,163	2	0	3	108
			T5VS	11,036	3	0	1	84	13,890	4	0	4	106	15,032	4	0	1	115
			T5S	10,902	3	0	1	83	13,721	3	0	1	105	14,849	4	0	1	113
	T5M	11,039	4	0	2	84	13,894	4	0	2	106	15,036	4	0	2	115		
	T5W	10,732	4	0	2	82	13,507	4	0	2	103	14,617	4	0	2	112		
	1000 mA	209 W	T1S	14,017	3	0	3	67	17,632	3	0	3	84	19,007	3	0	3	91
			T2S	14,681	3	0	3	70	18,467	3	0	3	88	19,908	3	0	3	95
			T2M	14,204	3	0	3	68	17,867	3	0	3	85	19,260	3	0	3	92
			T3S	14,518	3	0	3	69	18,262	3	0	3	87	19,687	3	0	3	94
			T3M	14,448	3	0	3	69	18,173	3	0	4	87	19,591	3	0	4	94
			T4M	14,473	3	0	3	69	18,205	3	0	3	87	19,625	3	0	4	94
			TFTM	14,253	2	0	3	68	17,928	3	0	4	86	19,326	3	0	4	92
T5VS			15,127	4	0	1	72	19,028	4	0	1	91	20,512	4	0	1	98	
T5S			14,943	4	0	1	71	18,797	4	0	1	90	20,263	4	0	1	97	
T5M	15,131	4	0	2	72	19,033	4	0	2	91	20,517	5	0	3	98			
T5W	14,710	4	0	2	70	18,503	5	0	3	89	19,946	5	0	3	95			

Note: Available with phosphor-converted amber LED's (nomenclature AMBPC). These LED's produce light with 97+% >530 nm. Output can be calculated by applying a 0.7 factor to 4000 K lumen values and photometric files.



## Performance Data

### Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.02
10°C	50°F	1.01
20°C	68°F	1.00
25°C	77°F	1.00
30°C	86°F	1.00
40°C	104°F	0.99

### Electrical Load

Number of LEDs	Drive Current (mA)	System Watts	Current (A)					
			120	208	240	277	347	480
30	530	52	0.52	0.30	0.26	0.23	--	--
	700	68	0.68	0.39	0.34	0.30	0.24	0.17
	1000	105	1.03	0.59	0.51	0.45	0.36	0.26
40	530	68	0.67	0.39	0.34	0.29	0.23	0.17
	700	89	0.89	0.51	0.44	0.38	0.31	0.22
	1000	138	1.35	0.78	0.67	0.58	0.47	0.34
60	530	99	0.97	0.56	0.48	0.42	0.34	0.24
	700	131	1.29	0.74	0.65	0.56	0.45	0.32
	1000	209	1.98	1.14	0.99	0.86	0.69	0.50

### Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a 25°C ambient, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

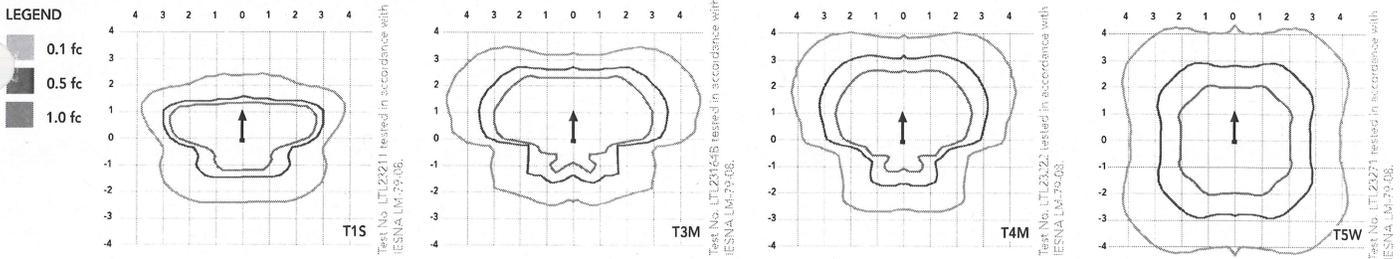
To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	DSX1 LED 60C 1000			
	1.0	0.95	0.93	0.88
Lumen Maintenance Factor	DSX1 LED 60C 700			
	1.0	0.99	0.98	0.96

## Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's D-Series Area Size 1 homepage.

Isfootcandle plots for the DSX1 LED 60C 1000 40K. Distances are in units of mounting height (20').



## FEATURES & SPECIFICATIONS

### INTENDED USE

The sleek design of the D-Series Size 1 reflects the embedded high performance LED technology. It is ideal for many commercial and municipal applications, such as parking lots, plazas, campuses, and streetscapes.

### CONSTRUCTION

Single-piece die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. Modular design allows for ease of maintenance and future light engine upgrades. The LED driver is mounted in direct contact with the casting to promote low operating temperature and long life. Housing is completely sealed against moisture and environmental contaminants (IP65). Low EPA (1.2 ft<sup>2</sup>) for optimized pole wind loading.

### FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Available in both textured and non-textured finishes.

### OPTICS

Precision-molded proprietary acrylic lenses are engineered for superior area lighting distribution, uniformity, and pole spacing. Light engines are available in standard 4000 K (70 minimum CRI) or optional 3000 K (80 minimum CRI) or 5000 K (70 CRI) configurations. The D-Series Size 1 has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

### ELECTRICAL

Light engine configurations consist of 30, 40 or 60 high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L96/100,000 hours at 25°C). Class 1 electronic drivers are designed to have a power factor >90%, THD <20%, and an

expected life of 100,000 hours with <1% failure rate. Easily serviceable 10kV or 6kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

### INSTALLATION

Included mounting block and integral arm facilitate quick and easy installation. Stainless steel bolts fasten the mounting block securely to poles and walls, enabling the D-Series Size 1 to withstand up to a 3.0 G vibration load rating per ANSI C136.31. The D-Series Size 1 utilizes the AERIS™ series pole drilling pattern. Optional terminal block, tool-less entry, and NEMA photocontrol receptacle are also available.

### LISTINGS

UL Listed for wet locations. Light engines are IP66 rated; luminaire is IP65 rated. Rated for -40°C minimum ambient. U.S. Patent No. D672,492 S. International patent pending.

DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at [www.designlights.org](http://www.designlights.org) to confirm which versions are qualified.

### WARRANTY

Five-year limited warranty. Full warranty terms located at:

[www.lithonia.com](http://www.lithonia.com) / [www.designlights.org](http://www.designlights.org) / [www.iesna.com](http://www.iesna.com)

**Note:** Specifications subject to change without notice.



# Section

# M

**SECTION M**  
**PLANS**

**N.1 Description**

As part of this submission, the various site plans have been enclosed.

**N.2 Supporting Documentation**

Enclosed in this section are the following plans:

- General Notes/Legend
- Existing Conditions Plan
- Demolition Plan
- Site/Utility Plan
- Grading, Drainage and Erosion Control Plan
- Site Detail Sheets
- Miscellaneous Detail Sheets
- Erosion Control Notes
- Subsurface Pond Plan and Details
- Retaining Wall Plan and Profile
- Landscaping Plans
- Lighting Plan