CITY OF LEWISTON
PLANNING BOARD MEETING
Monday, May 13 2019 – 5:30 P.M.
City Council Chambers – First Floor
Lewiston City Building
27 Pine Street, Lewiston, ME

AGENDA

1. **ROLL CALL**
2. **ADJUSTMENTS TO THE AGENDA**
3. **CORRESPONDENCE**
4. **PUBLIC HEARINGS:**
   a) An application from Stoneybrook Consultants, Inc. and agent for JIG Investments, LLC and J. F. Murphy Homes, Inc. to construct at 41,400 sf. school at a property located at 5 Memorial Avenue.
   b) A zoning text and map amendment to Article XV, Significant Buildings and Districts to include the Lewiston Commercial Historic District and any other necessary updates or amendments.
5. **OTHER BUSINESS:**
   a. Build Maine 2019
6. **READING OF THE MINUTES**: Motion to adopt the April 22, 2019 draft minutes
7. **ADJOURNMENT**

The next scheduled Planning Board meeting is June 10, 2019

CITY OF LEWISTON
PLANNING BOARD MEETING
MINUTES for APRIL 22, 2019

I. **ROLL CALL:** The meeting was held in the City Council Chambers on the first floor of City Hall and was called to order at 5:30 p.m. Chairperson, Pauline Gudas, chaired the meeting.

Members in Attendance: Pauline Gudas, Normand Anctil, Kristine Kittridge, Benjamin Martin and Lucy Bisson

Members Absent: John Butler, Sandra Marquis

Associate Members Present: None

Staff Present: David Hediger, Director of Planning and Code, Douglas Greene, City Planner and Linda Tripp, Administrative Assistant

II. **ADJUSTMENT TO THE AGENDA:** None

III. **CORRESPONDENCE:** None

IV. **PUBLIC HEARINGS:** None

403 Sabattus Street, Aroma Joe's development review application for an 848 sf drive-thru coffee shop.

Douglas Greene read staff comments. John Kuchinski of CES Engineers welcomed questions from the board. Normand Anctil inquired if there would be a designated and properly graded snow storage area and John Kuchinski assured the Board that there would be. Lucy Bisson requested clarification regarding the rear fence which was provided by John Kuchinski.

Pauline Gudas opened the discussion to the public. No public spoke.

The following motion was made:

MOTION: by **Benjamin Martin** that the application submitted by CES Engineers on behalf of MR Deal, LLC to construct an 848 square foot Aroma Joe's drive-thru coffee shop on a 0.4+/- acre vacant paved lot located at 403 Sabattus Street meets all of the necessary criteria contained in the Zoning and Land Use Code, including, but not limited to Article XIII, Section 4 of the Zoning and Land Use Code, and that approval be granted with the following conditions:

1. Construction of the entrance shall consist of a single 15-foot entrance lane and two exit lanes consisting of an 11-foot wide left-turn lane and a 12-foot right-turn lane. The entrance and exit lanes will be separated by a 2-foot wide flush mountable concrete island as separation.

2. One year after opening the City of Lewiston Police Department will provide crash reports for Sabattus Street related to the movements into and out of the existing entrance. If a review of the crashes show that four or more crashes related to Left-turns into and out of the entrance occurred during this one-year period then the applicant shall convert the existing entrance into a Right-in/Right-out entrance as shown on Plan Sheet SK-1, Right Hand Turn Alternative Entrance. The applicant shall provide an escrow in the amount of $13,000 to the City of Lewiston for the future construction of this Right-in/Right-out entrance. The escrow shall be returned to the applicant upon determination that a Right-in/Right-out entrance is not required or upon completion of the new entrance.
3. The overall site provides for 17 parking spaces for vehicles and an area for 2 additional parking spaces. One year after opening the applicant will provide the City of Lewiston a parking analysis to determine if these 2 additional spaces are required to comply with the City of Lewiston parking requirements for this land use. If the spaces are required due to congestion in the lot then these spaces will be paved and striped as parking spaces.
4. Curbing will be installed along the site frontage on Sabattus Street. The type and extent of curbing shall be determined by negotiations between the City of Lewiston and the Applicant.
5. Design and construct the area labeled "snow storage" along Sabattus Street to drain away from the Sabattus Street right-of-way.

Second by **Lucy Bisson.**
VOTED: 5-0 (Passed)

V. OTHER BUSINESS:

a) Request from the Historic Preservation Review Board to the Planning Board to initiate a zoning text and map amendment for the Lewiston Commercial Historic District.

The following motion was made:
MOTION: by **Normand Anctil** to initiate a text and map amendment to Article XV, Significant Buildings and Districts to include the Lewiston Commercial Historic District and any other necessary updates or amendments. Second by **Kristine Kittridge.**
VOTED: 5-0 (Passed)

b) Discuss upcoming meeting and events

- May 8, 2019 Public meeting for Design Lewiston (Update of Design Regulations) 5:30 – 7:00 p.m., 3rd Floor Conference Room, City Hall.
- June 5th and 6th Build Maine Conference at the Royal Oak Room, Iron Horse Court, 1 Bates Street, Lewiston, Maine

c) Pauline Gudas announced the resignation of Paul Robinson and explained that his need to do so was due to the fact that too many members within the same ward had mistakenly been appointed.

VI. **READING OF MINUTES:** Adoption of the March 11, 2019 and March 25, 2019 draft minutes.

The following motion was made:
MOTION: by **Lucy Bisson** to accept the March 11, 2019 draft minutes as presented. Second by **Kristine Kittridge.**
VOTED: **5-0 (Passed)**

The following motion was made:
MOTION: by **Lucy Bisson** to accept the March 25, 2019 draft minutes as presented. Second by **Kristine Kittridge.**
VOTED: **4-0 (Passed. Benjamin Martin abstained)**

VII. **ADJOURNMENT:** The following motion was made to adjourn.
MOTION: by **Kristine Kittridge** that this meeting adjourns at 6:00 p.m. Second by **Benjamin Martin.**
VOTED: **5-0 (Passed)**

The next regularly scheduled meeting is for Monday, May 13, 2019 at 5:30 p.m.

Respectfully Submitted:

Lucy Bisson, Vice Chairperson

CITY OF LEWISTON

Department of Planning & Code Enforcement

TO: Lewiston Planning Board

FROM: Douglas Greene, AICP, RLA, City Planner

DATE: May 13, 2019

RE: Memorial Avenue School, 5 Memorial Avenue

An application submitted by Stoneybrook Consultants, Inc. on behalf of John F. Murphy Homes, Inc. to construct a 41,400 sf. school at 5 Memorial Avenue.

PROJECT DESRIPTION

The proposed project is a special purpose private school that will provide special education to middle and high school aged children with developmental disorders. The 41,400 sf. building will serve 120 students and 120 staff. 135 parking spaces (18 handicapped) are provided along with an outdoor play area.

SITE DESCRIPTION

The property was zoned Highway Business (HB) from Medium Density Residential (MDR) by a contract zoning in 2013. The 23 acre site is located along the Androscoggin River and has a 250 foot shoreland zone buffer area. The project is located at the end of Memorial Avenue. City mapping shows Memorial Avenue as an accepted public street but the planned cul-de-sac was never constructed. The applicant is proposing to build a "T-turn-around" with an access driveway between the legs of the turnaround. After the construction of the "T-turn-around" is completed and accepted by the city, a request would be made to the City Council to vacate the remnant, unbuilt portion of the original, unbuilt cul-de-sac which would revert to the applicant. New water and gas lines will be connected from Main Street down Memorial Avenue to serve the project.

TRANSPORTATION/TRAFFIC MOVEMENT PERMIT

The project is expected to generate 288 AM peak hour trips and 218 PM peak hour trips. As a result a Traffic Movement Permit (TMP) application was submitted. The city has local delegated review authority to approve Traffic Movement Permits. A scoping meeting was held on February 4th and a traffic study was submitted. After review by city staff, the city's peer review consultant HNTB, ME DOT, and the Androscoggin Transportation Resource Center (ATRC), it was determined that the City of Lewiston approves the Traffic Movement permit for John F. Murphy School subject to the following conditions:

On-Site Mitigation

A. The section of Memorial Avenue at Main Street shall be widened to 35-feet for a distance of 100-feet providing two egress lanes (right and left-turn lanes) and a single ingress lane. The proposed widened section shall be striped as follows:

- 12-foot ingress lane
- 11-foot left-turn egress lane
- 12-foot right-turn egress lane

B. The City of Lewiston has determined the proposed private school does not qualify for School Zone signs now or as long as the school is operating as such.

C. Overhead lighting shall be provided, if not existing, to illuminate the Memorial Avenue/Main Street intersection. Overhead lighting shall have an average of 0.6 to 1.0-foot candles, with the maximum to minimum lighting ratio of not more than 10:1 and an average to minimum light level of not more than 4:1.

Off-Site Mitigation

There is no "Off-Site Mitigation" required of the proposed project.

STORMWATER MANAGEMENT

The project will create a total of 3.2 acres of disturbed area, which requires approval under the Site Location of Development Act (SLODA). The city has local delegated review for Site Law as well. An existing, undersized catch basin was located on site and the City Engineering Department asked the applicant to construct a larger system to control stormwater. Filter basins will control stormwater quality and some quantity collected on-site and a 24" stormwater system will direct water from the end of Memorial Avenue to an outlet at Stetson Brook.

ENVIRONMENTAL

The project will impact 3,362 sf. of wetland area, which can be done without review or approval by MDEP. There will be temporary disturbance to 4,083 sf. of wetland during the installation of the 24" storm sewer line. The wetland soils will be returned to the trenches as fill and is considered to be temporary and can be permitted with a permit-by-rule by MDEP. The applicant has provided the Staff with a copy of a Natural Resources Protection Act (NRPA) Permit by Rule notification form.

OTHER SITE AMENITIES

A landscaping plan has been provided. A lighting plan has been submitted that will offer cut-off fixtures. A fenced in outdoor playground and play area will be constructed.

STAFF REVIEW

Staff notes the following with respect to the application:

1. The applicant worked with Lewiston Public to install a new water and gas line in the Memorial Avenue to serve the proposed school.
2. The applicant discussed the proposed change to the end of Memorial Avenue, going from a cul-de-sac to a "T turn around". This change will necessitate approval and acceptance

by Public Works of the construction and the discontinuance by the City Council of the excess Memorial Avenue right of way.

3. The applicant submitted a full traffic study and worked with the City to develop an acceptable Traffic Movement Permit.
4. Storm water management was discussed. A new stormwater system will collect and manage the on-site stormwater run-off for quality and some quantity. The stormwater system at the end of Memorial Avenue will send that stormwater to Stetson Brook.
5. The applicant has discussed an annual license to allow a trail along the Androscoggin River to Stetson Brook with the Androscoggin Land Trust.
6. The Lewiston Police encourages the J. F. Murphy School to request that the transporters of students not use the rear Marden parking lot as a cut through and use Memorial Avenue as the route to bring students to the school.

All the review comments from city staff have been addressed to staff's satisfaction with revisions provided by the applicant. City staff has no additional comments at this time.

PLANNING BOARD ACTION

Staff recommends approval of the proposed project, with the following findings:

1. The applicant meets all of the necessary criteria contained in the Zoning and Land Use Code, including, but not limited to Article XIII, (Development Review and Standards), Section 4 (Approval Criteria).
2. The application has addressed the requirements of Maine DOT Chapter 305 for a Traffic Movement Permit. The on-site mitigation will be made as per plan sheet 8, dated March 14, 2019.

Should the Planning Board approve the application, the following conditions shall apply:

1. The applicant will coordinate the acceptance of the new Memorial Avenue "T-turnaround" right-of-way and the discontinuance the remaining cul-de-sac right of way with the city once construction is complete and the school is occupied.

ACTION NECESSARY

Make a motion to approve the application submitted by Stoneybrook Consultants, Inc. on behalf John F. Murphy Homes, Inc. to construct a 41,400 sf school at property located at 5 Memorial Avenue with the findings:

1. The applicant meets all of the necessary criteria contained in the Zoning and Land Use Code, including, but not limited to Article XIII, (Development Review and Standards), Section 4 (Approval Criteria).
2. The application has addressed the requirements of Maine DOT Chapter 305 for a Traffic Movement Permit.

Should the Planning Board approve the application, the following conditions shall apply:

1. The applicant will coordinate the acceptance of the new Memorial Avenue turnaround and the discontinuance the remaining cul-de-sac right of way with the city.

CITY OF LEWISTON

Department of Planning & Code Enforcement

May 13, 2019

Applicant:	John F. Murphy Homes, Inc.
Project Location:	Memorial Avenue Lewiston, Maine Lewiston Tax Map #169, Lots 007 & 008
Project:	Proposed Memorial Avenue School
Permit Category:	> 200 PCE
Traffic Engineer:	Traffic Solutions Attn: William J. Bray, P.E. 17 Mountview Drive Gorham, ME. 04038

Pursuant to the provision of 23 M.R.S.A. § 704-A and Chapter 305 of the Department's Regulations, with delegated review authority granted to the City of Lewiston, the City has considered the application of John F. Murphy Homes, Inc. with supportive data, staff review and other related materials on file.

PROJECT DESCRIPTION

The applicant proposes construction of a private school providing special education services for children with autism, spectrum disorder, developmental disabilities and emotional/behavioral disorders. The proposed school is a 41,400 square foot building with a capacity of 120 students. Staffing levels are projected to include one teacher or teacher aide per student. Staff generally arrives on-site between 7:00 and 8:00 AM and students arrive between 8:30 and 9:30 AM. Student pick-up occurs between 2:30 and 3:30 PM with staff leaving between 4:00 and 5:00 PM. Students are all transported by public school bus, vans or parents

The site will be accessed directly from the dead-end of Memorial Avenue, a short dead-end street that connects directly to Main Street.

The site is calculated to generate 288 trips in the AM peak hour and 218 trips in the PM peak hour.

Findings

Based on a review of the files and related information, the City of Lewiston approves the Traffic Movement Permit application of John F. Murphy Homes, Inc. subject to the following conditions:

MITIGATION

The following mitigation is intended to describe that conceptually shown on a plan entitled "Off-Site Improvements – Memorial Avenue School" prepared by Stoneybrook Consultants, Inc. and

SJR Engineering, Inc. with last revised date of 5-5-2019: If the descriptions contained herein conflict with the plans, these descriptions shall take precedence over the plans. Not all of the mitigation discussed herein may be shown on these or any plan. The following mitigation shall be constructed or implemented to City of Lewiston's satisfaction prior to the opening of the facility, unless otherwise approved by the City of Lewiston.

On-Site Mitigation

A. The section of Memorial Avenue at Main Street shall be widened to 35-feet for a distance of 100-feet providing two egress lanes (right and left-turn lanes) and a single ingress lane. The proposed widened section shall be striped as follows:

- 12-foot ingress lane
- 11-foot left-turn egress lane
- 12-foot right-turn egress lane

B. The City of Lewiston has determined the proposed private school does not qualify for School Zone Signs now or as long as the school is operating as such.

C. Overhead lighting shall be provided, if not existing, to illuminate the Memorial Avenue/Main Street intersection. Overhead lighting shall have an average of 0.6 to 1.0-foot candles, with the maximum to minimum lighting ratio of not more than 10:1 and an average to minimum light level of not more than 4:1.

Off-Site Mitigation

There is no "Off-Site Mitigation" required of the proposed project.

Overall Requirements

A. Provide all necessary auxiliary signs, striping and pavement markings to implement the improvements described herein according to MaineDOT and/or National standards.

B. All plantings and signs (existing and/or proposed; permanent and/or temporary) shall be placed and maintained such that they do not block available sight distances and do not violate the State's "Installations and Obstructions" law. No signage, plantings or structures shall be allowed within the "clear zone" if they constitute a deadly fixed object as determined by MaineDOT. All signs shall meet MRSA Title 23, Chapter 21, Section 1914: "On-Premise Signs".

C. If any of the supporting data or representations for which this permit is based changes in any way or is found to be incorrect / inaccurate, the applicant shall request in writing from the City of Lewiston a decision of what impacts those changes will have on the permit. The applicant will then be required to submit those changes for review and approval and additional mitigation as a result of those changes may be required at the expense of the applicant.

By: _____ Date: _____

Doug Greene
City Planner, City of Lewiston

CITY OF LEWISTON

Department of Planning & Code Enforcement

TO: **Lewiston Planning Board**

FROM: **Douglas Greene, AICP, RLA; Deputy Director/City Planner**

DATE: **May 13, 2019**

RE: **Text and Map Amendment for the Lisbon Commercial Historic District**

On October 4, 2018, the National Park Service, Department of the Interior entered the Lisbon Commercial Historic District in the National Register of Historic Places. This designation expanded a small portion of the Lisbon Commercial Historic District that had been created back in 1985.

Now that the expanded Lisbon Commercial Historic District has been made official, its description and list of contributing structures needs to be added to Article XV. Significant Buildings and Districts as both a text amendment and a mapping amendment. The Staff has prepared a draft text amendment that lists the contributing buildings and describes the new district boundary. The new district is also being added to the city's GIS mapping and on-line parcel viewer.

05.13.2019

AN ORDINANCE PERTAINING TO THE ADDITION OF NEW HISTORIC DISTRICT TO ARTICLE XV

THE CITY OF LEWISTON HEREBY ORDAINS:

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

APPENDIX A
ZONING AND LAND USE CODE
ARTICLE XV. SIGNIFICANT BUILDINGS AND DISTRICTS

Sec. 6. Designated historic structures and historic districts.

(b) *Historic districts.* The following described districts are designated as historic districts:

(2) *Lisbon ~~Street Historic~~ Commercial Historic District (1985).* Start at the intersection of Chestnut and Lisbon Streets: Thence in a generally southeasterly direction along Lisbon Street to the intersection of Lisbon and Cedar Streets; thence in a generally southwesterly direction along Cedar Street approximately one hundred thirty-eight (138) feet; thence in a generally northwesterly direction parallel to Lisbon Street to the intersection of Chestnut Street; thence along Chestnut Street to Lisbon Street and the point of beginning, listed on National Register of Historic Places 5/21/85.

The following are contributing structures within the Lisbon Street Historic Commercial District (1985):

277 Lisbon Street (Institute Jacques-Cartier);
291 Lisbon Street (Centennial Block);
311 Lisbon Street (Simard and Sons Building - upper floors destroyed by fire and demolished 1996);
323 Lisbon Street (Condemned 2004 – demolished 2006);
331 Lisbon Street;
337 Lisbon Street;
339 Lisbon Street;
343 Lisbon Street (Condemned and demolished in 2004);
347 Lisbon Street;
353 Lisbon Street (Dulac Building);
359 Lisbon Street (Condemned and demolished in 2004).

Lisbon Commercial Historic District. (2018) Start at the intersection of Chestnut Street and Lisbon Street, thence in a generally southwest direction, to the intersection of Chestnut Street and Canal Street Alley, thence in a northwesterly

direction along Canal Street Alley approximately eight hundred and thirty feet (830'), thence to the northeast twenty feet (20'), thence continue along Canal Street Alley approximately one hundred feet (100') to the intersection of Canal Street, thence to the north west approximately seven hundred and thirty feet (730') to the intersection of Main Street, thence to the northeast six hundred and thirty feet (620') to the intersection of Middle Street, thence to the northeast one hundred and eighty five feet (185'), thence ninety feet (90') to the north east, thence one hundred and ninety feet (190') to Main Street, thence five hundred and thirty feet (530'), thence to the southeast around the boundary of 249 Main Street, thence to the southwest along the rear property lines of 217 Main Street, across Middle Street along the southwestern boundary of 8 Park Street, thence across Park Street, thence following Journey Alley approximately one hundred and fifty feet (150'), thence in a southeasterly direction parallel to Lisbon Street to Ash Street, thence in a northeast direction to the intersection of Park Street, thence one hundred and seventy five feet (175'), thence one hundred and fifteen feet (115') to the southwest to Park Street Alley, thence six hundred and fifty feet (650') to the southeast to Chestnut Street, thence around the boundary of 99 Chestnut Street, thence around the rear property lines of 276 Lisbon Street, thence one hundred and fifty feet (150') northwest to the point of beginning, listed on the National Register of Historic Places on October 4, 2018.

The following are contributing structures within the Lisbon Commercial Historic District:

41 Ash Street, (Second Manufacturer's National Bank Building)
99 Chestnut Street
9-7 Lisbon Street, (The Gateway-Masonic Hall Building)
21-31 Lisbon Street, (Union Block)
43-47 Lisbon Street
46 Lisbon Street, (Lewiston Trust and Safe Deposit Company Building)
49-53 Lisbon Street, (Lyceum Hall)
50 Lisbon Street, (Second Osgood Building)
55 Lisbon Street,(Depositor's Trust Company Building)
69-87 Lisbon Street, (Music Hall/Frye Block)
80-84 Lisbon Street
96-108 Lisbon Street, (Evans Ehrefried Building)
110 Lisbon Street, (Lamey-Wellehan Building)
112-114 Lisbon Street, (Singer Building)
113 Lisbon Street, (Grant's Building)
117-119 Lisbon Street, (Supovitz Brothers Building)
124-130 Lisbon Street, (Sands Building)
127-129 Lisbon Street, (Osgood Building)
130 Lisbon Street, (Call Building)
133 Lisbon Street, (First McGillicuddy Block)
140 Lisbon Street, (People's Savings Bank Building)
145 Lisbon Street, (First Manufacturer's National Bank Building)
152 Lisbon Street

160-166 Lisbon Street, (Second McGillicuddy Building)
168 Lisbon Street
179 Lisbon Street, (Montgomery Ward Building)
180 Lisbon Street, (Ellard Building)
182-188 Lisbon Street, (Odd Fellows Block)
191-193 Lisbon Street
192-194 Lisbon Street, (Garcelon Building)
195 Lisbon Street
196-208 Lisbon Street, (Pilsbury Block)
199 Lisbon Street, (The Scruton Block)
215 Lisbon Street, (The Savings Bank Block)
220-226 Lisbon Street, (Atkinson Building)
223-225 Lisbon Street, (Le Messager Building)
230-234 Lisbon Street
239 Lisbon Street
240-242 Lisbon Street
243-245 Lisbon Street
244-248 Lisbon Street
249 Lisbon Street
250-274 Lisbon Street, (Lisbon Block/College Block)
255-259 Lisbon Street
263-267 Lisbon Street, (The Martel's Pharmacy Building)
276 Lisbon Street, (First Callahan Block)
277 Lisbon Street, (Institut Jacques Cartier Building)
282 Lisbon Street, (Second Callahan Block)
291-297 Lisbon Street, (The Centennial Block)
331-335 Lisbon Street
337 Lisbon Street
339-341 Lisbon Street, (J. Bureau Building)
347 Lisbon Street
351-353 Lisbon Street, (The Dulac Building)
379 Lisbon Street, (The Lord Block)
389 Lisbon Street
383 Lisbon Street, (The V. Palange Building)
391 Lisbon Street
157-163 Main Street and 2-10 Lisbon Street, Central Block/First National Bank Building
181-193 Main Street
195-205 Main Street (and 5 Park Street)
217 Main Street, Clifford Block
238-240 Main Street
249 Main Street, (Bonnalue Block)
90 Middle Street
103 Park Street, (Knights of Columbus Building)

REASONS FOR THE PROPOSED AMENDMENT

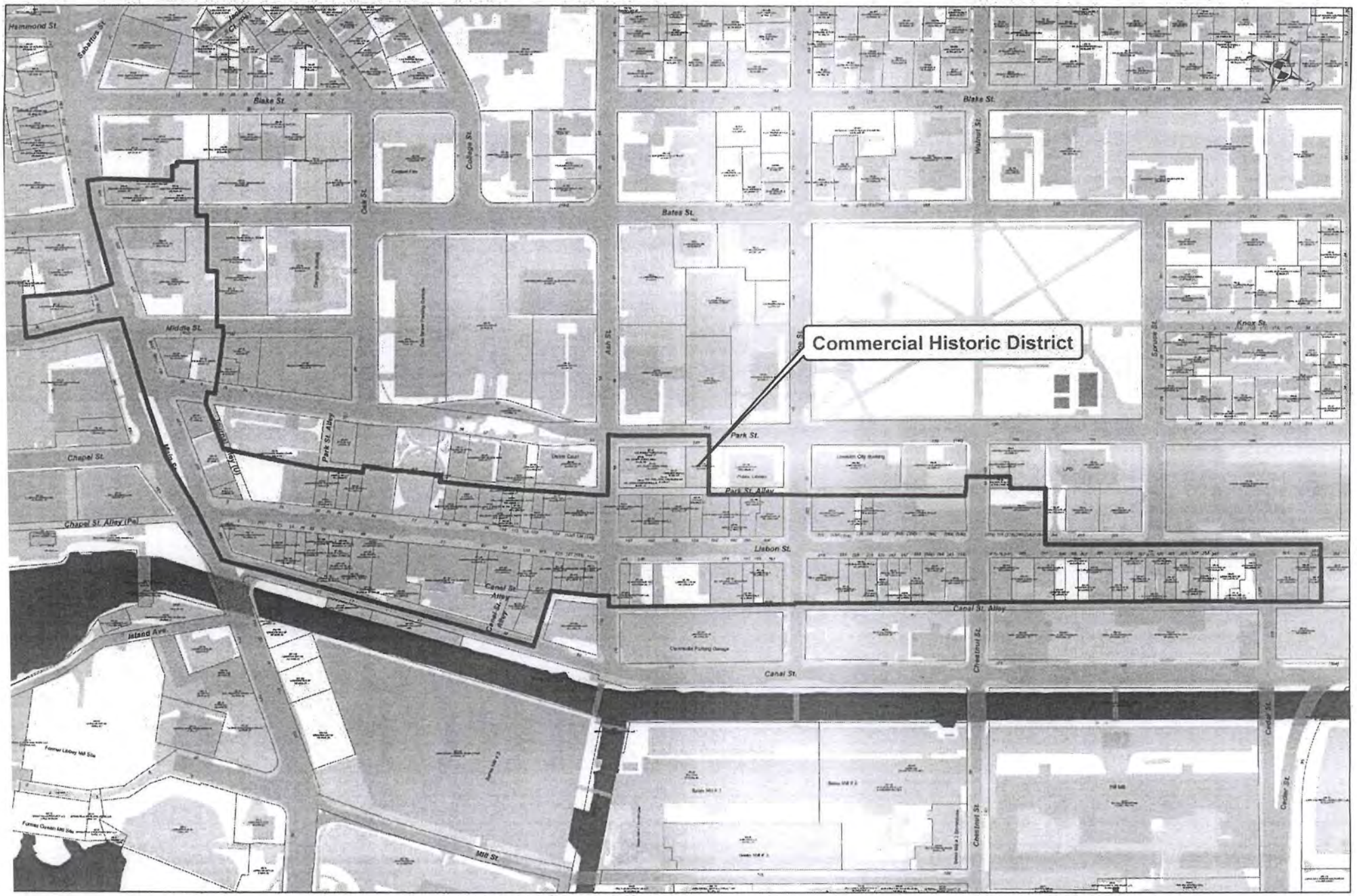
On October 4, 2018, the National Park Service, Department of the Interior entered the Lisbon Commercial Historic District in the National Register of Historic Places. This designation expanded a small portion of the Lisbon Commercial Historic District that had been created back in 1985. Now that the district is official, it needs to be added to Article XV. Significant Buildings and Districts as both a text amendment and a mapping amendment. The new district is also being added to the city's GIS mapping and on-line parcel viewer.

CONFORMANCE WITH 2017 COMPREHENSIVE PLAN

This proposed text amendment is in conformance with the 2017 Legacy Lewiston Comprehensive Plan.

Chapter on Celebrate History, Arts and Culture (Page 182)

"Protecting and enhancing Lewiston's historic and cultural resources, and celebrating the community through art and creative expression, rose to the top as key priorities for the City. Citizens united around the idea of protecting neighborhoods, the downtown, landmark buildings, and other historic structures throughout the City (The term "historic" may not necessarily refer to "historically significant" or National Register designated buildings, but instead as long-standing buildings that represent an important part of the City's past or exemplify a historic architectural period). It was widely understood by participants that these assets should be a centerpiece of Lewiston's rebirth and competitive advantage within the region, acknowledging that entrepreneurs looking for an opportunity to participate in a local renaissance, are drawn to the kind of place where they can invest and make a difference."


Commercial Historic District
Hammond St.
Sabattus St.
Blake St.
Cross St.
Cobb St.
College St.
Bates St.
Ash St.
Washington St.
Middle St.
Chapel St.
Chapel St. Alley (Pe)
Park St.
Park St. Alley
Lisbon St.
Canal St. Alley
Canal St.
Island Ave.
Mill St.
Chestnut St.
Cedar St.
Knox St.
Spruce St.

June 5, 2019 [Lewiston Public Library, 200 Lisbon Street]

9:00 am — 12:00 pm / 1:30 pm — 4:30 pm

WORKSHOP: TACTICAL URBANISM IN ACTION
Brought to you by Build Maine, Bicycle Coalition of Maine, Portland Trails, Ransom Consulting, Maine Department of Transportation, and City of Lewiston

Don't wear a suit and tie for this workshop. Get ready to learn on the job by implementing Tactical Urbanism installations in Lewiston, Maine. Learn the fundamentals, best practices, and low-cost strategies to reduce vehicular speeds, increase safety and comfort, and attract private sector investment. Workshop will include both classroom time and active hands-on street painting, bollard installation, public art and learning to make-do with low-cost, temporary materials.

9:00 am — 12:00 pm / 1:30 pm — 4:30 pm

WORKSHOP: DIRECT ACTION ORGANIZING
Brought to you by AARP

Direct Action Organizing is about organizing around an issue to win a change. We focus on how to plan and implement effective issue advocacy through organizing people to act together and think strategically. The purpose of the training being offered is to learn how to plan strategy by understanding Direct Action Organizing for local, regional, and state-wide advocacy. Most importantly, the training makes people rightfully put strategy before tactics by introducing the strategy chart, which is the most important tool for successful campaign planning. Additionally, participants learn to think about power as the factor that can determine winning or losing.

4:30 pm — 8:00 pm

MAINE-FOCUSED LIGHTNING TALKS
[The Pub at Baxter, 120 Mill Street, Lewiston]

Build Maine will kick off with a series of lightning talks, held at the Pub at Baxter. Join us to learn about innovative Maine projects from people who are building Maine's cities and towns. You'll find good conversation, food, and beer. Welcome to all!

June 6, 2019 [Iron Horse Court, 1 Bates Street, Lewiston]

7:30 am

*** Parking available at Oak Street Parking Garage ***
Registration Opens
Locally made + locally sourced breakfast provided by Forage Market
Developers Collaborative Coffee Bar

— Visit with Exhibitors

8:00 am — 8:30 am

Welcome to Build Maine!

8:30 am — 9:15 am

KATHRYN ROGERS MERLINO
Professor of Architecture
University of Washington, Seattle

What does truly sustainable design look like at the building and neighborhood scale? Kathryn will share the findings from her recent book, Building Reuse: Sustainability, Preservation, and the Value of Design. Learn about how reusing and reimagining existing buildings can reduce carbon emissions, spur economic growth, and improve neighborhood character.

"When we travel, we seek out existing buildings and places because they have a history and a cultural value to them. I think the messiness and complexity of older buildings appeals to our human nature, often more than new buildings, especially when they look exactly like all the rest of the buildings in the neighborhood."

9:15 am — 10:30 am

RICK RYBECK
Director
Just Economics, LLC | Washington, DC

Typically, public subsidies for infrastrastructure are used to facilitate development. Yet rising land prices near infrastructure often chase development to cheaper, but more remote sites. The resulting pattern is bad for the environment and bad for municipal budgets due to the necessary duplication of expensive infrastructure. While towns and cities create enormous value through public services, they often struggle for funds. Rick Rybeck will share how some communities have overcome these ongoing fiscal challenges while also providing more affordable housing and commercial space.

"How we raise funds for infrastructure is just as important as how much funding we raise. Different funding mechanisms have different incentives and disincentives. Using the right tools, communities can harmonize economic incentives with public policy objectives for job creation, affordable housing, and sustainable development to become more prosperous, equitable and financially self-sustaining."

10:30 am — 10:50 am

Developers Collaborative Morning Coffee Break — Visit with Exhibitors

10:50 am — 11:50 pm

JEFF SPECK
City Planner and Bestselling Author
Speck & Associates | Brookline, Massachusetts

Learn simple solutions to reclaim streets and make our downtowns and neighborhoods safe again for a broad range of human and economic activity. Jeff Speck, author of Suburban Nation and Walkable Cities, will share lessons from his latest book, Walkable City Rules: 101 Steps to Making Better Places, A "Tool-Kit for Urban Activists." He will describe the primacy of walkability in building more vital, resilient, and appealing cities.

"Even the best urbanism won't generate walkability if people think they're going to die every time they walk out on the street. Still, most American cities that developed pre-war have a downtown. And today many have virtually everything they need in terms of walkability—except they're utterly unsafe."

12:00 pm — 1:30 pm

FOOD TRUCKS + TOURS
Iron Horse Court (pay your own lunch)

Enjoy a food truck lunch and an opportunity to engage with speakers and conference participants in this year's pop-up outdoor lunch venue, right outside the conference venue. E-Bike demonstrations and a bicycle rodeo will be available courtesy of Bicycle Coalition of Maine. A variety of walking tours will also be available.

1:30 pm — 2:15 pm

JENIFER ACOSTA
Developer | Bay City, Michigan

With a focus on downtown neighborhoods, energy efficiency, and sustainability, Jenifer Acosta revitalizes communities through targeted community investment. An affordable housing advocate turned real estate developer, Jenifer will shed light on her approach to building community trust, collaborating regionally, and resurrecting buildings on the precipice of demolition.

"The advice I would give to anyone working to break into real estate development would be to pick a specific neighborhood and serve it. Being dedicated to a community will foster greater cumulative impact."

2:15 pm — 3:00 pm

ANDREW HOWARD
Co-Founder / Director
Team Better Block | Dallas, Texas

Team Better Block temporarily re-engineers auto-dominated urban areas into vibrant centers. Their iterative approach is both scalable and hyper-local. Having been used in over 200 cities, The Better Block approach provides elected officials, leaders, and citizens with a greater understanding of the urgent need for more permanent change. Andrew, the principal of Team Better Block, will share lessons learned from an all-hands-on-deck approach to urban design.

"What I've realized through Better Block is that every community already has everybody they need. They just need to activate the talented people who are already there, and shove them into one place at one time, and that place can become better really quickly."

3:00 pm — 5:00 pm

BEER + BRAINSTORM
Iron Horse Court (complementary beer included with ticket)

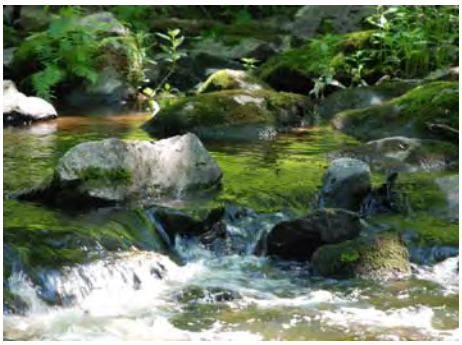
Do you have a problem to fix back at home? Do you have an initiative or idea you want to move forward? Join conference participants for a post-conference work session to find your people, brainstorm, and come up with ideas that you want to get done. Adam Burk from Adam Burk + Co. will lead this self guided conversation, based on the principles of design thinking.

5:30 pm — 7:30 pm

DINNER + CONVERSATION @ SONDER & DRAM
12 Ash Street, Lewiston (pay your own dinner)

Continue the conversation with conference participants at one of Lewiston's newest bars. Full dinner menu available.

TOWN & CITY SPONSORS



Stoneybrook Consultants, Inc.

P.O. Box 459
456 Buckfield Road
Turner, Maine 04282
(207) 224-0252

April 15, 2019

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

Re: Memorial Avenue School
5 Memorial Avenue

Dear Doug:

On behalf of JIG Investments, LLC (Developer) and John F. Murphy Homes, Inc. (Owner), I am pleased to submit this information as their request for approvals to construct a new school at 5 Memorial Avenue. The property was purchased by the Owner in December of 2013 and is known as Lots 7 & 8 on Map 169. These lots include about 21 acres and have about 458' of frontage on the undeveloped cul-de-sac turnaround at the end of Memorial Avenue. This undeveloped turnaround area was accepted by the City in the 1970's, but was never constructed.

The Owner is licensed by the State as a special purpose private school to provide special education services to children with autism spectrum disorder, developmental disabilities and emotional/behavioral disorders. The Owner operates seven schools throughout the State. In addition, they also provide services at Acadia Academy in Lewiston, Maine and Fairview Elementary in Auburn, Maine. Students are referred to these programs by their school district and can range in age from 18 months through 20 years old. The Owner has facilities for Preschool, Elementary, Middle and Secondary School Services, with the goal of maximizing the potential of each child.

This school will provide new space for programs currently operating at 180 Mt. Auburn Avenue in Auburn and at 655 Main Street in Lewiston. These programs are for middle school and high school age students. This school will also offer a technical school level training program for more advanced students to be able to seek employment in the local work force. This school is designed to serve 120 students and 120 staff. The school will be open 50 weeks per year and will operate 5 days per week with normal working hours from 7:00 AM to 5:00 PM. The school will contain 41,400 square feet.

The property is located in the Highway Business (HB) Zoning District where the school use is considered a permitted use. The property is also subject to the Shoreland area performance standards. The property is currently undeveloped. The existing conditions are shown on an "Overall Site Plan Graphic" prepared by Stoneybrook Consultants, Inc. (Stoneybrook) and the boundaries of the property are shown on a "Boundary Survey" prepared by Jones Associates, Inc. (Jones) in December of 2013. Copies of these plans are attached.

The Developer has been working with the City of Lewiston to determine how best to construct a turnaround at the end of Memorial Avenue to support this property and to meet the need for City services at this location. The agreed upon plan is to eliminate the proposed cul-de-sac turnaround and construct a hammerhead turnaround. The project access drive will split the proposed hammerhead turnaround. These improvements are shown on Sheet 8 of the attached full set of engineering plans prepared by SJR Engineering, Inc. (SJR).

To support the project, a new public water main will be extended to the property from an existing water main stub near Main Street. Natural gas will also be extended to the property from Main Street or at an existing main located in the rear of the Marden's complex. Given the work proposed in the existing street, the City is working with the Developer to regrade and repave the existing street. Once the Developer finishes construction of the new turnaround, the City will work with the Owner to accept the new right of way

for the hammerhead turnaround shown on the project plans and to discontinue the remaining portion of the cul-de-sac turnaround right of way that will no longer be necessary. Again, this process will start after the construction has been completed and the school has been occupied by the Owner.

This project is expected to generate 288 AM peak hour trips and 218 PM peak hour trips. A Traffic Movement Permit (TMP) scoping application was submitted in January for this project and a full Traffic Study was submitted in March. After review by City staff, peer-review consultant HNTB, the Androscoggin Transportation Resource Center and the Maine Department of Transportation, no offsite improvements have been required. As a project for a special needs school, this project will not qualify for "School Zone signs". Striping, lane and road width at the intersection of Memorial Avenue and Main Street shall be as shown on the Memorial Avenue Site Plan - Sheet 8 of the SJR plan set attached to this application. We have attached a partial copy of the Traffic Study for your information.

In addition to the TMP approvals and Memorial Avenue improvements discussed above, this project will require Site Plan Review for construction of the proposed building on this lot. All proposed improvements are shown on the attached set of plans prepared by SJR. As noted, the Developer plans to construct a 41,400 square foot single-story building. The project as currently proposed will provide a total of 135 parking spaces, 18 of which will be handicap accessible.

Article XII, Section 17 (d) requires a secondary school to provide five parking spaces per classroom. Current building plans show only 8 classrooms, but there are many other rooms shown to support a student population with special needs. Total staffing for this school is expected to be one teacher or support staff person per student. Therefore, the 135 spaces provided will support 120 employees and 15 visitors. Given the Owner's past experience, the level of parking shown will be sufficient to support the programs at this school.

The HB District allows a maximum impervious ratio of 0.75 (or 75%) and a maximum lot coverage of 0.50 (or 50%). The lot coverage proposed by this project is 4.5% and impervious ratio is 15.1%. A total of 3.2 acres of impervious area will be created and a total of 8.1 acres will be disturbed. This project will, therefore, need approvals under the Site Location of Development Act (SLODA) from the Maine Department of Environmental Protection (MDEP). Since the City can have delegated authority for projects with up to 7 acres of impervious area, we would ask that, as part of your review, you seek MDEP approvals under your delegated review authority to review this application under the SLODA and Stormwater requirements.

The proposed building meets the front and side setback requirements of 20'. The parking lot meets the front yard requirement of 15' and the side yard requirement of 10' outlined for the HB District. The single-story building proposed will not exceed the maximum height requirement of 65'. There is no minimum lot size requirement for the proposed use and the street frontage available on the new turnaround design will exceed the minimum requirement of 150'.

The Utility Plan shows how utility services will be extended to this site. Sewer will be connected to the existing public sewer main running through the property. There will be two separate water service gate valves installed in the 8" water main that will be extended from Main Street. These gate valves will be located in the service drive, so City staff will have easy access to shut off the water service, if necessary. Gas will also be extended along Memorial Avenue to the property and then extended into the site to the south end of the building. Power, communications and cable are planned to be overhead from Memorial Avenue to a new pole on the service drive. From this new pole, the service will extend underground to the building.

There is an existing catch basin located in the proposed turnaround of Memorial Avenue. There were no records found showing where this existing catch basin and piping leave this property. Since the outlet pipe is undersized at only a 6" diameter, City engineering staff asked us to look for other options

to discharge both City street stormwater and our site stormwater from this area. To accomplish this request, we have proposed a 24" stormwater system running from near the end of the street to Stetson Brook. This system will be installed along the existing sewer main running through the property. City street stormwater flow and existing offsite stormwater flow, which has been redirected around the proposed improvements, will discharge directly to this new stormwater system.

Stormwater flow from the proposed improvements will be directed to one of 3 proposed filter basins. Filter Basin #1 controls stormwater quality and provides some detention for stormwater collected from the roof and improvements at the rear of the proposed building. The discharge from this filter basin is on site, above the river level. Filter Basins #2 and #3 will treat stormwater flow from the parking areas and driveway improvements in the front of the building. Again, treatment for stormwater quality and some detention is provided. Discharge from these filter basins is to the new 24" stormwater system which leads to Stetson Brook at the confluence of the Androscoggin River. We have attached five full copies of the stormwater reports prepared by SJR outlining the details of these stormwater controls for this project. We have also attached ten partial copies of these reports.

We have attached a landscaping plan prepared by Davis Landscape Company Inc. We have also attached a lighting plan prepared by Swaney Lighting Associates, Inc. All lights will be full cut-off fixtures and we have provided copies of the catalog information sheets for each fixture.

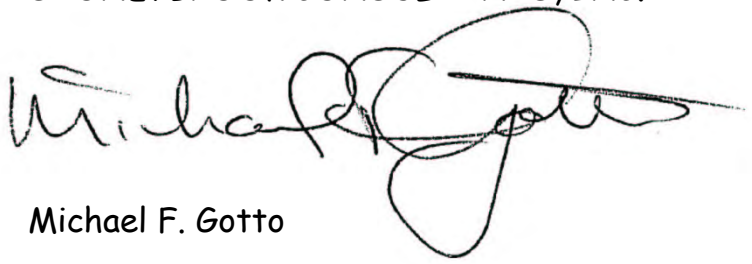
Jones first mapped wetland areas on this property in June of 2013. They visited the site again in January of 2019 to confirm the prior mapping was still valid. Copies of their reports are attached. The project as proposed will impact 3,362 square feet of wetland area. Impacts of up to 4,300 square feet can be done without review and approvals from MDEP. The project will also cause temporary impacts to 4,083 square feet of wetland area for installation of the 24" stormwater system. These impacts are considered temporary because the wetland soils will be replaced as the pipe trench is backfilled.

Temporary impacts can be permitted with approvals of a permit-by-rule from MDEP as a crossing (utility lines, pipes or cables). We will prepare and submit the required application before the Planning Board meeting.

To support this application, we have included the application form, response to ordinance requirements, a copy of the deed and several project graphics. The Developer plans to start construction in June and construction will be completed by June of 2020. The project is expected to cost about $4.8 million. Construction will be funded by the Owner. We hope you find the attached information sufficient for approval of this use for this site. Should you have any questions, please call.

Respectfully yours,

STONEYBROOK CONSULTANTS, INC.



Michael F. Gotto

cc: John Gendron
Peter Kowalski
Michelle Hathaway

Development Review Application

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

PROJECT NAME: Memorial Avenue School

PROPOSED DEVELOPMENT ADDRESS: 5 Memorial Avenue

PARCEL ID#: 169-7 & 169-8

REVIEW TYPE: Site Plan/Special Exception ☑ Site Plan Amendment ☐
Subdivision ☐ Subdivision Amendment ☐

PROJECT DESCRIPTION: See Cover Letter

CONTACT INFORMATION:

Applicant	
Name:	JIG Investments, LLC
Address:	P.O. Box 1913
Zip Code	Lewiston, ME 04241-1913
Work #:	
Cell #:	
Fax #:	
Home #:	
Email:	

Property Owner	
Name:	John F. Murphy Homes, Inc.
Address:	800 Center Street
Zip Code	Auburn, ME 04210
Work #:	(207) 782-2726
Cell #:	
Fax #:	
Home #:	
Email:	

Project Representative	
Name:	Mike Gotto-Stoneybrook Consultants
Address:	P.O. Box 459
Zip Code	Turner, ME 04282
Work #:	(207) 224-0252
Cell #:	(207) 513-6123
Fax #:	
Home #:	
Email:	mike@stoneybrookllc.com

Other professional representatives for the project (surveyors, engineers, etc.),	
Name:	Steve Roberge-SJR Engineering
Address:	16 Thurston Drive
Zip Code	Monmouth, ME 04259
Work #:	(207) 242-6248
Cell #:	
Fax #:	
Home #:	
Email:	steve@sjreng.com

PROJECT DATA

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

IMPERVIOUS SURFACE AREA/RATIO

Existing Total Impervious Area	0 sq. ft.
Proposed Total Paved Area	97,991 sq. ft.
Proposed Total Impervious Area	139,391 sq. ft.
Proposed Impervious Net Change	139,391 sq. ft.
Impervious surface ratio existing	0 % of lot area
Impervious surface ratio proposed	15.1 % of lot area

BUILDING AREA/LOT COVERAGE

Existing Building Footprint	0 sq. ft.
Proposed Building Footprint	41,400 sq. ft.
Proposed Building Footprint Net change	41,400 sq. ft.
Existing Total Building Floor Area	0 sq. ft.
Proposed Total Building Floor Area	41,400 sq. ft.
Proposed Building Floor Area Net Change	41,400 sq. ft
New Building	Yes (yes or no)
Building Area/Lot coverage existing	0 % of lot area
Building Area/Lot coverage proposed	4.5 % of lot area

ZONING

Existing	Highway Business
Proposed, if applicable	N/A

LAND USE

Existing	Vacant
Proposed	School

RESIDENTIAL, IF APPLICABLE

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

PARKING SPACES

Existing Number of Parking Spaces	0
Proposed Number of Parking Spaces	135
Required Number of Parking Spaces	
Number of Handicapped Parking Spaces	18

ESTIMATED COST OF PROJECT

DELEGATED REVIEW AUTHORITY CHECKLIST

SITE LOCATION OF DEVELOPMENT AND STORMWATER MANAGEMENT

Existing Impervious Area	0 sq. ft.
Proposed Disturbed Area	353,000 sq. ft.
Proposed Impervious Area	139,391 sq. ft.

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

TRAFFIC ESTIMATE

Total traffic estimated in the peak hour-existing (Since July 1, 1997) 0 passenger car equivalents (PCE)

Total traffic estimated in the peak hour-proposed (Since July 1, 1997) 288 passenger car equivalents (PCE)

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

Zoning Summary

1. Property is located in the **Highway Business** zoning district.
2. Parcel Area: **21.3** acres / _____ square feet(sf).

Regulations	Required/Allowed	Provided
Min Lot Area	**None**	**21.3 acres**
Street Frontage	**150'**	**348'**
Min Front Yard	**15'**	**15'**
Min Rear Yard	**20'**	**62'**
Min Side Yard	**20'**	**35'**
Max. Building Height	**65'**	**32'**
Use Designation	**Academic Institution**	**Academic Institution**
Parking Requirement	1 space/ per	square feet of floor area
Total Parking:	**40**	**135**
Overlay zoning districts (if any):		
Urban impaired stream watershed?	YES (NO) If yes, watershed name	

DEVELOPMENT REVIEW APPLICATION SUBMISSION

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

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

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

L/A's development review process and requirements have been made similar for convenience and to encourage development. Each Citys ordinances are available online at their prospective websites:
Auburn: www.auburnmaine.org under City Departments/ Planning and Permitting/Land Use Division/Zoning Ordinance
Lewiston: http://www.ci.lewiston.me.us/clerk/ordinances.htm. Refer to Appendix A of the Code of Ordinances

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

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

Signature of Applicant:	**Date:**
AS AGENT	4/15/19

Development Review Checklist

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

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

PROJECT NAME: Memorial Avenue School

PROPOSED DEVELOPMENT ADDRESS and PARCEL #: 5 Memorial Avenue 169-7&8

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

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

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

April 15, 2019
JIG Investments, LLC

Response to Ordinance Requirements

Article XIII, Section 4

(a) *Utilization of the site* – The building and site improvements have been sited on the lot to minimize impacts to wetlands, floodplain areas and steep slopes. The only improvements shown in the shoreland areas are those required for stormwater control. Those features need to be placed in the low area adjacent to Stetson Brook and the Androscoggin River.

(b) *Traffic Movements* – This project will create about 288 AM peak hour trips and 218 PM peak hour trips. Memorial Avenue at Main Street will be improved as shown on the project plans to create left and right turn lanes and a new hammerhead turnaround will be constructed at the end of the street. This proposed construction will improve vehicle movements and safety along this street.

(c) *Access to the site* – Access to the project will be from Memorial Avenue and the turnaround has been redesigned to improve access to the site.

(d) *Internal vehicular circulation* – Safe movements through the site have been provided.

(e) *Pedestrian circulation* – Safe movements for pedestrians through the site have been provided.

(f) *Stormwater management* – Stormwater management for Memorial Avenue will be improved with a new stormwater discharge at Stetson Brook. Stormwater runoff from all proposed improvements for this

project will be treated at three filter basins sized to treat stormwater flow in accordance with all City and State requirements.

(g) *Erosion control* – All improvements for this project will be completed under the requirements outlined on the plan set submitted. All erosion control measures proposed meet or exceed all City and MDEP requirements.

(h) *Water supply* – This project will be connected to the City water system.

(i) *Sewer disposal* – This project will be connected to the City sewer system.

(j) *Utilities* – This project will connect to the existing overhead utility services along Memorial Avenue.

(k) *Natural features* – The proposed improvements have been sited adjacent to the existing retail use and away from the river and associated shoreland areas. The natural vegetation along the river and stream will be retained to the extent possible. Grading and filling of the site have been minimized to the extent possible.

(l) *Groundwater protection* – There will be no impact to groundwater resources by this project.

(m) *Water and air pollution* – There will be no water or air pollution with this project.

(n) *Exterior lighting* – The exterior lighting proposed is shown on the plans. Lighting for this project has been designed to maintain safe lighting limits for vehicle and pedestrian movements in the paved areas of the property. All light will be full cut off luminaires.

(o) *Waste disposal* – Waste generated by this project will be collected by the owner and disposed of with existing commercial waste contracts.

(p) *Lot layout* – Not Applicable

(q) *Landscaping* – A landscaping plan has been provided to define the street edges and soften the appearance of the parking areas.

(r) *Shoreland relationship* – The only improvements proposed in the shoreland areas are for stormwater controls. All buildings and parking lot improvements are located outside of the shoreland areas.

(s) *Open space* – Not Applicable

(t) *Technical and financial capacity* – The application and design plans have been prepared by professionals qualified to perform this work. The applicant is also working with a developer/local contractor who has completed a number of similar developments in this area. The applicant/developer, with the assistance from this team of professionals, will be able to construct these improvements in accordance with all local and State environmental standards.

(u) *Buffering* – No buffering is required for this project.

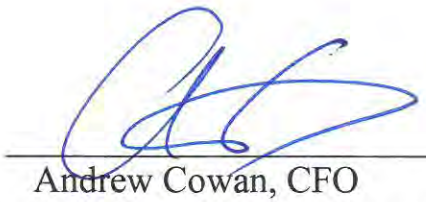
(v) *Compliance with district regulations* – Development of this lot as proposed meets all of the requirements of Article XI, Section 11.

(w) *Design consistent with performance standards* – The improvements proposed will comply with the performance standards of Article XII, insofar as they may be applicable.

John F. Murphy Homes, Inc.
800 Center Street
Auburn, ME 04210

To Whom It May Concern:

The signature below authorizes Stoneybrook Consultants, Inc. and Traffic Solutions to act as the applicant's agents in the processing of the enclosed application.



Andrew Cowan, CFO
for John F. Murphy Homes, Inc., applicant

Bk 8844 Pg243 #25952
12-31-2013 @ 11:55a

MAINE REAL ESTATE TRANSFER TAX PAID

QUITCLAIM DEED

Atlantic Refinance, LLC, a Delaware limited liability company with a mailing address of 50 Portland Pier, Suite 400, Portland, Maine 04101, consideration paid, grants to **John F. Murphy Homes, Inc.**, a Maine corporation with a place of business in Lewiston, County of Androscoggin and State of Maine, with Quitclaim Covenants except as to the shaded area on the survey referenced in Exhibit A to which no covenants are granted certain lots or parcels of land situated in Lewiston, County of Androscoggin and State of Maine, bounded and described as follows:

SEE ATTACHED EXHIBIT A

Attached as Exhibit B is the original Quitclaim Deed from Marden Realty to Atlantic Refinance, LLC releasing its interest in a portion of the parcel described in Exhibit A.

IN WITNESS WHEREOF, the Grantor has caused this instrument to be executed on this 27th day of December, 2013.

Atlantic Refinance, LLC

Witness

By: _____
James F. Hanley, its duly authorized agent

STATE OF MAINE
ANDROSCOGGIN, SS. December 27, 2013

Then personally appeared the above-named James F. Hanley, in his said capacity, and acknowledged the foregoing instrument to be his free act and deed and the free act and deed of said Grantor.

Before me,

_____
~~Notary Public~~/Attorney at Law
Print Name: Daniel A. Dalton Jr
My Commission Expires:

F:\DAD\Clients\Atlantic Refinance, LLC\5 Memorial Avenue Lewiston\Deed with quitclaim to JFM.doc

Exhibit A: Memorial Avenue, Lewiston, Maine

Certain lots or parcels of land, with any buildings thereon, situated in Lewiston, Androscoggin County, Maine, bounded and described as follows, to wit:

Beginning at an existing concrete monument found, witnessed by a 3/4" rebar found, in the northeasterly line of Memorial Avenue, so called, and marking the northwesterly corner of land now or formerly of Raymond L. Clark, Jr. and Betty H. Clark evidenced by deed recorded in the Androscoggin County Registry of Deeds in Book 2605, Page 23; thence

North 66° 59' 23" West along the northeasterly line of Memorial Avenue a distance of 42.28 feet to a concrete monument found (12" below grade); thence

North 76° 50' 25" West along the northeasterly line of Memorial Avenue a distance of 27.57 feet to a concrete monument found (6" below grade); thence

In a general northwesterly direction along a seventy and 00/100 (70.00) foot radius curve to the right a distance of 84.39 feet to a point; thence

In a general northwesterly, then westerly, then southwesterly, then southerly and then southeasterly direction along a seventy and 00/100 (70.00) foot radius curve to the left a distance of 304.30 feet to a concrete monument found (8"below grade), witnessed by a 3/4" rebar found, at the northerly corner of land now or formerly of Marden Realty evidenced by deed recorded in said Registry in Book 3714, Page 249, with this call and the immediately preceding call describing the cul-de-sac constituting the northwesterly end of Memorial Avenue; thence

South 13° 09' 35" West along said Marden Realty land a distance of 100.00 feet to a point; thence

North 76° 12' 56" West along said Marden Realty land and land now or formerly of Richard O. Campbell and Priscilla L. Campbell evidenced by deed recorded in said Registry in Book 948, Page 453 a distance of 301.06 feet to a 1 1/4" iron pipe found; thence

North 76° 39' 14" West along said Campbell land a distance of 275.51 feet to a 1 1/4" iron pipe found in the southeasterly line of land now or formerly of the Androscoggin Land Trust evidenced by deed recorded in said Registry in Book 7093, Page 279; thence

North 30° 15' 06" East along said Androscoggin Land Trust land a distance of 498.45 feet to a capped rebar found with ID cap No. 2177 marking the northeast corner of said Androscoggin Land Trust land; thence

North 56° 15' 17" West along said Androscoggin Land Trust land a distance of 306.89 feet to a 5/8" rebar set with ID cap No. 2433; thence

In a general northeasterly direction along the top of a former bank running along and near the current southeast bank of the Androscoggin River, as said former bank was depicted on an unrecorded property plan prepared for Lewiston Crushed Stone, Inc. by Aliberti, Larochelle and Hodson Engineering Corp. dated April 16, 1970 and revised January 21, 1972 (hereafter the "ALH Plan"), to a point near the high water mark along the current southeast bank of the Androscoggin River and near the high water mark

along the current southwest bank of Stetson Brook, said point being located at a bearing course of North 42° 14' 50" East and at a distance of 830.31 feet from the 5/8" rebar set with ID cap No. 2433 identified in the immediately preceding call above; thence

In a general easterly and southeasterly direction along the top of a former bank running along and near the current southwest bank of Stetson Brook as depicted on the ALH Plan, to a 5/8" rebar set with ID cap No. 2433, said rebar set being located at a bearing course of South 55° 40' 09" East and at a distance of 750.03 feet from the terminus point of the immediately preceding call above; thence

North 62° 08' 25" East along land now or formerly of Jori Brothers LLC evidenced by deed recorded in said Registry in Book 6267, Page 78 a distance of 35.63 feet to a 5/8" iron pipe found at the northwest corner of said Jori Brothers LLC land; thence

South 18° 30' 06" East along said Jori Brothers LLC land a distance of 100.01 feet to a 5/8" iron pipe found at the northeast corner of land now or formerly of Real Estate Holdings, LLC evidenced by deed recorded in said Registry in Book 8141, Page 40; thence

South 48° 03' 01" West along said Real Estate Holdings, LLC land a distance of 355.68 feet to a 5/8" iron pipe found and reset; thence

South 23° 42' 18" West along said Real Estate Holdings, LLC land a distance of 250.00 feet to a bent rebar found at the westerly corner of said Real Estate Holdings, LLC land; thence

South 64° 15' 23" East along said Real Estate Holdings, LLC land a distance of 73.37 feet to a 5/8" rebar set with ID cap No. 2433 at the northerly corner of land now or formerly of Reginald J. Drapeau, Jr. evidenced by deed recorded in said Registry in Book 5465, Page 320; thence

South 27° 49' 48" West along said Drapeau land a distance of 133.25 feet to a 5/8" rebar set with ID cap No. 2433 at the northerly corner of said Clark land; thence

South 13° 08' 51" West along said Clark land a distance of 109.54 feet to the point of beginning.

Also conveyed herewith is all of Grantor's right, title and interest in and to a certain lot or parcel of land located between the Androscoggin River and the top of the bank running along and near said River as depicted on the ALH Plan, and located between Stetson Brook and the top of the bank running along and near said Brook as depicted on the ALH Plan. The real estate described in this paragraph is depicted as a shaded area on the Jones Associates, Inc. plan, which is further described below.

The above bearing courses are based upon Grid North. The above metes and bounds description is based upon a Boundary Survey prepared by Jones Associates, Inc. dated December 10, 2013 under Project #13-034LE, which plan is to be recorded in said Registry. Reference should also be made to this plan for various easements and other matters depicted thereon affecting the above described premises.

Being the same premises conveyed by deeds from ATL Holdings LLC to Atlantic Refinance, LLC dated December 31, 2005 and recorded in said Registry in Book 7088, Pages 221 and 253.

EXHIBIT
tabbies
B

QUITCLAIM DEED

Marden Realty, a Maine Corporation with a place of business in Lewiston, County of Androscoggin and State of Maine, for consideration paid, grants to **Atlantic Refinance, LLC**, a Delaware limited liability company with a mailing address of 50 Portland Pier, Suite 400, Portland, Maine 04101, with **QUITCLAIM COVENANT**, certain lots or parcels of land situated in Lewiston, County of Androscoggin and State of Maine, bounded and described as follows:

Parcel #1: Beginning at a concrete monument set in the ground at the Northerly corner of lot numbered 11 as shown on a plan entitled "Plan of Memorial Park" and recorded in the Registry of Deeds for Androscoggin County in Book of Plans, Volume 3, Book 8, Page 410 said monument being three hundred thirty-seven and forty-nine hundredths feet (337.49') Northwesterly along the Southwesterly line of Memorial Avenue as shown on said plan from the Northwesterly line of Main Street, so-called; thence in a Northwesterly direction by a deflection angle to the left of three degrees forty-nine minutes twelve seconds (3° 49' 12") a distance of fifty and seventy-three hundredths feet (50.73') to a concrete monument set in the ground; thence in a Northwesterly direction by a deflection angle to the left of nine degrees forty-four minutes fifty-seven seconds (9° 44' 57") a distance of one hundred fifty feet (150') to a concrete monument set in the ground at the Northerly corner of lot numbered 13 as shown on said plan; thence in a Northeasterly direction at right angles to the last mentioned line a distance of fifty feet (50') to a point in the Southwesterly line of a triangular parcel of land designated as Memorial Park on said plan; thence in a Southeasterly direction along the Southwesterly line of said triangular parcel of land and at right angles to the last mentioned line a distance of thirty-eight feet, more or less (38+/-) to the intersection of the Southwesterly line and the northeasterly line of said triangular parcel of land; thence in a Northwesterly direction along the Northeasterly line of said triangular parcel of land a distance of eighteen feet, more or less, (18+/-) to a point; thence in a Northeasterly direction at right angles to the last mentioned line a distance of fifty feet (50') to a point at the Westerly corner of lot numbered 3 as shown on said plan; thence in a Southeasterly direction along the Southwesterly line of said lot numbered 3 and a projection thereof and at right angles to the last mentioned line a distance of one hundred twenty-five and sixty-six hundredths feet (125.66') to a point; thence in a Southeasterly direction by a deflection angle to the right of three degrees sixteen minutes eleven seconds (3° 16' 11") a distance of fifty-four and thirty-six hundredths feet (54.36') to a concrete monument set in the ground at the Westerly corner of lot numbered 2 as shown on said plan; thence in a Southwesterly direction across said Memorial Avenue and by a deflection angle to the right of sixty-six degrees fifty-three minutes twenty seconds (66° 53' 20") a distance of fifty-one and forty-three hundredths feet (51.43') to the point of beginning.

Parcel #2: Also another certain lot or parcel of land, being known as Dutil Street,

Androscoggin County in Book of Plans, Volume 3, Book 8, Page 410; thence in a Southwesterly direction along the Northwesterly line of said lot numbered 8 also among the Northwesterly terminus of Fortin Street, so-called, also along the Northwesterly line of lots numbered 20 and 19 also along the Northwesterly terminus of Belisle Street, so-called, also along the Northwesterly line of Lot numbered 18, as shown on said plan a distance of four hundred forty-five and fourteen hundredths feet (445.14') to a point at the Westerly corner of said lot numbered 18; thence in a Northwesterly direction on a projection Northwesterly of the Southwesterly line of said lot numbered 18 a distance of fifty-two and twenty-eight hundredths feet (52.28') to a point at the Southerly corner of lot numbered 27 as shown on said plan; thence in a Northeasterly direction along the Southeasterly line of said lot numbered 27, also along the Southeasterly line of lots numbered 26, 25, 24, 23, and 22 as shown on said plan a distance of four hundred sixty-two and seventy hundredths feet (462.70') to a point at the Easterly corner of said lot numbered 22; thence in a Southeasterly direction on a projection Southeasterly of the Northeasterly line of said lot numbered 22 a distance of fifty and six hundredths feet (50.06') to the point of beginning.

Parcel #3: Also another certain lot or parcel of land, being known as Fortin Street, bounded and described as follows: Beginning at a point at the Westerly corner of lot numbered 3 as shown on a plan entitled "Plan of Memorial Park" and recorded in the Registry of Deeds for Androscoggin County in Book of Plans, Volume 3, Book 8, Page 410; thence in a Northwesterly direction along the Southwesterly line of lots numbered 4, 5, 6, 7, and 8 as shown on said Plan a distance of three hundred seventy-five feet (375') to a point at the Westerly corner of said lot numbered 8; thence in a Southwesterly direction along the projection Southwesterly of the Northwesterly line of said lot numbered 8 a distance of fifty and six hundredths feet (50.06') to a point at the Northerly corner of lot numbered 20 as shown on said plan; thence in a Southeasterly direction along the Northeasterly line of said lot numbered 20 also along the Northeasterly line of lot numbered 21 also along the Northeasterly terminus of a proposed street, also along the Northeasterly line of a triangular parcel of land designated as Memorial Park on said plan a distance of three hundred seventy-two and sixty-five hundredths feet (372.65') to a point; thence in a Northeasterly direction at right angles to the last mentioned line a distance of fifty feet (50') to the point of beginning.

Parcel #4: Also another certain lot or parcel of land, being known as Belisle Street, bounded and described as follows: Beginning at a point at the Northerly corner of lot numbered 13 as shown on a plan entitled "Plan of Memorial Park" and recorded in the Registry of Deeds for Androscoggin County in Book of Plans, Volume 3, Book 8, Page 410; thence in a Northwesterly direction along the Northeasterly line of lots numbered 14, 15, 16, 17, and 18 as shown on said plan a distance of three hundred eighty-eight and three hundredths feet (388.03') to a point at the Northerly corner of said lot numbered 18; thence in a Northeasterly direction along the projection Northeasterly of the Northwesterly line of said lot numbered 18 a distance of fifty-two and twenty-eight hundredths feet (52.28') to a point at the Westerly corner of lot numbered 19 as shown on said plan; thence in a Southeasterly direction along the Southwesterly line of lot numbered 19 also along the Southwesterly line of lot numbered 21 also along the Southwesterly terminus of a proposed street also the Southwesterly line of a triangular parcel of land designated as Memorial Park on said plan a distance of three hundred seventy-two and eight hundredths feet (372.08') to a point; thence in a Southwesterly direction at right angles to the last

mentioned line a distance of fifty feet (50') to the point of beginning.

Parcel #5: Also another certain lot or parcel of land, being Short Street connecting the above named Fortin and Belisle Street, bounded and described as follows: Beginning at a point at the Easterly corner of lot numbered 21 as shown on a plan entitled "Plan of Memorial Park" and recorded in the Registry of Deed for Androscoggin County in Book of Plans, Volume 3, Book 8, Page 410; thence in a Southwesterly direction along the Southeasterly line of said lot numbered 21 a distance of seventy-four and twenty-two hundredths feet (74.22') to a point at the Southerly corner of said lot numbered 21; thence in a Southeasterly direction on a projection Southeasterly of the Southwesterly line of said lot numbered 21 a distance of forty-three feet, more or less (43 +/-) to a point at the Easterly corner of a triangular parcel of land designated as Memorial Park on said plan; thence Northeasterly direction forty feet (40') Southeasterly from and parallel to the first mentioned line and along the Northwesterly line of said triangular parcel of land a distance of fifty-nine and eighty-four hundredths feet (59.84') to a point at the Northerly corner of said triangular parcel of land; thence in a Northwesterly direction on a projection Northwesterly of the Northeasterly line of said triangular parcel of land a distance of forty feet (40') to the point of beginning. The above entitled parcel of land is set forth on a plan of land entitled "Plan of Memorial Park" recorded in the Androscoggin County Registry of Deeds, Book of Plans, Volume 3, Book 8, Page 410.

Excepting the portion of the premises that were conveyed to the Inhabitants of the City of Lewiston by Eagle Realty Corporation by Quitclaim Deed dated October 29, 1974 and recorded in Androscoggin County Registry of Deeds in Book 1133, Page 198.

Also the premises known as lots numbered 3, 4, 5, 6, 7, 8, 14, 15,16, 17, 18, 19 20, 21, 22, 23, 24, 25, 26 and 27 and lot labeled Central Securities Corporation, as shown on Plan of Memorial Park, recorded in the Androscoggin County Registry of Deeds, Vol. 3, Book 12, Page 617.

Also another parcel of lot of land situated in said Lewiston, and being a triangular parcel bounded by Fortin Street and Belisle Street and having a dimension of one hundred sixty-six and eight tenths feet (166.8') by one hundred seventy-eight and four tenths (178.4') feet by fifty-nine and eighty-four hundredths feet (59.84'), said parcel also being shown on said plan.

Subject to an easement for a public sewer line as described in instrument by Eagle Realty Corporation to the Inhabitants of the City of Lewiston dated September 24, 1975 and recorded in the Androscoggin County Registry of Deeds in Book 1210, Page 111, if same affects locus.

For source of title, reference is hereby made to the Quitclaim Deed Without Covenant from ATL Holdings, LLC to Atlantic Refinance, LLC, dated December 31, 2005 and recorded March 22, 2007 in Book 7088, Page 253.

By delivery of this deed the Grantor herein, and by acceptance of this deed the Grantee

herein, both acknowledge that the respective obligations of the Grantor and Grantee under the right

of first refusal conveyed by instrument dated October 8, 1968, and recorded October 10, 1968 in Book 995, Page 105, which was conveyed to Grantor by Warranty Deed from Grossman's Inc., dated November 29, 1996 and recorded December 17, 1996 in Book 3714, Page 249, are hereby released and terminated. The above-referenced parcels of land shall no longer be subject to the rights contained in the above referenced deeds. Grantor acknowledges Grantee's compliance with the terms of its right of first refusal, including receipt of proper notice of Grantee's intended sale of the land which is subject to its right of first refusal herein released being a portion of the entire parcel of land being sold, and that all information provided to Grantor satisfies the terms of its rights as outlined in the above recorded documents.

IN WITNESS WHEREOF, the Grantor has caused this instrument to be executed on this 13 day of September, 2013.

Marden Realty

Witness

By: _____
Print Name: John E Marden
Title: Managing Partner
Marden Realty, LLP

STATE OF MAINE
ANDROSCOGGIN, SS.

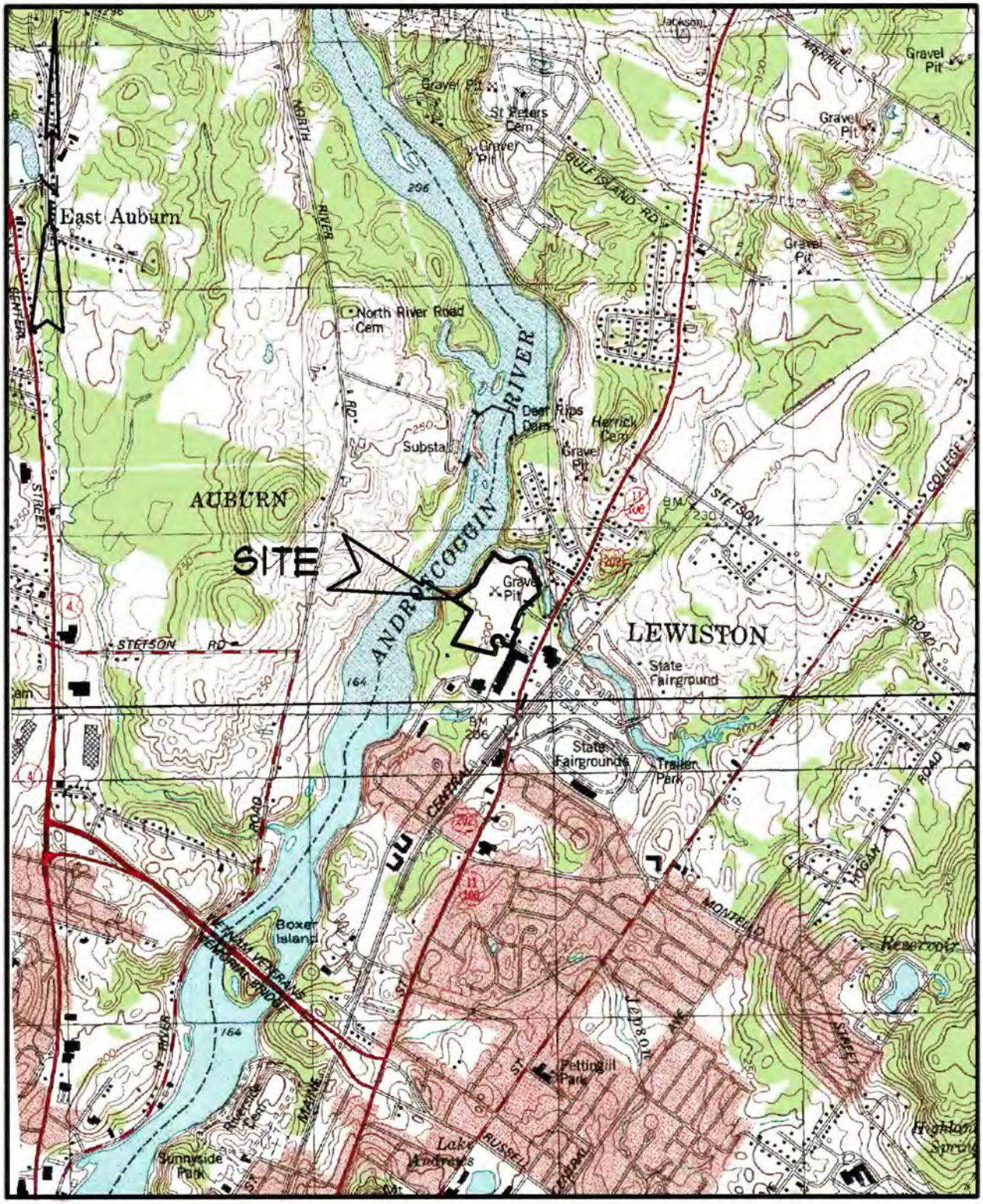
September 13, 2013

Then personally appeared the above-named John Marden, in his/her said capacity, and acknowledged the foregoing instrument to be his/her free act and deed and the free act and deed of said Marden Realty.

Before me,

_____
Notary Public/Attorney at Law
Print Name: Beckie L. Sheldon
My Commission Expires: December 1, 2016

ANDROSCOGGIN COUNTY
TINA M CHOUINARD
REGISTER OF DEEDS



USGS LOCATION MAP

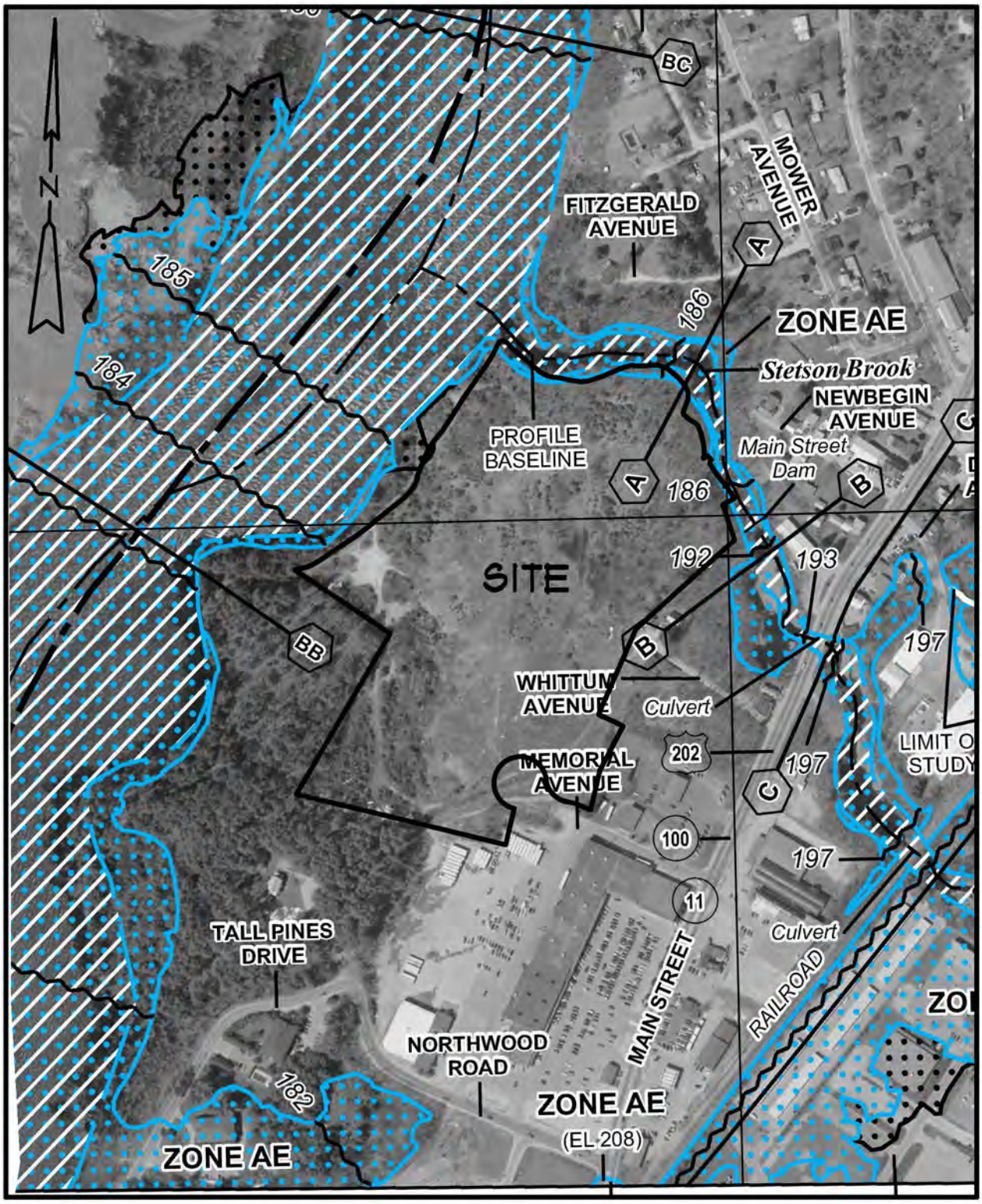
MEMORIAL AVENUE SCHOOL
APPLICANT: JIG INVESTMENTS, LLC
SCALE: 1" = 2,000'
DATE OF GRAPHIC: JANUARY 11, 2019
SOURCE: MAINE OFFICE OF GIS
PUBLICATION DATE: 1967

Stoneybrook Consultants, Inc.

TAX MAP

MEMORIAL AVENUE SCHOOL
APPLICANT: JIG INVESTMENTS, LLC
SCALE: NOT TO SCALE
DATE OF GRAPHIC: JANUARY 11, 2019
SOURCE: CITY OF LEWISTON GIS
PUBLICATION DATE: 2018

Stoneybrook Consultants, Inc.



FLOOD MAP

MEMORIAL AVENUE SCHOOL
APPLICANT: JIG INVESTMENTS, LLC
SCALE: 1" = 400'
DATE OF GRAPHIC: JANUARY 11, 2019
SOURCE: FEMA FIRM
PUBLICATION DATE: JULY 8, 2013

Stoneybrook Consultants, Inc.

JONES ASSOCIATES

Foresters, Surveyors and Environmental Consultants

WETLAND REPORT

Murphy Homes

Prepared for:
Stonybrook Consultants, Inc
456 Buckfield Road
Turner, ME 04282

Prepared by:
Jones Associates, Inc.
63 Tucker Lane
Poland Spring, Maine 04274
(207) 998-5242

JA Job # 13-034 Murphy Homes
June 2013

TABLE OF CONTENTS

INTRODUCTION

Jones Associates, Inc. was contracted to provide wetland delineation services for Stoneybrook Consultants, Inc. in Lewiston, Maine. The area investigated includes City of Lewiston Tax Map and Lot numbers 169-7 and 169-8. These lots are located in Lewiston, Maine at the terminus of Memorial Avenue off of Main Street. The following report summarizes site conditions observed during site visits in June of 2013.

Wetland/upland boundaries were identified and delineated according to U.S. Army Corps of Engineers (ACOE) Wetlands Delineation Manual (Environmental Laboratory 1987) and the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, October 2009. Wetlands were identified based on the presence of hydric soil (inundated or saturated soil conditions resulting from permanent or periodic inundation by ground water or surface water), hydrology (movement and distribution of water), and predominance of hydrophytic species (Hydrophytes: vegetation typically adapted for life in saturated soil conditions).

Wetland delineation consists of transecting the property, examining periodic soil samples, observing any evidence of hydrology and assessing each stratum of vegetation for its percentage of hydrophytic species. If all three factors were evident, the study plot was considered wetland habitat. Transitions between upland and wetland were clearly marked with blue sub-zero flagging every 30-40 feet, and labeled with alphanumeric codes to identify individual systems (A1, A2, A3….).

Wetland flags were located using Trimble Global Positioning System (GPS) technology with expected average accuracy of sub-meter. This method is recognized by both state and federal agencies. This being stated, Jones Associates, Inc. recommends that the wetland boundary be surveyed using a more precise method of location if any fill or regulated activities are to be performed within 20 feet of the GPS located wetland.

EXISTING CONDITIONS

The parcel of investigation is bounded to the north by Stetson Brook, to the east by three commercial lots, to the south by a parking lot, a residential lot, as well as Androscoggin Land Trust, and to the west the Androscoggin River. Drainage of the site is northerly into Stetson Brook.

This site is forested with open areas found in the north and central portions. The majority of the site has been disturbed in the past. Graded areas and mounds of material can be found throughout. The large area in the north and central part of this site appears to be an borrow gravel pit where fill material was brought in after the pit was complete. Currently this old excavated area contains old roads and trails that are rutted by four-wheelers and four-wheel drive vehicles.

The property contains forested wetlands, with some shrub/scrub wetlands intermixed. Wetlands are found in geographic depressions where the landscape is concave, converging hydrologic flow. The property is generally flat with the lower areas between them. There are a number of swales that run through these flatter areas conveying water towards Stetson Brook property. Vehicle tracks were observed throughout the property. This disturbance compacted soils and influenced hydrology to the extent that they now exhibit hydrophytes, saturated soils and redoximorphic features.

The property is primarily fields with some early successional forest/shrub colonies with 70 to 100% canopy closure. The upland forests are dominated by quaking aspen *(Populus tremuloides)* and eastern white pine (*Pinus strobus*) and a mixture of hardwoods and softwood including, red maple (*Acer rubrum*), American beech (*Fagus grandifolia*), white ash *(Fraxinus americana),* eastern hemlock (*Tsuga canadensis*) and white birch *(Betula papyrifera).* The upland understory is dominated by saplings of the same species as well as a light herbaceous layer including prickly dewberry (*Rubus flagallaris*), Canada mayflower *(Maianthemum canadense*), and starflower (*Trientalis borealis*).

The forested and shrub/scrub wetlands are dominated by red maple (*Acer rubrum*), speckled alder (*Alnus incana-rugosa*), black willow (*Salix nigra*), and sensitive fern (*Onoclea sensibilis*). The invasive species honeysuckle (*Lonicera spp.*), Japanese Knotweed (*Fallopia*

japonica), multiflora rose (*Rosa multiflora*) and Asiatic bittersweet (*Celastrus orbiculatus*) occupy approximately 15 to 20 percent of the land area.

SOILS

According to U.S. Department of Agriculture, Natural Resources Conservation Service, the soils series typed on the parcel include Adams loamy sand, Agawam fine sandy loam, Belgrade very fine sandy loam, Limerick silt loam, Merrimac fine sandy loam and Ninigret fine sandy loam. Characteristics of each series are described in the soil report according to: Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture, Official Soil Series Descriptions, http://soils.usda.gov/technical/classification/osd/index.html.

The Adams series consists of very deep, excessively and somewhat excessively drained soils formed in glacial-fluvial or glacio-lacustrine sand. They are on outwash plains, deltas, lake plains, moraines, terraces, and eskers. Saturated hydraulic conductivity is high or very high. Mean annual temperature is 6 degrees C and mean annual precipitation is 970 millimeters. The soil is considered somewhat excessively-drained. Runoff is very slow to medium.

The Hinckley series is a deep excessively drained soil found on outwash terraces. The parent material is sandy-skeletal glaciofluvial deposits derived from granite and gneiss. Saturated hydraulic conductivity is high or very high. The depth to water table is more than 80 inches. The mean annual temperature ranges from 37 to 46 degrees F and the mean annual precipitation is 30 to 48 in.

The Ninigret series consists of very deep, moderately well drained soils formed in loamy over sandy and gravelly glacial outwash. They are nearly level to strongly sloping soils on glaciofluvial landforms, typically in slight depressions and broad drainage ways. Saturated hydraulic conductivity is moderately high or high in the solum and high or very high in the substratum. Mean annual temperature is about 49 degrees F and mean annual precipitation is about 48 inches. The soil is considered moderately will-drained. Surface runoff is negligible to medium.

WETLAND CHARACTERISTICS

The term "wetlands" means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

--Corps of Engineers Wetlands Delineation Manual (U.S. Army Corps of Engineers 1987)

The primary wetland type found on the property is classified as PFO4E, a palustrine system with a broad-leaf forested community that is seasonally flooded/saturated, there are inclusions of the wetland type PSS1E, palustrine system with a broad-leaf shrub/scrub community that is seasonally flooded/saturated. (United States Fish and Wildlife Service, National Wetlands Inventory. http://www.fws.gov/wetlands/).

The forested wetlands are found in slight depressions and in the historic gravel exaction area. Surface water was observed in the old gravel pit where the residual soil has a clay texture, suggesting poor water infiltration. Surface water was also observed in areas where there are signs of soil compaction from heavy equipment. Drainage patterns such as swales were observed with saturated soils.

Dominant plants are red maple, speckled alder, black willow, and sensitive fern. They are classified as hydrophytes due to their indicator status or the morphological adaptations they exhibit. Morphological adaptations such as buttressing and shallow rooting were observed on white ash. The soil texture is a loam clay classified as a depleted matrix, showing 20% redoximorphic features in the soil matrix with a chroma of 2 and a value of 4.

The wetlands overlaying the ninigret soil had a sandy texture. The soils were observed to have saturation to 4 inches. Drainage patterns were observed. Dominant hydrophytes include silky dogwood, red maple, silver maple and speckled alder. The soil is classified as a sandy redox.

PHOTOS

Historic Soil Compaction 6/14/2013

Hydrophyte Boundary 6/14/2013
Murphy Homes – Tax Map 169, Lots 7 and 8
PHOTOGRAPHS
Jones Associates, Inc, 63 Tucker Lane, Poland Spring, ME 04274
Photographer: Rick Jones

Soil Disturbance, Borrow Pit Area 6/14/2013

Historic Soil Compaction 6/14/2013
Murphy Homes – Tax Map 169, Lots 7 and 8
PHOTOGRAPHS
Jones Associates, Inc, 63 Tucker Lane, Poland Spring, ME 04274
Photographer: Rick Jones

RARE OR UNUSUAL FEATURES

During our investigations of the above site, Jones Associates, Inc. did not observe any rare or unusual plant or animal species within the mapped wetland area. Portions of the area described in this report had been previously altered through clearing and excavation activities. The wetlands on this property were dominated by plant communities typical of this region of Maine. Although field work was done outside of the vernal pool breeding season, the investigation did not find any evidence of vernal pools.

WETLAND RULES AND INFORMATION

WETLANDS OF SPECIAL SIGNIFICANCE

Maine's Department of Environmental Protection considers some wetlands to be of higher significance than others. These wetlands are referred to as Wetlands of Special Significance (WSS). In order to be considered a WSS they must have one or more of the following characteristics:

(1) Critically imperiled or imperiled community. The freshwater wetland contains a natural community that is critically imperiled (S1) or imperiled (S2) as defined by the Natural Areas Program.

(2) Significant wildlife habitat. The freshwater wetland contains significant wildlife habitat as defined by 38 M.R.S.A. § 480-B (10).

(3) Location near coastal wetland. The freshwater wetland area is located within 250 feet of a coastal wetland.

(4) Location near GPA great pond. The freshwater wetland area is located within 250 feet of the normal high water line, and within the same watershed, of any lake or pond classified as GPA under 38 M.R.S.A. § 465-A.

(5) Aquatic vegetation, emergent marsh vegetation or open water. The freshwater wetland contains, under normal circumstances, at least 20,000 square feet of aquatic vegetation, emergent marsh vegetation or open water, unless the 20,000 or more square foot area is the result of an artificial pond or impoundment.

(6) Wetlands subject to flooding. The freshwater wetland area is inundated with floodwater during a 100-year flood event based on flood insurance maps produced by the Federal Emergency Management Agency or other site-specific information.

(7) Peatlands. The freshwater wetland is or contains peatlands, except that the department may determine that a previously mined peatland, or portion thereof, is not a wetland of special significance.

(8) River, stream or brook. The freshwater wetland area is located within 25 feet of a river, stream or brook.

STREAM CHANNELS

According to Maine's Natural Resource Protection Act, Title 38, Article 5-A, Protection of Natural Resources, §480-B Definitions:

"River, stream or brook" means a channel between defined banks. A channel is created by the action of surface water and has two or more of the following characteristics:

(1) It is depicted as a solid or broken blue line on the most recent edition of the U.S. Geological Survey 7.5-minute series topographic map or, if that is not available, a 15-minute series topographic map.

(2) It contains or is known to contain flowing water continuously for a period of at least 6 months of the year in most years.

(3) The channel bed is primarily composed of mineral material such as sand and gravel, parent material or bedrock that has been deposited or scoured by water.

(4) The channel contains aquatic animals such as fish, aquatic insects or mollusks in the water or, if no surface water is present, within the stream bed.

(5) The channel contains aquatic vegetation and is essentially devoid of upland vegetation.

"River, stream or brook" does not mean a ditch or other drainage way constructed, or constructed and maintained, solely for the purpose of draining storm water or a grassy swale.

VERNAL POOLS

As defined by Maine's Department of Environmental Protection (MDEP): A vernal pool, also referred to as a seasonal forest pool, is a natural, temporary to semi-permanent body of water occurring in a shallow depression that typically fills during the spring or fall and may dry during the summer. Vernal pools have no permanent inlet and no viable populations of predatory fish. A vernal pool may provide the primary breeding habitat for wood frogs (*Rana sylvatica*), spotted salamanders (*Ambystoma maculatum*), blue-spotted salamanders (*Ambystoma laterale*), and fairy shrimp (*Eubranchipus spp*.), as well as valuable habitat for other plants and wildlife, including several rare, threatened, and endangered species. A vernal pool intentionally created for the purposes of compensatory mitigation is included in this definition.

As of September 1, 2007, "Significant Vernal Pools" are defined by MDEP as "Significant Wildlife Habitat." As read in MDEP's Chapter 335 -- Significant Wildlife Habitat Rules, "Whether a vernal pool is a significant vernal pool is determined by the number and type

of pool-breeding amphibian egg masses in a pool, or the presence of fairy shrimp, or use by threatened or endangered species as specified in Section 9(B). Significant vernal pool habitat consists of a vernal pool depression and a portion of the critical terrestrial habitat within a 250 foot radius of the spring or fall high water mark of the depression. An activity that takes place in, on, over, or adjacent to a significant vernal pool habitat must meet the standards of this chapter."

Species and abundance criteria required for Significant Vernal Pools.

Species	Abundance Criteria
Fairy shrimp	Presence in any life stage.
Blue spotted salamanders	Presence of 10 or more egg masses.
Spotted salamanders	Presence of 20 or more egg masses.
Wood frogs	Presence of 40 or more egg masses.

MDEP habitat management standards for significant vernal pools: To the greatest extent practicable, the following management practices must be followed within significant vernal pool habitat.

(1) No disturbance within the vernal pool depression;

(2) Maintain a minimum of 75% of the critical terrestrial habitat as unfragmented forest with at least a partly-closed canopy of overstory trees to provide shade, deep litter and woody debris.

(3) Maintain or restore forest corridors connecting wetlands and significant vernal pools;

(4) Minimize forest floor disturbance; and

(5) Maintain native understory vegetation and downed woody debris.

If more than 25% of the critical terrestrial habitat has been previously developed, restoring a portion of that area through supplemental planting or regrowth of native forest species may be considered toward meeting these standards, or towards standards for avoidance, minimization, or compensation. For purposes of Chapter 355, developed area includes disturbed areas excluding areas that are returned to a condition with the same drainage patterns and the same or improved cover type that existed prior to the disturbance;

Currently, Army Corps of Engineers (ACOE) regulate vernal pools but do not have specific characteristics that define a vernal pool, or a definition of which vernal pools require protection or buffering. They review each site on a case by case basis. ACOE's jurisdiction does not begin until the waters of the United States are impacted.

NATURAL RESOURCES PROTECTION ACT

Jones Associates, Inc. has many years of experience working with and interpreting Maine's environmental laws; however MDEP has several unwritten policies that may change without public notice, therefore, certain project specific questions may need review by MDEP staff.

The Natural Resources Protection Act (NRPA) became effective on August 4, 1988. The law is focused on "protected natural resources". A permit is required when an "activity" will be:

(1) Located in, on or over any protected natural resource, or

(2) Located adjacent to (A) a coastal wetland, great pond, river, stream or brook or significant wildlife habitat contained within a freshwater wetland, or (B) certain freshwater wetlands.

An "activity" is (A) dredging, bulldozing, removing or displacing soil, sand, vegetation or other materials; (B) draining or otherwise dewatering; (C) filling, including adding sand or other material to a sand dune; or (D) any construction, repair or alteration of any permanent structure.

The Maine Department of Environmental Protection (MDEP) does not have to be contacted for projects involving minor wetland impacts. Single, complete activities that impact less than 4,300 square feet of freshwater wetland and <u>do NOT occur within</u>: another type of protected natural resource; 25 feet of another protected natural resource and erosion controls are used; a municipal shoreland zone; a wetland normally containing at least 20,000 sq. ft. of open water, aquatic or emergent marsh vegetation; or a peatland are exempt under the Natural Resources Protection Act, 38 M.R.S.A. Section 480-Q(17).

NRPA - PERMIT BY RULE

A "permit by rule" or "PBR", when approved by MDEP, is an approval for an activity that requires a permit under the Natural Resources Protection Act (NRPA). Only those activities described in Chapter 305 may proceed under the PBR process. A PBR activity will not significantly affect the environment if carried out in accordance with this chapter, and generally has less of an impact on the environment than an activity requiring an individual permit. A PBR satisfies the NRPA permit requirement and Water Quality Certification requirement. The following projects may be eligible as PBR activities:

(1) Activity Adjacent to Protected Natural Resource
(An activity adjacent to (any land area within 75 feet, measured horizontally, of the normal high water line), but not in: a coastal wetland, great pond, river, stream or brook or significant wildlife habitat contained within a freshwater wetland; or freshwater wetlands consisting of or containing: under normal circumstances, at least 20,000 square feet of aquatic vegetation, emergent marsh vegetation or open water, except for artificial ponds or impoundments; or peatlands dominated by shrubs, sedges and sphagnum moss.

(2) Placement of permanent intake pipes and water monitoring devices (including drilled wells)

(3) Replacement of Structures

(4) Movement of Rocks or Vegetation

(5) Placement of outfall pipes (including ditches and drain tiles)

(6) Shoreline stabilization using vegetation or riprap

(7) Construction of crossings (utility lines, pipes and cables)

(8) Construction of stream crossings (bridges, culverts and fords)

(9) State Transportation Facilities

(10) Restoration of natural areas (i.e., "undoing" human alteration)

(11) Fisheries & wildlife habitat creation or enhancement and water quality improvement projects

(12) Piers, wharves and pilings in coastal wetlands

(13) Public Boat Ramps

(14) Selected activities in coastal sand dunes

(15) Transfers and Permit Extensions

(16) One-time renewals of maintenance dredging permits

(17) Activities in/on/over significant vernal pool habitat

(18) Activities in existing dev. Areas located in/on/over high or moderate value inland waterfowl & wading bird habitat or shorebird nesting, feeding & staging areas

NRPA - TIER REVIEW PROCESS

NRPA's Tier Review process constitutes a joint application to both the Maine Department of Environmental Protection (MDEP) and the U.S. Army Corps of Engineers (USACOE) for a proposed alteration to a freshwater wetland that qualifies for Tier 1, 2 or 3 review. The square footage of impact is based on the alteration or impact of the whole activity in the wetland. If any part of the overall activity requires a higher tier review, then the whole activity will be reviewed under that higher tier.

The Tier Review process is required for impacts larger than 4,300 square feet, and for requesting a permit for activities in, on, or over a protected natural resource. It is also used for activities adjacent to certain protected natural resources (38 MRSA 480-C(1)). The Tier Review process is required when the activity is not eligible for a PBR.

According to 38 M.R.S.A. Section 480-X(2), an application for a permit to undertake activities altering freshwater wetlands must be reviewed in accordance with the following:

(1) A Tier 1 review process applies to any activity that involves a freshwater wetland alteration up to 15,000 square feet and does not involve the alteration of freshwater wetlands listed in 38 M.R.S.A. Section 480-X(4);

(2) A Tier 2 review process applies to any activity that involves a freshwater wetland alteration of 15,000 square feet up to one acre and does not involve the alteration of freshwater wetlands listed in 38 M.R.S.A. Section 480-X (4 or 5);

(3) A Tier 3 review process applies to any activity that does involve a freshwater wetland alteration greater than one acre, or an alteration of a freshwater wetland listed in 38 M.R.S.A. Section 480-X (4 or 5).

According to 38 M.R.S.A. Section 480-X(4), the following activities are not eligible for Tier 1 or Tier 2 review unless MDEP determines that the activity will not negatively affect the freshwater wetlands and other protected natural resources present.

(1) Activities located within 250 feet of a coastal wetland;

(2) Activities located within 250 feet of the normal high-water line, and within the same watershed, of any lake or pond classified as GPA under section 465-A;

(3) Activities occurring in freshwater wetlands, other than artificial ponds or impoundments, containing under normal circumstances at least 20,000 square feet of aquatic vegetation, emergent marsh vegetation or open water;

(4) Activities occurring in freshwater wetlands that are inundated with floodwater during a 100-year flood event based on flood insurance maps produced by the Federal Emergency Management Agency or other site-specific information;

(5) Activities occurring in freshwater wetlands containing significant wildlife habitat that has been mapped, identified or defined, as required pursuant to section 480-B(10), at the time of the filing by the applicant;

(6) Activities occurring in peatlands dominated by shrubs, sedges and sphagnum moss, except that applications proposing work in previously mined peatlands may be considered by the department for Tier 1 or Tier 2 review, as applicable;

(7) Activities occurring within 25 feet of a river, stream or brook.

According to 38 M.R.S.A. Section 480-X(5), an activity in freshwater wetlands containing a natural community that is imperiled (S2) or critically imperiled (S1), as defined by the Natural Areas Program pursuant to Title 12, Section 544 is not eligible for Tier 2 review unless the department determines that the activity will not negatively affect the freshwater wetlands and other protected natural resources present.

NRPA General Requirements for both the Tier 1 and Tier 2 review process require that the proposed freshwater wetland alteration must be avoided, if feasible, after considering cost, logistics, technology and the overall purpose of the project. However, if unavoidable, the alteration must be limited to the minimum amount necessary to complete the project. The project must utilize both temporary and permanent erosion control measures to prevent sedimentation of any protected natural resource. In addition, the alteration site must maintain an undisturbed 25 foot buffer strip between the activity and any river, stream or brook and must not violate any state water quality law, including those governing the classification of the State's waters.

WETLAND DELINEATION CHECKLIST

Job #:	13-034LE	Map/Lots:	169/7,8	Acreage:	+/- 24
Client:	Stoneybrook Consultants Inc.				
Site Address:	Terminus of Memorial Avenue in Lewiston, ME				

Wetland Scientist:	Kyle Ball
Date of Office Review:	6/26/2013
Date(s) of Field Delineation:	6/14/2013

Wetlands of Special Significance

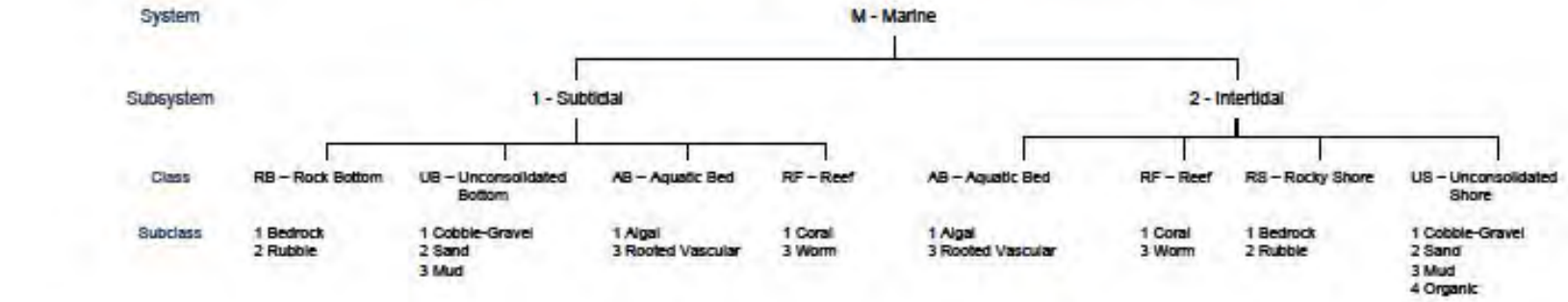
Yes	No	
	X	Does the on site or immediately adjacent wetland contain a mapped and numbered DWA?
	X	Does the on site or immediately adjacent wetland contain an Inland Waterfowl Wading Bird Habitat?
	X	Does the on site or immediately adjacent wetland contain a potential significant vernal pool?
	X	Does the recent aerial photos of the on site or immediately adjacent wetland show or are there any open water or emergent wetlands with areas greater than 20,000 sq. ft.?
X		Does the on site or immediately adjacent wetland contain a 100 year flood plain?
	X	Does the on site or immediately adjacent wetland contain a S1 or S2 community?
	X	Does the on site or immediately adjacent wetland contain a significant wildlife habitat?
	X	Is the on site wetland within 250' of a coastal wetland?
	X	Is the on site wetland within 250' of a great pond?
	X	Does the site contain peatlands?

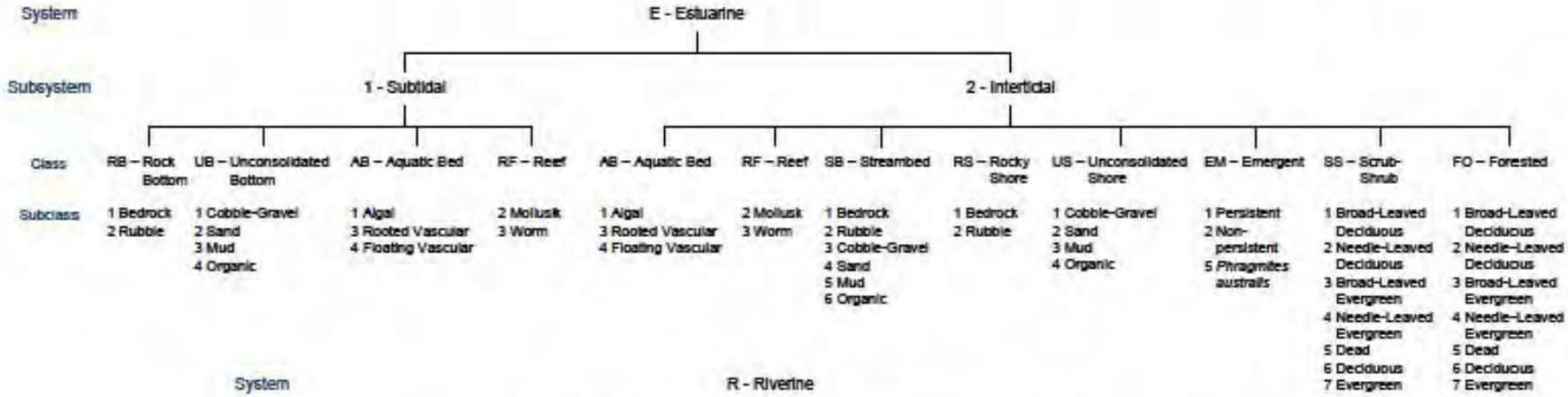
Stormwater Qualifications

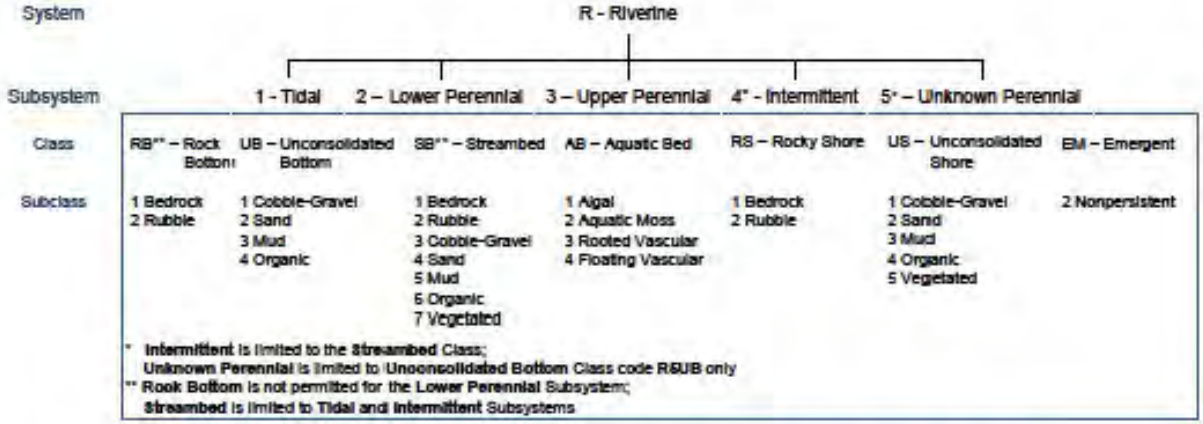
	X	Is the site in the watershed of a Great Pond or Impaired stream?
	X	Is the site in a lake watershed?
	X	Is the site in a watershed most at risk?

Additional Comments:
100-year flood plain as shown on the Federal Emergency Management Agency Flood Insurance Rate Map #230040005B
Mapped Inland Waterfowl Wading Bird Habitat upstream approximately 750 feet on Stetson Brook
The investigation used the "Beginning with Habitat" website to determine the presence of these features.

WETLANDS AND DEEPWATER HABITATS CLASSIFICATION

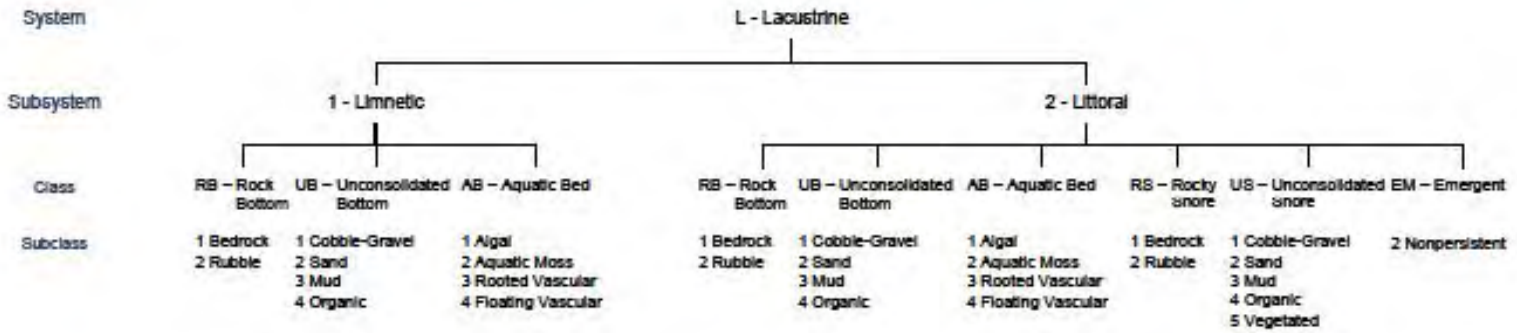


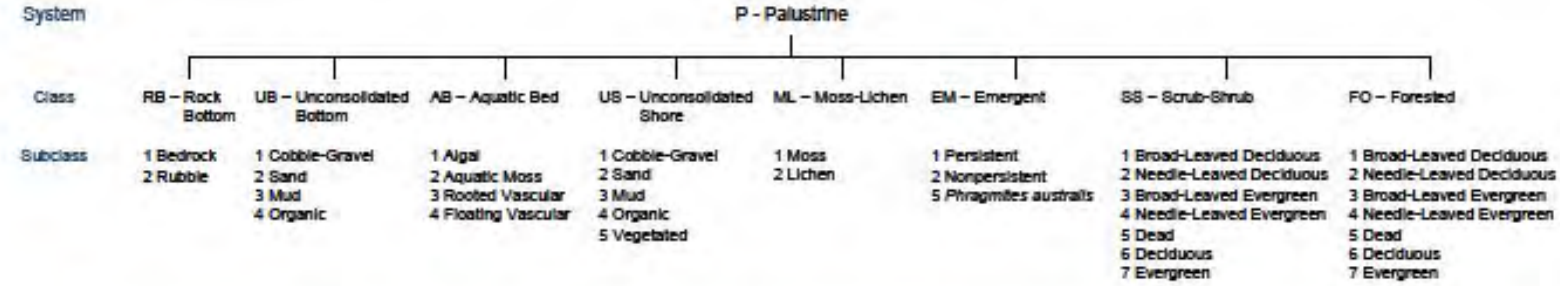




Classification of Wetlands and Deepwater Habitats of the United States, Cowardin *et al.* 1979

WETLANDS AND DEEPWATER HABITATS CLASSIFICATION





MODIFIERS

In order to more adequately describe the wetland and deepwater habitats, one or more of the water regime, water chemistry, soil, or special modifiers may be applied at the class or lower level in the hierarchy. The farmed modifier may also be applied to the ecological system.

Water Regime			Special Modifiers	Water Chemistry			Soil
Nontidal	**Saltwater Tidal**	**Freshwater Tidal**		**Coastal Salinity**	**Inland Salinity**	**pH Modifiers for all Fresh Water**	
A Temporarily Flooded	L Subtidal	S Temporarily Flooded-Tidal	b Beaver	1 Hyperhaline	7 Hypersaline	a Acid	g Organic
B Saturated	M Irregularly Exposed	R Seasonally Flooded-Tidal	d Partly Drained/Ditched	2 Euhaline	8 Eusaline	t Circumneutral	n Mineral
C Seasonally Flooded	N Regularly Flooded	T Semipermanently Flooded-Tidal	f Farmed	3 Mixohaline (Brackish)	9 Miosaline	i Alkaline	
E Seasonally Flooded/ Saturated	P Irregularly Flooded	V Permanently Flooded-Tidal	h Diked/Impounded	4 Polyhaline	0 Fresh		
F Semipermanently Flooded			r Artificial	5 Mesohaline			
G Intermittently Exposed			s Spoil	6 Oligohaline			
H Permanently Flooded			x Excavated	0 Fresh			
J Intermittently Flooded							
K Artificially Flooded							

Page 2 of 2

ATTACHMENT 1: U.S. ACOE WETLAND DATASHEET

Job #13-034

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Murphy Homes City/County: Lewiston Sampling Date: 6-14-13

Applicant/Owner: Stoneybrook Consultants, Inc. State: ME Sampling Point: Wet 1

Investigator(s): Kyle Ball Section, Township, Range:

Landform (hillslope, terrace, etc.): Excavated area Local relief (concave, convex, none): concave

Slope (%): 0 Lat: 44 07' 44.517" Long: -70 12' 10.823" Datum: NAD 83

Soil Map Unit Name: GP- Sand and Gravel Pits NWI classification: PFO1E

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ✔, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ✔

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ☐	**Is the Sampled Area within a Wetland?** Yes ✔ No ☐
Hydric Soil Present?	Yes ✔	No ☐	If yes, optional Wetland Site ID:
Wetland Hydrology Present?	Yes ✔	No ☐	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ✔ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ✔ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ☐	No ✔	Depth (inches):
Water Table Present?	Yes ✔	No ☐	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes ✔	No ☐	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Job #13-034
Sampling Point: Wet 1

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	75	yes	FacU*
2. Acer rubrum	5	no	
3. Betula papyrifera	5	no	
4.			
5.			
6.			
7.			
	85	= Total Cover	

Sapling/Shrub Stratum (Plot size: 12)			
1. Alnus incana-ragosa	10	Yes	FacW+
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	

Herb Stratum (Plot size: 6)			
1. Fragaria virginiana	4	no	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	4	= Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: 0 (A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☑ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks: (Include photo numbers here or on a separate sheet.)

Job #13-034

Sampling Point: Wet 1

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-15	5 Y 4/2	80	4/10B	20	D	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ☐ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ☐ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ☐ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ☐ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ☐ Dark Surface (S7) (**LRR K, L**)
- ☐ Polyvalue Below Surface (S8) (**LRR K, L**)
- ☐ Thin Dark Surface (S9) (**LRR K, L**)
- ☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ☐

Remarks:

Job #13-034

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Murphy Homes City/County: Lewiston Sampling Date: 6-14-13

Applicant/Owner: Stoneybrook Consultants, Inc. State: ME Sampling Point: up 1

Investigator(s): Kyle Ball Section, Township, Range:

Landform (hillslope, terrace, etc.): Excavated area Local relief (concave, convex, none): concave

Slope (%): 0 Lat: 44 07' 44.517" Long: -70 12' 10.823" Datum: NAD 83

Soil Map Unit Name: GP- Sand and Gravel Pits NWI classification: PFO1E

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✔	**Is the Sampled Area within a Wetland?** Yes ____ No ✔
Hydric Soil Present?	Yes ____	No ✔	
Wetland Hydrology Present?	Yes ____	No ✔	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✔ Depth (inches): ____

Water Table Present? Yes ____ No ✔ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No ✔ Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Job #13-034

Sampling Point: up 1

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	30	Yes	FacU
2. Salix babylonica	15	Yes	FacW-
3. Prunus serotina	5	no	
4. Quercus rubra	5	no	
5.			
6.			
7.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 12)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Herb Stratum (Plot size: 6)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	= Total Cover		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: 0 (A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ✔ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☐ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

Job #13-034
Sampling Point: up 1

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-12	5Y3/2	100					sandy clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ☐ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ☐ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ☐ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ☐ Dark Surface (S7) (**LRR K, L**)
- ☐ Polyvalue Below Surface (S8) (**LRR K, L**)
- ☐ Thin Dark Surface (S9) (**LRR K, L**)
- ☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☑

Remarks:

Job #13-034

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Murphy Homes City/County: Lewiston Sampling Date: 6-14-13

Applicant/Owner: Stoneybrook Consultants, Inc. State: ME Sampling Point: Wet 1

Investigator(s): Kyle Ball Section, Township, Range:

Landform (hillslope, terrace, etc.): Excavated area Local relief (concave, convex, none): concave

Slope (%): 0 Lat: 44 07' 44.517" Long: -70 12' 10.823" Datum: NAD 83

Soil Map Unit Name: GP- Sand and Gravel Pits NWI classification: PFO1E

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ✔, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ✔

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ☐	**Is the Sampled Area within a Wetland?** Yes ✔ No ☐
Hydric Soil Present?	Yes ✔	No ☐	If yes, optional Wetland Site ID:
Wetland Hydrology Present?	Yes ✔	No ☐	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ✔ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ✔ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ☐	No ✔	Depth (inches):
Water Table Present?	Yes ✔	No ☐	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes ✔	No ☐	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Job #13-034
Sampling Point: Wet 1

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	75	yes	FacU*
2. Acer rubrum	5	no	
3. Betula papyrifera	5	no	
4.			
5.			
6.			
7.			
	85	= Total Cover	

Sapling/Shrub Stratum (Plot size: 12)			
1. Alnus incana-ragosa	10	Yes	FacW+
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	

Herb Stratum (Plot size: 6)			
1. Fragaria virginiana	4	no	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	4	= Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: 0 (A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☑ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks: (Include photo numbers here or on a separate sheet.)

Job #13-034

Sampling Point: Wet 1

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-15	5 Y 4/2	80	4/10B	20	D	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ☐ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ☐ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ☐ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ☐ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ☐ Dark Surface (S7) (**LRR K, L**)
- ☐ Polyvalue Below Surface (S8) (**LRR K, L**)
- ☐ Thin Dark Surface (S9) (**LRR K, L**)
- ☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ☐

Remarks:

Job #13-034

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Murphy Homes City/County: Lewiston Sampling Date: 6-14-13

Applicant/Owner: Stoneybrook Consultants, Inc. State: ME Sampling Point: up 1

Investigator(s): Kyle Ball Section, Township, Range:

Landform (hillslope, terrace, etc.): Excavated area Local relief (concave, convex, none): concave

Slope (%): 0 Lat: 44 07' 44.517" Long: -70 12' 10.823" Datum: NAD 83

Soil Map Unit Name: GP- Sand and Gravel Pits NWI classification: PFO1E

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✔	**Is the Sampled Area within a Wetland?** Yes ____ No ✔
Hydric Soil Present?	Yes ____	No ✔	
Wetland Hydrology Present?	Yes ____	No ✔	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✔ Depth (inches): ____

Water Table Present? Yes ____ No ✔ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No ✔ Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Job #13-034

Sampling Point: up 1

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	30	Yes	FacU
2. Salix babylonica	15	Yes	FacW-
3. Prunus serotina	5	no	
4. Quercus rubra	5	no	
5.			
6.			
7.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 12)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Herb Stratum (Plot size: 6)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	= Total Cover		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: 0 (A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ✔ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☐ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

Job #13-034
Sampling Point: up 1

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-12	5Y3/2	100					sandy clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ☐ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ☐ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ☐ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ☐ Dark Surface (S7) (**LRR K, L**)
- ☐ Polyvalue Below Surface (S8) (**LRR K, L**)
- ☐ Thin Dark Surface (S9) (**LRR K, L**)
- ☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☑

Remarks:

JONES
ASSOCIATES
Foresters, Surveyors and
Environmental Consultants

February 04, 2019

Stoneybrook Consultants, Inc.
P.O. Box 459
Turner, ME 04282

Transmitted via email: mike@stoneybrookllc.com

Dear Mr. Gotto,

Jones Associates was hired to review a previously delineated wetland located at Murphy Homes on Memorial Drive in Lewiston in January 2019. Methodology included using GPS to find previously mapped wetlands and transecting the lot in search of new wetlands. Blue flagging from the previously conducted delineation was still evident which made determining the exact limits of the previously mapped wetlands clear. With this information it was determined that previously mapped wetlands had little to no change. Additionally, no new wetlands were observed from transecting the property.

Sincerely,

Jason Tome
Wildlife Biologist

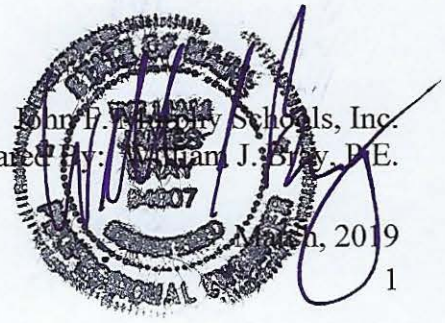
280 Poland Spring Road
Auburn, Maine 04210
(207) 241-0235
Email: jtome@jonesai.com
Website: www.jonesai.com

TRAFFIC IMPACT STUDY

FOR

PROPOSED

Memorial Avenue School



Prepared For: John J. Hagerty Schools, Inc.
Prepared By: William J. Bray, P.E.

March, 2019

INTRODUCTION

JIG Investments, LLC are proposing construction of a new school for John F. Murphy Homes on Memorial Avenue in the City of Lewiston. The school provides special education services with autism spectrum disorder, developmental disabilities and emotional/behavioral disorders. The proposed school building is a 41,400 square foot structure planned for a total of 120 students. Staffing levels are projected to include one teacher or teacher aide per student. Staff generally arrive on-site between 7:00 and 8:00 AM and students arrive between 8:30 and 9:30 AM. Student pick-up occurs between 2:30 and 3:30 PM with staff leaving between 4:00 and 5:00 PM. Students are transported either by public school vans, buses or parents. The school is open 50-weeks per year.

Access to the proposed school is planned with a minor extension of Memorial Avenue, a short dead-end street that connects directly to Main Street. A total of 170 surface parking spaces and other special site features for accommodating vehicle drop-off's and pick-ups are planned for the proposed school site.

The proposed project requires the applicant to receive approval for a Traffic Movement Permit (TMP) and Planning Board approval from the City of Lewiston. A TMP application was filed with the City on January 20, 2019 followed by a project scoping meeting conducted on Monday, February 24, 2019. The City's Traffic Consultant, at that time, identified a full traffic impact study would be required in support of the permit application.

The City's Traffic Consultant and Planning Staff defined the study area to include the section of Main Street between Memorial Avenue and the signalized intersection at Strawberry Avenue. Intersections within the corridor to be studied include: Memorial Avenue/Main Street, Mollison Way/Main Street and all additional intersections within the corridor that meet MaineDOT's criteria as a high crash location.

The traffic study scope will include: conduct a detailed review of current crash patterns at the intersection, prepare future traffic forecasts, perform pre- and post-development capacity analysis and develop suggested safety mitigation measures and intersection improvement recommendations.

Further, the City's Traffic Consultant directed the following additional tasks be completed as part of the detailed traffic study:

a. Provide a comparison of ITE trip generation rates and resulting trip volumes with the site specific trip values applied in forecasting site trip generation.
b. A signal warrant assessment to be completed for the Memorial Avenue/Main Street intersection.

EXISTING SAFETY CONDITIONS

The Maine Department of Transportation's (MDOT) Accident Records Section provided the latest three-year (2015 through 2017) crash data for the section of Main Street between Switzerland Road and Strawberry Avenue, a distance of approximately 1.17 miles. MaineDOT's report is presented as follows:

2015 - 2017 Accident Summary

Location	Number of Accidents	Critical Rate Factor
1. Main Street @ Strawberry Avenue	17	0.57
2. Main Street @ Bearce Avenue	2	0.25
3. Main Street @ Montello Street	12	1.53
4. Main Street @ Shopping Center Entrance	8	0.33
5. Main Street @ King Street	4	0.53
6. Main Street @ Mollison Way	7	0.27

7. Main Street @ Northwood Road	1	0.20
8. Main Street @ Switzerland Road	1	0.14
9. Main Street btw. Strawberry Avenue and Bearce Avenue	15	1.39
10. Main Street btw. Bearce Avenue and Montello Street	21	1.13
11. Main Street btw. Landry Road and Shopping Center Entrance	9	1.14
12. Main Street btw. Shopping Center Entrance and King Street	14	1.08
13. Main Street btw. King Street and Mollison Way	3	0.53
14. Main Street btw. Mollison Way and Northwood Road	5	0.56
15. Main Street btw. Northwood Road and Memorial Way	8	0.71
16. Main Street btw. Memorial Avenue and Whittum Avenue	3	0.45
17. Main Street btw. Whittum Avenue and Dumais Avenue	2	0.25
18. Main Street btw. Newbegin Avenue and Switzerland Road	3	0.67

The MDOT considers any roadway intersection or segment a high crash location if both of the following criteria are met:

- ***8 or more accidents and,***
- ***A Critical Rate Factor greater than 1.00***

As the data presented in the chart shows, there are a total of five (5) high crash locations within the study area (Each of the five locations are highlighted in red). MaineDOT's Safety Bureau prepared detailed vehicle collision diagrams for each of the five high crash location, copies of the vehicle collison diagrams are attached as an appendix to the report. A brief summary of MaineDOT's detailed review of each location follows:

Location #3: Main Street @ Montello Street: Five of the reported collisions occurring within the intersection were "rear-end" crashes. In each case the second driver was determined to be following too close to the lead vehicle. Four additional crashes defined as "angle" crashes involving motorists attempting a left-turn from Main Street to Montello Street colliding with a through vehicle traveling on Main Street. The three remaining vehicle collisions reported for the intersection were also "angle" crashes with vehicles entering the intersection from Montello Street being struck by a through vehicle on Main Street.

Location #9: Main Street between Strawberry Avenue and Bearce Avenue: Ten of the 15 crashes were classified as "rear-end" collisions involving through vehicles, most notably, traveling westerly towards Strawberry Avenue striking a second vehicle traveling in the same direction of travel. Plausible reasons for the high incidence of crashes include: driver inattention, following too close, unsafe speed, sneezing, etc. The remaining five accidents reported within the road segment occurred with varying crash patterns.

Location #10: Main Street between Bearce Avenue and Montello Avenue: Fifteen (15) of the 21 total accidents were "rear-end" crashes with 12 involving westbound traffic. The remaining 6 vehicle crashes in the intersection occurred for varying reasons. Consistent with the findings discussed for Location #9, the likely causes of the high incidence of rear-end accidents include: internal vehicle distraction, following lead vehicle too closely, physically impaired driver, driver inattention, etc.

Location #11: Main Street between Landry Road and Shopping Center Entrance: The principle crash pattern reported for this short street section, again, is a rear-end crash with 5 of the 9 accidents meeting that category. The remaining five crashes occurred more randomly within the street segment.

Location #12: Main Street between Shopping Center Entrance and King Street: A total of 14 crashes were reported for this road section; the most significant crash pattern reported for the roadway link is an angle crash. Seven of the 14 total crashes were "angle" crashes involving a motorist attempting a left-turn movement to or from Main Street to a driveway entrance. The remaining accidents within the road section occurred with varying crash patterns.

NOTE: In accordance with direction received from City Staff and the Consultant, the Mollison Street/Landry Road/Main Street intersection will be included as a study intersection in the conduct of the Traffic Impact Study.

2019 DESIGN HOUR TRAFFIC VOLUMES

2019 design hour traffic volumes were forecast for the three-study intersections based upon two data sources: 1) previous traffic counts collected in 2017 at Mollison Way/Main Street and, 2) 2019 traffic counts. A review of each process follows:

Main Street/Mollison Way: AVCOG performed 12-hour traffic counts at the noted intersection on October 25, 2017. Peak hour traffic summaries were included in the traffic data report for both the AM and PM peak hour. The "morning" peak hour falls between 7:15 and 8:15 AM and the PM peak hour occurred between 4:15 and 5:15 PM. Copies of the peak hour data is attached as an appendix to the report. Traffic data collected during the month of September requires an adjustment to reflect "*peak*" travel conditions during the summer months of July and August. MaineDOT provides factors for adjusting traffic data collected during other periods of time. MaineDOT utilizes highway classifications of I, II, or III for all State and Local roadways. Group I roadways are defined as urban roadways or those roads that typically see commuter traffic and experience little fluctuation from week to week throughout the year. Group II roadways or arterial roads are those that see a combination of commuter and recreational traffic and; therefore, experience moderate fluctuations during the year. Group III roads or recreational roadways are typically used for recreational purposes and experience significant seasonal fluctuations. MaineDOT has designated Main Street as a Group I roadway, which requires the collected traffic data to be adjusted by a factor of approximately 1.05. The 2017 design hour traffic projections were increased by an additional 5% to approximate 2019 design hour traffic conditions. **NOTE: A more detailed discussion on the steps applied in developing the annual growth projection is provided in the FUTURE TRAFFIC section on Page 6.**

Main Street/Memorial Avenue and Main Street/Montello Street: Manual turning movement counts were conducted at both intersections during the months of January and February, 2019. The traffic data was gathered on January 17th at the Memorial Avenue intersection and the data was collected on February 14th at the Montello Street intersection. All vehicle traffic entering each intersection was counted in 15-minute intervals between 7:00 and 9:00 AM and, again, between 3:00 and 6:00 PM on the noted dates. From a summary of the data, a peak hour of traffic was determined at each intersection. The "morning" peak hour occurs between 7:15 and 8:15 AM at both locations and the "evening" peak hour falls between 4:15 and 5:15 PM at the Memorial Avenue intersection and from 4:00 to 5:00 PM at Main Street and Montello Street intersection (Copies of the traffic count summary reports are attached).

Traffic data collected during the months of January and February require an adjustment to reflect "*peak*" travel conditions during the summer months of July and August. MaineDOT provides factors for adjusting traffic data collected during other periods of time. MaineDOT utilizes highway classifications of I, II, or III for all State and Local roadways. Group I roadways are defined as urban roadways or those roads that typically see commuter traffic and experience little fluctuation from week to week throughout the year. Group II roadways or arterial roads are those that see a combination of commuter and recreational traffic

and; therefore, experience moderate fluctuations during the year. Group III roads or recreational roadways are typically used for recreational purposes and experience significant seasonal fluctuations. MaineDOT has designated Main Street as a Group I highway, which requires the collected traffic data to be adjusted by a factor of approximately 1.18 for the Memorial Avenue intersection and an adjustment of 1.20 was applied to the traffic volumes recorded for the Montello Street intersection.

Figure 1: 2019 Design Hour Traffic illustratively presents the estimated 2019 design hour traffic forecasts for the study intersections.

SITE TRAFFIC

Site Trip Generation: Trip generation for the proposed 120-student school site is based upon traffic surveys conducted at the existing John F. Murphy Homes (JFMH) school sites in both the local cities of Auburn and Lewiston. JFMH school sites are located at 180 Mount Auburn Avenue in the City of Auburn and at 655 Main Street in the City of Lewiston. Combined, the two schools have an enrollment of 45 students with a total of 65 staff. All vehicles entering and exiting each school site were recorded in 15-minute intervals between 7:30 and 9:30 AM and, again, between 2:30 and 4:15 PM on Thursday, January 10, 2019. Table 1, below, provides a summary of the traffic data collection effort:

Table 1
Existing JFMH School Traffic Surveys
Vehicle Trip Generation Summary

Time of Day	Auburn School Site Trips			Lewiston School Site Trips			Total Trips		
	Enter Site	Exit Site	Total	Enter Site	Exit Site	Total	Enter Site	Exit Site	Total
7:00 to 7:15 AM	3	1	4	1	0	1	4	1	5
7:15 to 7:30	2	0	2	1	0	1	3	0	3
7:30 to 7:45	3	0	3	4	0	4	7	0	7
7:45 to 8:00	6	1	7	16	1	17	22	2	24
8:00 to 8:15	8	5	13	17	0	17	25	5	30
8:15 to 8:30	10	4	14	7	1	8	17	5	22
8:30 to 8:45	7	4	11	9	12	21	16	16	32
8:45 to 9:00	1	2	3	4	4	8	5	6	11
9:00 to 9:15	1	0	1	2	2	4	3	2	5
9:15 to 9:30	3	0	3	2	4	6	5	4	9
Peak Hour Total	**31**	**14**	**45**	**49**	**14**	**63**	**80**	**28**	**108**
2:30 to 2:45 PM	4	0	4	2	3	5	6	3	9
2:45 to 3:00	3	2	5	4	7	11	7	9	16
3:00 to 3:15	1	14	15	5	11	16	6	25	31
3:15 to 3:30	5	0	5	5	5	10	10	5	15
3:30 to 3:45	1	2	3	2	2	4	3	4	7
3:45 to 4:00	0	19	19	1	7	8	1	26	27
4:00 to 4:15	0	2	2	0	31	31	0	33	33
Peak Hour Total	**6**	**24**	**29**	**8**	**45**	**53**	**14**	**68**	**82**

As highlighted in the preceding table 1, the two existing JFMH schools, with an enrollment of 45 students, generate a total of 108 vehicle trips in the morning peak hour and an additional 82 trips in the evening peak hour. The morning peak hour falls between 7:45 and 8:45 AM and the afternoon peak hour occurs between 3:15 and 4:15 PM. The total number of peak hour trips generated by the existing schools during both peak travel times results in a per student trip rate of 2.40 trips in the morning peak hour and a somewhat lower trip rate of 1.82 trips per student in the afternoon peak hour.

The proposed Memorial Avenue school site, with a projected enrollment of 120 students, is forecast to generate a total of 288 trips in the morning peak hour and a much lower value of 218 trips in the afternoon peak hour.

Site Trip Composition: All trips generated by the proposed JFMH school project are considered "*primary*" trips or "*new*" trips to the highway system.

Site Trip Distribution: Based upon the results of the existing JFMH school traffic surveys, approximately 63% of the site generated trips in the morning peak hour will enter the site and the remaining trips will exit. In the afternoon peak hour, a reverse pattern occurs with 83% of the trips leaving the property and 17% entering the site. These travel distribution patterns provide the following volumes during both peak hour times:

AM Peak Hour
- Entering Trips = 181
- Exiting Trips = 107
- Total Trips = 288

PM Peak Hour
- Entering Trips = 37
- Exiting Trips = 181
- Total Trips = 218

Site Trip Assignment: JFHH provided residency zip code information for existing staff and students, with a total of 128 data points provided. "Home to School" travel assignments for each staff member and student were prepared separately to the proposed school site on Memorial Avenue to establish directional distribution patterns. The results of the travel assignment process show that approximately 85% of the staff and students will arrive from the west on Main Street with the remaining trips traveling easterly on Main Street. Accordingly, the site traffic generated by the new Memorial Avenue School was assigned to the street system based upon a directional distribution of 85% west and 15% east. Minor trip assignment adjustments were completed at both the Mollison Way and Montello Street intersections to account for minor route selection of either staff members or students. The minor adjustments were based upon existing vehicle splits recorded at each intersection. Figure 2 illustratively presents the assignment of the site trips directionally to the street system.

Site Trip Generation – ITE TRIP GENERATION Publication: Trip generation estimates were developed for the proposed school project, a private educational facility, based upon trip tables presented in the seventh edition of the Institute of Transportation Engineers (ITE) "**TRIP GENERATION**" handbook. The ITE publication provides numerous land use categories and the average volume of trips generated by each category.

The following trip rates were used to calculate trip generation for the proposed school:

Land Use #536 – Private School K-12 (120 Students)

- AM Peak Hour = 0.79 trips/student
- PM Peak Hour = 0.17 trips/student

Accordingly, based upon the ITE publication, the proposed school will generate a total of 95 trips in the morning peak hour and a very low volume of 20 trips in the evening peak hour.

FUTURE TRAFFIC

Annual Growth: The Traffic Impact Study has been prepared based upon a projected build-out year of 2020. MaineDOT's historical traffic count station at Main Street N/O Pettingill Street (Station #15801) shows a moderate level of traffic growth has been reported between 2013 and 2016 (8% growth over three years or 2.5%

per year). Accordingly, the 2019 traffic forecasts depicted on Figure 1 were increased by 2.5% to project future 2020 travel conditions on Main Street.

Other Development Traffic: Traffic generated by projects that have been approved by the Local Planning Board and/or the Maine Department of Transportation, yet are not opened, must be included in the estimate of pre-development traffic. The City Planning Department advised that there are no other development projects that would impact the study corridor.

2020 Pre-Development Traffic: 2020 Pre-Development traffic forecasts were prepared for the study intersections by increasing the 2019 design hour volumes presented on Figure 1 by 2.5%. Figure 3 highlights the expected 2020 design hour traffic volumes for each of the three study intersections.

2020 Post-Development Traffic: 2020 Post-Development traffic forecasts were prepared for the study intersections by combining the 2020 Pre-Development travel forecasts illustrated on Figure 3 with the estimated site generated trips highlighted on Figure 2. Figure 4 presents the estimated 2020 post-development traffic forecasts for the study intersections.

MOBILITY ANALYSIS

Capacity analyses of both 2020 Pre- and Post-Development traffic conditions were performed for each study intersection utilizing the Synchro and SimTraffic computer traffic models.

Levels of Service rankings are similar to the academic grading system, where an "A" is very good with little delay and "F" represents very poor conditions. The following table summarizes the relationship between delay and Level of Service for an unsignalized intersection:

Level of Service Criteria for Unsignalized Intersections

Level of Service	Total Control Delay (sec/veh)
A	Up to 10.0
B	10.1 to 15.0
C	15.1 to 25.0
D	25.1 to 35.0
E	35.1 to 50.0
F	Greater than 50.0

The following table summarizes the relationship between delay and Level of Service for a signalized intersection:

Level of Service Criteria for Signalized Intersections

Level of Service	Total Control Delay (sec/veh)
A	Up to 10.0
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	Greater than 80.0

The results of the unsignalized intersection capacity analyses are presented in the following table:

Unsignalized Intersection
Level of Service Summary
2020 Pre- and Post-Development Conditions

	2020 Pre-Development				2020 Post-Development			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Intersection/Approach	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS
1. Main Street @ Memorial Avenue								
- Main Street NB	2 sec.	A	4 sec.	A	6 sec.	A	4 sec.	A
- Main Street SB	2 sec.	A	1 sec.	A	3 sec.	A	2 sec.	A
- Memorial Avenue EB	10 sec.	A	20 sec.	C	19 sec.	C	13 sec.	B
- Overall Intersection	2 sec.	A	3 sec.	A	5 sec.	A	4 sec.	A
2. Main Street, Montello Street & Landry Road								
- Main Street NB	2 sec.	A	5 sec.	A	2 sec.	A	6 sec.	A
- Main Street SB	5 sec.	A	7 sec.	A	5 sec.	A	15 sec.	B
- Landry Road EB	15 sec.	C	100+ sec.	F	25 sec.	C	100+ sec.	F
- Montello Street WB	20 sec.	C	100+ sec.	F	29 sec.	D	100+ sec.	F
- Overall Intersection	5 sec.	A	16 sec.	C	5 sec.	A	32 sec.	D

The Memorial Avenue/Main Street intersection, **which was analyzed with two approach lanes on the Memorial Avenue approach**, is expected to operate, overall, at an acceptable level of service, Level of Service A, which represents the "best" operational travel condition. The analysis demonstrates that motorists exiting the Memorial Avenue approach during both peak hours experience minimal vehicle delay under projected 2020 "build" travel conditions.

The unsignalized intersection capacity analysis completed for the Montello Street/Landry Road and Main Street intersection for both 2020 pre- and post-development traffic loadings show that motorists entering Main Street from either side street approach in the PM peak hour experience excessive vehicle delay. Vehicle delay projections in excess of 100 seconds were determined for both travel conditions.

The following table presents the results of the capacity analysis conducted for the Main Street/Mollison Way signalized intersection:

Signalized Intersection Level of Service Summary
Main Street @ Mollison Way
(2020 Pre- and Post-Development Travel Conditions)

	2020 Pre-Development				2020 Post-Development			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Intersection/Approach	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS
Main Street @ Mollison Way								
- Main Street NB	6 sec.	A	13 sec.	B	7 sec.	A	15 sec.	B
- Main Street SB	8 sec.	A	9 sec.	A	8 sec.	A	13 sec.	B
- Mollison Way WB	25 sec.	C	29 sec.	C	22 sec.	C	33 sec.	C
- Overall Intersection	8 sec.	A	14 sec.	B	9 sec.	A	17 sec.	B

The result of the signalized intersection analysis completed for the signalized intersection of Main Street and Mollison Way demonstrates that the proposed private school project has very minimal impact on intersection traffic operations. The signalized intersection is expected to operate, overall, at a very high Level of Service A/B in both the 2020 pre- and post-development travel conditions.

VEHICLE QUEUE SUMMARY

Ninety-fifth (95%) percentile vehicle queues, an output of the detailed capacity analyses, were calculated for the northbound left-turn lane on Main Street to Memorial Avenue and the Memorial Avenue approach at Main Street based upon 2020 Post-Development travel forecasts. The results are summarized as follows:

2020 Post-Development AM Peak Hour 95th Percentile Queue
- Main Street NB Left-Turn to Memorial Avenue = 106 feet
- Memorial Avenue Approach at Main Street
  - Left-turn Lane = 44 feet
  - Right-turn lane = 75 feet

2019 Post-Development PM Peak Hour 95th Percentile Queue
- Main Street NB Left-Turn to Memorial Avenue = 41 feet
- Memorial Avenue Approach at Main Street
  - Left-turn Lane = 57 feet
  - Right -turn lane = 87 feet

TRAFFIC SIGNAL WARRANT ASSESSMENT

The Federal Highway Administration's 2009 edition of the Manual on Uniform Traffic Control Devices (MUTCD) provides nine separate warrants, whereby, prevailing traffic conditions at an intersection can be evaluated to determine if sequenced traffic signals are warranted. Pursuant to the request of City Staff and Traffic Consultant, projected travel conditions at the Memorial Avenue/Main Street intersection for the 2020 "build" travel condition were assessed to determine if forecast conditions warrant installation of a traffic signal at the intersection. Specifically, the Consultant was requested to determine if forecast conditions satisfy the stated requirements for Warrant #3 Peak Hour and Warrant #5 School Crossing. The MUTCD provides the following definition and guidance for both traffic signal warrants:

Warrant #3 Peak Hour: *"The peak hour signal warrant is intended for use at a location where traffic conditions are such that, for a minimum of 1 hour of an average day, the minor street traffic suffers undue delay*

when entering or crossing the major street. This warrant shall be applied only in unusual cases. The signal warrant shall be applied only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time. The need for a traffic signal shall be considered if an engineering study finds that criteria in either of the following two categories are met:

A. If all three of the following conditions exist for the same one hour of an average day:

1. The total stopped delay experienced by the traffic on one minor street approach controlled by a stop sign equals or exceeds 4 vehicle hours for a one lane approach or 5 vehicle hours for a two lane approach.

2. The volume on the same minor approach equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes; and

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.

B. The plotted point representing the vehicles per hour on the major street (both approaches) and the corresponding vehicles per hour on the higher volume side street approach falls above the applicable curve in Figure 4C-3 for the combination of approach lanes.

Warrant #5 School Crossing: *The School Crossing signal warrant is intended for application where the fact that schoolchildren cross the major street is the principal reason to consider installing a traffic control signal. For the purpose of this warrant, the word 'schoolchildren' includes elementary through high school students."*

Assessment

Warrant #3 Peak Hour: The MUTCD suggests that engineering judgement be used to determine what, if any, portion of the right-turn traffic is subtracted from the minor street traffic count when evaluating the count against the signal warrants. Separate left and right-turn lanes are proposed for the Memorial Avenue approach, accordingly, Traffic Solutions has assumed a 50% reduction in the volume of right-turn traffic exiting Memorial Avenue onto Main Street in the PM peak hour resulting in a total exiting volume of 112 vehicles. Category #3A condition 2 requirement of 150vph on the minor street approach is not met, as a result, Condition #3A is not met. Category #3B also requires a minimum of 150vph on the minor street approach for a minor street approach with two or more lanes. **Warrant Not Met**

Warrant #5 School Crossing: Students attending the proposed John F. Murphy Homes School will be either bused or dropped off at the school entrance by an adult. Students will not be walking to school. **Warrant Not Met**

The limited traffic signal warrant evaluation concludes that a fully sequenced traffic signal is not warranted at the Memorial Avenue/Main Street intersection.

SUMMARY

1. The proposed John F. Murphy Homes school project is forecast to generate approximately **288** total trips in the "morning" peak hour and an additional **218** trips in the "evening" peak hour. Both trip estimates were prepared based upon in-field data collected at the City of Auburn and Lewiston JFMH school sites. A separate site trip estimate was prepared for comparison and validation purposes based upon trip rates presented in the seventh edition of the Institute of Transportation Engineers (ITE) **TRIP GENERATION** publication. Land Use Code #536: Private School K-12 was used to conduct the analysis. Accordingly, The ITE trip publication provides peak hour estimates of **95** and **20** trips, respectively, for the AM and PM peak hours.

2. MaineDOT provided the most recent three-year (2015 through 2017) safety audit for the section of Main Street between Strawberry Avenue and Switzerland Road, a distance of 1.17 miles. MaineDOT's safety report identified five locations (both intersections and roadway links) that meet their criteria as a high crash location. The locations identified by MaineDOT's audit include: 1. Main Street/Montello Street/Landry Road intersection; 2. Main Street between Strawberry Avenue and Bearce Avenue; 3. Main Street between Bearce Avenue and Montello Street; 4. Main Street between Landry Road and Entrance to Shopping Center; 5. Main Street between Entrance to Shopping Center and King Street. Detailed vehicle collision diagrams were provided by MaineDOT for each of the five noted locations. The "common" vehicle crash patterns occurring at each of the five locations were "rear-end" and "angle" crashes.

3. The City is encouraged to consider re-striping the section of Main Street between Strawberry Avenue and Montello Street to provide a center two-way left-turn lane. This recommendation will require removal of on-street parking, at a minimum, on one side of Main Street. This report strongly recommends removal of parking on both sides.

4. Traffic Solutions suggests a full traffic signal warrant study be conducted at the Main Street/Montello Street/Landry Road intersection to determine if sequenced traffic signals are warranted. Traffic signalization at this very heavily traveled intersection with above average safety problems should be considered.

5. The City should consider both access management and intra-parcel connectivity improvements to the section of Main Street between Landry Road and King Street to address the higher than expected levels of vehicle crashes occurring through this section of Main Street.

6. Traffic operations at the Main Street/Memorial Avenue intersection are expected to operate at acceptable levels of service under post-development travel conditions. In fact, the intersection is projected to operate overall at Level of Service A, the highest or best level of service.

7. Traffic operations at the signalized intersection of Main Street and Mollison Way was found to operate at acceptable levels of service (Level of Service A/B) under post-development conditions. The City may want to review signal timing changes to the intersection to maximize the efficiency of operation.

8. The results of the capacity analysis completed for the Main Street/Montello Street/Landry Road intersection shows that motorists on both side street approaches will experience excessive delay entering the intersection under both 2020 pre- and post-development travel conditions, especially in the evening peak hour. Vehicle delays in excess of 100 seconds are expected on both side street approaches.

9. Vehicle queues were determined for both the Main Street NB left-turn lane and both approaches on Memorial Avenue. (The Memorial Avenue assessment was based upon two approach lanes on Memorial Avenue.) The findings of the study show very minor levels of vehicle queuing will occur in the noted travel lanes. The 95th percentile queue length in the Main Street NB left-turn lane is 106 feet and the queue lengths in either lane on Memorial Avenue are less than 100 feet.

10. The very limited traffic signal warrant evaluation conducted for the Memorial Avenue/Main Street intersection would suggest that forecast conditions at the intersection do not meet the warrant standards for either Warrant #3 or Warrant #5.

VIPER S OPTICS STRIKE

SMALL VIPER LUMINAIRE

Cat.#

Job

Type

BEACON design . performance . technology

Approvals

SPECIFICATIONS

Intended Use:

The Beacon Viper luminaire is available with a wide choice of different LED Wattage configurations and optical distributions designed to replace HID lighting up to 400W MH or HPS.

Construction:

- Manufactured with die cast aluminum.
- Coated with a polyester finish that meets ASTM B117 corrosion test requirements and ASTM D522 cracking and loss of adhesion test requirements.
- External hardware is corrosion resistant.
- One piece optical cartridge system consisting of an LED engine, LED lamps, optics, gasket and stainless steel bezel.
- Cartridge is held together with internal brass standoffs soldered to the board so that it can be field replaced as a one piece optical system.
- Two-piece silicone and micro-cellular polyurethane foam gasket ensures a weather-proof seal around each individual LED.

Electrical:

- 100V through 277V, 50 Hz to 60 Hz (UNV), or 347V or 480V input.
- Power factor is ≥.90 at full load.
- Dimming drivers are standard, but must contact factory to request wiring leads for purpose of external dimming controls.
- Component-to-component wiring within the luminaire may carry no more than 80% of rated load and is certified by UL for use at 600VAC at 90°C or higher.
- Plug disconnects are certified by UL for use at 600 VAC, 13A or higher. 13A rating applies to primary (AC) side only.
- Fixture electrical compartment shall contain all LED driver components and shall be provided with a push-button terminal block for AC power connections.
- Surge protection - 20kA.
- Optional 7-pin ANSI C136.41-2013 twist-lock photo control receptacle available. Compatible with ANSI C136.41 external wireless control devices.
- Lifeshield™ Circuit - protects luminaire from excessive temperature. The device shall activate at a specific, factory-preset temperature, and progressively reduce power over a finite temperature range. Operation shall be smooth and undetectable to the eye. Thermal circuit is designed to "fail on", allowing the luminaire to revert to full power in the event of an interruption of its power supply, or faulty wiring connection to the drivers. The device shall be able to co-exist with other 0-10V control devices (occupancy sensors, external dimmers, etc.).

Controls/Options:

- Available with an optional passive infrared (PIR) motion sensor capable of detecting motion 360° around the luminaire. When no motion is detected for the specified time, the Motion Response system reduces the wattage to factory preset level, reducing the light level accordingly. When motion is detected by the PIR sensor, the luminaire returns to full wattage and full light output. Please contact Beacon Products if project requirements vary from standard configuration.
- Available with Energeni for optional set dimming, timed dimming with simple delay, or timed dimming based on time of night (see www.beaconproducts.com/products/energeni).
- In addition, Viper can be specified with **SiteSync™** wireless control system for reduction in energy and maintenance costs while optimizing light quality 24/7. For more details, see ordering information or visit: www.hubbelllighting.com/sitesync

Installation:

- Mounting options for horizontal arm, vertical tenon or traditional arm mounting available. Mounting hardware included.

Finish:

- IFS polyester powder-coat electrostatically applied and thermocured. IFS finish consists of a five stage pretreatment regimen with a polymer primer sealer and top coated with a thermoset super TGIC polyester powder coat finish.
- The finish meets the AAMA 2604 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pounds.

Certifications/Ratings:

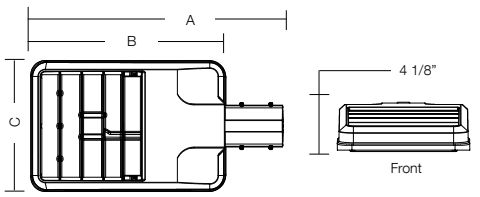
- DesignLights Consortium (DLC) qualified, consult DLC website for more details: http://www.designlights.org/QPL
- Certified to UL 1598, UL 8750 and CSA C22.2 No.250.0
- IDA approved
- This product is approved by the Florida Fish and Wildlife Conservation Commission. Separate spec available at: http://www.beaconproducts.com/products/vipersmall

Warranty:

Five year limited warranty for more information visit: www.hubbelllighting.com/resources/warranty

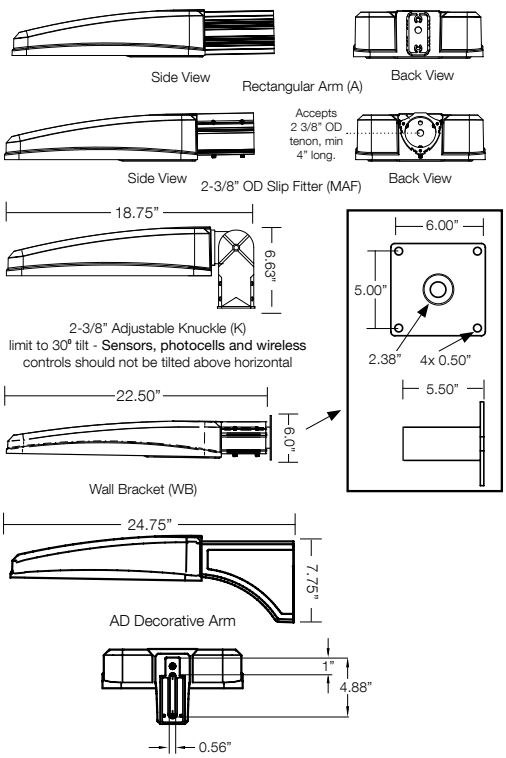
PRODUCT IMAGE(S)

DIMENSIONS



A	B	C	Weight:	EPA
21.75" (552 mm)	16.75" (425 mm)	11.25" (286 mm)	15.0 lbs (6.8 kg)	.67 ft²

MOUNTING OPTIONS



CERTIFICATIONS/LISTINGS

C SA US

ida

*3000K and warmer CCTs only

DLC QPL LISTED

HUBBELL Lighting

ORDERING INFORMATION

ORDERING EXAMPLE: VPS/24L-55/4K7/4W/UNV/A/DBT/7PR-TL/GENI-04/BC

VPS

SERIES
- **VPS** Viper

LED ENGINE
- **24L-55** 55W, LED array
- **36L-65** 65W, LED array
- **36L-80** 80W, LED array
- **48L-110** 110W, LED array
- **60L-136** 136W, LED array

CCT/CRI[7]
- **3K7** 3000K, 70 CRI
- **4K7** 4000K, 70 CRI
- **5K7** 5000K, 70 CRI

DISTRIBUTION
- **FR** Type 1/Front Row
- **2** Type 2
- **3** Type 3
- **4** Type 4
- **4W** Type 4 Wide
- **5QM** Type 5QM
- **5R** Type 5R (rectangular)
- **5W** Type 5W (round wide)
- **TC** Tennis Court

ROTATION
- Leave blank for no rotation
- **L**[5] Optic rotation left
- **R**[5] Optic rotation right

VOLTAGE
- **UNV** 120-277V
- **120** 120V
- **208** 208V
- **240** 240V
- **277** 277V
- **347** 347V
- **480** 480V

COLOR
- **BL** Black Textured
- **DB** Dark Bronze Textured
- **GYS** Light Gray Smooth
- **PS** Platinum Silver Smooth
- **WH** White Textured
- **CC** Custom Color
- BZT - Bronze Textured

OPTIONS
- **F** Fusing
- **BSP** Bird Spikes
- **BC** Backsheidld (available for FR, 2, 3, 4, 4W Optics)

MOUNTING
- **A** Rectangular Arm (formerly RA) for square or round pole
- **MAF** Mast Arm Fitter (formerly SF2) for 2-3/8" OD horizontal arm
- **K** Knuckle (formerly PK2) limit to 45° tilt or 2-3/8" OD horizontal arm or vertical tenon
- **WB** Wall Bracket
- **AD** Universal Arm for square pole
- **AD3** Universal Arm for 2.4"-4.1" round pole
- **AD4** Universal Arm for 4.2" -5.3" round pole
- **AD5** Universal Arm for 5.5" -5.9" round pole
- **AD6** Universal Arm for 6.0"-6.5" round pole

CONTROL OPTIONS
- **7PR** 7-Pin Receptacle only (shorting cap, photo control, or wireless control provided by others)
- **7PR-SC** 7-Pin Receptacle w/Shorting Cap
- **7PR-TL** 7-Pin Receptacle w/Twist Lock photo control
- **SCP/_F**[1,2,6] Programmable Occupancy Sensor w/ daylight control (120-277 volts only)
- **GENI-XX**[3] ENERGENI
- **SWP**[1,4] SiteSync Pre-Commission
- **SWPM**[1,2,4] SiteSync Pre-Comm w/ Sensor

HOUSE SIDE SHIELD ACCESSORIES
- **HSS/VP-S/90-FB/XXX** 90° shield front or back
- **HSS/VP-S/90-LR/XXX** 90° shield left or right
- **HSS/VP-S/270-FB/XXX** 270° shield front or back
- **HSS/VP-S/270-LR/XXX** 270° shield left or right
- **HSS/VP-S/360/XXX** Full shield

(Replace XXX with notation for desired finish color)
(Refer to page 5 for shield images)

MOUNTING ACCESSORIES
- **VPL-AD-RPA3** 2.4"-4.1" Round Pole Adapter for AD arm
- **VPL-AD-RPA4** 4.2"-5.3" Round Pole Adapter for AD arm
- **VPL-AD-RPA5** 5.5"-5.9" Round Pole Adapter for AD arm
- **VPL-AD-RPA6** 6.0"-6.5" Round Pole Adapter for AD arm

[1] Not available with other wireless control or sensor options
[2] Specify mounting height; 8=8' or less, 40=9' to 40'
[3] Specify routine setting code (example GENI-04). See ENERGENI brochure and instructions for setting table and options. Not available with sensor or SiteSync options.
[4] Specify group and zone at time of order. See www.hubbelllighting.com/sitesync for further details. Order at least one SiteSync interface Accessory SWUSB or SWTAB. Each option contains SiteSync License, GUI, and Bridge Node
[5] Only available with 1A, 2, 3, 4, 4W and 5R distributions
[6] Order at least one SCP-REMOTE per project location to program and control the occupancy sensor.
[7] This product is approved by the Florida Fish and Wildlife Conservation Commission. Separate spec available at: http://cdn.beaconproducts.com/content/products/specs/specs_files/Viper_Small_LED_turtle_spec_sheet.pdf

PRECOMMISSIONED SITESYNC ORDERING INFORMATION: When ordering a fixture with the SiteSync lighting control option, additional information will be required to complete the order. The SiteSync Commissioning Form or alternate schedule information must be completed. This form includes Project location, Group information, and Operating schedules. For more detailed information please visit www.hubbell-automation.com/products/sitesync/ or contact Hubbell Lighting tech support at (800) 345-4928.

SiteSync fixtures with Motion control (SWPM) require the mounting height of the fixture for selection of the lens.

Examples: VPS/24L-55/4K7/3/UNV/A/DBT/SWP/ SiteSync only
VPS/24L-55/4K7/3/UNV/A/DBT/SWPM-40F/ SiteSync with Motion Control

Accessories and Services (Ordered Separately)

Catalog Number	Description
SWUSB*	SiteSync interface software loaded on USB flash drive for use with owner supplied PC (Windows based only). Includes SiteSync license, software and USB radio bridge node
SWTAB*	Windows tablet and SiteSync interface software. Includes tablet with preloaded software, SiteSync license and USB radio bridge node.
SWBRG	SiteSync USB radio bridge node only. Order if a replacement is required or if an extra bridge node is requested.
SCP-REMOTE	Remote Control for SCP/_F option. Order at least one per project to program and control
SW7PR+	SiteSync 7 Pin on fixture module On/Off/Dim, Daylight Sensor 120-480VAC

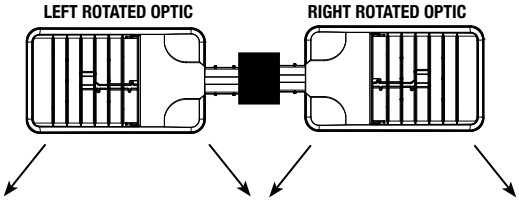
* When ordering SiteSync at least one of these two interface options must be ordered per project.
+ Available as a SiteSync retrofit solution for fixtures with an existing 7pin receptacle.

Hubbell Control Solutions - Accessories (sold separately)

Catalog Number	Description	HCS System
NXOFM-1R1D-UNV	On-fixture Module (7-pin), On / Off / Dim, Daylight Sensor with HubbNET Radio and Bluetooth® Radio, 120-480VAC	NX Distributed Intelligence™
WIR-RME-L	On-fixture Module (7-pin or 5-pin), On / Off / Dim, Daylight Sensor with wiSCAPE Radio, 110-480VAC	wiSCAPE® Lighting Control

For additional information related to these accessories please visit www.hubbellcontrolsolutions.com. Options provided for use with integrated sensor, please view specification sheet ordering information table for details.

LEFT ROTATED OPTIC RIGHT ROTATED OPTIC



SiteSync 7-Pin Module

SW7PR

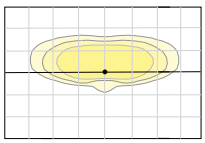
- SiteSync features in a new form
- Available as an accessory for new construction or retrofit applications (with existing 7-Pin receptacle)
- Does no interface with occupancy sensors

PERFORMANCE DATA

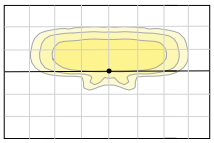
				5K (5000K nominal, 70 CRI)					4K (4000K nominal, 70 CRI)					3K (3000K nominal, 70 CRI)				
# LED'S	DRIVE CURRENT (MILLIAMPS)	SYSTEM WATTS	DISTRIBUTION TYPE	LUMENS	LPW[1]	B	U	G	LUMENS	LPW[1]	B	U	G	LUMENS	LPW[1]	B	U	G
24	700 mA	55W	FR	6357	118	1	0	1	6486	120	1	0	1	5804	107	1	0	1
			2	6132	114	1	0	1	6257	116	1	0	2	5599	104	1	0	1
			3	6015	111	1	0	2	6137	114	1	0	2	5492	102	1	0	2
			4	5921	110	1	0	2	6034	112	1	0	2	5400	100	1	0	2
			4W	5805	108	1	0	2	5921	110	1	0	2	5282	98	1	0	2
			5QM	6022	112	2	0	1	6145	114	2	0	1	5499	102	2	0	1
			5R	6063	112	3	0	3	6187	115	3	0	3	5536	103	3	0	3
			5W	5908	109	3	0	1	6028	112	3	0	1	5908	102	3	0	1
			TC	6183	115	1	0	1	6309	118	1	0	1	5645	105	1	0	1
36	560 mA	65W	FR	7864	121	1	0	1	8041	124	1	0	1	7189	111	1	0	1
			2	7586	117	1	0	2	7757	119	1	0	2	6934	107	1	0	2
			3	7441	114	1	0	2	7609	117	1	0	2	6802	105	1	0	2
			4	7317	110	1	0	2	7482	112	1	0	2	6688	100	1	0	2
			4W	7325	113	1	0	2	7490	115	1	0	2	6696	103	1	0	2
			5QM	7450	115	3	0	1	7618	117	3	0	1	6810	105	3	0	1
			5R	7501	115	3	0	3	7670	118	3	0	3	6857	105	3	0	3
			5W	7309	112	3	0	2	7473	115	3	0	2	6681	103	3	0	1
36	700 mA	80W	FR	9535	118	1	0	1	9730	120	1	0	1	8706	107	1	0	1
			2	9197	114	1	0	2	9385	116	1	0	2	8398	104	1	0	2
			3	9022	111	1	0	2	9206	114	1	0	2	8238	102	1	0	2
			4	8871	110	1	0	2	9052	112	1	0	2	8100	100	1	0	2
			4W	8707	108	1	0	2	8881	110	1	0	2	7923	98	1	0	2
			5QM	9033	112	3	0	1	9217	114	3	0	1	8248	102	3	0	1
			5R	9095	112	3	0	3	9280	115	3	0	3	8304	103	3	0	3
			5W	8861	109	3	0	2	9043	112	3	0	2	8092	100	3	0	2
			TC	9275	115	1	0	1	9464	118	1	0	1	8468	105	1	0	1
48	700 mA	110W	FR	12713	118	1	0	1	12973	120	2	0	1	11608	107	1	0	1
			2	12263	114	2	0	2	12513	116	2	0	2	11197	104	2	0	2
			3	12029	111	2	0	2	11275	114	2	0	2	10984	102	1	0	2
			4	11828	110	1	0	3	12069	112	1	0	3	10800	100	1	0	2
			4W	11609	108	1	0	3	11841	110	1	0	3	10564	98	1	0	3
			5QM	12044	112	3	0	2	12290	114	3	0	2	10997	102	3	0	1
			5R	12126	112	3	0	3	12374	115	3	0	3	11072	103	3	0	3
			5W	12126	109	4	0	2	12057	112	4	0	2	10789	100	4	0	2
			TC	12366	115	1	0	2	12619	118	1	0	2	11290	105	1	0	2
60	700 mA	136W	FR	15891	117	2	0	2	16216	120	2	0	2	14511	107	2	0	1
			2	15329	113	2	0	2	15642	116	2	0	2	13997	103	2	0	2
			3	15037	111	2	0	3	15344	113	2	0	3	13730	101	2	0	3
			4	14784	109	1	0	3	15086	111	1	0	3	13500	100	1	0	3
			4W	14511	108	2	0	4	14802	110	2	0	4	13205	98	2	0	3
			5QM	15055	111	3	0	2	15362	114	3	0	2	13747	102	3	0	2
			5R	15158	112	4	0	4	15469	114	4	0	4	13841	102	4	0	4
			5W	14781	109	4	0	2	15083	111	4	0	2	13495	100	4	0	2
			TC	15458	115	1	0	2	15834	118	1	0	2	14113	105	1	0	2

PHOTOMETRICS

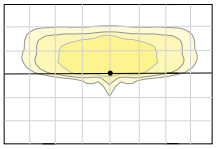
Type FR - Front Row/Auto Optic



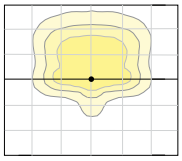
Type 2



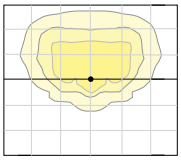
Type 3



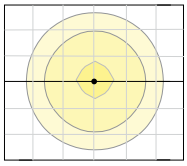
Type 4



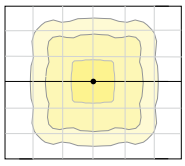
Type 4W



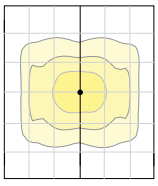
Type 5W



Type 5QM



Type 5R



[1]Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Actual performance may differ as a result of end-use environment and application.

ELECTRICAL DATA

# OF LEDS	NUMBER OF DRIVERS	DRIVE CURRENT (mA)	INPUT VOLTAGE (V)	SYSTEM POWER (w)	CURRENT (Amps)
24	2	700 mA	120	55	0.5
			277		0.2
			347		0.2
			480		0.1
36	1	560 mA	120	65	0.65
			277		0.28
			347		0.22
			480		0.16
		700 mA	120	80	0.7
			277		0.3
			347		0.2
			480		0.2
48	1	700 mA	120	110	0.9
			277		0.4
			347		0.3
			480		0.2
60	1	700 mA	120	136	1.1
			277		0.5
			347		0.4
			480		0.3

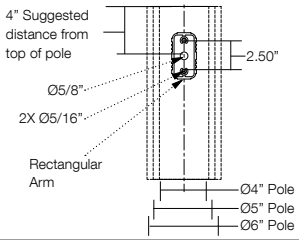
PROJECTED LUMEN MAINTENANCE

AMBIENT TEMP.	0	25,000	50,000	[1]TM-21-11 60,000	100,000	Calculated L70 (HOURS)
25°C / 77°C	1.00	0.97	0.95	0.95	0.92	>377,000

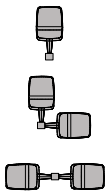
[1] Projected per IESNA TM-21-11
Data references the extrapolated performance projections for the base model in a 25°C ambient, based on 10,000 hours of LED testing per IESNA LM-80-08.

DRILL PATTERN

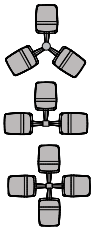
RECTANGULAR ARM (A)
Compatible with Pole drill pattern B4



EPA



Config.	EPA
1	.67
2 @ 90°	1.06
2 @ 180°	1.34



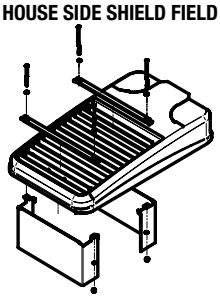
Config.	EPA
3 @ 120°	1.68
3 @ 90°	1.73
4 @ 90°	2.12

TENON TOP POLE BRACKET ACCESSORIES (Order Separately)

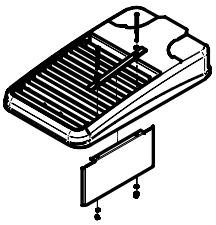
(2 3/8" OD tenon)

Catalog Number	Description
SETAVP-XX	Square tenon adapter (4 at 90°) for A - Rectangular Arm mounting option only
RETAVP-XX	Round tenon adapter (4 at 90°) for A - Rectangular Arm mounting option only
TETAVP-XX	Hexagonal tenon adapter (4 at 90°) for A - Rectangular Arm mounting option only
SETA2XX	Square tenon adapter (4 at 90°) for AD - Universal Arm mounting option only
RETA2XX	Round tenon adapter (4 at 90°) for AD3 - Universal Arm mounting option only
TETA2XX	Hexagonal tenon adapter (3 at 120°) for AD - Universal Arm mounting option only

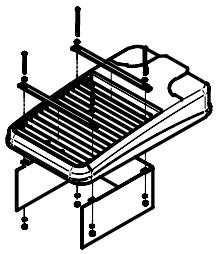
HOUSE SIDE SHIELD FIELD INSTALL ACCESSORIES



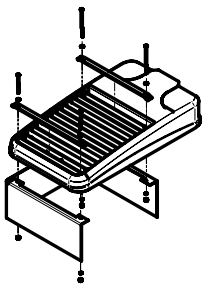
HSS/VP-S/90-FB/XXX
90° shield front or back
(2 shields shown)



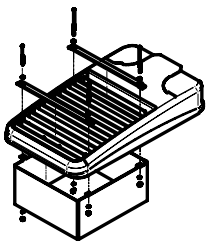
HSS/VP-S/90-LR/XXX
90° shield left or right
(1 shield shown in left orientation)



HSS/VP-S/270-FB/XXX
270° shield front or back
(1 shield shown in back orientation)

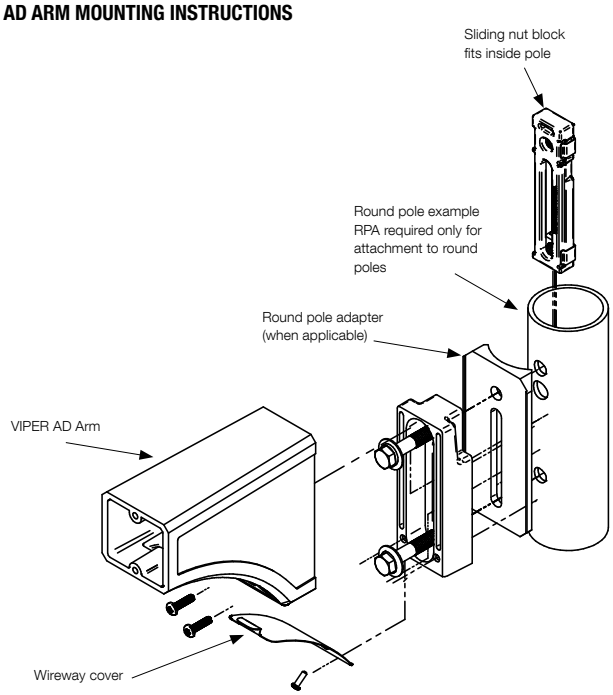


HSS/VP-S/270-LR/XXX
270° shield left or right
(1 shield shown in right orientation)

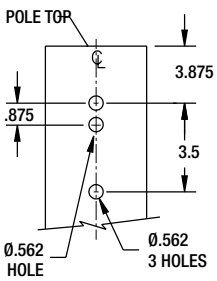


HSS/VP-S/360/XXX
Full shield (1 shield shown)

AD ARM MOUNTING INSTRUCTIONS



DECORATIVE ARM (AD)
Compatible with pole drill pattern S2



SSS-B SERIES POLES

SQUARE STRAIGHT STEEL

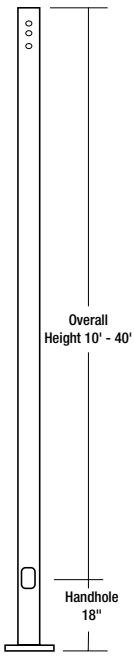
Cat.#

Job

Type

BEACON design . performance . technology

Approvals



APPLICATIONS

- Lighting installations for side and top mounting of luminaires with effective projected area (EPA) not exceeding maximum allowable loading of the specified pole in its installed geographic location

CONSTRUCTION

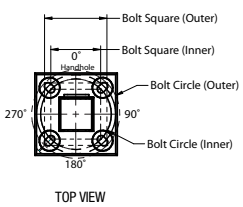
- SHAFT: One-piece straight steel with square cross section, flat sides and minimum 0.238" radius on all corners; Minimum yield of 46,000 psi (ASTM-A500, Grade B); Longitudinal weld seam to appear flush with shaft side wall; Steel base plate with axial bolt circle slots welded flush to pole shaft having minimum yield of 36,000 psi (ASTM A36)
- BASE COVER: Two-piece square aluminum base cover included standard
- POLE CAP: Pole shaft supplied with removable cover when applicable; Tenon and post-top configurations also available
- HAND HOLE: Rectangular 3x5 steel hand hole frame (2.38" x 4.38" opening); Mounting provisions for grounding lug located behind gasketed cover
- ANCHOR BOLTS: Four galvanized anchor bolts provided per pole with minimum yield of 55,000 psi (ASTM F1554). Galvanized hardware with two washers and two nuts per bolt for leveling

FINISH

- Durable thermoset polyester powder coat paint finish with nominal 3.0 mil thickness
- Powder paint prime applied over "white metal" steel substrate cleaned via mechanical shot blast method
- Decorative finish coat available in seven standard colors; Custom colors available; RAL number preferable; Internal protective coating available

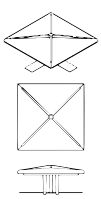
WAREHOUSE 'STOCKED' POLES:

- SSSH20-40A-4-HV-DB-RDC, SSSH25-40A-4-HV-DB-RDC and SSSH30-50B-4-HV-DB-RDC
- The HV designation in the above catalog numbers is a combination drill pattern of the Hubbell Outdoor S2 pattern and the Beacon B3/B4 Viper pattern (rectangular arm mounting)

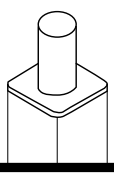


TOP VIEW

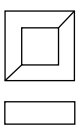
POLE CAP



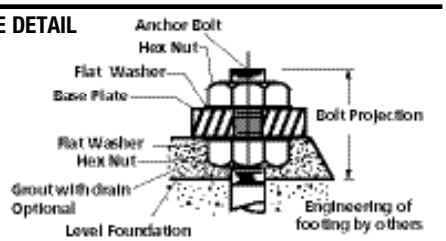
TENON



BASE COVER



BASE DETAIL



ORDERING INFORMATION

ORDERING EXAMPLE:

Reference page 2 for available configurations

SSS – B – 25 – 40 – A/B/C – 2L – B2 – BBT – UL

SERIES	HEIGHT	SHAFT	THICKNESS
SSS-B Square Straight Steel Pole Beacon	Reference page 2 Ordering matrix **20**	Reference page 2 Ordering matrix **40**	Reference page 2 Ordering matrix **A**

MOUNTING	
1	Single arm mount
2	Two fixtures at 180°
2L	Two fixtures at 90°
3T	Three fixtures at 90°
4	Four fixtures at 90°
TA	Tenon (2.38" OD x 4" Tall)
TB	Tenon (2.88" OD x 4" Tall)
TC	Tenon (3.5" OD x 6" Tall)
TR[1]	Removable Tenon (2.375 x 4.25)
OT	Open Top (includes pole cap)

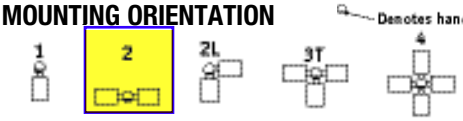
DRILL PATTERN	
B1	Cruzer
B3	Viper Large
B4	Viper Small

FINISH	
DB	Dark Bronze Textured
BL	Black Textured
WH	White Textured
PS	Platinum Silver
GYS	Light Gray Smooth
BZT	Bronze Textured
BBT	Basic Black Textured
CC	Custom Color

OPTIONS	
HSC	Internal Coating (Hubbell Seal)
GFI[2]	20 Amp GFCI Receptacle and Cover
EHH[2]	Extra Handhole
C05[2]	.5" Coupling
C07[2]	.75" Coupling
C20[2]	2" Coupling
MPB[2]	Mid-pole Luminaire Bracket
VM2	2nd mode vibration damper
LAB	Less Anchor Bolts
UL	UL Certified

MOUNTING ORIENTATION

Denotes handhole location



ACCESSORIES - Order Separately

Catalog Number	Description
VM1[3]	1st mode vibration damper
VM2SXX	2nd mode vibration damper

1 Removable tenon used in conjunction with side arm mounting. First specify desired arm configuration followed by the **"TR"** notation. Example: **SSS-B-25-40-A-1-B1-TR-BBT**
2 Specify option location using logic found on page 2 **(Option Orientation)**
3 VM1 recommended on poles 20' and taller with EPA of less than 1.

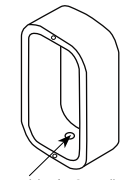
HUBBELL Lighting

ORDERING INFORMATION Cont.

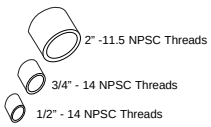
Catalog Number	Height		Nominal Shaft Dimensions	Wall Thickness	Bolt Circle (suggested)	Bolt Circle (range)	Bolt Square (range)	Base Plate Square	Anchor bolt size	Bolt Projection	Pole weight
	Feet	Meters									
SSS-B-10-40-A-XX-XX	10	3.0	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	77
SSS-B-12-40-A-XX-XX	12	3.7	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	90
SSS-B-14-40-A-XX-XX	14	4.3	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	103
SSS-B-16-40-A-XX-XX	16	4.9	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	116
SSS-B-18-40-A-XX-XX	18	5.5	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	129
SSS-B-20-40-A-XX-XX	20	6.1	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	142
SSS-B-25-40-A-XX-XX	25	7.6	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	175
SSS-B-14-40-B-XX-XX	14	4.3	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	152
SSS-B-16-40-B-XX-XX	16	4.9	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	171
SSS-B-18-40-B-XX-XX	18	5.5	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	190
SSS-B-20-40-B-XX-XX	20	6.1	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	209
SSS-B-25-40-B-XX-XX	25	7.6	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	257
SSS-B-30-40-B-XX-XX	30	9.1	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	304
SSS-B-16-50-B-XX-XX	16	4.9	5" square	.188"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	219
SSS-B-18-50-B-XX-XX	18	5.5	5" square	.188"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	243
SSS-B-20-50-B-XX-XX	20	6.1	5" square	.188"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	267
SSS-B-25-50-B-XX-XX	25	7.6	5" square	.188"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	327
SSS-B-30-50-B-XX-XX	30	9.1	5" square	.188"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	387
SSS-B-25-50-C-XX-XX	25	7.6	5" square	.25"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	427
SSS-B-30-50-C-XX-XX	30	9.1	5" square	.25"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	507
SSS-B-20-60-B-XX-XX	20	6.1	6" square	.188"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	329
SSS-B-25-60-B-XX-XX	25	7.6	6" square	.188"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	404
SSS-B-30-60-B-XX-XX	30	9.1	6" square	.188"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	479
SSS-B-35-60-B-XX-XX	35	10.7	6" square	.188"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	554
SSS-B-40-60-B-XX-XX	40	12.2	6" square	.188"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	629
SSS-B-30-60-C-XX-XX	30	9.1	6" square	.25"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	614
SSS-B-35-60-C-XX-XX	35	10.7	6" square	.25"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	712
SSS-B-40-60-C-XX-XX	40	12.2	6" square	.25"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	809

NOTE Factory supplied template must be used when setting anchor bolts. Beacon Products will deny any claim for incorrect anchorage placement resulting from failure to use factory supplied template and anchor bolts.

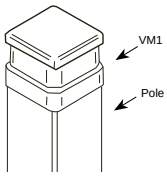
EHH - EXTRA HANDHOLE



C05 - C07 - C20 - COUPLING

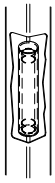


VM1 - VIBRATION DAMPER 1ST MODE



Field Installed Pole Top damper designed to reduce pole top deflection or sway. VM1 is recommended for pole systems 25' and taller with a total EPA of 1.0 or less.

VM2 - VIBRATION DAMPER 2ND MODE



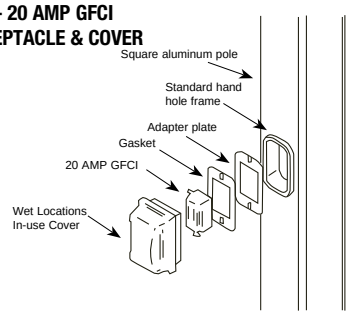
Factory installed, internal damper designed to alter pole resonance to reduce movement and material fatigue caused by 2nd mode vibration.

VM2SXX - VIBRATION DAMPER 2ND MODE

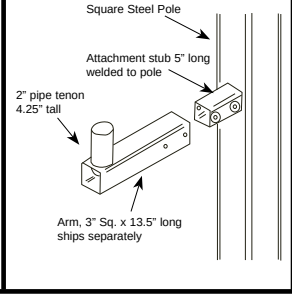
VM2S08 – 8'
VM2S12 – 12'
VM2S16 – 16'
VM2S20 – 20'
VM2S24 – 24'

Field installed, internal damper designed to alter pole resonance to reduce movement and material fatigue caused by 2nd mode vibration.

GFI – 20 AMP GFCI RECEPTACLE & COVER

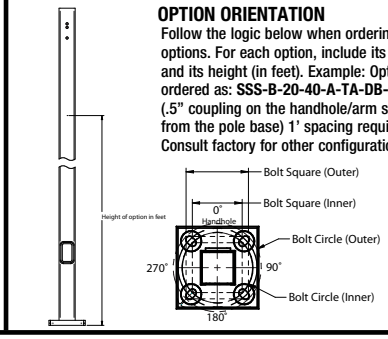


MPB - MID POLE BRACKET



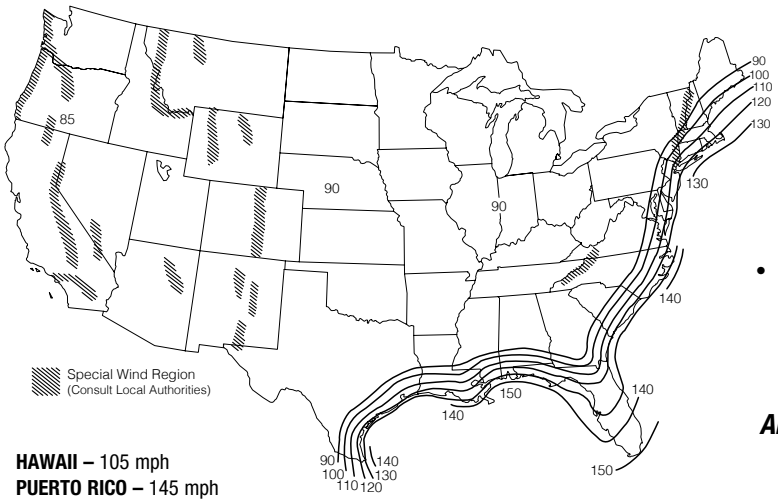
OPTION ORIENTATION

Follow the logic below when ordering location specific options. For each option, include its orientation (in degrees) and its height (in feet). Example: Option C07 should be ordered as: **SSS-B-20-40-A-TA-DB-C05-0-15**
(.5" coupling on the handhole/arm side of pole, 15 feet up from the pole base) 1' spacing required between option.
Consult factory for other configurations.



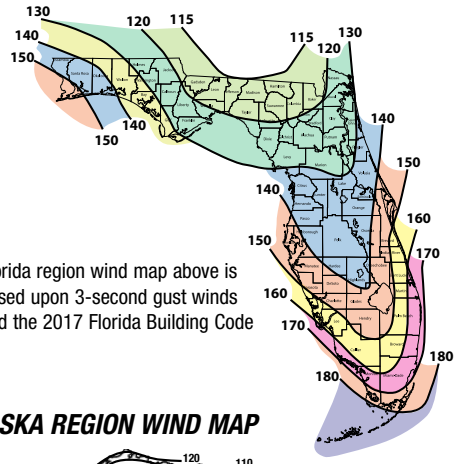
For more information about pole vibration and vibration dampers, please consult http://www.beaconproducts.com/content/products/literature/literature_files/Pole_Wind_Induced_Flyer_HL0I0022.pdf
Due to our continued efforts to improve our products, product specifications are subject to change without notice.

ASCE7-05 WIND MAP



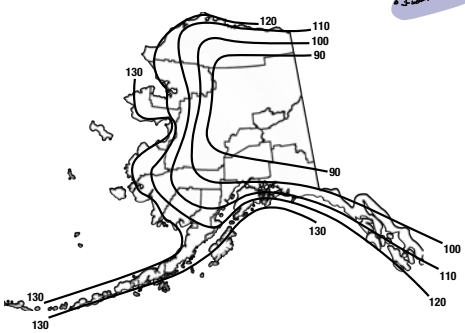
HAWAII – 105 mph
PUERTO RICO – 145 mph

FLORIDA REGION WIND *MAP*



- Florida region wind map above is based upon 3-second gust winds and the 2017 Florida Building Code

ALASKA REGION WIND MAP



ASCE 7-05 wind map EPA Load Rating - 3 second gust wind speeds (Use for all locations except Florida)										
Catalog Number	**85**	**90**	**100**	**105**	**110**	**120**	**130**	**140**	**145**	**150**
SSS-B-10-40-A	25.0	25.0	25.0	22.8	20.6	17.0	14.2	11.9	11.0	10.1
SSS-B-12-40-A	25.0	25.0	20.0	18.0	16.1	13.2	10.8	8.9	8.1	7.4
SSS-B-14-40-A	23.1	20.4	16.1	14.3	12.8	10.2	8.2	6.6	5.9	5.3
SSS-B-16-40-A	19.0	16.7	13.0	11.5	10.1	7.9	6.2	4.7	4.1	3.6
SSS-B-18-40-A	15.6	13.6	10.0	9.0	7.8	5.9	4.4	3.1	2.6	2.1
SSS-B-20-40-A	12.7	10.9	7.9	6.9	5.9	4.2	2.8	1.7	1.3	0.9
SSS-B-25-40-A	7.3	5.9	3.8	2.9	2.1	0.8	NR	NR	NR	NR
SSS-B-14-40-B	25.0	25.0	23.3	20.8	18.6	15.1	12.3	10.2	9.2	8.4
SSS-B-16-40-B	25.0	24.9	19.4	17.3	15.4	12.3	9.9	8.0	7.2	6.4
SSS-B-18-40-B	24.0	20.8	16.1	14.2	12.5	9.8	7.7	6.1	5.3	4.7
SSS-B-20-40-B	20.2	17.5	13.2	11.6	10.1	7.7	5.9	4.4	3.8	3.2
SSS-B-25-40-B	12.8	11.0	7.9	6.7	5.5	3.7	2.3	1.2	0.7	NR
SSS-B-30-40-B	8.0	6.6	4.1	3.1	2.2	0.8	NR	NR	NR	NR
SSS-B-16-50-B	25.0	25.0	25.0	25.0	24.8	20.1	16.5	13.6	12.3	11.2
SSS-B-18-50-B	25.0	25.0	25.0	22.9	20.4	16.4	13.2	10.7	9.6	8.6
SSS-B-20-50-B	25.0	25.0	21.3	18.9	16.7	13.2	10.4	8.1	7.2	6.3
SSS-B-25-50-B	20.7	17.8	13.3	11.5	9.8	7.2	5.0	3.3	2.6	1.9
SSS-B-30-50-B	13.5	11.3	7.7	6.2	4.9	2.8	1.1	NR	NR	NR
SSS-B-25-50-C	25.0	25.0	19.4	17.1	15.1	11.7	9.0	6.9	6.0	5.1
SSS-B-30-50-C	20.1	17.3	12.7	10.9	9.3	6.6	4.5	2.8	2.1	1.4
SSS-B-20-60-B	25.0	25.0	25.0	25.0	25.0	20.2	16.1	12.9	11.5	10.3
SSS-B-25-60-B	25.0	25.0	20.6	18.0	15.6	11.8	8.7	6.2	5.2	4.2
SSS-B-30-60-B	21.4	18.1	12.9	10.7	8.8	5.7	3.3	1.3	NR	NR
SSS-B-35-60-B	14.0	11.3	6.9	5.2	3.6	1.0	NR	NR	NR	NR
SSS-B-40-60-B	8.1	5.8	2.2	nr	NR	NR	NR	NR	NR	NR
SSS-B-30-60-C	24.3	20.5	14.6	12.2	10.2	6.8	4.2	2.2	1.3	0.5
SSS-B-35-60-C	16.6	13.5	8.6	6.6	4.9	2.1	NR	NR	NR	NR
SSS-B-40-60-C	10.6	7.9	3.7	2.1	0.6	NR	NR	NR	NR	NR

Florida Building Code 2017 EPA Load Rating - 3 second gust wind speeds (Use for Florida only)								
Catalog Number	**115**	**120**	**130**	**140**	**150**	**160**	**170**	**180**
SSS-B-10-40-A	25.0	25.0	25.0	25.0	21.4	18.4	15.9	13.9
SSS-B-12-40-A	25.0	25.0	23.6	19.8	16.7	14.2	12.1	10.4
SSS-B-14-40-A	25.0	23.1	19.0	15.7	13.1	10.9	9.1	7.6
SSS-B-16-40-A	20.8	18.7	15.2	12.3	10.1	8.2	6.7	5.4
SSS-B-18-40-A	16.8	15.0	11.9	9.4	7.5	5.9	4.5	3.4
SSS-B-20-40-A	13.6	11.9	9.2	7.1	5.3	3.9	2.7	1.7
SSS-B-25-40-A	7.4	6.2	4.1	2.5	1.1	NR	NR	NR
SSS-B-14-40-B	25.0	23.6	19.4	16.1	13.4	11.2	9.4	7.8
SSS-B-16-40-B	21.4	19.2	15.6	12.7	10.4	8.5	6.9	5.6
SSS-B-18-40-B	17.2	15.4	12.2	9.7	7.7	6.1	4.7	3.6
SSS-B-20-40-B	13.9	12.3	9.5	7.3	5.5	4.1	2.9	1.9
SSS-B-25-40-B	7.7	6.4	4.3	2.6	1.3	NR	NR	NR
SSS-B-30-40-B	3.2	2.1	NR	NR	NR	NR	NR	NR
SSS-B-16-50-B	25.0	25.0	25.0	25.0	25.0	21.4	18.2	15.5
SSS-B-18-50-B	25.0	25.0	25.0	24.4	20.4	17.0	14.2	11.9
SSS-B-20-50-B	25.0	25.0	24.4	19.9	1 6.3	13.4	11.0	8.9
SSS-B-25-50-B	21.8	19.3	15.0	11.5	8.8	6.5	4.7	3.1
SSS-B-30-50-B	13.7	11.7	8.2	5.5	3.3	1.5	NR	NR
SSS-B-25-50-C	21.8	19.3	15.0	11.5	8.8	6.5	4.7	3.1
SSS-B-30-50-C	13.7	11.7	8.2	5.5	3.3	1.5	NR	NR
SSS-B-20-60-B	25.0	25.0	25.0	21.9	17.8	14.5	11.7	9.4
SSS-B-25-60-B	23.8	20.9	16.1	12.3	9.2	6.6	4.5	2.8
SSS-B-30-60-B	14.6	12.3	8.4	5.3	2.8	0.8	NR	NR
SSS-B-35-60-B	7.5	5.6	2.4	NR	NR	NR	NR	NR
SSS-B-40-60-B	1.8	NR	NR	NR	NR	NR	NR	NR
SSS-B-30-60-C	14.6	12.3	8.4	5.3	2.8	0.8	NR	NR
SSS-B-35-60-C	7.5	5.6	2.4	NR	NR	NR	NR	NR
SSS-B-40-60-C	1.8	NR	NR	NR	NR	NR	NR	NR

NOTES

Wind-speed Website disclaimer:
Hubbell Lighting has no connection to the linked website and makes no representations as to its accuracy. While the information presented on this third-party website provides a useful starting point for analyzing wind conditions, Hubbell Lighting has not verified any of the information on this third party website and assumes no responsibility or liability for its accuracy. The material presented in the windspeed website should not be used or relied upon for any specific application without competent examination and verification of its accuracy, suitability and applicability by engineers or other licensed professionals. Hubbell Lighting Inc. does not intend that the use of this information replace the sound judgment of such competent professionals, having experience and knowledge in the field of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the results of the windspeed report provided by this website. Users of the information from this third party website assume all liability arising from such use. Use of the output of these referenced websites do not imply approval by the governing building code bodies responsible for building code approval and interpretation for the building site described by latitude/longitude location in the windspeed report. http://windspeed.atcouncil.org

NOTES

- Allowable EPA, to determine max pole loading weight, multiply allowable EPA by 30 lbs.
- The tables for allowable pole EPA are based on the ASCE 7-05 Wind Map or the Florida Region Wind Map for the 2010 Florida Building Code. The Wind Maps are intended only as a general guide and cannot be used in conjunction with other maps. Always consult local authorities to determine maximum wind velocities, gusting and unique wind conditions for each specific application
- Allowable pole EPA for jobsite wind conditions must be equal to or greater than the total EPA for fixtures, arms, and accessories to be assembled to the pole. Responsibility lies with the specifier for correct pole selection. Installation of poles without luminaires or attachment of any unauthorized accessories to poles is discouraged and shall void the manufacturer's warranty
- Wind speeds and listed EPAs are for ground mounted installations. Poles mounted on structures (such as bridges and buildings) must consider vibration and coefficient of height factors beyond this general guide; Consult local and federal standards
- Wind Induced Vibration brought on by steady, unidirectional winds and other unpredictable aerodynamic forces are not included in wind velocity ratings. Consult Hubbell Lighting's Pole Vibration Application Guide for environmental risk factors and design considerations. http://www.beaconproducts.com/content/products/literature/literature_files/Pole_Wind_Induced_Flyer_HLOI0022.pdf
- Extreme Wind Events like, Hurricanes, Typhoons, Cyclones, or Tornadoes may expose poles to flying debris, wind shear or other detrimental effects not included in wind velocity ratings

Due to our continued efforts to improve our products, product specifications are subject to change without notice.

Submitted by Swaney Lighting

Job Name:
JFMH - SITE
Distributor: CED/GILMAN ELECTRIC
AUBURN (AUBURN)

Catalog Number:
VP-S/36L-80/4K7/4W/UNV/A/BZT

Notes:

Type:
SA

SLA19-41349

VIPER S OPTICS STRIKE
SMALL VIPER LUMINAIRE

Cat.#

Job

Type

BEACON design . performance . technology

Approvals

SPECIFICATIONS

Intended Use:

The Beacon Viper luminaire is available with a wide choice of different LED Wattage configurations and optical distributions designed to replace HID lighting up to 400W MH or HPS.

Construction:

- Manufactured with die cast aluminum.
- Coated with a polyester finish that meets ASTM B117 corrosion test requirements and ASTM D522 cracking and loss of adhesion test requirements.
- External hardware is corrosion resistant.
- One piece optical cartridge system consisting of an LED engine, LED lamps, optics, gasket and stainless steel bezel.
- Cartridge is held together with internal brass standoffs soldered to the board so that it can be field replaced as a one piece optical system.
- Two-piece silicone and micro-cellular polyurethane foam gasket ensures a weather-proof seal around each individual LED.

Electrical:

- 100V through 277V, 50 Hz to 60 Hz (UNV), or 347V or 480V input.
- Power factor is ≥.90 at full load.
- Dimming drivers are standard, but must contact factory to request wiring leads for purpose of external dimming controls.
- Component-to-component wiring within the luminaire may carry no more than 80% of rated load and is certified by UL for use at 600VAC at 90°C or higher.
- Plug disconnects are certified by UL for use at 600 VAC, 13A or higher. 13A rating applies to primary (AC) side only.
- Fixture electrical compartment shall contain all LED driver components and shall be provided with a push-button terminal block for AC power connections.
- Surge protection - 20kA.
- Optional 7-pin ANSI C136.41-2013 twist-lock photo control receptacle available. Compatible with ANSI C136.41 external wireless control devices.
- Lifeshield™ Circuit - protects luminaire from excessive temperature. The device shall activate at a specific, factory-preset temperature, and progressively reduce power over a finite temperature range. Operation shall be smooth and undetectable to the eye. Thermal circuit is designed to "fail on", allowing the luminaire to revert to full power in the event of an interruption of its power supply, or faulty wiring connection to the drivers. The device shall be able to co-exist with other 0-10V control devices (occupancy sensors, external dimmers, etc.).

Controls/Options:

- Available with an optional passive infrared (PIR) motion sensor capable of detecting motion 360° around the luminaire. When no motion is detected for the specified time, the Motion Response system reduces the wattage to factory preset level, reducing the light level accordingly. When motion is detected by the PIR sensor, the luminaire returns to full wattage and full light output. Please contact Beacon Products if project requirements vary from standard configuration.
- Available with Energeni for optional set dimming, timed dimming with simple delay, or timed dimming based on time of night (see www.beaconproducts.com/products/energeni).
- In addition, Viper can be specified with **SiteSync™** wireless control system for reduction in energy and maintenance costs while optimizing light quality 24/7. For more details, see ordering information or visit: www.hubbelllighting.com/sitesync

Installation:

- Mounting options for horizontal arm, vertical tenon or traditional arm mounting available. Mounting hardware included.

Finish:

- IFS polyester powder-coat electrostatically applied and thermocured. IFS finish consists of a five stage pretreatment regimen with a polymer primer sealer and top coated with a thermoset super TGIC polyester powder coat finish.
- The finish meets the AAMA 2604 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pounds.

Certifications/Ratings:

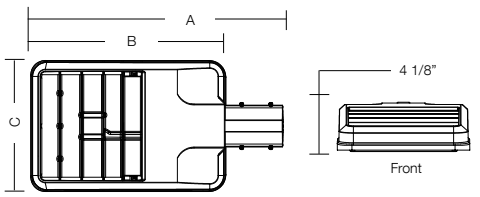
- DesignLights Consortium (DLC) qualified, consult DLC website for more details: http://www.designlights.org/QPL
- Certified to UL 1598, UL 8750 and CSA C22.2 No.250.0
- IDA approved
- This product is approved by the Florida Fish and Wildlife Conservation Commission. Separate spec available at: http://www.beaconproducts.com/products/vipersmall

Warranty:

Five year limited warranty for more information visit: www.hubbelllighting.com/resources/warranty

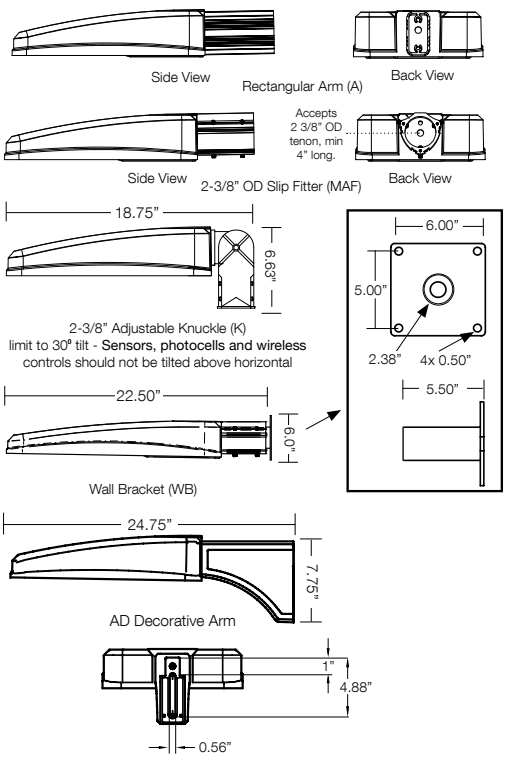
PRODUCT IMAGE(S)

DIMENSIONS



A	B	C	Weight:	EPA
21.75" (552 mm)	16.75" (425 mm)	11.25" (286 mm)	15.0 lbs (6.8 kg)	.67 ft²

MOUNTING OPTIONS



CERTIFICATIONS/LISTINGS

C SA US

ida

DLC QPL LISTED

*3000K and warmer CCTs only

HUBBELL Lighting

ORDERING INFORMATION

ORDERING EXAMPLE: VPS/24L-55/4K7/4W/UNV/A/DBT/7PR-TL/GENI-04/BC

VPS

SERIES
- **VPS** Viper

LED ENGINE
- **24L-55** 55W, LED array
- **36L-65** 65W, LED array
- **36L-80** 80W, LED array
- **48L-110** 110W, LED array
- **60L-136** 136W, LED array

CCT/CRI[7]
- **3K7** 3000K, 70 CRI
- **4K7** 4000K, 70 CRI
- **5K7** 5000K, 70 CRI

DISTRIBUTION
- **FR** Type 1/Front Row
- **2** Type 2
- **3** Type 3
- **4** Type 4
- **4W** Type 4 Wide
- **5QM** Type 5QM
- **5R** Type 5R (rectangular)
- **5W** Type 5W (round wide)
- **TC** Tennis Court

ROTATION
- Leave blank for no rotation
- **L**[5] Optic rotation left
- **R**[5] Optic rotation right

VOLTAGE
- **UNV** 120-277V
- **120** 120V
- **208** 208V
- **240** 240V
- **277** 277V
- **347** 347V
- **480** 480V

COLOR
- **BL** Black Textured
- **DB** Dark Bronze Textured
- **GYS** Light Gray Smooth
- **PS** Platinum Silver Smooth
- **WH** White Textured
- **CC** Custom Color
- BZT - Bronze Textured

OPTIONS
- **F** Fusing
- **BSP** Bird Spikes
- **BC** Backsheidld (available for FR, 2, 3, 4, 4W Optics)

MOUNTING
- **A** Rectangular Arm (formerly RA) for square or round pole
- **MAF** Mast Arm Fitter (formerly SF2) for 2-3/8" OD horizontal arm
- **K** Knuckle (formerly PK2) limit to 45° tilt or 2-3/8" OD horizontal arm or vertical tenon
- **WB** Wall Bracket
- **AD** Universal Arm for square pole
- **AD3** Universal Arm for 2.4"-4.1" round pole
- **AD4** Universal Arm for 4.2" -5.3" round pole
- **AD5** Universal Arm for 5.5" -5.9" round pole
- **AD6** Universal Arm for 6.0"-6.5" round pole

CONTROL OPTIONS
- **7PR** 7-Pin Receptacle only (shorting cap, photo control, or wireless control provided by others)
- **7PR-SC** 7-Pin Receptacle w/Shorting Cap
- **7PR-TL** 7-Pin Receptacle w/Twist Lock photo control
- **SCP/_F**[1,2,6] Programmable Occupancy Sensor w/ daylight control (120-277 volts only)
- **GENI-XX**[3] ENERGENI
- **SWP**[1,4] SiteSync Pre-Commission
- **SWPM**[1,2,4] SiteSync Pre-Comm w/ Sensor

HOUSE SIDE SHIELD ACCESSORIES
- **HSS/VP-S/90-FB/XXX** 90° shield front or back
- **HSS/VP-S/90-LR/XXX** 90° shield left or right
- **HSS/VP-S/270-FB/XXX** 270° shield front or back
- **HSS/VP-S/270-LR/XXX** 270° shield left or right
- **HSS/VP-S/360/XXX** Full shield

(Replace XXX with notation for desired finish color)
(Refer to page 5 for shield images)

MOUNTING ACCESSORIES
- **VPL-AD-RPA3** 2.4"-4.1" Round Pole Adapter for AD arm
- **VPL-AD-RPA4** 4.2"-5.3" Round Pole Adapter for AD arm
- **VPL-AD-RPA5** 5.5"-5.9" Round Pole Adapter for AD arm
- **VPL-AD-RPA6** 6.0"-6.5" Round Pole Adapter for AD arm

[1] Not available with other wireless control or sensor options
[2] Specify mounting height; 8=8' or less, 40=9' to 40'
[3] Specify routine setting code (example GENI-04). See ENERGENI brochure and instructions for setting table and options. Not available with sensor or SiteSync options.
[4] Specify group and zone at time of order. See www.hubbelllighting.com/sitesync for further details. Order at least one SiteSync interface Accessory SWUSB or SWTAB. Each option contains SiteSync License, GUI, and Bridge Node
[5] Only available with 1A, 2, 3, 4, 4W and 5R distributions
[6] Order at least one SCP-REMOTE per project location to program and control the occupancy sensor.
[7] This product is approved by the Florida Fish and Wildlife Conservation Commission. Separate spec available at: http://cdn.beaconproducts.com/content/products/specs/specs_files/Viper_Small_LED_turtle_spec_sheet.pdf

PRECOMMISSIONED SITESYNC ORDERING INFORMATION: When ordering a fixture with the SiteSync lighting control option, additional information will be required to complete the order. The SiteSync Commissioning Form or alternate schedule information must be completed. This form includes Project location, Group information, and Operating schedules. For more detailed information please visit www.hubbell-automation.com/products/sitesync/ or contact Hubbell Lighting tech support at (800) 345-4928.

SiteSync fixtures with Motion control (SWPM) require the mounting height of the fixture for selection of the lens.

Examples: VPS/24L-55/4K7/3/UNV/A/DBT/SWP/ SiteSync only
VPS/24L-55/4K7/3/UNV/A/DBT/SWPM-40F/ SiteSync with Motion Control

Accessories and Services (Ordered Separately)

Catalog Number	Description
SWUSB*	SiteSync interface software loaded on USB flash drive for use with owner supplied PC (Windows based only). Includes SiteSync license, software and USB radio bridge node
SWTAB*	Windows tablet and SiteSync interface software. Includes tablet with preloaded software, SiteSync license and USB radio bridge node.
SWBRG	SiteSync USB radio bridge node only. Order if a replacement is required or if an extra bridge node is requested.
SCP-REMOTE	Remote Control for SCP/_F option. Order at least one per project to program and control
SW7PR+	SiteSync 7 Pin on fixture module On/Off/Dim, Daylight Sensor 120-480VAC

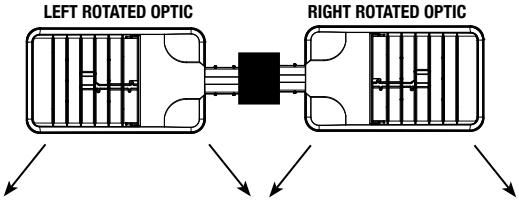
* When ordering SiteSync at least one of these two interface options must be ordered per project.
+ Available as a SiteSync retrofit solution for fixtures with an existing 7pin receptacle.

Hubbell Control Solutions - Accessories (sold separately)

Catalog Number	Description	HCS System
NXOFM-1R1D-UNV	On-fixture Module (7-pin), On / Off / Dim, Daylight Sensor with HubbNET Radio and Bluetooth® Radio, 120-480VAC	NX Distributed Intelligence™
WIR-RME-L	On-fixture Module (7-pin or 5-pin), On / Off / Dim, Daylight Sensor with wiSCAPE Radio, 110-480VAC	wiSCAPE® Lighting Control

For additional information related to these accessories please visit www.hubbellcontrolsolutions.com. Options provided for use with integrated sensor, please view specification sheet ordering information table for details.

LEFT ROTATED OPTIC RIGHT ROTATED OPTIC



SiteSync 7-Pin Module

SW7PR

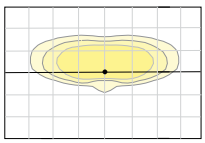
- SiteSync features in a new form
- Available as an accessory for new construction or retrofit applications (with existing 7-Pin receptacle)
- Does no interface with occupancy sensors

PERFORMANCE DATA

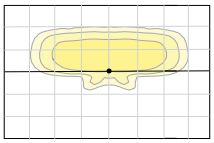
				5K (5000K nominal, 70 CRI)					4K (4000K nominal, 70 CRI)					3K (3000K nominal, 70 CRI)				
# LED'S	DRIVE CURRENT (MILLIAMPS)	SYSTEM WATTS	DISTRIBUTION TYPE	LUMENS	LPW[1]	B	U	G	LUMENS	LPW[1]	B	U	G	LUMENS	LPW[1]	B	U	G
24	700 mA	55W	FR	6357	118	1	0	1	6486	120	1	0	1	5804	107	1	0	1
			2	6132	114	1	0	1	6257	116	1	0	2	5599	104	1	0	1
			3	6015	111	1	0	2	6137	114	1	0	2	5492	102	1	0	2
			4	5921	110	1	0	2	6034	112	1	0	2	5400	100	1	0	2
			4W	5805	108	1	0	2	5921	110	1	0	2	5282	98	1	0	2
			5QM	6022	112	2	0	1	6145	114	2	0	1	5499	102	2	0	1
			5R	6063	112	3	0	3	6187	115	3	0	3	5536	103	3	0	3
			5W	5908	109	3	0	1	6028	112	3	0	1	5908	102	3	0	1
			TC	6183	115	1	0	1	6309	118	1	0	1	5645	105	1	0	1
36	560 mA	65W	FR	7864	121	1	0	1	8041	124	1	0	1	7189	111	1	0	1
			2	7586	117	1	0	2	7757	119	1	0	2	6934	107	1	0	2
			3	7441	114	1	0	2	7609	117	1	0	2	6802	105	1	0	2
			4	7317	110	1	0	2	7482	112	1	0	2	6688	100	1	0	2
			4W	7325	113	1	0	2	7490	115	1	0	2	6696	103	1	0	2
			5QM	7450	115	3	0	1	7618	117	3	0	1	6810	105	3	0	1
			5R	7501	115	3	0	3	7670	118	3	0	3	6857	105	3	0	3
			5W	7309	112	3	0	2	7473	115	3	0	2	6681	103	3	0	1
36	700 mA	80W	FR	9535	118	1	0	1	9730	120	1	0	1	8706	107	1	0	1
			2	9197	114	1	0	2	9385	116	1	0	2	8398	104	1	0	2
			3	9022	111	1	0	2	9206	114	1	0	2	8238	102	1	0	2
			4	8871	110	1	0	2	9052	112	1	0	2	8100	100	1	0	2
			4W	8707	108	1	0	2	8881	110	1	0	2	7923	98	1	0	2
			5QM	9033	112	3	0	1	9217	114	3	0	1	8248	102	3	0	1
			5R	9095	112	3	0	3	9280	115	3	0	3	8304	103	3	0	3
			5W	8861	109	3	0	2	9043	112	3	0	2	8092	100	3	0	2
			TC	9275	115	1	0	1	9464	118	1	0	1	8468	105	1	0	1
48	700 mA	110W	FR	12713	118	1	0	1	12973	120	2	0	1	11608	107	1	0	1
			2	12263	114	2	0	2	12513	116	2	0	2	11197	104	2	0	2
			3	12029	111	2	0	2	11275	114	2	0	2	10984	102	1	0	2
			4	11828	110	1	0	3	12069	112	1	0	3	10800	100	1	0	2
			4W	11609	108	1	0	3	11841	110	1	0	3	10564	98	1	0	3
			5QM	12044	112	3	0	2	12290	114	3	0	2	10997	102	3	0	1
			5R	12126	112	3	0	3	12374	115	3	0	3	11072	103	3	0	3
			5W	12126	109	4	0	2	12057	112	4	0	2	10789	100	4	0	2
			TC	12366	115	1	0	2	12619	118	1	0	2	11290	105	1	0	2
60	700 mA	136W	FR	15891	117	2	0	2	16216	120	2	0	2	14511	107	2	0	1
			2	15329	113	2	0	2	15642	116	2	0	2	13997	103	2	0	2
			3	15037	111	2	0	3	15344	113	2	0	3	13730	101	2	0	3
			4	14784	109	1	0	3	15086	111	1	0	3	13500	100	1	0	3
			4W	14511	108	2	0	4	14802	110	2	0	4	13205	98	2	0	3
			5QM	15055	111	3	0	2	15362	114	3	0	2	13747	102	3	0	2
			5R	15158	112	4	0	4	15469	114	4	0	4	13841	102	4	0	4
			5W	14781	109	4	0	2	15083	111	4	0	2	13495	100	4	0	2
			TC	15458	115	1	0	2	15834	118	1	0	2	14113	105	1	0	2

PHOTOMETRICS

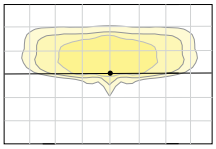
Type FR - Front Row/Auto Optic



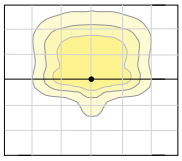
Type 2



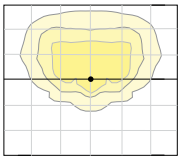
Type 3



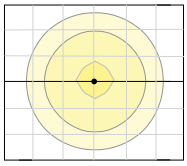
Type 4



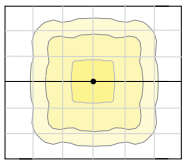
Type 4W



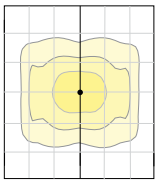
Type 5W



Type 5QM



Type 5R



[1]Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Actual performance may differ as a result of end-use environment and application.

ELECTRICAL DATA

# OF LEDS	NUMBER OF DRIVERS	DRIVE CURRENT (mA)	INPUT VOLTAGE (V)	SYSTEM POWER (w)	CURRENT (Amps)
24	2	700 mA	120	55	0.5
			277		0.2
			347		0.2
			480		0.1
36	1	560 mA	120	65	0.65
			277		0.28
			347		0.22
			480		0.16
		700 mA	120	80	0.7
			277		0.3
			347		0.2
			480		0.2
48	1	700 mA	120	110	0.9
			277		0.4
			347		0.3
			480		0.2
60	1	700 mA	120	136	1.1
			277		0.5
			347		0.4
			480		0.3

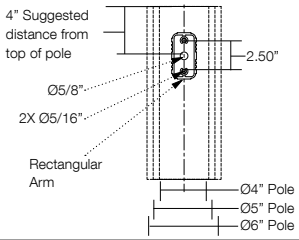
PROJECTED LUMEN MAINTENANCE

AMBIENT TEMP.	0	25,000	50,000	[1]TM-21-11 60,000	100,000	Calculated L70 (HOURS)
25°C / 77°C	1.00	0.97	0.95	0.95	0.92	>377,000

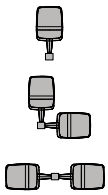
[1] Projected per IESNA TM-21-11
Data references the extrapolated performance projections for the base model in a 25°C ambient, based on 10,000 hours of LED testing per IESNA LM-80-08.

DRILL PATTERN

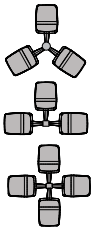
RECTANGULAR ARM (A)
Compatible with Pole drill pattern B4



EPA



Config.	EPA
1	.67
2 @ 90°	1.06
2 @ 180°	1.34



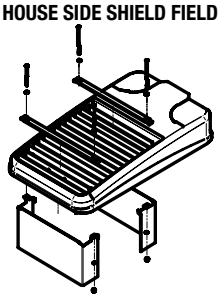
Config.	EPA
3 @ 120°	1.68
3 @ 90°	1.73
4 @ 90°	2.12

TENON TOP POLE BRACKET ACCESSORIES (Order Separately)

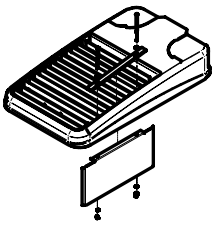
(2 3/8" OD tenon)

Catalog Number	Description
SETAVP-XX	Square tenon adapter (4 at 90°) for A - Rectangular Arm mounting option only
RETAVP-XX	Round tenon adapter (4 at 90°) for A - Rectangular Arm mounting option only
TETAVP-XX	Hexagonal tenon adapter (4 at 90°) for A - Rectangular Arm mounting option only
SETA2XX	Square tenon adapter (4 at 90°) for AD - Universal Arm mounting option only
RETA2XX	Round tenon adapter (4 at 90°) for AD3 - Universal Arm mounting option only
TETA2XX	Hexagonal tenon adapter (3 at 120°) for AD - Universal Arm mounting option only

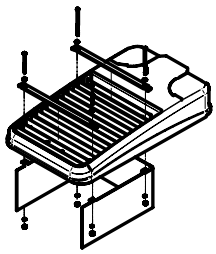
HOUSE SIDE SHIELD FIELD INSTALL ACCESSORIES



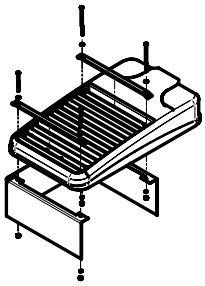
HSS/VP-S/90-FB/XXX
90° shield front or back
(2 shields shown)



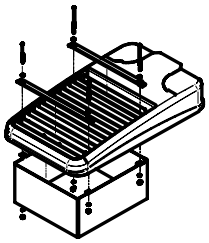
HSS/VP-S/90-LR/XXX
90° shield left or right
(1 shield shown in left orientation)



HSS/VP-S/270-FB/XXX
270° shield front or back
(1 shield shown in back orientation)

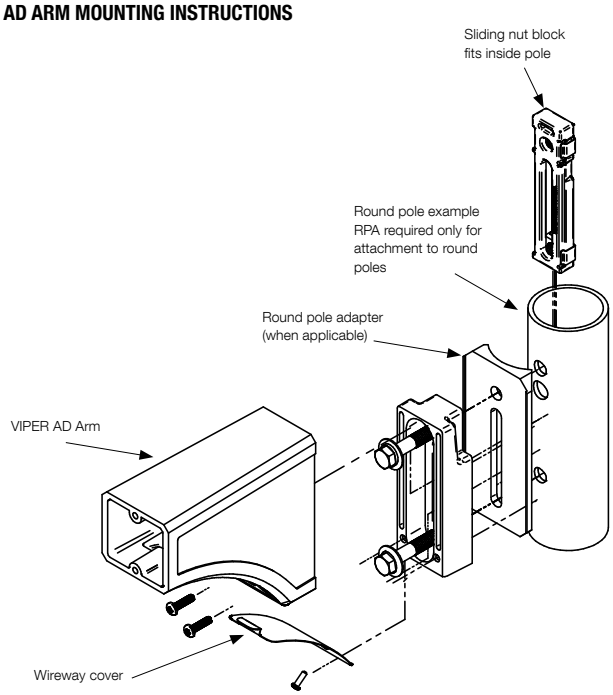


HSS/VP-S/270-LR/XXX
270° shield left or right
(1 shield shown in right orientation)

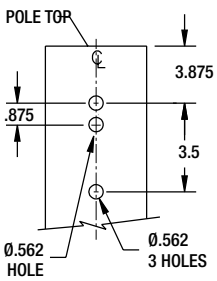


HSS/VP-S/360/XXX
Full shield (1 shield shown)

AD ARM MOUNTING INSTRUCTIONS



DECORATIVE ARM (AD)
Compatible with pole drill pattern S2



Submitted by Swaney Lighting

Job Name:
JFMH - SITE
Distributor: CED/GILMAN ELECTRIC
AUBURN (AUBURN)

Catalog Number:
VP-S/36L-80/4K7/3/UNV/A/BZT

Notes:

Type:
SB

SLA19-41349

VIPER S OPTICS STRIKE
SMALL VIPER LUMINAIRE

Cat.#

Job

Type

BEACON design . performance . technology

Approvals

SPECIFICATIONS

Intended Use:

The Beacon Viper luminaire is available with a wide choice of different LED Wattage configurations and optical distributions designed to replace HID lighting up to 400W MH or HPS.

Construction:

- Manufactured with die cast aluminum.
- Coated with a polyester finish that meets ASTM B117 corrosion test requirements and ASTM D522 cracking and loss of adhesion test requirements.
- External hardware is corrosion resistant.
- One piece optical cartridge system consisting of an LED engine, LED lamps, optics, gasket and stainless steel bezel.
- Cartridge is held together with internal brass standoffs soldered to the board so that it can be field replaced as a one piece optical system.
- Two-piece silicone and micro-cellular polyurethane foam gasket ensures a weather-proof seal around each individual LED.

Electrical:

- 100V through 277V, 50 Hz to 60 Hz (UNV), or 347V or 480V input.
- Power factor is ≥.90 at full load.
- Dimming drivers are standard, but must contact factory to request wiring leads for purpose of external dimming controls.
- Component-to-component wiring within the luminaire may carry no more than 80% of rated load and is certified by UL for use at 600VAC at 90°C or higher.
- Plug disconnects are certified by UL for use at 600 VAC, 13A or higher. 13A rating applies to primary (AC) side only.
- Fixture electrical compartment shall contain all LED driver components and shall be provided with a push-button terminal block for AC power connections.
- Surge protection - 20kA.
- Optional 7-pin ANSI C136.41-2013 twist-lock photo control receptacle available. Compatible with ANSI C136.41 external wireless control devices.
- Lifeshield™ Circuit - protects luminaire from excessive temperature. The device shall activate at a specific, factory-preset temperature, and progressively reduce power over a finite temperature range. Operation shall be smooth and undetectable to the eye. Thermal circuit is designed to "fail on", allowing the luminaire to revert to full power in the event of an interruption of its power supply, or faulty wiring connection to the drivers. The device shall be able to co-exist with other 0-10V control devices (occupancy sensors, external dimmers, etc.).

Controls/Options:

- Available with an optional passive infrared (PIR) motion sensor capable of detecting motion 360° around the luminaire. When no motion is detected for the specified time, the Motion Response system reduces the wattage to factory preset level, reducing the light level accordingly. When motion is detected by the PIR sensor, the luminaire returns to full wattage and full light output. Please contact Beacon Products if project requirements vary from standard configuration.
- Available with Energeni for optional set dimming, timed dimming with simple delay, or timed dimming based on time of night (see www.beaconproducts.com/products/energeni).
- In addition, Viper can be specified with **SiteSync™** wireless control system for reduction in energy and maintenance costs while optimizing light quality 24/7. For more details, see ordering information or visit: www.hubbelllighting.com/sitesync

Installation:

- Mounting options for horizontal arm, vertical tenon or traditional arm mounting available. Mounting hardware included.

Finish:

- IFS polyester powder-coat electrostatically applied and thermocured. IFS finish consists of a five stage pretreatment regimen with a polymer primer sealer and top coated with a thermoset super TGIC polyester powder coat finish.
- The finish meets the AAMA 2604 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pounds.

Certifications/Ratings:

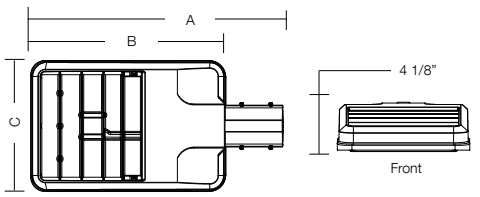
- DesignLights Consortium (DLC) qualified, consult DLC website for more details: http://www.designlights.org/QPL
- Certified to UL 1598, UL 8750 and CSA C22.2 No.250.0
- IDA approved
- This product is approved by the Florida Fish and Wildlife Conservation Commission. Separate spec available at: http://www.beaconproducts.com/products/vipersmall

Warranty:

Five year limited warranty for more information visit: www.hubbelllighting.com/resources/warranty

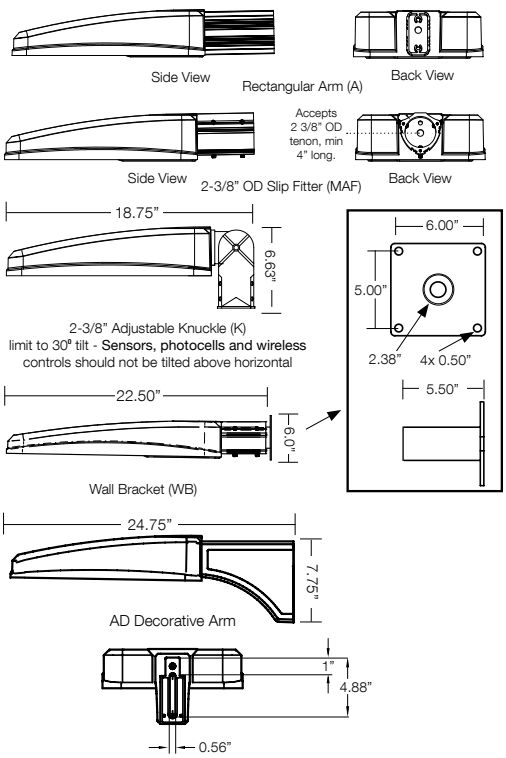
PRODUCT IMAGE(S)

DIMENSIONS



A	B	C	Weight:	EPA
21.75" (552 mm)	16.75" (425 mm)	11.25" (286 mm)	15.0 lbs (6.8 kg)	.67 ft²

MOUNTING OPTIONS



CERTIFICATIONS/LISTINGS

C SA US

ida

DLC QPL LISTED

*3000K and warmer CCTs only

HUBBELL Lighting

ORDERING INFORMATION

ORDERING EXAMPLE: VPS/24L-55/4K7/4W/UNV/A/DBT/7PR-TL/GENI-04/BC

VPS

SERIES
- **VPS** Viper

LED ENGINE
- **24L-55** 55W, LED array
- **36L-65** 65W, LED array
- **36L-80** 80W, LED array
- **48L-110** 110W, LED array
- **60L-136** 136W, LED array

CCT/CRI[7]
- **3K7** 3000K, 70 CRI
- **4K7** 4000K, 70 CRI
- **5K7** 5000K, 70 CRI

DISTRIBUTION
- **FR** Type 1/Front Row
- **2** Type 2
- **3** Type 3
- **4** Type 4
- **4W** Type 4 Wide
- **5QM** Type 5QM
- **5R** Type 5R (rectangular)
- **5W** Type 5W (round wide)
- **TC** Tennis Court

ROTATION
- Leave blank for no rotation
- **L**[5] Optic rotation left
- **R**[5] Optic rotation right

VOLTAGE
- **UNV** 120-277V
- **120** 120V
- **208** 208V
- **240** 240V
- **277** 277V
- **347** 347V
- **480** 480V

COLOR
- **BL** Black Textured
- **DB** Dark Bronze Textured
- **GYS** Light Gray Smooth
- **PS** Platinum Silver Smooth
- **WH** White Textured
- **CC** Custom Color
- BZT - Bronze Textured

OPTIONS
- **F** Fusing
- **BSP** Bird Spikes
- **BC** Backsheidld (available for FR, 2, 3, 4, 4W Optics)

MOUNTING
- **A** Rectangular Arm (formerly RA) for square or round pole
- **MAF** Mast Arm Fitter (formerly SF2) for 2-3/8" OD horizontal arm
- **K** Knuckle (formerly PK2) limit to 45° tilt or 2-3/8" OD horizontal arm or vertical tenon
- **WB** Wall Bracket
- **AD** Universal Arm for square pole
- **AD3** Universal Arm for 2.4"-4.1" round pole
- **AD4** Universal Arm for 4.2" -5.3" round pole
- **AD5** Universal Arm for 5.5" -5.9" round pole
- **AD6** Universal Arm for 6.0"-6.5" round pole

CONTROL OPTIONS
- **7PR** 7-Pin Receptacle only (shorting cap, photo control, or wireless control provided by others)
- **7PR-SC** 7-Pin Receptacle w/Shorting Cap
- **7PR-TL** 7-Pin Receptacle w/Twist Lock photo control
- **SCP/_F**[1,2,6] Programmable Occupancy Sensor w/ daylight control (120-277 volts only)
- **GENI-XX**[3] ENERGENI
- **SWP**[1,4] SiteSync Pre-Commission
- **SWPM**[1,2,4] SiteSync Pre-Comm w/ Sensor

HOUSE SIDE SHIELD ACCESSORIES
- **HSS/VP-S/90-FB/XXX** 90° shield front or back
- **HSS/VP-S/90-LR/XXX** 90° shield left or right
- **HSS/VP-S/270-FB/XXX** 270° shield front or back
- **HSS/VP-S/270-LR/XXX** 270° shield left or right
- **HSS/VP-S/360/XXX** Full shield

(Replace XXX with notation for desired finish color)
(Refer to page 5 for shield images)

MOUNTING ACCESSORIES
- **VPL-AD-RPA3** 2.4"-4.1" Round Pole Adapter for AD arm
- **VPL-AD-RPA4** 4.2"-5.3" Round Pole Adapter for AD arm
- **VPL-AD-RPA5** 5.5"-5.9" Round Pole Adapter for AD arm
- **VPL-AD-RPA6** 6.0"-6.5" Round Pole Adapter for AD arm

[1] Not available with other wireless control or sensor options
[2] Specify mounting height; 8=8' or less, 40=9' to 40'
[3] Specify routine setting code (example GENI-04). See ENERGENI brochure and instructions for setting table and options. Not available with sensor or SiteSync options.
[4] Specify group and zone at time of order. See www.hubbelllighting.com/sitesync for further details. Order at least one SiteSync interface Accessory SWUSB or SWTAB. Each option contains SiteSync License, GUI, and Bridge Node
[5] Only available with 1A, 2, 3, 4, 4W and 5R distributions
[6] Order at least one SCP-REMOTE per project location to program and control the occupancy sensor.
[7] This product is approved by the Florida Fish and Wildlife Conservation Commission. Separate spec available at: http://cdn.beaconproducts.com/content/products/specs/specs_files/Viper_Small_LED_turtle_spec_sheet.pdf

PRECOMMISSIONED SITESYNC ORDERING INFORMATION: When ordering a fixture with the SiteSync lighting control option, additional information will be required to complete the order. The SiteSync Commissioning Form or alternate schedule information must be completed. This form includes Project location, Group information, and Operating schedules. For more detailed information please visit www.hubbell-automation.com/products/sitesync/ or contact Hubbell Lighting tech support at (800) 345-4928.

SiteSync fixtures with Motion control (SWPM) require the mounting height of the fixture for selection of the lens.

Examples: VPS/24L-55/4K7/3/UNV/A/DBT/SWP/ SiteSync only
VPS/24L-55/4K7/3/UNV/A/DBT/SWPM-40F/ SiteSync with Motion Control

Accessories and Services (Ordered Separately)

Catalog Number	Description
SWUSB*	SiteSync interface software loaded on USB flash drive for use with owner supplied PC (Windows based only). Includes SiteSync license, software and USB radio bridge node
SWTAB*	Windows tablet and SiteSync interface software. Includes tablet with preloaded software, SiteSync license and USB radio bridge node.
SWBRG	SiteSync USB radio bridge node only. Order if a replacement is required or if an extra bridge node is requested.
SCP-REMOTE	Remote Control for SCP/_F option. Order at least one per project to program and control
SW7PR+	SiteSync 7 Pin on fixture module On/Off/Dim, Daylight Sensor 120-480VAC

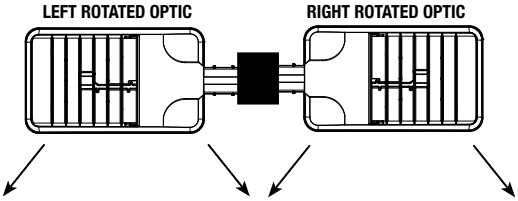
* When ordering SiteSync at least one of these two interface options must be ordered per project.
+ Available as a SiteSync retrofit solution for fixtures with an existing 7pin receptacle.

Hubbell Control Solutions - Accessories (sold separately)

Catalog Number	Description	HCS System
NXOFM-1R1D-UNV	On-fixture Module (7-pin), On / Off / Dim, Daylight Sensor with HubbNET Radio and Bluetooth® Radio, 120-480VAC	NX Distributed Intelligence™
WIR-RME-L	On-fixture Module (7-pin or 5-pin), On / Off / Dim, Daylight Sensor with wiSCAPE Radio, 110-480VAC	wiSCAPE® Lighting Control

For additional information related to these accessories please visit www.hubbellcontrolsolutions.com. Options provided for use with integrated sensor, please view specification sheet ordering information table for details.

LEFT ROTATED OPTIC



RIGHT ROTATED OPTIC

SiteSync 7-Pin Module

SW7PR

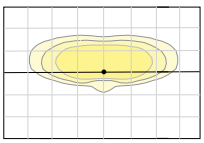
- SiteSync features in a new form
- Available as an accessory for new construction or retrofit applications (with existing 7-Pin receptacle)
- Does no interface with occupancy sensors

PERFORMANCE DATA

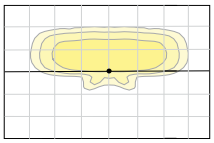
				5K (5000K nominal, 70 CRI)					4K (4000K nominal, 70 CRI)					3K (3000K nominal, 70 CRI)				
# LED'S	DRIVE CURRENT (MILLIAMPS)	SYSTEM WATTS	DISTRIBUTION TYPE	LUMENS	LPW[1]	B	U	G	LUMENS	LPW[1]	B	U	G	LUMENS	LPW[1]	B	U	G
24	700 mA	55W	FR	6357	118	1	0	1	6486	120	1	0	1	5804	107	1	0	1
			2	6132	114	1	0	1	6257	116	1	0	2	5599	104	1	0	1
			3	6015	111	1	0	2	6137	114	1	0	2	5492	102	1	0	2
			4	5921	110	1	0	2	6034	112	1	0	2	5400	100	1	0	2
			4W	5805	108	1	0	2	5921	110	1	0	2	5282	98	1	0	2
			5QM	6022	112	2	0	1	6145	114	2	0	1	5499	102	2	0	1
			5R	6063	112	3	0	3	6187	115	3	0	3	5536	103	3	0	3
			5W	5908	109	3	0	1	6028	112	3	0	1	5908	102	3	0	1
			TC	6183	115	1	0	1	6309	118	1	0	1	5645	105	1	0	1
36	560 mA	65W	FR	7864	121	1	0	1	8041	124	1	0	1	7189	111	1	0	1
			2	7586	117	1	0	2	7757	119	1	0	2	6934	107	1	0	2
			3	7441	114	1	0	2	7609	117	1	0	2	6802	105	1	0	2
			4	7317	110	1	0	2	7482	112	1	0	2	6688	100	1	0	2
			4W	7325	113	1	0	2	7490	115	1	0	2	6696	103	1	0	2
			5QM	7450	115	3	0	1	7618	117	3	0	1	6810	105	3	0	1
			5R	7501	115	3	0	3	7670	118	3	0	3	6857	105	3	0	3
			5W	7309	112	3	0	2	7473	115	3	0	2	6681	103	3	0	1
36	700 mA	80W	FR	9535	118	1	0	1	9730	120	1	0	1	8706	107	1	0	1
			2	9197	114	1	0	2	9385	116	1	0	2	8398	104	1	0	2
			3	9022	111	1	0	2	9206	114	1	0	2	8238	102	1	0	2
			4	8871	110	1	0	2	9052	112	1	0	2	8100	100	1	0	2
			4W	8707	108	1	0	2	8881	110	1	0	2	7923	98	1	0	2
			5QM	9033	112	3	0	1	9217	114	3	0	1	8248	102	3	0	1
			5R	9095	112	3	0	3	9280	115	3	0	3	8304	103	3	0	3
			5W	8861	109	3	0	2	9043	112	3	0	2	8092	100	3	0	2
			TC	9275	115	1	0	1	9464	118	1	0	1	8468	105	1	0	1
48	700 mA	110W	FR	12713	118	1	0	1	12973	120	2	0	1	11608	107	1	0	1
			2	12263	114	2	0	2	12513	116	2	0	2	11197	104	2	0	2
			3	12029	111	2	0	2	11275	114	2	0	2	10984	102	1	0	2
			4	11828	110	1	0	3	12069	112	1	0	3	10800	100	1	0	2
			4W	11609	108	1	0	3	11841	110	1	0	3	10564	98	1	0	3
			5QM	12044	112	3	0	2	12290	114	3	0	2	10997	102	3	0	1
			5R	12126	112	3	0	3	12374	115	3	0	3	11072	103	3	0	3
			5W	12126	109	4	0	2	12057	112	4	0	2	10789	100	4	0	2
			TC	12366	115	1	0	2	12619	118	1	0	2	11290	105	1	0	2
60	700 mA	136W	FR	15891	117	2	0	2	16216	120	2	0	2	14511	107	2	0	1
			2	15329	113	2	0	2	15642	116	2	0	2	13997	103	2	0	2
			3	15037	111	2	0	3	15344	113	2	0	3	13730	101	2	0	3
			4	14784	109	1	0	3	15086	111	1	0	3	13500	100	1	0	3
			4W	14511	108	2	0	4	14802	110	2	0	4	13205	98	2	0	3
			5QM	15055	111	3	0	2	15362	114	3	0	2	13747	102	3	0	2
			5R	15158	112	4	0	4	15469	114	4	0	4	13841	102	4	0	4
			5W	14781	109	4	0	2	15083	111	4	0	2	13495	100	4	0	2
			TC	15458	115	1	0	2	15834	118	1	0	2	14113	105	1	0	2

PHOTOMETRICS

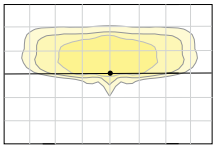
Type FR - Front Row/Auto Optic



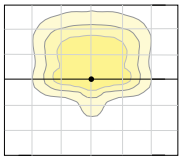
Type 2



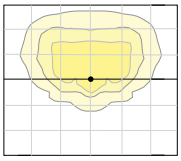
Type 3



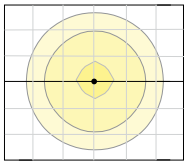
Type 4



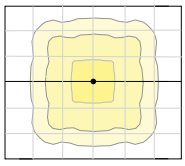
Type 4W



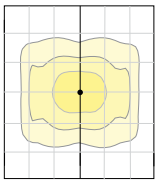
Type 5W



Type 5QM



Type 5R



[1]Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Actual performance may differ as a result of end-use environment and application.

ELECTRICAL DATA

# OF LEDS	NUMBER OF DRIVERS	DRIVE CURRENT (mA)	INPUT VOLTAGE (V)	SYSTEM POWER (w)	CURRENT (Amps)
24	2	700 mA	120	55	0.5
			277		0.2
			347		0.2
			480		0.1
36	1	560 mA	120	65	0.65
			277		0.28
			347		0.22
			480		0.16
		700 mA	120	80	0.7
			277		0.3
			347		0.2
			480		0.2
48	1	700 mA	120	110	0.9
			277		0.4
			347		0.3
			480		0.2
60	1	700 mA	120	136	1.1
			277		0.5
			347		0.4
			480		0.3

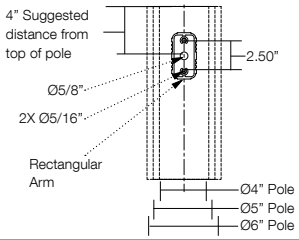
PROJECTED LUMEN MAINTENANCE

AMBIENT TEMP.	0	25,000	50,000	[1]TM-21-11 60,000	100,000	Calculated L70 (HOURS)
25°C / 77°C	1.00	0.97	0.95	0.95	0.92	>377,000

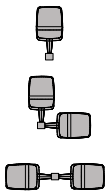
[1] Projected per IESNA TM-21-11
Data references the extrapolated performance projections for the base model in a 25°C ambient, based on 10,000 hours of LED testing per IESNA LM-80-08.

DRILL PATTERN

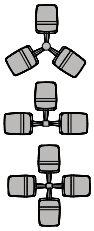
RECTANGULAR ARM (A)
Compatible with Pole drill pattern B4



EPA



Config.	EPA
1	.67
2 @ 90°	1.06
2 @ 180°	1.34



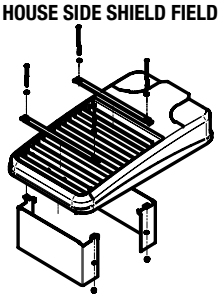
Config.	EPA
3 @ 120°	1.68
3 @ 90°	1.73
4 @ 90°	2.12

TENON TOP POLE BRACKET ACCESSORIES (Order Separately)

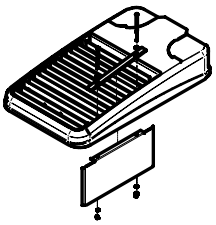
(2 3/8" OD tenon)

Catalog Number	Description
SETAVP-XX	Square tenon adapter (4 at 90°) for A - Rectangular Arm mounting option only
RETAVP-XX	Round tenon adapter (4 at 90°) for A - Rectangular Arm mounting option only
TETAVP-XX	Hexagonal tenon adapter (4 at 90°) for A - Rectangular Arm mounting option only
SETA2XX	Square tenon adapter (4 at 90°) for AD - Universal Arm mounting option only
RETA2XX	Round tenon adapter (4 at 90°) for AD3 - Universal Arm mounting option only
TETA2XX	Hexagonal tenon adapter (3 at 120°) for AD - Universal Arm mounting option only

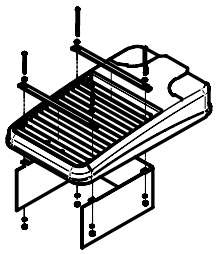
HOUSE SIDE SHIELD FIELD INSTALL ACCESSORIES



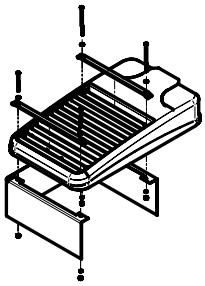
HSS/VP-S/90-FB/XXX
90° shield front or back
(2 shields shown)



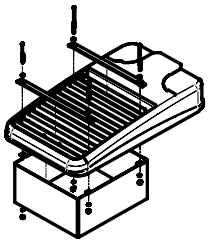
HSS/VP-S/90-LR/XXX
90° shield left or right
(1 shield shown in left orientation)



HSS/VP-S/270-FB/XXX
270° shield front or back
(1 shield shown in back orientation)

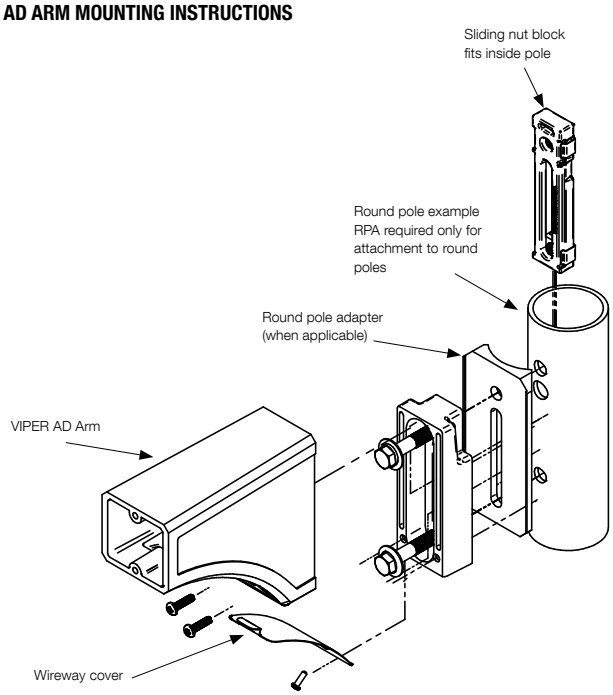


HSS/VP-S/270-LR/XXX
270° shield left or right
(1 shield shown in right orientation)

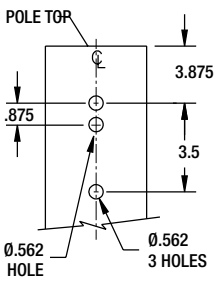


HSS/VP-S/360/XXX
Full shield (1 shield shown)

AD ARM MOUNTING INSTRUCTIONS



DECORATIVE ARM (AD)
Compatible with pole drill pattern S2



VIPER S OPTICS STRIKE

SMALL VIPER LUMINAIRE

Cat.#

Job

Type

BEACON design . performance . technology

Approvals

SPECIFICATIONS

Intended Use:

The Beacon Viper luminaire is available with a wide choice of different LED Wattage configurations and optical distributions designed to replace HID lighting up to 400W MH or HPS.

Construction:

- Manufactured with die cast aluminum.
- Coated with a polyester finish that meets ASTM B117 corrosion test requirements and ASTM D522 cracking and loss of adhesion test requirements.
- External hardware is corrosion resistant.
- One piece optical cartridge system consisting of an LED engine, LED lamps, optics, gasket and stainless steel bezel.
- Cartridge is held together with internal brass standoffs soldered to the board so that it can be field replaced as a one piece optical system.
- Two-piece silicone and micro-cellular polyurethane foam gasket ensures a weather-proof seal around each individual LED.

Electrical:

- 100V through 277V, 50 Hz to 60 Hz (UNV), or 347V or 480V input.
- Power factor is ≥.90 at full load.
- Dimming drivers are standard, but must contact factory to request wiring leads for purpose of external dimming controls.
- Component-to-component wiring within the luminaire may carry no more than 80% of rated load and is certified by UL for use at 600VAC at 90°C or higher.
- Plug disconnects are certified by UL for use at 600 VAC, 13A or higher. 13A rating applies to primary (AC) side only.
- Fixture electrical compartment shall contain all LED driver components and shall be provided with a push-button terminal block for AC power connections.
- Surge protection - 20kA.
- Optional 7-pin ANSI C136.41-2013 twist-lock photo control receptacle available. Compatible with ANSI C136.41 external wireless control devices.
- Lifeshield™ Circuit - protects luminaire from excessive temperature. The device shall activate at a specific, factory-preset temperature, and progressively reduce power over a finite temperature range. Operation shall be smooth and undetectable to the eye. Thermal circuit is designed to "fail on", allowing the luminaire to revert to full power in the event of an interruption of its power supply, or faulty wiring connection to the drivers. The device shall be able to co-exist with other 0-10V control devices (occupancy sensors, external dimmers, etc.).

Controls/Options:

- Available with an optional passive infrared (PIR) motion sensor capable of detecting motion 360° around the luminaire. When no motion is detected for the specified time, the Motion Response system reduces the wattage to factory preset level, reducing the light level accordingly. When motion is detected by the PIR sensor, the luminaire returns to full wattage and full light output. Please contact Beacon Products if project requirements vary from standard configuration.
- Available with Energeni for optional set dimming, timed dimming with simple delay, or timed dimming based on time of night (see www.beaconproducts.com/products/energeni).
- In addition, Viper can be specified with **SiteSync™** wireless control system for reduction in energy and maintenance costs while optimizing light quality 24/7. For more details, see ordering information or visit: www.hubbelllighting.com/sitesync

Installation:

- Mounting options for horizontal arm, vertical tenon or traditional arm mounting available. Mounting hardware included.

Finish:

- IFS polyester powder-coat electrostatically applied and thermocured. IFS finish consists of a five stage pretreatment regimen with a polymer primer sealer and top coated with a thermoset super TGIC polyester powder coat finish.
- The finish meets the AAMA 2604 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pounds.

Certifications/Ratings:

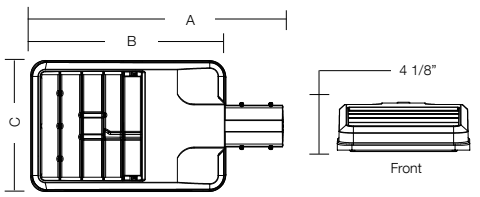
- DesignLights Consortium (DLC) qualified, consult DLC website for more details: http://www.designlights.org/QPL
- Certified to UL 1598, UL 8750 and CSA C22.2 No.250.0
- IDA approved
- This product is approved by the Florida Fish and Wildlife Conservation Commission. Separate spec available at: http://www.beaconproducts.com/products/vipersmall

Warranty:

Five year limited warranty for more information visit: www.hubbelllighting.com/resources/warranty

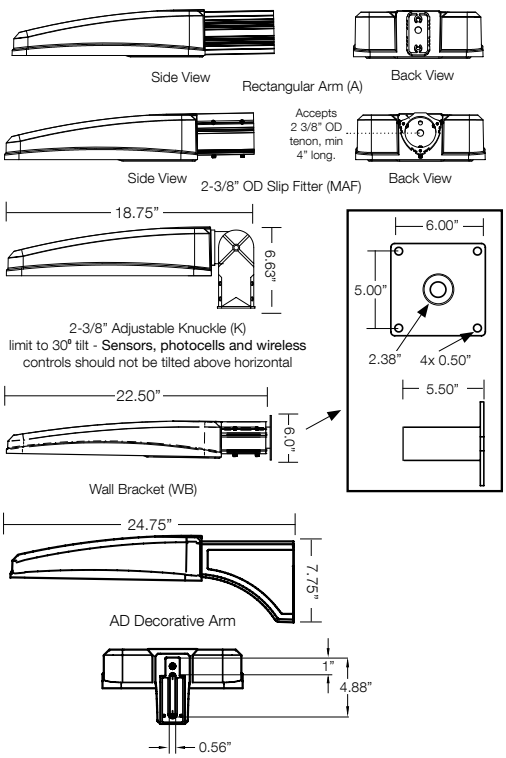
PRODUCT IMAGE(S)

DIMENSIONS



A	B	C	Weight:	EPA
21.75" (552 mm)	16.75" (425 mm)	11.25" (286 mm)	15.0 lbs (6.8 kg)	.67 ft²

MOUNTING OPTIONS



CERTIFICATIONS/LISTINGS

C SA US

ida

*3000K and warmer CCTs only

DLC QPL LISTED

HUBBELL Lighting

ORDERING INFORMATION

ORDERING EXAMPLE: VPS/24L-55/4K7/4W/UNV/A/DBT/7PR-TL/GENI-04/BC

VPS

SERIES
- **VPS** Viper

LED ENGINE
- **24L-55** 55W, LED array
- **36L-65** 65W, LED array
- **36L-80** 80W, LED array
- **48L-110** 110W, LED array
- **60L-136** 136W, LED array

CCT/CRI[7]
- **3K7** 3000K, 70 CRI
- **4K7** 4000K, 70 CRI
- **5K7** 5000K, 70 CRI

DISTRIBUTION
- **FR** Type 1/Front Row
- **2** Type 2
- **3** Type 3
- **4** Type 4
- **4W** Type 4 Wide
- **5QM** Type 5QM
- **5R** Type 5R (rectangular)
- **5W** Type 5W (round wide)
- **TC** Tennis Court

ROTATION
- Leave blank for no rotation
- **L[5]** Optic rotation left
- **R[5]** Optic rotation right

VOLTAGE
- **UNV** 120-277V
- **120** 120V
- **208** 208V
- **240** 240V
- **277** 277V
- **347** 347V
- **480** 480V

COLOR
- **BL** Black Textured
- **DB** Dark Bronze Textured
- **GYS** Light Gray Smooth
- **PS** Platinum Silver Smooth
- **WH** White Textured
- **CC** Custom Color
- BZT - Bronze Textured

OPTIONS
- **F** Fusing
- **BSP** Bird Spikes
- **BC** Backsheidld (available for FR, 2, 3, 4, 4W Optics)

MOUNTING
- **A** Rectangular Arm (formerly RA) for square or round pole
- **MAF** Mast Arm Fitter (formerly SF2) for 2-3/8" OD horizontal arm
- **K** Knuckle (formerly PK2) limit to 45° tilt or 2-3/8" OD horizontal arm or vertical tenon
- **WB** Wall Bracket
- **AD** Universal Arm for square pole
- **AD3** Universal Arm for 2.4"-4.1" round pole
- **AD4** Universal Arm for 4.2" -5.3" round pole
- **AD5** Universal Arm for 5.5" -5.9" round pole
- **AD6** Universal Arm for 6.0"-6.5" round pole

CONTROL OPTIONS
- **7PR** 7-Pin Receptacle only (shorting cap, photo control, or wireless control provided by others)
- **7PR-SC** 7-Pin Receptacle w/Shorting Cap
- **7PR-TL** 7-Pin Receptacle w/Twist Lock photo control
- **SCP/_F[1,2,6]** Programmable Occupancy Sensor w/ daylight control (120-277 volts only)
- **GENI-XX[3]** ENERGENI
- **SWP[1,4]** SiteSync Pre-Commission
- **SWPM[1,2,4]** SiteSync Pre-Comm w/ Sensor

HOUSE SIDE SHIELD ACCESSORIES
- **HSS/VP-S/90-FB/XXX** 90° shield front or back
- **HSS/VP-S/90-LR/XXX** 90° shield left or right
- **HSS/VP-S/270-FB/XXX** 270° shield front or back
- **HSS/VP-S/270-LR/XXX** 270° shield left or right
- **HSS/VP-S/360/XXX** Full shield

(Replace XXX with notation for desired finish color)
(Refer to page 5 for shield images)

MOUNTING ACCESSORIES
- **VPL-AD-RPA3** 2.4"-4.1" Round Pole Adapter for AD arm
- **VPL-AD-RPA4** 4.2"-5.3" Round Pole Adapter for AD arm
- **VPL-AD-RPA5** 5.5"-5.9" Round Pole Adapter for AD arm
- **VPL-AD-RPA6** 6.0"-6.5" Round Pole Adapter for AD arm

[1] Not available with other wireless control or sensor options
[2] Specify mounting height; 8=8' or less, 40=9' to 40'
[3] Specify routine setting code (example GENI-04). See ENERGENI brochure and instructions for setting table and options. Not available with sensor or SiteSync options.
[4] Specify group and zone at time of order. See www.hubbelllighting.com/sitesync for further details. Order at least one SiteSync interface Accessory SWUSB or SWTAB. Each option contains SiteSync License, GUI, and Bridge Node
[5] Only available with 1A, 2, 3, 4, 4W and 5R distributions
[6] Order at least one SCP-REMOTE per project location to program and control the occupancy sensor.
[7] This product is approved by the Florida Fish and Wildlife Conservation Commission. Separate spec available at: http://cdn.beaconproducts.com/content/products/specs/specs_files/Viper_Small_LED_turtle_spec_sheet.pdf

PRECOMMISSIONED SITESYNC ORDERING INFORMATION: When ordering a fixture with the SiteSync lighting control option, additional information will be required to complete the order. The SiteSync Commissioning Form or alternate schedule information must be completed. This form includes Project location, Group information, and Operating schedules. For more detailed information please visit www.hubbell-automation.com/products/sitesync/ or contact Hubbell Lighting tech support at (800) 345-4928.

SiteSync fixtures with Motion control (SWPM) require the mounting height of the fixture for selection of the lens.

Examples: VPS/24L-55/4K7/3/UNV/A/DBT/SWP/ SiteSync only
VPS/24L-55/4K7/3/UNV/A/DBT/SWPM-40F/ SiteSync with Motion Control

Accessories and Services (Ordered Separately)

Catalog Number	Description
SWUSB*	SiteSync interface software loaded on USB flash drive for use with owner supplied PC (Windows based only). Includes SiteSync license, software and USB radio bridge node
SWTAB*	Windows tablet and SiteSync interface software. Includes tablet with preloaded software, SiteSync license and USB radio bridge node.
SWBRG	SiteSync USB radio bridge node only. Order if a replacement is required or if an extra bridge node is requested.
SCP-REMOTE	Remote Control for SCP/_F option. Order at least one per project to program and control
SW7PR+	SiteSync 7 Pin on fixture module On/Off/Dim, Daylight Sensor 120-480VAC

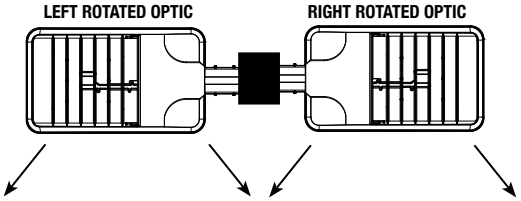
* When ordering SiteSync at least one of these two interface options must be ordered per project.
+ Available as a SiteSync retrofit solution for fixtures with an existing 7pin receptacle.

Hubbell Control Solutions - Accessories (sold separately)

Catalog Number	Description	HCS System
NXOFM-1R1D-UNV	On-fixture Module (7-pin), On / Off / Dim, Daylight Sensor with HubbNET Radio and Bluetooth® Radio, 120-480VAC	NX Distributed Intelligence™
WIR-RME-L	On-fixture Module (7-pin or 5-pin), On / Off / Dim, Daylight Sensor with wiSCAPE Radio, 110-480VAC	wiSCAPE® Lighting Control

For additional information related to these accessories please visit www.hubbellcontrolsolutions.com. Options provided for use with integrated sensor, please view specification sheet ordering information table for details.

LEFT ROTATED OPTIC



RIGHT ROTATED OPTIC

SiteSync 7-Pin Module

SW7PR

- SiteSync features in a new form
- Available as an accessory for new construction or retrofit applications (with existing 7-Pin receptacle)
- Does no interface with occupancy sensors

SiteSync LIGHTING CONTROL

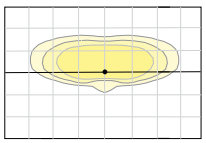
HUBBELL Lighting

PERFORMANCE DATA

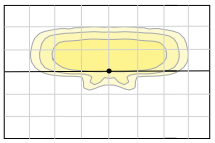
				5K (5000K nominal, 70 CRI)					4K (4000K nominal, 70 CRI)					3K (3000K nominal, 70 CRI)				
# LED'S	DRIVE CURRENT (MILLIAMPS)	SYSTEM WATTS	DISTRIBUTION TYPE	LUMENS	LPW[1]	B	U	G	LUMENS	LPW[1]	B	U	G	LUMENS	LPW[1]	B	U	G
24	700 mA	55W	FR	6357	118	1	0	1	6486	120	1	0	1	5804	107	1	0	1
			2	6132	114	1	0	1	6257	116	1	0	2	5599	104	1	0	1
			3	6015	111	1	0	2	6137	114	1	0	2	5492	102	1	0	2
			4	5921	110	1	0	2	6034	112	1	0	2	5400	100	1	0	2
			4W	5805	108	1	0	2	5921	110	1	0	2	5282	98	1	0	2
			5QM	6022	112	2	0	1	6145	114	2	0	1	5499	102	2	0	1
			5R	6063	112	3	0	3	6187	115	3	0	3	5536	103	3	0	3
			5W	5908	109	3	0	1	6028	112	3	0	1	5908	102	3	0	1
			TC	6183	115	1	0	1	6309	118	1	0	1	5645	105	1	0	1
36	560 mA	65W	FR	7864	121	1	0	1	8041	124	1	0	1	7189	111	1	0	1
			2	7586	117	1	0	2	7757	119	1	0	2	6934	107	1	0	2
			3	7441	114	1	0	2	7609	117	1	0	2	6802	105	1	0	2
			4	7317	110	1	0	2	7482	112	1	0	2	6688	100	1	0	2
			4W	7325	113	1	0	2	7490	115	1	0	2	6696	103	1	0	2
			5QM	7450	115	3	0	1	7618	117	3	0	1	6810	105	3	0	1
			5R	7501	115	3	0	3	7670	118	3	0	3	6857	105	3	0	3
			5W	7309	112	3	0	2	7473	115	3	0	2	6681	103	3	0	1
36	700 mA	80W	FR	9535	118	1	0	1	9730	120	1	0	1	8706	107	1	0	1
			2	9197	114	1	0	2	9385	116	1	0	2	8398	104	1	0	2
			3	9022	111	1	0	2	9206	114	1	0	2	8238	102	1	0	2
			4	8871	110	1	0	2	9052	112	1	0	2	8100	100	1	0	2
			4W	8707	108	1	0	2	8881	110	1	0	2	7923	98	1	0	2
			5QM	9033	112	3	0	1	9217	114	3	0	1	8248	102	3	0	1
			5R	9095	112	3	0	3	9280	115	3	0	3	8304	103	3	0	3
			5W	8861	109	3	0	2	9043	112	3	0	2	8092	100	3	0	2
			TC	9275	115	1	0	1	9464	118	1	0	1	8468	105	1	0	1
48	700 mA	110W	FR	12713	118	1	0	1	12973	120	2	0	1	11608	107	1	0	1
			2	12263	114	2	0	2	12513	116	2	0	2	11197	104	2	0	2
			3	12029	111	2	0	2	11275	114	2	0	2	10984	102	1	0	2
			4	11828	110	1	0	3	12069	112	1	0	3	10800	100	1	0	2
			4W	11609	108	1	0	3	11841	110	1	0	3	10564	98	1	0	3
			5QM	12044	112	3	0	2	12290	114	3	0	2	10997	102	3	0	1
			5R	12126	112	3	0	3	12374	115	3	0	3	11072	103	3	0	3
			5W	12126	109	4	0	2	12057	112	4	0	2	10789	100	4	0	2
			TC	12366	115	1	0	2	12619	118	1	0	2	11290	105	1	0	2
60	700 mA	136W	FR	15891	117	2	0	2	16216	120	2	0	2	14511	107	2	0	1
			2	15329	113	2	0	2	15642	116	2	0	2	13997	103	2	0	2
			3	15037	111	2	0	3	15344	113	2	0	3	13730	101	2	0	3
			4	14784	109	1	0	3	15086	111	1	0	3	13500	100	1	0	3
			4W	14511	108	2	0	4	14802	110	2	0	4	13205	98	2	0	3
			5QM	15055	111	3	0	2	15362	114	3	0	2	13747	102	3	0	2
			5R	15158	112	4	0	4	15469	114	4	0	4	13841	102	4	0	4
			5W	14781	109	4	0	2	15083	111	4	0	2	13495	100	4	0	2
			TC	15458	115	1	0	2	15834	118	1	0	2	14113	105	1	0	2

PHOTOMETRICS

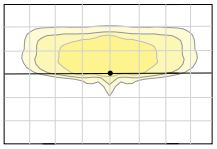
Type FR - Front Row/Auto Optic



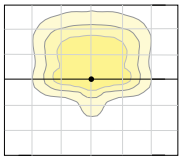
Type 2



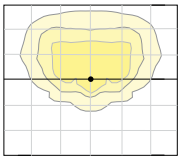
Type 3



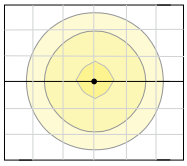
Type 4



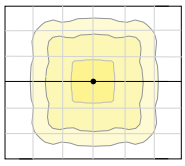
Type 4W



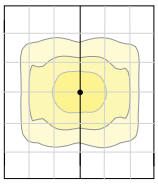
Type 5W



Type 5QM



Type 5R



[1]Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Actual performance may differ as a result of end-use environment and application.

ELECTRICAL DATA

# OF LEDS	NUMBER OF DRIVERS	DRIVE CURRENT (mA)	INPUT VOLTAGE (V)	SYSTEM POWER (w)	CURRENT (Amps)
24	2	700 mA	120	55	0.5
			277		0.2
			347		0.2
			480		0.1
36	1	560 mA	120	65	0.65
			277		0.28
			347		0.22
			480		0.16
		700 mA	120	80	0.7
			277		0.3
			347		0.2
			480		0.2
48	1	700 mA	120	110	0.9
			277		0.4
			347		0.3
			480		0.2
60	1	700 mA	120	136	1.1
			277		0.5
			347		0.4
			480		0.3

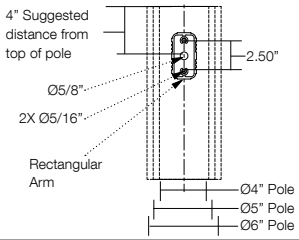
PROJECTED LUMEN MAINTENANCE

AMBIENT TEMP.	0	25,000	50,000	[1]TM-21-11 60,000	100,000	Calculated L70 (HOURS)
25°C / 77°C	1.00	0.97	0.95	0.95	0.92	>377,000

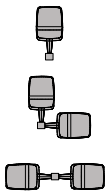
[1] Projected per IESNA TM-21-11
Data references the extrapolated performance projections for the base model in a 25°C ambient, based on 10,000 hours of LED testing per IESNA LM-80-08.

DRILL PATTERN

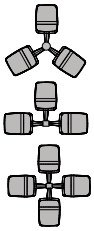
RECTANGULAR ARM (A)
Compatible with Pole drill pattern B4



EPA



Config.	EPA
1	.67
2 @ 90°	1.06
2 @ 180°	1.34



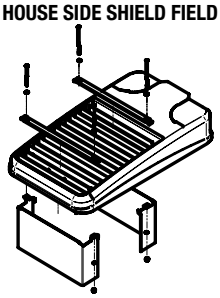
Config.	EPA
3 @ 120°	1.68
3 @ 90°	1.73
4 @ 90°	2.12

TENON TOP POLE BRACKET ACCESSORIES (Order Separately)

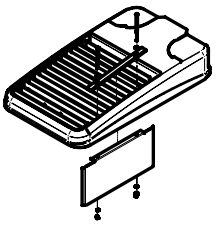
(2 3/8" OD tenon)

Catalog Number	Description
SETAVP-XX	Square tenon adapter (4 at 90°) for A - Rectangular Arm mounting option only
RETAVP-XX	Round tenon adapter (4 at 90°) for A - Rectangular Arm mounting option only
TETAVP-XX	Hexagonal tenon adapter (4 at 90°) for A - Rectangular Arm mounting option only
SETA2XX	Square tenon adapter (4 at 90°) for AD - Universal Arm mounting option only
RETA2XX	Round tenon adapter (4 at 90°) for AD3 - Universal Arm mounting option only
TETA2XX	Hexagonal tenon adapter (3 at 120°) for AD - Universal Arm mounting option only

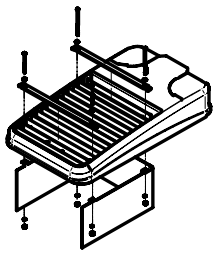
HOUSE SIDE SHIELD FIELD INSTALL ACCESSORIES



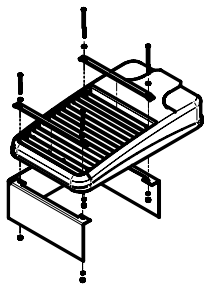
HSS/VP-S/90-FB/XXX
90° shield front or back
(2 shields shown)



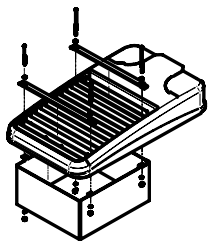
HSS/VP-S/90-LR/XXX
90° shield left or right
(1 shield shown in left orientation)



HSS/VP-S/270-FB/XXX
270° shield front or back
(1 shield shown in back orientation)

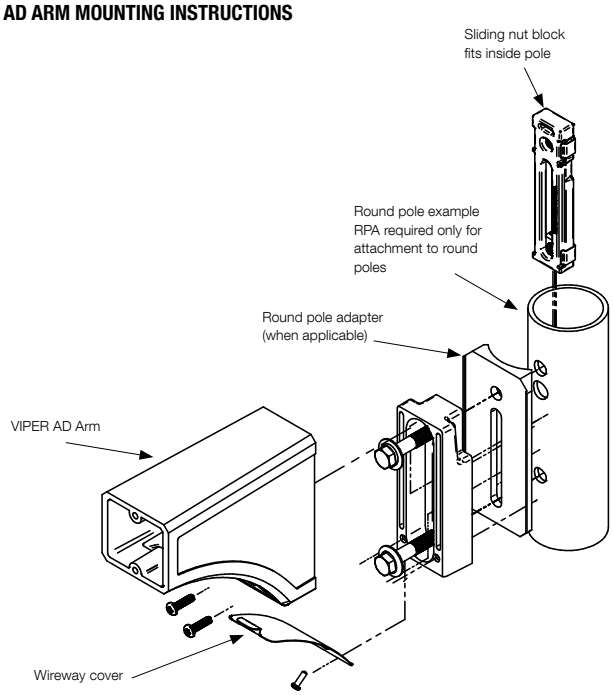


HSS/VP-S/270-LR/XXX
270° shield left or right
(1 shield shown in right orientation)

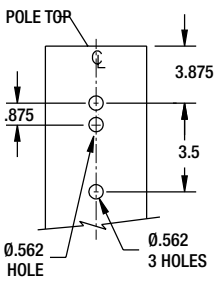


HSS/VP-S/360/XXX
Full shield (1 shield shown)

AD ARM MOUNTING INSTRUCTIONS



DECORATIVE ARM (AD)
Compatible with pole drill pattern S2



SSS-B SERIES POLES

SQUARE STRAIGHT STEEL

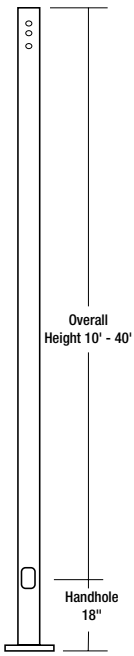
Cat.#

Job

Type

BEACON design . performance . technology

Approvals



APPLICATIONS

- Lighting installations for side and top mounting of luminaires with effective projected area (EPA) not exceeding maximum allowable loading of the specified pole in its installed geographic location

CONSTRUCTION

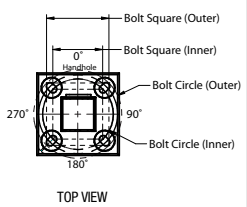
- SHAFT: One-piece straight steel with square cross section, flat sides and minimum 0.238" radius on all corners; Minimum yield of 46,000 psi (ASTM-A500, Grade B); Longitudinal weld seam to appear flush with shaft side wall; Steel base plate with axial bolt circle slots welded flush to pole shaft having minimum yield of 36,000 psi (ASTM A36)
- BASE COVER: Two-piece square aluminum base cover included standard
- POLE CAP: Pole shaft supplied with removable cover when applicable; Tenon and post-top configurations also available
- HAND HOLE: Rectangular 3x5 steel hand hole frame (2.38" x 4.38" opening); Mounting provisions for grounding lug located behind gasketed cover
- ANCHOR BOLTS: Four galvanized anchor bolts provided per pole with minimum yield of 55,000 psi (ASTM F1554). Galvanized hardware with two washers and two nuts per bolt for leveling

FINISH

- Durable thermoset polyester powder coat paint finish with nominal 3.0 mil thickness
- Powder paint prime applied over "white metal" steel substrate cleaned via mechanical shot blast method
- Decorative finish coat available in seven standard colors; Custom colors available; RAL number preferable; Internal protective coating available

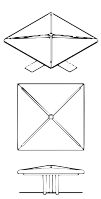
WAREHOUSE 'STOCKED' POLES:

- SSSH20-40A-4-HV-DB-RDC, SSSH25-40A-4-HV-DB-RDC and SSSH30-50B-4-HV-DB-RDC
- The HV designation in the above catalog numbers is a combination drill pattern of the Hubbell Outdoor S2 pattern and the Beacon B3/B4 Viper pattern (rectangular arm mounting)

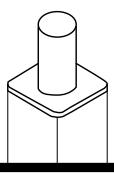


TOP VIEW

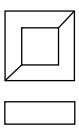
POLE CAP



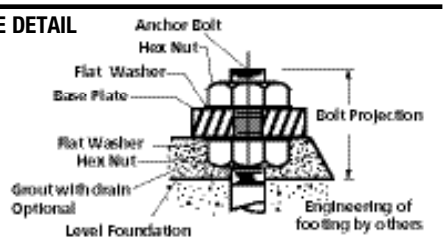
TENON



BASE COVER



BASE DETAIL



ORDERING INFORMATION

ORDERING EXAMPLE:

Reference page 2 for available configurations

SSS – B – 25 – 40 – A/B/C – 2L – B2 – BBT – UL

SERIES	HEIGHT	SHAFT	THICKNESS
SSS-B Square Straight Steel Pole Beacon	Reference page 2 Ordering matrix: **20**	Reference page 2 Ordering matrix: **40**	Reference page 2 Ordering matrix: **A**

MOUNTING	
1	Single arm mount
2	Two fixtures at 180°
2L	Two fixtures at 90°
3T	Three fixtures at 90°
4	Four fixtures at 90°
TA	Tenon (2.38" OD x 4" Tall)
TB	Tenon (2.88" OD x 4" Tall)
TC	Tenon (3.5" OD x 6" Tall)
TR[1]	Removable Tenon (2.375 x 4.25)
OT	Open Top (includes pole cap)

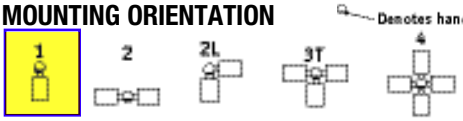
DRILL PATTERN	
B1	Cruzer
B3	Viper Large
B4	Viper Small

FINISH	
DB	Dark Bronze Textured
BL	Black Textured
WH	White Textured
PS	Platinum Silver
GYS	Light Gray Smooth
BZT	Bronze Textured
BBT	Basic Black Textured
CC	Custom Color

OPTIONS	
HSC	Internal Coating (Hubbell Seal)
GFI[2]	20 Amp GFCI Receptacle and Cover
EHH[2]	Extra Handhole
C05[2]	.5" Coupling
C07[2]	.75" Coupling
C20[2]	2" Coupling
MPB[2]	Mid-pole Luminaire Bracket
VM2	2nd mode vibration damper
LAB	Less Anchor Bolts
UL	UL Certified

MOUNTING ORIENTATION

Denotes handhole location



ACCESSORIES - Order Separately

Catalog Number	Description
VM1[3]	1st mode vibration damper
VM2SXX	2nd mode vibration damper

1 Removable tenon used in conjunction with side arm mounting. First specify desired arm configuration followed by the **"TR"** notation. Example: **SSS-B-25-40-A-1-B1-TR-BBT**
2 Specify option location using logic found on page 2 **(Option Orientation)**
3 VM1 recommended on poles 20' and taller with EPA of less than 1.

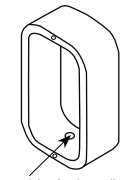
HUBBELL Lighting

ORDERING INFORMATION Cont.

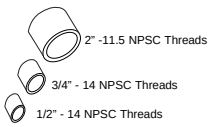
Catalog Number	Height		Nominal Shaft Dimensions	Wall Thickness	Bolt Circle (suggested)	Bolt Circle (range)	Bolt Square (range)	Base Plate Square	Anchor bolt size	Bolt Projection	Pole weight
	Feet	Meters									
SSS-B-10-40-A-XX-XX	10	3.0	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	77
SSS-B-12-40-A-XX-XX	12	3.7	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	90
SSS-B-14-40-A-XX-XX	14	4.3	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	103
SSS-B-16-40-A-XX-XX	16	4.9	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	116
SSS-B-18-40-A-XX-XX	18	5.5	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	129
SSS-B-20-40-A-XX-XX	20	6.1	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	142
SSS-B-25-40-A-XX-XX	25	7.6	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	175
SSS-B-14-40-B-XX-XX	14	4.3	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	152
SSS-B-16-40-B-XX-XX	16	4.9	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	171
SSS-B-18-40-B-XX-XX	18	5.5	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	190
SSS-B-20-40-B-XX-XX	20	6.1	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	209
SSS-B-25-40-B-XX-XX	25	7.6	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	257
SSS-B-30-40-B-XX-XX	30	9.1	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	304
SSS-B-16-50-B-XX-XX	16	4.9	5" square	.188"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	219
SSS-B-18-50-B-XX-XX	18	5.5	5" square	.188"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	243
SSS-B-20-50-B-XX-XX	20	6.1	5" square	.188"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	267
SSS-B-25-50-B-XX-XX	25	7.6	5" square	.188"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	327
SSS-B-30-50-B-XX-XX	30	9.1	5" square	.188"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	387
SSS-B-25-50-C-XX-XX	25	7.6	5" square	.25"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	427
SSS-B-30-50-C-XX-XX	30	9.1	5" square	.25"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	507
SSS-B-20-60-B-XX-XX	20	6.1	6" square	.188"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	329
SSS-B-25-60-B-XX-XX	25	7.6	6" square	.188"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	404
SSS-B-30-60-B-XX-XX	30	9.1	6" square	.188"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	479
SSS-B-35-60-B-XX-XX	35	10.7	6" square	.188"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	554
SSS-B-40-60-B-XX-XX	40	12.2	6" square	.188"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	629
SSS-B-30-60-C-XX-XX	30	9.1	6" square	.25"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	614
SSS-B-35-60-C-XX-XX	35	10.7	6" square	.25"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	712
SSS-B-40-60-C-XX-XX	40	12.2	6" square	.25"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	809

NOTE Factory supplied template must be used when setting anchor bolts. Beacon Products will deny any claim for incorrect anchorage placement resulting from failure to use factory supplied template and anchor bolts.

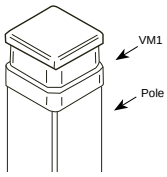
EHH - EXTRA HANDHOLE



C05 - C07 - C20 - COUPLING

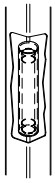


VM1 - VIBRATION DAMPER 1ST MODE



Field Installed Pole Top damper designed to reduce pole top deflection or sway. VM1 is recommended for pole systems 25' and taller with a total EPA of 1.0 or less.

VM2 - VIBRATION DAMPER 2ND MODE



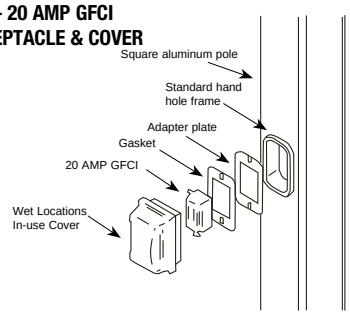
Factory installed, internal damper designed to alter pole resonance to reduce movement and material fatigue caused by 2nd mode vibration.

VM2SXX - VIBRATION DAMPER 2ND MODE

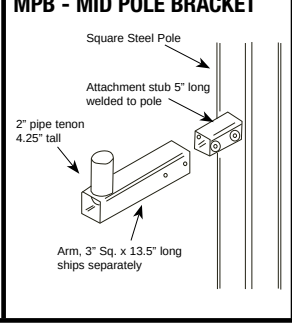
VM2S08 – 8'
VM2S12 – 12'
VM2S16 – 16'
VM2S20 – 20'
VM2S24 – 24'

Field installed, internal damper designed to alter pole resonance to reduce movement and material fatigue caused by 2nd mode vibration.

GFI – 20 AMP GFCI RECEPTACLE & COVER

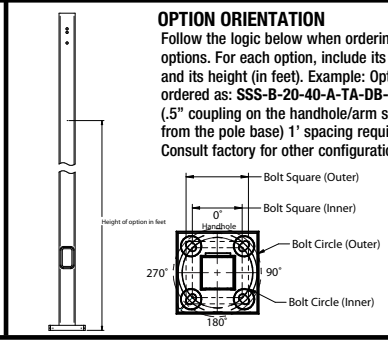


MPB - MID POLE BRACKET



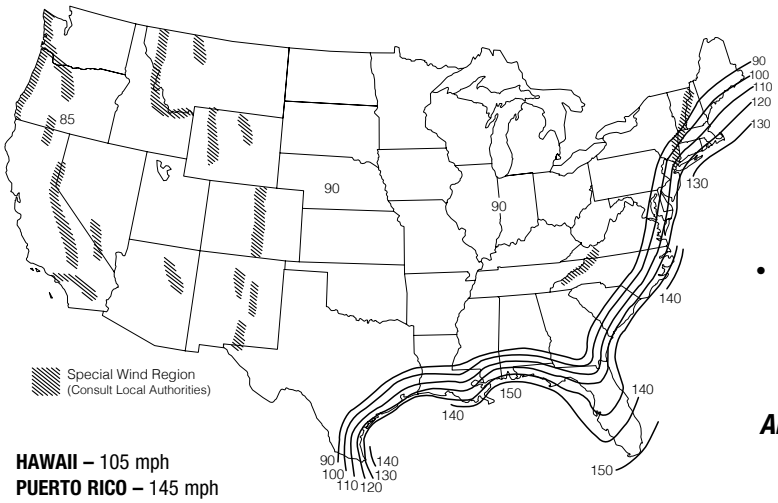
OPTION ORIENTATION

Follow the logic below when ordering location specific options. For each option, include its orientation (in degrees) and its height (in feet). Example: Option C07 should be ordered as: **SSS-B-20-40-A-TA-DB-C05-0-15**
(.5" coupling on the handhole/arm side of pole, 15 feet up from the pole base) 1' spacing required between option. Consult factory for other configurations.



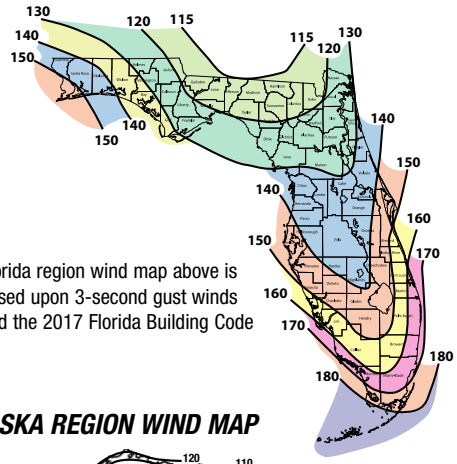
For more information about pole vibration and vibration dampers, please consult http://www.beaconproducts.com/content/products/literature/literature_files/Pole_Wind_Induced_Flyer_HL0I0022.pdf
Due to our continued efforts to improve our products, product specifications are subject to change without notice.

ASCE7-05 WIND MAP



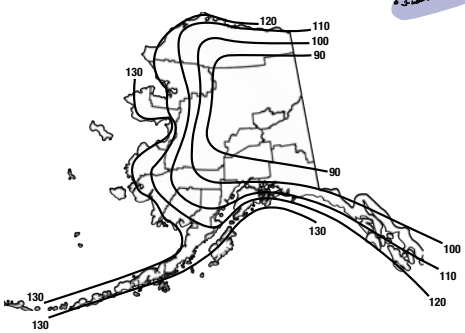
HAWAII – 105 mph
PUERTO RICO – 145 mph

FLORIDA REGION WIND *MAP*



- Florida region wind map above is based upon 3-second gust winds and the 2017 Florida Building Code

ALASKA REGION WIND MAP



ASCE 7-05 wind map EPA Load Rating - 3 second gust wind speeds (Use for all locations except Florida)										
Catalog Number	**85**	**90**	**100**	**105**	**110**	**120**	**130**	**140**	**145**	**150**
SSS-B-10-40-A	25.0	25.0	25.0	22.8	20.6	17.0	14.2	11.9	11.0	10.1
SSS-B-12-40-A	25.0	25.0	20.0	18.0	16.1	13.2	10.8	8.9	8.1	7.4
SSS-B-14-40-A	23.1	20.4	16.1	14.3	12.8	10.2	8.2	6.6	5.9	5.3
SSS-B-16-40-A	19.0	16.7	13.0	11.5	10.1	7.9	6.2	4.7	4.1	3.6
SSS-B-18-40-A	15.6	13.6	10.0	9.0	7.8	5.9	4.4	3.1	2.6	2.1
SSS-B-20-40-A	12.7	10.9	7.9	6.9	5.9	4.2	2.8	1.7	1.3	0.9
SSS-B-25-40-A	7.3	5.9	3.8	2.9	2.1	0.8	NR	NR	NR	NR
SSS-B-14-40-B	25.0	25.0	23.3	20.8	18.6	15.1	12.3	10.2	9.2	8.4
SSS-B-16-40-B	25.0	24.9	19.4	17.3	15.4	12.3	9.9	8.0	7.2	6.4
SSS-B-18-40-B	24.0	20.8	16.1	14.2	12.5	9.8	7.7	6.1	5.3	4.7
SSS-B-20-40-B	20.2	17.5	13.2	11.6	10.1	7.7	5.9	4.4	3.8	3.2
SSS-B-25-40-B	12.8	11.0	7.9	6.7	5.5	3.7	2.3	1.2	0.7	NR
SSS-B-30-40-B	8.0	6.6	4.1	3.1	2.2	0.8	NR	NR	NR	NR
SSS-B-16-50-B	25.0	25.0	25.0	25.0	24.8	20.1	16.5	13.6	12.3	11.2
SSS-B-18-50-B	25.0	25.0	25.0	22.9	20.4	16.4	13.2	10.7	9.6	8.6
SSS-B-20-50-B	25.0	25.0	21.3	18.9	16.7	13.2	10.4	8.1	7.2	6.3
SSS-B-25-50-B	20.7	17.8	13.3	11.5	9.8	7.2	5.0	3.3	2.6	1.9
SSS-B-30-50-B	13.5	11.3	7.7	6.2	4.9	2.8	1.1	NR	NR	NR
SSS-B-25-50-C	25.0	25.0	19.4	17.1	15.1	11.7	9.0	6.9	6.0	5.1
SSS-B-30-50-C	20.1	17.3	12.7	10.9	9.3	6.6	4.5	2.8	2.1	1.4
SSS-B-20-60-B	25.0	25.0	25.0	25.0	25.0	20.2	16.1	12.9	11.5	10.3
SSS-B-25-60-B	25.0	25.0	20.6	18.0	15.6	11.8	8.7	6.2	5.2	4.2
SSS-B-30-60-B	21.4	18.1	12.9	10.7	8.8	5.7	3.3	1.3	NR	NR
SSS-B-35-60-B	14.0	11.3	6.9	5.2	3.6	1.0	NR	NR	NR	NR
SSS-B-40-60-B	8.1	5.8	2.2	nr	NR	NR	NR	NR	NR	NR
SSS-B-30-60-C	24.3	20.5	14.6	12.2	10.2	6.8	4.2	2.2	1.3	0.5
SSS-B-35-60-C	16.6	13.5	8.6	6.6	4.9	2.1	NR	NR	NR	NR
SSS-B-40-60-C	10.6	7.9	3.7	2.1	0.6	NR	NR	NR	NR	NR

Florida Building Code 2017 EPA Load Rating - 3 second gust wind speeds (Use for Florida only)								
Catalog Number	**115**	**120**	**130**	**140**	**150**	**160**	**170**	**180**
SSS-B-10-40-A	25.0	25.0	25.0	25.0	21.4	18.4	15.9	13.9
SSS-B-12-40-A	25.0	25.0	23.6	19.8	16.7	14.2	12.1	10.4
SSS-B-14-40-A	25.0	23.1	19.0	15.7	13.1	10.9	9.1	7.6
SSS-B-16-40-A	20.8	18.7	15.2	12.3	10.1	8.2	6.7	5.4
SSS-B-18-40-A	16.8	15.0	11.9	9.4	7.5	5.9	4.5	3.4
SSS-B-20-40-A	13.6	11.9	9.2	7.1	5.3	3.9	2.7	1.7
SSS-B-25-40-A	7.4	6.2	4.1	2.5	1.1	NR	NR	NR
SSS-B-14-40-B	25.0	23.6	19.4	16.1	13.4	11.2	9.4	7.8
SSS-B-16-40-B	21.4	19.2	15.6	12.7	10.4	8.5	6.9	5.6
SSS-B-18-40-B	17.2	15.4	12.2	9.7	7.7	6.1	4.7	3.6
SSS-B-20-40-B	13.9	12.3	9.5	7.3	5.5	4.1	2.9	1.9
SSS-B-25-40-B	7.7	6.4	4.3	2.6	1.3	NR	NR	NR
SSS-B-30-40-B	3.2	2.1	NR	NR	NR	NR	NR	NR
SSS-B-16-50-B	25.0	25.0	25.0	25.0	25.0	21.4	18.2	15.5
SSS-B-18-50-B	25.0	25.0	25.0	24.4	20.4	17.0	14.2	11.9
SSS-B-20-50-B	25.0	25.0	24.4	19.9	1 6.3	13.4	11.0	8.9
SSS-B-25-50-B	21.8	19.3	15.0	11.5	8.8	6.5	4.7	3.1
SSS-B-30-50-B	13.7	11.7	8.2	5.5	3.3	1.5	NR	NR
SSS-B-25-50-C	21.8	19.3	15.0	11.5	8.8	6.5	4.7	3.1
SSS-B-30-50-C	13.7	11.7	8.2	5.5	3.3	1.5	NR	NR
SSS-B-20-60-B	25.0	25.0	25.0	21.9	17.8	14.5	11.7	9.4
SSS-B-25-60-B	23.8	20.9	16.1	12.3	9.2	6.6	4.5	2.8
SSS-B-30-60-B	14.6	12.3	8.4	5.3	2.8	0.8	NR	NR
SSS-B-35-60-B	7.5	5.6	2.4	NR	NR	NR	NR	NR
SSS-B-40-60-B	1.8	NR	NR	NR	NR	NR	NR	NR
SSS-B-30-60-C	14.6	12.3	8.4	5.3	2.8	0.8	NR	NR
SSS-B-35-60-C	7.5	5.6	2.4	NR	NR	NR	NR	NR
SSS-B-40-60-C	1.8	NR	NR	NR	NR	NR	NR	NR

NOTES

Wind-speed Website disclaimer:
Hubbell Lighting has no connection to the linked website and makes no representations as to its accuracy. While the information presented on this third-party website provides a useful starting point for analyzing wind conditions, Hubbell Lighting has not verified any of the information on this third party website and assumes no responsibility or liability for its accuracy. The material presented in the windspeed website should not be used or relied upon for any specific application without competent examination and verification of its accuracy, suitability and applicability by engineers or other licensed professionals. Hubbell Lighting Inc. does not intend that the use of this information replace the sound judgment of such competent professionals, having experience and knowledge in the field of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the results of the windspeed report provided by this website. Users of the information from this third party website assume all liability arising from such use. Use of the output of these referenced websites do not imply approval by the governing building code bodies responsible for building code approval and interpretation for the building site described by latitude/longitude location in the windspeed report. http://windspeed.atcouncil.org

NOTES

- Allowable EPA, to determine max pole loading weight, multiply allowable EPA by 30 lbs.
- The tables for allowable pole EPA are based on the ASCE 7-05 Wind Map or the Florida Region Wind Map for the 2010 Florida Building Code. The Wind Maps are intended only as a general guide and cannot be used in conjunction with other maps. Always consult local authorities to determine maximum wind velocities, gusting and unique wind conditions for each specific application
- Allowable pole EPA for jobsite wind conditions must be equal to or greater than the total EPA for fixtures, arms, and accessories to be assembled to the pole. Responsibility lies with the specifier for correct pole selection. Installation of poles without luminaires or attachment of any unauthorized accessories to poles is discouraged and shall void the manufacturer's warranty
- Wind speeds and listed EPAs are for ground mounted installations. Poles mounted on structures (such as bridges and buildings) must consider vibration and coefficient of height factors beyond this general guide; Consult local and federal standards
- Wind Induced Vibration brought on by steady, unidirectional winds and other unpredictable aerodynamic forces are not included in wind velocity ratings. Consult Hubbell Lighting's Pole Vibration Application Guide for environmental risk factors and design considerations. http://www.beaconproducts.com/content/products/literature/literature_files/Pole_Wind_Induced_Flyer_HLOI0022.pdf
- Extreme Wind Events like, Hurricanes, Typhoons, Cyclones, or Tornadoes may expose poles to flying debris, wind shear or other detrimental effects not included in wind velocity ratings

Due to our continued efforts to improve our products, product specifications are subject to change without notice.

HUBBELL Lighting

VIPER S OPTICS STRIKE

SMALL VIPER LUMINAIRE

Cat.#

Job

Type

BEACON design . performance . technology

Approvals

SPECIFICATIONS

Intended Use:

The Beacon Viper luminaire is available with a wide choice of different LED Wattage configurations and optical distributions designed to replace HID lighting up to 400W MH or HPS.

Construction:

- Manufactured with die cast aluminum.
- Coated with a polyester finish that meets ASTM B117 corrosion test requirements and ASTM D522 cracking and loss of adhesion test requirements.
- External hardware is corrosion resistant.
- One piece optical cartridge system consisting of an LED engine, LED lamps, optics, gasket and stainless steel bezel.
- Cartridge is held together with internal brass standoffs soldered to the board so that it can be field replaced as a one piece optical system.
- Two-piece silicone and micro-cellular polyurethane foam gasket ensures a weather-proof seal around each individual LED.

Electrical:

- 100V through 277V, 50 Hz to 60 Hz (UNV), or 347V or 480V input.
- Power factor is ≥.90 at full load.
- Dimming drivers are standard, but must contact factory to request wiring leads for purpose of external dimming controls.
- Component-to-component wiring within the luminaire may carry no more than 80% of rated load and is certified by UL for use at 600VAC at 90°C or higher.
- Plug disconnects are certified by UL for use at 600 VAC, 13A or higher. 13A rating applies to primary (AC) side only.
- Fixture electrical compartment shall contain all LED driver components and shall be provided with a push-button terminal block for AC power connections.
- Surge protection - 20kA.
- Optional 7-pin ANSI C136.41-2013 twist-lock photo control receptacle available. Compatible with ANSI C136.41 external wireless control devices.
- Lifeshield™ Circuit - protects luminaire from excessive temperature. The device shall activate at a specific, factory-preset temperature, and progressively reduce power over a finite temperature range. Operation shall be smooth and undetectable to the eye. Thermal circuit is designed to "fail on", allowing the luminaire to revert to full power in the event of an interruption of its power supply, or faulty wiring connection to the drivers. The device shall be able to co-exist with other 0-10V control devices (occupancy sensors, external dimmers, etc.).

Controls/Options:

- Available with an optional passive infrared (PIR) motion sensor capable of detecting motion 360° around the luminaire. When no motion is detected for the specified time, the Motion Response system reduces the wattage to factory preset level, reducing the light level accordingly. When motion is detected by the PIR sensor, the luminaire returns to full wattage and full light output. Please contact Beacon Products if project requirements vary from standard configuration.
- Available with Energeni for optional set dimming, timed dimming with simple delay, or timed dimming based on time of night (see www.beaconproducts.com/products/energeni).
- In addition, Viper can be specified with **SiteSync™** wireless control system for reduction in energy and maintenance costs while optimizing light quality 24/7. For more details, see ordering information or visit: www.hubbelllighting.com/sitesync

Installation:

- Mounting options for horizontal arm, vertical tenon or traditional arm mounting available. Mounting hardware included.

Finish:

- IFS polyester powder-coat electrostatically applied and thermocured. IFS finish consists of a five stage pretreatment regimen with a polymer primer sealer and top coated with a thermoset super TGIC polyester powder coat finish.
- The finish meets the AAMA 2604 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pounds.

Certifications/Ratings:

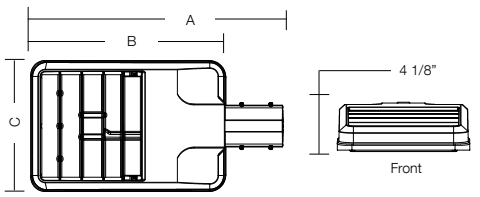
- DesignLights Consortium (DLC) qualified, consult DLC website for more details: http://www.designlights.org/QPL
- Certified to UL 1598, UL 8750 and CSA C22.2 No.250.0
- IDA approved
- This product is approved by the Florida Fish and Wildlife Conservation Commission. Separate spec available at: http://www.beaconproducts.com/products/vipersmall

Warranty:

Five year limited warranty for more information visit: www.hubbelllighting.com/resources/warranty

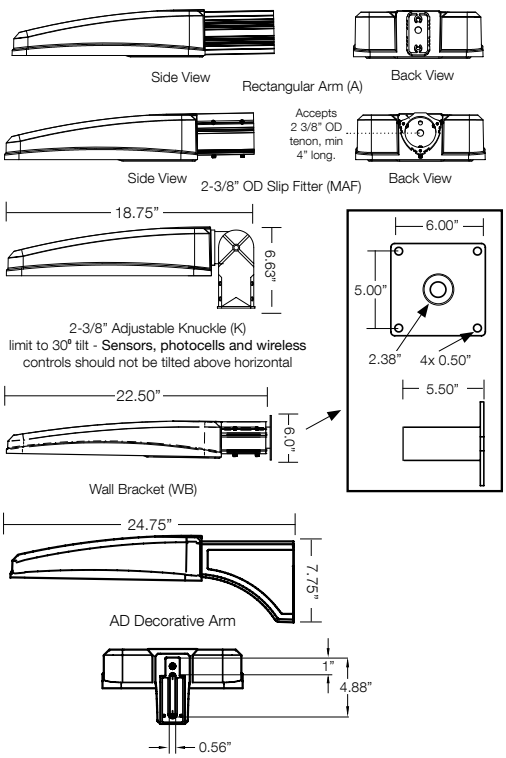
PRODUCT IMAGE(S)

DIMENSIONS



A	B	C	Weight:	EPA
21.75" (552 mm)	16.75" (425 mm)	11.25" (286 mm)	15.0 lbs (6.8 kg)	.67 ft²

MOUNTING OPTIONS



CERTIFICATIONS/LISTINGS

C SA US

ida

*3000K and warmer CCTs only

DLC QPL LISTED

HUBBELL Lighting

ORDERING INFORMATION

ORDERING EXAMPLE: VPS/24L-55/4K7/4W/UNV/A/DBT/7PR-TL/GENI-04/BC

VPS

SERIES
- **VPS** Viper

LED ENGINE
- **24L-55** 55W, LED array
- **36L-65** 65W, LED array
- **36L-80** 80W, LED array
- **48L-110** 110W, LED array
- **60L-136** 136W, LED array

CCT/CRI[7]
- **3K7** 3000K, 70 CRI
- **4K7** 4000K, 70 CRI
- **5K7** 5000K, 70 CRI

DISTRIBUTION
- **FR** Type 1/Front Row
- **2** Type 2
- **3** Type 3
- **4** Type 4
- **4W** Type 4 Wide
- **5QM** Type 5QM
- **5R** Type 5R (rectangular)
- **5W** Type 5W (round wide)
- **TC** Tennis Court

ROTATION
- Leave blank for no rotation
- **L**[5] Optic rotation left
- **R**[5] Optic rotation right

VOLTAGE
- **UNV** 120-277V
- **120** 120V
- **208** 208V
- **240** 240V
- **277** 277V
- **347** 347V
- **480** 480V

COLOR
- **BL** Black Textured
- **DB** Dark Bronze Textured
- **GYS** Light Gray Smooth
- **PS** Platinum Silver Smooth
- **WH** White Textured
- **CC** Custom Color
- BZT - Bronze Textured

OPTIONS
- **F** Fusing
- **BSP** Bird Spikes
- **BC** Backsheidld (available for FR, 2, 3, 4, 4W Optics)

MOUNTING
- **A** Rectangular Arm (formerly RA) for square or round pole
- **MAF** Mast Arm Fitter (formerly SF2) for 2-3/8" OD horizontal arm
- **K** Knuckle (formerly PK2) limit to 45° tilt or 2-3/8" OD horizontal arm or vertical tenon
- **WB** Wall Bracket
- **AD** Universal Arm for square pole
- **AD3** Universal Arm for 2.4"-4.1" round pole
- **AD4** Universal Arm for 4.2" -5.3" round pole
- **AD5** Universal Arm for 5.5" -5.9" round pole
- **AD6** Universal Arm for 6.0"-6.5" round pole

CONTROL OPTIONS
- **7PR** 7-Pin Receptacle only (shorting cap, photo control, or wireless control provided by others)
- **7PR-SC** 7-Pin Receptacle w/Shorting Cap
- **7PR-TL** 7-Pin Receptacle w/Twist Lock photo control
- **SCP/_F**[1,2,6] Programmable Occupancy Sensor w/ daylight control (120-277 volts only)
- **GENI-XX**[3] ENERGENI
- **SWP**[1,4] SiteSync Pre-Commission
- **SWPM**[1,2,4] SiteSync Pre-Comm w/ Sensor

HOUSE SIDE SHIELD ACCESSORIES
- **HSS/VP-S/90-FB/XXX** 90° shield front or back
- **HSS/VP-S/90-LR/XXX** 90° shield left or right
- **HSS/VP-S/270-FB/XXX** 270° shield front or back
- **HSS/VP-S/270-LR/XXX** 270° shield left or right
- **HSS/VP-S/360/XXX** Full shield

(Replace XXX with notation for desired finish color)
(Refer to page 5 for shield images)

MOUNTING ACCESSORIES
- **VPL-AD-RPA3** 2.4"-4.1" Round Pole Adapter for AD arm
- **VPL-AD-RPA4** 4.2"-5.3" Round Pole Adapter for AD arm
- **VPL-AD-RPA5** 5.5"-5.9" Round Pole Adapter for AD arm
- **VPL-AD-RPA6** 6.0"-6.5" Round Pole Adapter for AD arm

[1] Not available with other wireless control or sensor options
[2] Specify mounting height; 8=8' or less, 40=9' to 40'
[3] Specify routine setting code (example GENI-04). See ENERGENI brochure and instructions for setting table and options. Not available with sensor or SiteSync options.
[4] Specify group and zone at time of order. See www.hubbelllighting.com/sitesync for further details. Order at least one SiteSync interface Accessory SWUSB or SWTAB. Each option contains SiteSync License, GUI, and Bridge Node
[5] Only available with 1A, 2, 3, 4, 4W and 5R distributions
[6] Order at least one SCP-REMOTE per project location to program and control the occupancy sensor.
[7] This product is approved by the Florida Fish and Wildlife Conservation Commission. Separate spec available at: http://cdn.beaconproducts.com/content/products/specs/specs_files/Viper_Small_LED_turtle_spec_sheet.pdf

PRECOMMISSIONED SITESYNC ORDERING INFORMATION: When ordering a fixture with the SiteSync lighting control option, additional information will be required to complete the order. The SiteSync Commissioning Form or alternate schedule information must be completed. This form includes Project location, Group information, and Operating schedules. For more detailed information please visit www.hubbell-automation.com/products/sitesync/ or contact Hubbell Lighting tech support at (800) 345-4928.

SiteSync fixtures with Motion control (SWPM) require the mounting height of the fixture for selection of the lens.

Examples: VPS/24L-55/4K7/3/UNV/A/DBT/SWP/ SiteSync only
VPS/24L-55/4K7/3/UNV/A/DBT/SWPM-40F/ SiteSync with Motion Control

Accessories and Services (Ordered Separately)

Catalog Number	Description
SWUSB*	SiteSync interface software loaded on USB flash drive for use with owner supplied PC (Windows based only). Includes SiteSync license, software and USB radio bridge node
SWTAB*	Windows tablet and SiteSync interface software. Includes tablet with preloaded software, SiteSync license and USB radio bridge node.
SWBRG	SiteSync USB radio bridge node only. Order if a replacement is required or if an extra bridge node is requested.
SCP-REMOTE	Remote Control for SCP/_F option. Order at least one per project to program and control
SW7PR+	SiteSync 7 Pin on fixture module On/Off/Dim, Daylight Sensor 120-480VAC

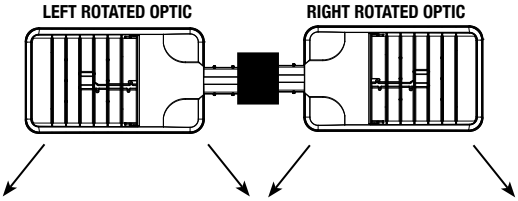
* When ordering SiteSync at least one of these two interface options must be ordered per project.
+ Available as a SiteSync retrofit solution for fixtures with an existing 7pin receptacle.

Hubbell Control Solutions - Accessories (sold separately)

Catalog Number	Description	HCS System
NXOFM-1R1D-UNV	On-fixture Module (7-pin), On / Off / Dim, Daylight Sensor with HubbNET Radio and Bluetooth® Radio, 120-480VAC	NX Distributed Intelligence™
WIR-RME-L	On-fixture Module (7-pin or 5-pin), On / Off / Dim, Daylight Sensor with wiSCAPE Radio, 110-480VAC	wiSCAPE® Lighting Control

For additional information related to these accessories please visit www.hubbellcontrolsolutions.com. Options provided for use with integrated sensor, please view specification sheet ordering information table for details.

LEFT ROTATED OPTIC



RIGHT ROTATED OPTIC

SiteSync 7-Pin Module

SW7PR

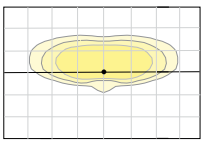
- SiteSync features in a new form
- Available as an accessory for new construction or retrofit applications (with existing 7-Pin receptacle)
- Does no interface with occupancy sensors

PERFORMANCE DATA

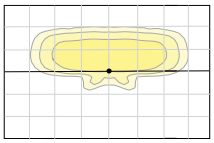
				5K (5000K nominal, 70 CRI)					4K (4000K nominal, 70 CRI)					3K (3000K nominal, 70 CRI)				
# LED'S	DRIVE CURRENT (MILLIAMPS)	SYSTEM WATTS	DISTRIBUTION TYPE	LUMENS	LPW[1]	B	U	G	LUMENS	LPW[1]	B	U	G	LUMENS	LPW[1]	B	U	G
24	700 mA	55W	FR	6357	118	1	0	1	6486	120	1	0	1	5804	107	1	0	1
			2	6132	114	1	0	1	6257	116	1	0	2	5599	104	1	0	1
			3	6015	111	1	0	2	6137	114	1	0	2	5492	102	1	0	2
			4	5921	110	1	0	2	6034	112	1	0	2	5400	100	1	0	2
			4W	5805	108	1	0	2	5921	110	1	0	2	5282	98	1	0	2
			5QM	6022	112	2	0	1	6145	114	2	0	1	5499	102	2	0	1
			5R	6063	112	3	0	3	6187	115	3	0	3	5536	103	3	0	3
			5W	5908	109	3	0	1	6028	112	3	0	1	5908	102	3	0	1
			TC	6183	115	1	0	1	6309	118	1	0	1	5645	105	1	0	1
36	560 mA	65W	FR	7864	121	1	0	1	8041	124	1	0	1	7189	111	1	0	1
			2	7586	117	1	0	2	7757	119	1	0	2	6934	107	1	0	2
			3	7441	114	1	0	2	7609	117	1	0	2	6802	105	1	0	2
			4	7317	110	1	0	2	7482	112	1	0	2	6688	100	1	0	2
			4W	7325	113	1	0	2	7490	115	1	0	2	6696	103	1	0	2
			5QM	7450	115	3	0	1	7618	117	3	0	1	6810	105	3	0	1
			5R	7501	115	3	0	3	7670	118	3	0	3	6857	105	3	0	3
			5W	7309	112	3	0	2	7473	115	3	0	2	6681	103	3	0	1
36	700 mA	80W	FR	9535	118	1	0	1	9730	120	1	0	1	8706	107	1	0	1
			2	9197	114	1	0	2	9385	116	1	0	2	8398	104	1	0	2
			3	9022	111	1	0	2	9206	114	1	0	2	8238	102	1	0	2
			4	8871	110	1	0	2	9052	112	1	0	2	8100	100	1	0	2
			4W	8707	108	1	0	2	8881	110	1	0	2	7923	98	1	0	2
			5QM	9033	112	3	0	1	9217	114	3	0	1	8248	102	3	0	1
			5R	9095	112	3	0	3	9280	115	3	0	3	8304	103	3	0	3
			5W	8861	109	3	0	2	9043	112	3	0	2	8092	100	3	0	2
			TC	9275	115	1	0	1	9464	118	1	0	1	8468	105	1	0	1
48	700 mA	110W	FR	12713	118	1	0	1	12973	120	2	0	1	11608	107	1	0	1
			2	12263	114	2	0	2	12513	116	2	0	2	11197	104	2	0	2
			3	12029	111	2	0	2	11275	114	2	0	2	10984	102	1	0	2
			4	11828	110	1	0	3	12069	112	1	0	3	10800	100	1	0	2
			4W	11609	108	1	0	3	11841	110	1	0	3	10564	98	1	0	3
			5QM	12044	112	3	0	2	12290	114	3	0	2	10997	102	3	0	1
			5R	12126	112	3	0	3	12374	115	3	0	3	11072	103	3	0	3
			5W	12126	109	4	0	2	12057	112	4	0	2	10789	100	4	0	2
			TC	12366	115	1	0	2	12619	118	1	0	2	11290	105	1	0	2
60	700 mA	136W	FR	15891	117	2	0	2	16216	120	2	0	2	14511	107	2	0	1
			2	15329	113	2	0	2	15642	116	2	0	2	13997	103	2	0	2
			3	15037	111	2	0	3	15344	113	2	0	3	13730	101	2	0	3
			4	14784	109	1	0	3	15086	111	1	0	3	13500	100	1	0	3
			4W	14511	108	2	0	4	14802	110	2	0	4	13205	98	2	0	3
			5QM	15055	111	3	0	2	15362	114	3	0	2	13747	102	3	0	2
			5R	15158	112	4	0	4	15469	114	4	0	4	13841	102	4	0	4
			5W	14781	109	4	0	2	15083	111	4	0	2	13495	100	4	0	2
			TC	15458	115	1	0	2	15834	118	1	0	2	14113	105	1	0	2

PHOTOMETRICS

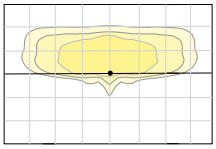
Type FR - Front Row/Auto Optic



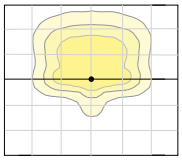
Type 2



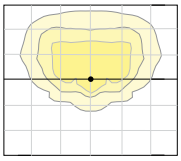
Type 3



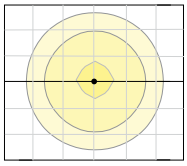
Type 4



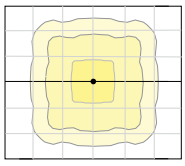
Type 4W



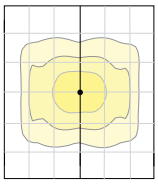
Type 5W



Type 5QM



Type 5R



[1]Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Actual performance may differ as a result of end-use environment and application.

ELECTRICAL DATA

# OF LEDS	NUMBER OF DRIVERS	DRIVE CURRENT (mA)	INPUT VOLTAGE (V)	SYSTEM POWER (w)	CURRENT (Amps)
24	2	700 mA	120	55	0.5
			277		0.2
			347		0.2
			480		0.1
36	1	560 mA	120	65	0.65
			277		0.28
			347		0.22
			480		0.16
		700 mA	120	80	0.7
			277		0.3
			347		0.2
			480		0.2
48	1	700 mA	120	110	0.9
			277		0.4
			347		0.3
			480		0.2
60	1	700 mA	120	136	1.1
			277		0.5
			347		0.4
			480		0.3

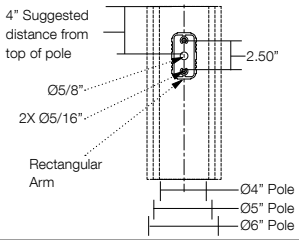
PROJECTED LUMEN MAINTENANCE

AMBIENT TEMP.	0	25,000	50,000	[1]TM-21-11 60,000	100,000	Calculated L70 (HOURS)
25°C / 77°C	1.00	0.97	0.95	0.95	0.92	>377,000

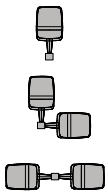
[1] Projected per IESNA TM-21-11
Data references the extrapolated performance projections for the base model in a 25°C ambient, based on 10,000 hours of LED testing per IESNA LM-80-08.

DRILL PATTERN

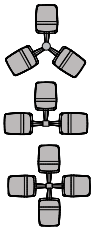
RECTANGULAR ARM (A)
Compatible with Pole drill pattern B4



EPA



Config.	EPA
1	.67
2 @ 90°	1.06
2 @ 180°	1.34



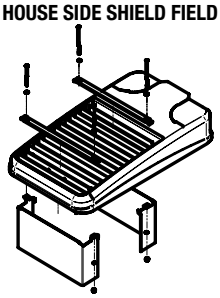
Config.	EPA
3 @ 120°	1.68
3 @ 90°	1.73
4 @ 90°	2.12

TENON TOP POLE BRACKET ACCESSORIES (Order Separately)

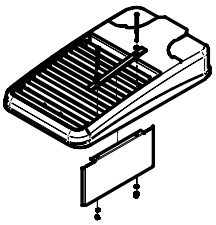
(2 3/8" OD tenon)

Catalog Number	Description
SETAVP-XX	Square tenon adapter (4 at 90°) for A - Rectangular Arm mounting option only
RETAVP-XX	Round tenon adapter (4 at 90°) for A - Rectangular Arm mounting option only
TETAVP-XX	Hexagonal tenon adapter (4 at 90°) for A - Rectangular Arm mounting option only
SETA2XX	Square tenon adapter (4 at 90°) for AD - Universal Arm mounting option only
RETA2XX	Round tenon adapter (4 at 90°) for AD3 - Universal Arm mounting option only
TETA2XX	Hexagonal tenon adapter (3 at 120°) for AD - Universal Arm mounting option only

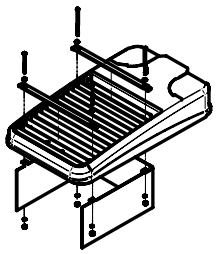
HOUSE SIDE SHIELD FIELD INSTALL ACCESSORIES



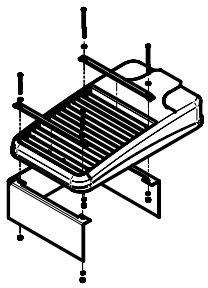
HSS/VP-S/90-FB/XXX
90° shield front or back
(2 shields shown)



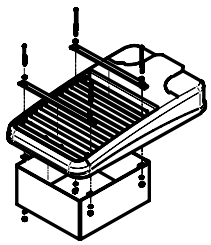
HSS/VP-S/90-LR/XXX
90° shield left or right
(1 shield shown in left orientation)



HSS/VP-S/270-FB/XXX
270° shield front or back
(1 shield shown in back orientation)

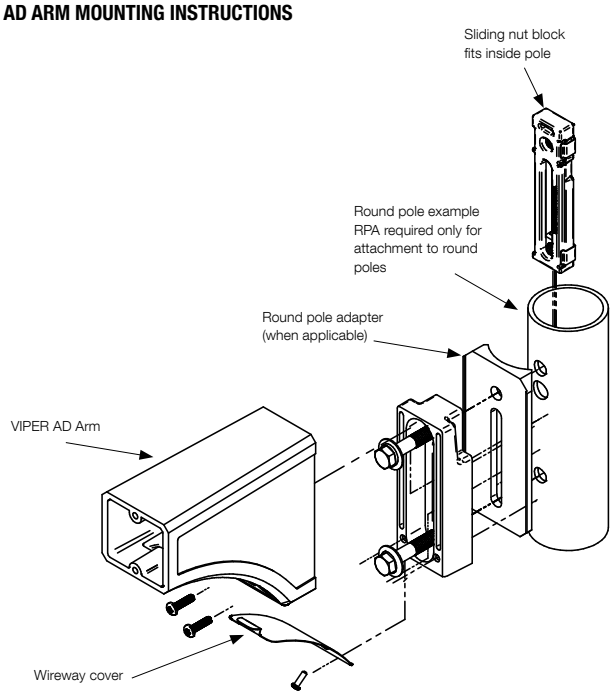


HSS/VP-S/270-LR/XXX
270° shield left or right
(1 shield shown in right orientation)

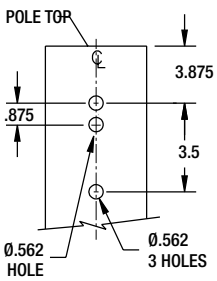


HSS/VP-S/360/XXX
Full shield (1 shield shown)

AD ARM MOUNTING INSTRUCTIONS



DECORATIVE ARM (AD)
Compatible with pole drill pattern S2



SSS-B SERIES POLES

SQUARE STRAIGHT STEEL

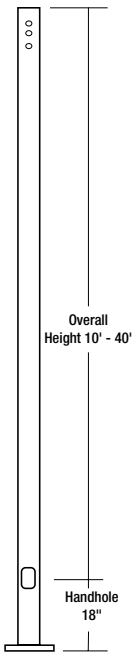
Cat.#

Job

Type

BEACON design . performance . technology

Approvals



APPLICATIONS

- Lighting installations for side and top mounting of luminaires with effective projected area (EPA) not exceeding maximum allowable loading of the specified pole in its installed geographic location

CONSTRUCTION

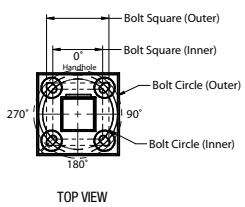
- SHAFT: One-piece straight steel with square cross section, flat sides and minimum 0.238" radius on all corners; Minimum yield of 46,000 psi (ASTM-A500, Grade B); Longitudinal weld seam to appear flush with shaft side wall; Steel base plate with axial bolt circle slots welded flush to pole shaft having minimum yield of 36,000 psi (ASTM A36)
- BASE COVER: Two-piece square aluminum base cover included standard
- POLE CAP: Pole shaft supplied with removable cover when applicable; Tenon and post-top configurations also available
- HAND HOLE: Rectangular 3x5 steel hand hole frame (2.38" x 4.38" opening); Mounting provisions for grounding lug located behind gasketed cover
- ANCHOR BOLTS: Four galvanized anchor bolts provided per pole with minimum yield of 55,000 psi (ASTM F1554). Galvanized hardware with two washers and two nuts per bolt for leveling

FINISH

- Durable thermoset polyester powder coat paint finish with nominal 3.0 mil thickness
- Powder paint prime applied over "white metal" steel substrate cleaned via mechanical shot blast method
- Decorative finish coat available in seven standard colors; Custom colors available; RAL number preferable; Internal protective coating available

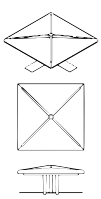
WAREHOUSE 'STOCKED' POLES:

- SSSH20-40A-4-HV-DB-RDC, SSSH25-40A-4-HV-DB-RDC and SSSH30-50B-4-HV-DB-RDC
- The HV designation in the above catalog numbers is a combination drill pattern of the Hubbell Outdoor S2 pattern and the Beacon B3/B4 Viper pattern (rectangular arm mounting)

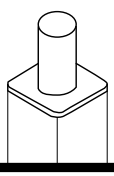


TOP VIEW

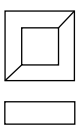
POLE CAP



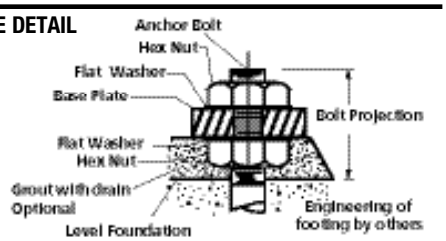
TENON



BASE COVER



BASE DETAIL



ORDERING INFORMATION

ORDERING EXAMPLE:

Reference page 2 for available configurations

SSS – B – 25 – 40 – A/B/C – 2L – B2 – BBT – UL

SERIES	HEIGHT	SHAFT	THICKNESS
SSS-B Square Straight Steel Pole Beacon	Reference page 2 Ordering matrix **20**	Reference page 2 Ordering matrix **40**	Reference page 2 Ordering matrix **A**

MOUNTING	
1	Single arm mount
2	Two fixtures at 180°
2L	Two fixtures at 90°
3T	Three fixtures at 90°
4	Four fixtures at 90°
TA	Tenon (2.38" OD x 4" Tall)
TB	Tenon (2.88" OD x 4" Tall)
TC	Tenon (3.5" OD x 6" Tall)
TR[1]	Removable Tenon (2.375 x 4.25)
OT	Open Top (includes pole cap)

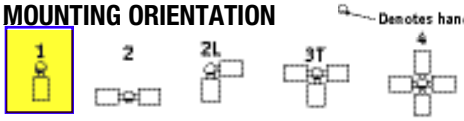
DRILL PATTERN	
B1	Cruzer
B3	Viper Large
B4	Viper Small

FINISH	
DB	Dark Bronze Textured
BL	Black Textured
WH	White Textured
PS	Platinum Silver
GYS	Light Gray Smooth
BZT	Bronze Textured
BBT	Basic Black Textured
CC	Custom Color

OPTIONS	
HSC	Internal Coating (Hubbell Seal)
GFI[2]	20 Amp GFCI Receptacle and Cover
EHH[2]	Extra Handhole
C05[2]	.5" Coupling
C07[2]	.75" Coupling
C20[2]	2" Coupling
MPB[2]	Mid-pole Luminaire Bracket
VM2	2nd mode vibration damper
LAB	Less Anchor Bolts
UL	UL Certified

MOUNTING ORIENTATION

Denotes handhole location



ACCESSORIES - Order Separately

Catalog Number	Description
VM1[3]	1st mode vibration damper
VM2SXX	2nd mode vibration damper

1 Removable tenon used in conjunction with side arm mounting. First specify desired arm configuration followed by the **"TR"** notation. Example: **SSS-B-25-40-A-1-B1-TR-BBT**
2 Specify option location using logic found on page 2 **(Option Orientation)**
3 VM1 recommended on poles 20' and taller with EPA of less than 1.

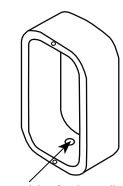
HUBBELL Lighting

ORDERING INFORMATION Cont.

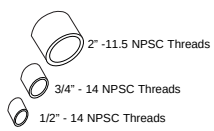
Catalog Number	Height		Nominal Shaft Dimensions	Wall Thickness	Bolt Circle (suggested)	Bolt Circle (range)	Bolt Square (range)	Base Plate Square	Anchor bolt size	Bolt Projection	Pole weight
	Feet	Meters									
SSS-B-10-40-A-XX-XX	10	3.0	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	77
SSS-B-12-40-A-XX-XX	12	3.7	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	90
SSS-B-14-40-A-XX-XX	14	4.3	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	103
SSS-B-16-40-A-XX-XX	16	4.9	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	116
SSS-B-18-40-A-XX-XX	18	5.5	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	129
SSS-B-20-40-A-XX-XX	20	6.1	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	142
SSS-B-25-40-A-XX-XX	25	7.6	4" square	0.125"	9"	8" - 10"	5.66" - 7.07"	9"	3/4" x 30" x 3"	3.5	175
SSS-B-14-40-B-XX-XX	14	4.3	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	152
SSS-B-16-40-B-XX-XX	16	4.9	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	171
SSS-B-18-40-B-XX-XX	18	5.5	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	190
SSS-B-20-40-B-XX-XX	20	6.1	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	209
SSS-B-25-40-B-XX-XX	25	7.6	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	257
SSS-B-30-40-B-XX-XX	30	9.1	4" square	.188"	11"	10" - 12"	7.07" - 8.48"	10.50"	3/4" x 30" x 3"	3.5	304
SSS-B-16-50-B-XX-XX	16	4.9	5" square	.188"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	219
SSS-B-18-50-B-XX-XX	18	5.5	5" square	.188"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	243
SSS-B-20-50-B-XX-XX	20	6.1	5" square	.188"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	267
SSS-B-25-50-B-XX-XX	25	7.6	5" square	.188"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	327
SSS-B-30-50-B-XX-XX	30	9.1	5" square	.188"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	387
SSS-B-25-50-C-XX-XX	25	7.6	5" square	.25"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	427
SSS-B-30-50-C-XX-XX	30	9.1	5" square	.25"	11"	10.25" - 13.25"	7.25" - 9.37"	11.50"	1" x 36" x 4"	4.5	507
SSS-B-20-60-B-XX-XX	20	6.1	6" square	.188"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	329
SSS-B-25-60-B-XX-XX	25	7.6	6" square	.188"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	404
SSS-B-30-60-B-XX-XX	30	9.1	6" square	.188"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	479
SSS-B-35-60-B-XX-XX	35	10.7	6" square	.188"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	554
SSS-B-40-60-B-XX-XX	40	12.2	6" square	.188"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	629
SSS-B-30-60-C-XX-XX	30	9.1	6" square	.25"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	614
SSS-B-35-60-C-XX-XX	35	10.7	6" square	.25"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	712
SSS-B-40-60-C-XX-XX	40	12.2	6" square	.25"	12"	11.00" - 13.25"	7.81" - 9.37"	12.25"	1-1/4" x 42" x 6"	5.0	809

NOTE Factory supplied template must be used when setting anchor bolts. Beacon Products will deny any claim for incorrect anchorage placement resulting from failure to use factory supplied template and anchor bolts.

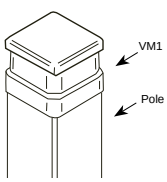
EHH - EXTRA HANDHOLE



C05 - C07 - C20 - COUPLING



VM1 - VIBRATION DAMPER 1ST MODE



Field Installed Pole Top damper designed to reduce pole top deflection or sway. VM1 is recommended for pole systems 25' and taller with a total EPA of 1.0 or less.

VM2 - VIBRATION DAMPER 2ND MODE

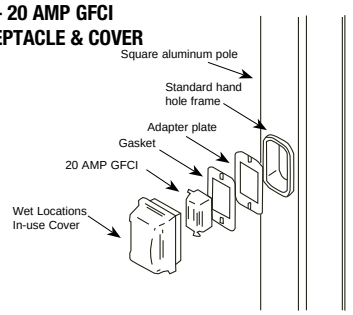
Factory installed, internal damper designed to alter pole resonance to reduce movement and material fatigue caused by 2nd mode vibration.

VM2SXX - VIBRATION DAMPER 2ND MODE

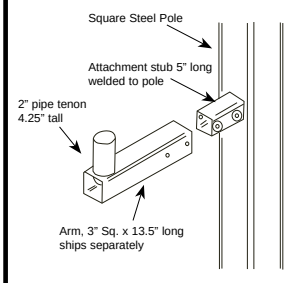
VM2S08 – 8'
VM2S12 – 12'
VM2S16 – 16'
VM2S20 – 20'
VM2S24 – 24'

Field installed, internal damper designed to alter pole resonance to reduce movement and material fatigue caused by 2nd mode vibration.

GFI – 20 AMP GFCI RECEPTACLE & COVER

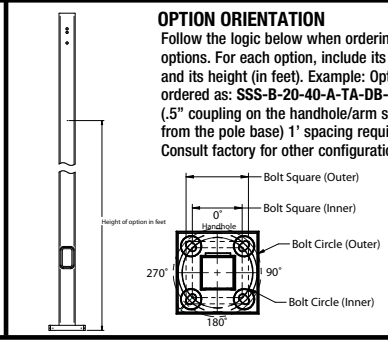


MPB - MID POLE BRACKET



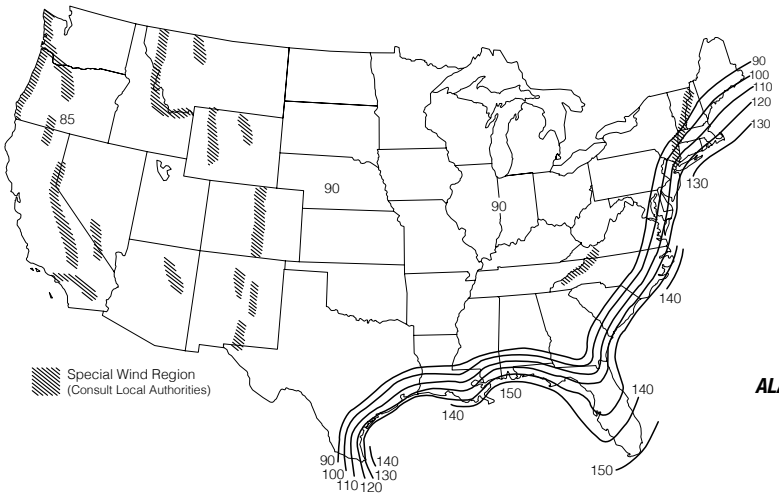
OPTION ORIENTATION

Follow the logic below when ordering location specific options. For each option, include its orientation (in degrees) and its height (in feet). Example: Option C07 should be ordered as: **SSS-B-20-40-A-TA-DB-C05-0-15**
(.5" coupling on the handhole/arm side of pole, 15 feet up from the pole base) 1' spacing required between option.
Consult factory for other configurations.



For more information about pole vibration and vibration dampers, please consult http://www.beaconproducts.com/content/products/literature/literature_files/Pole_Wind_Induced_Flyer_HL0I0022.pdf
Due to our continued efforts to improve our products, product specifications are subject to change without notice.

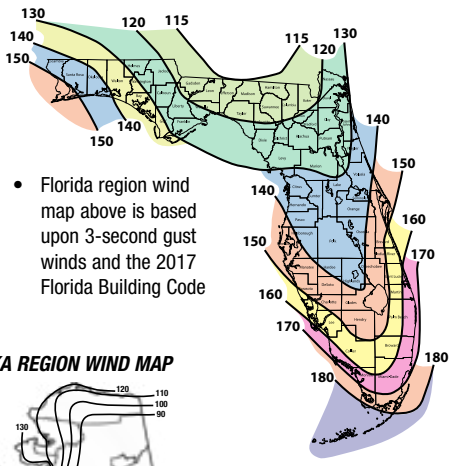
ASCE7-05 WIND MAP



HAWAII – 105 mph
PUERTO RICO – 145 mph

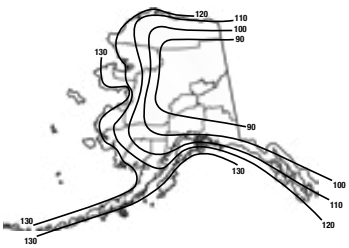
***PRINTED WITH PERMISSION FROM ASCE**

FLORIDA REGION WIND MAP



- Florida region wind map above is based upon 3-second gust winds and the 2017 Florida Building Code

ALASKA REGION WIND MAP



ASCE 7-05 wind map EPA Load Rating - 3 second gust wind speeds										
Catalog Number	85	90	100	105	110	120	130	140	145	150
SSA-B-08-40-A	17.3	15.2	12.0	10.7	9.6	7.7	6.2	5.0	4.5	4.0
SSA-B-10-40-A	12.6	11.0	8.4	7.4	6.5	4.9	3.7	2.8	2.4	2.0
SSA-B-12-40-A	9.3	7.9	5.8	4.9	4.2	2.9	1.9	1.1	0.8	0.5
SSA-B-14-40-A	6.7	5.6	3.8	3.0	2.4	1.3	NR	NR	NR	NR
SSA-B-16-40-A	4.7	3.7	2.1	1.4	0.9	NR	NR	NR	NR	NR
SSA-B-18-40-A	2.9	2.1	0.6	NR	NR	NR	NR	NR	NR	NR
SSA-B-20-40-A	1.4	0.6	NR	NR	NR	NR	NR	NR	NR	NR
SSA-B-16-40-B	9.2	7.7	5.4	4.5	3.7	2.3	1.2	NR	NR	NR
SSA-B-18-40-B	6.8	5.6	3.6	2.7	2.0	0.8	NR	NR	NR	NR
SSA-B-20-40-B	4.8	3.7	1.9	1.2	0.6	NR	NR	NR	NR	NR
SSA-B-18-50-B	12.9	10.9	7.6	6.3	5.1	3.2	1.7	0.5	NR	NR
SSA-B-20-50-B	9.8	8.1	5.2	4.0	3.0	1.3	NR	NR	NR	NR
SSA-B-25-50-B	4.0	2.7	0.5	NR	NR	NR	NR	NR	NR	NR
SSA-B-16-60-B	25.0	22.3	16.9	14.7	12.7	9.6	7.0	5.0	4.2	3.4
SSA-B-18-60-B	20.7	17.7	13.0	11.0	9.3	6.5	4.3	2.6	1.8	1.1
SSA-B-20-60-B	16.4	13.8	9.6	7.9	6.4	3.9	2.0	NR	NR	NR
SSA-B-25-60-B	8.3	6.3	3.1	1.8	0.7	NR	NR	NR	NR	NR
SSA-B-30-60-B	2.5	0.8	NR	NR	NR	NR	NR	NR	NR	NR
SSA-B-16-60-C	25.0	25.0	24.5	21.5	19.0	14.9	11.6	9.0	7.9	6.8
SSA-B-18-60-C	25.0	25.0	19.5	17.1	14.9	11.2	8.3	6.0	5.1	4.2
SSA-B-20-60-C	24.2	20.9	15.4	13.2	11.2	8.0	5.5	3.5	2.6	1.8
SSA-B-25-60-C	14.2	11.6	7.5	5.8	4.3	1.9	NR	NR	NR	NR
SSA-B-30-60-C	7.1	5.0	1.7	NR	NR	NR	NR	NR	NR	NR

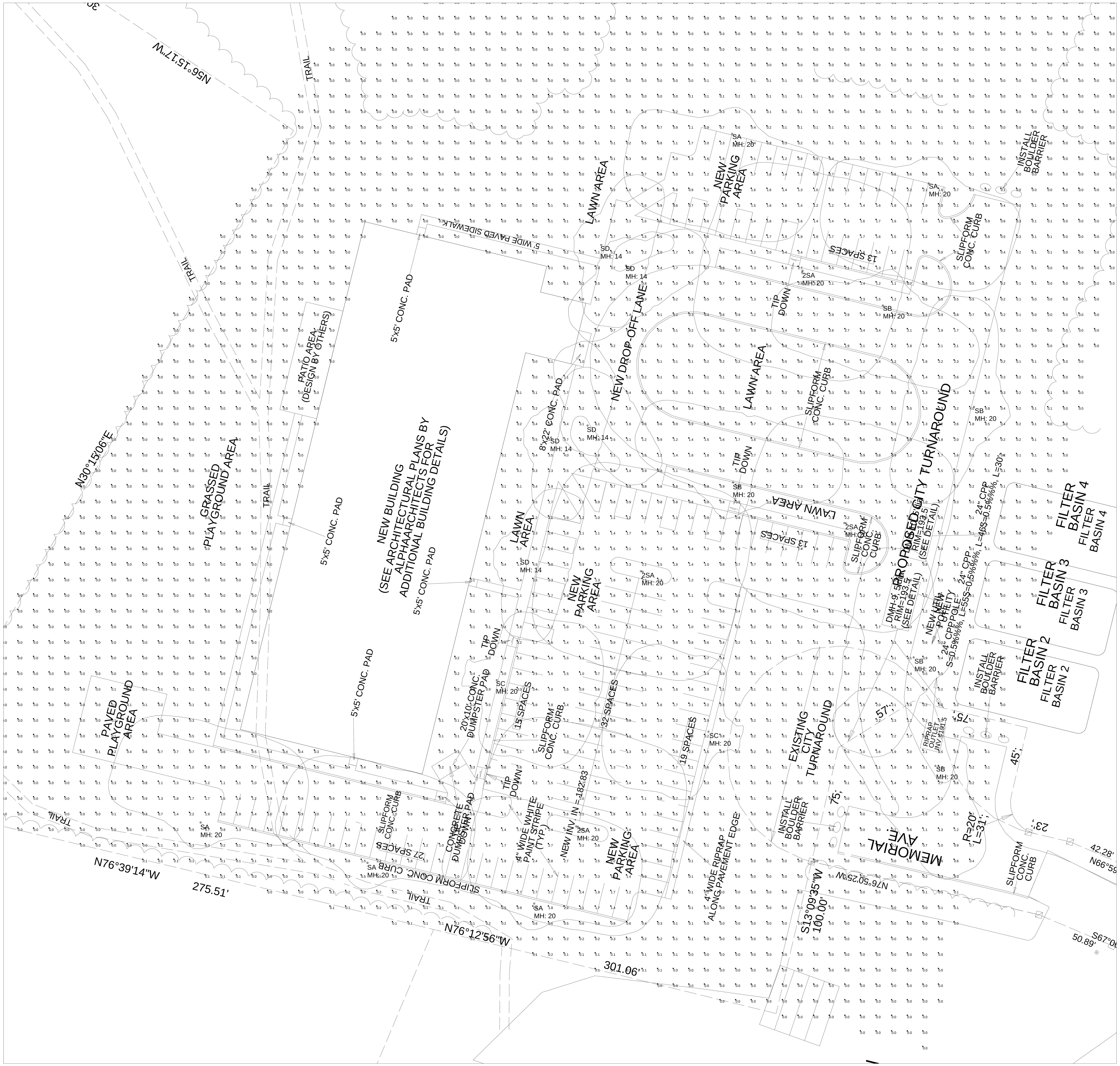
Florida Building Code 2017 EPA Load Rating - 3 second gust wind speeds								
Catalog Number	115	120	130	140	150	160	170	180
SSA-B-08-40-A	14.8	13.4	11	9.1	7.6	6.3	5.3	4.4
SSA-B-10-40-A	10.9	9.8	7.9	6.3	5.1	4.1	3.2	2.5
SSA-B-12-40-A	7.9	7.0	5.4	4.1	3.0	2.2	1.5	0.9
SSA-B-14-40-A	5.6	4.8	3.4	2.3	1.4	0.6	NR	NR
SSA-B-16-40-A	3.6	2.9	1.7	0.7	NR	NR	NR	NR
SSA-B-18-40-A	1.8	1.2	NR	NR	NR	NR	NR	NR
SSA-B-20-40-A	NR	NR	NR	NR	NR	NR	NR	NR
SSA-B-16-40-B	7.7	6.7	4.9	3.5	2.4	1.5	0.7	NR
SSA-B-18-40-B	5.4	4.5	3	1.8	0.8	NR	NR	NR
SSA-B-20-40-B	3.5	2.7	1.3	NR	NR	NR	NR	NR
SSA-B-18-50-B	10.6	9.2	6.8	4.9	3.3	2	1	NR
SSA-B-20-50-B	7.8	6.5	4.4	2.7	1.3	NR	NR	NR
SSA-B-25-50-B	2.2	1.2	NR	NR	NR	NR	NR	NR
SSA-B-16-60-B	22	19.6	15.5	12.4	9.8	7.7	5.9	4.4
SSA-B-18-60-B	17.2	15.2	11.7	8.9	6.6	4.8	3.3	2
SSA-B-20-60-B	13.4	11.5	8.4	6.4	4	2.4	1	NR
SSA-B-25-60-B	5.7	4.4	2	NR	NR	NR	NR	NR
SSA-B-30-60-B	NR	NR	NR	NR	NR	NR	NR	NR
SSA-B-16-60-C	25	25	22.8	18.6	15.2	12.5	10.1	8.2
SSA-B-18-60-C	25	22.5	18	14.3	11.3	9	7	5.3
SSA-B-20-60-C	20.4	18	14	10.8	8.2	6	4.3	2.8
SSA-B-25-60-C	11.2	9.3	6.2	3.8	1.8	NR	NR	NR
SSA-B-30-60-C	4.3	2.9	NR	NR	NR	NR	NR	NR

NOTES

Wind-speed Website disclaimer:
Hubbell Lighting has no connection to the linked website and makes no representations as to its accuracy. While the information presented on this third-party website provides a useful starting point for analyzing wind conditions, Hubbell Lighting has not verified any of the information on this third party website and assumes no responsibility or liability for its accuracy. The material presented in the windspeed website should not be used or relied upon for any specific application without competent examination and verification of its accuracy, suitability and applicability by engineers or other licensed professionals. Hubbell Lighting Inc. does not intend that the use of this information replace the sound judgment of such competent professionals, having experience and knowledge in the field of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the results of the windspeed report provided by this website. Users of the information from this third party website assume all liability arising from such use. Use of the output of these referenced websites do not imply approval by the governing building code bodies responsible for building code approval and interpretation for the building site described by latitude/longitude location in the windspeed report. http://windspeed.atcouncil.org

- Allowable EPA, to determine max pole loading weight, multiply allowable EPA by 30 lbs.
- The tables for allowable pole EPA are based on the ASCE 7-05 Wind Map or the Florida Region Wind Map for the 2010 Florida Building Code. The Wind Maps are intended only as a general guide and cannot be used in conjunction with other maps. Always consult local authorities to determine maximum wind velocities, gusting and unique wind conditions for each specific application
- Allowable pole EPA for jobsite wind conditions must be equal to or greater than the total EPA for fixtures, arms, and accessories to be assembled to the pole. Responsibility lies with the specifier for correct pole selection. Installation of poles without luminaires or attachment of any unauthorized accessories to poles is discouraged and shall void the manufacturer's warranty
- Wind speeds and listed EPAs are for ground mounted installations. Poles mounted on structures (such as bridges and buildings) must consider vibration and coefficient of height factors beyond this general guide; Consult local and federal standards
- Wind Induced Vibration brought on by steady, unidirectional winds and other unpredictable aerodynamic forces are not included in wind velocity ratings. Consult Hubbell Lighting's Pole Vibration Application Guide for environmental risk factors and design considerations. http://cdn.beaconproducts.com/content/products/literature/literature_files/Pole_Wind_Induced_Flyer_HLOI0022.pdf
- Extreme Wind Events like, Hurricanes, Typhoons, Cyclones, or Tornadoes may expose poles to flying debris, wind shear or other detrimental effects not included in wind velocity ratings

Due to our continued efforts to improve our products, product specifications are subject to change without notice.



PLAN VIEW

NOTES:
1) EXACT MOUNTING DETAILS TO BE DETERMINED AT JOBSITE BY OTHERS.
2) CALCULATIONS MAY or MAY NOT SHOW THE EFFECT OF SHADOWING CAUSED BY BUILDINGS AND OBJECTS WITHIN THE CALCULATED SPACE OR IN THE SITE AREA.
3) READINGS SHOWN ARE INITIAL HORIZONTAL FOOTCANDLES ON A FLAT SITE WITHOUT REFLECTIONS OR OBSTRUCTIONS UNLESS OTHERWISE INDICATED.
4) THIS CALCULATION IS BASED ON LIMITED INFORMATION SUPPLIED BY OTHERS TO SWANEY LIGHTING ASSOCIATES AND STANDARD ASSUMPTIONS OF THE SPACE AND/OR SITE.
5) CONFORMANCE TO CODES AND OTHER LOCAL REQUIREMENTS AS DETERMINED BY THE AHJ ARE THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.
6) THIS LAYOUT DRAWING MUST BE COORDINATED WITH THE SITE LOCATION FOR CORRECT FIXTURE ORIENTATION.
7) DOCUMENTS PRINTED OR PLOTTED FROM ELECTRONIC FILES MAY APPEAR AT OTHER THAN THE DESIRED OR ASSUMED GRAPHIC SCALES. IT IS THE RESPONSIBILITY OF THE RECIPIENT TO VERIFY THAT THE PRINTED OR PLOTTED-TO-SCALE DRAWING IS PRINTED TO SCALE.

Calculation Summary

Label	Avg	Max	Min	Avg/Min	Max/Min
PARKING 1	1.38	4.1	0.3	4.6	13.7
PARKING 2	1.41	2.4	0.5	2.8	4.8
SITE	0.54	6.4	0.0	N.A.	N.A.

Luminaire Schedule (note fixture cataloge numbers are not complete)

Type	Qty	Lum. Lumens	LLF	Lum. Watts	Description
2SA	4	8881	0.900	161	TWIN VP-S-36L-80-4K7-4W
SA	5	8881	0.900	80.52	VP-S-36L-80-4K7-4W
SB	5	9206	0.900	81	VP-S-36L-80-4K7-3
SC	2	9052	0.900	81	VP-S-36L-80-4K7-4
SD	5	6137	0.900	54	VP-S-24L-55-4K7-3

site 3-18-19.AGI

GENERATED BY SWANEY LIGHTING, SCARBOROUGH ME - 207-883-7100 - swaneylighting.com

TITLE
JFMH
SITE LIGHTING LAYOUT

Date:3/18/2019

GENERATED FOR:
CED AUBURN

SCALE NOT TO SCALE

Page 1 of 1

SWANEY LIGHTING ASSOCIATES, INC.

April 1, 2019

Mr. Mike Gotto
Stonybrook Consultants
PO Box 459
Turner, Maine 04282

SJR ENGINEERING

Re: Water Quality Analysis for John F Murphy Homes, Memorial Avenue, Lewiston, Maine

Dear Mike,

John F Murphy Homes is proposing to construct a 40,200 sf building plus ancillary parking areas along the front and side of the main school building. It is anticipated that this project will start construction during the Spring of this construction season (2019).

The site is undeveloped and was a former gravel pit years ago. The parcel is located at the end of Memorial Drive in Lewiston. It is located on tax map 169, lots 7 and 8. The parcel size is approximately 21.3 acres. Existing conditions have been surveyed by Jones Associates and augmented with topographic contours taken from the City of Lewiston GIS data base. The parcel has access to public sewer, water, and cable utilities. A 30" diameter sewer line runs through a portion of the parcel.

We have prepared a stormwater quantity analysis under separate cover to size drainage piping from Memorial Avenue and the new school construction. No pre/post stormwater analysis is necessary as the project discharges into the Androscoggin River. However, the water quality aspects of the stormwater discharge from the new development must be addressed. Maine DEP Chapter 500 rules require that at least 80% of the site be treated through the use of wet ponds, filtration, infiltration or buffers. In addition, at least 95% of the site's impervious area stormwater must also be treated. We have designed this project to meet and exceed these standards by use of combined soil filter ponds along the southerly corner of

SJR ENGINEERING, INC.
STEVE@SJRENG.COM. 16 THURSTON DRIVE, MONMOUTH, ME. TEL: (207) 242-6248

the project and along the northern end of the project adjacent to the Androscoggin River.

Water quality - Soil Filter Ponds

Soil Filter Pond 1: We have designed the project to redirect impervious and lawn areas runoff into a soil filter pond in the northerly end of the project. The total area draining to this pond is 98,314 sf. We have calculated 49,267 sf of the new impervious area (parking lot, sidewalks, and building roof) and 49,047 sf of the landscaped area of the project would be treated through the proposed soil filter pond.

The soil filter/detention pond is designed to act such that initial and ending runoff flows are captured and infiltrated through the soil filter media within the pond. The higher flows will be bypassed through the pond and dispersed through the riprap spillway.

Soil filter pond 1 is to be constructed that has a ground elevation of 193.00 (top of ground surface for filtering system). The pond is to be sized such that the surface area meets (or exceeds) 5% of the impervious area plus 2% of the landscape area that drains to the pond. We have calculated 2,463 sf of impervious area runoff and 981 sf of landscape area runoff will enter the pond. Therefore, we are required to have a minimum of 3,444 sf of surface filter area. We have provided 3,600 sf of available area within contour 193.00.

In addition, a minimum treatment volume must be contained such that the required volume contained is less than 18" deep over the surface filter area. The channel protection volume is based on 1" of impervious surface area and .4" of vegetative area entering the pond. Using the same impervious and landscape areas noted above, we are required to have 5,740 cf of pond storage above the soil filter surface area (elevation 193.0 to 194.5). Our design has provided 6,249 cf of storage area at elevation 194.5.

Water quality enhancement flows are detained within the soil filter pond for approximately 28.8 hours by restricting the discharge flow through a small 1.0" orifice control that is located within the stormwater control structure

(elevation 190.0).

Soil Filter Ponds 2/3: We have designed the project to redirect impervious and lawn areas runoff into a soil filter pond in the southerly end of the project. The total watershed draining from this area of the project is 175,529 sf. We have calculated 90,136 sf of the new impervious area (parking lot, sidewalks, and driveways) and 85,393 sf of the landscaped area of the project would be treated through the proposed soil filter pond.

The soil filter/detention pond is designed to act such that initial and ending runoff flows are captured and infiltrated through the soil filter media within the pond. The higher flows will be bypassed through the pond control structure and discharged into a stormdrain conveyance system that eventually discharges into the confluence of the Androscoggin River/Stetson Brook.

Soil filter ponds 2/3 are to be constructed with a ground elevation of 190.50 (top of ground surface for filtering system). The ponds are to be sized such that the surface area meets (or exceeds) 5% of the impervious area plus 2% of the landscape area that drains to the pond. We have calculated 90,136 sf of impervious area runoff and 85,393 sf of landscape area runoff will enter the ponds. Therefore, we are required to have a minimum of 6,215 sf of surface filter area. We have provided 6,720 sf of available area within contour 190.50 for ponds 2/3.

In addition, a minimum treatment volume must be contained such that the required volume contained is less than 18" deep over the surface filter area. The channel protection volume is based on 1" of impervious surface area and .4" of vegetative area entering the pond. Using the same impervious and landscape areas noted above, we are required to have 10,357 cf of pond storage above the soil filter surface area (elevation 190.5 to 192.0). Our design has provided 10,874 cf of storage area up to elevation 192.0.

Water quality enhancement flows are detained within the soil filter pond for approximately 25.2 hours by restricting the discharge flow through a small 1.0" orifice control that is located within the stormwater control structure (elevation 187.5).

95% Impervious treatment

We have calculated 139,403 sf of project impervious area will be directed into the soil filter pond area. The total impervious area of the project has been calculated to be 139,403 sf. Dividing these two numbers results in a 100.0% impervious area treatment. The project complies with the 95% requirements.

80% total site treatment

We have calculated 273,843 sf proposed impervious and landscape area will be treated in the 3 soil filter ponds. The project total disturbed area (proposed impervious and landscape area) has been calculated to be 330,174 sf. Dividing the two numbers results in a project treatment ratio of 82.9%, which also meets the standard.

Please feel free to contact me if you have any questions concerning the calculations of stormwater from this project.

Sincerely yours,

Stephen Roberge

Stephen Roberge, PE
for SJR Engineering Inc.

Project: _____ Date: _____ Sheet: ____ of ____

ENGINEERING BACKUP SHEET

SJR ENGINEERING
21 Mayflower Road
Augusta, Maine 04330
Tel/Fax: (207) 622-1676

Subject: SOIL FILTER POND 1

Job #: _____

	IMPERVIOUS	LANDSCAPED	TOTAL
WATERSHED 7	7047	14833	21880
WATERSHED 8	40200	-	40200
WATERSHED 1	2020	25350	27370
WATERSHED 13	-	8864	8864
TOTALS	49267	49047	98314

MINIMUM SIZE

$49267(5\%) + 49047(2\%) =$

$2463 + 981 = 3444$ SF REQUIRED
3600 SF AVAILABLE OK

18" TREATMENT

$49267(1/12) + 49047(.4/12) =$

$4105 + 1635 = 5740$ CF REQUIRED
6249 CF AVAILABLE OK

24 HR DETENTION

$6232/.06(60)(60) = 28.8$ HRS OK

Project: _____ Date: 3/22/19 Sheet: ____ of ____

ENGINEERING BACKUP SHEET

SJR ENGINEERING
21 Mayflower Road
Augusta, Maine 04330
Tel/Fax: (207) 622-1676

Subject: SOIL FILTER PONDS 2/3

Job #: _____

PHASE 1	IMPERVIOUS SF	LANDSCAPE SF	TOTAL SF
WATERSHED 6	49860	18154+14100	82114
WATERSHED 2	20811	8816 + 5160	34787
WATERSHED 3/4	14142	8158+2968	25268
POND AREA (WATERSHED 12)	5323	28037	33360
	90136	85393	175529

POND MINIMUM SIZE

$90136(.05) + 85393(.02) =$

4507 + 1708 = 6215 SF REQUIRED AREA

CONSTRUCT 2-3360 SF BASINS = 6720 SF OK
42' x 80'

18" TREATMENT

$90136(1/12) + 85393(.4/12) =$

7511 + 2846 = 10357 cf REQUIRED VOLUME

10,874 cf PROVIDED @EL 192.0 OK

24 HR DETENTION

TRY 1" ORIFICE: $10874/0.12(60)(60) = 25.2$ HRS OK

Project: _____ Date: _____ Sheet: _____ of _____

ENGINEERING BACKUP SHEET

SJR ENGINEERING
21 Mayflower Road
Augusta, Maine 04330
Tel/Fax: (207) 622-1676

Subject: _____

Job #: _____

95% IMPERVIOUS TREATMENT

49267 SF + 90136 SF = 139403 SF TREATED IMPERVIOUS
TO POND 1 TO PONDS 2/3 139403 SF TOTAL IMPERVIOUS

$\frac{139403\ sf}{139403\ sf} = 100\%$ OK

80% DISTURBED AREA TREATMENT

98314 SF + 175529 SF = 273843 SF TREATED AREA
330174 SF TOTAL AREA

$\frac{273843\ sf}{330174\ sf} = 82.9\%$ OK

Project: _____ Date: _____ Sheet: ____ of ____

ENGINEERING BACKUP SHEET

SJR ENGINEERING
21 Mayflower Road
Augusta, Maine 04330
Tel/Fax: (207) 622-1676

Subject: _____

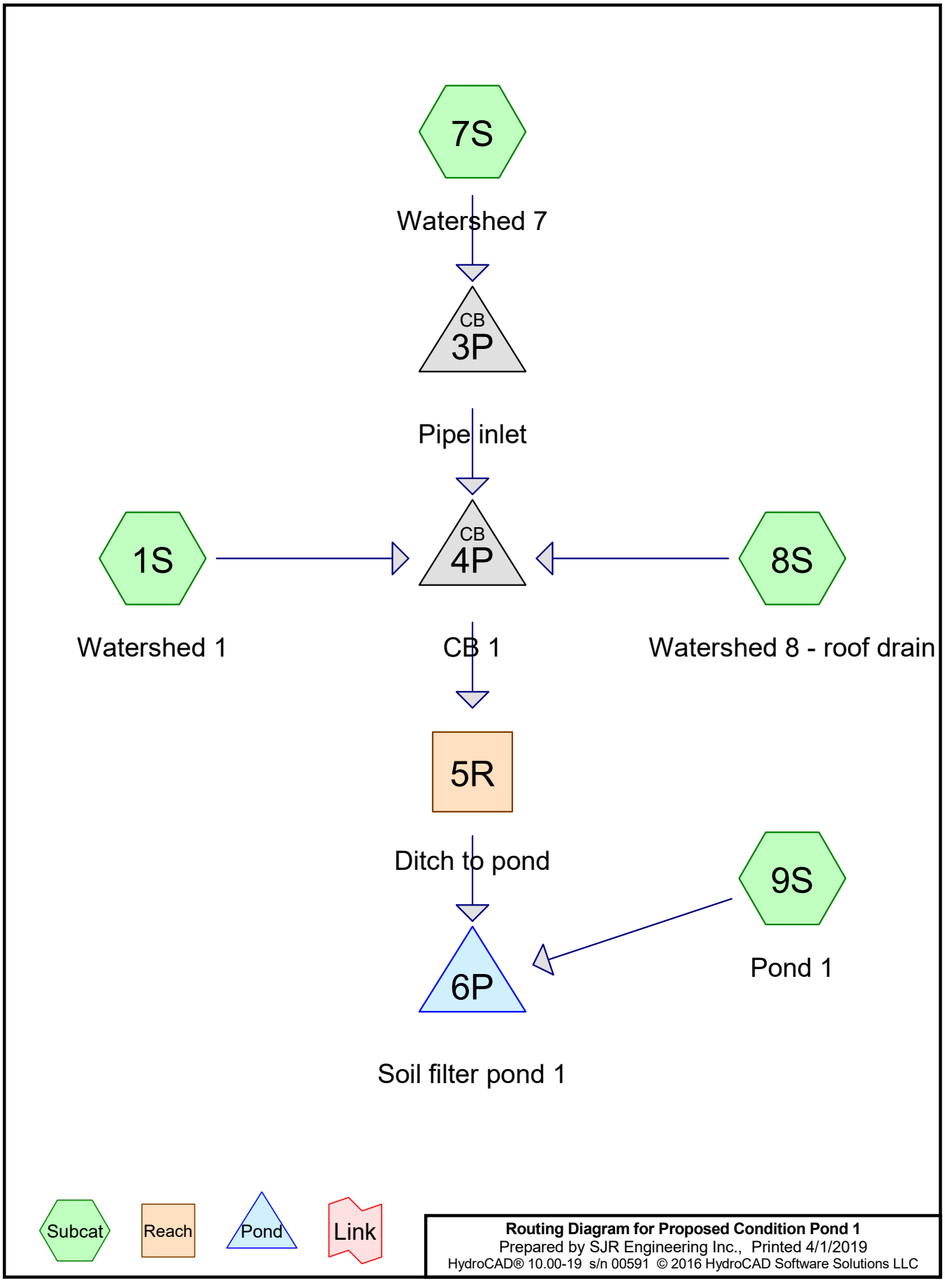
Job #: _____

POND 1

CONTOUR	AREA	VOL
193.0	3600	0
194.0	4085	
194.5	4732	6249
196.0	6673	

POND 2/3

190.5	3360	0	0
192.0	11139	10874	10874
194.0	22151	33290	44164



Routing Diagram for Proposed Condition Pond 1
Prepared by SJR Engineering Inc., Printed 4/1/2019

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.126	39	>75% Grass cover, Good, HSG A (1S, 7S, 9S)
0.208	98	Paved parking, HSG A (1S, 7S)
0.923	98	Roofs, HSG A (8S)
2.257	**69**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
2.257	HSG A	1S, 7S, 8S, 9S
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
2.257		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
1.126	0.000	0.000	0.000	0.000	1.126	>75% Grass cover, Good	1S, 7S, 9S
0.208	0.000	0.000	0.000	0.000	0.208	Paved parking	1S, 7S
0.923	0.000	0.000	0.000	0.000	0.923	Roofs	8S
2.257	**0.000**	**0.000**	**0.000**	**0.000**	**2.257**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	8S	0.00	0.00	170.0	0.0200	0.012	12.0	0.0	0.0
2	8S	0.00	0.00	35.0	0.0200	0.012	15.0	0.0	0.0
3	3P	0.00	-1.10	220.0	0.0050	0.012	12.0	0.0	0.0
4	4P	0.00	-1.13	225.0	0.0050	0.012	18.0	0.0	0.0
5	6P	190.00	189.90	20.0	0.0050	0.012	18.0	0.0	0.0

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

Subcatchment 1S: Watershed 1 Runoff Area=27,370 sf 7.38% Impervious Runoff Depth>0.39"
Flow Length=165' Tc=22.4 min CN=43 Runoff=0.11 cfs 0.021 af

Subcatchment 7S: Watershed 7 Runoff Area=21,880 sf 32.21% Impervious Runoff Depth>1.26"
Flow Length=140' Tc=7.4 min CN=58 Runoff=0.69 cfs 0.053 af

Subcatchment 8S: Watershed 8 - roof drain Runoff Area=40,200 sf 100.00% Impervious Runoff Depth>4.78"
Flow Length=225' Tc=1.1 min CN=98 Runoff=5.41 cfs 0.368 af

Subcatchment 9S: Pond 1 Runoff Area=8,864 sf 0.00% Impervious Runoff Depth>0.23"
Flow Length=225' Slope=0.0010 '/' Tc=27.3 min CN=39 Runoff=0.01 cfs 0.004 af

Reach 5R: Ditch to pond Avg. Flow Depth=0.65' Max Vel=1.44 fps Inflow=5.76 cfs 0.441 af
n=0.022 L=140.0' S=0.0012 '/' Capacity=53.20 cfs Outflow=5.27 cfs 0.440 af

Pond 3P: Pipe inlet Peak Elev=0.47' Inflow=0.69 cfs 0.053 af
12.0" Round Culvert n=0.012 L=220.0' S=0.0050 '/' Outflow=0.69 cfs 0.053 af

Pond 4P: CB 1 Peak Elev=1.32' Inflow=5.76 cfs 0.441 af
18.0" Round Culvert n=0.012 L=225.0' S=0.0050 '/' Outflow=5.76 cfs 0.441 af

Pond 6P: Soil filter pond 1 Peak Elev=194.96' Storage=8,420 cf Inflow=5.27 cfs 0.444 af
Outflow=2.09 cfs 0.297 af

Total Runoff Area = 2.257 ac Runoff Volume = 0.445 af Average Runoff Depth = 2.37"
49.89% Pervious = 1.126 ac 50.11% Impervious = 1.131 ac

Summary for Subcatchment 1S: Watershed 1

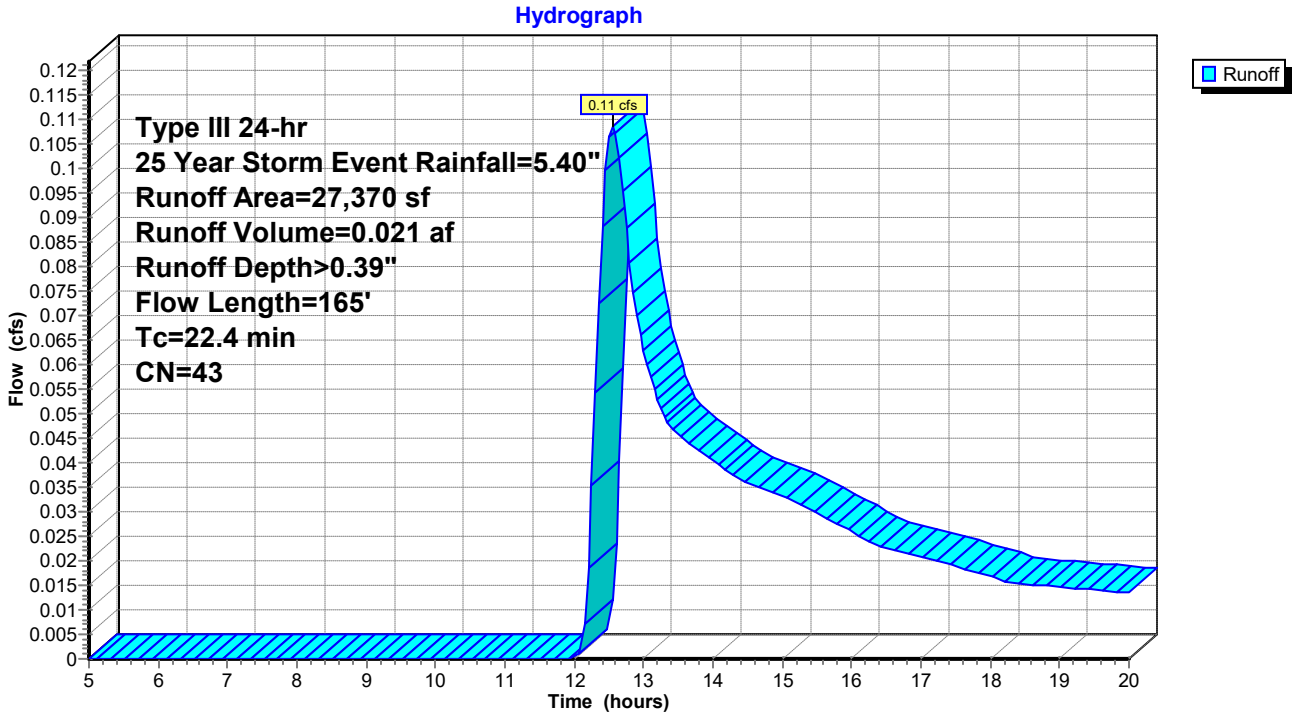
Runoff = 0.11 cfs @ 12.56 hrs, Volume= 0.021 af, Depth> 0.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Event Rainfall=5.40"

Area (sf)	CN	Description
2,020	98	Paved parking, HSG A
25,350	39	>75% Grass cover, Good, HSG A
27,370	43	Weighted Average
25,350		92.62% Pervious Area
2,020		7.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.9	25	0.0200	0.09		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
17.5	140	0.0100	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
22.4	165	Total			

Subcatchment 1S: Watershed 1



Summary for Subcatchment 7S: Watershed 7

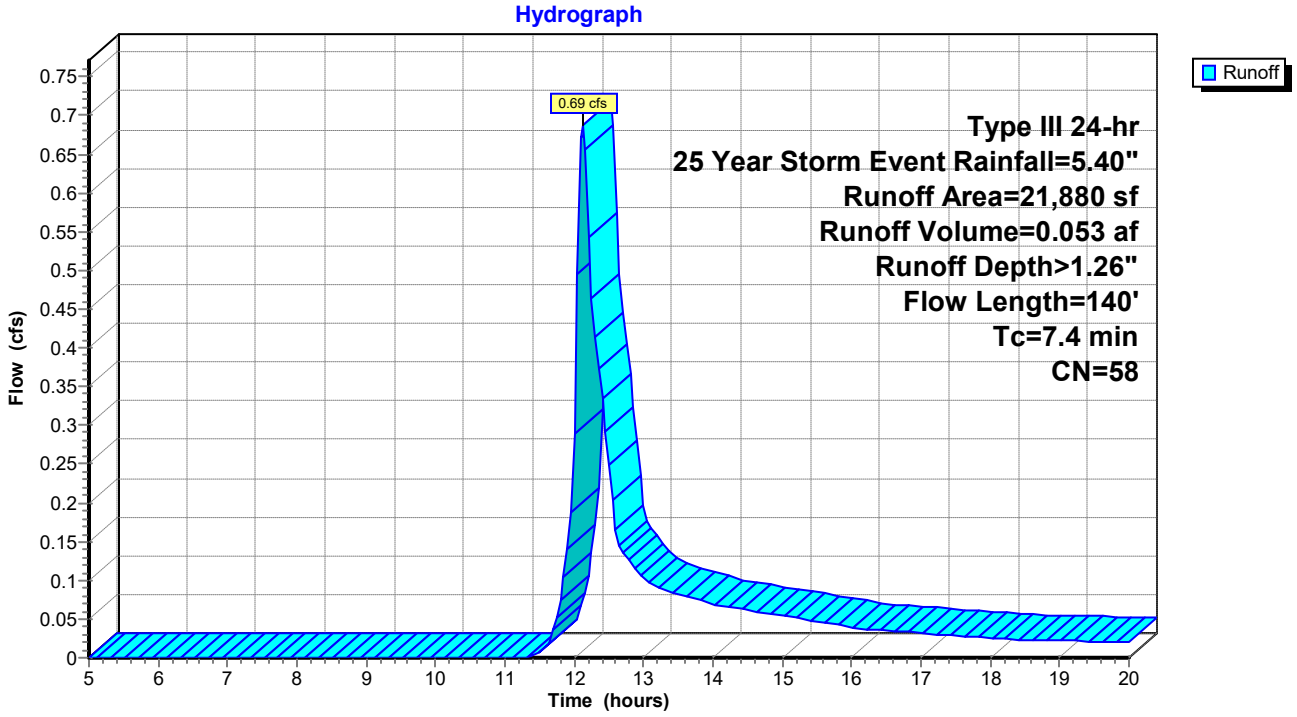
Runoff = 0.69 cfs @ 12.12 hrs, Volume= 0.053 af, Depth> 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Event Rainfall=5.40"

Area (sf)	CN	Description
7,047	98	Paved parking, HSG A
14,833	39	>75% Grass cover, Good, HSG A
21,880	58	Weighted Average
14,833		67.79% Pervious Area
7,047		32.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	10	0.4000	0.24		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
5.4	35	0.0300	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
1.2	70	0.0100	0.94		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.1	25	0.0800	4.24		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
7.4	140	Total			

Subcatchment 7S: Watershed 7



Summary for Subcatchment 8S: Watershed 8 - roof drain

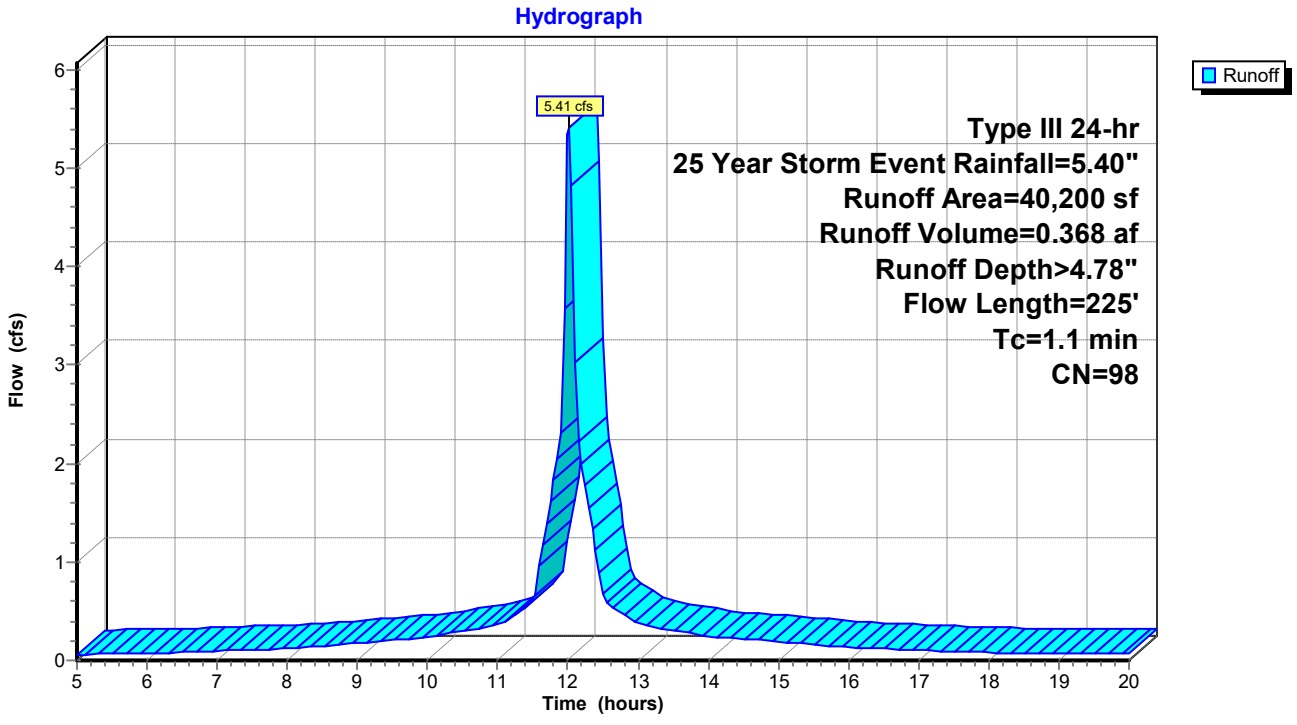
Runoff = 5.41 cfs @ 12.01 hrs, Volume= 0.368 af, Depth> 4.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Event Rainfall=5.40"

Area (sf)	CN	Description
40,200	98	Roofs, HSG A
40,200		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	20	0.0050	0.55		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.4	170	0.0200	6.95	5.46	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.1	35	0.0200	8.06	9.90	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
1.1	225	Total			

Subcatchment 8S: Watershed 8 - roof drain



Summary for Subcatchment 9S: Pond 1

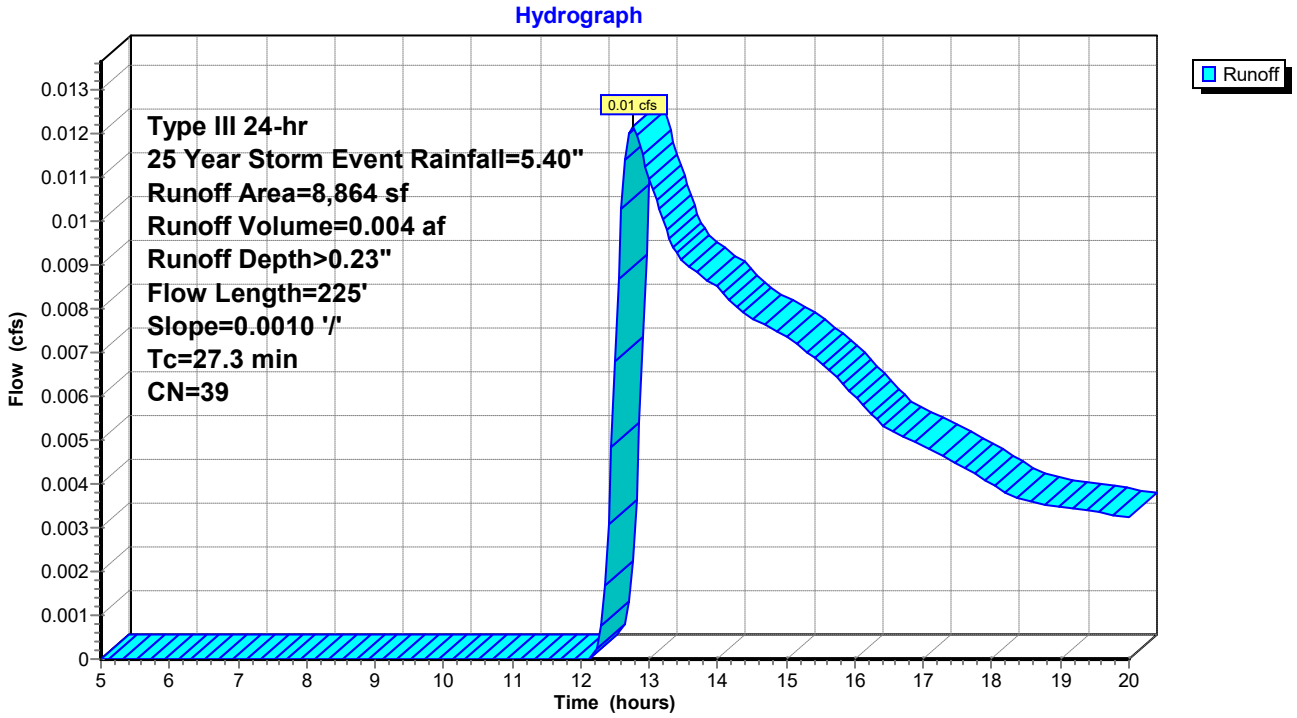
Runoff = 0.01 cfs @ 12.76 hrs, Volume= 0.004 af, Depth> 0.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Event Rainfall=5.40"

Area (sf)	CN	Description
8,864	39	>75% Grass cover, Good, HSG A
8,864		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	140	0.0010	2.41	48.27	**Trap/Vee/Rect Channel Flow,** Bot.W=4.00' D=2.00' Z= 3.0 '/' Top.W=16.00' n= 0.022 Earth, clean & straight
26.3	85	0.0010	0.05		**Sheet Flow,** Range n= 0.130 P2= 3.00"
27.3	225	Total			

Subcatchment 9S: Pond 1



Summary for Reach 5R: Ditch to pond

Inflow Area = 2.053 ac, 55.08% Impervious, Inflow Depth > 2.58" for 25 Year Storm Event event
Inflow = 5.76 cfs @ 12.02 hrs, Volume= 0.441 af
Outflow = 5.27 cfs @ 12.07 hrs, Volume= 0.440 af, Atten= 9%, Lag= 3.1 min

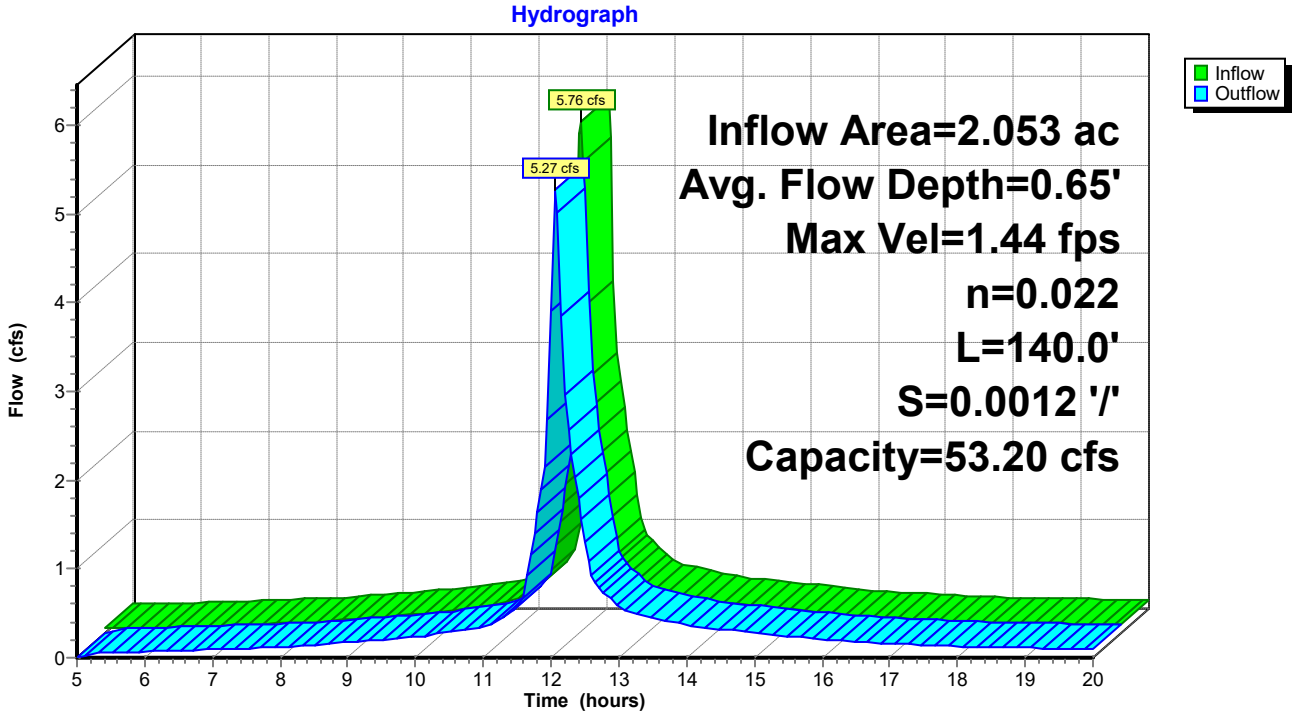
Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.44 fps, Min. Travel Time= 1.6 min
Avg. Velocity = 0.51 fps, Avg. Travel Time= 4.6 min

Peak Storage= 542 cf @ 12.04 hrs
Average Depth at Peak Storage= 0.65'
Bank-Full Depth= 2.00' Flow Area= 20.0 sf, Capacity= 53.20 cfs

4.00' x 2.00' deep channel, n= 0.022 Earth, clean & straight
Side Slope Z-value= 3.0 '/' Top Width= 16.00'
Length= 140.0' Slope= 0.0012 '/'
Inlet Invert= 0.00', Outlet Invert= -0.17'

‡

Reach 5R: Ditch to pond



Summary for Pond 3P: Pipe inlet

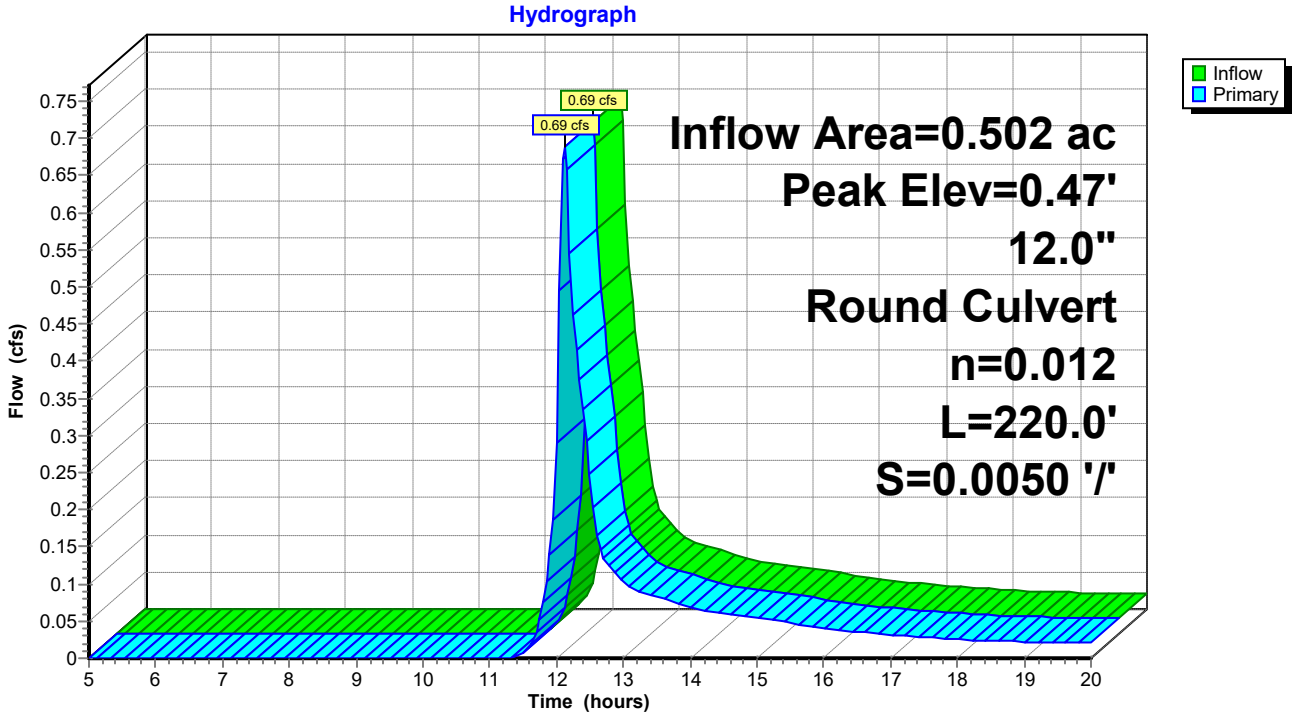
Inflow Area = 0.502 ac, 32.21% Impervious, Inflow Depth > 1.26" for 25 Year Storm Event event
Inflow = 0.69 cfs @ 12.12 hrs, Volume= 0.053 af
Outflow = 0.69 cfs @ 12.12 hrs, Volume= 0.053 af, Atten= 0%, Lag= 0.0 min
Primary = 0.69 cfs @ 12.12 hrs, Volume= 0.053 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 0.47' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**12.0" Round Culvert** L= 220.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 0.00' / -1.10' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.67 cfs @ 12.12 hrs HW=0.46' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.67 cfs @ 2.80 fps)

Pond 3P: Pipe inlet



Summary for Pond 4P: CB 1

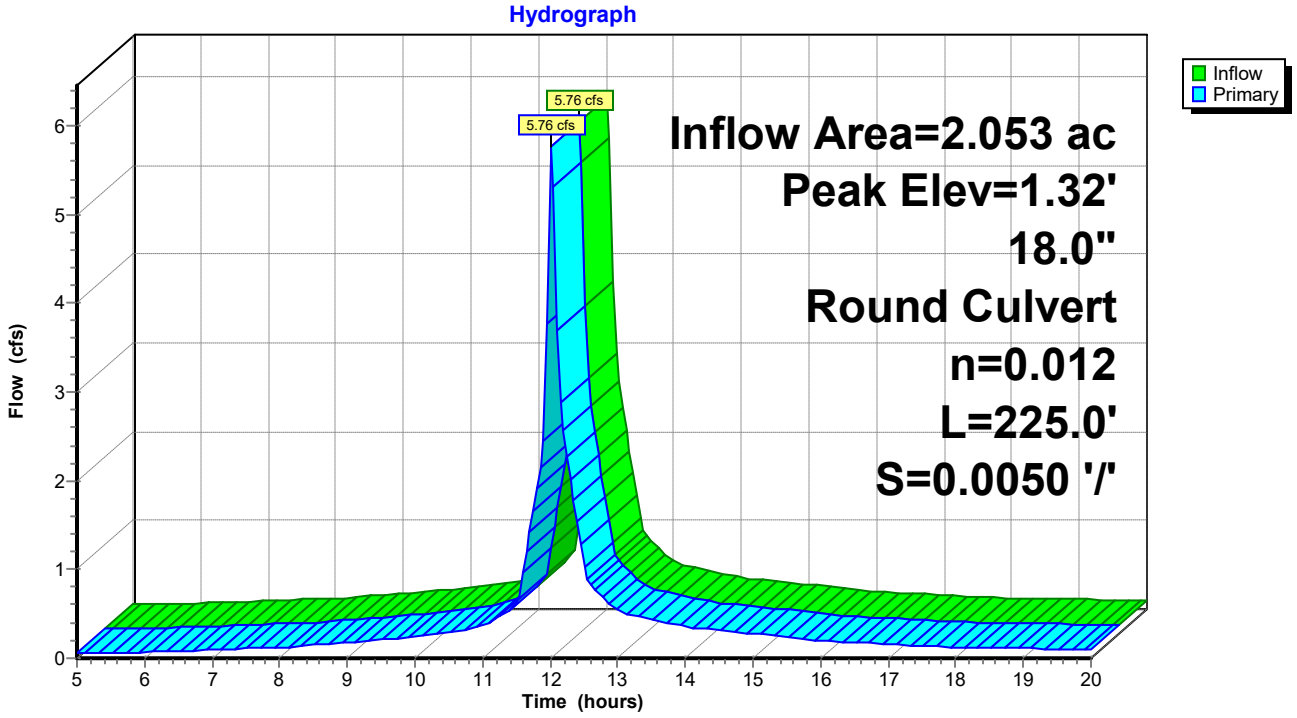
Inflow Area = 2.053 ac, 55.08% Impervious, Inflow Depth > 2.58" for 25 Year Storm Event event
Inflow = 5.76 cfs @ 12.02 hrs, Volume= 0.441 af
Outflow = 5.76 cfs @ 12.02 hrs, Volume= 0.441 af, Atten= 0%, Lag= 0.0 min
Primary = 5.76 cfs @ 12.02 hrs, Volume= 0.441 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1.32' @ 12.02 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**18.0" Round Culvert** L= 225.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 0.00' / -1.13' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=5.51 cfs @ 12.02 hrs HW=1.28' (Free Discharge)
└**1=Culvert** (Barrel Controls 5.51 cfs @ 4.60 fps)

Pond 4P: CB 1



Summary for Pond 6P: Soil filter pond 1

Inflow Area = 2.257 ac, 50.11% Impervious, Inflow Depth > 2.36" for 25 Year Storm Event event
Inflow = 5.27 cfs @ 12.07 hrs, Volume= 0.444 af
Outflow = 2.09 cfs @ 12.34 hrs, Volume= 0.297 af, Atten= 60%, Lag= 16.4 min
Primary = 2.09 cfs @ 12.34 hrs, Volume= 0.297 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 194.96' @ 12.34 hrs Surf.Area= 5,288 sf Storage= 8,420 cf

Plug-Flow detention time= 142.6 min calculated for 0.296 af (67% of inflow)
Center-of-Mass det. time= 65.0 min (821.0 - 755.9)

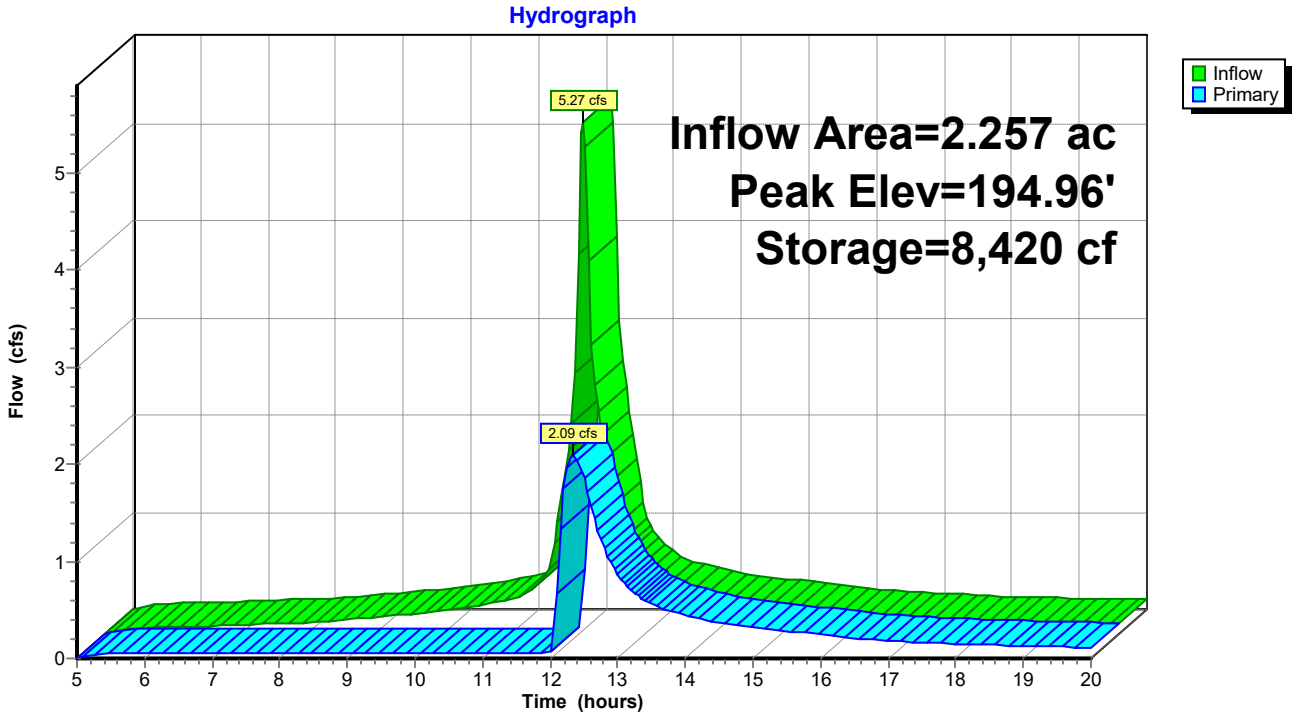
Volume	Invert	Avail.Storage	Storage Description
#1	190.00'	14,539 cf	**Custom Stage Data (Prismatic)** Listed below

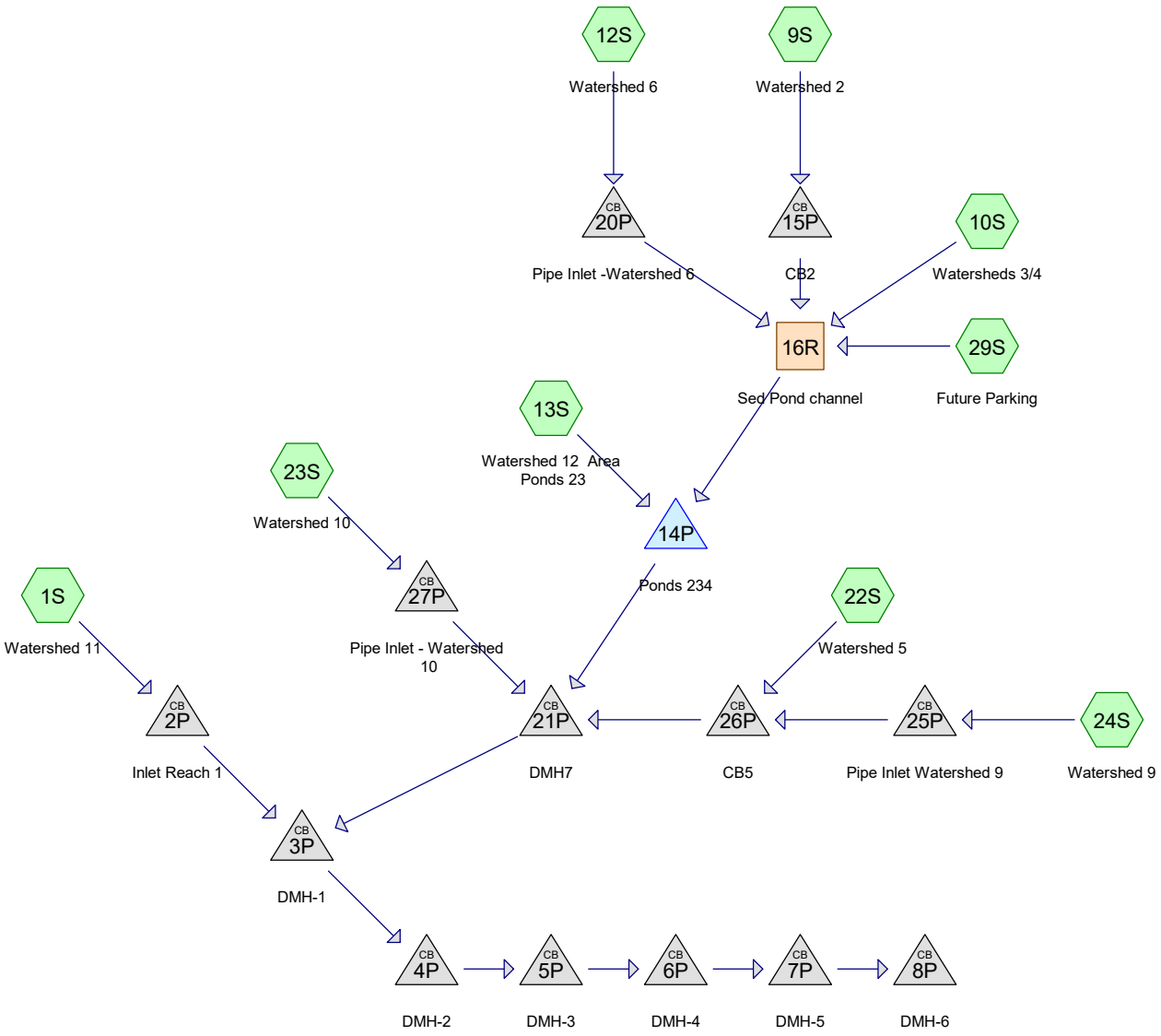
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
190.00	1	0	0
192.99	2	4	4
193.00	3,600	18	22
194.00	4,102	3,851	3,873
195.00	5,333	4,718	8,591
196.00	6,564	5,949	14,539

Device	Routing	Invert	Outlet Devices
#1	Primary	190.00'	**18.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 190.00' / 189.90' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	190.00'	**1.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	194.50'	**24.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600
#4	Primary	195.00'	**15.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=2.08 cfs @ 12.34 hrs HW=194.96' (Free Discharge)
- **1=Culvert** (Passes 2.08 cfs of 17.46 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 0.06 cfs @ 10.68 fps)
  - **3=Orifice/Grate** (Orifice Controls 2.02 cfs @ 2.18 fps)
- **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 6P: Soil filter pond 1





Routing Diagram for Proposed Condition Ponds 23

Prepared by SJR Engineering Inc., Printed 4/1/2019

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.872	39	>75% Grass cover, Good, HSG A (9S, 10S, 12S, 13S, 22S, 23S, 24S)
0.187	61	>75% Grass cover, Good, HSG B (9S, 10S)
0.324	98	Future expansion of paved parking, HSG A (12S)
0.154	39	PONDS 234>75% Grass cover, Good, HSG A (13S)
2.777	98	Paved parking, HSG A (9S, 10S, 12S, 24S, 29S)
0.416	98	Paved roads w/curbs & sewers, HSG A (13S, 22S)
2.953	32	Woods/grass comb., Good, HSG A (1S)
9.683	**59**	**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
2.872	0.187	0.000	0.000	0.000	3.059	>75% Grass cover, Good	9S, 10S, 12S, 13S, 22S, 23S, 24S
0.324	0.000	0.000	0.000	0.000	0.324	Future expansion of paved parking	12S
0.154	0.000	0.000	0.000	0.000	0.154	PONDS 234>75% Grass cover, Good	13S
2.777	0.000	0.000	0.000	0.000	2.777	Paved parking	9S, 10S, 12S, 24S, 29S
0.416	0.000	0.000	0.000	0.000	0.416	Paved roads w/curbs & sewers	13S, 22S
2.953	0.000	0.000	0.000	0.000	2.953	Woods/grass comb., Good	1S
9.496	**0.187**	**0.000**	**0.000**	**0.000**	**9.683**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	2P	0.00	-9.06	185.0	0.0490	0.012	12.0	0.0	0.0
2	3P	0.00	-1.50	300.0	0.0050	0.012	24.0	0.0	0.0
3	4P	0.00	-1.50	300.0	0.0050	0.012	24.0	0.0	0.0
4	5P	0.00	-1.50	300.0	0.0050	0.012	24.0	0.0	0.0
5	6P	0.00	-1.50	300.0	0.0050	0.012	24.0	0.0	0.0
6	7P	0.00	-0.61	122.0	0.0050	0.012	24.0	0.0	0.0
7	8P	0.00	-0.10	20.0	0.0050	0.012	24.0	0.0	0.0
8	14P	187.50	186.97	105.0	0.0050	0.012	24.0	0.0	0.0
9	15P	0.00	-0.48	48.0	0.0100	0.012	15.0	0.0	0.0
10	20P	0.00	-0.58	58.0	0.0100	0.012	18.0	0.0	0.0
11	21P	0.00	-0.35	70.0	0.0050	0.012	24.0	0.0	0.0
12	25P	0.00	-1.08	54.0	0.0200	0.012	12.0	0.0	0.0
13	26P	0.00	-2.50	125.0	0.0200	0.012	15.0	0.0	0.0
14	27P	0.00	-2.99	23.0	0.1300	0.012	12.0	0.0	0.0

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

Subcatchment 1S: Watershed 11 Runoff Area=128,651 sf 0.00% Impervious Runoff Depth>0.03"
Flow Length=605' Tc=46.9 min CN=32 Runoff=0.02 cfs 0.008 af

Subcatchment 9S: Watershed 2 Runoff Area=34,787 sf 59.82% Impervious Runoff Depth>2.85"
Flow Length=296' Tc=2.1 min CN=78 Runoff=3.14 cfs 0.190 af

Subcatchment 10S: Watersheds 3/4 Runoff Area=25,268 sf 55.97% Impervious Runoff Depth>2.58"
Flow Length=315' Slope=0.0200 '/' Tc=8.9 min CN=75 Runoff=1.67 cfs 0.125 af

Subcatchment 12S: Watershed 6 Runoff Area=82,114 sf 77.89% Impervious Runoff Depth>3.52"
Flow Length=500' Tc=4.3 min CN=85 Runoff=8.45 cfs 0.553 af

Subcatchment 13S: Watershed 12 Area Ponds 23 Runoff Area=33,360 sf 15.96% Impervious Runoff Depth>0.65"
Flow Length=370' Tc=12.4 min CN=48 Runoff=0.33 cfs 0.041 af

Subcatchment 22S: Watershed 5 Runoff Area=14,742 sf 86.71% Impervious Runoff Depth>4.03"
Flow Length=340' Tc=2.0 min CN=90 Runoff=1.77 cfs 0.114 af

Subcatchment 23S: Watershed 10 Runoff Area=6,176 sf 0.00% Impervious Runoff Depth>0.23"
Flow Length=160' Slope=0.0100 '/' Tc=8.9 min CN=39 Runoff=0.01 cfs 0.003 af

Subcatchment 24S: Watershed 9 Runoff Area=75,687 sf 20.02% Impervious Runoff Depth>0.82"
Flow Length=350' Tc=1.9 min CN=51 Runoff=1.58 cfs 0.119 af

Subcatchment 29S: Future Parking Runoff Area=21,000 sf 100.00% Impervious Runoff Depth>4.78"
Flow Length=370' Tc=3.9 min CN=98 Runoff=2.69 cfs 0.192 af

Reach 16R: Sed Pond channel Avg. Flow Depth=1.05' Max Vel=1.73 fps Inflow=15.46 cfs 1.060 af
n=0.022 L=170.0' S=0.0010 '/' Capacity=13.55 cfs Outflow=14.31 cfs 1.057 af

Pond 2P: Inlet Reach 1 Peak Elev=0.07' Inflow=0.02 cfs 0.008 af
12.0" Round Culvert n=0.012 L=185.0' S=0.0490 '/' Outflow=0.02 cfs 0.008 af

Pond 3P: DMH-1 Peak Elev=1.32' Inflow=7.74 cfs 1.023 af
24.0" Round Culvert n=0.012 L=300.0' S=0.0050 '/' Outflow=7.74 cfs 1.023 af

Pond 4P: DMH-2 Peak Elev=1.32' Inflow=7.74 cfs 1.023 af
24.0" Round Culvert n=0.012 L=300.0' S=0.0050 '/' Outflow=7.74 cfs 1.023 af

Pond 5P: DMH-3 Peak Elev=1.32' Inflow=7.74 cfs 1.023 af
24.0" Round Culvert n=0.012 L=300.0' S=0.0050 '/' Outflow=7.74 cfs 1.023 af

Pond 6P: DMH-4 Peak Elev=1.32' Inflow=7.74 cfs 1.023 af
24.0" Round Culvert n=0.012 L=300.0' S=0.0050 '/' Outflow=7.74 cfs 1.023 af

Pond 7P: DMH-5 Peak Elev=1.38' Inflow=7.74 cfs 1.023 af
24.0" Round Culvert n=0.012 L=122.0' S=0.0050 '/' Outflow=7.74 cfs 1.023 af

Pond 8P: DMH-6 Peak Elev=1.50' Inflow=7.74 cfs 1.023 af
24.0" Round Culvert n=0.012 L=20.0' S=0.0050 '/' Outflow=7.74 cfs 1.023 af

Pond 14P: Ponds 234 Peak Elev=192.48' Storage=19,370 cf Inflow=14.49 cfs 1.098 af
Outflow=6.47 cfs 0.780 af

Pond 15P: CB2 Peak Elev=0.94' Inflow=3.14 cfs 0.190 af
15.0" Round Culvert n=0.012 L=48.0' S=0.0100 '/' Outflow=3.14 cfs 0.190 af

Pond 20P: Pipe Inlet -Watershed 6 Peak Elev=1.73' Inflow=8.45 cfs 0.553 af
18.0" Round Culvert n=0.012 L=58.0' S=0.0100 '/' Outflow=8.45 cfs 0.553 af

Pond 21P: DMH7 Peak Elev=1.42' Inflow=7.74 cfs 1.015 af
24.0" Round Culvert n=0.012 L=70.0' S=0.0050 '/' Outflow=7.74 cfs 1.015 af

Pond 25P: Pipe Inlet Watershed 9 Peak Elev=0.68' Inflow=1.58 cfs 0.119 af
12.0" Round Culvert n=0.012 L=54.0' S=0.0200 '/' Outflow=1.58 cfs 0.119 af

Pond 26P: CB5 Peak Elev=0.95' Inflow=3.32 cfs 0.232 af
15.0" Round Culvert n=0.012 L=125.0' S=0.0200 '/' Outflow=3.32 cfs 0.232 af

Pond 27P: Pipe Inlet - Watershed 10 Peak Elev=0.05' Inflow=0.01 cfs 0.003 af
12.0" Round Culvert n=0.012 L=23.0' S=0.1300 '/' Outflow=0.01 cfs 0.003 af

Total Runoff Area = 9.683 ac Runoff Volume = 1.345 af Average Runoff Depth = 1.67"
63.68% Pervious = 6.166 ac 36.32% Impervious = 3.516 ac

Summary for Subcatchment 1S: Watershed 11

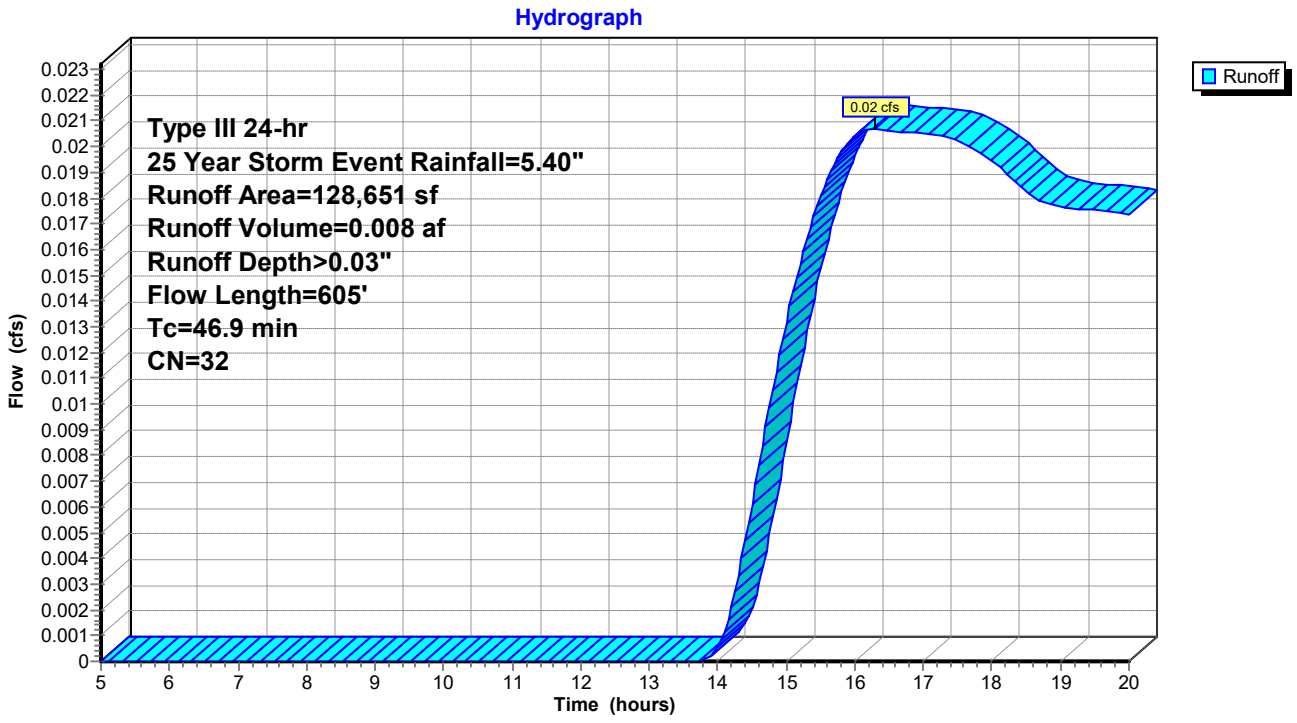
Runoff = 0.02 cfs @ 16.30 hrs, Volume= 0.008 af, Depth> 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Event Rainfall=5.40"

Area (sf)	CN	Description
128,651	32	Woods/grass comb., Good, HSG A
128,651		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
38.9	175	0.0150	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
6.0	180	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	250	0.0200	2.12		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
46.9	605	Total			

Subcatchment 1S: Watershed 11



Summary for Subcatchment 9S: Watershed 2

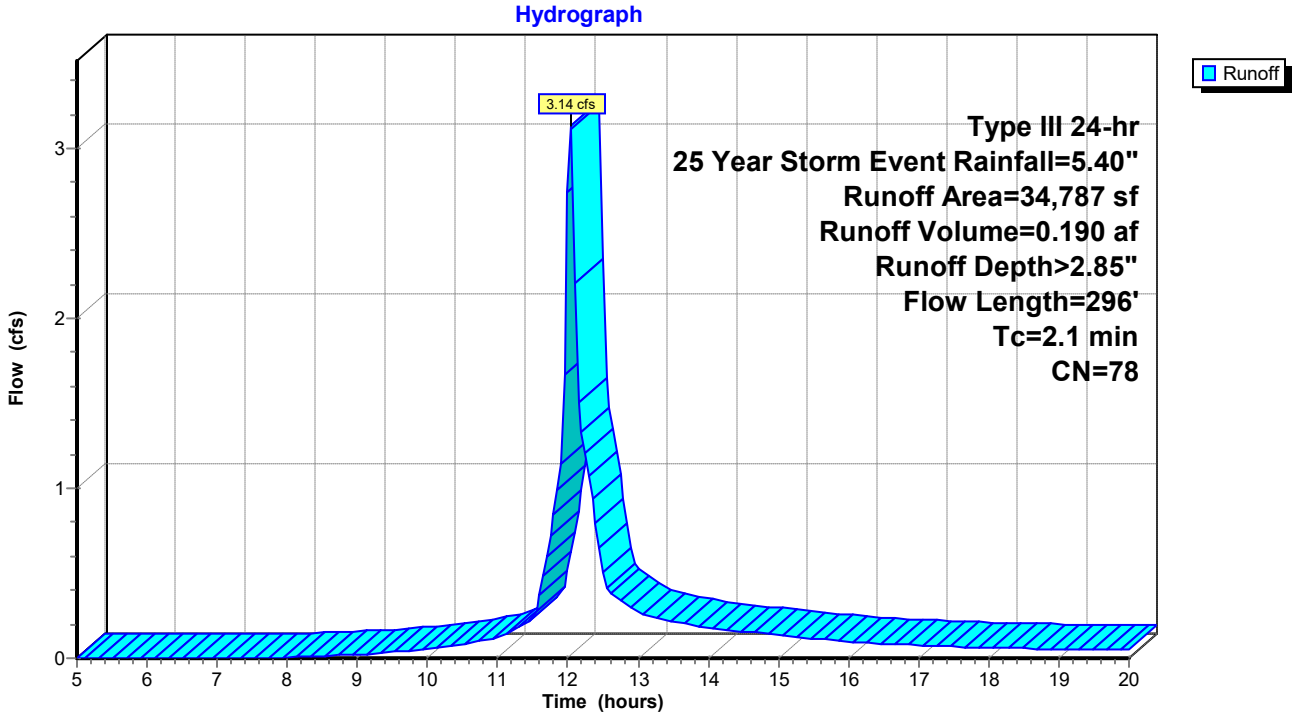
Runoff = 3.14 cfs @ 12.04 hrs, Volume= 0.190 af, Depth> 2.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Event Rainfall=5.40"

Area (sf)	CN	Description
20,811	98	Paved parking, HSG A
8,816	39	>75% Grass cover, Good, HSG A
5,160	61	>75% Grass cover, Good, HSG B
34,787	78	Weighted Average
13,976		40.18% Pervious Area
20,811		59.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	20	0.2000	2.42		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.9	70	0.0200	1.24		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.1	206	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.1	296	Total			

Subcatchment 9S: Watershed 2



Summary for Subcatchment 10S: Watersheds 3/4

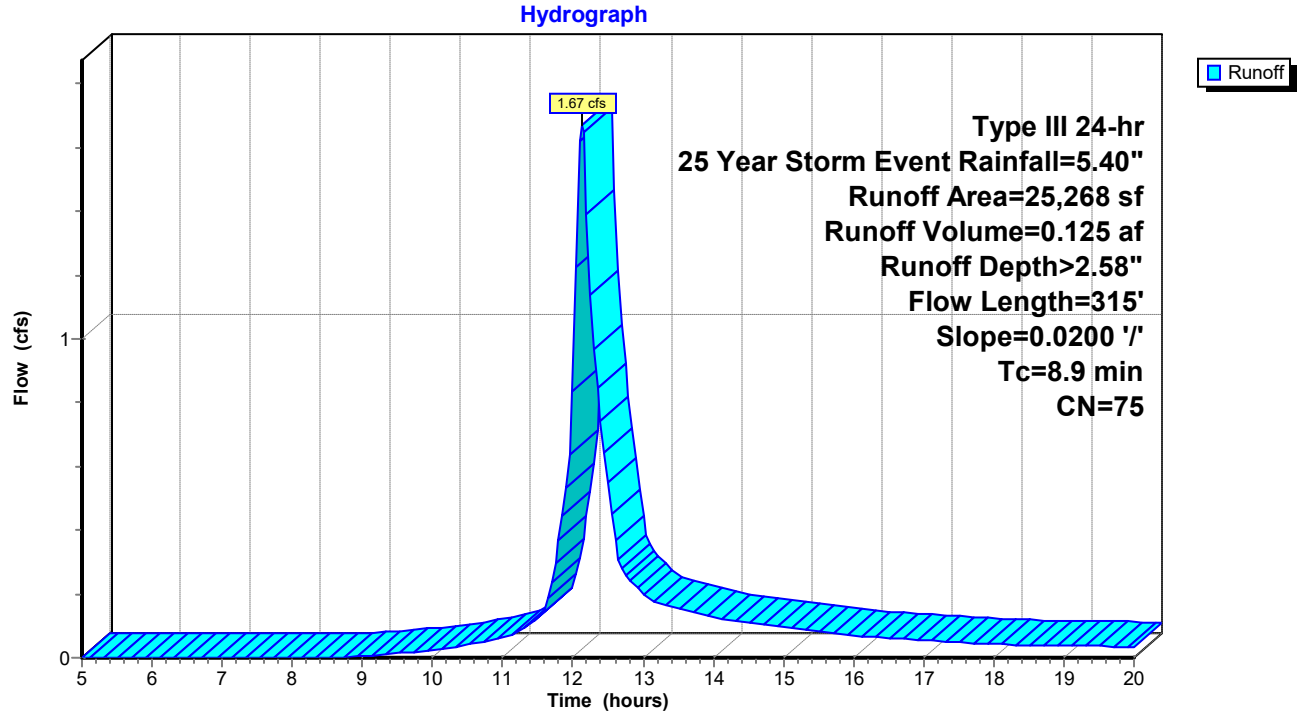
Runoff = 1.67 cfs @ 12.13 hrs, Volume= 0.125 af, Depth> 2.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Event Rainfall=5.40"

Area (sf)	CN	Description
14,142	98	Paved parking, HSG A
8,158	39	>75% Grass cover, Good, HSG A
2,968	61	>75% Grass cover, Good, HSG B
25,268	75	Weighted Average
11,126		44.03% Pervious Area
14,142		55.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	65	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
1.5	130	0.0200	1.40		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.2	120	0.0200	10.79	215.89	**Trap/Vee/Rect Channel Flow,** Bot.W=4.00' D=2.00' Z= 3.0 '/' Top.W=16.00' n= 0.022 Earth, clean & straight
8.9	315	Total			

Subcatchment 10S: Watersheds 3/4



Summary for Subcatchment 12S: Watershed 6

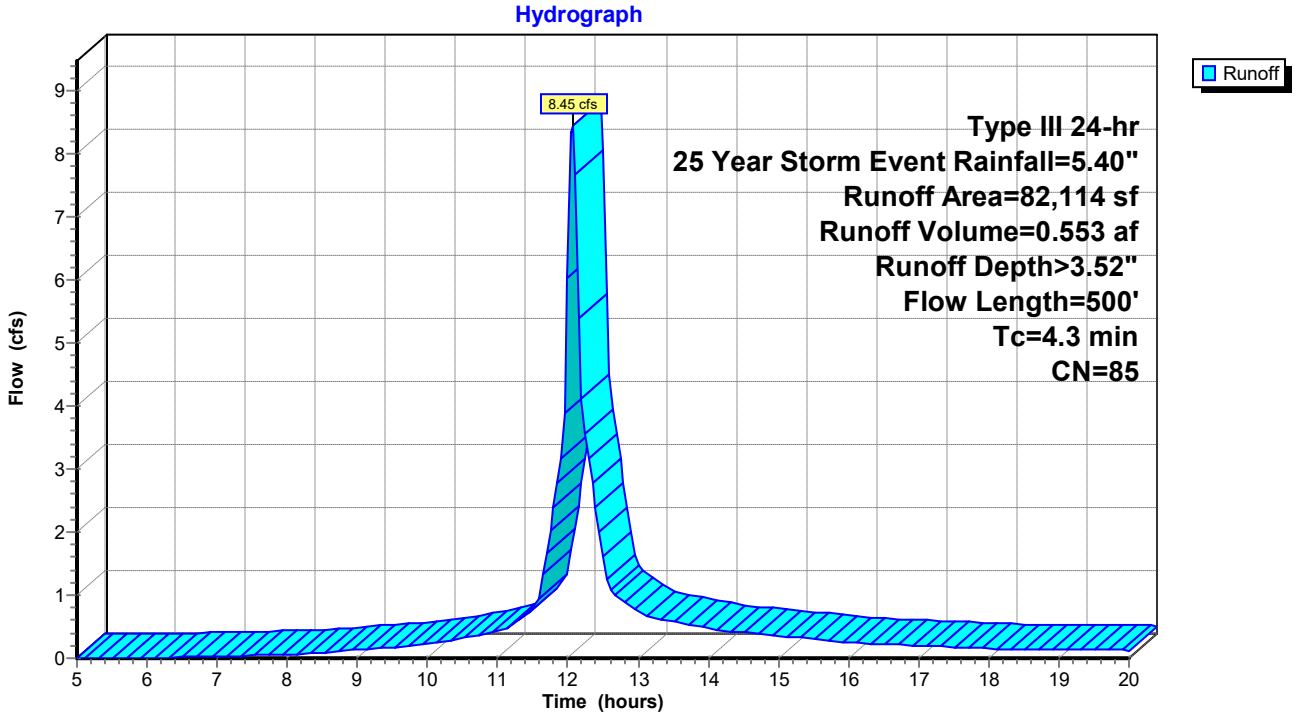
Runoff = 8.45 cfs @ 12.06 hrs, Volume= 0.553 af, Depth> 3.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Event Rainfall=5.40"

	Area (sf)	CN	Description
	49,860	98	Paved parking, HSG A
*	14,100	98	Future expansion of paved parking, HSG A
	18,154	39	>75% Grass cover, Good, HSG A
	82,114	85	Weighted Average
	18,154		22.11% Pervious Area
	63,960		77.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	85	0.0200	1.29		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.1	185	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.1	230	0.0150	1.84		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.3	500	Total			

Subcatchment 12S: Watershed 6



Summary for Subcatchment 13S: Watershed 12 Area Ponds 23

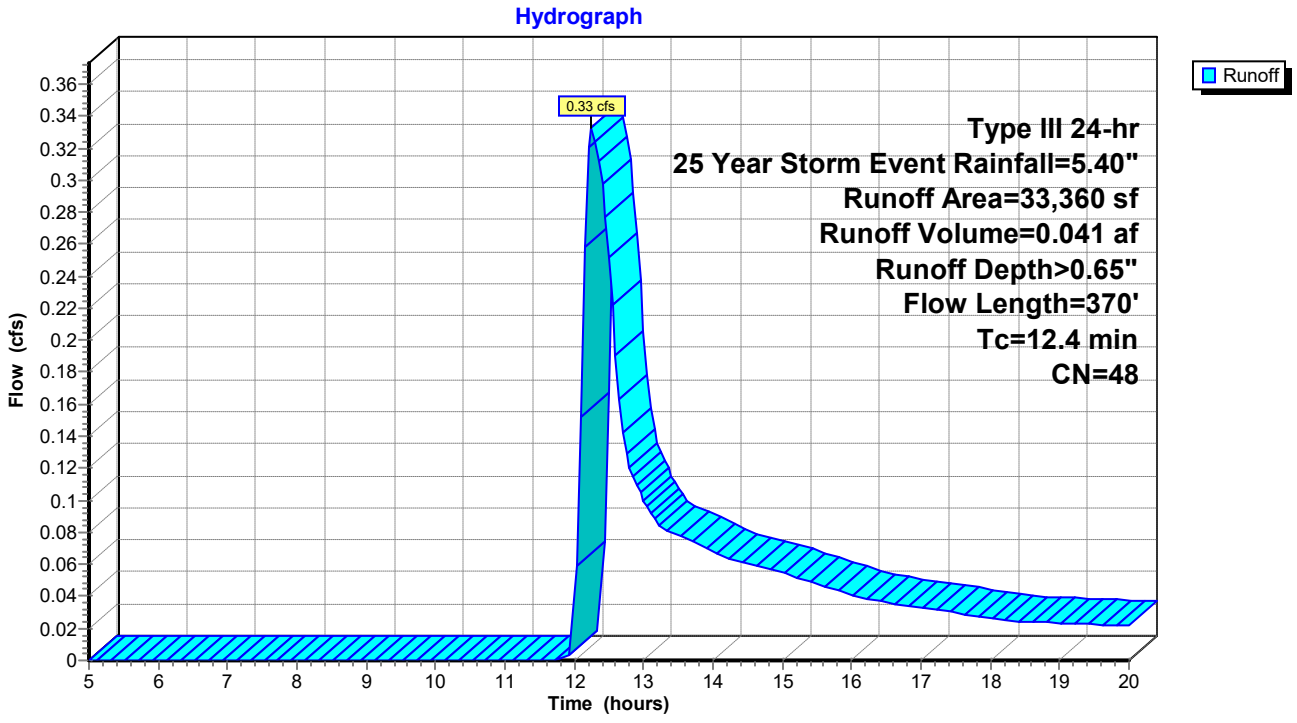
Runoff = 0.33 cfs @ 12.25 hrs, Volume= 0.041 af, Depth> 0.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Event Rainfall=5.40"

	Area (sf)	CN	Description
	5,323	98	Paved roads w/curbs & sewers, HSG A
	21,317	39	>75% Grass cover, Good, HSG A
*	6,720	39	PONDS 234>75% Grass cover, Good, HSG A
	33,360	48	Weighted Average
	28,037		84.04% Pervious Area
	5,323		15.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	30	0.0200	1.05		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
11.9	340	0.0010	0.47		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.4	370	Total			

Subcatchment 13S: Watershed 12 Area Ponds 23



Summary for Subcatchment 22S: Watershed 5

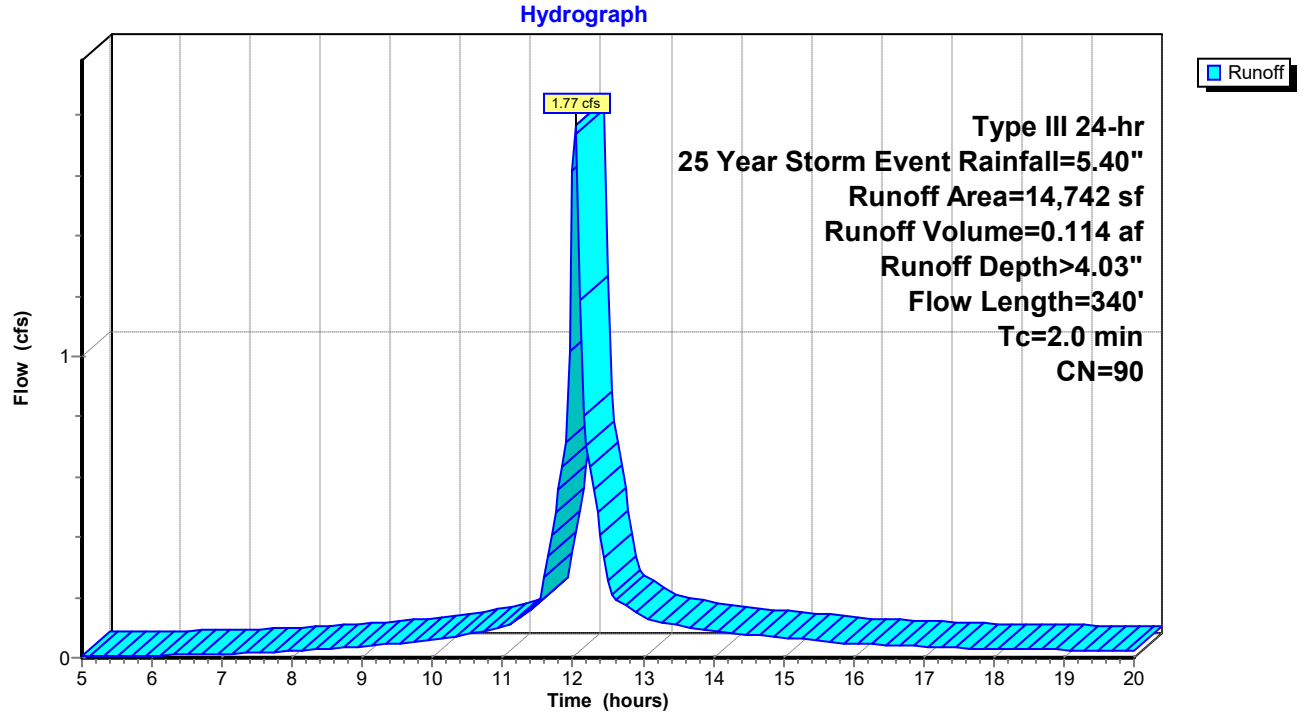
Runoff = 1.77 cfs @ 12.03 hrs, Volume= 0.114 af, Depth> 4.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Event Rainfall=5.40"

Area (sf)	CN	Description
12,783	98	Paved roads w/curbs & sewers, HSG A
1,959	39	>75% Grass cover, Good, HSG A
14,742	90	Weighted Average
1,959		13.29% Pervious Area
12,783		86.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.97		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.5	90	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.5	150	0.0600	4.97		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	80	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.0	340	Total			

Subcatchment 22S: Watershed 5



Summary for Subcatchment 23S: Watershed 10

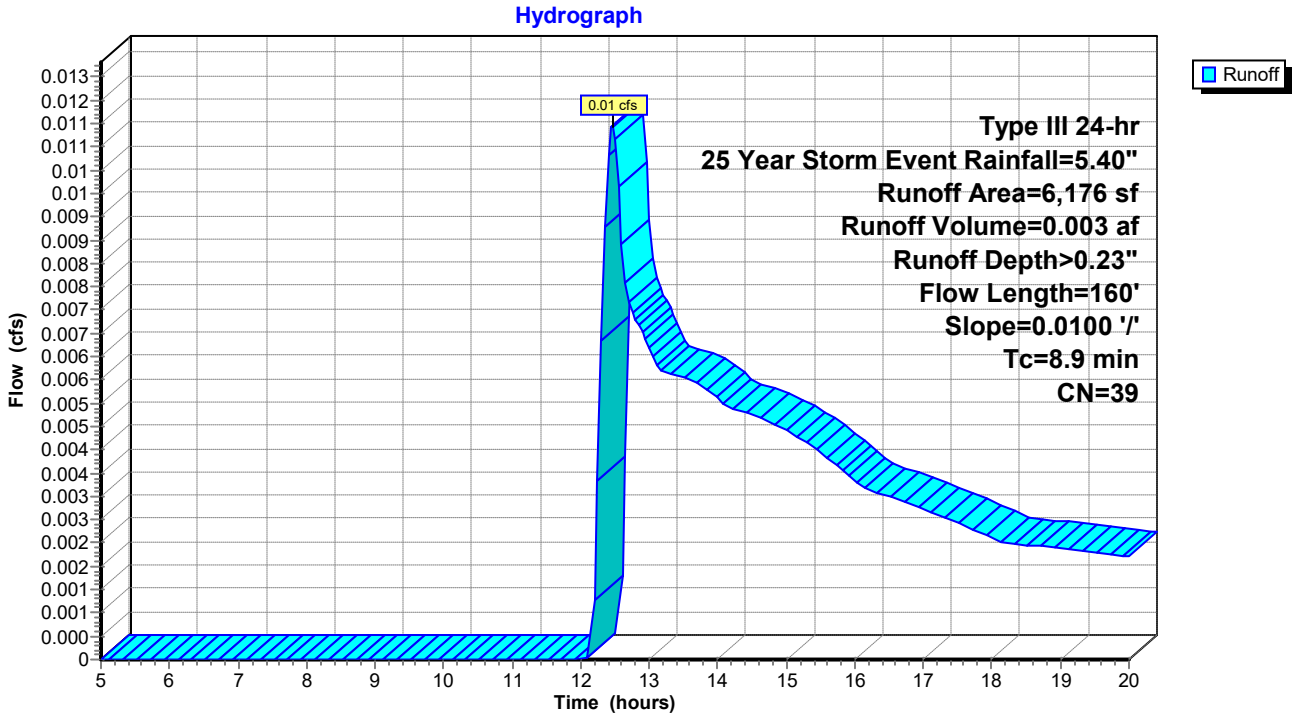
Runoff = 0.01 cfs @ 12.46 hrs, Volume= 0.003 af, Depth> 0.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Event Rainfall=5.40"

Area (sf)	CN	Description
6,176	39	>75% Grass cover, Good, HSG A
6,176		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
1.2	110	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
8.9	160	Total			

Subcatchment 23S: Watershed 10



Summary for Subcatchment 24S: Watershed 9

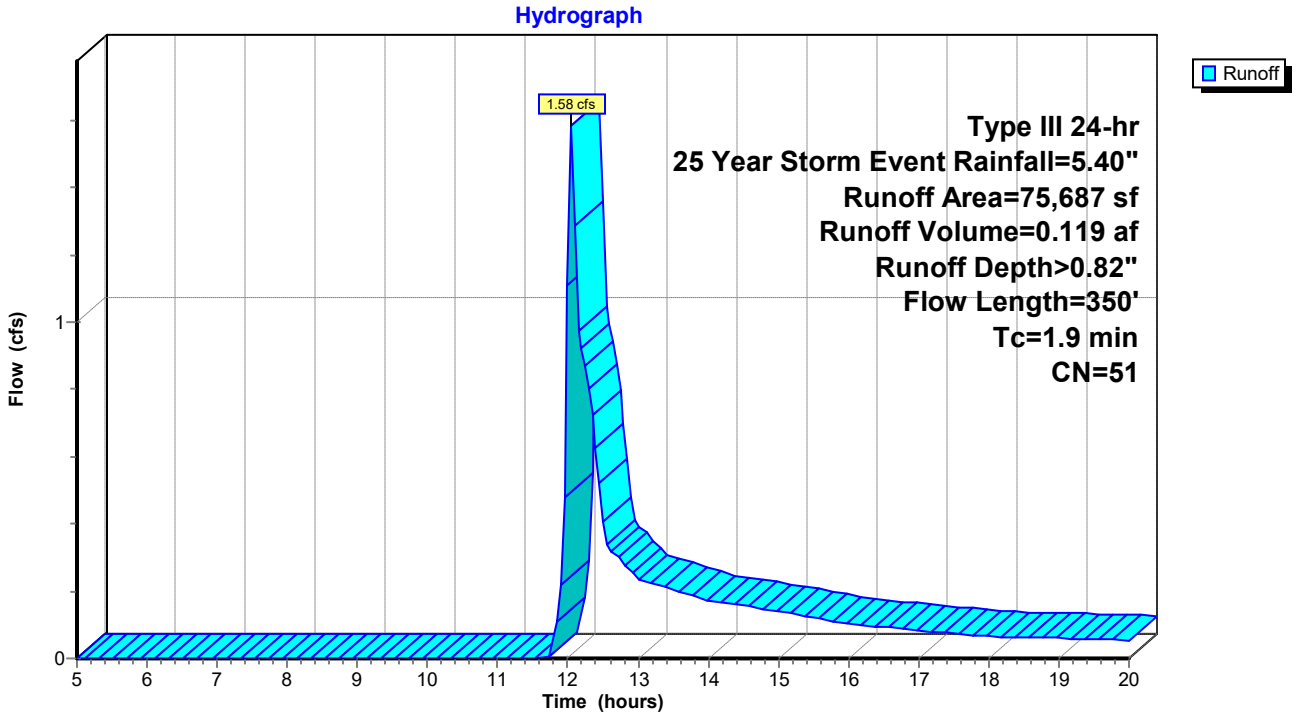
Runoff = 1.58 cfs @ 12.06 hrs, Volume= 0.119 af, Depth> 0.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Event Rainfall=5.40"

Area (sf)	CN	Description
15,156	98	Paved parking, HSG A
60,531	39	>75% Grass cover, Good, HSG A
75,687	51	Weighted Average
60,531		79.98% Pervious Area
15,156		20.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.97		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.5	90	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.5	150	0.0600	4.97		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.5	60	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	30	0.1200	5.20		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.9	350	Total			

Subcatchment 24S: Watershed 9



Summary for Subcatchment 29S: Future Parking

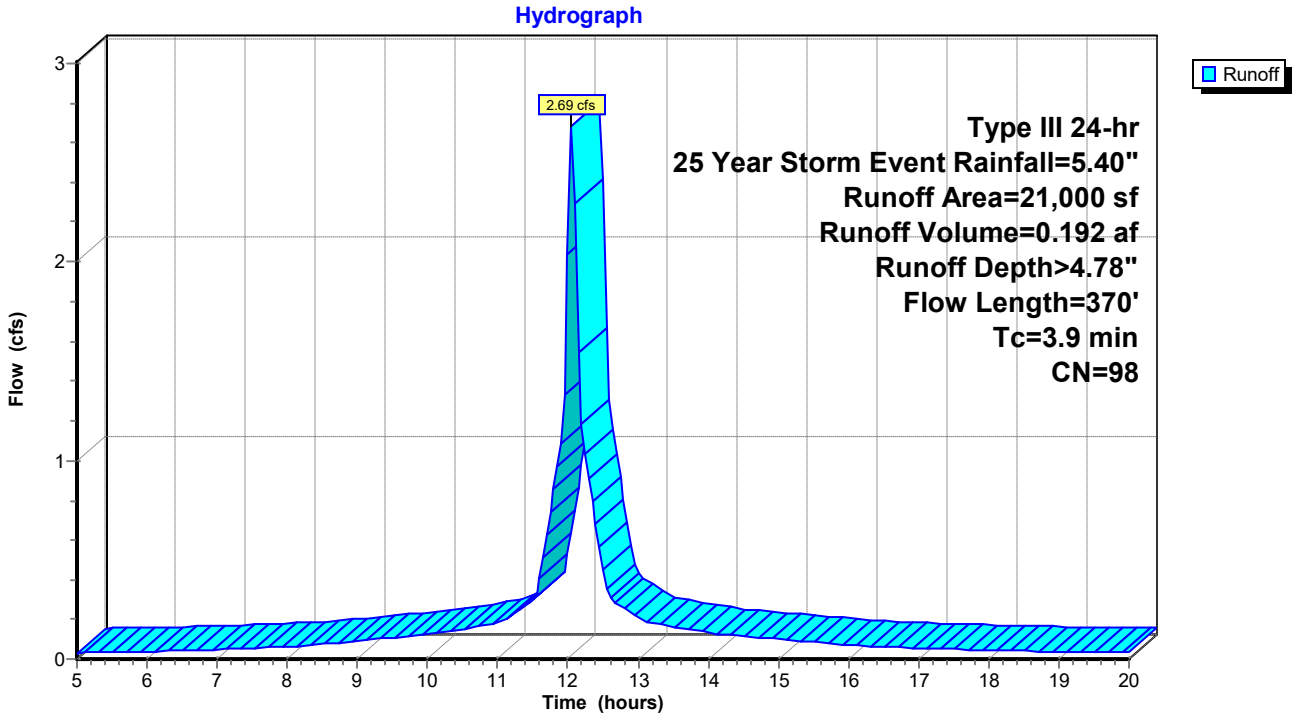
Runoff = 2.69 cfs @ 12.06 hrs, Volume= 0.192 af, Depth> 4.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Event Rainfall=5.40"

Area (sf)	CN	Description
21,000	98	Paved parking, HSG A
21,000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	70	0.0200	1.24		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
3.0	300	0.0010	1.69	13.55	**Trap/Vee/Rect Channel Flow,** Bot.W=5.00' D=1.00' Z= 3.0 '/' Top.W=11.00' n= 0.022 Earth, clean & straight
3.9	370	Total			

Subcatchment 29S: Future Parking



Summary for Reach 16R: Sed Pond channel

Inflow Area = 3.746 ac, 73.49% Impervious, Inflow Depth > 3.40" for 25 Year Storm Event event
Inflow = 15.46 cfs @ 12.06 hrs, Volume= 1.060 af
Outflow = 14.31 cfs @ 12.11 hrs, Volume= 1.057 af, Atten= 7%, Lag= 3.1 min

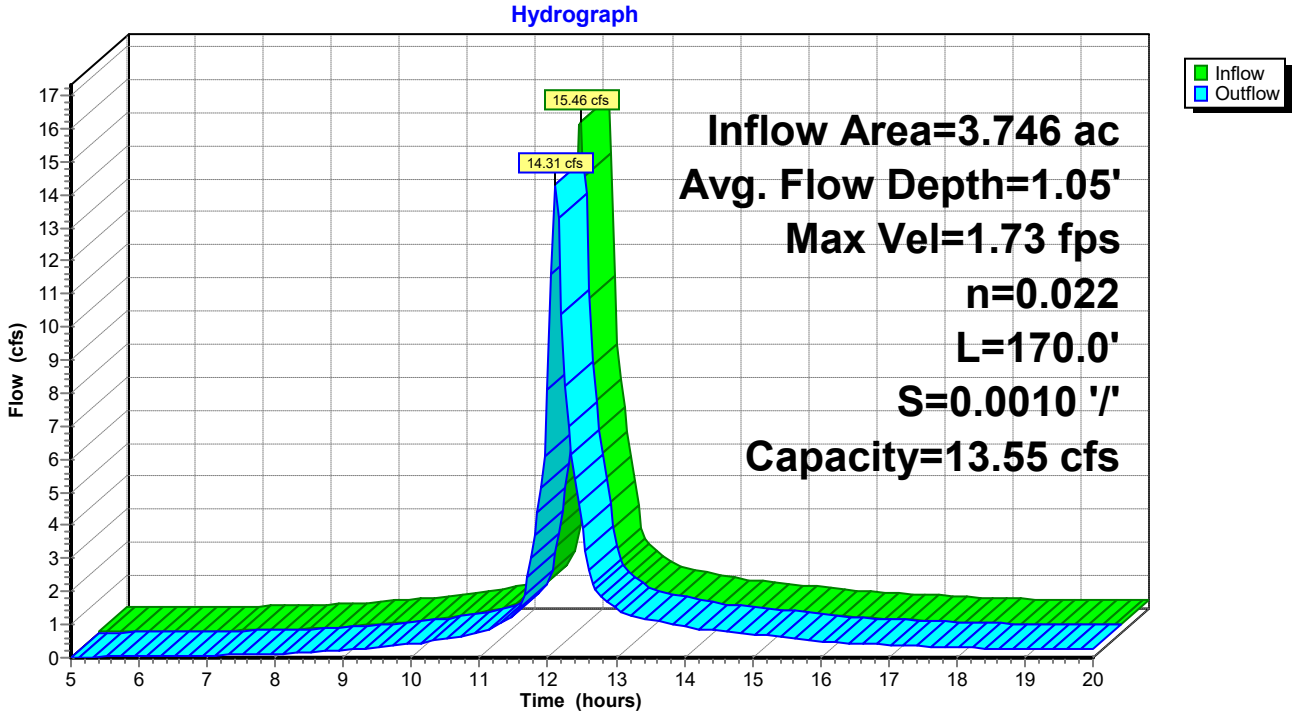
Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.73 fps, Min. Travel Time= 1.6 min
Avg. Velocity = 0.57 fps, Avg. Travel Time= 5.0 min

Peak Storage= 1,450 cf @ 12.09 hrs
Average Depth at Peak Storage= 1.05'
Bank-Full Depth= 1.00' Flow Area= 8.0 sf, Capacity= 13.55 cfs

5.00' x 1.00' deep channel, n= 0.022 Earth, clean & straight
Side Slope Z-value= 3.0 '/' Top Width= 11.00'
Length= 170.0' Slope= 0.0010 '/'
Inlet Invert= 0.00', Outlet Invert= -0.17'

‡

Reach 16R: Sed Pond channel



Summary for Pond 2P: Inlet Reach 1

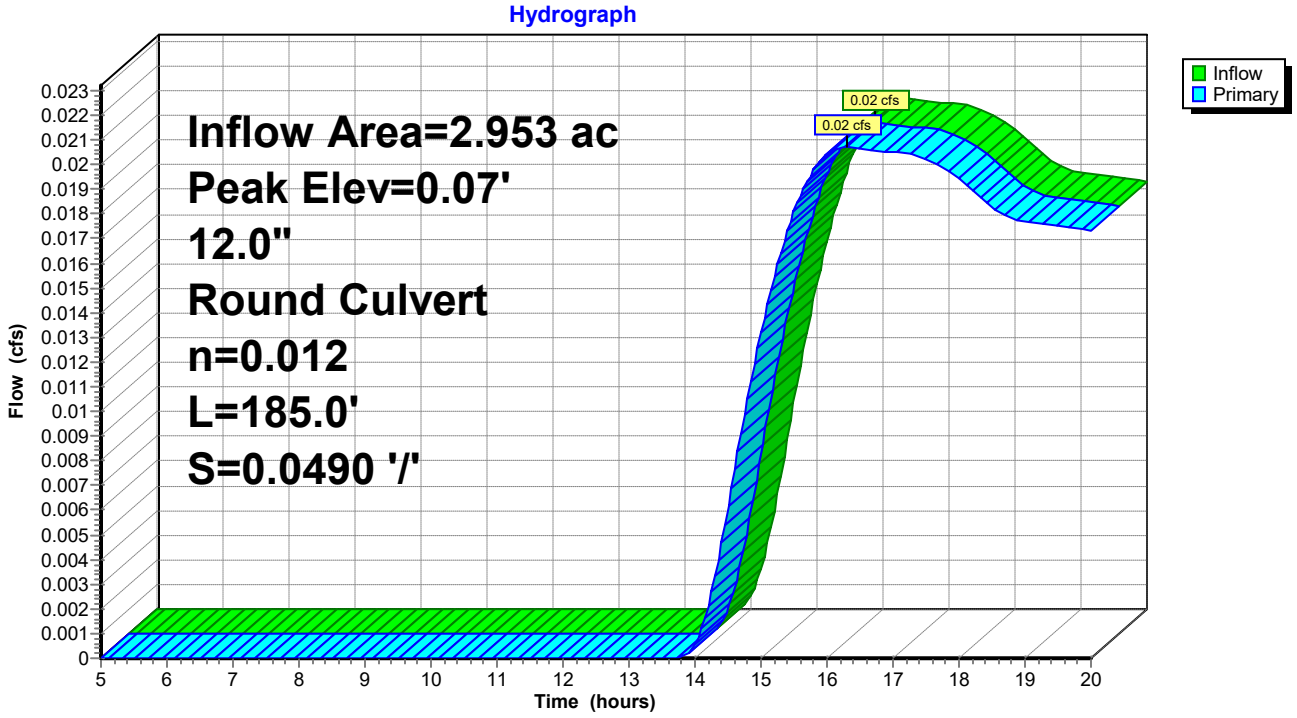
Inflow Area = 2.953 ac, 0.00% Impervious, Inflow Depth > 0.03" for 25 Year Storm Event event
Inflow = 0.02 cfs @ 16.30 hrs, Volume= 0.008 af
Outflow = 0.02 cfs @ 16.30 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min
Primary = 0.02 cfs @ 16.30 hrs, Volume= 0.008 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 0.07' @ 16.30 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**12.0" Round Culvert** L= 185.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 0.00' / -9.06' S= 0.0490 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.02 cfs @ 16.30 hrs HW=0.07' (Free Discharge)
└**1=Culvert** (Inlet Controls 0.02 cfs @ 0.89 fps)

Pond 2P: Inlet Reach 1



Summary for Pond 3P: DMH-1

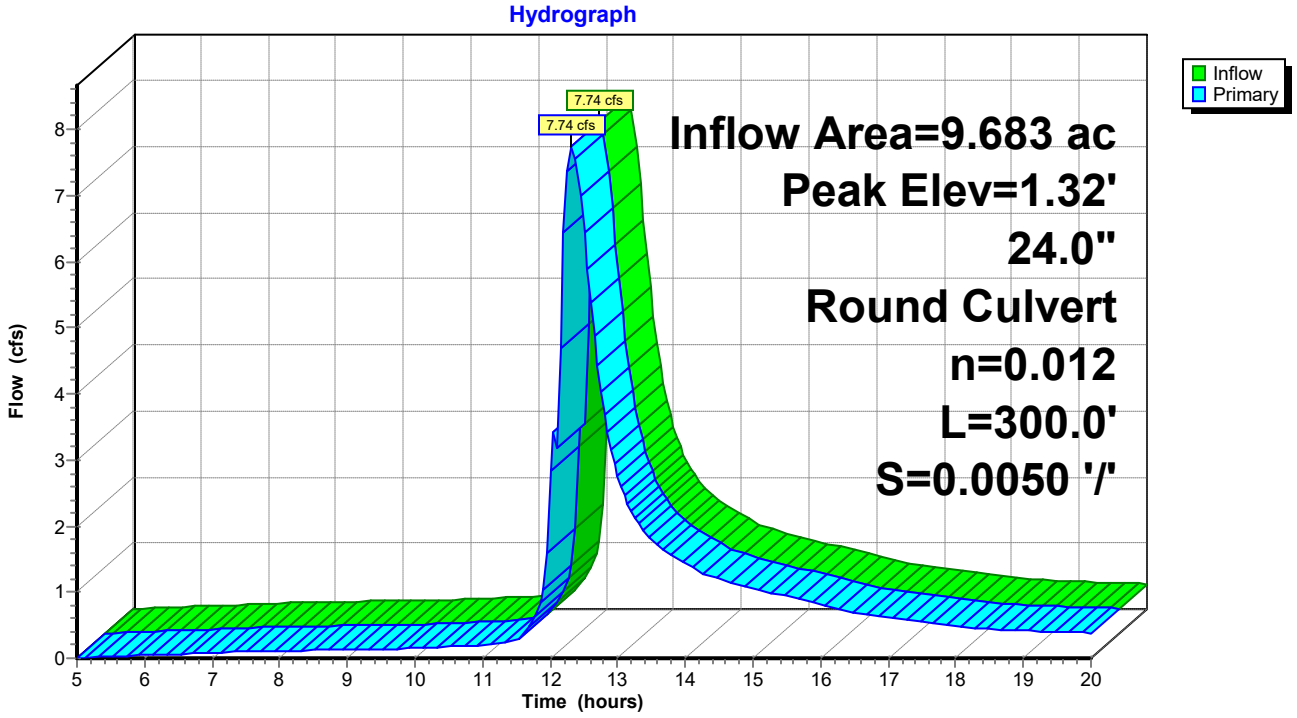
Inflow Area = 9.683 ac, 36.32% Impervious, Inflow Depth > 1.27" for 25 Year Storm Event event
Inflow = 7.74 cfs @ 12.32 hrs, Volume= 1.023 af
Outflow = 7.74 cfs @ 12.32 hrs, Volume= 1.023 af, Atten= 0%, Lag= 0.0 min
Primary = 7.74 cfs @ 12.32 hrs, Volume= 1.023 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1.32' @ 12.32 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**24.0" Round Culvert** L= 300.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 0.00' / -1.50' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=7.70 cfs @ 12.32 hrs HW=1.31' (Free Discharge)
└**1=Culvert** (Barrel Controls 7.70 cfs @ 4.99 fps)

Pond 3P: DMH-1



Summary for Pond 4P: DMH-2

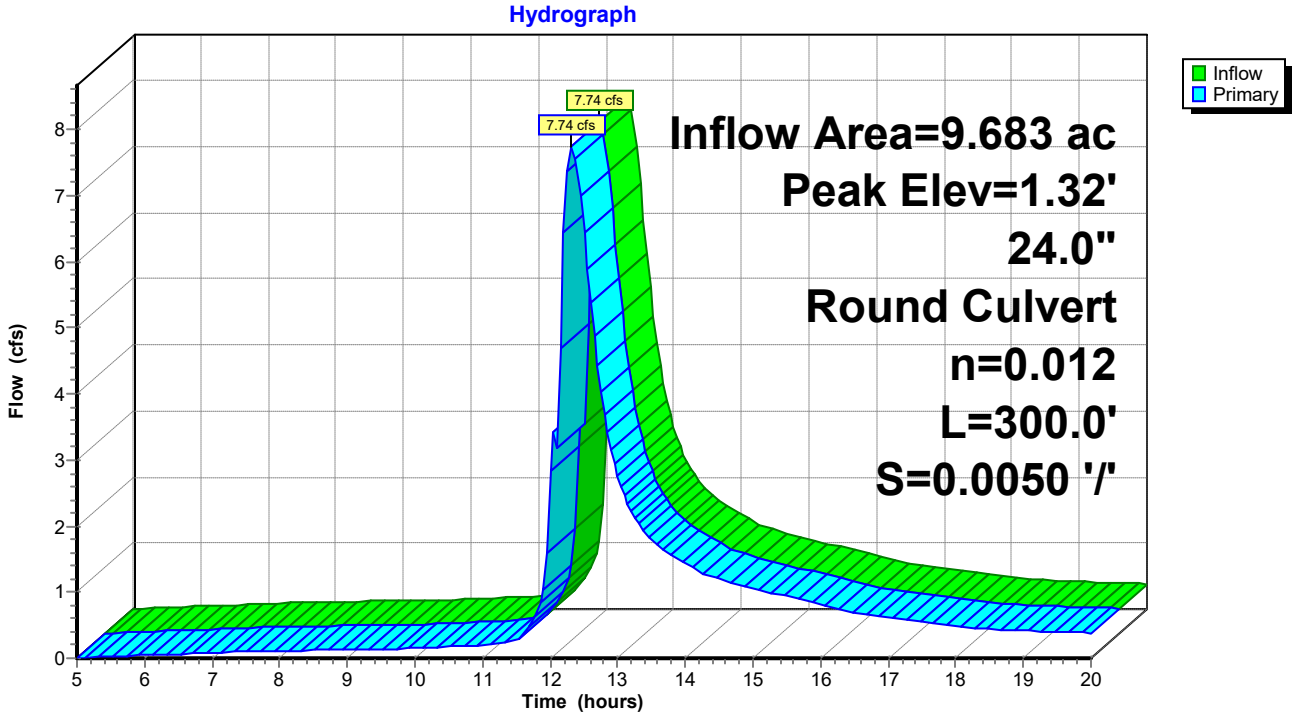
Inflow Area = 9.683 ac, 36.32% Impervious, Inflow Depth > 1.27" for 25 Year Storm Event event
Inflow = 7.74 cfs @ 12.32 hrs, Volume= 1.023 af
Outflow = 7.74 cfs @ 12.32 hrs, Volume= 1.023 af, Atten= 0%, Lag= 0.0 min
Primary = 7.74 cfs @ 12.32 hrs, Volume= 1.023 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1.32' @ 12.32 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**24.0" Round Culvert** L= 300.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 0.00' / -1.50' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=7.70 cfs @ 12.32 hrs HW=1.31' (Free Discharge)
└**1=Culvert** (Barrel Controls 7.70 cfs @ 4.99 fps)

Pond 4P: DMH-2



Summary for Pond 5P: DMH-3

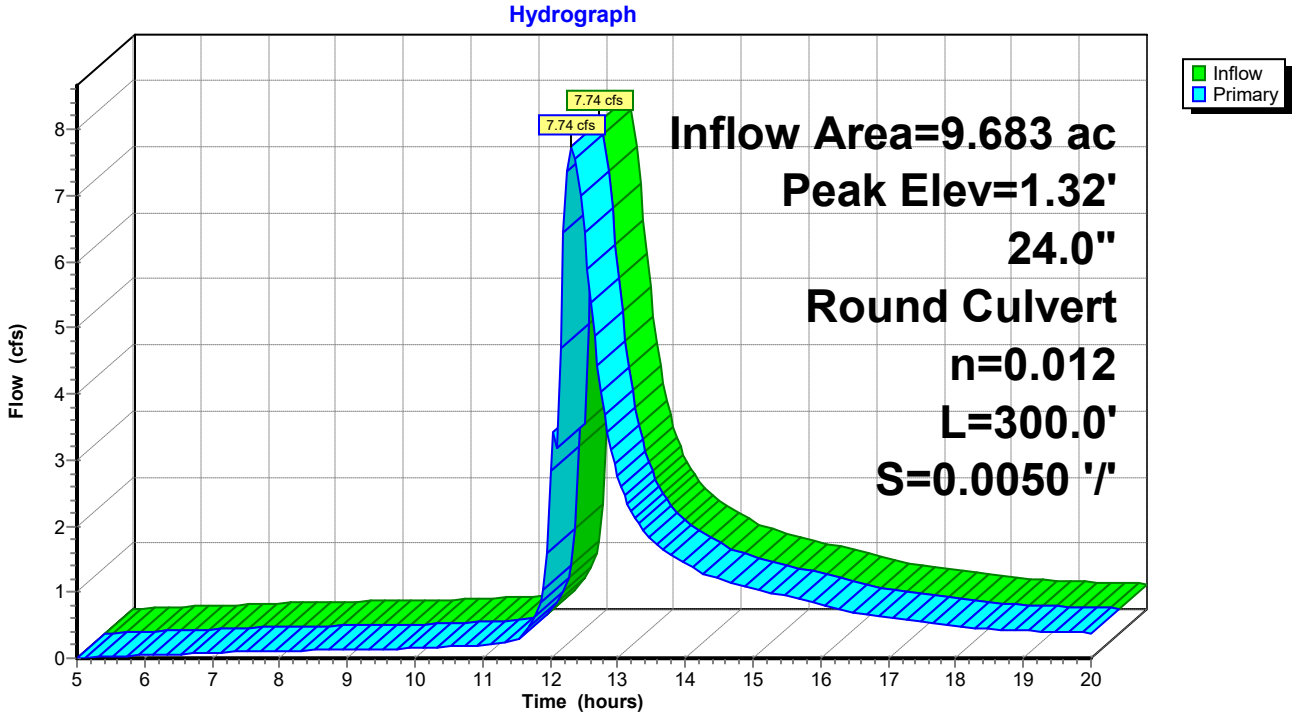
Inflow Area = 9.683 ac, 36.32% Impervious, Inflow Depth > 1.27" for 25 Year Storm Event event
Inflow = 7.74 cfs @ 12.32 hrs, Volume= 1.023 af
Outflow = 7.74 cfs @ 12.32 hrs, Volume= 1.023 af, Atten= 0%, Lag= 0.0 min
Primary = 7.74 cfs @ 12.32 hrs, Volume= 1.023 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1.32' @ 12.32 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**24.0" Round Culvert** L= 300.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 0.00' / -1.50' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=7.70 cfs @ 12.32 hrs HW=1.31' (Free Discharge)
└**1=Culvert** (Barrel Controls 7.70 cfs @ 4.99 fps)

Pond 5P: DMH-3



Summary for Pond 6P: DMH-4

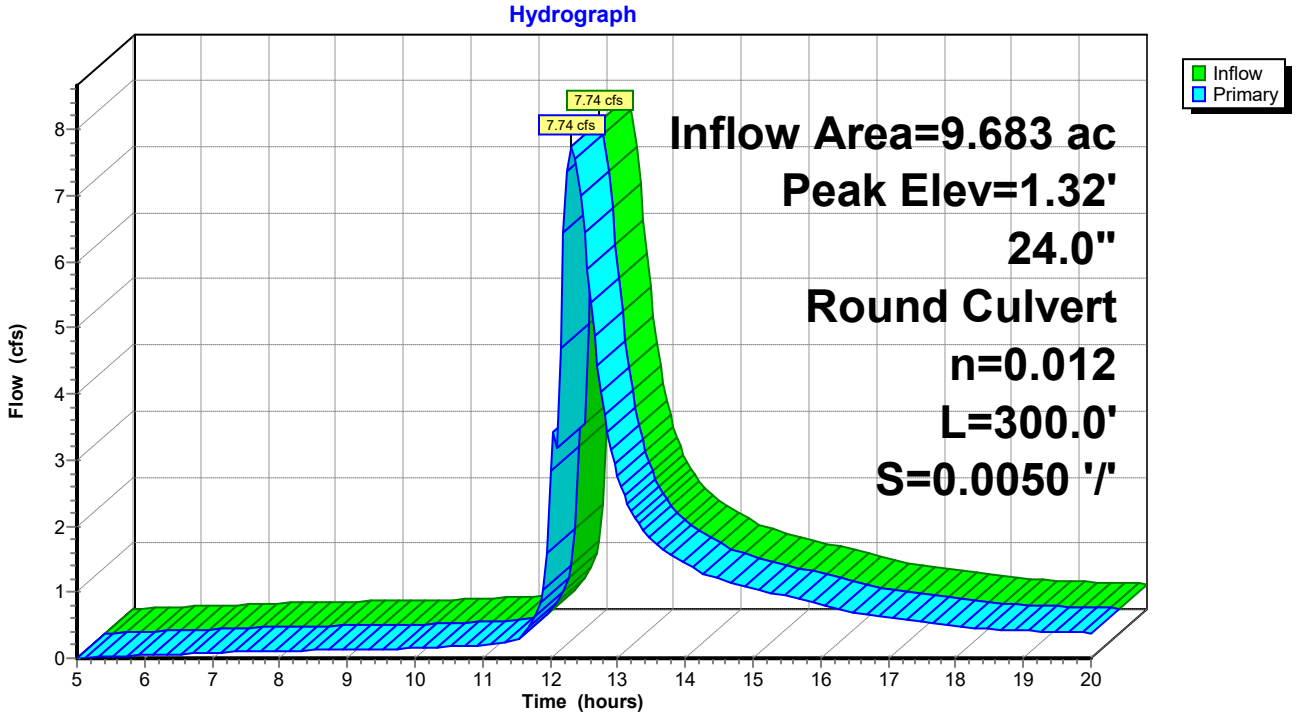
Inflow Area = 9.683 ac, 36.32% Impervious, Inflow Depth > 1.27" for 25 Year Storm Event event
Inflow = 7.74 cfs @ 12.32 hrs, Volume= 1.023 af
Outflow = 7.74 cfs @ 12.32 hrs, Volume= 1.023 af, Atten= 0%, Lag= 0.0 min
Primary = 7.74 cfs @ 12.32 hrs, Volume= 1.023 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1.32' @ 12.32 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**24.0" Round Culvert** L= 300.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 0.00' / -1.50' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=7.70 cfs @ 12.32 hrs HW=1.31' (Free Discharge)
└**1=Culvert** (Barrel Controls 7.70 cfs @ 4.99 fps)

Pond 6P: DMH-4



Summary for Pond 7P: DMH-5

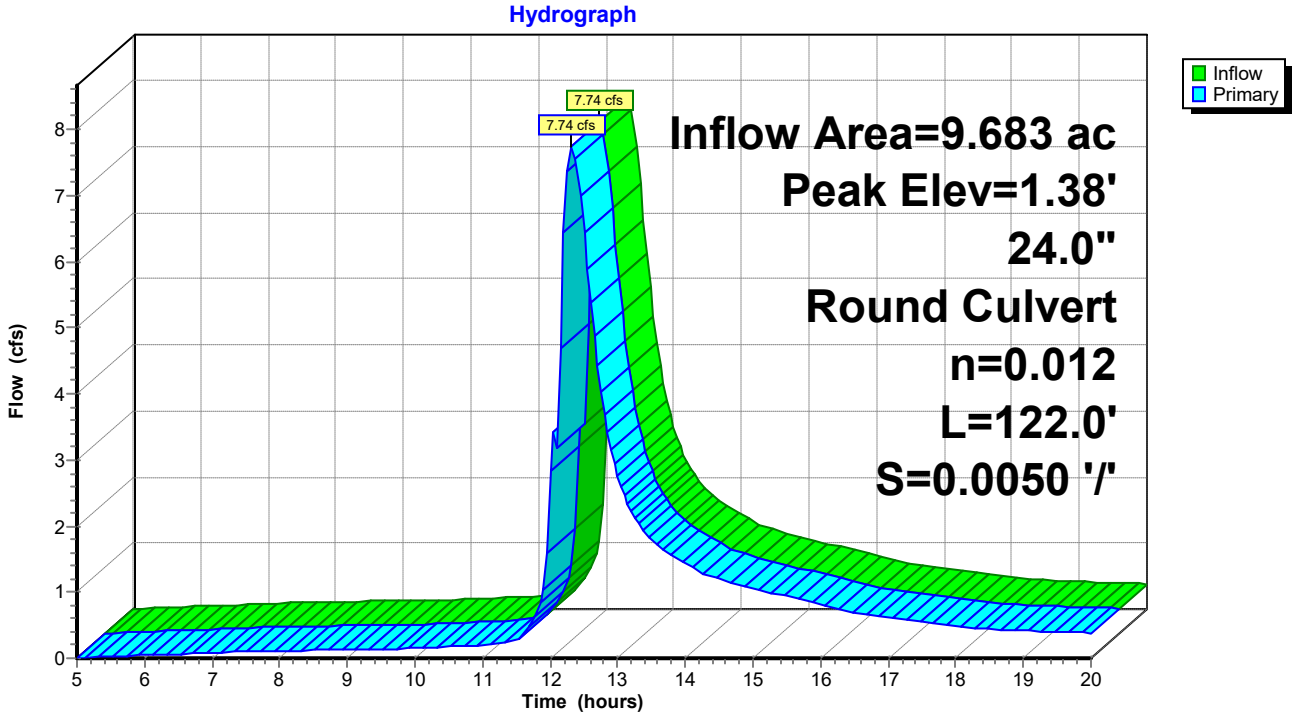
Inflow Area = 9.683 ac, 36.32% Impervious, Inflow Depth > 1.27" for 25 Year Storm Event event
Inflow = 7.74 cfs @ 12.32 hrs, Volume= 1.023 af
Outflow = 7.74 cfs @ 12.32 hrs, Volume= 1.023 af, Atten= 0%, Lag= 0.0 min
Primary = 7.74 cfs @ 12.32 hrs, Volume= 1.023 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1.38' @ 12.32 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**24.0" Round Culvert** L= 122.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 0.00' / -0.61' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=7.70 cfs @ 12.32 hrs HW=1.37' (Free Discharge)
└**1=Culvert** (Barrel Controls 7.70 cfs @ 4.71 fps)

Pond 7P: DMH-5



Summary for Pond 8P: DMH-6

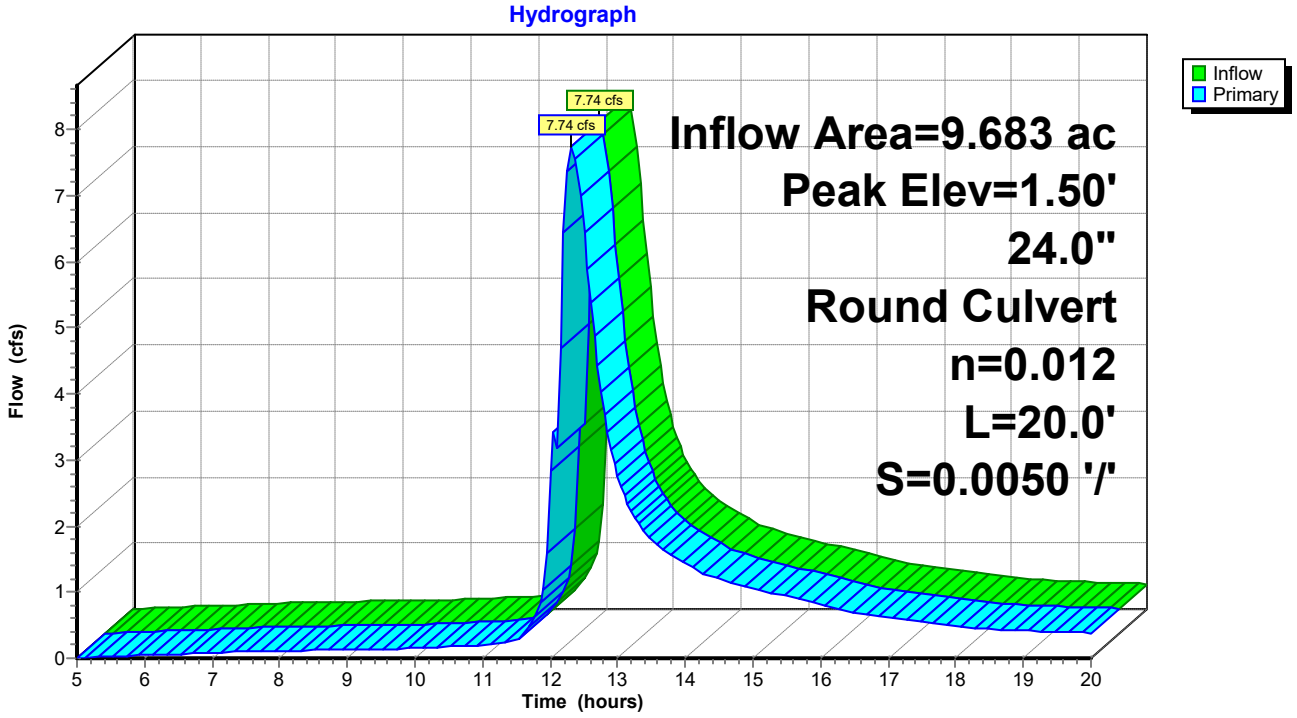
Inflow Area = 9.683 ac, 36.32% Impervious, Inflow Depth > 1.27" for 25 Year Storm Event event
Inflow = 7.74 cfs @ 12.32 hrs, Volume= 1.023 af
Outflow = 7.74 cfs @ 12.32 hrs, Volume= 1.023 af, Atten= 0%, Lag= 0.0 min
Primary = 7.74 cfs @ 12.32 hrs, Volume= 1.023 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1.50' @ 12.32 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**24.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 0.00' / -0.10' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=7.70 cfs @ 12.32 hrs HW=1.50' (Free Discharge)
└**1=Culvert** (Barrel Controls 7.70 cfs @ 4.24 fps)

Pond 8P: DMH-6



Summary for Pond 14P: Ponds 234

Inflow Area = 4.512 ac, 63.72% Impervious, Inflow Depth > 2.92" for 25 Year Storm Event event
Inflow = 14.49 cfs @ 12.11 hrs, Volume= 1.098 af
Outflow = 6.47 cfs @ 12.35 hrs, Volume= 0.780 af, Atten= 55%, Lag= 14.4 min
Primary = 6.47 cfs @ 12.35 hrs, Volume= 0.780 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 192.48' @ 12.35 hrs Surf.Area= 13,765 sf Storage= 19,370 cf

Plug-Flow detention time= 116.8 min calculated for 0.777 af (71% of inflow)
Center-of-Mass det. time= 50.5 min (827.6 - 777.1)

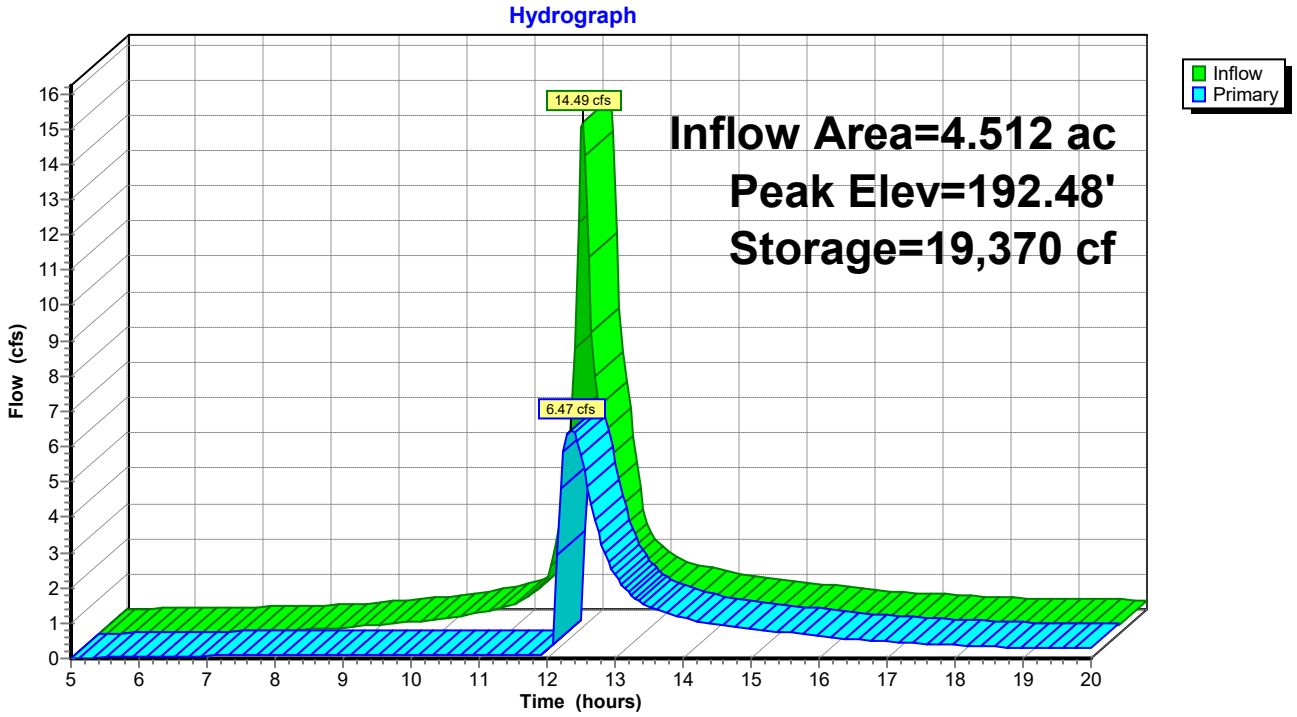
Volume	Invert	Avail.Storage	Storage Description
#1	187.50'	46,722 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
187.50	1	0	0
190.49	2	4	4
190.50	6,720	34	38
192.00	11,139	13,394	13,432
194.00	22,151	33,290	46,722

Device	Routing	Invert	Outlet Devices
#1	Primary	187.50'	**24.0" Round Culvert** L= 105.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 187.50' / 186.97' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf
#2	Device 1	187.50'	**1.0" Vert. Orifice/Grate X 2.00** C= 0.600
#3	Device 1	192.00'	**36.0" W x 12.0" H Vert. Orifice/Grate X 2.00** C= 0.600
#4	Primary	193.99'	**15.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=6.45 cfs @ 12.35 hrs HW=192.48' (Free Discharge)
- **1=Culvert** (Passes 6.45 cfs of 29.19 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 0.12 cfs @ 10.70 fps)
  - **3=Orifice/Grate** (Orifice Controls 6.34 cfs @ 2.22 fps)
- **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 14P: Ponds 234



Summary for Pond 15P: CB2

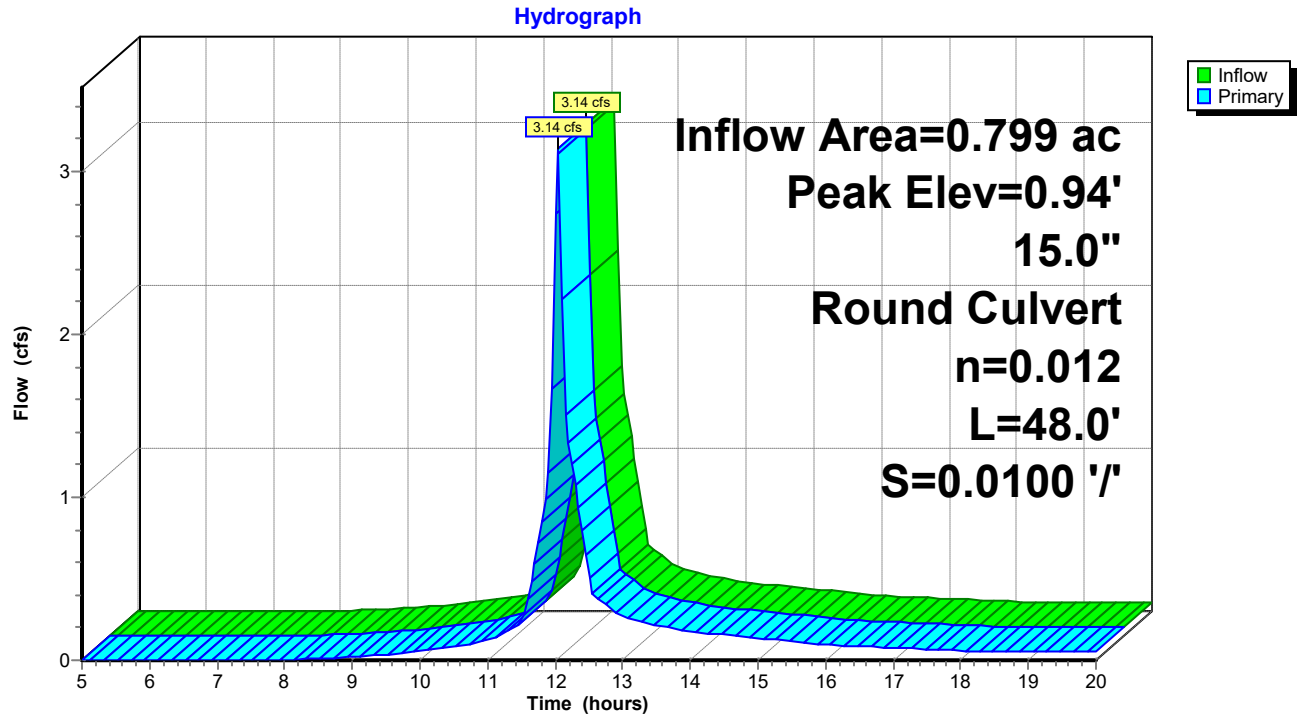
Inflow Area = 0.799 ac, 59.82% Impervious, Inflow Depth > 2.85" for 25 Year Storm Event event
Inflow = 3.14 cfs @ 12.04 hrs, Volume= 0.190 af
Outflow = 3.14 cfs @ 12.04 hrs, Volume= 0.190 af, Atten= 0%, Lag= 0.0 min
Primary = 3.14 cfs @ 12.04 hrs, Volume= 0.190 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 0.94' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**15.0" Round Culvert** L= 48.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 0.00' / -0.48' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=3.03 cfs @ 12.04 hrs HW=0.92' (Free Discharge)
└**1=Culvert** (Barrel Controls 3.03 cfs @ 4.38 fps)

Pond 15P: CB2



Summary for Pond 20P: Pipe Inlet -Watershed 6

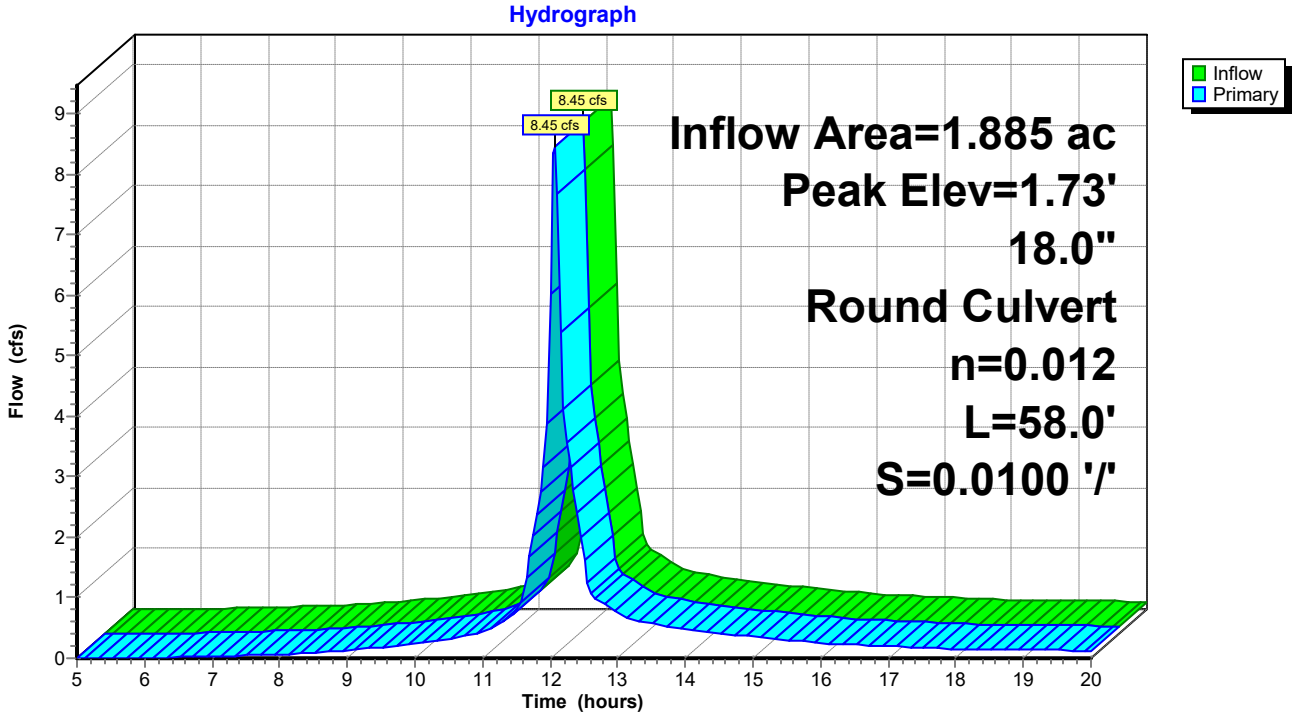
Inflow Area = 1.885 ac, 77.89% Impervious, Inflow Depth > 3.52" for 25 Year Storm Event event
Inflow = 8.45 cfs @ 12.06 hrs, Volume= 0.553 af
Outflow = 8.45 cfs @ 12.06 hrs, Volume= 0.553 af, Atten= 0%, Lag= 0.0 min
Primary = 8.45 cfs @ 12.06 hrs, Volume= 0.553 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1.73' @ 12.06 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**18.0" Round Culvert** L= 58.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 0.00' / -0.58' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=8.16 cfs @ 12.06 hrs HW=1.67' (Free Discharge)
└**1=Culvert** (Inlet Controls 8.16 cfs @ 4.62 fps)

Pond 20P: Pipe Inlet -Watershed 6



Summary for Pond 21P: DMH7

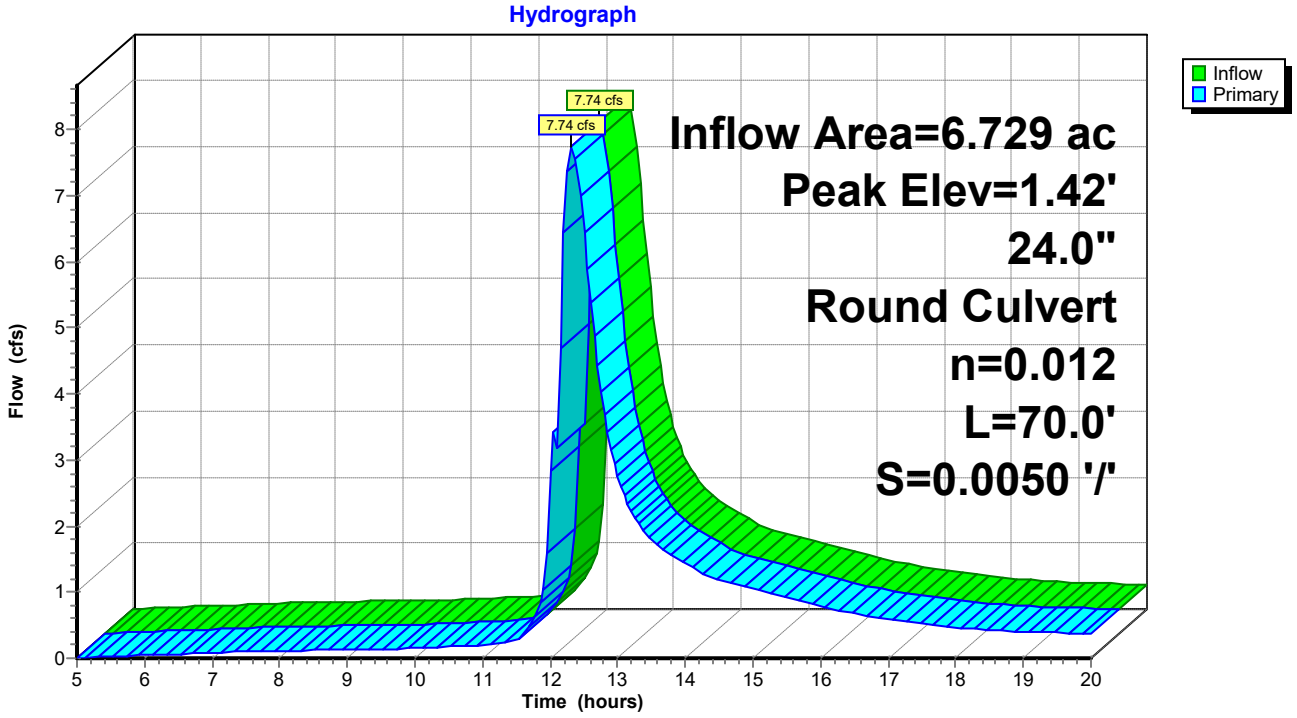
Inflow Area = 6.729 ac, 52.25% Impervious, Inflow Depth > 1.81" for 25 Year Storm Event event
Inflow = 7.74 cfs @ 12.32 hrs, Volume= 1.015 af
Outflow = 7.74 cfs @ 12.32 hrs, Volume= 1.015 af, Atten= 0%, Lag= 0.0 min
Primary = 7.74 cfs @ 12.32 hrs, Volume= 1.015 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1.42' @ 12.32 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**24.0" Round Culvert** L= 70.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 0.00' / -0.35' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=7.70 cfs @ 12.32 hrs HW=1.42' (Free Discharge)
└**1=Culvert** (Barrel Controls 7.70 cfs @ 4.53 fps)

Pond 21P: DMH7



Summary for Pond 25P: Pipe Inlet Watershed 9

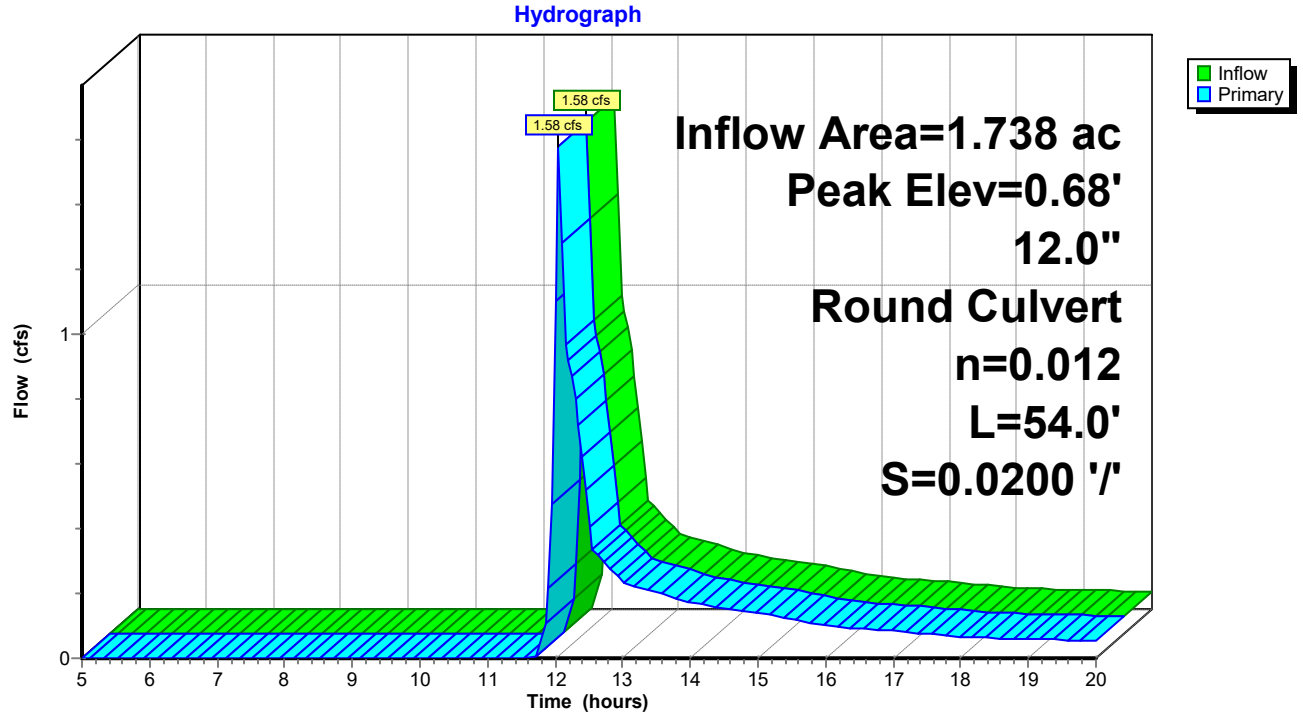
Inflow Area = 1.738 ac, 20.02% Impervious, Inflow Depth > 0.82" for 25 Year Storm Event event
Inflow = 1.58 cfs @ 12.06 hrs, Volume= 0.119 af
Outflow = 1.58 cfs @ 12.06 hrs, Volume= 0.119 af, Atten= 0%, Lag= 0.0 min
Primary = 1.58 cfs @ 12.06 hrs, Volume= 0.119 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 0.68' @ 12.06 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**12.0" Round Culvert** L= 54.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 0.00' / -1.08' S= 0.0200 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.54 cfs @ 12.06 hrs HW=0.67' (Free Discharge)
1=Culvert (Inlet Controls 1.54 cfs @ 2.78 fps)

Pond 25P: Pipe Inlet Watershed 9



Summary for Pond 26P: CB5

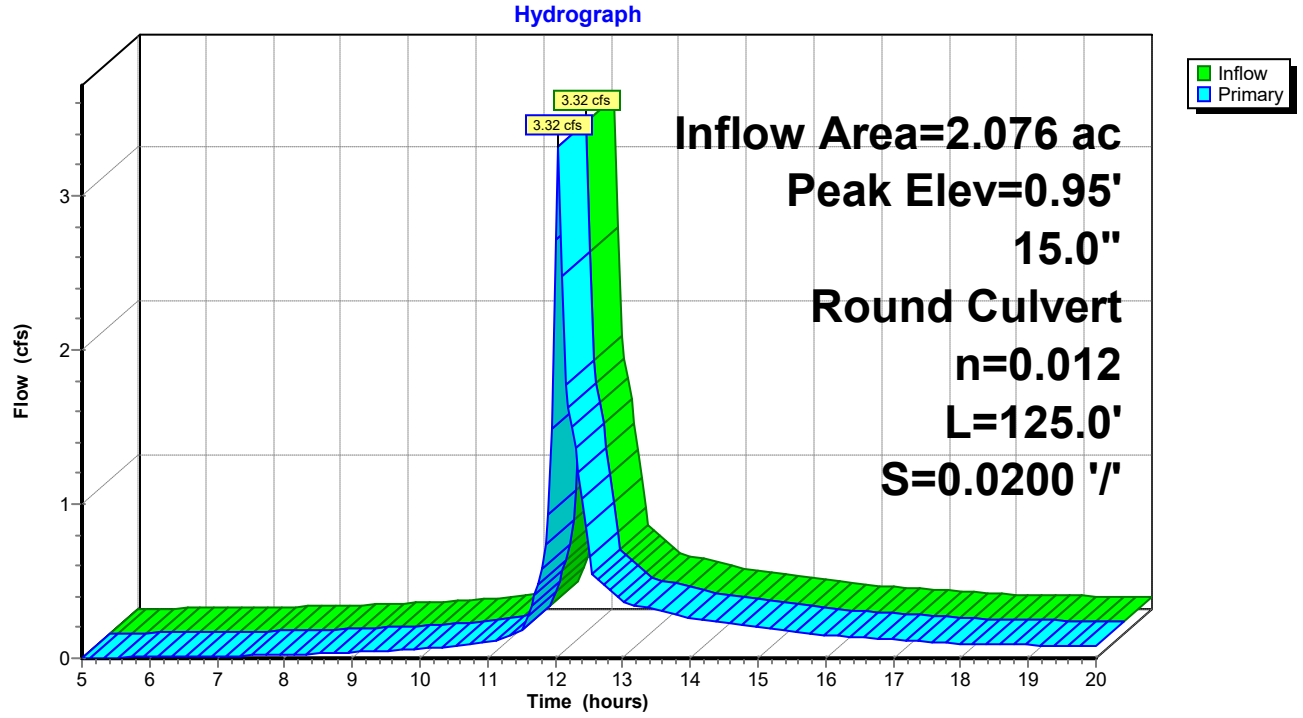
Inflow Area = 2.076 ac, 30.90% Impervious, Inflow Depth > 1.34" for 25 Year Storm Event event
Inflow = 3.32 cfs @ 12.05 hrs, Volume= 0.232 af
Outflow = 3.32 cfs @ 12.05 hrs, Volume= 0.232 af, Atten= 0%, Lag= 0.0 min
Primary = 3.32 cfs @ 12.05 hrs, Volume= 0.232 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 0.95' @ 12.05 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**15.0" Round Culvert** L= 125.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 0.00' / -2.50' S= 0.0200 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=3.26 cfs @ 12.05 hrs HW=0.94' (Free Discharge)
└**1=Culvert** (Inlet Controls 3.26 cfs @ 3.30 fps)

Pond 26P: CB5



Summary for Pond 27P: Pipe Inlet - Watershed 10

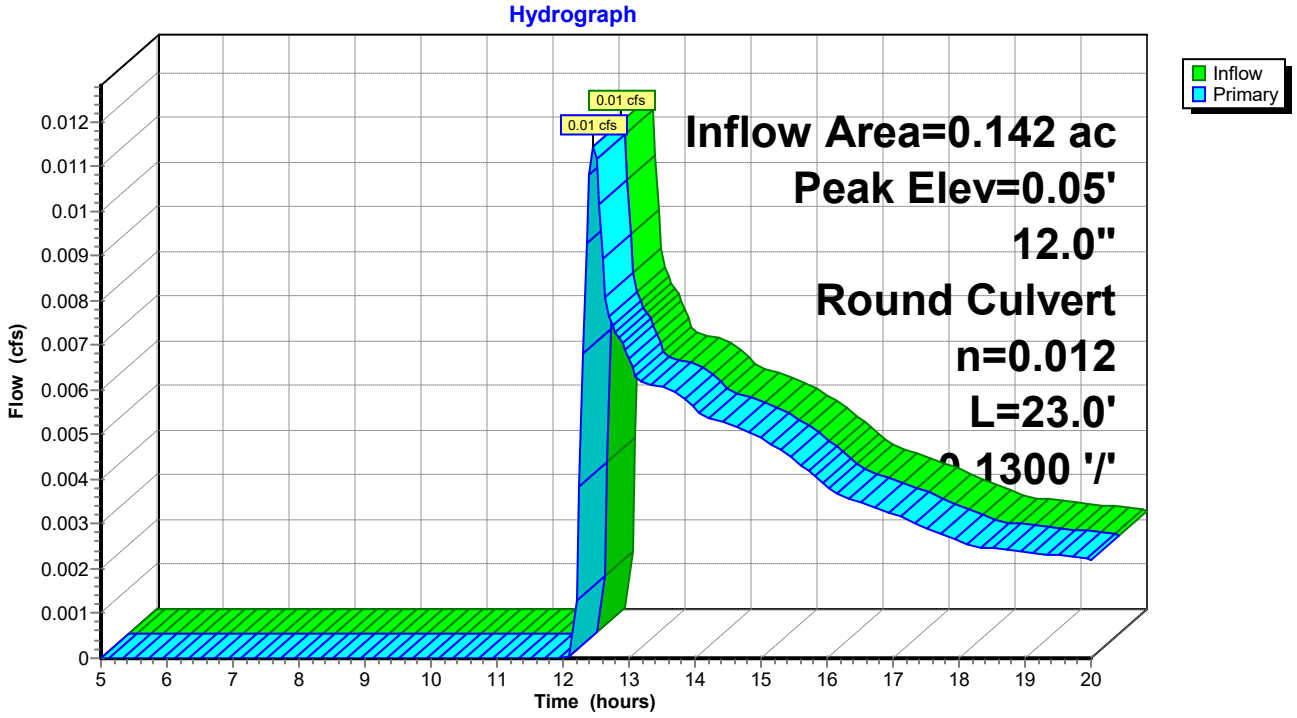
Inflow Area = 0.142 ac, 0.00% Impervious, Inflow Depth > 0.23" for 25 Year Storm Event event
Inflow = 0.01 cfs @ 12.46 hrs, Volume= 0.003 af
Outflow = 0.01 cfs @ 12.46 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min
Primary = 0.01 cfs @ 12.46 hrs, Volume= 0.003 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 0.05' @ 12.46 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**12.0" Round Culvert** L= 23.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 0.00' / -2.99' S= 0.1300 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.01 cfs @ 12.46 hrs HW=0.05' (Free Discharge)
└**1=Culvert** (Inlet Controls 0.01 cfs @ 0.76 fps)

Pond 27P: Pipe Inlet - Watershed 10



March 25, 2019

Mr. Mike Gotto
Stoneybrook Consultants
PO Box 459
Turner, Maine 04282

SJR ENGINEERING, INC.
STEVE@SJRENG.COM. 16 THURSTON DRIVE, MONMOUTH, ME. TEL: (207) 242-6248

Re: Water Quantity Analysis for John F Murphy Homes, Memorial Avenue, Lewiston, Maine

Dear Mike,

John F Murphy Homes is proposing to construct a 40,200 sf building plus ancillary parking areas along the front and side of the main school building. It is anticipated that this project will start construction during the Spring of this construction season (2019).

The site is undeveloped and was a former gravel pit years ago. The parcel is located at the end of Memorial Drive in Lewiston. It is located on tax map 169, lots 7 and 8. The parcel size is approximately 21.3 acres. Existing conditions have been surveyed by Jones Associates and augmented with topographic contours taken from the City of Lewiston GIS data base. The parcel has access to public sewer, water, and cable utilities. A 30" diameter sewer line runs through a portion of the parcel.

We have prepared plans and details in order to properly evaluate existing and proposed stormwater impacts from the development. The new grading plan will capture stormwater runoff from the proposed developed area and redirect flows to several stormwater soil filters within the parcel. Discharges from the ponds will then be directed to the Androscoggin River confluence with Stetson Brook. Stormwater flows will be attenuated by diverting and capturing stormwater flows from the new construction. No downstream impacts from stormwater flows are expected with this proposal.

Existing Site Conditions

The existing site being proposed for new construction is the location of a former gravel pit. The site has been used as a soil fill area in the past. There is significant tree growth within the parcel. A major sewer line traverses the property. This proposal will construct a 40,200 sf building with driveway entrance and associated paved parking surface capable of withstanding vehicle loads for construction. The existing watershed encompasses the entire property and drains to the confluence of Androscoggin River and Stetson Brook. Upslope watershed areas flow through the parcel. The Lidar topography of the existing site is shown at a two foot contour interval. The slope of the property varies from 1% along the flatter areas to 30% along the steeper slopes of the Androscoggin River/Stetson Brook riverbanks.

Soils mapping was taken from Androscoggin County Soil Survey medium intensity mapping. These soils have been overlaid onto the site development plan. Soils are identified (see attached soil map) as being Hinckley gravelly sandy loam, and Adams loamy sand (both hydro group "A" soils), and Ninigret fine sandy loam (hydro group "B" soil). The hydrological group rating is a rating system of the relative permeability of the soil with Group "A" being extremely permeable such as a beach sand, to Group "D" being slow draining such as a wetland area.

Stormwater Analysis

We have prepared a stormwater quantity analysis to size drainage piping from Memorial Avenue and the new school construction. No pre/post stormwater analysis is necessary as the project discharges into the Androscoggin River.

I have reviewed the drainage characteristics of the watershed area which includes proposed buildings, pavement, lawn areas, and woods, as well upslope watershed areas. We have also incorporated flow capacity into the stormwater model for future expansion of the parcel uses.

I have used the SCS TR-20 (HydroCad 10.0 computer model) method of computing stormwater runoff peak flow rates. This method accounts for

soil types, existing land uses, topography, vegetative cover, and proposed land use for the parcel to be developed. The proposed conditions were analyzed using data for Androscoggin County type III, 24 hour storm distribution (Northeast Regional Climate Center June 2014) with a design frequency of occurrence of 25 years. One day precipitation values of 5.4" have been used for this event. All supporting calculations and data are submitted with this report.

The existing and proposed site conditions were analyzed using information taken from existing/proposed topographic plan of the parcel to be developed. Impervious areas, lawns, meadows, and woods areas for each hydrological soil condition were measured within AutoCad in order to calculate a weighted curve number that typifies the drainage condition of the site.

The river side of the parcel from the new building to river has been isolated by berms/ditches to capture runoff from the developed site and diverted to a soil filter pond. The soil filter treats the first and last 18" of stormwater through the filter media for quality purposes. Flows greater than the captured 18" amount pass through the ponds control structure and emergency spillway and are spread overland onsite by means of a level spreader prior to being released into the Androscoggin River.

The upslope side of the development (parking lots, Memorial Avenue, and upslope offsite areas) are captured and diverted to two additional soil filters and/or passed through a new 24" diameter "clean" water drainage system that discharges to Stetson Brook confluence with the Androscoggin River. Upslope offsite water and Memorial Avenue is already considered "clean water and enter the stormdrain system directly. Development water needs to be treated and enters into 2 new soil filters located near the entrance to the project. The two soil filters act in a similar manner as the soil filter along the riverfront side of the project. The soil filter treats the first and last 18" of stormwater

through the filter media for quality purposes. Flows greater than the captured 18" amount pass through the ponds control structure and enter into the "clean" water stormdrain piping system.

Sizing for the stormdrain piping is based upon flows generated from the development for a 25 year storm event and includes flows from both onsite and offsite watersheds. The major portion of this stormdrain system has been sized as a 24" diameter pipe with a slope of ½% and a manning N factor of 0.013.

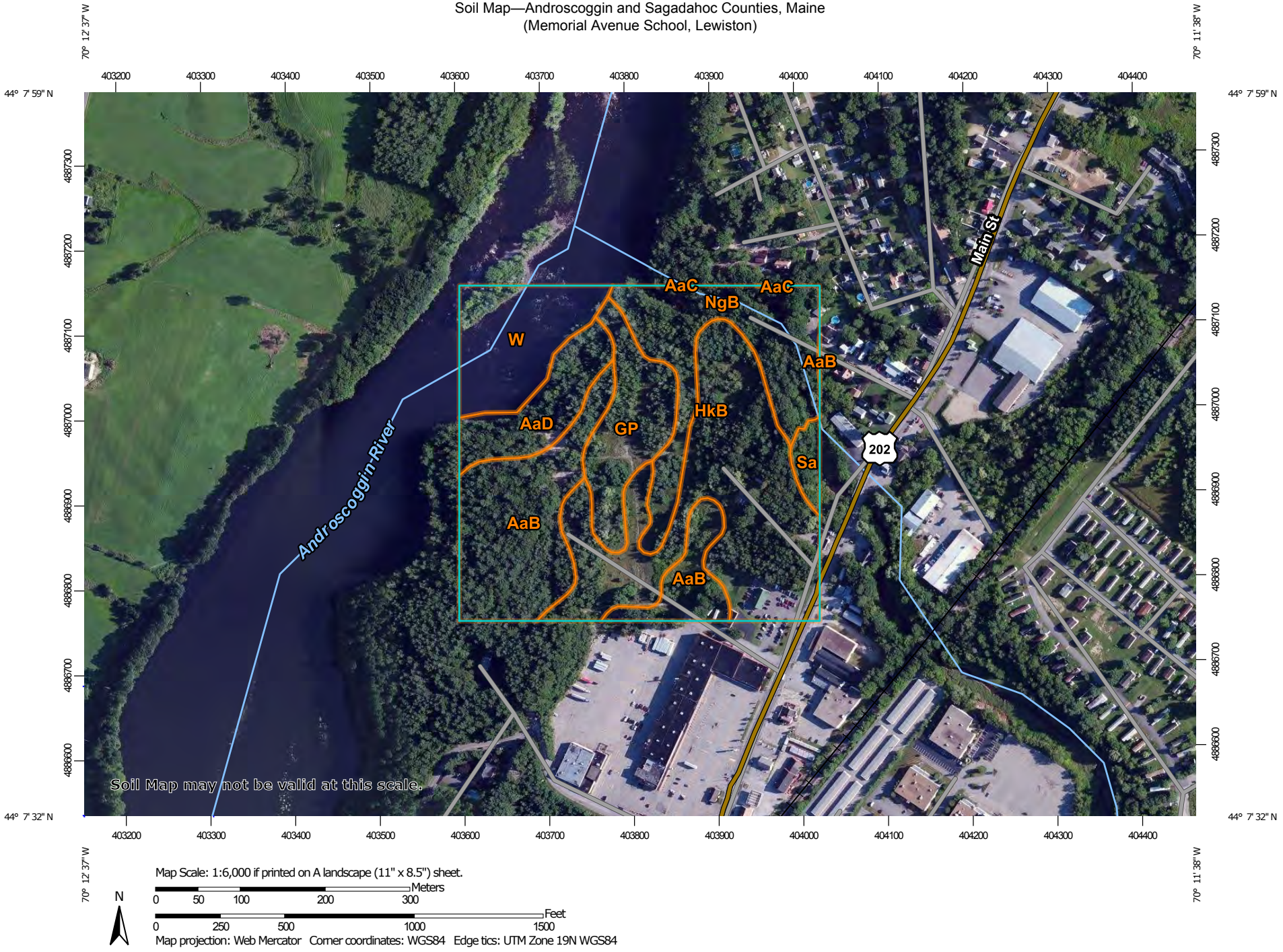
Please feel free to contact me if you have any questions concerning the calculations of stormwater from this project.

Sincerely yours,

Stephen Roberge

Stephen Roberge, PE
for SJR Engineering Inc.

Soil Map—Androscoggin and Sagadahoc Counties, Maine
(Memorial Avenue School, Lewiston)



Map Scale: 1:6,000 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 50 100 200 300

Feet
0 250 500 1000 1500

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

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

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

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

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

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

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

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

Soil Survey Area: Androscoggin and Sagadahoc Counties, Maine
Survey Area Data: Version 19, Sep 11, 2018

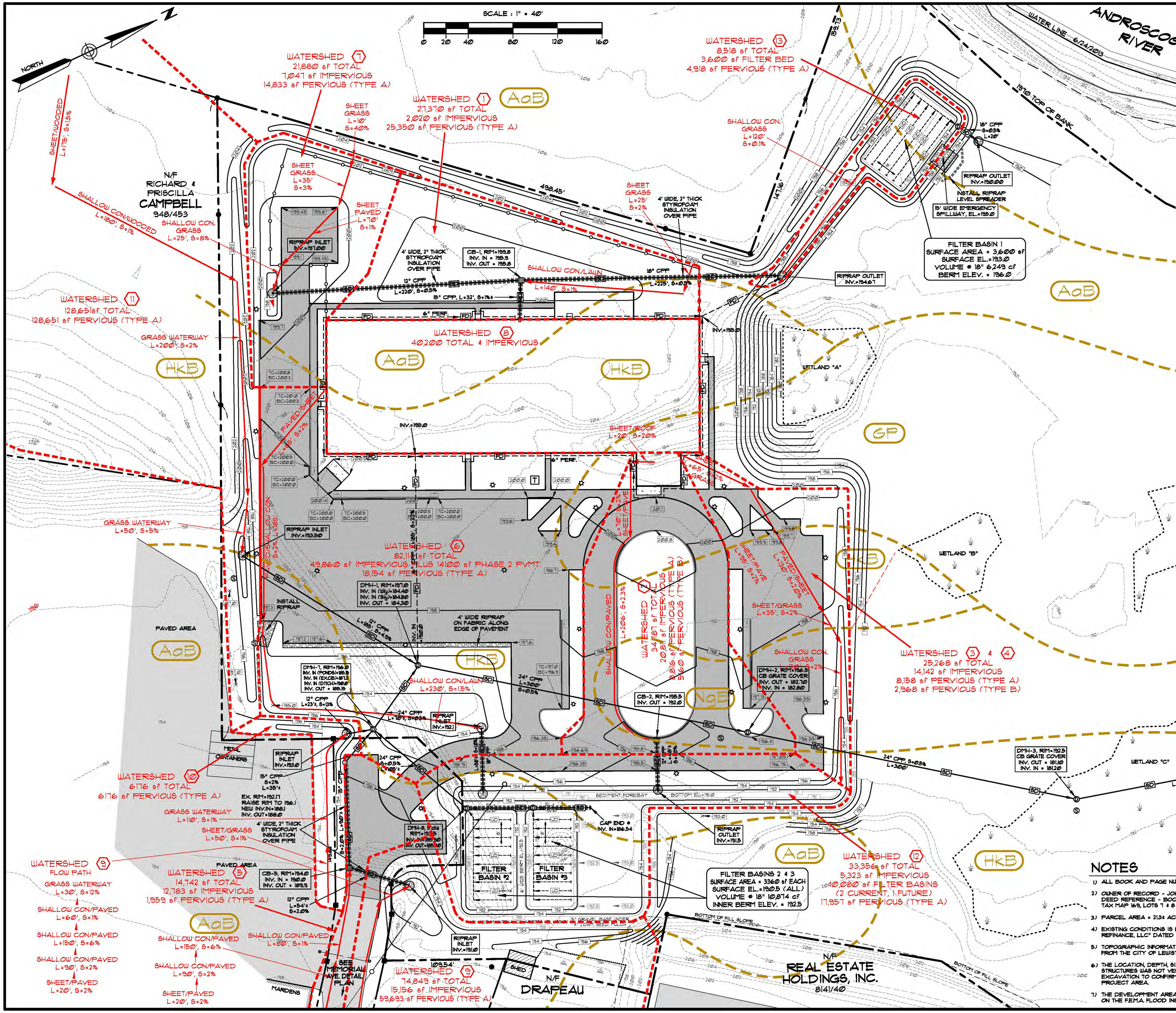
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

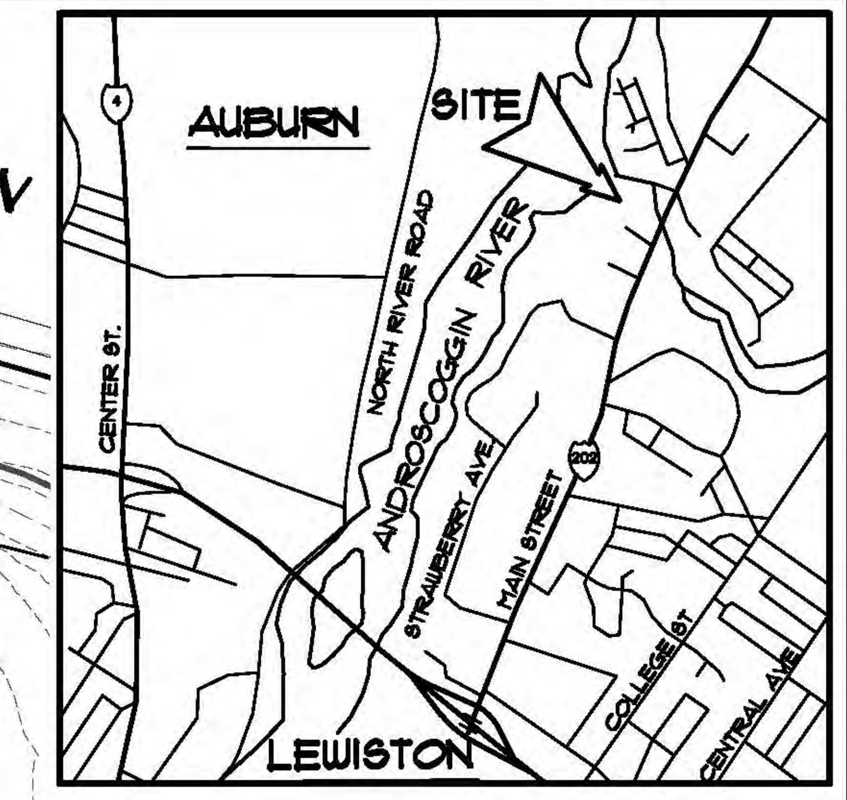
Date(s) aerial images were photographed: Apr 18, 2012—Nov 1, 2016

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AaB	Adams loamy sand, 0 to 8 percent slopes	9.0	21.5%
AaC	Adams loamy sand, 8 to 15 percent slopes	0.0	0.1%
AaD	Adams loamy sand, 15 to 30 percent slopes	3.2	7.6%
GP	Sand and gravel pits	4.1	9.7%
HkB	Hinckley gravelly sandy loam, 0 to 8 percent slopes	13.0	31.2%
NgB	Ninigret fine sandy loam, 0 to 8 percent slopes	7.1	16.9%
Sa	Saco silt loam	0.7	1.6%
W	Water	4.7	11.3%
Totals for Area of Interest		**41.7**	**100.0%**





LOCATION MAP

LEGEND

- BOUNDARY LINE (SUBJECT PARCEL)
- BOUNDARY LINE (OTHER)
- IRON PIPE OR ROD FOUND
- MONUMENT FOUND
- N/F — NOW OR FORMERLY
- 2178/189 — BOOK AND PAGE NUMBER
- TC — TOP OF CURB
- BC — BOTTOM OF CURB
- EXISTING CATCH BASIN
- EXISTING SEWER MANHOLE
- EXISTING SEWER LINE
- EXISTING CONTOUR
- NEW CONTOUR
- NEW PLAYGROUND FENCE
- NEW DRAINAGE MANHOLE
- NEW CATCH BASIN
- NEW STORM DRAIN LINE
- NEW FILTER BASIN UNDERDRAIN LINE
- INSTALL SILT FENCE
- EXISTING TREE LINE (TO REMAIN)
- NEW TREE LINE
- NEW BUILDING
- EXISTING PAVEMENT
- NEW PAVEMENT
- WETLAND AREA
- NEW RIPRAP (D = 8")

SOILS LEGEND

- AoB — ADAMS LOAMY SAND, 0-8% SLOPE (HYDROGEOLOGIC SOIL TYPE "A")
- GP — SAND AND GRAVEL PITS (HYDROGEOLOGIC SOIL TYPE "A")
- HkB — HINKLEY GRAVELLY SANDY LOAM 0-8% SLOPES (SOIL TYPE "A")
- NgB — NINEGRET FINE SANDY LOAM 0-8% SLOPES (SOIL TYPE "B")

NOTES

1) ALL BOOK AND PAGE NUMBERS REFER TO THE ANDROSCOGGIN COUNTRY REGISTRY OF DEEDS.

2) OWNER OF RECORD - JOHN F. MURPHY HOMES, INC.
DEED REFERENCE - BOOK 8844, PAGE 243
TAX MAP 169, LOTS 7 & 8

3) PARCEL AREA = 21.3± ACRES

4) EXISTING CONDITIONS IS BASED ON A PLAN ENTITLED "BOUNDARY SURVEY - ATLANTIC REFINANCE, LLC" DATED DECEMBER 10, 2013, PREPARED BY JONES ASSOCIATES, INC.

5) TOPOGRAPHIC INFORMATION IS BASED ON A FIELD SURVEY AND 2' GIS CONTOURS OBTAINED FROM THE CITY OF LEWISTON.

6) THE LOCATION, DEPTH, SIZE & EXISTENCE OF ALL UNDERGROUND UTILITY LINES, TANKS AND/OR STRUCTURES WAS NOT VERIFIED. CONTRACTOR SHALL CONTACT DIGSAFE/ON-TARGET PRIOR TO EXCAVATION TO CONFIRM THE LOCATION OF ALL PUBLIC & PRIVATE UTILITIES WITHIN THE PROJECT AREA.

7) THE DEVELOPMENT AREA IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON THE F.E.M.A. FLOOD INSURANCE RATE MAP, PANEL #23001C 0214E, DATED JULY 8, 2013.

STATE OF MAINE — STEPHEN J. ROBERGE — #4835 — LICENSED PROFESSIONAL ENGINEER

FOR APPROVALS ONLY

REV:	DATE:	CHANGES:

DO NOT MODIFY PLAN WITHOUT WRITTEN PERMISSION FROM SJR ENG, INC.

Stoneybrook Consultants, Inc.
P.O. Box 459 - Turner, Maine 04282
(207) 224-0252

SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04259
(207) 242-6248 tel
steve@sjreng.com
SJR ENGINEERING

WATERSHED PLAN 1
MEMORIAL AVENUE SCHOOL
LEWISTON, MAINE
PREPARED FOR
JIG INVESTMENTS, LLC
P.O. BOX 1913 - LEWISTON, ME 04241-1913

DATE	PROJECT
3-3-19	2019-02
DRAWN BY	SCALE
PIM	1" = 40'

SHEET WS-1

John F Murphy Homes, Lewiston

Best Management Practices and Maintenance Plan

Date: March 2019

John F Murphy Homes maintenance staff will be responsible for maintenance and operations of the stormwater system.

INSPECTIONS – During Construction and Post Construction

Areas of construction that will require maintenance of the stormwater system include the following:

- **Detention/Retention/Infiltration Facilities**

  Embankment inspection and maintenance

  Spillway maintenance

  Sediment removal and disposal

- **Ditches, Swales, or other open stormwater channels**

  Embankment inspection and maintenance

  Channel inspection

  Sediment removal and disposal

- **Culverts, catch basins, stormwater control structures**

  Embankment inspection and maintenance

  Inlet and Outlet inspection

  Debris removal and disposal

- **Buffers**

  Road Embankment inspection and maintenance

  Inlet and Outlet inspection

  Debris removal and disposal

The Owners representative will inspect the soil filter pond, swales, channels, and stormwater structures to determine if a soil blockage or impaired capacity to pass flow exists. Inspections will be performed on a monthly basis from March to November, and quarterly during the remainder of the year. A record of inspections and maintenance or corrective measures shall be kept by the owner.

MAINTENANCE AND CLEANING

The owner will regularly inspect for sediment accumulation, obstructions, debris, and other potential causes for operational difficulty in the conveyance and detention system. Immediate action shall be taken to remedy detrimental obstructions.

The owner will regularly inspect the infiltration rate of the soil filter pond after every major storm event in the first few months to ensure proper function. Thereafter, the ponds should be inspected bi-annually to ensure that they draining within 24 hours. Sediment shall be removed from the pond when sediment reduces the pond volume by 25% and/or the pond does not infiltrate the water within 24 hours. The removed sediment shall be hauled off site and disposed in an approved location. Mowing of the pond area shall be limited to 2 times per year to maintain grass heights to less than 12". Weeding and pruning of growth within the pond and pond back slopes will be completed as necessary. The pond outlet shall be inspected for erosion and make repairs as needed annually.

A mandatory scheduled maintenance will be performed every four weeks for a period of one hundred and twenty (120) days and will begin after satisfactory completion and acceptance of landscape construction. Ongoing maintenance will be required as necessary.

All sand, salt, etc. accumulated when sweeping the paved parking and display areas, shall be trucked off-site for disposal.

RECORD KEEPING

The owner will maintain inspection records, with recordings of condition of basins, and pipes and annotation of substantial precipitation events or mitigating circumstances in the intervening time for trending to develop the anticipated preventive maintenance schedule.

MAINTENANCE CONTRACT

Should proprietary devices be utilized, a maintenance contract will be established with the manufacturer for regular maintenance and cleaning of the device.

RE-CERTIFICATION

The owner shall submit a certification to the City of Lewiston within three months of the expiration of each five year interval from the date of issuance of the permit. The owner shall submit the maintenance log which identifies inspections completed, erosion problems found, when corrective action was taken, and who completed the work. The certification will include a statement indicating that the stormwater system is working and is being maintained in working condition in accordance with the permit requirements.

Maintenance Log Sheet

John F Murphy Homes, Lewiston, Maine

Inspector Name	Maintenance Task Completed	Date

Housekeeping

These performance standards apply to all projects.

1. Spill prevention. Controls must be used to prevent pollutants from being discharged from materials on site, including storage practices to minimize exposure of the materials to stormwater, and appropriate spill prevention, containment, and response planning and implementation.

2. Groundwater protection. During construction, liquid petroleum products and other hazardous materials with the potential to contaminate groundwater may not be stored or handled in areas of the site draining to an infiltration area. An "infiltration area" is any area of the site that by design or as a result of soils, topography and other relevant factors accumulates runoff that infiltrates into the soil. Dikes, berms, sumps, and other forms of secondary containment that prevent discharge to groundwater may be used to isolate portions of the site for the purposes of storage and handling of these materials.

NOTE: Lack of appropriate pollutant removal best management practices (BMPs) may result in violations of the groundwater quality standard established by 38 M.R.S.A. §465-C(1).

3. Fugitive sediment and dust. Actions must be taken to ensure that activities do not result in noticeable erosion of soils or fugitive dust emissions during or after construction. Oil may not be used for dust control.

NOTE: An example of the use of BMPs to control fugitive sediment and dust is as follows: Operations during wet months that experience tracking of mud off the site onto public roads should provide for sweeping of road areas at least once a week and prior to significant storm events. Where chronic mud tracking occurs, a stabilized construction entrance should be provided. Operations during dry months, that experience fugitive dust problems, should wet down the access roads once a week or more frequently as needed.

NOTE: Dewatering a stream without a permit from the department violates state water quality standards and the Natural Resources Protection Act.

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

NOTE: To prevent these materials from becoming a source of pollutants, construction and post-construction activities related to a project may be required to comply with applicable provision of rules related to solid, universal, and hazardous waste, including, but not limited to, the Maine solid waste and hazardous waste management rules; Maine hazardous waste management rules; Maine oil conveyance and storage rules; and Maine pesticide requirements.

5. Trench or foundation de-watering. Trench de-watering is the removal of water from trenches, foundations, coffer dams, ponds, and other areas within the construction area that retain water after excavation. In most cases the collected water is heavily silted and hinders correct and safe construction practices. The collected water must be removed from the ponded area, either through gravity or pumping, and must be spread through natural wooded buffers or removed to areas that are specifically designed to collect the maximum amount of sediment possible, like a cofferdam sedimentation basin (or pumping water through a sediment dirtbag). Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved by the department.

NOTE: For guidance on de-watering controls, consult the Maine Erosion and Sediment Control BMPs", Maine Department of Environmental Protection."

6. Non-stormwater discharges. Identify and prevent contamination by non-stormwater discharges.

7. Additional requirements. Additional requirements may be applied on a site-specific basis.

Maintenance Plan for Ponds & Best Management Practices

Site Inspection & Maintenance During Construction: Weekly inspections, as well as routine inspections following rainfalls, shall be conducted by the General Site Contractor of all temporary and permanent erosion control devices until final acceptance of the project (90% grass catch). Necessary repairs shall be made to correct undermining or deterioration. Final acceptance shall include a site inspection to verify the stability of all disturbed areas and slopes. Until final inspection, all erosion and sedimentation control measures shall immediately be cleaned, and repaired by the General Contractor as required. Disposal of all temporary erosion control devices shall be the responsibility of the General Contractor.

It is recommended that the Owner hire the services of the design engineer, or other qualified individual, to provide compliance inspections (during active construction) relative to implementation of the Stormwater and Erosion Control Plans. Such inspections should be limited to once a week or as necessary and be reportable to the Owner, and City.

Maintenance Agreement: Short-term sedimentation maintenance shall be the responsibility of the Contractor to clean out all swales, structures, and soil filter ponds prior to turning project over to the Owners. After project turnover, the Owner shall be the responsible party for inspecting and maintaining a pond and proper functioning of all stormwater conveyance practices and measures. The Owner may assign an environmental manager to carry out specific tasks identified below.

Soil Filter, Infiltration, and Wet Ponds

Clearing Inlets and Outlets of Ponds (where applicable): The inlet and outlet of a pond shall be checked periodically to ensure that flow structures are not blocked by debris. All ditches and pipes connecting ponds in series shall be checked for debris that may obstruct flow. Inspections shall be conducted monthly during wet weather conditions from March to November.

Basin Inspections: Ponds shall be inspected on an annual basis for erosion, destabilization of side slopes, embankment settling, and other signs of structural failure. Brief inspections shall be conducted following major storms. Corrective action shall be taken immediately upon identification of problem area. Records shall be kept of all maintenance operations at jobsite to help plan future work and identify problem areas.

Maintenance Dredging: Wet ponds typically lose 1% of their volume annually due to sediment accumulation. Dredging is required when accumulated volume loss reaches 15% or approximately every 15-20 years.

Drainage Area Inspections: The owners' environmental manager shall inspect the basin's drainage area semi-annually for eroding soil and other sediment sources. Repair eroding areas using appropriate erosion control BMP's immediately. Control sediment sources, such as stockpiles of winter sand, by removing them from the basin's drainage area or surrounding them with sediment control BMP's.

Mowing: A basin with a turf lining shall have its side-slopes and top of berm mowed at least twice a year to prevent woody growth. Clippings shall be removed to minimize the amount of organic material accumulating in the basin.

Sediment Removal: Remove accumulated debris and sediments from the sediment forebays, inlet plunge pools, and pre-treatment BMP's at least annually.

Snow Storage: The ponds are not to be used for snow storage. Snow storage shall be sited so that snowmelt flows to a pre-treatment BMP before reaching the infiltration basin.

Pedestrian Access: Limit access to ponds to passive recreational use.

Vehicle Access: Prohibit vehicle access to all ponds, except that authorized for maintenance.

Structures and Other Measures

Sweeping: Paved parking lots and streets shall be mechanically swept twice per year. The first shall take place in the Fall. The second sweeping shall take place after winter sanding operations terminate, prior to May 1.

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

Vegetated Ditches: Vegetative should be mowed at least monthly during the growing season to a height of not less than 3 inches. Larger brush or trees must not be allowed to become established in the channel. Unless finely mulched, clippings should be

removed to minimize the amount of organic material accumulating in the swales. Any areas where the vegetation fails will be subject to erosion and should be repaired and revegetated.

Stone Lined Channels: Where stone is displaced from constructed riprap areas, it should be replaced and chinked to assure stability. With time, riprap may need to be added. Vegetation growing through riprap should be removed on a yearly schedule.

Culverts: If sediment in culverts or piped drainage systems exceeds 20% of the diameter of the pipe, it should be removed. This may be accomplished by mechanical means or hydraulic flushing. Care should be taken to prevent the release of the sediments into the downstream receiving areas. All. pipes should be inspected on an annual basis.

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

Level Spreaders & Ditch Turnout Sediment Traps: Inspect and remove debris. Inspect for flow bypass or undermining. Repair any channelization if occurring and remove sediment build-up to assure potential storage volume and sheet flow characteristics of the discharge lip. Perform inspection on a semi-annual basis at a minimum. All work should be performed from the up gradient side, do not disturbed the down gradient receiving area or discharge edge.

APPENDIX D. INSPECTION CHECKLIST, FREQUENCY AND REPORTING FORM

Anyone who conducts or directs an activity that involves exposing, filling or displacing soil or other earthen materials should take appropriate measures to prevent erosion and the loss of sediment beyond the project site or into a sensitive resource. Erosion and sediment control measures should be in place before the activity begins and should remain functional until the site is permanently stabilized. All measures should remain effective until all areas are permanently stabilized.

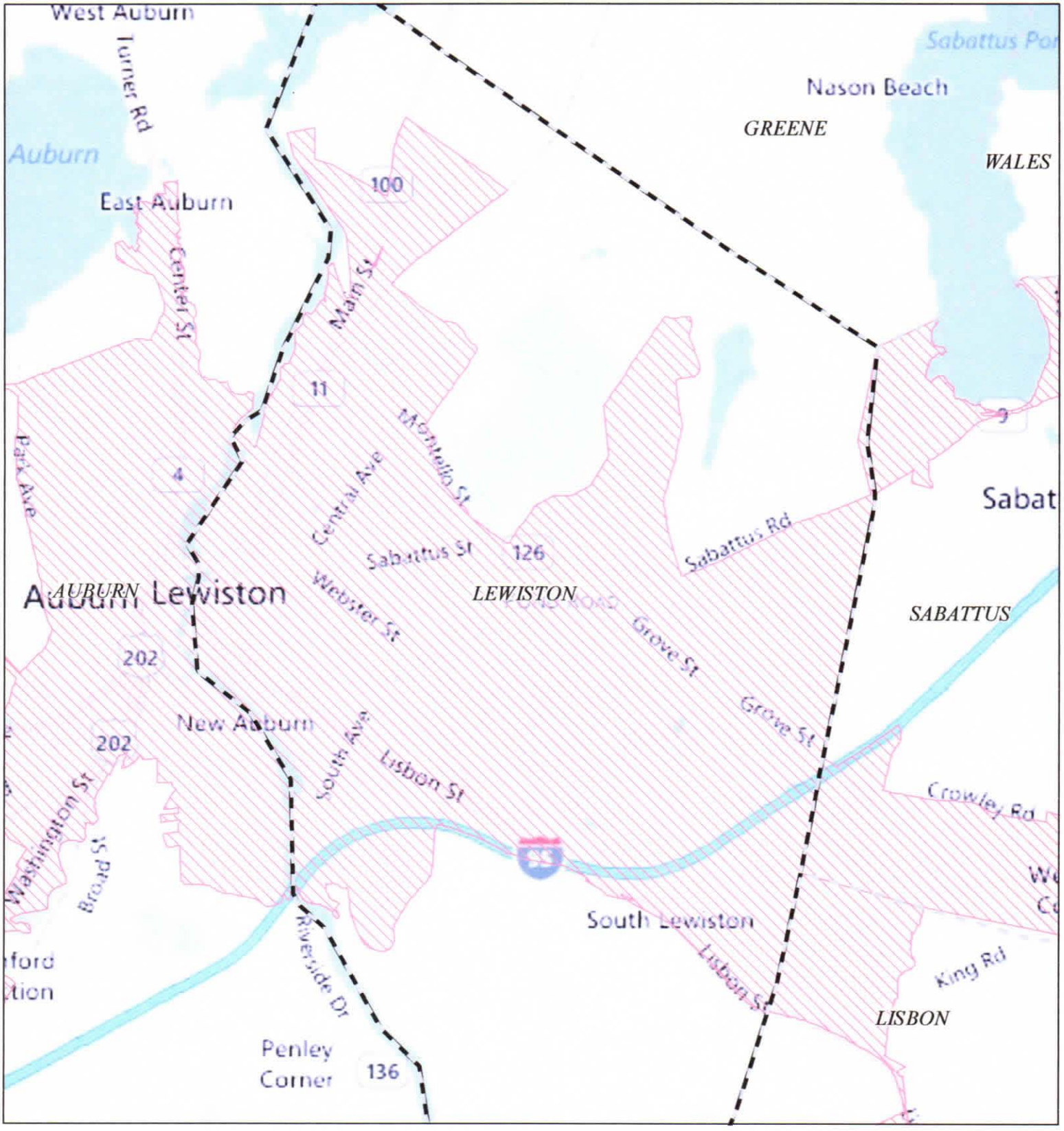
Any disturbed area should be regularly inspected until the site is fully stabilized with either 90% grass cover or a permanent impervious surface such as pavement. A person who has the knowledge of erosion and sediment control measures and of stormwater management practices should inspect the site at a minimum once a week, and before and after a storm event. Any failing measure should be repaired or modified to adequately stabilize the site prior to the next storm event or no later than 7 calendar days.

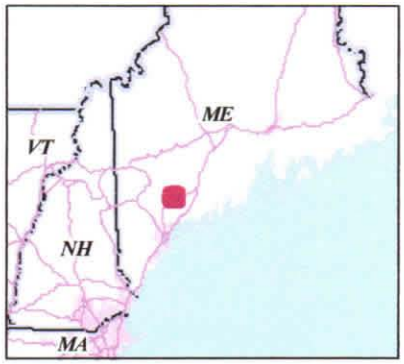
The Inspection Frequency table found in in this appendix may be used and adapted as a guide for inspecting each specific practice. And the form may be used to record the inspection, its outcome and all needed maintenance tasks.

EROSION AND SEDIMENT CONTROL MEASURES AND ACTIVITY	INSPECTION FREQUENCY		
	Weekly	Before and After a Storm	After Construction
SEDIMENT BARRIERS			
Sediment barriers are installed prior to soil disturbances	X	X	
Silt fences are keyed in and tight	X	X	
Barriers are repaired and replaced as necessary	X	X	
Barriers are removed when the site is stabilized - Silt fence should be cut at the ground surface			X
TEMPORARY STABILIZATION			
Areas are stabilized if idle for 14 days or more	X	X	
Daily stabilization within 100 ft of a natural resource	X	X	
MULCH			
Seed and mulch within 7 days of final grading. Ground is not visible	X	X	
Erosion control mix is 4-6 inch thick	X	X	
Erosion control blankets or hay mulch are anchored	X	X	
VEGETATION			
Vegetation provides 90% soil cover	X		X
Loam or soil amendment were provided	X		X
New seeded areas are mulched and protected from vehicle, foot traffic and runoff	X	X	X
Areas that will remain unworked for more than 1 year are vegetated with grass	X		
SLOPES AND EMBANKMENTS			
Final graded slopes and embankments are stabilized	X	X	X
Diversions are provided for areas with rill erosion	X	X	X
Areas steeper than 2:1 are riprapped	X		
Stones are angular, durable and various in size	X		
Riprap is underlain with a gravel layer or filter fabric	X		
STORMWATER CHANNELS AND CULVERTS			
Ditches and swales are permanently stabilized–channels that will be riprapped have been over-excavated	X	X	X
Ditches are clear of obstructions, accumulated sediments or debris	X	X	X
Ditch lining/bottoms are free of erosion	X	X	X
Check dams are spaced correctly to slow flow velocity	X		
Underlying filter fabric or gravel is not visible	X	X	X
Culvert aprons and plunge pools are sized for expected flows volume and velocity	X		
Stones are angular, durable and various in size	X		
Culverts are sized to avoid upgradient flooding	X	X	
Culvert protection extends to the maximum flow elevation within the ditch	X	X	X
Culvert is embedded, not hanging	X	X	X

CATCH BASIN SYSTEMS			
Catch basins are built properly	X		
Accumulated sediments and debris are removed from sump, grate and collection area		X	X
Floating debris and floating oils are removed from trap			X
ROADWAYS AND PARKING SURFACES			
The gravel pad at the construction entrance is clear from sediments	X	X	
Roads are crowned		X	X
Cross drainage (culvert) is provided	X		
False ditches (from winter sand) are graded		X	X
BUFFERS			
Buffers are free of erosion or concentrated flows		X	X
The downgradient of spreaders and turnouts is stable		X	X
Level spreaders are on the contour			X
The number of spreaders and ditch turnouts is adequate for flow distribution		X	X
Any sediment accumulation is removed from within spreader or turnouts		X	X
STORMWATER BASINS AND TRAPS			
Embankments are free of settlement, slope erosion, internal piping, and downstream swamping		X	X
All flow control structure or orifices are operational and clear of debris or sediments		X	X
Any pre-treatment structure that collects sediment or hydrocarbons is clean or maintained		X	X
Vegetated filters and infiltration basins have adequate grass growth			X
Any impoundment or forebay is free of sediment		X	X
WINTER CONSTRUCTION (November 1st-April15th)			
Final graded areas are mulched daily at twice the normal rate with hay, and anchor (not on snow)	Daily		
A double row of sediment barrier is provided for all areas within 100 ft of a sensitive resource (use erosion control mix on frozen ground)	Daily		
Newly constructed ditches are riprapped	Daily		
Slopes greater than 8% are covered with an erosion control blanket or a 4-inch layer of erosion control mix	Daily		
HOUSEKEEPING PUNCH LIST			
All disturbed areas are permanently stabilized, and plantings are established (grass seeds have germinated with 90% vegetative cover)			X
All trash, sediments, debris or any solid waste have been removed from stormwater channels, catch basins, detention structures, discharge points, etc.			X
All ESC devices have been removed: (silt fence and posts, diversions and sediment structures, etc.)			X
All deliverables (certifications, survey information, as-built plans, reports, notice of termination (NOT), etc.) in accordance with all permit requirements have been submitted to town, Maine DEP, association, owner, etc.			X

CONSTRUCTION INSPECTION FORM FOR EROSION AND SEDIMENT CONTROL					
General Information:					
Site Name:	Date:		Inspected by:		
Owner:					
Retained 3PI:	Last Rain Date:			Amount:	
Reason for Inspection:	Weekly	Winter	Final	Rain Event	Complaint
Description of disturbed area:					
Photos:					
	YES/NO/NA	**COMMENTS**			
1. Is an Erosion and Sediment Control Plan available?					
ESC plan on-site and followed					
Other:					
2. Are all erosion control practices installed properly, maintained and functioning?					
Disturbed areas stable					
Concentrated flow inlet/outlet protection					
All areas at final grade					
Disturbed dormant areas stabilized					
Access roads and parking					
Hillsides and stockpiles					
Other:					
3. Are all sedimentation control practices installed properly, maintained and functioning?					
Construction entrance					
Sedimentation basins/traps/diversions					
Perimeter controls					
Check dams					
Other:					
4. Is maintenance of ESC measures, construction activities and housekeeping kept-up?					
Sedimentation/erosion in ditches					
Tracked Sediment or dust at exits					
Hazardous material storage and spill control practices					
Waste management (concrete, hazardous material, etc.)					
Other:					
5. Violation, Corrective Actions, Recommendations					
Sediment discharged from site?					
Corrective action required?					
Site compliant with all permits?					
Notice of violation or stop work order issued?					
Comments/Corrective Actions (complete corrective actions before the next rain event and within 7 day)					





NPDES Phase II Stormwater Program
Automatically Designated MS4 Areas

Lewiston ME

Regulated Area (2000 + 2010 Urbanized Area)

0 1 2 3 4 Kilometers

0 1 2 3 4 Miles

Town Population: **36576**

Regulated Population: **33768**

(Populations estimated from 2010 Census)

EPA

Urbanized Areas, Town Boundaries:
US Census (2000, 2010)
Base map © 2010 Microsoft Corporation
and its data suppliers

US EPA Region 1 GIS Center Map #8824, 11/19/2012

STORMWATER REPORT

MEMORIAL AVENUE SCHOOL
5 MEMORIAL AVENUE
LEWISTON, MAINE

MS4 Area

Stormwater discharge from the new catch basin will enter into the City's MS4 Area. A qualified Third Party Inspector will be engaged by the Applicant's representative:

Andrew Cowan
John F. Murphy Homes, Inc
800 Center Street
Auburn, Maine 04210
(207) 782-2726

at least annually to inspect the three catch basins and other stormwater related features in accordance with the approved Post-Construction Stormwater Management Plan (PCSMP). If the catch basins or other stormwater related features require maintenance to function as intended, the Qualified Third Party shall note the deficiencies and the remedies. The Applicant's representative shall take the required actions to address any deficiencies. The Qualified Third Party Inspector shall provide, on or by May 31 of each year, a completed and signed City of Lewiston Annual Stormwater Management Facilities Certification (SMF) Form, certifying that the SMF have been inspected, and that they are adequately maintained and functioning as intended by the PCSMP, or that they require maintenance or repair, in order to function as intended by the PCSMP. The Qualified Third Party shall provide a record of the required maintenance or deficiency and corrective actions taken.

A Post Construction Stormwater Management Performance guarantee will be executed and filed with the Registry of Deeds.

POST CONSTRUCTION STORMWATER MANAGEMENT PERFORMANCE GUARANTEE

John F. Murphy Homes, Inc., Auburn, Maine

This performance guarantee is provided by John F. Murphy Homes, Inc., a corporation located at 800 Center Street, in Auburn, Maine 04210. John F. Murphy Homes, Inc., its successors, heirs, and assigns hereby acknowledge their legal obligation to repair, maintain, and replace the Stormwater Management Facilities at the Memorial Avenue School project on the Memorial Avenue property in Lewiston, Maine in accordance with the plan set and notes dated March 9, 2019. This performance guarantee shall be valid until John f. Murphy Homes, Inc., has legally relinquished ownership of the subject properties.

The City of Lewiston shall have the ability to establish a special assessment, district, or other means upon the parties responsible for the post construction stormwater management plan to ensure resources are available to perform the repairs, maintenance, and replacement of the Stormwater Management Facilities.

Stormwater management items at the subject property include new stormwater drainage piping and catch basins. The estimated costs of repair and replacement vary widely depending on the extent of repair or replacement necessary. Annual repairs could range between $1,000 and $20,000.

This document shall be recorded in the Androscoggin Registry of Deeds and be included in the deeds for each subdivision property.

_____

John F. Murphy Homes, Inc.

_____

Date

_____

Witness

CONSTRUCTION

EROSION AND SEDIMENTATION CONTROL MAINTENANCE LOG

Inspections to be performed once per week, before and after storms, and prior to completing permanent stabilization.

ITEM	DEFECTS	DESCRIPTION OF DEFECTS AND REPAIRS/MAINTENANCE	
Vehicle Entrances and Exits	Yes No		
Disturbed Areas	Yes No		
Impervious Areas	Yes No		
Erosion and Sedimentation Control	Yes No		
Stormwater System	Yes No		
DATE:	**BY:**	**COMPANY:**	**QUALS/POSITION:**

REMARKS:

Disturbed Areas: Inspect mulched and temporary seed areas for rill erosion. Add additional mulch if less than 90% coverage is observed. Inspect nets after rain events for dislocation or failure.

Impervious Areas: Sweep pavement as necessary to keep dust levels to a minimum. Accumulated sediment shall be removed and stored or disposed of appropriately.

Erosion and Sedimentation Control: Inspect silt fence for erosion and/or accumulated sedimentation. Replace silt fence where evidence of undercutting or impounding of water behind the fence occur. Replace fabric that has decomposed. Remove sediment deposits behind silt fence when deposits reach ½ the height of the fence.

Vehicle Entrances and Exits: Check for mudding and clogging of stone and replace as necessary. Sweep pavement at exits where mud has been tracked onto the travelled way.

Stormwater System: Check flow paths for runoff flows to insure paths remain unimpeded and are not eroding. Remove impediments and repair eroding areas with appropriate materials (riprap, geotech fabric, etc.)

EROSION AND SEDIMENTATION CONTROL MAINTENANCE LOG

Inspections to be performed twice per year, once in the spring and once in the fall and after each significant (>3") rainfall.

ITEM	DEFECTS	DESCRIPTION OF DEFECTS AND REPAIRS/MAINTENANCE	
Ditches	Yes / No		
Culverts	Yes / No		
Paved Areas	Yes / No		
Catch Basins	Yes / No		
DATE:	**BY:**	**COMPANY:**	**QUALS/POSITION:**

Ditches and Culverts: Inspect for debris that may impede flow. Control woody vegetation with mowing. Repair any erosion of ditch linings and culvert inlets and outlets.

Paved Areas: Remove accumulated winter sand and debris from all pavement areas annually. Accumulated sediment shall be removed and stored or disposed of appropriately.

Catch Basins: Remove and legally dispose of accumulated debris and sediment from the bottom of the structure, inlet grates, inflow channels to the basin, and pipes between basins.

CITY OF LEWISTON

Annual Stormwater Management Facilities Certification

(to be sent to Planning and Code Enforcement and Public Works as required by Appendix A Zoning and Land Use Code, Article XIII. Development Review and Standards, Section 15. Post-construction stormwater management standards)

I, _____ (print or type name), certify the following:

1. I am making this Annual Stormwater Management Facilities Certification for the following property:
_____ (print or type name of subdivision, condominium or other development) located at
_____ (print or type address), (the "Property");

2. The owner, operator, tenant, lessee or homeowners' association of the Property is: _____ (name(s) of owner, operator, tenant, lessee, homeowners' association or other party having control over the Property);

3. I am a Qualified Third-Party Inspector (as defined by the City of Lewiston Post-Construction Stormwater Management Ordinance, and) hired by the owner, operator, tenant, lessee or homeowners' association of the Property (circle one);

5. On _____, 20__, I inspected the Stormwater Management Facilities, including but not limited to parking areas, catch basins, drainage swales, detention basins and ponds, pipes and related structures required by the approved Post-Construction Stormwater Management Plan for the Property;

6. At the time of my inspection of the Stormwater Management Facilities on the Property, I identified the following need(s) for routine maintenance or deficiencies in the Stormwater Management Facilities:

_____
_____
_____
_____
_____
_____

7. On _____, 20__, the owner, operator, tenant, lessee or homeowners' association of the Property took or had taken the following routine maintenance or the following corrective action(s) to address the deficiencies in the Stormwater Management Facilities stated in 6. above:

_____
_____

_____

_____

_____

_____

8. As of the date of this certification, the Stormwater Management Facilities are functioning as intended by the approved Post-Construction Stormwater Management Plan for the Property.

Date:_____, 20__.

By:_____

Signature

_____

Print Name

STATE OF MAINE

_____, ss. _____, 20__

Personally appeared the above-named _____, the _____ of _____, and acknowledged the foregoing Annual Certification to be said person's free act and deed in said capacity.

Before me,

_____

Notary Public/Attorney at Law

Print Name:

_____

Mail this certification to the City of Lewiston at the following address:

Director of Planning & Code Enforcement
City Building
27 Pine Street
Lewiston, ME 04240

Director of Public Works
103 Adams Avenue
Lewiston, ME 04240

PLAN REFERENCES:

A. EXISTING CONDITIONS PLAN OF ATLANTIC HOLDING, INC. PROPERTY PREPARED FOR REAL ESTATE HOLDING, LLC PREPARED BY SEBAGO TECHNICS DATED 01-28-11, REV.C DATED 03-23-11, RECORDED IN PLAN BOOK 48, PAGE 126.

B. PROPERTY PLAN, ANDROSCOGGIN LAND TRUST, 11 TALL PINES DRIVE, LEWISTON, PREPARED BY A.R.C.C. LAND SURVEYORS INC. DATED JANUARY 26, 2007, RECORDED IN PLAN BOOK 46, PAGE 49.

C. STATE OF MAINE DEPARTMENT OF TRANSPORTATION RIGHT OF WAY MAP STATE HIGHWAY "15", LEWISTON, ANDROSCOGGIN COUNTY, STATE PROJECT NO. 03005.00, SHEET 5 OF 5 DATED JULY 1988, RECORDED IN BOOK 35, PAGE 188.

D. PROPERTY BASE MAP EASEMENT OVERLAY 33 PREPARED BY ENGINEERING DEPT. LEWISTON, MAINE, DATED 1981.

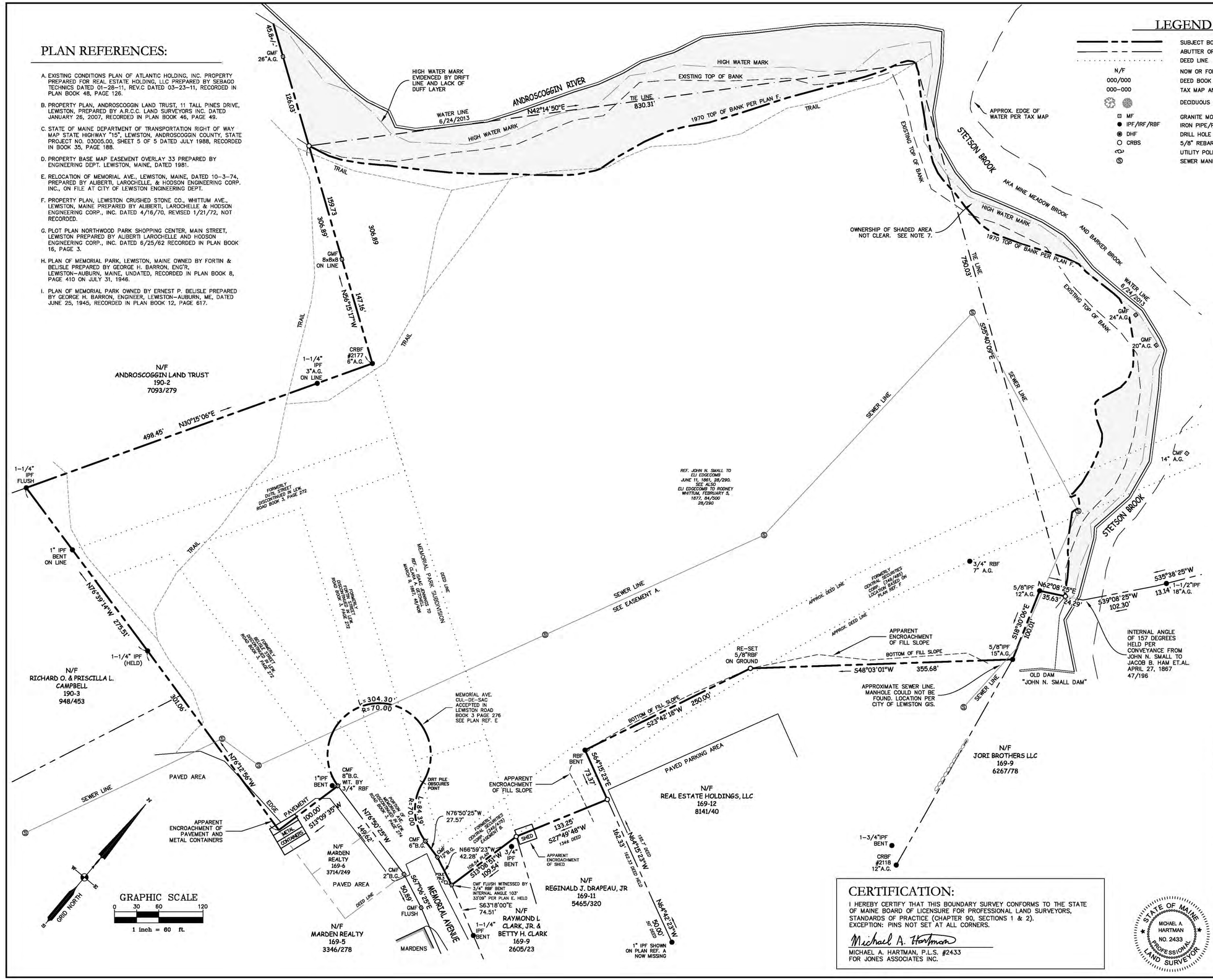
E. RELOCATION OF MEMORIAL AVE., LEWISTON, MAINE, DATED 10-3-74, PREPARED BY ALIBERTI, LAROCHELLE, & HODSON ENGINEERING CORP. INC., ON FILE AT CITY OF LEWISTON ENGINEERING DEPT.

F. PROPERTY PLAN, LEWISTON CRUSHED STONE CO., WHITTUM AVE., LEWISTON, MAINE PREPARED BY ALIBERTI, LAROCHELLE & HODSON ENGINEERING CORP., INC. DATED 4/16/70, REVISED 1/21/72, NOT RECORDED.

G. PLOT PLAN NORTHWOOD PARK SHOPPING CENTER, MAIN STREET, LEWISTON PREPARED BY ALIBERTI LAROCHELLE AND HODSON ENGINEERING CORP., INC. DATED 6/25/62 RECORDED IN PLAN BOOK 16, PAGE 3.

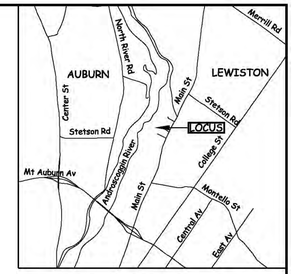
H. PLAN OF MEMORIAL PARK, LEWISTON, MAINE OWNED BY FORTIN & BELISLE PREPARED BY GEORGE H. BARRON, ENG'R, LEWISTON-AUBURN, MAINE, UNDATED, RECORDED IN PLAN BOOK 8, PAGE 410 ON JULY 31, 1946.

I. PLAN OF MEMORIAL PARK OWNED BY ERNEST P. BELISLE PREPARED BY GEORGE H. BARRON, ENGINEER, LEWISTON-AUBURN, ME, DATED JUNE 25, 1945, RECORDED IN PLAN BOOK 12, PAGE 617.



LEGEND

- SUBJECT BOUNDARY LINE
- ABUTTER OR RIGHT OF WAY LINE
- DEED LINE
- N/F — NOW OR FORMERLY
- 000/000 — DEED BOOK PAGE REFERENCE
- 000-000 — TAX MAP AND LOT NUMBER
- DECIDUOUS / CONIFEROUS TREE
- MF — GRANITE MONUMENT FOUND
- IPF/IRF/RBF — IRON PIPE/ROD/REBAR FOUND
- DHF — DRILL HOLE FOUND
- CRBS — 5/8" REBAR W/ CAP SET
- UTILITY POLE
- SEWER MANHOLE



LOCATION PLAN

NOTES:

1. RECORD OWNER: ATLANTIC REFINANCE LLC
2. PARCEL DEED REFERENCES:
   A. SEE DEED FROM ATL HOLDINGS LLC TO ATLANTIC REFINANCE LLC DATED DECEMBER 31, 2005, RECORDED AT THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS IN BOOK 7088, PAGE 253.
   B. SEE DEED FROM ATL HOLDINGS LLC TO ATLANTIC REFINANCE LLC DATED DECEMBER 31, 2005, RECORDED AT THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS IN BOOK 7088, PAGE 221.
3. ALL BOOK AND PAGE REFERENCES REFER TO THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS.
4. PARCEL TAX MAP REFERENCE: PORTION OF CITY OF LEWISTON, MAP 169, LOT 7 & 8
5. TOTAL AREA OF PARCEL NOT INCLUDING SHADED AREA: 21.0± ACRES.
6. ALL BEARINGS ARE REFERENCED TO MAINE STATE PLANE WEST ZONE GRID NORTH PER PLAN REFERENCE A.
7. OWNERSHIP OF SHADED AREA ALONG STETSON BROOK AND THE ANDROSCOGGIN RIVER IS NOT CLEAR. AREA INCLUDES A 75'X100' DAM PARCEL (SEE DEED 52/265 FROM NELSON T. FOGG TO ISAIAH POMPILLY DATED JULY 13, 1868), AND A BANK PARCEL (SEE DEED 171/253 FROM RODNEY WHITTUM TO ISAIAH AND SAMUEL POMPILLY ON DECEMBER 27, 1895). BOTH PARCELS WERE LATER CONVEYED FROM MELVIN J. GOOGIN TO THE FRANKLIN COMPANY ON AUGUST 19, 1899 IN DEED 191/554. NO FURTHER RECORD OF THESE PARCELS COULD BE FOUND. HOWEVER, THIS AREA APPEARS TO HAVE BEEN EXCAVATED AND FILLED BY LEWISTON CRUSHED STONE PREDECESSOR IN TITLE TO THE SURVEYED PARCEL AND A 1970's PLAN (PLAN REFERENCE F.) SHOWS THIS AREA AS BEING OWNED BY LEWISTON CRUSHED STONE WITH NO DEED REFERENCE GIVEN. OPERATIVE DEEDS CALL FOR BOUNDARY TO BE BROW OF BANK WHICH HAS CHANGED DUE TO PRIOR EXCAVATION AND FILL. THE TOP OF BANK AS SHOWN ON THE 1970'S PLAN HELD AS BEST EVIDENCE OF HISTORIC BANK LOCATION. RIGHTS OF OTHERS WITHIN THIS AREA MAY ALSO EXIST AS REFERENCED IN PRIOR DEEDS.

EASEMENTS

A. EASEMENT TO CITY OF LEWISTON TO CONSTRUCT, REPAIR, REPLACE, AND MAINTAIN SEWER LINE ACROSS PROPERTY. LOCATION NOT SPECIFIED IN DEEDS. THIS EASEMENT IS FOR THE CROSS COUNTRY SEWER LINE AS SHOWN ON THIS SURVEY. SEE EASEMENT FROM EAGLE REALTY CORPORATION TO THE CITY OF LEWISTON DATED APRIL 5, 1972 IN DEED 1050/282, EASEMENT FROM LEWISTON CRUSHED STONE CO. INC. TO THE CITY OF LEWISTON DATED APRIL 5, 1972 IN DEED 1050/284, AND EASEMENT FROM ERNEST P. & LILIETTE A. BELISLE TO THE CITY OF LEWISTON DATED APRIL 12, 1972 IN DEED 1052/119.

B. EASEMENT TO CONSTRUCT AND MAINTAIN ELECTRIC LINES ACROSS AND UNDER LAND RETAINED IN DEED 789/264 FROM CENTRAL MAINE POWER CO. TO ROBERT H. SAWYER DATED SEPTEMBER 25, 1958. LOCATION AS SHOWN.

C. FLOWAGE RIGHTS TO FLOW TO THE CURRENT HEIGHT OF THE DAM. THIS RIGHT RESERVED IN DEED 28/290 FROM JOHN N SMALL TO ELI EDGECOMB ON JUNE 11, 1861, AND ALSO CONVEYED FROM JOHN N SMALL TO JACOB B. HAM EL. AL. ON APRIL 27, 1867 IN DEED 47/196. THIS DAM IS LOCATED UPSTREAM OF SURVEYED PARCEL ON ABUTTER, NOW JORI BROTHERS LLC. AND DOES NOT AFFECT SUBJECT PARCEL.

D. RIGHT OF WAY INCLUDED IN DEED 52/265 FROM NELSON T. FOGG TO ISAIAH POMPILLY DATED JULY 13, 1868. RIGHT OF WAY IS FOR "FREE PASSAGE" TO A DAM LOCATED BETWEEN THE JOHN N. SMALL DAM AND THE ANDROSCOGGIN RIVER. LOCATION OF RIGHT OF WAY NOT SPECIFIED. NO DAM REMNANTS WERE FOUND. LOCATION COULD NOT BE DETERMINED. SEE ALSO NOTE 7.

GRAPHIC SCALE
0 30 60 120
1 inch = 60 ft.

CERTIFICATION:

I HEREBY CERTIFY THAT THIS BOUNDARY SURVEY CONFORMS TO THE STATE OF MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS, STANDARDS OF PRACTICE (CHAPTER 90, SECTIONS 1 & 2). EXCEPTION: PINS NOT SET AT ALL CORNERS.

Michael A. Hartman

MICHAEL A. HARTMAN, P.L.S. #2433
FOR JONES ASSOCIATES INC.

STATE OF MAINE · MICHAEL A. HARTMAN · NO. 2433 · PROFESSIONAL LAND SURVEYOR

REVISIONS			
NO.	DATE	DESCRIPTION	BY

BOUNDARY SURVEY

ATLANTIC REFINANCE LLC

MAIN STREET
LEWISTON, MAINE

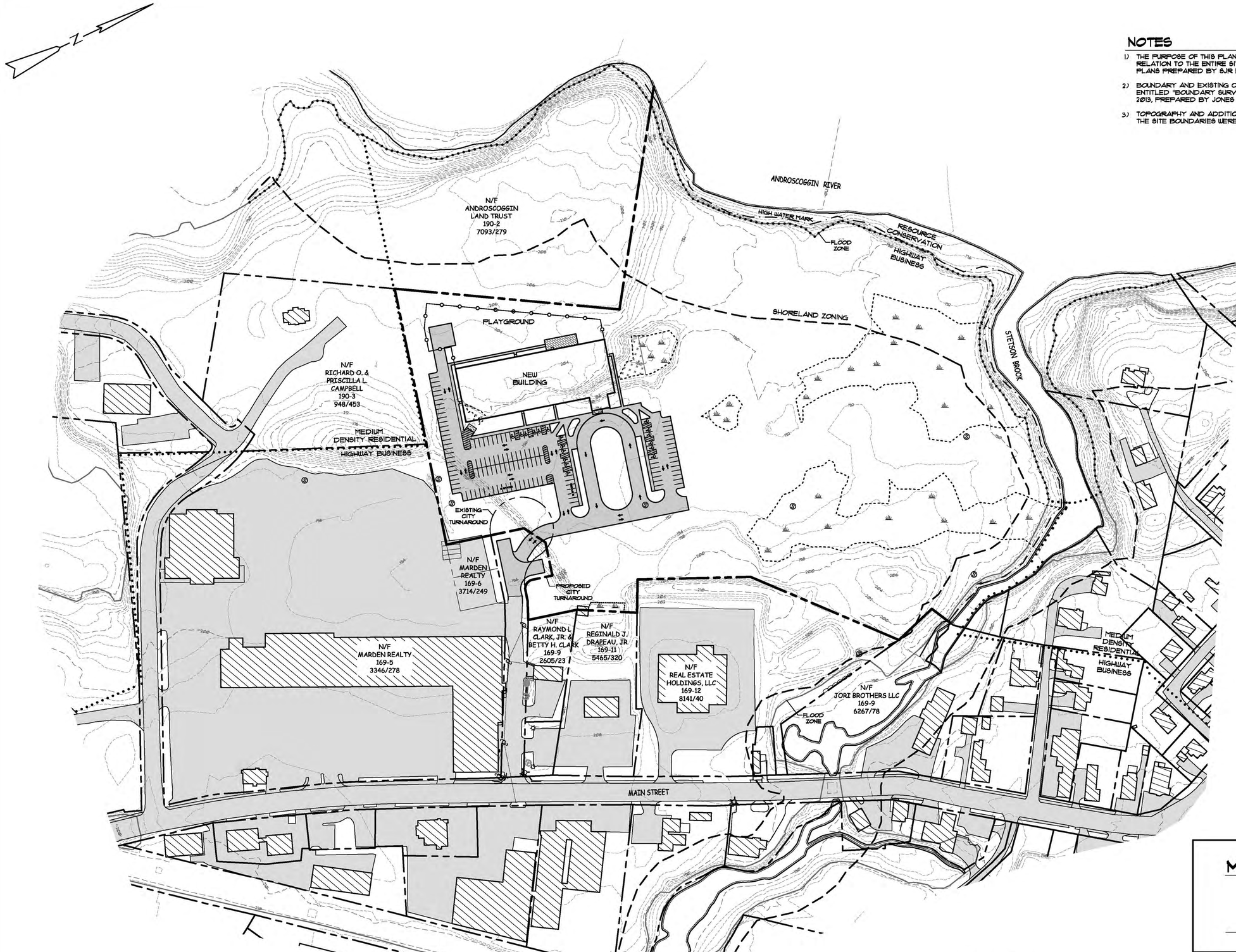
PREPARED FOR: JOHN F. MURPHY HOMES
800 CENTER STREET
AUBURN, MAINE

PREPARED BY:
JONES ASSOCIATES INC.
Foresters, Surveyors And Environmental Consultants
63 TUCKER LANE, POLAND SPRING, MAINE 04274
(207) 998-5242

PLAN DATE: 12/10/2013
FIELD WORK DATE: JUNE 2013
SCALE: 1"=60'
PROJ. #: 13-034LE

NOTES

1) THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED SITE IMPROVEMENTS IN RELATION TO THE ENTIRE SITE AND MAIN STREET. PLEASE REFER TO THE DESIGN PLANS PREPARED BY SJR ENGINEERING FOR DETAILS.
2) BOUNDARY AND EXISTING CONDITIONS INFORMATION WERE TAKEN FROM A PLAN ENTITLED "BOUNDARY SURVEY - ATLANTIC REFINANCE, LLC" DATED DECEMBER 10, 2013, PREPARED BY JONES ASSOCIATES, INC.
3) TOPOGRAPHY AND ADDITIONAL EXISTING CONDITION INFORMATION SHOWN OUTSIDE THE SITE BOUNDARIES WERE TAKEN FROM THE CITY OF LEWISTON GIS.



LEGEND

- BOUNDARY LINE (SUBJECT PARCEL)
- BOUNDARY LINE (OTHER)
- SHORELAND ZONING
- ZONING BOUNDARY
- FLOOD ZONE
- HIGH WATER LINE
- EXISTING BUILDING
- NEW BUILDING
- EXISTING PAVEMENT
- NEW PAVEMENT
- WETLAND AREA

SCALE : 1" = 100'

0 50 100 200 300 400

OVERALL SITE GRAPHIC
MEMORIAL AVENUE SCHOOL

LEWISTON, MAINE
ANDROSCOGGIN COUNTY

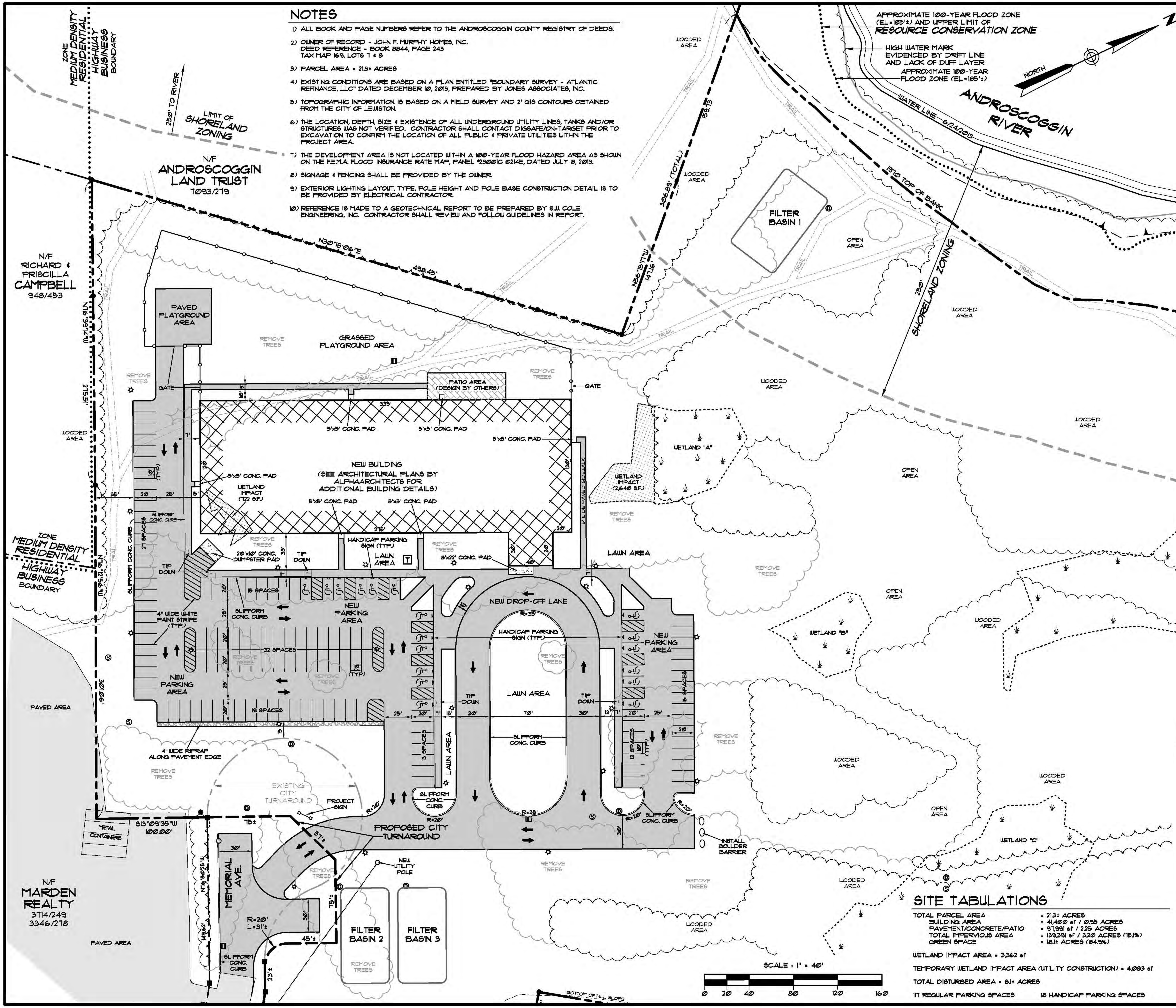
PREPARED FOR

JIG INVESTMENTS, LLC

P.O. BOX 1913 - LEWISTON, MAINE 04241-1913

Stoneybrook Consultants, Inc.
P.O. Box 459 - Turner, Maine 04282 - (207) 224-0252

DATE: APRIL 2019 JOB NUMBER: 18-033	DRAWN BY: BRJ CHECKED BY: MFG	SCALE: 1" = 100' CADD: 18-033 OVERALL	SHEET 1



ANDROSCOGGIN RIVER
APPROXIMATE 100-YEAR FLOOD ZONE (EL=185'±) AND UPPER LIMIT OF RESOURCE CONSERVATION ZONE
HIGH WATER MARK EVIDENCED BY DRIFT LINE AND LACK OF DUFF LAYER
APPROXIMATE 100-YEAR FLOOD ZONE (EL=185'±)
WATER LINE-6/24/2013
1970 TOP OF BANK
EXISTING TOP/BANK
NORTH
N/F ANDROSCOGGIN LAND TRUST 7093/279
N/F RICHARD & PRISCILLA CAMPBELL 948/453
N/F MARDEN REALTY 3714/249 3346/278
ZONE MEDIUM DENSITY RESIDENTIAL HIGHWAY BUSINESS BOUNDARY
LIMIT OF SHORELAND ZONING
250' TO RIVER
250' SHORELAND ZONING
N30°15'06"E 498.45'
FILTER BASIN 1
FILTER BASIN 2
FILTER BASIN 3
PAVED PLAYGROUND AREA
GRASSED PLAYGROUND AREA
PATIO AREA (DESIGN BY OTHERS)
NEW BUILDING (SEE ARCHITECTURAL PLANS BY ALPHAARCHITECTS FOR ADDITIONAL BUILDING DETAILS)
NEW DROP-OFF LANE
NEW PARKING AREA
LAWN AREA
WETLAND "A"
WETLAND "B"
WETLAND "C"
WETLAND "D"
WETLAND IMPACT (722 S.F.)
WETLAND IMPACT (2,640 S.F.)
EXISTING CITY TURNAROUND
PROPOSED CITY TURNAROUND
MEMORIAL AVE.
PROJECT SIGN
NEW UTILITY POLE
INSTALL BOULDER BARRIER
METAL CONTAINERS
PAVED AREA
WOODED AREA
OPEN AREA
REMOVE TREES
SCALE : 1" = 40'

NOTES

1) ALL BOOK AND PAGE NUMBERS REFER TO THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS.

2) OWNER OF RECORD - JOHN F. MURPHY HOMES, INC.
DEED REFERENCE - BOOK 8844, PAGE 243
TAX MAP 169, LOTS 7 & 8

3) PARCEL AREA = 21.3± ACRES

4) EXISTING CONDITIONS ARE BASED ON A PLAN ENTITLED "BOUNDARY SURVEY - ATLANTIC REFINANCE, LLC" DATED DECEMBER 10, 2013, PREPARED BY JONES ASSOCIATES, INC.

5) TOPOGRAPHIC INFORMATION IS BASED ON A FIELD SURVEY AND 2' GIS CONTOURS OBTAINED FROM THE CITY OF LEWISTON.

6) THE LOCATION, DEPTH, SIZE & EXISTENCE OF ALL UNDERGROUND UTILITY LINES, TANKS AND/OR STRUCTURES WAS NOT VERIFIED. CONTRACTOR SHALL CONTACT DIGSAFE/ON-TARGET PRIOR TO EXCAVATION TO CONFIRM THE LOCATION OF ALL PUBLIC & PRIVATE UTILITIES WITHIN THE PROJECT AREA.

7) THE DEVELOPMENT AREA IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON THE F.E.M.A. FLOOD INSURANCE RATE MAP, PANEL #23001C 0214E, DATED JULY 8, 2013.

8) SIGNAGE & FENCING SHALL BE PROVIDED BY THE OWNER.

9) EXTERIOR LIGHTING LAYOUT, TYPE, POLE HEIGHT AND POLE BASE CONSTRUCTION DETAIL IS TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

10) REFERENCE IS MADE TO A GEOTECHNICAL REPORT TO BE PREPARED BY S.W. COLE ENGINEERING, INC. CONTRACTOR SHALL REVIEW AND FOLLOW GUIDELINES IN REPORT.

SITE TABULATIONS

TOTAL PARCEL AREA	= 21.3± ACRES
BUILDING AREA	= 41,400 sf / 0.95 ACRES
PAVEMENT/CONCRETE/PATIO	= 97,991 sf / 2.25 ACRES
TOTAL IMPERVIOUS AREA	= 139,391 sf / 3.20 ACRES (15.1%)
GREEN SPACE	= 18.1± ACRES (84.9%)

WETLAND IMPACT AREA = 3,362 sf

TEMPORARY WETLAND IMPACT AREA (UTILITY CONSTRUCTION) = 4,083 sf

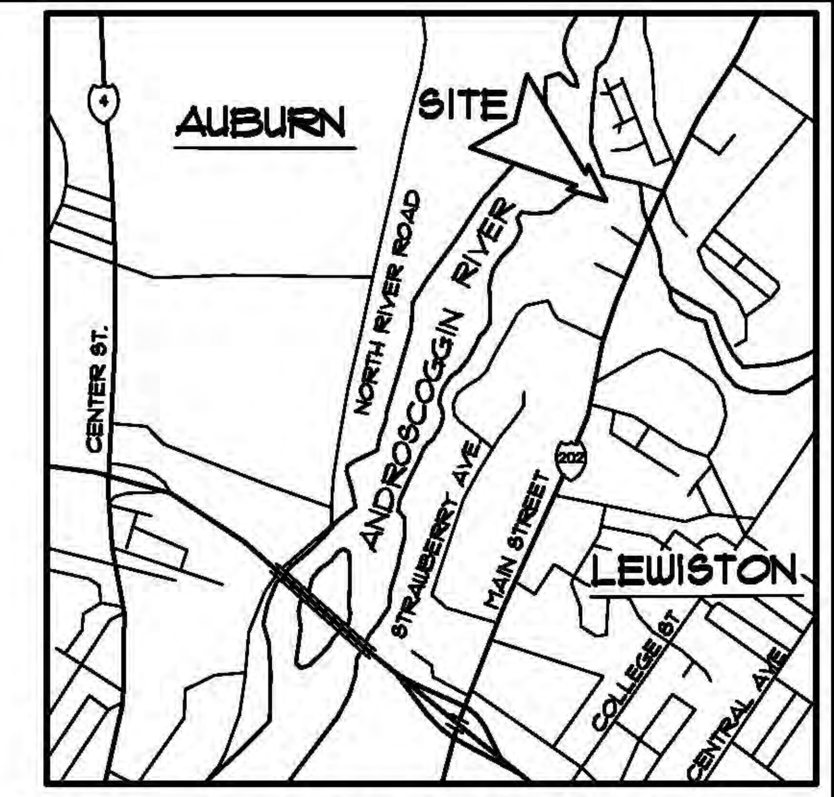
TOTAL DISTURBED AREA = 8.1± ACRES

117 REGULAR PARKING SPACES 18 HANDICAP PARKING SPACES

LEGEND

- BOUNDARY LINE (SUBJECT PARCEL)
- BOUNDARY LINE (OTHER)
- ZONE BOUNDARY
- IRON PIPE OR ROD FOUND
- MONUMENT FOUND
- N/F — NOW OR FORMERLY
- 2178/189 — BOOK AND PAGE NUMBER
- EXISTING CATCH BASIN
- SEWER MANHOLE
- NEW ELECTRIC TRANS. ON CONC. PAD
- NEW POLE MOUNTED EXTERIOR LIGHT
- NEW STORM DRAIN MANHOLE
- NEW UTILITY POLE WITH O.H. WIRES
- NEW PLAYGROUND FENCE
- NEW DRAINAGE MANHOLE
- NEW CATCH BASIN
- EXISTING TREE LINE (TO REMAIN)
- NEW TREE LINE
- EXISTING TREE LINE (REMOVED)
- NEW BUILDING
- EXISTING PAVEMENT
- NEW PAVEMENT
- WETLAND AREA
- PROPOSED WETLAND IMPACT

LOCATION MAP



STATE OF MAINE — STEPHEN J. ROBERGE #4835 — LICENSED PROFESSIONAL ENGINEER

FOR APPROVALS ONLY

REV:	DATE:	CHANGES:
2	4-5-19	ADD PROJECT SIGN
1	4-2-19	PER CITY REVIEW COMMENTS

DO NOT MODIFY PLAN WITHOUT WRITTEN PERMISSION FROM SJR ENG, INC.

Stoneybrook Consultants, Inc.
P.O. Box 459 - Turner, Maine 04282
(207) 224-0252

SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04259
(207) 242-6248 tel
steve@sjreng.com
SJR ENGINEERING

SITE PLAN
MEMORIAL AVENUE SCHOOL
LEWISTON, MAINE

PREPARED FOR

JIG INVESTMENTS, LLC
P.O. BOX 1913 - LEWISTON, ME 04241-1913

DATE	PROJECT
3-14-19	2019-02
DRAWN BY	SCALE
PIM	1" = 40'

SHEET 1

TOPOGRAPHIC SITE PLAN
MEMORIAL AVENUE SCHOOL
LEWISTON, MAINE

PREPARED FOR

JIG INVESTMENTS, LLC
P.O. BOX 1913 - LEWISTON, ME 04241-1913

Stoneybrook Consultants, Inc.
P.O. Box 459 - Turner, Maine 04282 - (207) 224-0252

SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04259
(207) 242-6248 tel
steve@sjreng.com

DATE: MARCH 14, 2019	DRAWN BY: PIM	SCALE: 1" = 40'	SHEET
JOB NUMBER: 2019-02	CHECKED BY: MFG/SJR	CADD: 18-033 SITE	2

REVISED: 4-2-19 - PER CITY REVIEW COMMENTS
REVISED: 4-5-19 - ADD PROJECT SIGN

STATE OF MAINE — STEPHEN J. ROBERGE #4835 — LICENSED PROFESSIONAL ENGINEER

FOR APPROVALS ONLY

LEGEND

	BOUNDARY LINE (SUBJECT PARCEL)
	BOUNDARY LINE (OTHER)
●	IRON PIPE OR ROD FOUND
■	MONUMENT FOUND
N/F	NOW OR FORMERLY
2178/189	BOOK AND PAGE NUMBER
TC	TOP OF CURB
BC	BOTTOM OF CURB
	EXISTING CATCH BASIN
	EXISTING SEWER MANHOLE
S	EXISTING SEWER LINE
204	EXISTING CONTOUR
204	NEW CONTOUR
	NEW PLAYGROUND FENCE
	NEW DRAINAGE MANHOLE
	NEW POLE MOUNTED EXTERIOR LIGHT
T	NEW ELECTRIC TRANS. ON CONC. PAD
	NEW CATCH BASIN
	NEW UTILITY POLE WITH O.H. WIRES
SD	NEW STORM DRAIN LINE
UD	NEW FILTER BASIN UNDERDRAIN LINE
×	INSTALL SILT FENCE
	EXISTING TREE LINE (TO REMAIN)
	NEW TREE LINE
	NEW BUILDING
	EXISTING PAVEMENT
	NEW PAVEMENT
	WETLAND AREA
	NEW RIPRAP ON FABRIC (D_{50}= 8")
	INSTALL SILT SACK (ALL CB's)

NOTES

1) ALL BOOK AND PAGE NUMBERS REFER TO THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS.

2) OWNER OF RECORD - JOHN F. MURPHY HOMES, INC.
DEED REFERENCE - BOOK 8844, PAGE 243
TAX MAP 169, LOTS 7 & 8

3) PARCEL AREA = 21.3± ACRES

4) EXISTING CONDITIONS ARE BASED ON A PLAN ENTITLED "BOUNDARY SURVEY - ATLANTIC REFINANCE, LLC" DATED DECEMBER 10, 2013, PREPARED BY JONES ASSOCIATES, INC.

5) TOPOGRAPHIC INFORMATION IS BASED ON A FIELD SURVEY AND 2' GIS CONTOURS OBTAINED FROM THE CITY OF LEWISTON.

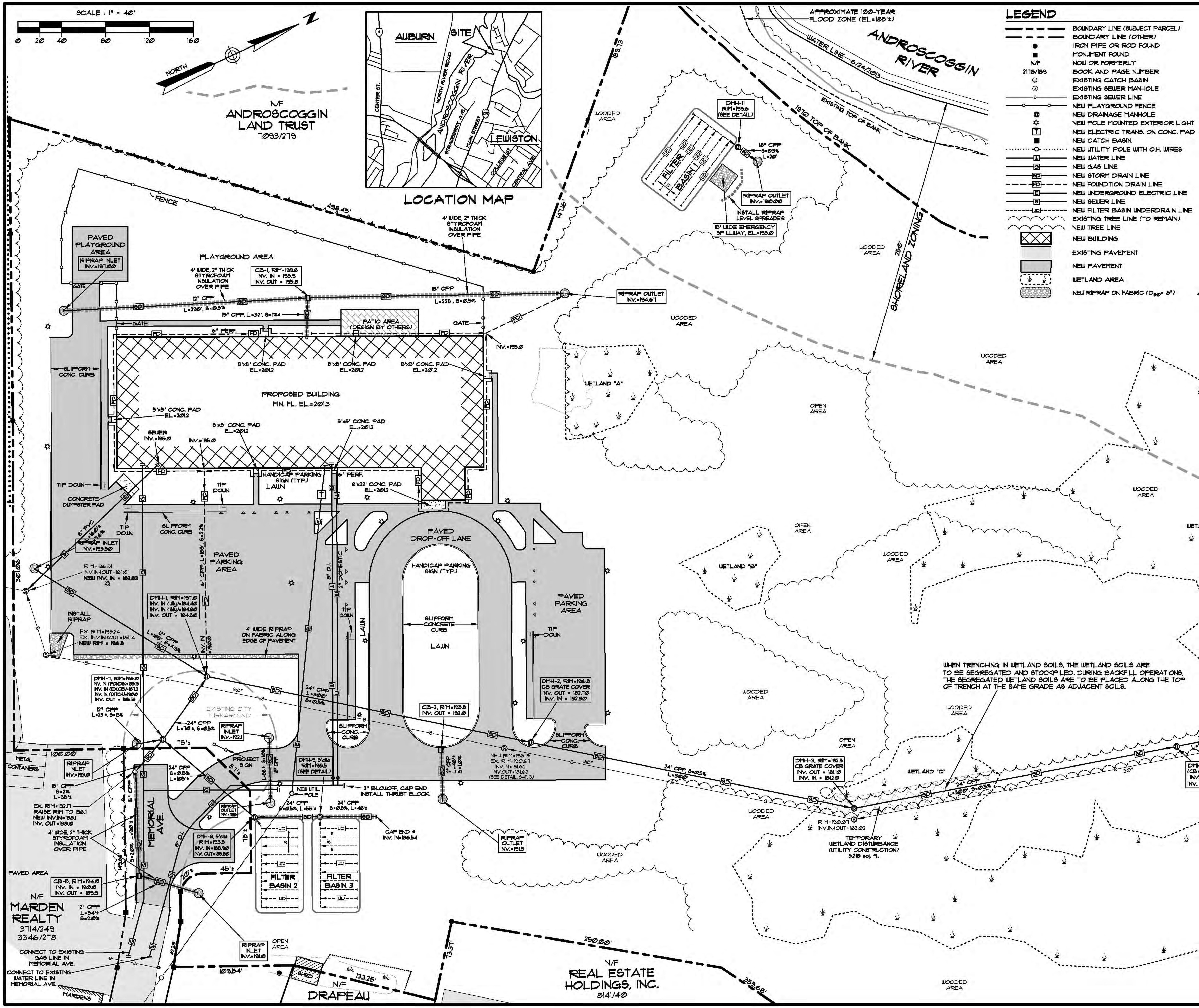
6) THE LOCATION, DEPTH, SIZE & EXISTENCE OF ALL UNDERGROUND UTILITY LINES, TANKS AND/OR STRUCTURES WAS NOT VERIFIED. CONTRACTOR SHALL CONTACT DIGSAFE/ON-TARGET PRIOR TO EXCAVATION TO CONFIRM THE LOCATION OF ALL PUBLIC & PRIVATE UTILITIES WITHIN THE PROJECT AREA.

7) THE DEVELOPMENT AREA IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON THE F.E.M.A. FLOOD INSURANCE RATE MAP, PANEL #23001C 0214E, DATED JULY 8, 2013.

8) INSTALL EROSION CONTROL MAT (SEE DETAIL SHEET) ON ALL SLOPES OF 3 : 1 OR STEEPER.

9) LOAM, SEED & MULCH ALL DISTURBED AREA NOT PAVED OR RIPRAPPED (SEE DETAIL).

10) INSTALL SILT SACK IN ALL CATCH BASINS (SEE DETAIL).



LEGEND

(heavy dashed line)	BOUNDARY LINE (SUBJECT PARCEL)
(dashed line)	BOUNDARY LINE (OTHER)
●	IRON PIPE OR ROD FOUND
■	MONUMENT FOUND
N/F	NOW OR FORMERLY
2178/189	BOOK AND PAGE NUMBER
⊜	EXISTING CATCH BASIN
Ⓢ	EXISTING SEWER MANHOLE
—S—	EXISTING SEWER LINE
—o—o—	NEW PLAYGROUND FENCE
Ⓓ	NEW DRAINAGE MANHOLE
✡	NEW POLE MOUNTED EXTERIOR LIGHT
T	NEW ELECTRIC TRANS. ON CONC. PAD
▤	NEW CATCH BASIN
·····O·····	NEW UTILITY POLE WITH O.H. WIRES
—W—	NEW WATER LINE
—G—	NEW GAS LINE
—SD—	NEW STORM DRAIN LINE
--FD--	NEW FOUNDTION DRAIN LINE
—E—	NEW UNDERGROUND ELECTRIC LINE
—S—	NEW SEWER LINE
--UD--	NEW FILTER BASIN UNDERDRAIN LINE
	EXISTING TREE LINE (TO REMAIN)
	NEW TREE LINE
	NEW BUILDING
	EXISTING PAVEMENT
	NEW PAVEMENT
	WETLAND AREA
	NEW RIPRAP ON FABRIC (D_{50}= 8")

UTILITY PLAN

MEMORIAL AVENUE SCHOOL

LEWISTON, MAINE

PREPARED FOR

JIG INVESTMENTS, LLC

P.O. BOX 1913 - LEWISTON, ME 04241-1913

Stoneybrook Consultants, Inc.
P.O. Box 459 - Turner, Maine 04282 - (207) 224-0252

SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04259
(207) 242-6248 tel
steve@sjreng.com

DATE: MARCH 14, 2019 JOB NUMBER: 2019-02	DRAWN BY: PIM CHECKED BY: MFG/SJR	SCALE: 1" = 40' CADD: 18-033 SITE	SHEET 3

REVISED: 4-2-19 - PER CITY REVIEW COMMENTS
REVISED: 4-5-19 - ADD PROJECT SIGN

STATE OF MAINE
STEPHEN J. ROBERGE
#4835
LICENSED
PROFESSIONAL ENGINEER

FOR APPROVALS ONLY

NOTES

1) ALL BOOK AND PAGE NUMBERS REFER TO THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS.

2) OWNER OF RECORD - JOHN F. MURPHY HOMES, INC.
DEED REFERENCE - BOOK 8844, PAGE 243
TAX MAP 169, LOTS 7 & 8

3) PARCEL AREA = 21.3± ACRES

4) EXISTING CONDITIONS ARE BASED ON A PLAN ENTITLED "BOUNDARY SURVEY - ATLANTIC REFINANCE, LLC" DATED DECEMBER 10, 2013, PREPARED BY JONES ASSOCIATES, INC.

5) TOPOGRAPHIC INFORMATION IS BASED ON A FIELD SURVEY AND 2' GIS CONTOURS OBTAINED FROM THE CITY OF LEWISTON.

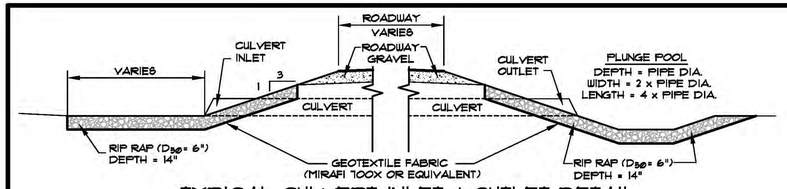
6) THE LOCATION, DEPTH, SIZE & EXISTENCE OF ALL UNDERGROUND UTILITY LINES, TANKS AND/OR STRUCTURES WAS NOT VERIFIED. CONTRACTOR SHALL CONTACT DIGSAFE/ON-TARGET PRIOR TO EXCAVATION TO CONFIRM THE LOCATION OF ALL PUBLIC & PRIVATE UTILITIES WITHIN THE PROJECT AREA.

7) THE DEVELOPMENT AREA IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON THE F.E.M.A. FLOOD INSURANCE RATE MAP, PANEL #23001C 0214E, DATED JULY 8, 2013.

8) INSTALL EROSION CONTROL MAT (SEE DETAIL SHEET) ON ALL SLOPES OF 3 : 1 OR STEEPER.

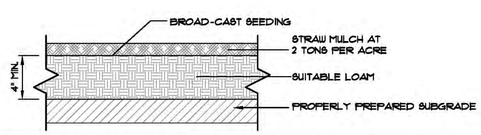
9) LOAM, SEED & MULCH ALL DISTURBED AREA NOT PAVED OR RIPRAPPED (SEE DETAIL).

10) INSTALL SILT SACK IN ALL CATCH BASINS (SEE DETAIL).



TYPICAL CULVERT INLET & OUTLET DETAIL

NOT TO SCALE

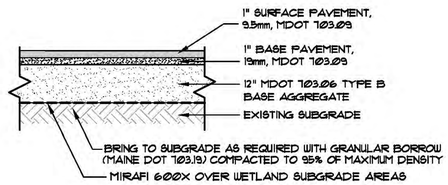


PERMANENT SEED MIX	APPLICATION RATE
	lbs/1000 sf
KENTUCKY BLUEGRASS	.46
CREEPING RED FESCUE	.46
PERENNIAL RYEGRASS	.13
TOTAL SEED RATE	1.05

PLACE LOAM & SEED ON ALL DISTURBED AREAS NOT TO BE RIP RAPPED OR GRAVELED

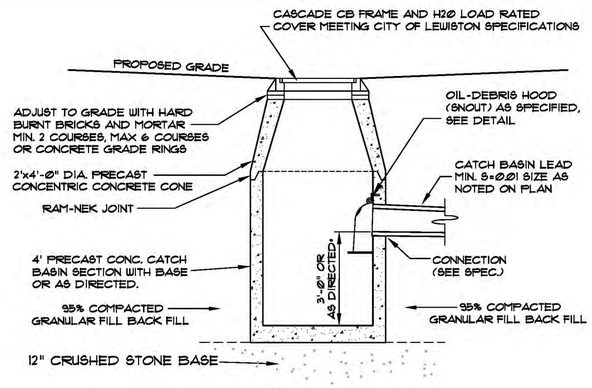
LOAM & SEED DETAIL

NOT TO SCALE



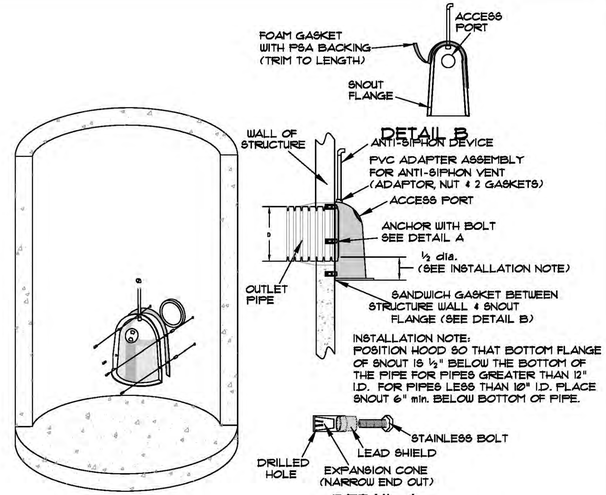
SIDEWALK CROSS SECTION

NOT TO SCALE



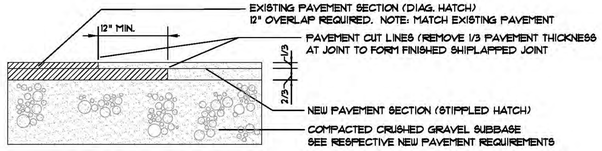
4'-0" DIA. CATCH BASIN

NOT TO SCALE



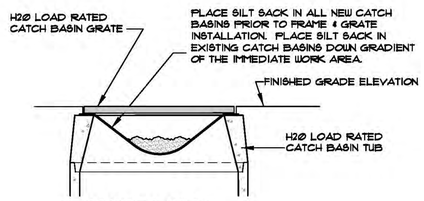
CATCH BASIN SNOUT INSTALLATION DETAIL

NOT TO SCALE



PAVEMENT SAWCUT JOINT DETAIL

NOT TO SCALE

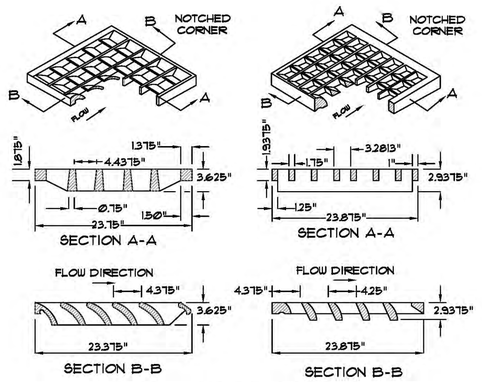


NEW INSTALLATION

NOTE: REMOVE SILT SACK AFTER VEGETATIVE COVER IS GREATER THAN 75% ESTABLISHED.

SILT SACK DETAIL

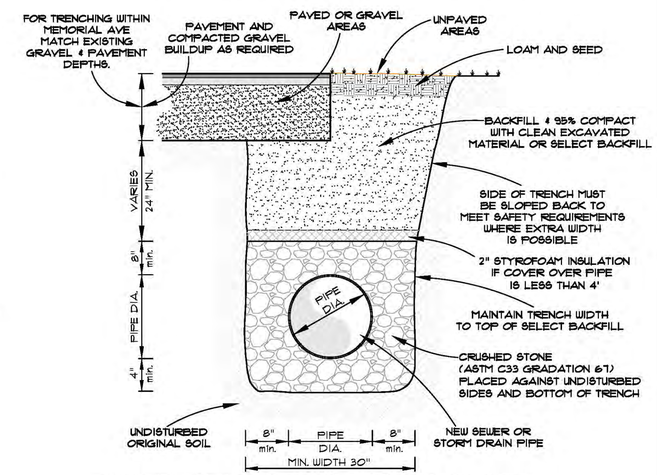
NOT TO SCALE



CASCADE CB FRAME AND GRATE TO
MEET H20 LOAD RATED REQUIREMENTS
CASCADE GRATES TO MEET CITY OF LEWISTON CONSTRUCTION STANDARDS

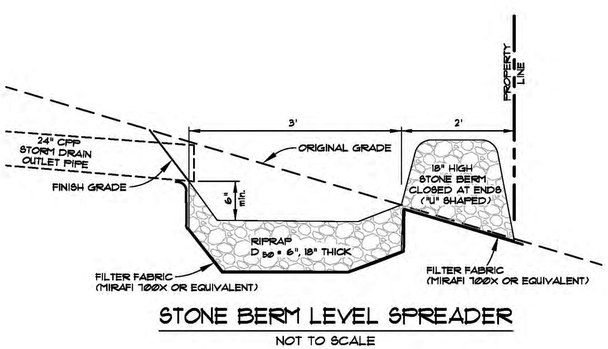
CASCADE TYPE GRATES

NOT TO SCALE



STORM DRAIN / SEWER TRENCH DETAIL

NOT TO SCALE

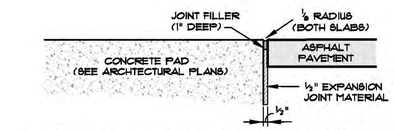


NOTES

1) COMPACT GRAVEL SUBBASE, BASE COURSE TO 95% OF THEIR MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557.
2) HOT MIX ASPHALT PAVEMENT MUST BE COMPACTED TO 92%-97% OF ITS THEORETICAL MAXIMUM DENSITY AS DETERMINED BY ASTM D-2041.
3) A TACK COAT MUST BE USED BETWEEN SUCCESSIVE LIFTS OF BITUMINOUS PAVEMENT.
4) PROVIDE NON-FROST SUSCEPTIBLE COMPACTED FILL GRANULAR BORROW (MDOT 703.19) BELOW PAVEMENT IN FILL AREAS.
5) CONTRACTOR SHALL SET GRADE STAKES MARKING SUBBASE AND FINISH GRADE ELEVATIONS FOR CONSTRUCTION REFERENCE.

PAVED AREA CROSS SECTION

NOT TO SCALE

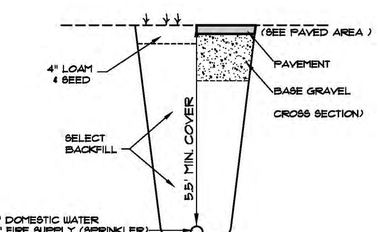


CONCRETE PAD / ASPHALT INTERFACE

NOT TO SCALE

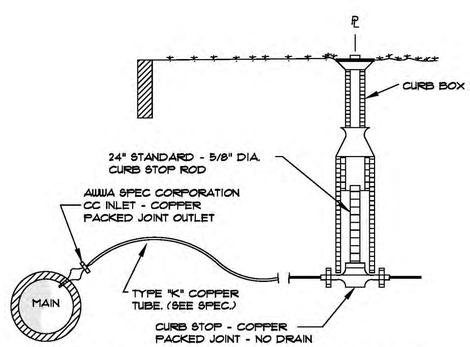
STONE BERM LEVEL SPREADER

NOT TO SCALE



WATER SERVICE TRENCH DETAIL

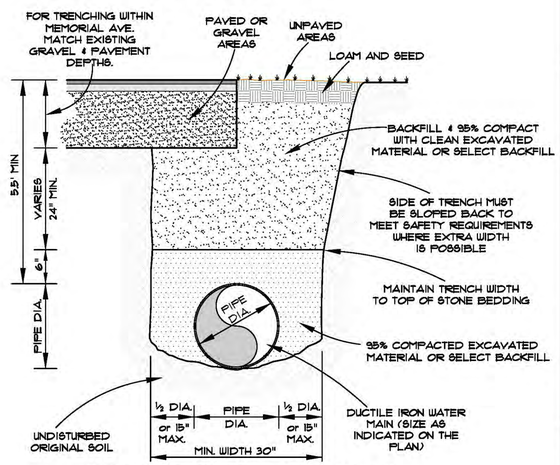
NOT TO SCALE



NOTE: INSTALL 6" (8" IN ROCK) OF SAND, OR WATER DISTRICT APPROVED BACKFILL, ALL AROUND SERVICE LINE.

TYPICAL DOMESTIC WATER SERVICE

NOT TO SCALE



WATER MAIN TRENCH DETAIL

NOT TO SCALE

STATE OF MAINE
STEPHEN J. ROBERGE
#4837
REGISTERED PROFESSIONAL ENGINEER
FOR APPROVALS ONLY

REV:	DATE:	CHANGES:
1	4-2-19	PER CITY REVIEW COMMENTS

DO NOT MODIFY PLAN WITHOUT WRITTEN PERMISSION FROM SJR ENG., INC.

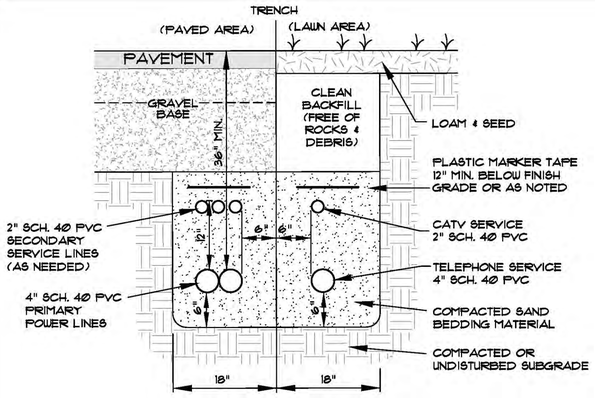
Stoneybrook Consultants, Inc.
P.O. Box 459 - Turner, Maine 04282
(207) 224-0252

SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04259
(207) 242-6248 tel
stevesjreng.com
SJR ENGINEERING

CONSTRUCTION DETAILS #1
MEMORIAL AVENUE SCHOOL
LEWISTON, MAINE
PREPARED FOR
JJG INVESTMENTS, LLC
P.O. BOX 1913 - LEWISTON, ME 04241-1913

DATE	PROJECT
3-14-19	2019-02
DRAWN BY	SCALE
PJM	1" = 40'

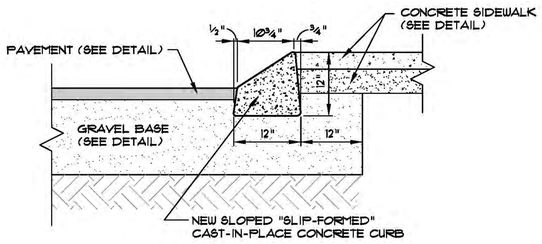
SHEET 4



NOTE: ALL WORK IS TO COMPLY WITH THE RESPECTIVE UTILITY COMPANY STANDARDS

UNDERGROUND UTILITY TRENCH DETAIL

NOT TO SCALE



SLOPED SLIP-FORM CURB

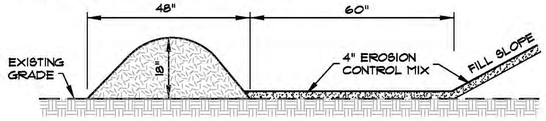
NOT TO SCALE

THE FILTER BERM SHALL CONSIST OF A WOOD WASTE COMPOST/BARK MULCH MIX OR RECYCLED COMPOSTED BARK FLUME GRIT AND FRAGMENTED WOOD GENERATED FROM WATER FLUME LOG HANDLING SYSTEMS. COMPARABLE COMPOSTED MIXES CAN BE USED UPON WRITTEN APPROVAL OF THE ENGINEER.

THE MIX SHALL CONFORM TO THE FOLLOWING: pH BETWEEN 5.0-8.0, PARTICLE SIZE - 100% PASSING THROUGH A 6" SCREEN AND 80% RETAINED ON A ¾" SCREEN, SOLUBLE SALTS CONTENT SHALL BE LESS THAN 4.0 mmhos/cm.

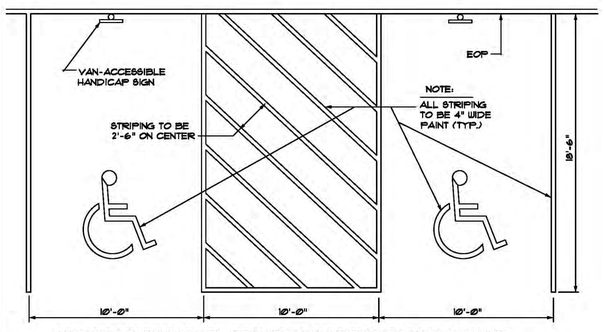
THE COMPOSTED BERM SHALL BE PLACED, UNCOMPACTED, ALONG A RELATIVELY LEVEL CONTOUR.

THE BERM MAY BE USED IN COMBINATION WITH SILT FENCE TO IMPROVE SEDIMENT REMOVAL AND PREVENT CLOGGING OF THE BERM BY LARGER SEDIMENT PARTICLES (SILT FENCE PLACED ON THE UPHILL SIDE OF BERM).



EROSION CONTROL FILTER BERM

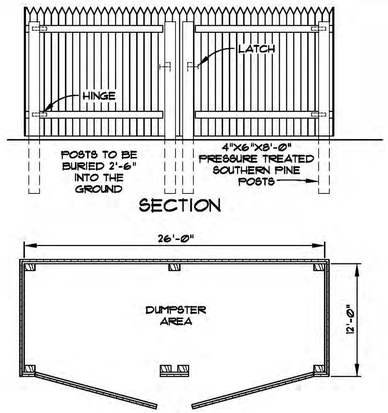
NOT TO SCALE



ACCESSIBLE PARKING SPACES ARE 8' WIDE. VAN ACCESSIBLE SPACES ARE 11' WIDE. ACCESS AISLES FOR EITHER TYPE OF SPACE ARE 5' WIDE. AN ALTERNATIVE DESIGN ALLOWS A VAN-ACCESSIBLE SPACE TO BE 8' WIDE IF THE ADJACENT ACCESS AISLE IS ALSO 8' WIDE.

HANDICAPPED PARKING SPACE DETAIL

NOT TO SCALE

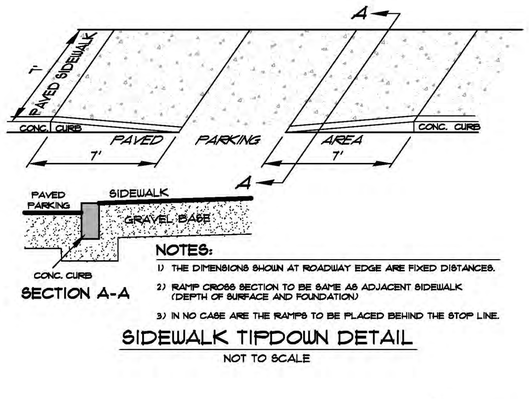


SECTION

PLAN

STOCKADE FENCE TRASH DUMPSTER ENCLOSURE

NOT TO SCALE



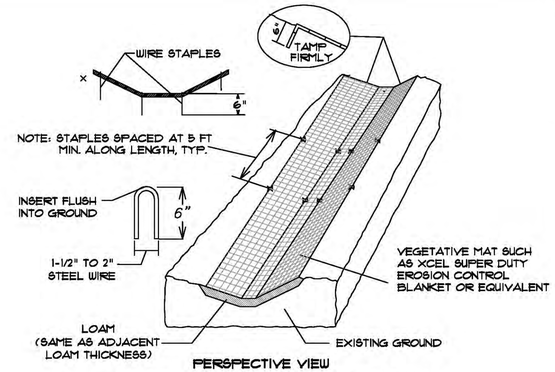
SECTION A-A

NOTES:

1) THE DIMENSIONS SHOWN AT ROADWAY EDGE ARE FIXED DISTANCES.
2) RAMP CROSS SECTION TO BE SAME AS ADJACENT SIDEWALK (DEPTH OF SURFACE AND FOUNDATION)
3) IN NO CASE ARE THE RAMPS TO BE PLACED BEHIND THE STOP LINE.

SIDEWALK TIPDOWN DETAIL

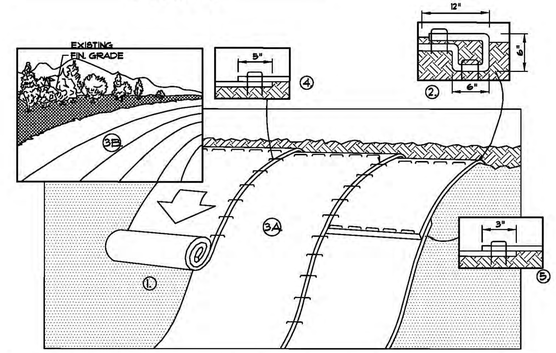
NOT TO SCALE



PERSPECTIVE VIEW

VEGETATIVE MAT LINED DITCH

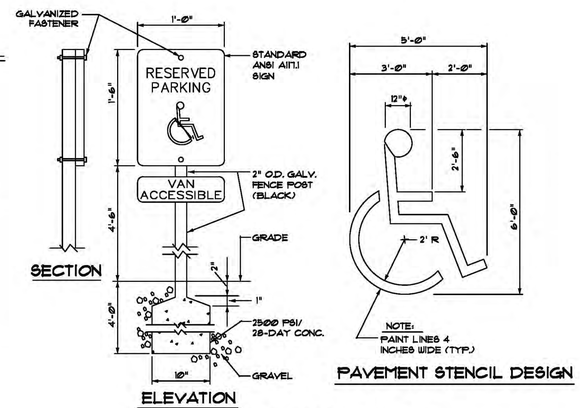
NOT TO SCALE



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-3" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH. NOTE: IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

EROSION CONTROL MAT DETAIL

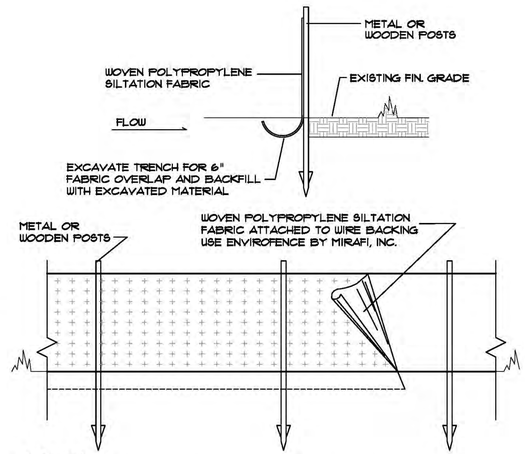
NOT TO SCALE



PAVEMENT STENCIL DESIGN

HANDICAP SIGN DETAIL

NOT TO SCALE



NOTES

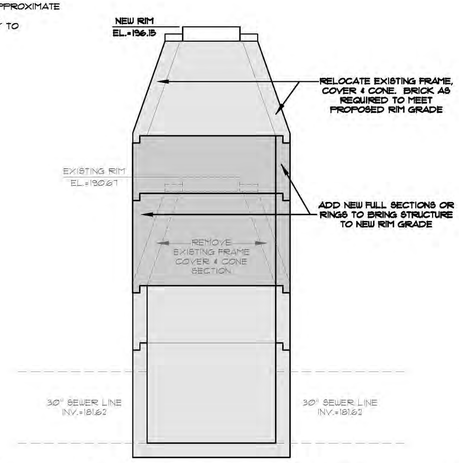
REFERENCE IS MADE TO THE BEST MANAGEMENT PRACTICE FOR EROSION AND SEDIMENT CONTROL: B-1 SEDIMENT BARRIERS.

SILTATION FABRIC WITH INTEGRAL MESH AND POSTS MAY BE USED.

EROSION CONTROL FILTER BERM IS AN ACCEPTABLE ALTERNATIVE TO SILT FENCING.

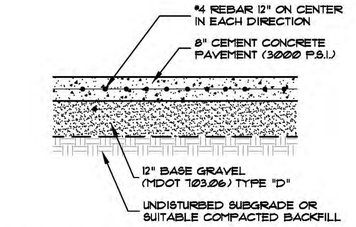
SILT FENCE DETAIL

NOT TO SCALE



RAISED RIM ON EXISTING SEWER MANHOLE

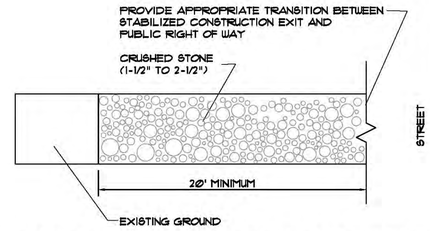
NOT TO SCALE



CONCRETE PAD CROSS SECTION

(TRANSFORMER PAD, DUMPSTER PAD, ETC.)

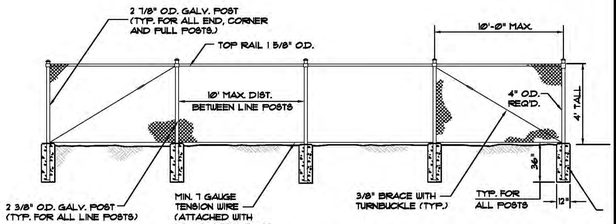
NOT TO SCALE



1. STONE SIZE - AASHTO DESIGNATION M 43, SIZE #2 (2½" - 1½") USE CRUSHED STONE
2. LENGTH - AS EFFECTIVE BUT NOT LESS THAN 50'
3. THICKNESS - NOT LESS THAN 6"
4. WIDTH - NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS
5. WASHING - WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE THROUGH USE OF SAND BAGS, GRAVEL, BOARDS, OR OTHER APPROVED METHODS.
6. MAINTENANCE - THE STABILIZED CONSTRUCTION EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURED USES TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY.

STABILIZED CONSTRUCTION EXIT DETAIL

NOT TO SCALE



CHAIN LINK FENCE

NOT TO SCALE

REV.	DATE	CHANGES
1	4-22-19	PER CITY REVIEW COMMENTS

DO NOT MODIFY PLAN WITHOUT WRITTEN PERMISSION FROM SJR ENG., INC.

Stonebrook Consultants, Inc.
P.O. Box 459 - Turner, Maine 04282
(207) 224-0252

SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04259
(207) 242-6248 tel
steves@sjreng.com
SJR ENGINEERING

CONSTRUCTION DETAILS #2
MEMORIAL AVENUE SCHOOL
LEWISTON, MAINE
PREPARED FOR
JIG INVESTMENTS, LLC
P.O. BOX 1913 - LEWISTON, ME 04241-1913

DATE	PROJECT
3-14-2019	2019-02
DRAWN BY	SCALE
PJM	1" = 40'

SHEET 5

STORMWATER CONSTRUCTION OVERSIGHT NOTES

THE CONTRACTOR SHALL RETAIN THE SERVICES OF A PROFESSIONAL ENGINEER TO INSPECT THE CONSTRUCTION AND STABILIZATION OF ALL STORMWATER MANAGEMENT STRUCTURES TO BE BUILT AS PART OF THIS PROJECT. IF NECESSARY, THE INSPECTING ENGINEER WILL INTERPRET THE CONSTRUCTION PLANS FOR THE CONTRACTOR. ONCE ALL STORMWATER MANAGEMENT STRUCTURES ARE CONSTRUCTED AND STABILIZED, THE INSPECTING ENGINEER SHALL NOTIFY THE CITY OF LEWISTON AND THE DEPARTMENT OF ENVIRONMENTAL PROTECTION IN WRITING WITHIN 30 DAYS TO STATE THAT THE STRUCTURES HAVE BEEN COMPLETED. ACCOMPANYING THE ENGINEER'S NOTIFICATION SHALL BE A COPY OF THE TEST RESULTS FOR ANY SOIL FILL, AGGREGATE OR MULCH MATERIALS USED IN THE CONSTRUCTION OF THE STORMWATER MANAGEMENT STRUCTURES AND A LOG OF THE ENGINEER'S INSPECTIONS GIVING THE DATE OF EACH INSPECTION, THE TIME OF EACH INSPECTION AND THE TIME INSPECTED ON EACH VISIT.

VEGETATED UNDERDRAINED SOIL FILTER BASINS

CONSTRUCTION INSPECTIONS - AT A MINIMUM, THE PROFESSIONAL ENGINEER'S INSPECTION SHALL OCCUR AFTER FOUNDATION SOIL PREPARATION BUT PRIOR TO PLACEMENT OF THE EMBANKMENT FILL, AFTER THE UNDERDRAIN PIPES ARE INSTALLED BUT NOT BACKFILLED, AFTER THE PIPE BEDDING IS PLACED BUT PRIOR TO THE PLACEMENT OF THE FILTER MEDIA, AND AFTER THE FILTER MEDIA HAS BEEN PLACED AND THE FILTER SURFACE SEEDED.

TESTING AND SUBMITTALS - ALL THE SOIL, MULCH, AND AGGREGATE USED FOR THE CONSTRUCTION OF THE VEGETATED UNDERDRAINED SOIL FILTER BASIN SHALL BE CONFIRMED AS SUITABLE BY TESTING. THE CONTRACTOR SHALL IDENTIFY THE SOURCE OF EACH MATERIAL AND OBTAIN SAMPLES FROM EACH MATERIAL FOR TESTING. ALL TESTING SHALL BE DONE BY A CERTIFIED LABORATORY. ALL RESULTS OF FIELD AND LABORATORY TESTING SHALL BE SUBMITTED TO THE PROJECT ENGINEER FOR CONFIRMATION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE COMPLETION OF THE FOLLOWING SAMPLING AND TESTING BEFORE THE FILL OR AGGREGATE IS PLACED AS PART OF THE VEGETATED UNDERDRAINED SOIL FILTER BASIN'S CONSTRUCTION.

OBTAIN A SAMPLE OF THE FILTER MEDIA CONSISTING OF A BLEND OF SAND, TOPSOIL AND WOOD FIBER MULCH (OR OTHER APPROVED ORGANIC SOURCE). THE SAMPLE MUST BE A COMPOSITE OF THREE DIFFERENT LOCATIONS (GRABS) FROM THE STOCKPILE. THE SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY. PERFORM ANALYSES OF THE BLENDED FILTER MEDIA SHOWING IT HAS 8% TO 12% BY WEIGHT PASSING THE #200 SIEVE AS DETERMINED BY ASTM C136 (STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COURSE AGGREGATES 1996A), HAS A CLAY CONTENT OF LESS THAN 2% AND HAS AN ORGANIC MATTER CONTENT OF NO LESS THAN 10% BY DRY WEIGHT.

IF THE UNDERDRAIN PIPES WILL BE BEDDED IN GRAVEL, OBTAIN A SAMPLE OF THE GRAVEL FILL TO BE USED FOR THE PIPE BEDDING. THE SAMPLE MUST BE A COMPOSITE OF THREE DIFFERENT LOCATIONS (GRABS) FROM THE STOCKPILE OR PIT FACE. THE SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY. PERFORM A SIEVE ANALYSIS CONFORMING TO ASTM C136 (STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COURSE AGGREGATES 1996A) OF THE GRAVEL TO BE USED FOR THE UNDERDRAIN PIPE BEDDING. THE GRAVEL FILL MUST CONFORM TO MEDOT SPECIFICATION 703.22 UNDERDRAIN TYPE B.

IF THE UNDERDRAIN PIPE WILL BE BEDDED IN CRUSHED STONE, OBTAIN A SAMPLE OF THE CRUSHED STONE TO BE USED FOR THE PIPE BEDDING. THE SAMPLE MUST BE A COMPOSITE OF THREE DIFFERENT LOCATIONS (GRABS) FROM THE STOCKPILE. THE SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY. PERFORM A SIEVE ANALYSIS CONFORMING TO ASTM C136 (STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COURSE AGGREGATES 1996A) OF THE CRUSHED STONE TO BE USED FOR THE UNDERDRAIN PIPE BEDDING. THE CRUSHED STONE FILL MUST CONFORM TO MEDOT SPECIFICATION 703.22 UNDERDRAIN TYPE C.

SOIL FILTER NOTES

1) THE SOIL FILTER IS PART OF A CITY OF LEWISTON PERMIT. CONSTRUCTION SHALL FOLLOW CURRENT MAINE DEP GUIDELINES WHICH INCLUDE APPROVAL OF MATERIAL PRIOR TO PLACEMENT AND CONSTRUCTION OVERSIGHT BY THE DESIGN ENGINEER.

2) SUBMIT SAMPLES AND GRADATIONS FOR EACH MATERIAL TO BE USED. PROVIDE EXPECTED DESIGN MIX. PERFORM AND PROVIDE STANDARD PROCTOR ON COMBINED MIXTURE AS WELL AS A PERMEABILITY TEST.

3) SCARIFY TO LOOSEN EXISTING SOIL AT LEAST 8" PRIOR TO LAYING FIRST LAYER OF THE SOIL FILTER SECTION.

4) MAXIMUM SPACING OF UNDERDRAIN PIPING IS 4' O.C. END CAPS SHALL BE INSTALLED ON ALL UNDER DRAIN PIPES.

5) AFTER APPROVAL OF MATERIAL, PLACE FILTER MEDIA IN TWO LIFTS WITH LOW WEIGHT VEHICLES TO 92% STANDARD PROCTOR.

6) PROVIDE 2" OF BARK MULCH OR EROSION CONTROL MIX ON TOP OF THE FILTER BED UNTIL THE SITE HAS PROPOSED HARDSCAPE PLACED AND HAS VEGETATION WELL ESTABLISHED EVERYWHERE ELSE. ONCE THE SITE IS STABILIZED, REMOVE THE MULCH AND ACCUMULATED SEDIMENT FROM THE FILTER AND ESTABLISH VEGETATION PER THE FILTER BED SEEDING PLAN.

7) PRIOR TO TURNING OVER TO OWNER, REMOVE SEDIMENT AND DEBRIS FROM FILTER SURFACE, OVERFLOW WEIR, INSIDE OVERFLOW STRUCTURE AND DISCHARGE PIPE.

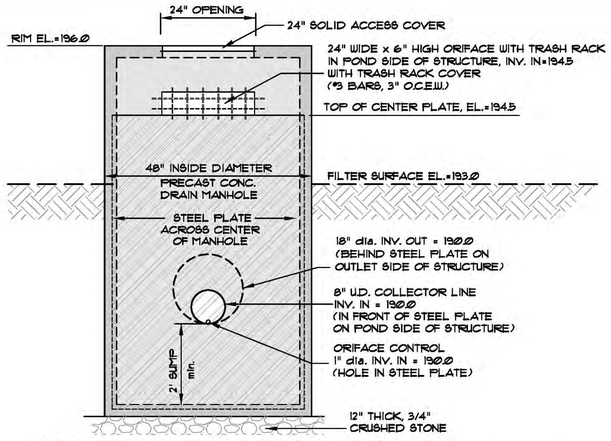
SOIL FILTER MEDIA SPECIFICATIONS *

FILTER MEDIA	SAND	TOPSOIL	MULCH
MIXTURE BY VOL.	50% (±5%)	25% (±5%)	25% (±5%)
SPECIFICATION	MEDOT SPEC. #703.01 FINE AGGREGATE FOR CONCRETE	USDA LOAMY SANDY TOPSOIL	WOODY FIBER & MODERATELY FINE, SHREDDED BARK SUPERHUMUS OR EQUAL, ADJUSTED FOR MINERAL SOIL CONTENT WITH LESS THAN 5% PASSING THE #200 SIEVE
GRADATION			
SIEVE SIZE	% BY WEIGHT	% BY WEIGHT	% BY WEIGHT
⅜"	100	-	-
4	90-100	75-95	-
8	80-100	-	-
10	-	60-90	-
16	50-85	-	-
30	25-60	-	-
40	-	35-85	-
60	10-30	-	-
100	2-10	-	-
200	0-5	15-25	-
200 CLAY	<2% **	<2% **	<2% **

* FOR GRASSED UNDERDRAINED SOIL FILTER BMP, PER THE MAINE DEP VOLUME III : BMP's TECHNICAL DESIGN MANUAL, MAY 2014

** COMBINED MIXTURE CLAY CONTENT SHALL NOT EXCEED 2%

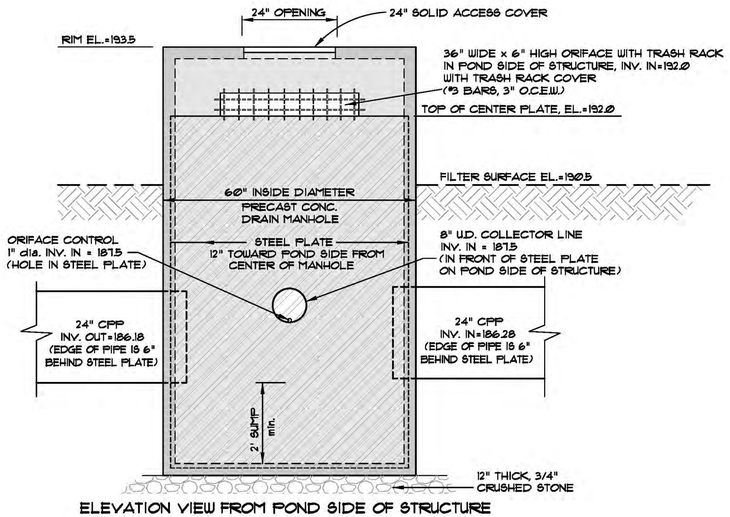
NOTE: THE SOIL FILTER SHALL DRAIN IN NO LESS THAN 24 hrs BUT NOT MORE THAN 48 hrs.



ELEVATION VIEW FROM POND SIDE OF STRUCTURE

FILTER BASIN #1 OUTLET CONTROL STRUCTURE (DMH-11) DETAIL

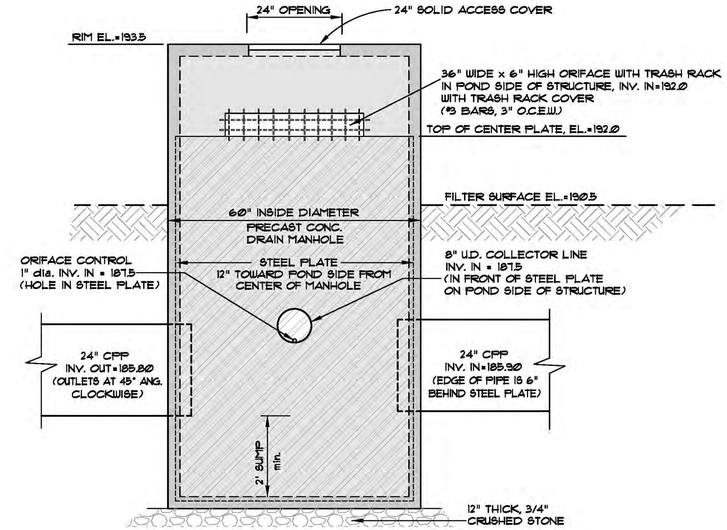
(NOT TO SCALE)



ELEVATION VIEW FROM POND SIDE OF STRUCTURE

FILTER BASIN #3 OUTLET CONTROL STRUCTURE (DMH-9) DETAIL

(NOT TO SCALE)



ELEVATION VIEW FROM POND SIDE OF STRUCTURE

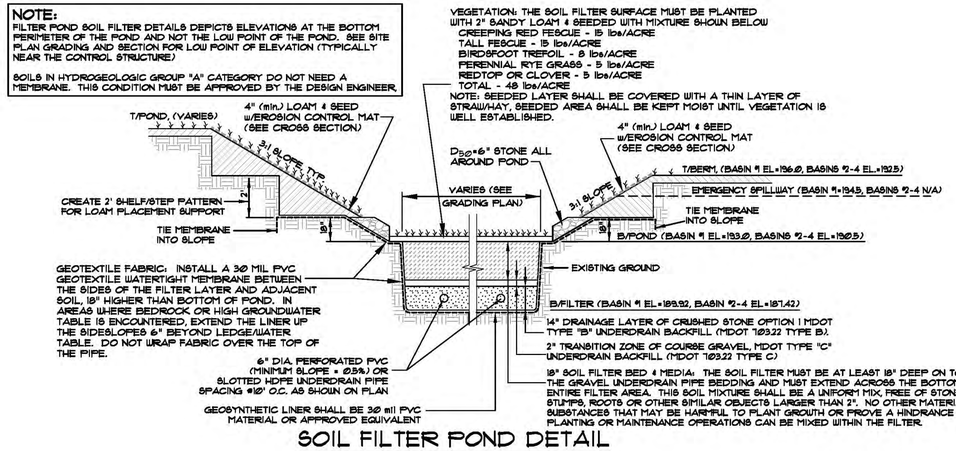
FILTER BASIN #2 OUTLET CONTROL STRUCTURE (DMH-8) DETAIL

(NOT TO SCALE)

NOTE:
FILTER POND SOIL FILTER DETAILS DEPICTS ELEVATIONS AT THE BOTTOM PERIMETER OF THE POND AND NOT THE LOW POINT OF THE POND. SEE SITE PLAN GRADING AND SECTION FOR LOW POINT OF ELEVATION (TYPICALLY NEAR THE CONTROL STRUCTURE)

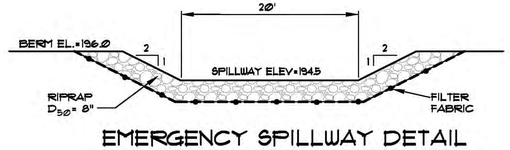
SOILS IN HYDROGEOLOGIC GROUP "A" CATEGORY DO NOT NEED A MEMBRANE. THIS CONDITION MUST BE APPROVED BY THE DESIGN ENGINEER.

VEGETATION: THE SOIL FILTER SURFACE MUST BE PLANTED WITH 2" SANDY LOAM & SEEDED WITH MIXTURE SHOWN BELOW
CREEPING RED FESCUE - 15 lbs/ACRE
TALL FESCUE - 15 lbs/ACRE
BIRDSFOOT TREFOIL - 8 lbs/ACRE
PERENNIAL RYE GRASS - 5 lbs/ACRE
REDTOP OR CLOVER - 5 lbs/ACRE
TOTAL - 48 lbs/ACRE
NOTE: SEEDED LAYER SHALL BE COVERED WITH A THIN LAYER OF STRAW/HAY. SEEDED AREA SHALL BE KEPT MOIST UNTIL VEGETATION IS WELL ESTABLISHED.



SOIL FILTER POND DETAIL

NOT TO SCALE



EMERGENCY SPILLWAY DETAIL

NOT TO SCALE

STATE OF MAINE STEPHEN ROBERGE #4832 REGISTERED PROFESSIONAL ENGINEER

FOR APPROVALS ONLY

REV.	DATE	CHANGES
1	4-22-19	PER CITY REVIEW COMMENTS

DO NOT MODIFY PLAN WITHOUT WRITTEN PERMISSION FROM SJR ENG., INC.

Stoneybrook Consultants, Inc.
P.O. Box 459 - Turner, Maine 04282
(207) 224-0252

SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04259
(207) 242-6248 tel
steve@sjreng.com
SJR ENGINEERING

FILTER BASIN DETAILS AND NOTES
MEMORIAL AVENUE SCHOOL
LEWISTON, MAINE
PREPARED FOR
JIG INVESTMENTS, LLC
P.O. BOX 1913 - LEWISTON, ME 04241-1913

DATE	PROJECT
3-14-18	2018-02
DRAWN BY	SCALE
PJM	1" = 40'

SHEET 6

GENERAL NOTES

1) THE CONTRACTOR IS REFERRED TO THE SPECIFICATIONS REGARDING COORDINATION WITH OTHERS, INCLUDING RESPONSIBILITIES AND RELATED COSTS. ALL UTILITY CONSTRUCTION IS SUBJECT TO APPROVAL INSPECTION BY UTILITY COMPANY PERSONNEL PRIOR TO BACKFILL OF TRENCHES.

2) BELOW GRADE UTILITY INFORMATION IS BASED UPON FIELD SURVEY, MDOT PLANS, CITY OF LEWISTON PLANS, CITY OF LEWISTON GIS WEBSITE, AND INFORMATION PROVIDED BY INDIVIDUAL UTILITY COMPANIES. LOCATIONS AND ELEVATIONS OF PUBLIC UTILITIES SHOWN ARE ONLY APPROXIMATE AND MAY NOT BE COMPLETE. PRIVATE UNDERGROUND UTILITIES SUCH AS, BUT NOT LIMITED TO, SEWER LINES, WATER LINES AND BURIED ELECTRICAL SERVICE ENTRANCES ARE NOT SHOWN. THE CONTRACTOR SHALL ASCERTAIN THE LOCATION AND SIZE OF EXISTING UTILITIES IN THE FIELD WITH THE RESPECTIVE UTILITY REPRESENTATIVE PRIOR TO COMMENCING WORK. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES, INCLUDING SERVICES. SHOULD ANY UNCHARTED OR INCORRECTLY CHARTED UTILITIES BE FOUND, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY FOR DIRECTION BEFORE PROCEEDING FURTHER WITH THE WORK IN THIS AREA. ADDITIONAL TEST PITS, BEYOND THOSE SHOWN, MAY BE REQUIRED. UTILITY CONTACTS ARE AS FOLLOWS:

DIG SAFE:
1-888-344-7233

ELECTRICAL:
CENTRAL MAINE POWER
83 EDISON DRIVE
AUGUSTA, ME 04336
TEL. (207) 779-9118

GAS
UNITIL
6075 FOREST AVENUE
PORTLAND, ME 04104
TEL. (207) 797-8002

TELECOMMUNICATIONS:
FIRSTLIGHT FIBER
491 LISBON STREET
LEWISTON, ME 04240
TEL. (207) 336-9911

TIME WARNER CABLE:
7 ALFRED PLOURDE PARKWAY
LEWISTON, ME 04240
TEL. 1-800-833-2253

FAIRPOINT COMMUNICATIONS:
521 E. MOREHEAD ST.
PORTLAND, ME 04101
TEL. 1-800-585-4466

WATER AND SEWER:
LEWISTON WATER & SEWER DISTRICT
103 ADAMS AVENUE
LEWISTON, ME 04240
TEL. (207) 784-5753

3) THE CONTRACTOR IS HEREBY CAUTIONED THAT ALL SITE FEATURES SHOWN HEREON ARE BASED ON FIELD OBSERVATIONS BY THE SURVEYOR AND BY INFORMATION PROVIDED BY UTILITY COMPANIES. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT DIG SAFE (1-888-DIGSAFE) AT LEAST THREE (3) BUT NOT MORE THAN THIRTY (30) DAYS PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION TO VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES.

4) CONTRACTOR SHALL BE AWARE THAT DIG SAFE ONLY NOTIFIES ITS "MEMBER" UTILITIES ABOUT THE DIG. WHEN NOTIFIED, DIG SAFE WILL ADVISE CONTRACTOR OF MEMBER UTILITIES IN THE AREA. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND CONTACTING NON-MEMBER UTILITIES DIRECTLY. NON-MEMBER UTILITIES MAY INCLUDE CITY WATER AND SEWER DISTRICTS AND SMALL LOCAL UTILITIES, AS WELL AS USG PUBLIC WORKS SYSTEMS.

5) CONTRACTORS SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE REQUIREMENTS OF 23 MRSA 3360-A. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE APPROPRIATE UTILITIES TO OBTAIN AUTHORIZATION PRIOR TO RELOCATION OF ANY EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS. IF A UTILITY CONFLICT ARISES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER, THE CITY, AND APPROPRIATE UTILITY COMPANY PRIOR TO PROCEEDING WITH ANY RELOCATION.

6) ALL EXISTING STORM DRAIN LINES ENCOUNTERED DURING CONSTRUCTION ARE TO REMAIN IN SERVICE. ANY EXISTING STORM DRAIN LINES OR CULVERTS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CITY AND OWNER. ALL TEST PITS SHALL BE EXCAVATED PRIOR TO CONSTRUCTION LAYOUT AND RESULTS REPORTED TO ENGINEER FOR REVIEW FOR CONFORMANCE WITH PLANS.

7) THE CONTRACTOR MAY ENCOUNTER ASBESTOS CEMENT PIPE DURING PROSECUTION OF THE WORK. CONTRACTOR SHALL CONFORM TO ALL APPLICABLE PROVISIONS OF OSHA, USEPA, MDEP AND ALL OTHER FEDERAL, STATE AND LOCAL REGULATIONS WHEN HANDLING AND/OR DISPOSING OF ASBESTOS CEMENT PRODUCTS.

8) ALL STRUCTURES AND PIPELINES LOCATED ADJACENT TO THE TRENCH EXCAVATION SHALL BE PROTECTED AND FIRMLY SUPPORTED BY THE CONTRACTOR UNTIL THE TRENCH IS BACKFILLED. INJURY TO ANY SUCH STRUCTURES CAUSED BY, OR RESULTING FROM, THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. ALL UTILITIES REQUIRING REPAIR, RELOCATION OR ADJUSTMENT AS A RESULT OF THE PROJECT SHALL BE COORDINATED THROUGH THE RESPECTIVE UTILITY.

9) ALL TEST PITS SHALL BE COMPLETED A MINIMUM OF TWO WEEKS PRIOR TO ORDERING THE ADJACENT STRUCTURES. THE INFORMATION FROM THE TEST PITS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND REVISION.

10) IN THOSE INSTANCES WHERE POWER OR TELEPHONE POLE SUPPORT IS REQUIRED, THE CONTRACTOR SHALL PROVIDE A MINIMUM 48-HOUR NOTIFICATION TO CMP OR FAIRPOINT, RESPECTIVELY. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR TEMPORARY BRACING OF UTILITIES.

11) IN THOSE INSTANCES THAT A UTILITY NEEDS TO BE RELOCATED, THE CONTRACTOR SHALL COORDINATE WITH THE RESPECTIVE UTILITY DIVISION/COMPANY TO SCHEDULE THE WORK AFTER THE COMPLETION OF THE TEST PITS.

12) CONTRACTOR SHALL INSTALL AND MAINTAIN TRAFFIC CONTROL SIGNS IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

13) THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TRAFFIC FLOW AT ALL TIMES. THE CONTRACTOR IS REQUIRED TO SUBMIT A TRAFFIC CONTROL PLAN TO THE CITY OR THEIR REPRESENTATIVE AT THE PRE-CONSTRUCTION MEETING. THE LEWISTON CITY PUBLIC WORKS DIRECTOR OR HIS DESIGNATE SHALL BE NOTIFIED AT THE PRE-CONSTRUCTION MEETING OF ANY PLANNED STREET CLOSINGS OR DETOURS. ALL TRAFFIC CONTROL SHALL BE IN COMPLIANCE WITH THE MUTCD.

14) THE CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING ALL PERMITS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE FAMILIAR WITH THE APPLICABLE PROVISIONS OF EACH PERMIT AS THEY APPLY TO THE WORK PRIOR TO BIDDING AND ABIDE BY THOSE PROVISIONS DURING CONSTRUCTION. THE CONTRACTOR SHALL POST ALL BONDS AS REQUIRED, PAY ALL FEES & PROVIDE PROOF OF INSURANCE AS NECESSARY FOR THIS WORK.

15) THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY RIGHTS OF WAY AND EASEMENTS. THE CONTRACTOR SHALL VERIFY THAT THE NECESSARY EASEMENTS HAVE BEEN SECURED BY THE OWNER. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE FAMILIAR WITH THE APPLICABLE PROVISIONS OF EACH EASEMENT AS THEY APPLY TO THE WORK PRIOR TO BIDDING AND ABIDE BY THOSE PROVISIONS DURING CONSTRUCTION. COPIES OF ALL RIGHTS-OF-WAY AND EASEMENTS ARE AVAILABLE FOR REVIEW AT THE OWNER'S OFFICE.

16) THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT OF ALL PROPOSED LINES AND GRADES AS SHOWN ON THE DRAWINGS. THE HORIZONTAL ALIGNMENT OF THE NEW STORM DRAINS AND SANITARY SEWER MAY BE ADJUSTED IN THE FIELD SUBJECT TO PRIOR APPROVAL BY THE ENGINEER.

17) THE SURVEYOR SHALL PROVIDE THE NECESSARY HORIZONTAL AND VERTICAL CONTROL POINTS FOR THE CONTRACTOR FOR WORK OUTSIDE THE STREET RIGHT-OF-WAY AND CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THIS INFORMATION THROUGHOUT CONSTRUCTION. ALL ELEVATIONS REFER TO THE 1988 NATIONAL GEODETIC VERTICAL DATUM UNLESS OTHERWISE NOTED ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ALL ELEVATION REFERENCE INFORMATION PRIOR TO USE IN CONSTRUCTION.

18) THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESETTING ALL EXISTING PROPERTY MONUMENTATION THAT IS DISTURBED BY HIS OPERATIONS AT NO EXPENSE TO THE CITY. THIS WORK IS TO BE DONE BY A LAND SURVEYOR REGISTERED IN THE STATE OF MAINE.

19) THE CONTRACTOR SHALL BE RESPONSIBLE FOR SEDIMENT CONTROL AND THE PREVENTION OF EROSION. ALL DISTURBED EARTH SURFACES ARE TO BE STABILIZED IN THE SHORTEST PRACTICAL TIME AND TEMPORARY SEDIMENT AND EROSION CONTROL DEVICES SHALL BE EMPLOYED UNTIL SUCH TIME AS ADEQUATE SOIL STABILIZATION HAS BEEN ACHIEVED. TEMPORARY STORAGE OF EXCAVATED MATERIAL IS TO BE IN A MANNER THAT WILL MINIMIZE EROSION. MATERIALS AND METHODS USED FOR TEMPORARY SEDIMENT AND EROSION CONTROL SHALL BE AS SPECIFIED BY THE LATEST EDITION OF THE "MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES" PREPARED BY THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

20) COMPACTION TESTS SHALL BE PERFORMED IN ACCORDANCE WITH MDOT SPECIFICATIONS WITH RESULTS OF TESTING SUBMITTED TO THE OWNER. ANY SETTLEMENT OCCURRING WITHIN ONE YEAR OF SUBSTANTIAL COMPLETION OF THE PROJECT WILL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.

21) OPEN TRENCHES OUTSIDE OF THE RIGHT OF WAY MAY BE LEFT OPEN IF THE CONTRACTOR PROVIDES SAFE BARRICADING AND LIGHTS.

22) PROPER IMPLEMENTATION AND MAINTENANCE OF EROSION CONTROL MEASURES ARE OF PARAMOUNT IMPORTANCE FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL EROSION CONTROL MEASURES SHOWN ON THE PLANS. ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY ONSITE INSPECTIONS OF THE OWNER, THEIR REPRESENTATIVES, OR STATE/LOCAL/ FEDERAL INSPECTORS AT NO ADDITIONAL COST TO THE OWNER.

GENERAL NOTES CONTINUED

23) CONTRACTOR SHALL CONTROL DUST WITH APPROPRIATE DUST CONTROL MEASURES. CONTRACTOR SHALL NOT TRACK OR SPILL EARTH AND DEBRIS ON PUBLIC STREETS OUTSIDE THE PROJECT AREA. STREETS OPENED TO THE PUBLIC SHALL BE KEPT SWEPT AND FREE OF DEBRIS.

24) ALL ROAD SURFACES SHALL PITCH 1/4 INCH PER FOOT MINIMUM FROM CENTERLINE TO GUTTER UNLESS OTHERWISE NOTED. ALL VEGETATED AREAS THAT ARE EXCAVATED, FILLED OR OTHERWISE DISTURBED BY THE CONTRACTOR AND ARE NOT TO BE PAVED OR FILLED WITH RIP-RAP SHALL BE LOAMED, GRADED, LIMED, FERTILIZED, SEEDED AND MULCHED AT NO ADDITIONAL EXPENSE TO THE CITY/OWNER.

25) THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND ALL OTHER APPLICABLE LOCAL, STATE AND FEDERAL RULES, REGULATIONS AND LAWS.

26) THE CONTRACTOR SHALL NOT HAVE ANY RIGHT OF PROPERTY IN ANY SUITABLE MATERIALS TAKEN FROM ANY EXCAVATION. SUITABLE EXCAVATED MATERIAL AS APPROVED BY THE ENGINEER, MAY BE INCORPORATED IN THE PROJECT, WITH EXCESS MATERIAL DISPOSED OF AT A LOCATION APPROVED BY THE CITY/OWNER. THESE PROVISIONS SHALL IN NO WAY RELIEVE THE CONTRACTOR OF HIS OBLIGATIONS TO PROPERLY DISPOSE OF AND REPLACE ANY MATERIAL DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING. THE CONTRACTOR SHALL DISPOSE OF UNSUITABLE AND EXCESS MATERIAL IN ACCORDANCE WITH THE APPLICABLE RULES AND REGULATIONS.

27) THE CONTRACTOR IS TO TAKE SPECIAL CARE NOT TO DAMAGE TREES WITHIN THE CONSTRUCTION AREA UNLESS THEY ARE NOTED TO BE REMOVED.

28) EXISTING STORM MANHOLES OR CATCH BASINS NOT TO REMAIN IN SERVICE SHALL BE REMOVED BY THE CONTRACTOR.

29) PROVIDE 2" RIGID INSULATION OVER WATER AND SEWER MAINS AND SERVICES WHEN COVER IS LESS THAN 4 FEET AND WHERE DIRECTED BY THE ENGINEER. CONTRACTOR SHALL SUPPLY INSULATION.

30) MINOR ADJUSTMENTS TO THE ALIGNMENT OF PROPOSED UTILITIES SHALL BE ALLOWED TO ACCOMMODATE EXISTING UTILITIES WHERE APPROPRIATE AS APPROVED BY THE ENGINEER.

31) A MINIMUM VERTICAL OR HORIZONTAL SEPARATION OF 6 INCHES BETWEEN THE WATER LINES (INCLUDING SERVICES) AND STORM DRAINAGE PIPES AND STRUCTURES, SHALL BE MAINTAINED. 2" RIGID INSULATION SHALL BE INSTALLED WHEN SEPARATION IS LESS THAN 18 INCHES.

32) EXISTING SIGNS THAT ARE IMPACTED BY THIS PROJECT SHALL BE RESET IN ACCORDANCE WITH M.U.T.C.D.

33) CONTRACTOR SHALL RESET OR REBUILD WALKWAY STEPS WHEN NECESSARY. WORK SHALL BE CONSIDERED INCIDENTAL.

34) ALL TEST PITS SHALL BE EXCAVATED PRIOR TO CONSTRUCTION LAYOUT AT THE APPROXIMATE LOCATIONS NOTED ON THE PLANS AND ACTUAL LOCATIONS OF SUBSURFACE UTILITIES SHALL BE REPORTED TO THE CITY ENGINEER WHERE APPROPRIATE, MINOR ADJUSTMENTS TO THE ALIGNMENTS OF PROPOSED LINES SHALL BE MADE TO ACCOMMODATE EXISTING UTILITIES.

35) THE INVERTS INDICATED ON THE PLAN AND PROFILE SHEETS ARE TO THE INSIDE FACE OF THE MANHOLE.

36) STATIONS AND OFFSETS INDICATED ON THE PLAN AND PROFILE SHEETS ARE TO THE CENTER OF THE CATCH BASIN GRATE AND THE CENTER OF THE SEWER AND STORM DRAIN MANHOLE COVER.

37) DEWATERING EFFORTS FROM SANITARY OR COMBINED SEWERS SHALL NOT BE DISCHARGED TO THE STORMDRAIN. DEWATERING EFFORTS FROM STORMWATER SHALL NOT BE DISCHARGED TO THE SEWER OR COMBINED SYSTEM.

38) STORM DRAIN INVERTS FOR CROSS STREET CONNECTIONS SHALL BE BASED ON ELEVATIONS OF EXISTING UTILITIES AS DETERMINED IN THE FIELD. CONTRACTOR SHALL COORDINATE PROPOSED STORM DRAIN INVERTS WITH THE ENGINEER.

39) CONTRACTOR TO VERIFY TYPE (BRICK OR PRECAST CONCRETE) AND CONDITION OF ALL SMH'S AND DMH'S IMPACTED AS PART OF THIS WORK. CONTRACTOR TO MAINTAIN THE INTEGRITY OF ALL STRUCTURES TO BE REUSED. DAMAGE TO EXISTING STRUCTURES SHALL BE REPAIRED AT CONTRACTORS EXPENSE.

40) CONTRACTOR TO REPLACE OR RESET ALL DISTURBED CURBING UPON COMPLETION OF UNDERGROUND UTILITY WORK.

41) CONTRACTOR TO RESTORE SIDEWALKS AND DRIVEWAYS IMPACTED BY CONSTRUCTION.

42) CONTRACTOR TO REGRADE AND REPLANT ESPLANADE AREAS IMPACTED BY CONSTRUCTION.

43) CONTRACTOR TO SAWCUT PAVEMENT AS NECESSARY TO INSTALL UTILITY IMPROVEMENTS. CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING AREAS WHERE THE EXISTING PAVEMENT WAS REMOVED FOR PAVING, INCLUDING GRADING AND ADDITIONAL SAWCUTTING AS REQUIRED BY THE ENGINEER.

44) CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGNING, FURNISHING, INSTALLING AND MONITORING ANY SHORING, BRACING OR OTHER EXCAVATION SUPPORT THAT MAY BE REQUIRED TO PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENT OR OTHER FACILITIES THAT COULD BE DAMAGED BY SETTLEMENT, LATERAL MOVEMENTS, UNDERMINING, WASHOUT OR OTHER HAZARDS THAT COULD DEVELOP DURING EXCAVATION SUPPORT AND PROTECTION OPERATIONS.

45) CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIM OR HERSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIM OR HERSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.

46) INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND OWNER'S REQUIREMENTS UNLESS SPECIFICALLY OTHERWISE INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.

47) CONTRACTOR SHALL CLEAN AND REMOVE DEBRIS AND SEDIMENT DEPOSITED ON PUBLIC STREETS, SIDEWALKS, ADJACENT AREAS, OR OTHER PUBLIC WAYS DUE TO CONSTRUCTION DAILY.

48) THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ANY CHANGES AND DEVIATION OF APPROVED PLANS NOT AUTHORIZED BY THE ENGINEER AND/OR OWNER.

49) DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. ANY MODIFICATION TO SUIT FIELD DIMENSION AND CONDITION SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ANY WORK.

50) BEFORE THE FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT AND MATERIALS, REPAIR OR REPLACE PRIVATE OR PUBLIC PROPERTY WHICH MAY HAVE BEEN DAMAGED OR DESTROYED DURING CONSTRUCTION AS DETERMINED BY THE CITY, CLEAN THE AREAS WITHIN AND ADJACENT TO THE PROJECT WHICH HAVE BEEN OBSTRUCTED BY HIS/HER OPERATIONS, AND LEAVE THE PROJECT AREA NEAT AND PRESENTABLE.

51) THE CONTRACT WORK TO BE PERFORMED ON THIS PROJECT CONSISTS OF FURNISHING ALL REQUIRED LABOR, MATERIALS, EQUIPMENT, IMPLEMENTS, PARTS AND SUPPLIES NECESSARY FOR, OR APPURTENANT TO, THE INSTALLATION OF CONSTRUCTION IMPROVEMENTS IN ACCORDANCE WITH THESE DRAWINGS AND AS FURTHER ELABORATED IN ANY ACCOMPANYING SPECIFICATIONS.

52) THE WORK SHALL BE PERFORMED IN A THOROUGH WORKMANLIKE MANNER. ANY REFERENCE TO A SPECIFICATION OR DESIGNATION OF THE AMERICAN SOCIETY FOR TESTING MATERIALS, FEDERAL SPECIFICATIONS, OR OTHER STANDARDS, CODES OR ORDERS, REFERS TO THE MOST RECENT OR LATEST SPECIFICATION OR DESIGNATION.

53) THE CONTRACTOR SHALL GUARANTEE THE FAITHFUL REMEDY OF ANY DEFECTS DUE TO FAULTY MATERIALS OR WORKMANSHIP AND GUARANTEES PAYMENT FOR ANY RESULTING DAMAGE WHICH SHALL APPEAR WITHIN A PERIOD OF ONE (1) YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION OF THE PROJECT.

54) THE CONTRACTOR SHALL NOT USE PRIVATE PROPERTY FOR STOCKPILING MATERIALS OR PARKING EQUIPMENT OR VEHICLES WITHOUT WRITTEN CONSENT FROM THE PROPERTY OWNER. ANY DAMAGE DONE TO PRIVATE PROPERTY RESULTING FROM THESE ACTIVITIES SHALL BE THE RESPONSIBLITY OF THE CONTRACTOR TO REPAIR AT NO ADDITIONAL COST TO THE CITY/OWNER.

EROSION & SEDIMENTATION CONTROL NOTES

1) THE CONTRACTOR SHALL INSPECT EROSION & SEDIMENT CONTROL MEASURES WEEKLY AND AFTER HEAVY RAINFALLS THROUGHOUT THE DURATION OF THE PROJECT INCLUDING WEEKENDS AND HOLIDAYS. INSPECTION REPORTS MUST BE PROVIDED TO THE CITY AND OWNER WITHIN 48-HOURS OF INSPECTION. ALL EROSION AND SEDIMENT CONTROLS SHALL BE MAINTAINED PER BEST MANAGEMENT PRACTICES.

2) THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTING THE EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH THE "MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES", DEPARTMENT OF ENVIRONMENTAL PROTECTION, DATED MARCH 2015 (DEPLW 588) AND IN ACCORDANCE WITH THE STORMWATER REPORT INCLUDED WITH THE PERMIT APPLICATION APPROVED BY THE CITY OF LEWISTON. ADDITIONAL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY DURING ON-SITE INSPECTIONS BY THE OWNER, THEIR REPRESENTATIVES OR STATE/LOCAL/FEDERAL INSPECTORS AT NO ADDITIONAL COST TO THE OWNER.

3) PRIOR TO CONSTRUCTION, PROPERLY INSTALL SEDIMENT BARRIERS AT THE DOWN GRADIENT EDGE OF THE DISTURBED AREA AND ADJACENT TO DRAINAGE CHANNELS WITHIN THIS AREA.

4) SILT FENCE AND BARK MULCH BERM LOCATIONS SHOWN ARE APPROXIMATE. INSTALL WHERE APPROPRIATE TO CONTROL SEDIMENTATION ON AND OFF SITE. SILT FENCE SHALL BE REMOVED AFTER THE SITE IS STABILIZED WITH AT LEAST 90% VEGETATED GROWTH.

5) NO SLOPES, EITHER PERMANENT OR TEMPORARY, SHALL BE STEEPER THAN TWO TO ONE (2 TO 1).

6) AREAS DISTURBED DURING CONSTRUCTION SHALL BE MINIMIZED. AREAS SHALL BE TEMPORARILY STABILIZED WITH MULCH OR NON-ERODABLE COVER IF EXPOSED SOILS WILL NOT BE WORKED FOR MORE THAN 7 DAYS. PERMANENT SEEDING SHALL TAKE PLACE WITHIN 7 DAYS OF FINAL GRADING.

7) IF FINAL SEEDING OF THE DISTURBED AREAS IS NOT COMPLETED 45 DAYS PRIOR TO THE FIRST KILLING FROST, USE TEMPORARY MULCHING (DORMANT SEEDING MAY BE ATTEMPTED AS WELL) TO PROTECT THE SITE AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.

8) TEMPORARY SEEDING OF DISTURBED AREAS THAT HAVE NOT BEEN FINAL GRADED SHALL BE COMPLETED BY AUGUST 15th OR 45 DAYS PRIOR TO THE FIRST KILLING FROST (OCT. 1) TO PROTECT FROM SPRING RUNOFF PROBLEMS.

9) REVEGETATION MEASURES WILL COMMENCE UPON COMPLETION OF CONSTRUCTION EXCEPT AS NOTED ABOVE. ALL DISTURBED AREAS NOT OTHERWISE STABILIZED WILL BE GRADED, SMOOTHED AND PREPARED FOR FINAL SEEDING AS FOLLOWS
A) 4" OF LOAM WILL BE SPREAD OVER DISTURBED AREAS AND SMOOTHED TO A UNIFORM SURFACE.
B) APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 2000 POUNDS PER ACRE OR 15 POUNDS PER SQUARE FOOT USING 10-20-20 (N-P2O5-K2O) OR EQUIVALENT. APPLY GROUND LIMESTONE (EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF 3.3 TONS PER ACRE (150 lbs. PER 1000 s.f.)
C) FOLLOWING SEED BED PREPARATION, DITCHES AND BARK SLOPES WILL BE SEEDED TO A MIXTURE OF 41% CREEPING RED FESCUE, 5% REDTOP AND 48% TALL FESCUE. THE LAWN AREAS WILL BE SEEDED TO A PREMIUM TURF MIXTURE OF 44% KENTUCKY BLUEGRASS, 44% CREEPING RED FESCUE AND 12% PERENNIAL RYEGRASS. SEEDING RATE IS ONE POUND PER 1000 s.f. LAWN QUALITY SOD MAY BE SUBSTITUTED FOR SEED. SEED MIX SHALL CONTAIN 10% ANNUAL RYEGRASS.
D) HAY MULCH AT THE RATE OF 70-90 lbs PER 1000 s.f. OR A HYDRO-APPLICATION OF ASPHALT, WOOD OR PAPER FIBER SHALL BE APPLIED FOLLOWING SEEDING. A SUITABLE BINDER SUCH AS CURASOL OR RMB PLUS WILL BE USED ON HAY MULCH FOR WIND CONTROL.

WINTER CONSTRUCTION NOTES

1) WINTER CONSTRUCTION IS CONSTRUCTION ACTIVITY PERFORMED DURING THE PERIOD FROM NOVEMBER 1 - APRIL 15. IF DISTURBED AREAS ARE NOT STABILIZED WITH PERMANENT MEASURES BY NOVEMBER 1 OR NEW SOIL DISTURBANCE OCCURS AFTER NOVEMBER 1, BUT BEFORE APRIL 15, THEN THESE AREAS MUST BE PROTECTED AND RUNOFF FROM THEM MUST BE CONTROLLED BY ADDITIONAL MEASURES AND RESTRICTIONS.

2) SITE STABILIZATION - FOR WINTER STABILIZATION, HAY MULCH IS APPLIED AT TWICE THE STANDARD TEMPORARY STABILIZATION RATE. AT THE END OF EACH CONSTRUCTION DAY, AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE MUST BE STABILIZED. MULCH MAY NOT BE SPREAD ON TOP OF SNOW.

3) SEDIMENT BARRIERS - ALL AREAS WITHIN 75' OF A PROTECTED NATURAL RESOURCE MUST BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIERS.

4) DITCH - ALL VEGETATIVE DITCH LINES THAT HAVE NOT BEEN STABILIZED BY NOVEMBER 1, OR WILL BE WORKED DURING THE WINTER CONSTRUCTION PERIOD, MUST BE STABILIZED WITH AN APPROPRIATE STONE LINING BACKED BY AN APPROPRIATE GRAVEL BED OR GEOTEXTILE UNLESS SPECIFICALLY RELEASED FROM THIS STANDARD BY THE DEPARTMENT.

5) SLOPES - MULCH NETTING MUST BE USED TO ANCHOR MULCH ON ALL SLOPES GREATER THAN 8% UNLESS EROSION CONTROL BLANKETS OR EROSION CONTROL MIX IS BEING USED ON THESE SLOPES.

LAYOUT NOTES

1) ALL SIGNS INDICATED ON THE PLANS ARE TO MEET ALL REQUIREMENTS AND STANDARDS OF THE MDOT AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

2) PROPERTY LINE AND RIGHT OF WAY MONUMENTS SHALL NOT BE DISTURBED BY CONSTRUCTION. IF DISTURBED, THEY SHALL BE RESET TO THEIR ORIGINAL LOCATIONS AT THE CONTRACTORS EXPENSE BY A MAINE PROFESSIONAL LAND SURVEYOR.

3) PROPOSED RIGHT-OR-WAY MONUMENTS AND PROPERTY LINES PINS SHALL BE INSTALLED UNDER THE DIRECTION OF A MAINE PROFESSIONAL LAND SURVEYOR.

PERMITTING NOTE

THIS PROJECT WILL BE SUBJECT TO THE TERMS AND CONDITIONS OF CITY OF LEWISTON, MAINE SITE PLAN APPROVAL. THE CONTRACTOR SHALL BECOME KNOWLEDGEABLE WITH THE LAND USE ORDINANCE REQUIREMENTS, THE PERMIT REQUIREMENTS, AND AGENCY APPROVALS.

GRADING AND DRAINAGE NOTES

1) UNLESS OTHERWISE NOTED, STORM DRAIN PIPE SHALL BE IN ACCORDANCE WITH MDOT SPECIFICATIONS SECTION 603 PIPE CULVERTS AND STORM DRAINS, LATEST REVISION WITH THE EXCEPTION THAT THE ONLY ACCEPTABLE TYPES OF PIPE ARE AS FOLLOWS: REINFORCED CONCRETE PIPE, HDPE/SMOOTH INTERIOR CORRUGATED PLASTIC PIPE.

2) HDPE/SMOOTH INTERIOR CORRUGATED PLASTIC PIPE (SICP) MAY ONLY BE USED FOR PIPE SIZES 48" DIAMETER AND SMALLER.

3) TOPSOIL STRIPPED IN AREAS OF CONSTRUCTION THAT IS SUITABLE FOR REUSE AS LOAM SHALL BE STOCKPILED ON SITE AT A LOCATION DESIGNATED BY THE OWNER. UNSUITABLE SOIL SHALL BE SEPARATED, REMOVED AND DISPOSED OF AT AN APPROVED DISPOSAL LOCATION OFFSITE.

4) ALL EXISTING STRUCTURES, FENCING, TREES, ETC., WITHIN THE CONSTRUCTION AREA, UNLESS OTHERWISE NOTED TO REMAIN, SHALL BE REMOVED AND DISPOSED OF OFFSITE. ANY BURNING ONSITE SHALL BE SUBJECT TO LOCAL ORDINANCES AND PROJECT SPECIFICATIONS.

5) THE SITE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES HAVING UNDERGROUND PIPING ON-SITE OR IN THE RIGHT OF WAY PRIOR TO EXCAVATION. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING COMPANY AND LOCATE ALL UTILITIES PRIOR TO GRADING/EXCAVATION START.

6) SITE EXCAVATION AND FILL-IN-PLACE TO ESTABLISH THE DESIRED SUB-GRADE SHALL BE SCHEDULED SUCH THAT EROSION CONTROL PRACTICES ARE IN PLACE AND FUNCTIONING DOWN-GRADIENT OF THE EARTHWORK PRIOR TO THE START OF EARTHMOVING ACTIVITIES.

STATE OF MAINE · STEPHEN J. ROBERGE · #4832 · REGISTERED PROFESSIONAL ENGINEER
FOR APPROVALS ONLY

REV.	DATE	CHANGES
1	4-22-19	PER CITY REVIEW COMMENTS

DO NOT MODIFY PLAN WITHOUT WRITTEN PERMISSION FROM SJR ENG., INC.

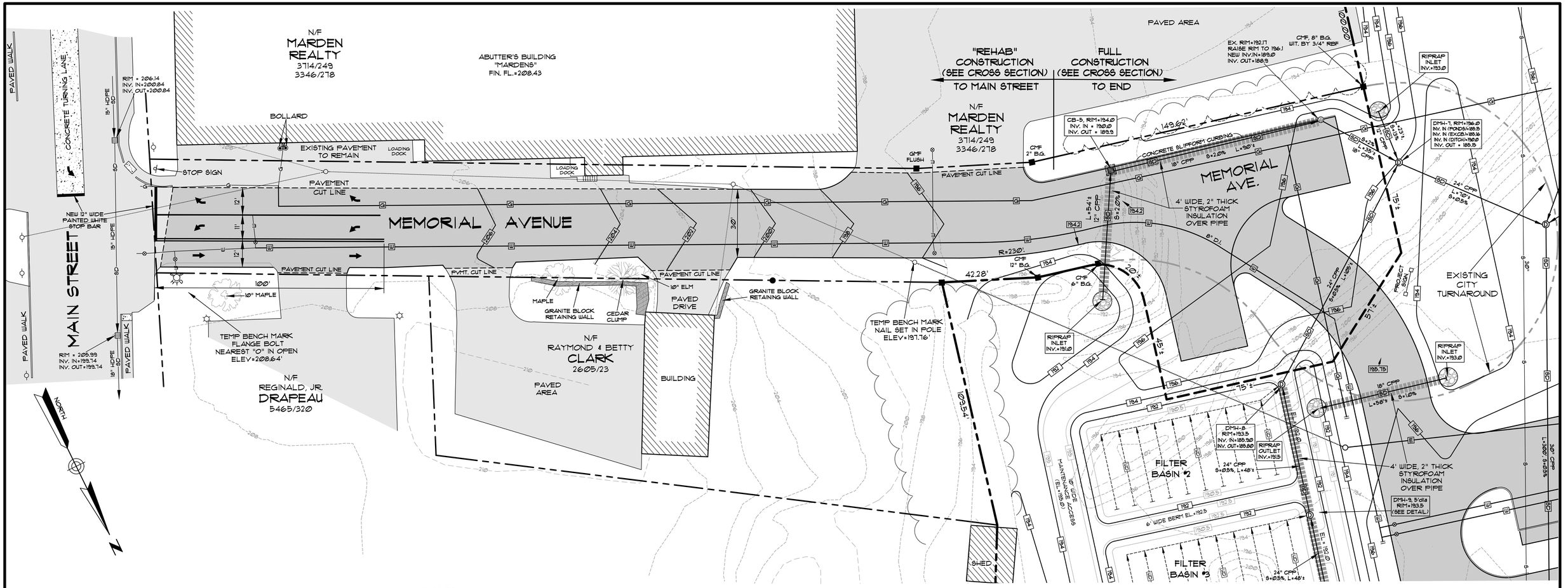
Stoneybrook Consultants, Inc.
P.O. Box 459 - Turner, Maine 04282
(207) 224-0252

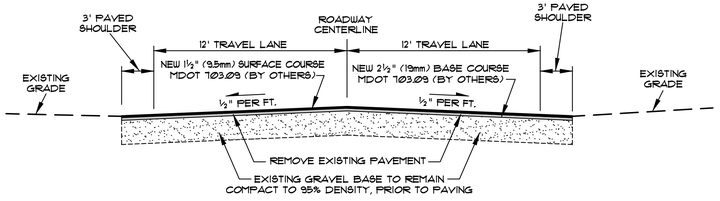
SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04259
(207) 242-6248 tel
stevesejreng.com
SJR ENGINEERING

CONSTRUCTION NOTES
MEMORIAL AVENUE SCHOOL
LEWISTON, MAINE
PREPARED FOR
JIG INVESTMENTS, LLC
P.O. BOX 1913 - LEWISTON, ME 04241-1913

DATE	PROJECT
3-14-19	2019-02
DRAWN BY	SCALE
PJM	N.T.S.

SHEET 1

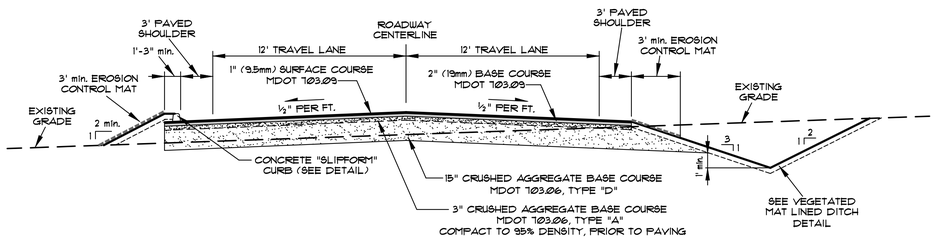




SHIM AS REQUIRED TO CREATE CROWN

TYPICAL CROSS SECTION - PAVEMENT "REHAB"

NOT TO SCALE



TYPICAL CROSS SECTION - FULL CONSTRUCTION

NOT TO SCALE

SCALE : 1" = 20'

0 10 20 40 60 80

NOTES

1) ALL BOOK AND PAGE NUMBERS REFER TO THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS.

2) EXISTING CONDITIONS ARE BASED ON A PLAN ENTITLED "BOUNDARY SURVEY - ATLANTIC REFINANCE, LLC" DATED DECEMBER 10, 2013, PREPARED BY JONES ASSOCIATES, INC.

3) TOPOGRAPHIC INFORMATION IS BASED ON A FIELD SURVEY AND 2' GIS CONTOURS OBTAINED FROM THE CITY OF LEWISTON.

4) THE LOCATION, DEPTH, SIZE & EXISTENCE OF ALL UNDERGROUND UTILITY LINES, TANKS AND/OR STRUCTURES WAS NOT VERIFIED. CONTRACTOR SHALL CONTACT DIGSAFE/ON-TARGET PRIOR TO EXCAVATION TO CONFIRM THE LOCATION OF ALL PUBLIC & PRIVATE UTILITIES WITHIN THE PROJECT AREA (INCLUDING MEMORIAL AVENUE).

5) THE DEVELOPMENT AREA IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON THE F.E.M.A. FLOOD INSURANCE RATE MAP, PANEL #2300IC 0214E, DATED JULY 8, 2013.

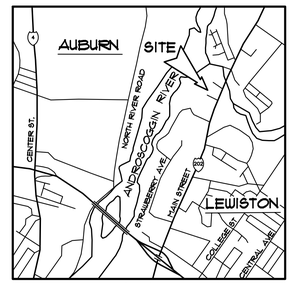
6) INSTALL EROSION CONTROL MAT (SEE DETAIL SHEET) ON ALL SLOPES OF 3 : 1 OR STEEPER.

7) LOAM, SEED & MULCH ALL DISTURBED AREA NOT PAVED OR RIPRAPPED (SEE DETAIL).

8) INSTALL SILT SACK IN ALL CATCH BASINS (SEE DETAIL).

LEGEND

- BOUNDARY LINE (SUBJECT PARCEL)
- BOUNDARY LINE (OTHER)
- IRON PIPE OR ROD FOUND
- MONUMENT FOUND
- N/F — NOW OR FORMERLY
- 2178/189 — BOOK AND PAGE NUMBER
- EXISTING CATCH BASIN
- EXISTING SEWER MANHOLE
- G — EXISTING GAS LINE
- W — EXISTING WATER LINE
- SD — EXISTING STORM DRAIN LINE
- 204 — EXISTING CONTOUR
- 204 — NEW CONTOUR
- NEW DRAINAGE MANHOLE
- EXISTING HYDRANT
- EXISTING WATER SHUT OFF
- EXISTING GAS SHUT OFF
- EXISTING CATCH BASIN
- NEW CATCH BASIN
- EXISTING UTILITY POLE WITH O.H. WIRES
- NEW UTILITY POLE WITH O.H. WIRES
- SD — NEW STORM DRAIN LINE
- E — NEW UNDERGROUND ELECTRIC LINE
- W — NEW WATER LINE
- G — NEW GAS LINE
- EXISTING TREE LINE
- EXISTING TO BE REMOVED
- NEW TREE LINE
- EXISTING BUILDING
- NEW BUILDING
- EXISTING PAVEMENT
- NEW PAVEMENT
- NEW RIPRAP ON FABRIC (D_{50}= 8")
- INSTALL SILT SACK IN CATCH BASIN



LOCATION MAP

STATE OF MAINE
STEPHEN J. ROBERGE #4837 REGISTERED PROFESSIONAL ENGINEER
FOR APPROVALS ONLY

REVISED: APRIL 5, 2019 - ADD PROJECT SIGN
REVISED: APRIL 2, 2019 - PER CITY REVIEW COMMENTS

OFF-SITE IMPROVEMENTS
MEMORIAL AVENUE SCHOOL
LEWISTON, MAINE

PREPARED FOR

JIG INVESTMENTS, LLC
P.O. BOX 1913 - LEWISTON, ME 04241-1913

Stoneybrook Consultants, Inc.
P.O. Box 459 - Turner, Maine 04282 - (207) 224-0252

SJR ENGINEERING
SJR ENGINEERING, INC.
16 THURSTON DRIVE
MONMOUTH, MAINE 04259
(207) 242-6248 tel
steve@sjreng.com

DATE: MARCH 14, 2019	DRAWN BY: PJM	SCALE: 1" = 20'	SHEET
JOB NUMBER: 2019-02	CHECKED BY: MFG/SJR	CADD: 18-033 ROAD	8

NOTES

1) ALL BOOK AND PAGE NUMBERS REFER TO THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS.

2) OWNER OF RECORD - JOHN F. MURPHY HOMES, INC.
DEED REFERENCE - BOOK 8844, PAGE 243
TAX MAP 169, LOTS 7 & 8

3) PARCEL AREA = 21.3± ACRES

4) EXISTING CONDITIONS ARE BASED ON A PLAN ENTITLED "BOUNDARY SURVEY - ATLANTIC REFINANCE, LLC" DATED DECEMBER 10, 2013, PREPARED BY JONES ASSOCIATES, INC.

5) TOPOGRAPHIC INFORMATION IS BASED ON A FIELD SURVEY AND 2' GIS CONTOURS OBTAINED FROM THE CITY OF LEWISTON.

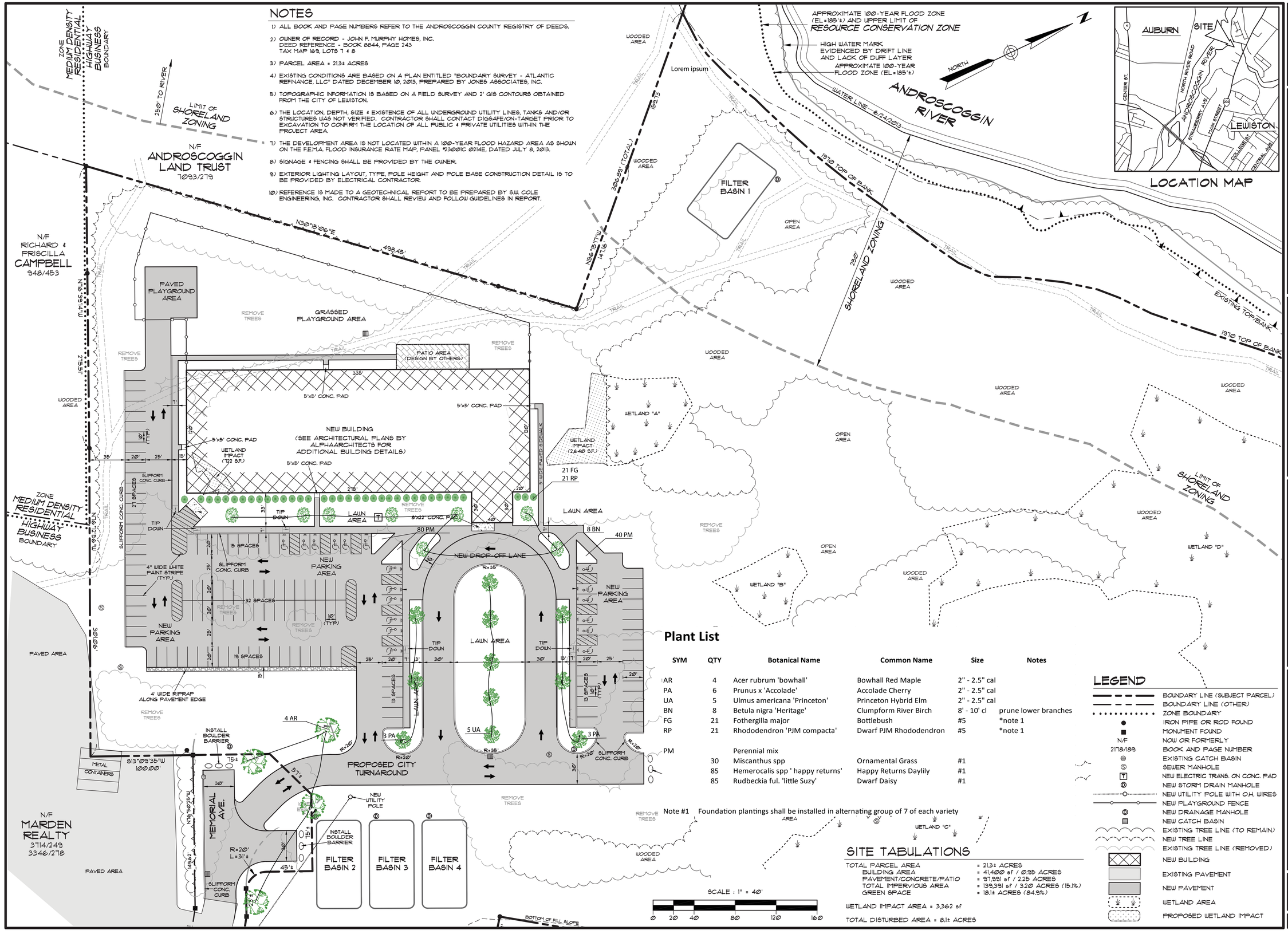
6) THE LOCATION, DEPTH, SIZE & EXISTENCE OF ALL UNDERGROUND UTILITY LINES, TANKS AND/OR STRUCTURES WAS NOT VERIFIED. CONTRACTOR SHALL CONTACT DIGSAFE/ON-TARGET PRIOR TO EXCAVATION TO CONFIRM THE LOCATION OF ALL PUBLIC & PRIVATE UTILITIES WITHIN THE PROJECT AREA.

7) THE DEVELOPMENT AREA IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON THE F.E.M.A. FLOOD INSURANCE RATE MAP, PANEL #2300C 0014E, DATED JULY 8, 2013.

8) SIGNAGE & FENCING SHALL BE PROVIDED BY THE OWNER.

9) EXTERIOR LIGHTING LAYOUT, TYPE, POLE HEIGHT AND POLE BASE CONSTRUCTION DETAIL IS TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

10) REFERENCE IS MADE TO A GEOTECHNICAL REPORT TO BE PREPARED BY S.W. COLE ENGINEERING, INC. CONTRACTOR SHALL REVIEW AND FOLLOW GUIDELINES IN REPORT.



LOCATION MAP

Plant List

SYM	QTY	Botanical Name	Common Name	Size	Notes
AR	4	Acer rubrum 'bowhall'	Bowhall Red Maple	2" - 2.5" cal	
PA	6	Prunus x 'Accolade'	Accolade Cherry	2" - 2.5" cal	
UA	5	Ulmus americana 'Princeton'	Princeton Hybrid Elm	2" - 2.5" cal	
BN	8	Betula nigra 'Heritage'	Clumpform River Birch	8' - 10' cl	prune lower branches
FG	21	Fothergilla major	Bottlebush	#5	*note 1
RP	21	Rhododendron 'PJM compacta'	Dwarf PJM Rhododendron	#5	*note 1
PM		Perennial mix			
	30	Miscanthus spp	Ornamental Grass	#1	
	85	Hemerocalis spp ' happy returns'	Happy Returns Daylily	#1	
	85	Rudbeckia ful. 'little Suzy'	Dwarf Daisy	#1	

Note #1 Foundation plantings shall be installed in alternating group of 7 of each variety

LEGEND

- BOUNDARY LINE (SUBJECT PARCEL)
- BOUNDARY LINE (OTHER)
- ZONE BOUNDARY
- IRON PIPE OR ROD FOUND
- MONUMENT FOUND
- N/F NOW OR FORMERLY
- 2178/189 BOOK AND PAGE NUMBER
- EXISTING CATCH BASIN
- SEWER MANHOLE
- NEW ELECTRIC TRANS. ON CONC. PAD
- NEW STORM DRAIN MANHOLE
- NEW UTILITY POLE WITH O.H. WIRES
- NEW PLAYGROUND FENCE
- NEW DRAINAGE MANHOLE
- NEW CATCH BASIN
- EXISTING TREE LINE (TO REMAIN)
- NEW TREE LINE
- EXISTING TREE LINE (REMOVED)
- NEW BUILDING
- EXISTING PAVEMENT
- NEW PAVEMENT
- WETLAND AREA
- PROPOSED WETLAND IMPACT

SITE TABULATIONS

TOTAL PARCEL AREA	= 21.3± ACRES
BUILDING AREA	= 41,400 sf / 0.95 ACRES
PAVEMENT/CONCRETE/PATIO	= 97,991 sf / 2.25 ACRES
TOTAL IMPERVIOUS AREA	= 139,391 sf / 3.20 ACRES (15.1%)
GREEN SPACE	= 18.1± ACRES (84.9%)

WETLAND IMPACT AREA = 3,362 sf

TOTAL DISTURBED AREA = 8.1± ACRES

SCALE : 1" = 40'

0 20 40 80 120 160

Davis Landscape Company, Inc.

REV:	DATE:	CHANGES:

LANDSCAPE PLAN
MEMORIAL AVENUE SCHOOL
LEWISTON, MAINE
PREPARED FOR
JIG INVESTMENTS, LLC
P.O. BOX 1913 - LEWISTON, ME 04241-1913

DATE	PROJECT
03-26-19	2019-02
DRAWN BY	SCALE
CTD	1" = 40'

Sheet 1 - LS