

**CITY OF LEWISTON  
PLANNING BOARD MEETING**  
Monday, April 27, 2020 – 5:30 P.M.  
Lewiston City Government  
27 Pine Street, Lewiston, ME

## **AGENDA**

**Remote Meeting Information:**

In accordance with An Act To Implement Provisions Necessary to the Health, Welfare and Safety of the Citizens of Maine in Response to the COVID-19 Public Health Emergency, as enacted to read: Sec. G-1 1 MRSA §403-A Public proceedings through remote access during declaration of state of emergency due to COVID-19, the meeting will be held through ZOOM video conferencing. To participate in the meeting, please go to

[https://zoom.us/meeting/register/tJMqcuCpqzgiH91o\\_123\\_NbHhOHWa7Qcip-F](https://zoom.us/meeting/register/tJMqcuCpqzgiH91o_123_NbHhOHWa7Qcip-F)

Information regarding this application is available at

<http://www.lewistonmaine.gov/209/Planning-Board> Questions and comments on the application or meeting may be sent to [dgreene@lewistonmaine.gov](mailto:dgreene@lewistonmaine.gov) or by calling 207-513-3000, ext. 3223.

**1. ROLL CALL**

**2. ADJUSTMENTS TO THE AGENDA**

**3. CORRESPONDENCE**

**4. PUBLIC HEARINGS:**

- a. Stoneybrook Land Use, Inc., an agent for Connor Realty, LLC, has submitted a Development Review Application to construct a 7,083 sf. Dunkin Donuts and multi-tenant building at 1896 Lisbon Street.
- b. David Langelier of 10 East Merrill Road has submitted a petition to change the zoning for properties located at 949 College Street, 2 East Merrill Road, 4 East Merrill Road, 6 East Merrill Road, 8 East Merrill Road, 10 East Merrill Road, and portions of 1 East Merrill Road, 3 East Merrill Road and 5 East Merrill Road from Rural Agricultural district (RA) to Low-Density Residential district (LDR).
- c. VHB Engineers, an agent for NextGrid Inc., has submitted a Development Review and Conditional Use Application to construct a 4.004 MWdc solar facility covering 17.25 ac. at 1043-1045 Main Street.

- d. VHB Engineers, an agent for NextGrid Inc., has submitted a Development Review and Conditional Use Application to construct a 1.879 MWdc solar facility covering 9.55 ac. at 1875 Lisbon Street.
- e. VHB Engineers, an agent for NextGrid Inc., has submitted a Development Review and Conditional Use Application to construct a 5.297 MWdc solar facility covering 19.81 ac. at 265 Merrill Road.
- f. Site Lines, PA, an agent for 410 Industries, LLC, has submitted a Development Review Application to construct a 7,500 sf. office and warehouse building at 1222 Sabattus Street.

**5. OTHER BUSINESS:**

- a. Minor Amendment to Maple Ridge Subdivision, De Minimis change to lot lines at 4 Bayberry Lane (Lots 24-26).
- b. Update on Design Lewiston

**6. READING OF THE MINUTES:** Motion to adopt the February 24, 2020 draft minutes

**7. ADJOURNMENT**

The next scheduled Planning Board meeting is May 11, 2020



## CITY OF LEWISTON

### Department of Planning & Code Enforcement

TO: Lewiston Planning Board

FROM: Douglas Greene, AICP, RLA, City Planner

DATE: April 27, 2020

RE: Agenda Item 4a. Development Review and Traffic Movement Permit Request for Dunkin Donut shop and Multi-tenant Building at 1896 Lisbon Street

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A Development Review and Traffic Movement Permit application has been submitted by Stoneybrook Land Use, Inc. on behalf of Connor Realty, LLC, to construct a 7,083 sf. Dunkin Donuts and multi-tenant building located at 1896 Lisbon Street.

#### PROJECT DESCRIPTION

The property at 1896 Lisbon Street is zoned Highway Business (HB) and is 2.27 acres in size. The property is a double-frontage lot with Lisbon Street on one side and South Lisbon Street on the opposite side. A landscaping business at 1904 Lisbon Street is located to the east and a shared drive will serve both properties and connect Lisbon Street to South Lisbon Street. The land slopes gently from Lisbon Street towards South Lisbon Street and currently has a vacant house and shed, which will be removed.

The project seeks to relocate an existing Dunkin Donuts located at 1930 Lisbon Street and construct a 7,000 sf building that will contain a 2,163 sf Dunkin Donuts and associated office space of 900 sf. Two other separate rental units, with a total area of around 4,000 sf, are also included in the proposed building. The site plan has a two-way, shared entrance on the east side of the Lisbon Street frontage and an exit only to both directions of Lisbon Street on the western side of Lisbon Street. The Dunkin Donuts will have two lanes of drive-through traffic, one for mobile orders and one for regular pick-up, and a vehicular lane on the north side of the drive-through lanes. 16 parking spaces are located on the west side of the building, and 41 parking spaces on the south and east side of the lot. The drive-through lanes will have space for 21 cars to stack.

The Dunkin Donuts is considered a drive-in restaurant and has a parking requirement of 10 spaces plus one space for every 100 sf. of building space, which totals 32 required parking spaces. For the other tenant building space, the applicant used the higher required parking rate of retail use to calculate the required parking, which is one parking space for every 250 sf., for a total 20 required spaces. The project's combined uses require 52 total spaces, and the site plan show 57 spaces provided.

The application has submitted a stormwater management plan that has been reviewed by Public Works. The stormwater plan features stormwater quality system that directs run-off into a filter

basin along the Lisbon Street frontage and filter basin and small detention pond that sends run-off to a nearby stormwater system along the South Lisbon Street frontage. The development will have connections to all utilities. The design for the entrances and access drives allow adequate room for the turning movements of delivery trucks and emergency vehicles.

#### LIST TYPES OF APPROVALS:

Development Review- The applicant is proposing a new building greater than 5,000 sf, which makes it a major development. Major developments must comply with the approval criteria of Article XIII, Section 4, Development Review and Standards. The applicant submitted a narrative in the application that addresses these criteria.

Traffic Movement Permit- The development review application also states that the development will generate 246 trips during the AM peak hour. Projects which generate more than 100 trips during a peak hour requires a Traffic Movement Permit (TMP), which the City of Lewiston has the delegated review authority to review and approve. The Traffic Movement Permit approval process requires a scoping meeting where traffic issues are discussed. A scoping meeting was held via Zoom on March 31, 2020, with HMTB, (peer reviewers for the city), Maine DOT, AVCOG, city departments and the consultants representing the applicant in attendance. HNTB submitted a summary report and recommendations of the March 31<sup>st</sup> meeting and did not recommend any changes to the Traffic Movement Permit Application submitted by the applicant.

Outer Lisbon Street Impact Fee- In addition to the Development Review and TMP approvals, new development projects in the outer Lisbon Street area that generate significant traffic are required to pay an Outer Lisbon Street Impact Fee. (City of Lewiston Code of Ordinance- Chapter 66- Streets and Sidewalk, Article VI, attachment 1) Note 16 on the applicant's site plan states, "Any Outer Lisbon Street Impact Fee shall be paid prior to the issuance of a building permit."

#### STAFF REVIEW AND COMMENTS

Staff notes the following items were included in staff comments to the applicant:

1. The initial application submission did not include a landscape plan. A landscape plan has since been submitted. Staff is satisfied with the landscape plan, which includes street trees, shrubs and planting beds. The applicant desires to build and open the Dunkin Donuts before the end of this year and is asking to complete the installation of the planting plan prior to the issuance of final certificate of occupancy. (Note 13 on Site Plan)
2. Staff received a call from a resident at 22 South Lisbon Street concerned about the location of the driveway entering South Lisbon Street across from their house. The applicant has contacted this person and is working to resolve the neighbor's concerns. In doing so, the driveway was reconfigured to the south of its original proposed location. The redesign is being reviewed by staff and an update will be provided to Planning Board at the April 27, 2020 meeting.
3. The applicant added a note 14 agreeing to meet the requirements of post-construction stormwater management plan approval and compliance.

4. The applicant has added a note 15 agreeing to comply with the provisions of Article XIII, section 15 that requires final inspection of the stormwater system along with a written report stating that the stormwater system and all site improvements have been completed.
5. A cross easement agreement will be recorded between 1896 Lisbon St. and the adjacent property at 1904 Lisbon Street regarding shared access and stormwater.
6. The applicant has agreed to pay an Outer Lisbon Street Impact Fee prior to the issuance of a building permit. The impact fee, created back in 2005, was created to fund the widening of Outer Lisbon Street to 5 lanes due to traffic congestion that might come from new development. However, the impact fee as has proven to be an ineffective means of collecting funds. The applicant has started conversations with staff and Administration discussing whether it should be amended or repealed.

All other review comments from city staff have been addressed to staff's satisfaction with revisions provided by the applicant.

#### **STAFF RECOMMENDATION**

Staff recommends APPROVAL of the proposed project, with the following conditions:

1. The design of the South Lisbon Road access drive shall be reviewed to the satisfaction of the City of Lewiston prior to the issuance of a building permit.
2. The applicant shall pay an Outer Lisbon Street Impact Fee prior to the issuance of a building permit.

#### **ACTION NECESSARY**

Make a motion that the application submitted by Stoneybrook Land Use, Inc. on behalf of Connor Realty, LLC, to construct a 7,083 sf. Dunkin Donuts and multi-tenant building located at 1896 Lisbon 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 the application has addressed the requirements of Maine DOT Chapter 305 for a Traffic Movement Permit and approval be granted (including, if any, specific conditions raised by the Planning Board or staff).

**Attachment 1**  
**STREETS AND SIDEWALKS**

with all applicable laws and ordinances.

(Code 1982, § 26-255)

**Secs. 66-147--66-159. Reserved.**

**ARTICLE VI. OUTER LISBON STREET TRAFFIC IMPACT FEE**

**Sec. 66-160. Purpose.**

This article imposes an impact fee on land development requiring development review under Appendix A, Article XIII of the City of Lewiston's Zoning and Land Use Code. These fees will be used to upgrade roads and related facilities necessitated by new development that impacts traffic along Outer Lisbon Street, as defined herein. It also provides for the placement of impact fee revenues into a traffic impact fee trust fund established for that purpose and for the administration of the Outer Lisbon Street Traffic Impact Fee Ordinance, including the expenditure of funds derived from traffic impact fees and the refunds of unexpended funds.

(Ord. No. 05-17, 11-17-05)

**Sec. 66-161. Legislative findings.**

The Lewiston City Council finds, determines and declares as follows:

- (1) The city will need to upgrade and expand road infrastructure along Outer Lisbon Street as a result of expected development in the area. To maintain adequate levels of service along Outer Lisbon Street, the existing road system must be expanded to accommodate future traffic increases safely and without decreasing current levels of service. This must be done to promote and protect the public health, safety and welfare;
- (2) The State of Maine has authorized municipalities to adopt impact fees for various purposes, including the construction of off-site capital improvements such as roads and traffic control devices, pursuant to 30-A M.R.S.A. § 4354;
- (3) The imposition of impact fees is a preferred method of insuring that new development bears a proportionate share of the cost of capital investments necessary to accommodate such development. Appropriate locations for new development in Lewiston and the capital improvements necessary to accommodate such development are consistent with the city's comprehensive plan and capital improvements program;
- (4) New development generates additional traffic, necessitating the acquisition of rights-of-way, road construction and road improvements;
- (5) The impact fee has been derived from the city's determination that development along Outer Lisbon Street will require that road capacity is expanded by widening it to five lanes or through similar infrastructure upgrades. The city anticipates funding ten percent of the necessary road improvements, with remaining funding provided by state and federal sources. The city's effort to seek alternative sources of funding will reduce the amount of the impact fee sought under this article to

## STREETS AND SIDEWALKS

five percent of the cost of impacts created by new development.

(Ord. No. 05-17, 11-17-05)

### **Sec. 66-162. Title, authority, and applicability.**

- (a) *Title.* This article shall be known and may be cited as the "Outer Lisbon Street Traffic Impact Fee Ordinance."
- (b) *Authority.* The Lewiston City Council has the authority to enact this ordinance pursuant to 30-A M.R.S.A. § 4354 and its statutory and constitutional home rule powers.
- (c) *Applicability.* This article shall apply to all development requiring a traffic movement permit issued on or after August 9, 2005 that would require an expansion of road capacity along Outer Lisbon Street based on the four-lane alignment that existed on August 9, 2005.

(Ord. No. 05-17, 11-17-05)

### **Sec. 66-163. Definitions.**

As used in this article, the following terms shall have the meanings indicated:

*"Capital improvement"* includes transportation planning, preliminary engineering, engineering design studies, land surveys, right-of-way acquisition, engineering, permitting and construction of all the necessary features for any public infrastructure, including but not limited to:

- (1) Construction of new through lanes;
- (2) Construction of new turn lanes;
- (3) Construction of new bridges;
- (4) Construction of new drainage facilities in conjunction with new roadway construction;
- (5) Purchase and installation of traffic signalization (including new and upgraded signalization);
- (6) Construction of curbs, medians, and shoulders;
- (7) Relocating utilities to accommodate new roadway construction;
- (8) Construction of public utilities to accommodate new development;
- (9) Construction or implementation of interim measures to address increased transportation capacity needs or demands created by new development during the period prior to construction of permanent improvements.

Capital improvements do not include site-related improvements defined herein.

*"Developer"* is a person or entity commencing a land development activity which generates or attracts traffic on Outer Lisbon Street and which requires a traffic movement permit.

*"Development"* is any change in land use or any construction of buildings or structures or any change in the use of any structure along Outer Lisbon Street which requires a traffic

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movement permit.

*"Expansion of road capacity"* means all road and intersection capacity enhancements, including but not limited to: extensions, widening, intersection improvements, upgrading signalization, and expansion of bridges.

*"Mandatory or required rights-of-way dedications and/or roadway improvements"* means such non-compensated dedications and/or roadway improvements as required by a traffic movement permit.

*"Outer Lisbon Street"* includes all land serviced by Lisbon Street, from its intersection with Pleasant Street to the Lewiston/Lisbon town line;

*"Roads"* means and includes arterial streets and transportation facilities associated with the arterial and state-aid highway network along Outer Lisbon Street and under the jurisdiction of the city or the State of Maine.

*"Site related improvements"* are capital improvements and right-of-way dedications for direct access improvements to and/or within the development in question. Direct access improvements include but are not limited to the following:

- (1) Access roads leading to the development;
- (2) Driveways and roads within the development;
- (3) Acceleration and deceleration lanes, and right and left turn lanes leading to those roads and driveways; and
- (4) Traffic control measures for those roads and driveways.

*"Traffic movement permit"* is a permit obtained from the City of Lewiston or Maine Department of Transportation for any development that generates 100 or more passenger car equivalents at peak hour.

(Ord. No. 05-17, 11-17-05)

### **Sec. 66-164. Imposition of traffic impact fee.**

- (a) Any developer who, on or after August 9, 2005, requires a traffic movement permit along Outer Lisbon Street is hereby required to pay a traffic impact fee in the manner and amount set forth in this article. Preliminary determinations regarding whether a proposed development will generate traffic along Outer Lisbon Street shall be made by the developer and provided to the city's department of planning and code enforcement and, if necessary, the city's traffic engineer at the developer's expense. Actual impacts shall be determined by a traffic study prepared by a traffic engineer at the developer's expense and approved by the city's consulting engineer, unless the developer agrees with the city's determination.
- (b) No traffic movement permit or building permit for any activity requiring payment of an impact fee pursuant to this article shall be issued unless and until the traffic impact fee hereby required has been paid.

(Ord. No. 05-17, 11-17-05)

## STREETS AND SIDEWALKS

### **Sec. 66-165. Computation of traffic impact fee.**

- (a) Any development requiring a traffic movement permit, which, in the city's judgment, requires the creation of a fifth travel lane shall pay a traffic impact fee equal to five percent of the cost of upgrading Outer Lisbon Street's four-lane configuration existing as of August 9, 2005 to five lanes (four travel lanes and an center turning lane) sufficient to address impacts created by the development, based on a traffic engineering study and the size and nature of the development.
- (b) Planning and code enforcement staff shall apply the impact fee to the development and shall make a final determination as to the amount of the fee to be imposed, net of any applicable credits. Staff may request additional information from the developer if necessary to apply the fee. The developer may submit its own calculation of costs and any other information related to the impact of the development on Outer Lisbon Street. Staff shall consider information submitted by the developer, but is not required to accept information it deems to be inaccurate or unreliable.

(Ord. No. 05-17, 11-17-05)

### **Sec. 66-166. Payment of fee.**

- (a) The developer shall pay the traffic impact fee required by this article to the department of planning and code enforcement prior to the issuance of a traffic movement permit or building permit.
- (b) All funds collected shall be properly identified as traffic impact fees and promptly transferred for deposit in the traffic impact fee trust fund to be used solely for the purposes specified in this article.

(Ord. No. 05-17, 11-17-05)

### **Sec. 66-167. Traffic impact fee trust fund established.**

- (a) There is hereby established a traffic impact fee trust fund, to be used to accomplish the goals of this article, in accordance with section 66-168 of this article.

(Ord. No. 05-17, 11-17-05)

### **Sec. 66-168. Use of funds.**

- (a) Funds collected from traffic impact fees shall be used for the purpose of capital improvements to, and the expansion of, transportation facilities associated with Outer Lisbon Street.
- (b) No funds shall be used for periodic or routine maintenance.
- (c) Funds shall be used exclusively for capital improvements within the traffic impact fee area.
- (d) In the event that bonds or similar debt instruments are issued for advanced provision of capital facilities for which traffic impact fees may be expended, impact fees may be used to pay debt service on such bonds or similar debt instruments to the extent that the facilities provided are of the type described in subsection (a) of this section.

## STREETS AND SIDEWALKS

(Ord. No. 05-17, 11-17-05)

### **Sec. 66-169. Refund of fees.**

- (a) If a building permit is surrendered or expires without commencement of construction, the developer shall be entitled to a refund, without interest, of the impact fee paid as a condition for its issuance, except that the city shall retain three percent of the impact fee paid to offset a portion of the costs of collection. A request for a refund shall be made in writing to the department of planning and code enforcement not later than 15 days after the expiration of the permit.
- (b) Any funds not expended or obligated by contract by the end of the calendar quarter immediately following 15 years from the date the fee was paid shall, upon application of the developer, be returned to the developer, provided the developer submits an application for refund of the fee to the city planning and code enforcement department within 180 days of the end of the 15-year period.

(Ord. No. 05-17, 11-17-05)

### **Sec. 66-170. Credits**

- (a) A credit against the impact fee otherwise due may be given when a developer is required to make road improvements other than an expansion from a four-lane to five-lane configuration pursuant to a traffic movement permit. Credit shall be limited to road improvements associated with Outer Lisbon Street intersections, pursuant to the traffic movement permit. In no event shall credit be given for site related improvements, as defined in this article.
- (b) Credit shall be calculated in the following manner for the above referenced road improvements as required by the aforementioned traffic movement permit: 50 percent of the value of required road improvements as determined pursuant to section 66-165 may be applied as credit against the impact fee. In no event shall the credit exceed the amount of the otherwise applicable impact fee, or be applied against unrelated impact fee items.
- (c) The developer shall provide documentation indicating the cost of the improvements required for the project versus the impact fee. The city shall consider the documentation submitted by the developer but is not required to accept any documentation which it deems to be inaccurate or unreliable.
- (d) A credit under this section will be made up to the amount of the impact fee otherwise due, and will not result in any payment of funds to the developer in the event the credit due under this section exceeds the impact fee assessed.

(Ord. No. 05-17, 11-17-05; Ord. No. 06-03, 3-23-06)

### **Sec. 66-171. Severability.**

If any section, phrase, sentence or portion of this ordinance is for any reason held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed a separate, distinct and independent provision, and such holding shall not affect the validity of the remaining portion thereof. (Ord. No. 05-17, 11-17-05)



## CITY OF LEWISTON

### Department of Planning & Code Enforcement

**TO:** Lewiston Planning Board

**FROM:** Douglas Greene, AICP, RLA City Planner

**DATE:** April 24, 2020

**RE:** Supplemental Information for 1896 Lisbon St. Dunkin Donuts Project

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As mentioned in the Staff Report in the Staff Review and Comments, Item #2, discussion:

2. Staff received a call from a resident at 22 South Lisbon Street concerned about the location of the driveway entering South Lisbon Street across from their house. The applicant has contacted this person and is working to resolve the neighbor's concerns. In doing so, the driveway was reconfigured to the south of its original proposed location. The redesign is being reviewed by staff and an update will be provided to the Planning Board at the April 27, 2020 meeting.

Just prior to completing the Planning Board packet, the applicant submitted additional information on the project's entrance on to South Lisbon Street and alternative plans to relocate the entrance to reduce impacts to the property located at 22 South Lisbon Street.

Please find attached:

1. A google street view of 22 South Lisbon St.
2. Second view of 22 South Lisbon St.
3. A landscape plan for the currently proposed location.
4. A revised site plan showing the entrance at a new location.
5. A revised grading plan showing the entrance at a new location.

The applicant will update the Planning Board at the meeting on Monday.



# SITE PHOTOS

WORKING HOUSE - SOUTH LISBON ROAD  
IMAGERY DATE: JUNE 2019  
SOURCE: GOOGLE EARTH



# SITE PHOTOS

WORKING HOUSE - SOUTH LISBON ROAD  
IMAGERY DATE: APRIL 16, 2020  
SOURCE: PHOTO TAKEN BY BRJ

**APPROVAL**

APPROVED BY THE CITY OF LEWISTON PLANNING BOARD

IF DEVELOPMENT HAS NOT OCCURRED AS DEFINED WITHIN THE SCOPE OF THE CITY OF LEWISTON CODE OF ORDINANCES, WITHIN 24 MONTHS OF THE DATE OF APPROVAL, DEVELOPMENT REVIEW APPROVAL SHALL EXPIRE. THE APPLICANT MAY NOT BEGIN CONSTRUCTION OR OPERATION OF THE DEVELOPMENT UNTIL A NEW APPROVAL IS GRANTED (ARTICLE XIII, SECTION 11).

**NOTES**

- EXISTING CONDITIONS IS BASED UPON A PLAN ENTITLED 'TOPOGRAPHIC PLAN - PLAN OF PROPERTY, 1904 LISBON STREET - LEWISTON, MAINE', DATED APRIL 20, 2018, PREPARED BY DAVIS LAND SURVEYING, LLC.
- ALL BOOK AND PAGE NUMBERS REFER TO THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS.
- OWNER OF RECORD - CONNOR REALTY, LLC DEED REFERENCE - BOOK 9832, PAGE 88 TAX MAP 69, LOT 50
- PARCEL AREA - 2.21 ACRES
- THE PARCEL IS LOCATED IN THE HIGHWAY BUSINESS ZONING DISTRICT.
- 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.
- THE PARCEL IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP, PANEL 232001C 0334E, DATED JULY 8, 2013.
- ALL SIGNAGE TO BE OBTAINED AND INSTALLED BY THE OWNER.
- SEE BUILDING PLANS BY ARCHITECT FOR EXACT DIMENSIONS.
- PROVIDE CURBING TIPDOWN WITHIN THE PARCEL BOUNDARIES AT ALL ENDS OF CURB. TIPDOWN TO MEET CITY OF LEWISTON SPECIFICATIONS.
- LOAM, SEED & MULCH ALL DISTURBED AREAS NOT OTHERWISE DESIGNED.
- LIGHTING DESIGN IS TO BE PROVIDED BY OTHERS.

PROGRESS PRINT

REV.	DATE	CHANGES

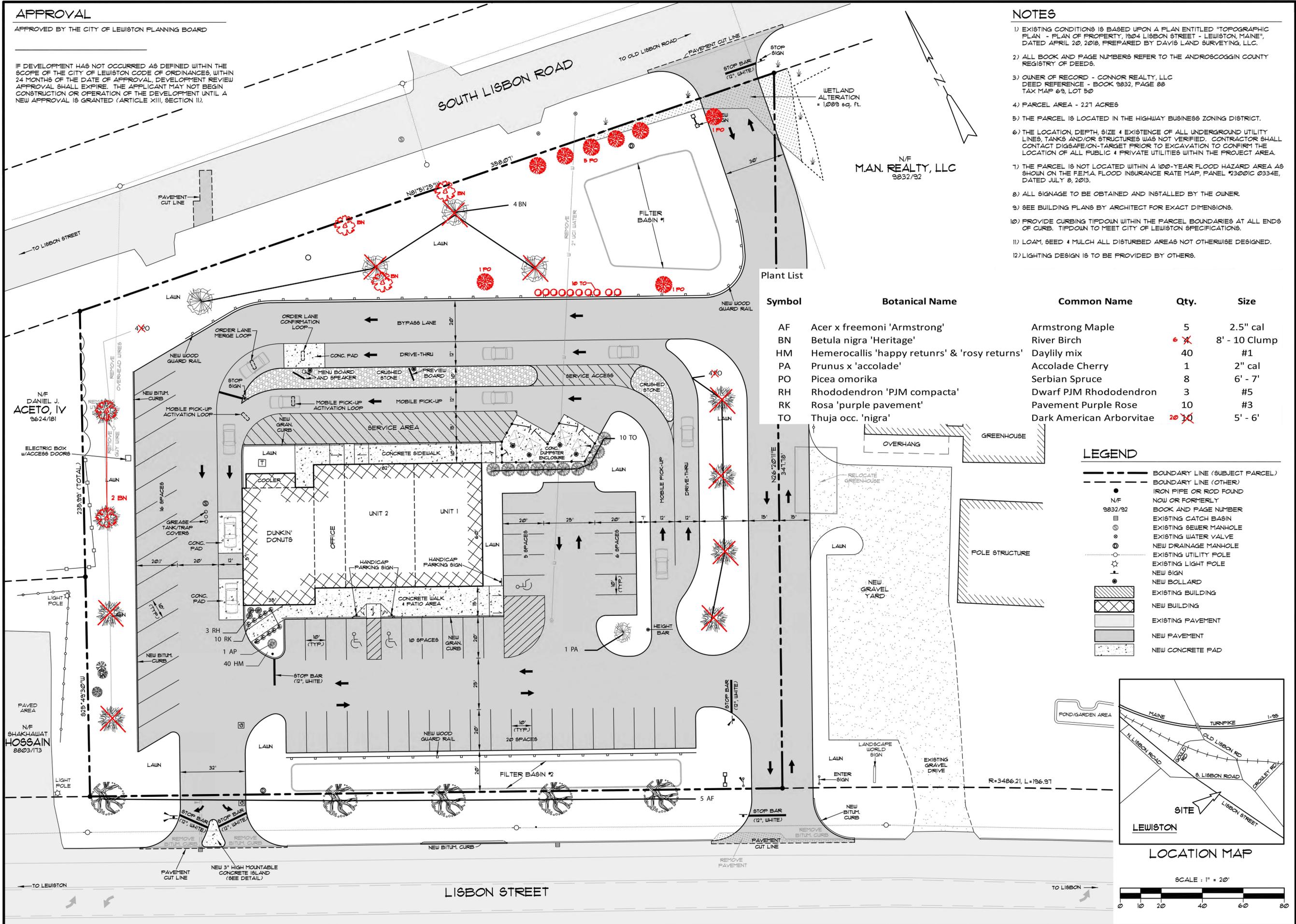
**Stoneybrook**  
Land Use, Inc.  
4846 Sun City Center Blvd., #300  
Sun City Center, FL 33573-6281

**DAVIS**  
LANDSCAPE COMPANY, INC.  
78 Lisbon Street  
Lewiston, Maine 04250  
(207) 353-4848  
www.davislandscape.com

**Landscape Plan**  
1896 Lisbon Street  
Lewiston, ME 04240  
Prepared for:  
**Connor Realty, LLC**  
1124 Lisbon Street - Lewiston, ME 04240

DATE	PROJECT
04.07.20	17-028
DRAWN BY	SCALE
CTD	1" = 20'

Sheet LS-1

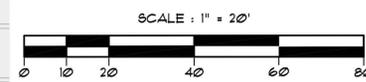
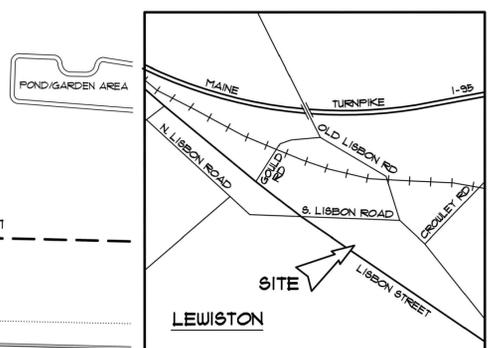


**Plant List**

Symbol	Botanical Name	Common Name	Qty.	Size
AF	Acer x freemoni 'Armstrong'	Armstrong Maple	5	2.5" cal
BN	Betula nigra 'Heritage'	River Birch	6	8' - 10 Clump
HM	Hemerocallis 'happy returns' & 'rosy returns'	Daylily mix	40	#1
PA	Prunus x 'accolade'	Accolade Cherry	1	2" cal
PO	Picea omorika	Serbian Spruce	8	6' - 7'
RH	Rhododendron 'PJM compacta'	Dwarf PJM Rhododendron	3	#5
RK	Rosa 'purple pavement'	Pavement Purple Rose	10	#3
TO	Thuja occ. 'nigra'	Dark American Arborvitae	20	5' - 6'

**LEGEND**

---	BOUNDARY LINE (SUBJECT PARCEL)
---	BOUNDARY LINE (OTHER)
N/F	NOW OR FORMERLY
9832/92	BOOK AND PAGE NUMBER
⊕	EXISTING CATCH BASIN
⊙	EXISTING SEWER MANHOLE
⊗	EXISTING WATER VALVE
⊚	NEW DRAINAGE MANHOLE
⊛	EXISTING UTILITY POLE
⊜	EXISTING LIGHT POLE
⊝	NEW SIGN
⊞	NEW BOLLARD
▨	EXISTING BUILDING
▩	NEW BUILDING
▪	EXISTING PAVEMENT
▫	NEW PAVEMENT
▬	NEW CONCRETE PAD









Stoneybrook  
Land Use, Inc.

4846 Sun City Center Blvd., #300  
Sun City Center, FL 33573-6281  
(207) 513-6123

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March 17, 2020  
Revised April 17, 2020

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

Re: Dunkin Donuts  
1896 Lisbon Street  
Development Review Application

Dear Doug:

On behalf of Connor Realty, LLC (Connor), I have attached a Development Review Application to establish a Dunkin Donut shop in a multi-tenant building at 1896 Lisbon Street. Connor purchased the property in May of 2018. The property is shown on Tax Map 69 as Lot 50. This lot is currently developed with a vacant house and shed. A mobile home was removed from the property around 2011. The property is in the Highway Business (HB) district. A Drive-in Restaurant is an allowed use in this district.

The property, by survey, contains 2.27 acres. There is about 338' of frontage on Lisbon Street and about 358' of frontage on South Lisbon Road. A copy of the survey prepared by Davis Land Surveying, Inc. (Davis) is attached. Davis also completed a topographic survey of the property. These existing conditions and proposed improvements are shown on a full set of site engineering plans prepared by SJR Engineering, Inc. (SJR), also attached.

The site engineering plans provide full details for the site improvements, utility connections and stormwater improvements. All these improvements have been designed to meet City standards. We have also attached partial copies of the stormwater report addressing the requirements of City Ordinances for stormwater and erosion controls for this project for the Planning Board. Five full copies of these reports are included for Staff review.

Connor plans to replace its current C-store location at 1930 Lisbon Street by constructing a multi-tenant building at this site. The proposed building will include about 2,163 square feet for a Dunkin Shop with an attached 900 square foot office area for Connor's back office operations. There will be 25 seats inside the Dunkin Shop. There will also be two separate units for rent. Unit #1 will include about 1,980 square feet and Unit #2 will include about 2,040 square feet. These units will be constructed to allow flexibility to adjust the size of the units or to combine them into one larger space.

The proposed building and site layout represent the Nextgen Prototype for a new Dunkin franchise. The building will have two drive-up windows, one order board and a mobile pick-up lane for To-Go orders. Drivers with To-Go orders will have a separate lane through the service area to bypass the order board. They will merge with the drive-thru lane just before the pick-up windows. The regular drive-thru customers will have a stop sign at this merge point to allow a smooth traffic flow to the drive-up windows. This new traffic pattern is shown on the attached site plans.

In the existing site conditions, this property shares access from Lisbon Street and South Lisbon Road with the property located at 1904 Lisbon Street, along a narrow gravel drive. That parcel is occupied by Landscape World. Their existing driveway on Lisbon Street, located east of the shared access, will remain to allow large trucks to access their parking area for deliveries. Their parking area will be reconfigured as shown on the project plans to allow these truck movements and better access for their customers to the gravel parking area.

In the proposed condition, this shared access will be upgraded to a 30' wide paved driveway with two-way traffic flow with enter or exit lanes at each street. The Dunkin Shop will have two driveways on this shared access road. The front and east side parking areas are designed to allow two-way traffic flow. The west side parking area and rear traffic flow is set up with a counterclockwise one-way traffic flow as required for a Dunkin Shop.

A new Exit Only connection to Lisbon Street is proposed at the west end of the project and is located about 280' from the shared access driveway. This exit will allow right- and left-turn exit movements only. The drive-thru and To-Go lanes start at the east end of the property with access from the front parking lot. The drive-thru lane provides stacking for 21 vehicles from this starting point to the first pickup window. Additional vehicle stacking is also available in the To-Go lane.

The site plans show these traffic movements through the site and around the building. This one-way traffic flow allows for 16 parking spaces along the west side of the building. An additional 41 parking spaces are available in the front and east side parking areas. Parking requirements for a drive-in restaurant, which is a similar use, are ten spaces, plus one for every 100 square feet of building area. This would result in a requirement of 32 parking spaces on-site. Parking requirements for the proposed occupancy for the remaining 4,920 square feet is not known because tenants and proposed uses are unknown. If we assume this space will be occupied by retail or personal service establishments, which has a higher parking requirement of one space per 250 square feet, a total of 20 spaces would be required. Together, these uses would need 52 parking spaces and we have provided a total of 57 spaces on-site.

This project will generate 246 vehicle trips in the AM peak hour. Therefore, a Traffic Movement Permit (TMP) will be required. A Traffic Scoping Application was submitted during the week of March 16, 2020 and a scoping meeting was held on March 31<sup>st</sup>. A Traffic Impact Study has been completed and a partial copy is attached. No off-site improvements are proposed in the draft TMP we have included with this submittal.

Curbing is provided around the building and a concrete island (raised 3") will be installed at the Exit Only to better direct traffic movements at the project's exit to Lisbon Street. This concrete island and the site drives have been designed to allow truck (WB-50) movements through the site for product deliveries. Three attached graphics show the truck movements through this site and the Landscape World parcel and movement through this site for the City's new fire truck.

We have shown a small service area behind the building for the smaller delivery trucks to park while unloading. We have also shown two new enclosed dumpster pads in this service area. All utility connections are shown on the project plans. Sewer and water will be connected to existing City service mains located in South Lisbon Road. Power will be extended underground to the new building from an existing pole on Lisbon Street. Gas will be connected from the existing main also located in Lisbon Street.

Currently, stormwater exits the property at a culvert located at the west end of the property on Lisbon Street and at another cross culvert on South Lisbon Road. To control stormwater flow from this site, Connor will install a filter bed along the front parking lot which will discharge treated storm flow to the existing Lisbon Street system. A second filter bed will be constructed at the rear of the building and that system will discharge treated storm flow at the existing culvert crossing South Lisbon Road.

Based upon the Davis survey and City GIS information, there is about 3,935 square feet of existing impervious surface on the parcel. The proposed project will increase impervious area to a total of 62,651 square feet. This total will result in an impervious coverage of 0.63. City code allows a maximum impervious coverage of 0.75 in the HB District. Total lot coverage within the parcel for the building improvements is 0.07. City code allows 0.50 lot coverage in the HB District. The proposed layout will meet all City setbacks and yard requirements.

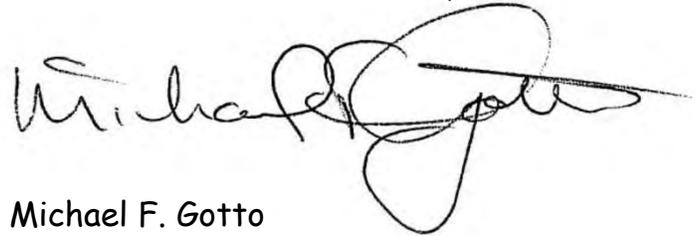
Revised April 17, 2020  
Douglas Greene  
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This Dunkin' could operate 24 hours per day, 7 days per week in the future. Current plans are to open at 4:00 AM and close at 10:00 PM. This store will have 15 employees working two shifts per day. The total estimated cost for the new building and site improvements is about \$1.1 million. Financing will be provided by Gorham Savings Bank. Construction is scheduled to begin as soon as this project is approved. Occupancy of the building is planned by Fall of this year. Final landscaping may not be completed until Spring of next year.

We hope you find this application complete and we will plan to attend the Planning Board meeting to answer any questions the Planning Board or staff may have.

Respectfully Yours

STONEBROOK LAND USE, INC.

A handwritten signature in black ink, appearing to read "Michael F. Gotto". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Michael F. Gotto

cc: Michael Connor



Stoneybrook  
Land Use, Inc.

4846 Sun City Center Blvd., #300  
Sun City Center, FL 33573-6281  
(207) 513-6123

---

April 17, 2020

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

Re: Dunkin Donuts  
1896 Lisbon Street  
Response to Staff Comments

Dear Doug:

On behalf of Connor Realty, LLC (Connor), please accept this letter and attachments as our response to Staff comments on our plans to establish a Dunkin Donut shop in a multi-tenant building at 1896 Lisbon Street.

1. Article XIII, Section q. Landscaping  
No landscaping plan in the current submission. While the staff acknowledges the need for the stormwater filtration basin along the Lisbon Street frontage, street trees, shrubs, and plantings should be incorporated into the Plan to the greatest extent possible along both Lisbon Street and South Lisbon Street.

Section q states:

- (q) Landscaping. The development plan will provide for landscaping to define street edges, break up parking areas, soften the appearance of the development and protect abutting properties from adverse impacts of the development.
  - (1) The landscaping plan will comply with the guidelines contained in the City of Lewiston's Site Plan Review and Design Guidelines as amended.

Please see the attached landscape plan prepared by Davis Landscaping Company, Inc.

Please acknowledge that the existing Site Plan Review and Design Guidelines have been reviewed and responded to.

We acknowledge that the City does have existing Site Plan Review and Design Guidelines. In some areas, in my opinion, these guidelines conflict with specific requirements of the Zoning Ordinances. Requirements of the zoning ordinance must be met to secure approvals for this project. To the extent possible, I believe this site layout meets the guidelines, when you consider the zoning requirements for stormwater treatment and traffic movement permit standards. Our ability to meet these two specific zoning standards were the driving factors to the site layout proposed on our plans.

2. The property owner at 22 South Lisbon Street is concerned about the proposed entrance to the project being directly opposite to the front his house on South Lisbon Street. Please respond on possible alternate entrance locations or landscape screening or buffering either on the project property or at 22 South Lisbon Street as mitigation.

The common access driveway location was determined by existing agreement between abutters, with adjustments to meet specific zoning requirements for stormwater treatment, traffic movement permit standards and wetland impacts. As you know, wetland impacts should be avoided to the maximum extent practical. Moving the proposed driveway easterly will still impact the residential uses at 22 or 26 South Lisbon Road and would require more wetland impacts for this project. The proposed common driveway cannot be moved westerly because of the grading required to meet stormwater quality and quantity standards of the zoning ordinance.

Use of common driveways and connection to back streets are strongly encouraged in the City design guidelines discussed above. The Traffic Study completed for this project assumes only 4 trips during the peak hour will enter or exit this site from that common driveway at the South Lisbon Road intersection.

At your request, I have spoken with Scott Worthing, owner of the property at 22 South Lisbon Road, by telephone, to discuss his concerns with our site layout. As you know, our proposed common driveway is located directly across the street from his house. We have hand delivered copies of some of the site plans for this

project to him. We have also indicated that we will give him direct access to our entire application submittal today. I will follow up with him next week to discuss what options we may have to address his concerns or provide buffering. We hope to provide his preferred option prior to the Planning Board meeting.

3. Add a note to the Plan regarding the timing of a certificate of occupancy and installation of the landscape plan.

Please see note #13 on the revised Site Plan.

4. The Stormwater plan refers to Turner Street on page 3. We assume that's an error.

Page 3 of the Stormwater Quantity Analysis has been revised.

5. Please consider adding a bike rack with room for four bikes at an appropriate location on the Site Plan.

Connor is not proposing installation of a Bike Rack, currently.

6. Add a note to the Plan, "Prior to any certificate of occupancy being issued, the Applicant shall meet the provisions of Article XIII, Section 15, e, Post-construction Stormwater Management System Plan Approval and f, Post-construction Stormwater Management System Plan Compliance."

Please see note # 14 on the revised Site Plan.

7. Add note to plan, "Evidence of a final inspection of the stormwater system shall be provided to the city by the designing engineer along with a written statement indicating that the stormwater system and all site improvements have been completed in accordance with the approved plans."

Please see Note #15 on the revised Site Plan. Please be advised that the language has been adjusted to refer to a "Professional Engineer" instead of the "designing engineer" as suggested.

8. Does the shared driveway need to be 30 feet wide?

The project could use a 24' wide access road to support typical traffic movements at this site. However, City technical standards require the project to support large delivery truck and City Fire Truck movements within the site. To meet these standards, the common access drive needs to be 30' wide. Please refer to turning movement graphics provided with our application materials.

9. Demonstrate the angled parking on the north side complies with Article XII, Section 17 Parking, by providing that each parking space shall contain a rectangle at least 18 feet long by 9 feet wide.

Parking spaces shown on the project plans meet this requirement.

10. The gravel parking area at Landscape World has changed from having a planted median to none. Please show the existing conditions and the impacts to the new parking area.

The hatch pattern for gravel areas on the Site Plan has been revised to better show these improvements.

11. Will there be any stormwater run-off moving on to the Landscape World property?

Yes, there will be stormwater runoff on the Landscape World parcel. We have added wording in the attached "Cross Easement and Use Agreement" to address this concern. Also, please refer to Note #18 on the revised Site Plan to address recording of this document.

12. Show lighting on the site plan, including the height of light poles, and submit a separate, simple photometric lighting plan.

Please see the lighting plan and detail cut sheets attached. Poles will be 20' high and wall packs will be mounted at 12' high on the building.

Public Works Comments:

1. Site plans should have engineers stamp and signature.

All final site plans are now stamped.

2. Maintain a minimum separation of 10 feet between water and sewer services.

The Plans have been revised to address this concern.

3. Provide easements for the shared drive between applicant and Landscape World.

Please see the attached "Cross Easement and Use Agreement" to address all easement right concerns. Also, please refer to Note #18 on the revised Site Plan to address recording of this document.

4. Show snow storage location(s).

Snow storage locations have been shown on the revised Site Plan.

5. Note that stormwater filter basins shall not be used for snow storage.

Please refer to Note #17 on the revised Site Plan. Also, the stormwater narratives have been revised to address this concern.

6. Provide test pit results for stormwater filter basins.

Please see test pit information from Summit Geoengineering Services, Inc. attached.

7. Provide water quality calculations for underdrained soil filter basins per Chapter 500.

I am not sure what happened, but those calculations were previously submitted. We have included five full copies of them again with this submittal. Partial copies were provided for the Planning Board members.

8. Show and label pretreatment areas for sheet flow entering stormwater soil filter basins.

These areas have been labelled on the revised plans attached.

9. Provide Sediment and erosion control written plan per Chapter 500 Appendices A,B & C.

Again, I am not sure what happened, but this document was previously submitted. We have included copies of them again with this submittal.

10. Provide Post Construction Stormwater Management Plan per Article XIII Section 15.

This information has been included in this revised submittal.

11. Show erosion and sediment control measures on-site plan.

Erosion and sediment control measures have been added to the revised plans.

12. Show electric service to building and location of any transformers and/or backup generators.

This information is shown on Sheet 2.

13. Provide a trench repair detail for Lisbon Street consisting of 27-inches of gravel and 6-inches of pavement per Street Design and Construction Policy 79.

We have provided two trench details for work in Lisbon Street and South Lisbon Road as utility connections are proposed on both City Streets.

14. MaineDOT opened bids for paving Lisbon Street Last week. Once paving is complete, then there will be a five year moratorium on street openings. Public Works can provide contact information for the MaineDOT paving project.

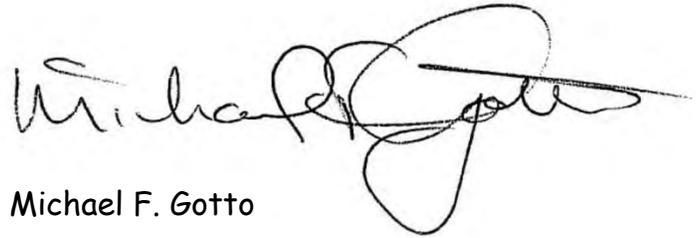
We have been in contact with Jeff Beaulé, Acting City Engineer, and have been informed that the moratorium could impact our gas service for this project. The moratorium will not impact construction of the driveway entrances. We are working with the gas company to install a service connection before Lisbon Street is repaved.

April 17, 2020  
Douglas Greene  
RE: 1896 Lisbon Street  
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We hope you find that these responses have addressed the concerns and comments provided. Please let me know if you have any questions. We can also provide additional information or answer any questions the Planning Board or staff may have at the meeting on April 27<sup>th</sup>.

Respectfully Yours

STONEBROOK LAND USE, INC.

A handwritten signature in black ink, appearing to read "Michael F. Gotto". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Michael F. Gotto

cc: Michael Connor



# PROJECT DATA

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

## IMPERVIOUS SURFACE AREA/RATIO

Existing Total Impervious Area	<u>3,935</u>	sq. ft.
Proposed Total Paved Area	<u>55,568</u>	sq. ft.
Proposed Total Impervious Area	<u>62,651</u>	sq. ft.
Proposed Impervious Net Change	<u>58,716</u>	sq. ft.
Impervious surface ratio existing	<u>4</u>	% of lot area
Impervious surface ratio proposed	<u>63</u>	% of lot area

## BUILDING AREA/LOT

### COVERAGE

Existing Building Footprint	<u>1,681</u>	sq. ft.
Proposed Building Footprint	<u>7,083</u>	sq. ft.
Proposed Building Footprint Net change	<u>5,402</u>	sq. ft.
Existing Total Building Floor Area	<u>1,681</u>	sq. ft.
Proposed Total Building Floor Area	<u>7,083</u>	sq. ft.
Proposed Building Floor Area Net Change	<u>5,402</u>	sq. ft.
New Building	<u>Yes</u>	(yes or no)
Building Area/Lot coverage existing	<u>2</u>	% of lot area
Building Area/Lot coverage proposed	<u>7</u>	% of lot area

### ZONING

Existing		<u>Highway Business</u>
Proposed, if applicable		<u>Highway Business</u>

### LAND USE

Existing		<u>Vacant/Residential</u>
Proposed		<u>Drive-thru Restaurant</u>

### RESIDENTIAL, IF APPLICABLE

Existing Number of Residential Units	<u>0</u>	
Proposed Number of Residential Units	<u>0</u>	
Subdivision, Proposed Number of Lots	<u>N/A</u>	

### PARKING SPACES

Existing Number of Parking Spaces	<u>0</u>	
Proposed Number of Parking Spaces	<u>57</u>	
Required Number of Parking Spaces	<u>52</u>	
Number of Handicapped Parking Spaces	<u>4</u>	

### ESTIMATED COST OF PROJECT

\$1.1 million

## DELEGATED REVIEW AUTHORITY CHECKLIST

### SITE LOCATION OF DEVELOPMENT AND STORMWATER MANAGEMENT

Existing Impervious Area	<u>3,935</u>	sq. ft.
Proposed Disturbed Area	<u>107,156</u>	sq. ft.
Proposed Impervious Area	<u>62,651</u>	sq. ft.

1. *If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with MDEP.*
2. *If the proposed impervious area is greater than one acre including any impervious area 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) 246 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: 2.27 acres / \_\_\_\_\_ square feet(sf).

Regulations	<u>Required/Allowed</u>	<u>Provided</u>
Min Lot Area	<u>None</u>	<u>2.27 acres</u>
Street Frontage	<u>150'</u>	<u>338'</u>
Min Front Yard	<u>15'</u>	<u>20'</u>
Min Rear Yard	<u>10'</u>	<u>N/A</u>
Min Side Yard	<u>10'</u>	<u>23'</u>
Max. Building Height	<u>65'</u>	<u>        </u>
Use Designation	<u>Vacant/Residential</u>	<u>Drive-thru Rest.</u>
Parking Requirement	1 space/ per _____ square feet of floor area	
Total Parking:	<u>52</u>	<u>57</u>
Overlay zoning districts (if any):	_____ / _____ / _____	
Urban impaired stream watershed?	YES <input type="radio"/> NO <input checked="" type="radio"/> 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.

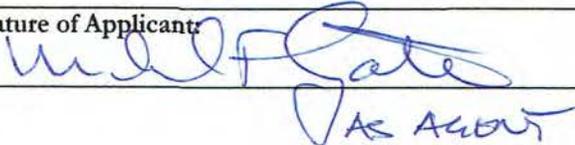
Refer to the application checklist for a detailed list of submittal requirements.

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

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

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

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

Signature of Applicant: 	Date: <u>3/17/20</u>
--	-------------------------

*Michael Gate*  
*VA ACQU*

# 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: Dunkin Donuts - 1896 Lisbon Street

PROPOSED DEVELOPMENT ADDRESS and PARCEL #: 69-50

Required Information		Check Submitted		Applicable Ordinance	
		Applicant	Staff	Lewiston	Auburn
<b>Site Plan</b>					
	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	N/A			
	Proposed Use	✓			
	PB/BOA/Other Restrictions				
	Fire Department Review				
	Open Space/Lot Coverage	✓			
	Lot Layout (Lewiston only)	N/A			
	Existing Building (s)	✓			
	Existing Streets, etc.	✓			
	Existing Driveways, etc.	✓			
	Proposed Building(s)	✓			
	Proposed Driveways	✓			
<b>Landscape Plan</b>					
	Greenspace Requirements	✓			
	Setbacks to Parking	✓			
	Buffer Requirements	✓			
	Street Tree Requirements	N/A			
	Screened Dumpsters	✓			
	Additional Design Guidelines				

	Planting Schedule	✓			
<b>Stormwater &amp; Erosion Control Plan</b>					
	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)	✓			
<b>Lighting Plan</b>					
	Full cut-off fixtures	✓			
	Meets Parking Lot Requirements	✓			
<b>Traffic Information</b>					
	Access Management	✓			
	Signage	✓			
	PCE - Trips in Peak Hour	✓			
	Vehicular Movements	✓			
	Safety Concerns	✓			
	Pedestrian Circulation	✓			
	Police Traffic				
	Engineering Traffic	✓			
<b>Utility Plan</b>					
	Water	✓			
	Adequacy of Water Supply				
	Water main extension agreement	N/A			
	Sewer	✓			
	Available city capacity				
	Electric	✓			
	Natural Gas	✓			
	Cable/Phone	✓			
<b>Natural Resources</b>					
	Shoreland Zone	N/A			
	Flood Plain	N/A			
	Wetlands or Streams	✓			
	Urban Impaired Stream	N/A			
	Phosphorus Check	N/A			
	Aquifer/Groundwater Protection	N/A			
	Applicable State Permits	N/A			
	No Name Pond Watershed (Lewiston only)	N/A			

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

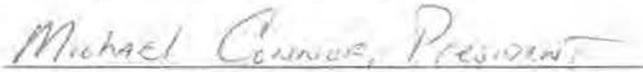
**Connor Realty, LLC  
1124 Lisbon Street  
Lewiston, ME 04240**

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.

  
\_\_\_\_\_

for Connor Realty, LLC, applicant

  
\_\_\_\_\_

(print name, title)

March 17, 2020

## Response to Ordinance Requirements

### Article XIII, Section 4

- (a) *Utilization of the site* - This project proposes to maximize development in the usable areas of the site. The site design has been planned for full development of the entire parcel. Utilities and stormwater controls have been designed to support the level of development. Wetland impacts have been minimized with a total of 1,089 square feet of impact proposed. There are no steep slopes, floodplains or unique natural features on the property that will be impacted by this project.
- (b) *Traffic Movements* - This project will create more than 100 peak hour new vehicle trips. An application for a Traffic Movement Permit was previously submitted and the site has been designed to meet all Local and State requirements for safe vehicle operations onsite. The applicant has provided a Traffic Impact Study that has addressed traffic concerns raised at the Traffic Scoping meeting.
- (c) *Access to the site* - Access to the project will be from Lisbon Street or South Lisbon Road. An exit only driveway is also provided at the west end of the property. The project will operate with a one-way counterclockwise traffic flow around the building - one entrance lane from the front parking lot is divided into a dedicated drive-thru lane and a "To Go" lane and bypass lane available for customers. A by-pass lane is available from the common driveway shared with this property east of this site. All lanes, entrance and exit drives have been designed at safe and convenient locations for vehicle movements in and out of this property.
- (d) *Internal vehicular circulation* - Safe movements through the site have been provided.

- (e) *Pedestrian circulation* - Safe movements through the site for pedestrian movements have been provided.
- (f) *Stormwater management* - Stormwater management has been designed to meet City and MDEP stormwater standards.
- (g) *Erosion control* - All improvements for this project will be completed under the requirements outlined on the plan sheet submitted. All erosion control measures proposed meet or exceed all City and MDEP requirements.
- (h) *Water supply* - Water will be extended to the site from the public water system on South Lisbon Road.
- (i) *Sewer disposal* - Sewer will be extended to the site from the public sewer system on South Lisbon Road.
- (j) *Utilities* - This project will connect to the existing overhead utility services along Lisbon Street. Power to the proposed building will be installed underground to the new building.
- (k) *Natural features* - This site has been previously disturbed. Buildings and associated improvements were removed. Only a few trees remain on the property. Grading for this project will disturb the entire site. Trees, landscaping and grass will be planted with the construction to meet the standards of the zoning ordinance.
- (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* - There will be exterior lighting proposed on the building and in the parking areas. All of this lighting has been designed to meet City requirements and maintain safe lighting limits for vehicle and pedestrian movements.
- (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* - Landscaping is proposed.
- (r) *Shoreland relationship* - Not applicable.
- (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 has completed numerous projects and owns a number of Dunkin shops. The applicant has a proven track record for completing these types of projects. Funding for this project will be provided by Gorham Savings Bank.
- (u) *Buffering* - Not applicable.
- (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.

**DEED OF SALE  
BY PERSONAL REPRESENTATIVES**

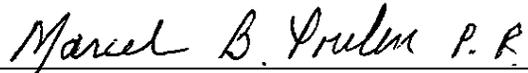
**MARCEL POULIN, HELENE POULIN and ANDRE POULIN**, as the duly appointed and acting Personal Representatives of the **ESTATE OF ARMANDE A. POULIN** (collectively, the "Grantor"), deceased (testate), as shown by the probate records of the County of Androscoggin, (Docket No. 2017-498) State of Maine, and having given notice to each person succeeding to an interest in the real property described below at least ten (10) days prior to the sale, by the power conferred by the Probate Code, and every other power, for consideration paid, grant to **Connor Realty LLC**, a Maine Limited Liability Company, with a mailing address at 1124 Lisbon Street, Lewiston, Maine 04240 a Maine (the "Grantee"), a certain lot or parcel of land in Lewiston, County of Androscoggin, State of Maine, bounded and described as follows:

MAINE REAL ESTATE  
TRANSFER TAX PAID

**\*\*SEE ATTACHED EXHIBIT A\*\***

<sup>4<sup>th</sup></sup> IN WITNESS WHEREOF, the Grantor has executed and delivered this deed as of the day of May, 2018.

  
Witness

  
Marcel Poulin, Personal Representative of the Estate of Armande A. Poulin

  
Witness

  
Helene Poulin, Personal Representative of the Estate of Armande A. Poulin

*Todd Allston*

Witness

*Andre Poulin*

Andre Poulin, Personal Representative of  
the Estate of Armande A. Poulin

STATE OF MAINE  
ANDROSCOGGIN COUNTY

*May 4*, 2018

Then personally appeared the above-named **MARCEL POULIN** and acknowledged the  
foregoing instrument to be his free act and deed in said capacity.

Before me,

*Shawn K. Bell*

Notary Public/Attorney at Law

Print Name: *Shawn K. Bell*

My Commission Expires: *N/A*

**EXHIBIT A****DESCRIPTION OF PROPERTY LOCATED ON THE NORTHEASTERLY SIDELINE OF LISBON STREET AND THE SOUTHWESTERLY SIDELINE OF SOUTH LISBON ROAD IN THE CITY OF LEWISTON, MAINE****2.27-acre lot to be conveyed to Connor Realty, LLC**

A certain lot or parcel of land situated on the apparent northeasterly sideline of Lisbon Street and the apparent southwesterly sideline of South Lisbon Road in the City of Lewiston, County of Androscoggin, State of Maine and being more particularly described as follows:

**BEGINNING** at a 5/8" capped rebar inscribed PLS 2208 on the apparent northeasterly sideline of said Lisbon Street at the apparent southeasterly corner of land now or formerly of Shakhawat Hossain as described in a deed dated October 28, 2013 and recorded in the Androscoggin County Registry of Deeds in Book 8803, Page 173. Said 5/8" capped rebar also being S 63° 39' 49" E along the apparent northeasterly sideline of said Lisbon Street, a distance of one hundred ninety-seven and 30/100 feet (197.30') from a 1 ¼" iron pipe found ±4" below grade at the apparent southwesterly corner of said Hossain;

**THENCE**, S 63° 39' 49" E along the apparent northeasterly sideline of said Lisbon Street, a distance of three hundred thirty-eight and 06/100 feet (338.06') to a 5/8" capped rebar inscribed PLS 2208. Said rebar also being on a tie-line of N 62° 12' 55" W and a tie-line distance of two hundred twenty and 04/100 feet (220.04') from a 5/8" capped rebar inscribed PLS 2208 at the apparent southwesterly corner of land now or formerly of the Clough Cemetery Association as described in a deed dated May 14, 1963 and recorded in said Registry in Book 893, Page 368;

**THENCE**, N 26° 20' 11" E a distance of three hundred forty-seven and 78/100 feet (347.78') to a 5/8" capped rebar inscribed PLS 2208 on the apparent southwesterly sideline of said South Lisbon Road. Said 5/8" capped rebar also being N 81° 51' 25" W along the apparent southwesterly sideline of said South Lisbon Road, a distance of ninety-seven and 42/100 feet (97.42') from a 3/4" capped rebar inscribed PLS 492 at the most westerly corner of land now or formerly of Miracle Real Estate, LLC as described in a deed dated January 31, 2007 and recorded in said Registry in Book 7044, Page 307;

**THENCE**, N 81° 51' 25" W along the apparent southwesterly sideline of said South Lisbon Road, a distance of three hundred fifty-eight and 07/100 feet (358.07') to a 5/8" capped rebar inscribed PLS 2208 at the apparent northeasterly corner of land now or formerly of Daniel J. Aceto, IV as described in a deed dated June 22, 2017 and recorded in said Registry in Book 9624, Page 181;

**THENCE**, S 25° 49' 30" W along the apparent southeasterly sideline of said Aceto and the apparent southeasterly sideline of said Hossain, a distance of two hundred thirty-five and 99/100 feet (235.99') to the **POINT OF BEGINNING**.

The above described parcel of land contains 2.27 acres, more or less. The bearings referred to above are referenced to Maine State Plane Coordinate System – ME2000 West Zone – North American Datum 1983.

Meaning and intending to describe only a portion of land as described in a deed to Armande Poulin from Dominique Poulin dated December 22, 1953 and recorded in the Androscoggin County Registry of Deeds in Book 694, Page 264.

Title may be subject to the following:

1. Utility easement from Dominique Poulin and Armande A. Poulin to Central Maine Power Company as set forth in an instrument dated September 22, 1972 and recorded at Book 1066, Page 302.
2. Utility easement from Dominique Poulin and Armande A. Poulin to Central Maine Power Company as set forth in an instrument dated September 21, 1976 and recorded at Book 1234, Page 164.
3. Utility easement from Dominique Poulin and Armande A. Poulin to Central Maine Power Company as set forth in an instrument dated September 27, 1977 and recorded at Book 1318, Page 323.
4. Rights and easements as set forth in Notice of Layout and Taking by the State of Maine Highway Commission dated January 27, 1954 and recorded at Book 694, Page 458.
5. Rights and easements as set forth in Notice of Layout and Taking by the State of Maine Department of Transportation dated February 20, 1991 and recorded at Book 2671, Page 36.
6. The rights of parties in possession, namely: Cheryl Stewart, doing business as Landscape World.

## **CROSS EASEMENT AND USE AGREEMENT**

**This Agreement made effective this \_\_\_\_ day of April, 2020 by and between Connor Realty, LLC, a Maine Limited Liability Company with a mailing address at 1124 Lisbon Street, Lewiston, Maine 04240 (hereinafter referred to as “Connor Realty”) and M.A.N. Realty, LLC, a Maine Limited Liability Company with a mailing address c/o P.O. Box 1776, Lewiston, Maine 04241-1776 (hereinafter referred to as “M.A.N.”),**

### **WITNESSETH :**

**Whereas, Connor Realty is the owner of certain real estate located at 1896 Lisbon Street, Lewiston, Maine, as more fully described in a Deed of Sale by Personal Representatives from Marcel Poulin, Helen E. Poulin, and Andre Poulin, Personal Representatives of the Estate of Armande A. Poulin to Connor Realty, LLC dated May 4, 2018 recorded in the Androscoggin County Registry of Deeds at Book 9832, Page 88 (the “Connor Realty Real Estate”); and**

**Whereas, M.A.N. is the owner of certain real estate located at 1904 Lisbon Street, Lewiston, Maine, as more fully described in a Deed of Sale by Personal Representatives from Marcel Poulin, Helen E. Poulin, and Andre Poulin, Personal Representatives of the Estate of Armande A. Poulin to M.A.N. Realty, LLC dated May 4, 2018 recorded in the said Registry of Deeds at Book 9832, Page 92 (the “M.A.N. Real Estate”); and**

**Whereas, Connor Realty desires to develop the Connor Realty Real Estate in accordance with that certain Plan entitled “Site Plan, 1896 Lisbon Street, Lewiston, Maine, prepared for Connor Realty, LLC” by Stoneybrook Land Use, Inc. and SJR Engineering, Inc. dated March 9,**

2020, as amended, and recorded in the said Registry of Deeds at Plan Book \_\_\_\_\_, Page \_\_\_\_\_, a copy of which is attached hereto as Exhibit "A" (the "Stoneybrook Plan"); and

**Whereas**, the Stoneybrook Plan contemplates construction of an entranceway off of Lisbon Street running in a northeasterly direction, the center point of which is on the common boundary line between the Connor Realty Real Estate and the M. A. N. Real Estate (the "Entranceway"), said Entranceway being partially on the Connor Realty Real Estate and partially on the M.A. N. Real Estate and extending to South Lisbon Road; and

**Whereas**, the development of the Connor Realty Real Estate shall also necessitate the common use of filter basins and related amenities; and

**Whereas**, the parties desire to enter into this Agreement for purposes of evidencing their rights to use the Entranceway and the common amenities more fully described herein, all for which it is the purpose of this Agreement to provide.

**Now, Therefore**, in consideration of the mutual promises and covenants contained herein, the parties hereto agree as follows:

**1. Connor Realty Grant.**

(a) **Entranceway.** Connor Realty hereby grants to M.A.N., its agents, guests, invitees, licensees, employees, tenants, and patrons of tenants, an easement on, over, and across that portion of the Entranceway located on the Connor Realty Real Estate, said easement being for the purpose of ingress and egress, on foot or by vehicle, and for purposes of installing, constructing, maintaining, and improving utilities (above and below ground) within said Entranceway. For all purposes of this Agreement, the term "utilities" shall mean facilities for the transmission of electricity, gas, telephone

communications, cable television, sewerage, water, or other similar utility services which are currently or may in the future become available.

(b) **Drainage.** Connor Realty grants to M.A.N. a non-exclusive right to drain surface water from the M.A.N. Real Estate over, upon, and through the Connor Realty Real Estate and into Filter Basin #1 and Filter Basin #2 on the Connor Realty Real Estate as shown on the Stoneybrook Plan. The location of any drainage pipes leading from the M.A.N. Real Estate to the Connor Realty Real Estate and to Filter Basin #1 and/or Filter Basin #2 shall be in such location(s) as shall be mutually agreed upon by Connor Realty and M.A.N., the parties hereby agreeing that the said location shall not unreasonably interfere with the use or development of either the Connor Realty Real Estate or the M.A.N. Real Estate. M.A.N. shall have the additional right to enter upon the Connor Realty Real Estate for purposes of maintaining and repairing the pipes leading to Filter Basin #1 and/or Filter Basin #2.

2. **M.A.N. Grant.** (a) **Entranceway.** M.A.N. hereby grants to Connor Realty, its agents, guests, invitees, licensees, employees, tenants, and patrons of tenants, an easement on, over, and across that portion of the Entranceway located on the M.A.N. Real Estate, said easement being for the purpose of ingress and egress, on foot or by vehicle, and for purposes of installing, constructing, maintaining, and improving utilities (above and below ground), as defined in Item 1(a) above within said Entranceway.

(b) **Drainage.** M.A.N. grants to Connor Realty a non-exclusive right to construct drainage improvements (including, without limitation, swales, ditches, culverts, and filter basins) and to drain surface water from the Connor Realty Real Estate over, upon, and through the M.A.N. Real Estate and into said improvements on the M.A.N. Real Estate. The

location of any drainage pipes leading from the Connor Realty Real Estate to the M.A.N. Real Estate and to any drainage improvements on the M.A.N. Real Estate shall be in such location(s) as shall be mutually agreed upon by Connor Realty and M.A.N., the parties hereby agreeing that the said location shall not unreasonably interfere with the use or development of either the Connor Realty Real Estate or the M.A.N. Real Estate. Connor Realty shall have the additional right to enter upon the M.A.N. Real Estate for purposes of maintaining and repairing the drainage improvements and the pipes leading to said drainage improvements.

**3. Additional Agreements.**

(a) **Gravel Drive.** The parties hereto acknowledge and agree that both the Connor Realty Real Estate and the M.A.N. Real Estate are benefitted by that certain Gravel Drive which meanders through the Connor Realty Real Estate and the M.A.N. Real Estate in a northerly/northeasterly direction from Lisbon Street to South Lisbon Road ("Gravel Drive") more fully described in the "Standard Boundary Survey, Plan of Property, 1904 Lisbon Street, Lewiston, Maine, Connor Realty, LLC," prepared by Davis Land Surveying, LLC dated April 20, 2019 and recorded in the said Registry of Deeds at Plan Book 52, Page 78, a copy of which is attached hereto as Exhibit "B" (the "Davis Plan"). The parties hereto acknowledge and agree that, upon completion of the construction of the Entranceway, the Gravel Drive shall be discontinued and eliminated, and neither Connor Realty nor M.A.N. shall have any further rights to the use of the Gravel Drive.

(b) **M.A.N. Existing Gravel Entrance.** The parties hereto acknowledge that if the M.A.N. Real Estate is redeveloped at any time, and for any reason, then the Existing Gravel Entrance more fully described on the Davis Plan shall be removed and

eliminated. For purposes of this Subparagraph 3(b), redevelopment of the M.A.N. Real Estate shall mean removal of all buildings and change of use of the M.A.N. Real Estate from landscaping retail sales.

(c) **M.A.N. Structures.** The parties hereto agree that if any structure located on the M.A.N. Real Estate encroaches upon or into the Entranceway, then M.A.N. shall, at its expense, cause said structure to be relocated to a location on the M.A.N. Real Estate which does not encroach on or within the Entranceway and which does not unreasonably interfere with the operating and use of the Entranceway.

4. **Maintenance and Repair.** Connor Realty and M.A.N. shall share equally in the cost of maintaining and repairing the Entranceway, Filter Basin #1, and Filter Basin #2 as shown on the Stoneybrook Plan. Notwithstanding anything elsewhere set forth herein to the contrary, in the event that the Entranceway, Filter Basin #1, and/or Filter Basin #2 is damaged at any time as a result of the negligence or misconduct of either party, or their respective agents, guests, invitees, licensees, employees, tenants, or agents of tenants, then the cost of such repair shall be the sole responsibility of the parties whose negligence or misconduct, or whose agents', guests', invitees', licensees', employees', tenants', or patrons' of tenants negligence or misconduct cause such damage.

For all purposes of this Agreement, maintenance and repairs to the Entranceway shall include maintaining the grade, gravel, pavement, or other surface of the Entranceway, snow plowing, snow removal, sanding, repairing and re-patching pavement on an as required basis, striping, and all other costs and expenses associated with maintenance and repair of the Entranceway. Maintaining and repairing Filter Basin #1 and Filter Basin #2 shall include all

costs and expenses associated with maintaining the viability of Filter Basin #1 and Filter Basin #2 as operational basins for the retention of surface drainage.

**5. Indemnification, Etc.**

(a) **Connor Realty.** Connor Realty shall indemnify, defend, and hold M.A.N. harmless from and against any loss, cost, or liability of any kind or nature (including reasonable attorneys' and paralegal fees and costs) arising out of the use of the Entranceway, Filter Basin #1, and/or Filter Basin #2 by Connor Realty, its agents, licensees, employees, invitees, guests, tenants, and patrons of tenants, except as caused directly or indirectly by the negligent acts or omissions of M.A.N., its agents, licensees, employees, invitees, guests, tenants, and patrons of tenants.

(b) **M.A.N..** M.A.N. shall indemnify, defend, and hold Connor Realty harmless from and against any loss, cost, or liability of any kind or nature (including reasonable attorneys' and paralegal fees and costs) arising out of the use of the Entranceway, Filter Basin #1, and/or Filter Basin #2 by M.A.N., its agents, invitees, licensees, employees, guests, tenants, and patrons of tenants, except as caused directly or indirectly by the negligent acts or omissions of Connor Realty, its agents, licensees, guests, invitees, tenants, and patrons of tenants.

**6. Default.** In the event of a default by any party to this Agreement, the non-breaching party shall be entitled to any and all remedies available at law or in equity, including, without limitation, the right to cover reasonable attorneys' and paralegal fees and costs.

**7. Other Agreements.** The parties hereto agree to enter into such other and further agreements as may be reasonably necessary to effectuate the terms hereof.



**M.A.N. Realty, LLC**

\_\_\_\_\_

By: \_\_\_\_\_  
Print: \_\_\_\_\_  
Its Duly Authorized Agent

STATE OF MAINE  
ANDROSCOGGIN, SS.

April \_\_, 2020

Then personally appeared before me the above-named **Michael T. Connor**, in his capacity as Member of **Connor Realty, LLC**, and acknowledged the foregoing instrument to be his/her free act and deed in his capacity and the free act and deed of said entity.

Before me,

\_\_\_\_\_  
Notary Public/Attorney-At-Law  
Print Name: \_\_\_\_\_  
My Commission Expires: \_\_\_\_\_

STATE OF MAINE  
ANDROSCOGGIN, SS.

April \_\_, 2020

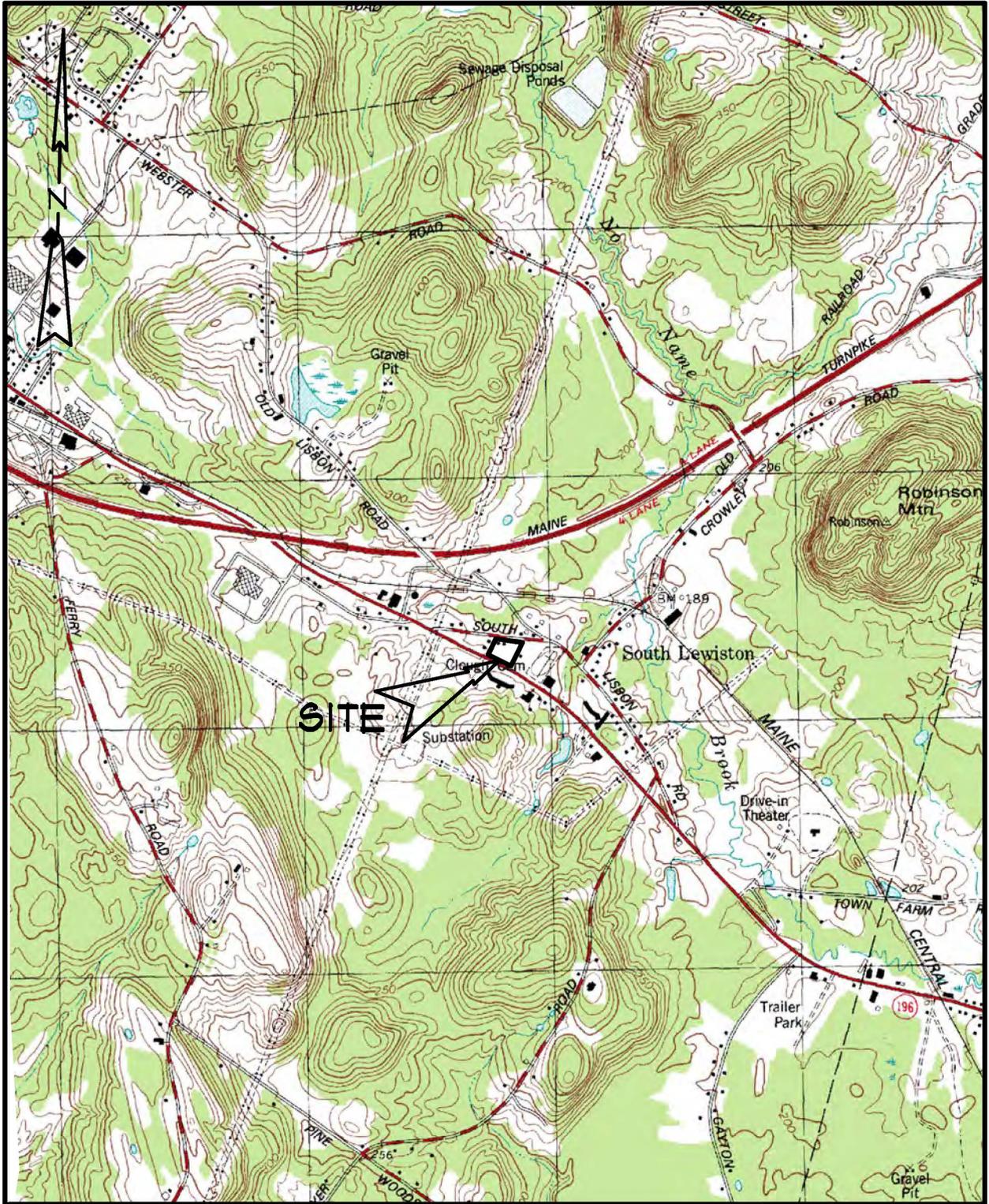
Then personally appeared before me the above-named \_\_\_\_\_, in his capacity as Duly Authorized Agent of **M.A.N. Realty, LLC**, and acknowledged the foregoing instrument to be his/her free act and deed in his capacity and the free act and deed of said entity.

Before me,

\_\_\_\_\_  
Notary Public/Attorney-At-Law  
Print Name: \_\_\_\_\_  
My Commission Expires: \_\_\_\_\_







## USGS LOCATION MAP

1896 LISBON STREET - LEWISTON  
 OWNER: CONNOR REALTY, LLC  
 SCALE: 1" = 2,000'  
 DATE OF GRAPHIC: MARCH 3, 2020  
 SOURCE: MAINE OFFICE OF GIS  
 ORIGINAL PUBLICATION DATE: 1967

**Stoneybrook**  
 Land Use, Inc.



# TAX MAP

1896 LISBON STREET - LEWISTON

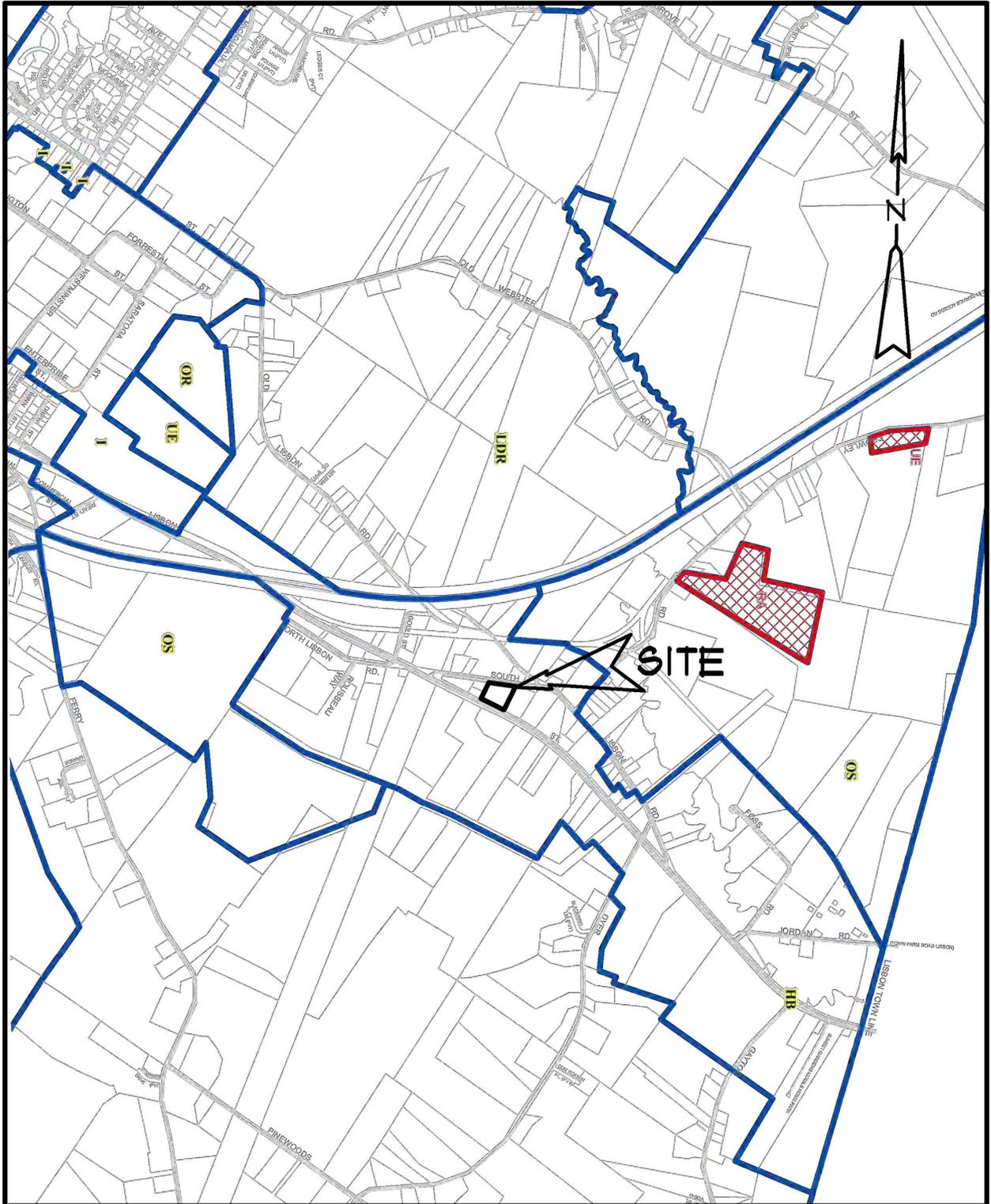
OWNER: CONNOR REALTY, LLC

SCALE: 1" = 2,000'

DATE OF GRAPHIC: MARCH 3, 2020

SOURCE: CITY OF LEWISTON TAX MAPS 69 & 70

PUBLICATION DATE: APRIL 1, 2019



# ZONING MAP

1896 LISBON STREET - LEWISTON  
 OWNER: CONNOR REALTY, LLC  
 SCALE: 1" = 2,000'  
 DATE OF GRAPHIC: MARCH 3, 2020  
 SOURCE: CITY OF LEWISTON ZONING MAP  
 PUBLICATION DATE: JANUARY 2017



March 10, 2020

Michael Gotto  
Stoneybrook Consultants, Inc.  
PO Box 459  
Turner, ME 04282

Dear Mr. Gotto,

I'm writing to inform you that Gorham Savings Bank has been providing financing to Michael and Diane Connor for many years and they are valued clients of the Bank.

In May 2018 Gorham Savings Bank worked with Michael and Diane Connor on their purchase of land at 1904 Lisbon Street in Lewiston. At the time it was understood that the land would be developed in a few years. Now that the Connor's have decided to proceed with the project, Gorham Savings Bank is looking forward to working with them on the development.

If you should need further information or clarification, please contact me at (207) 222-1494.

Sincerely,

A handwritten signature in blue ink, appearing to read "Todd Abbotoni", is written over a light blue horizontal line.

Todd Abbotoni  
Vice President  
Commercial Services Group



## Wetland Identification and Mapping Report 1904 Lisbon Street, Lewiston

**Date:** December 21, 2018

**To:** Mike Gotto  
Stoneybrook Consultants, Inc.  
P.O. Box 459  
Turner, ME 04282

**Date(s) of the Investigation:** October 31, 2018

### **Location of the Investigation:**

The area investigated is located at 1904 Lisbon Street, Lewiston. It is comprised of two parcels and is 4.4 acres in size.

### **Purposes of Investigation:**

The purposes of the wetland investigation are to identify and describe wetlands according to definitions in the *Natural Resources Protection Act* (the *NRPA*); to determine if specific alteration and filling permits are required and if there are any setbacks required under the *NRPA*; to determine the Maine DEP jurisdictional status of any streams, and to identify any potential significant vernal pools.

### **Method of Investigation:**

A literature search and on-site investigations were made. The investigations were performed following the guidelines described in the 1987 Corps of Engineers Delineation Manual and the 2009 Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region. This procedure uses a multiple

parameter approach that requires the presence of three primary components for an area to be identified as a wetland: 1) hydric soils; 2) predominance of hydrophytic vegetation; and 3) wetland hydrology.

The *Standard Boundary Survey Plan of Property 1904 Lisbon Street, Lewiston, Maine Connor Realty, LLC* by Davis Land Surveying, LLC, dated April 20, 2018 was used in the field during the investigation.

Boundary positions were flagged on the site and locations were made with a Trimble Geo-XH 6000 GPS device, capable of sub-meter accuracy. The results were post-processed for accuracy and an AutoCAD drawing file of the results was sent to Stonybrook Consultants, Inc.

### **Results of the Investigation:**

The property is located on a terrace north of a small knoll, west of No Name Brook. Drainage is northerly to a wetland and intermittent stream which flows easterly to No Name Brook (See Figure 1).

The area is depicted as association of Adams loamy sand and Lamoine-Buxton Complex on the *National Cooperative Soil Survey* (see attached photomap and descriptions). Neither soil type is a Hydric soil. Wetlands are not depicted on the property on the *National Wetlands Inventory*, (see attached photomap).

A small area of Palustrine forested wetlands was found in a depression adjacent to the road ditch of South Lisbon Road. The wetlands are not Wetlands of Special Significance. There are no setback requirements to the wetlands. 4,300 square feet can be filled and/or disturbed before a Permit is required.

There are no streams or potential vernal pool habitats on the property.

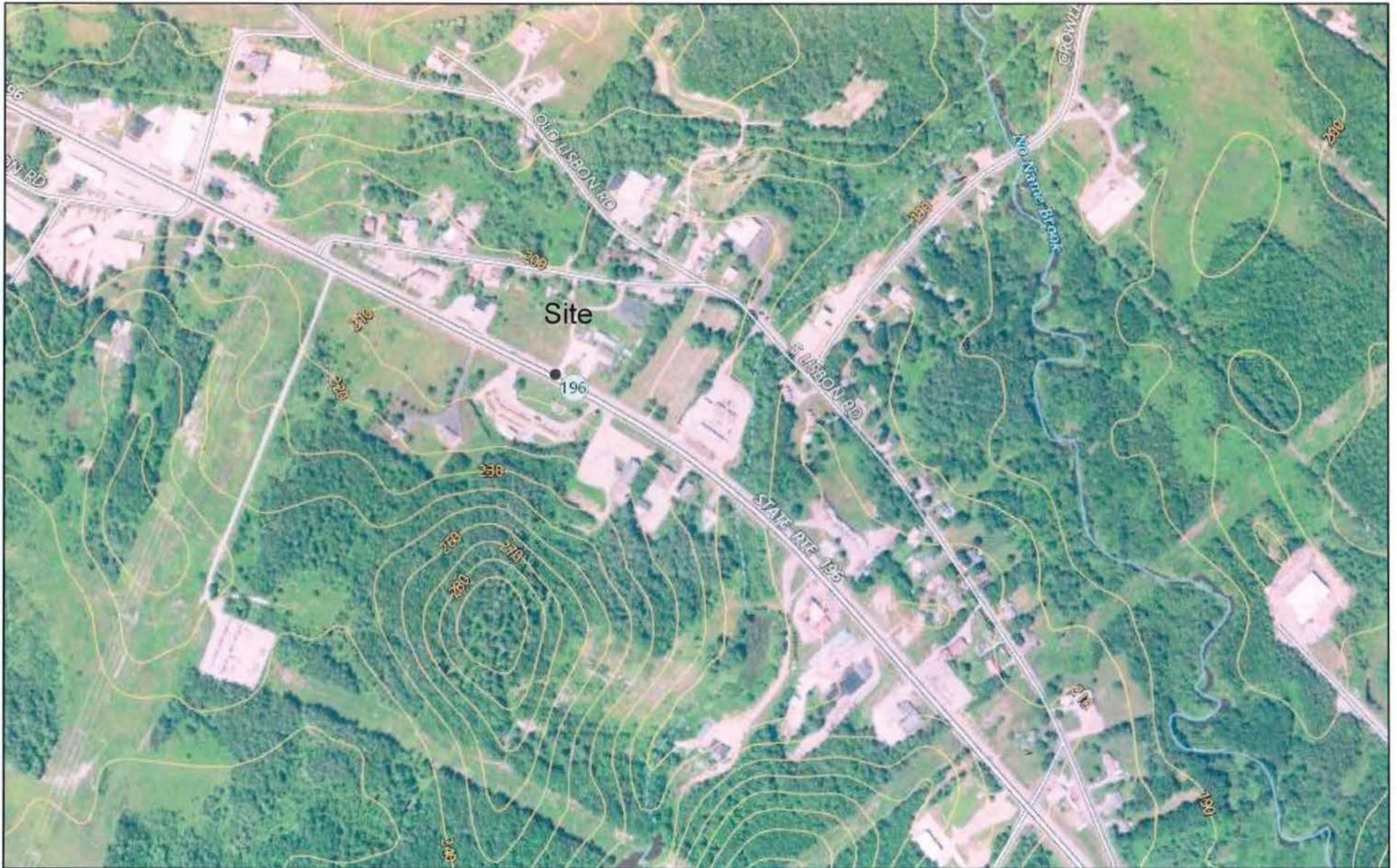
### **Conclusions:**

A small area of wetlands was found and delineated adjacent to the road ditch of South Lisbon Road. The wetlands are not Wetlands of Special Significance. There are no streams or potential vernal pool habitats on the property.

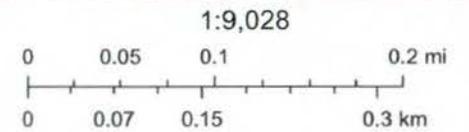


Mark Cenci  
Maine Certified Geologist #467

# Topographic Locus, 1904 Lisbon Street

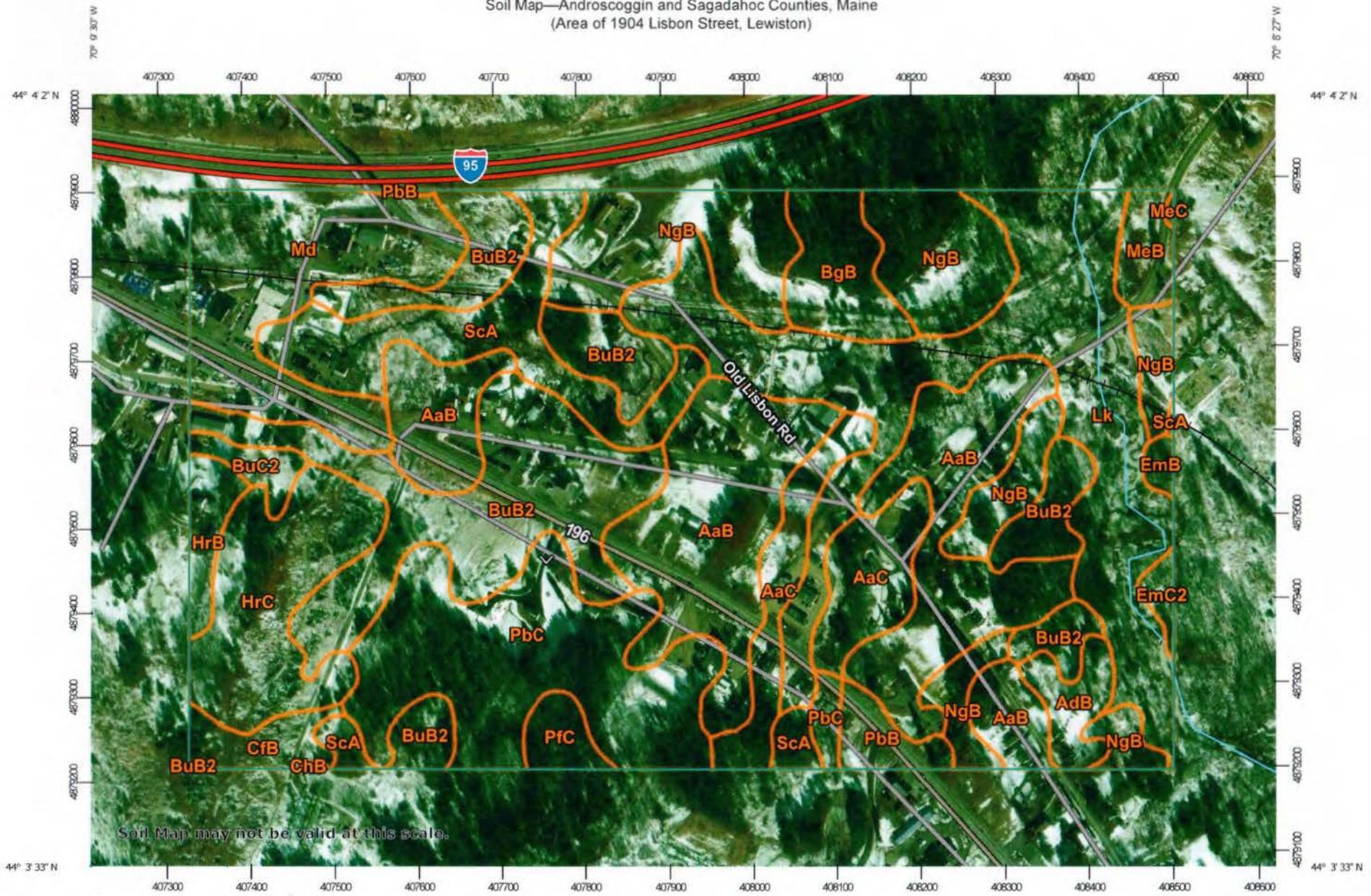


12/21/2018 12:07:51 PM

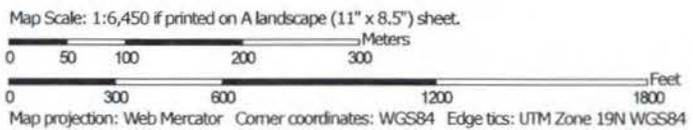


USGS The National Map: Orthoimagery and US Topo. Data refreshed April.

Soil Map—Androscoggin and Sagadahoc Counties, Maine  
(Area of 1904 Lisbon Street, Lewiston)



Soil Map may not be valid at this scale.



Soil Map—Androscoggin and Sagadahoc Counties, Maine  
(Area of 1904 Lisbon Street, Lewiston)

### MAP LEGEND

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

### 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: Dec 31, 2009—Oct 13, 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	33.4	16.6%
AaC	Adams loamy sand, 8 to 15 percent slopes	9.3	4.6%
AdB	Agawam fine sandy loam, 2 to 8 percent slopes	2.5	1.3%
BgB	Belgrade very fine sandy loam, 2 to 8 percent slopes	4.8	2.4%
BuB2	Lamoine-Buxton complex, 0 to 8 percent slopes	29.4	14.7%
BuC2	Buxton silt loam, 8 to 15 percent slopes	1.4	0.7%
CfB	Charlton fine sandy loam, 0 to 8 percent slopes	2.4	1.2%
ChB	Charlton very stony fine sandy loam, 0 to 8 percent slopes	0.1	0.0%
EmB	Elmwood fine sandy loam, 2 to 8 percent slopes	0.5	0.3%
EmC2	Elmwood fine sandy loam, 8 to 15 percent slopes, eroded	0.7	0.4%
HrB	Lyman-Tunbridge complex, 0 to 8 percent slopes, rocky	2.1	1.1%
HrC	Lyman-Tunbridge complex, 8 to 15 percent slopes, rocky	10.8	5.4%
Lk	Charles silt loam, 0 to 2 percent slopes, occasionally flooded	29.3	14.6%
Md	Made land, loamy materials	14.6	7.3%
MeB	Melrose fine sandy loam, 0 to 8 percent slopes	2.1	1.0%
MeC	Melrose fine sandy loam, 8 to 20 percent slopes	0.1	0.0%
NgB	Ninigret fine sandy loam, 0 to 8 percent slopes	21.5	10.7%
PbB	Paxton loam, 2 to 8 percent slopes	2.2	1.1%
PbC	Paxton loam, 8 to 15 percent slopes	19.8	9.9%
PfC	Paxton very stony loam, 8 to 15 percent slopes	1.7	0.8%
ScA	Scantic silt loam, 0 to 3 percent slopes	12.0	6.0%
<b>Totals for Area of Interest</b>		<b>200.5</b>	<b>100.0%</b>



December 21, 2018

**Wetlands**

- |  |                                |  |                                   |  |          |
|--|--------------------------------|--|-----------------------------------|--|----------|
|  | Estuarine and Marine Deepwater |  | Freshwater Emergent Wetland       |  | Lake     |
|  | Estuarine and Marine Wetland   |  | Freshwater Forested/Shrub Wetland |  | Other    |
|  | Freshwater Pond                |  |                                   |  | Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

# TRAFFIC IMPACT STUDY

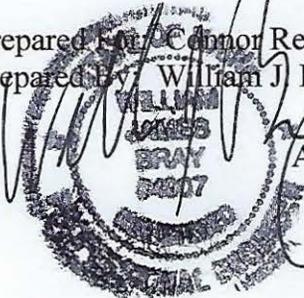
FOR

PROPOSED

# Multi-Tenant Building

(Partial Copy)

Prepared For: Connor Realty, LLC  
Prepared By: William J. Bray, P.E.



April 2020

## INTRODUCTION

The proposed site, a 2.27± acre parcel, is located at 1896 Lisbon Street near the intersection with South Lisbon Road in the City of Lewiston. The proposed site is currently occupied with a vacant single-family house and shed that will be razed with development of the proposed project. This property shares access from both Lisbon Street and South Lisbon Road with the property located at 1904 Lisbon Street, along a narrow gravel drive. The adjoining parcel is occupied by Landscape World.

The Applicant is proposing to construct a multi-tenant building with a 2,163 square foot full-service Dunkin' Donuts Shop and a 900-foot adjoining office space. There will also be two separate rental units; Unit #1 is roughly 1,980 square feet in total area and Unit #2 programmed with a slightly larger foot print of 2,040 square feet. Both rental units will be marketed for either a retail, personal service or office use.

The proposed Dunkin' Donuts store building and site layout represent the Nextgen Prototype for all new Dunkin' franchises. The site design includes two drive-up windows, one order board and a mobile pick-up lane exclusively for "To Go" orders. Drivers with "To Go" orders will have a separate lane through the service area to by-pass the pick-up windows. Regular drive-through customers will have a stop sign at the merge point to allow a smooth traffic flow to the drive-up window.

The Applicant proposes to upgrade the existing shared access drive with the adjoining Landscape World that presently connects Lisbon Street with South Lisbon Road. The existing gravel driveway will be widened and paved to a width of 30-feet with two direct connections to the proposed multi-tenant building and the existing Landscape World site. Additionally, the existing parking area of the Landscape World parcel will be reconfigured to allow truck movements and better site circulation to/from the proposed upgraded access driveway connecting to the two city streets. A second restricted exit-only access drive is proposed for the multi-tenant building, which is located about 280-feet from the upgraded shared-access driveway.

The drive-thru lane provides vehicle stacking for a total of 21 vehicles as measured from the starting point of the Drive-thru and To-Go lanes to the first pick-up window. Additional vehicle stacking is available within the To-Go lane.

A total of 57 parking spaces are provided on-site to meet the parking requirements of the proposed Dunkin' store and the two rental units.

This report assumes full development of the proposed site will occur in early 2021.

## EXISTING CONDITIONS

**Existing Traffic:** A manual turning movement count was conducted on Friday, August 16, 2019 between the hours of 6:30 and 9:30 a.m. on Lisbon Street at the proposed site to establish weekday AM peak hour through traffic volumes on State Route 196 (a.k.a. Lisbon Street) at the proposed site driveway entrance. From a summary of the data, a peak hour of traffic (7:00 to 8:00 a.m.) was determined for the noted section of Lisbon Street. A copy of the peak hour count summary sheet is attached as an appendix to the report.

Traffic data collected during the months of July and August are generally representative of "peak" travel conditions and further adjustment is not required. Accordingly, the estimated 2019 design hour directional through traffic volumes for Lisbon Street during the AM peak hour at the proposed site driveway are presented as follows:

Westbound	= 558 vph
Eastbound	= 346 vph
Total Volume	= 904 vehicles per hour

**Existing Safety Trends:** The Maine Department of Transportation's (MaineDOT) Accident Records Section provided the most current three-year (2016 through 2018) safety records for the section of Lisbon Street between Dyer Road and South Lisbon Road. MaineDOT's report is presented as follows:

**2016 - 2018 Accident Summary  
Lisbon Street (Dyer Road to South Lisbon Road)**

<u>Location</u>	<u>Number of Accidents</u>	<u>Critical Rate Factor</u>
1. Lisbon Street @ Dyer Road	2	0.41
2. Lisbon Street @ South Lisbon Road	3	0.56
3. Lisbon Street btw. South Lisbon Road and Dyer Road	9	0.33

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 table shows, there are no identified high crash locations within the defined study area.

**SITE TRAFFIC**

**Site Trip Generation:** Trip generation estimates were prepared for the proposed multi-tenant building project applying standard trip rate information presented in the 7<sup>th</sup> edition of the Institute of Transportation Engineers (ITE) **TRIP GENERATION** publication and 2007 trip generation estimating formulas specifically developed for Dunkin' Donuts restaurants.

**Calculation Procedures**

*Trip estimates for the proposed site were based upon the following level of development:*

- 2,163sf Dunkin' Donuts with Drive-Thru*
- 900sf adjoining office space in Dunkin' Donuts Store*
- 1,980sf Fast-Food Restaurant w/o drive-thru window (Operating after 10:00 a.m. Sunday through Saturday)*
- 2,040sf Single Tenant Office Space*

Trip estimates for both the proposed projected Single Tenant Office space(s) and the Fast-food Restaurant spaces are based upon the following land-use codes as presented in the seventh edition of the ITE publication:

**Land Use #715 – Single Tenant Office Building**

- AM Peak Hour (Street) = 1.80 trips per 1,000sf of floor area
- PM Peak Hour (Street) = 1.73 trips per 1,000sf of floor area
- AM Peak Hour (Generator) = 1.80 trips per 1,000sf of floor area <sup>(1)</sup>
- PM Peak Hour (Generator) = 1.73 trips per 1,000sf of floor area <sup>(1)</sup>

**Land Use #933 – Fast-Food Restaurant w/o Drive-Through Window**

- AM Peak Hour (Street) = Not Applicable
- PM Peak Hour (Street) = 26.15 trips per 1,000sf of floor area
- AM Peak Hour (Generator) = 63.50 trips per 1,000sf of floor area
- PM Peak Hour (Generator) = 52.40 trips per 1,000sf of floor area

Trip generation for the proposed Dunkin' Donuts restaurant with drive-through lane in the AM peak hour of the street was calculated based upon the following formula presented in the 2007 Dunkin' Donuts Trip Generation Report:

$$Y = 0.1061x + 144.49$$

[Y = number of trips generated during the AM peak hour and x represents the Average Peak Hour Traffic Volume passing by the site]

The 2019 design hour traffic volume for Lisbon Street during the AM peak hour (Refer to attached traffic count summary sheet) at the proposed Dunkin' Donuts site is 904 vehicles. Accordingly, the estimated volume of traffic generated by the proposed Dunkin' Donuts site during the morning peak hour is **240** vehicle trips.

**NOTE:** Trip Generation for the remaining three peak hour time periods for the proposed Dunkin' Donuts store were determined based upon Land-Use #937 as presented in the 10<sup>th</sup> edition of the Institute of Transportation Engineers "TRIP GENERATION" publication. The following trip rates were applied in calculating the peak hour trips during the remaining peak hour time periods:

- PM Peak Hour (Street) = 43.38 trips per 1,000sf of floor area
- AM Peak Hour (Generator) = 97.96 trips per 1,000sf of floor area
- PM Peak Hour (Generator) = 37.43 trips per 1,000sf of floor area

Table 1, as follows, provides the expected trip generation values of each of the designated peak hour time periods:

**Table 1**  
**Peak Hour Trip Generation**  
**Summary**

<b>Peak Hour Trip Generation</b>	<b>Proposed Land-Use Identification</b>				
	<b>Dunkin' Donuts Store</b>	<b>Dunkin' Donuts Adjoining Office Space</b>	<b>Fast-Food w/o Drive-Thru Window Service</b>	<b>Single Tenant Office Space</b>	<b>Total Peak Hour Trips</b>
AM Peak Hour (Street)	240 trips	2 trips	n/a	4 trips	246 trips
PM Peak Hour (Street)	94 trips	2 trips	52 trips	4 trips	152 trips
AM Peak Hour (Generator)	212 trips	2 trips	126 trips	4 trips	344 trips
PM Peak Hour (Generator)	81 trips	2 trips	104 trips	4 trips	191 trips

The proposed multi-tenant building can be expected to generate a total of **246** trips during the AM peak hour of the street; **152** trips in the evening peak hour of the street and a total of **344** trips in the morning peak hour of the generator and, lastly, a total of **191** trips in the evening peak hour of the generator.

**Site Trip Composition:** The 2007 Gorrill-Palmer, Inc. study established that, on average, approximately 15% of the total trips generated by a Dunkin' Donuts site are "primary" or new trips to the area; 70% are "pass-by" trips or vehicle trips already on the roadway system and; 15% are "diverted-link" trips or existing trips on adjacent roadways that shift travel patterns. The diverted link trips generated by the proposed Dunkin' store are considered new or primary trips to the roadway system.

Traffic Solutions applied an average "pass-by" trip percentage of 43% for the proposed Fast-Food Restaurant w/o a drive-thru window service. This value was obtained from the 3<sup>rd</sup> edition of the ITE "TRIP GENERATION"

handbook for Land-Use #932 - High Turnover (Sit-Down) Restaurant. [A specific “pass-by” trip rate is not provided for the proposed fast-food restaurant land-use.]

Peak hour trips generated by the single-tenant office space are primary or “new” trips to the roadway system.

Table 2, as follows, presents the trip composition values for each of the proposed land-uses:

**Table 2**  
**Trip Composition Summary**

<u>Peak Hour Time</u>	<u>Total Trips</u>	<u>Primary Trips</u>	<u>Pass-By Trips</u>
AM Peak Hour (Street)			
- Dunkin' Donuts Store	240	72	168
- Dunkin' Office Space	2	2	0
- Fast-Food Rest. w/o Drive-Thru	n/a	n/a	n/a
- Single-Tenant Office Space	4	4	0
<b>Total</b>	<b>246</b>	<b>78</b>	<b>168</b>
PM Peak Hour (Street)			
- Dunkin' Donuts Store	94	28	66
- Dunkin' Office Space	2	2	0
- Fast-Food Rest. w/o Drive-Thru	52	30	22
- Single-Tenant Office Space	4	4	0
<b>Total</b>	<b>152</b>	<b>64</b>	<b>88</b>
AM Peak Hour (Generator)			
- Dunkin' Donuts Store	212	64	148
- Dunkin' Office Space	2	2	0
- Fast-Food Rest. w/o Drive-Thru	126	72	54
- Single-Tenant Office Space	4	4	0
<b>Total</b>	<b>344</b>	<b>142</b>	<b>202</b>
PM Peak Hour (Generator)			
- Dunkin' Donuts Store	81	25	56
- Dunkin' Office Space	2	2	0
- Fast-Food Rest. w/o Drive-Thru	104	60	44
- Single-Tenant Office Space	4	4	0
<b>Total</b>	<b>191</b>	<b>91</b>	<b>100</b>

Accordingly, the proposed site will generate: 168 “pass-by” and 78 “primary” trips in the morning peak hour of the street and a total of 88 “pass-by” and 64 “primary” trips in the evening peak hour of the street.

**Site Trip Distribution:** Trip distribution patterns were established for the proposed site uses based upon rates presented in both the 7<sup>th</sup> and 10<sup>th</sup> editions of the Institute of Transportation Engineers “TRIP GENERATION” publication and distribution patterns established for a Dunkin’ Donuts site as documented in the 2007 Gorrill-Palmer, Inc. trip rate study. The following summarizes that effort:

**Land-Use Code 715 – Single Tenant Office Building (7<sup>th</sup> Edition)**

- AM Peak Hour Street) = 89% enter/11% exit
- PM Peak Hour (Street) = 15% enter/85% exit
- AM Peak Hour (Generator) = N/A
- PM Peak Hour (Generator) = N/A

**Land-Use #933 – Fast-Food Restaurant w/o Drive-Thru Window (7<sup>th</sup> Edition)**

AM Peak Hour Street) = N/A  
 PM Peak Hour (Street) = 51% enter/49% exit  
 AM Peak Hour (Generator) = 52% enter/48% exit  
 PM Peak Hour (Generator) = 51% enter/49% exit

**Dunkin’ Donuts**

AM Peak Hour Street) = 50% enter/50% exit (2007 Dunkin’ Donuts Study)  
 PM Peak Hour (Street) = 53% enter/47% exit (LUC # 937 10<sup>th</sup> Edition)  
 AM Peak Hour (Generator) = 55% enter/45% exit (LUC # 937 10<sup>th</sup> Edition)  
 PM Peak Hour (Generator) = 52% enter/48% exit (LUC # 937 10<sup>th</sup> Edition)

Table 3, below, provides a summary of the site trip volumes projected to enter and exit the proposed Lisbon Street site during each noted peak hour time period. Separate values are estimated and presented for both the primary and “pass-by” trips. All “pass-by” trip values are based upon a 50% enter/50% exit distribution pattern, as required, based upon the definition of a “pass-by” trip. The trip distribution values presented for the primary trips are based upon the percentage values highlighted above.

**Table 3**  
**Peak Hour Trip Directional Distribution**  
**Summary**

<u>Peak Hour Time Period</u>	<u>Primary Trip</u>		<u>“Pass-By” Trip</u>		<u>Total Trips</u>	
	<u>Enter</u>	<u>Exit</u>	<u>Enter</u>	<u>Exit</u>	<u>Enter</u>	<u>Exit</u>
AM Peak Hour (Street)	41	37	84	84	125	121
PM Peak Hour (Street)	30	34	44	44	74	78
AM Peak Hour (Generator)	72	70	101	101	173	171
PM Peak Hour (Generator)	46	45	50	50	96	95

**NOTE:** City Staff and Consultant limited the traffic impact study requirements to include only the AM peak hour time period. Accordingly, the remaining content of this study is limited to the AM peak hour time period with no additional reference to other peak hour time periods.

**Site Trip Assignment:** Site trips generated by the proposed multi-tenant building were directionally assigned to the Lisbon Street corridor based upon existing vehicle splits measured at the proposed site. The directional assignment percentages applied in the AM peak hour were based upon peak hour traffic count data collected on August 16, 2019. Accordingly, site trips were directionally assigned to the Lisbon Street corridor applying a 65% westbound/35% eastbound directional split. Minor adjustments in the actual volume of traffic traveling in either direction on ME 196 (a.k.a. Lisbon Street) were applied to account for a few expected site trips that will use South Lisbon Road to ingress/egress the proposed multi-tenant site.

Figure 1 is a “stick-diagram” that illustratively presents the travel assignment for the AM peak hour of the street condition.

**2021 POST-DEVELOPMENT TRAFFIC**

**Annual Growth:** The Traffic Impact Study has been prepared based upon a projected build-out year of 2021. MaineDOT’s traffic count station located at the Lisbon town line presents average annual daily traffic data for multiple years starting in 2012 and continuing through 2017. The yearly traffic data, which is highlighted and summarized on the attached excerpt from MaineDOT’s traffic count report, suggests very little growth (less than a quarter percent per year) has occurred in the corridor during the noted time period.

However, to conservatively measure traffic impacts of the proposed multi-tenant project an annual growth rate of 1% per year was applied to estimate 2021 design hour traffic volumes for Lisbon Street at the site driveway intersection. The estimated 2021 directional design hour traffic volumes for Lisbon Street at the site driveway are summarized as follows:

Westbound = 569 vph  
 Eastbound = 353 vph  
**Total = 922 vehicles per hour**

**Other Development Traffic:** Traffic generated by projects that have been approved (or submitted for approval) 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. City staff advised that construction phase trips generated by the proposed Lisbon Street Solar Project should be considered as other development trips impacting the study corridor.

VHB Engineers, site engineers for the proposed solar project located at 1875 Lisbon Street, have provided written documentation in their site application that the peak staffing portion of the site construction will generate about 93 peak hour trips in the AM peak hour. Traffic Solutions has assumed that during the morning peak hour roughly 90% of the trips enter the site and 10% exit. The construction trips were assigned to the Lisbon Street corridor applying the same directional splits used in the assignment of the site trips. The other development trips impacting the proposed multi-use tenant site are estimated as follows:

Westbound = 29 vph  
 Eastbound = 3 vph  
**Total = 32 vehicles per hour**

**2021 Post-Development Traffic:** 2021 Post-Development traffic forecasts for the AM peak hour were projected for the primary site driveway intersection at Lisbon Street combining the 2021 design hour travel forecasts and Other Development volumes with the site generated trips for the AM peak hour, as highlighted on Figure 1. Figure 2 presents the estimated 2021 post-development traffic forecasts for the site driveway intersection with Lisbon Street.

**MOBILITY ANALYSIS**

Capacity analyses of the projected 2021 Post-Development traffic condition projected for the primary site driveway intersection with Lisbon Street was performed utilizing the Synchro and SimTraffic computer models. Level 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**

<u>Level of Service</u>	<u>Total Control Delay (sec/veh)</u>
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

Table 1, as follows, provides the results of the capacity analyses conducted for the primary site driveway intersection with Lisbon Street.

**Table 1**  
**Level of Service Summary**  
**2021 Post-Development Condition**  
**[AM Peak Hour]**

<u>Intersection/Approach</u>	<u>2021 Post-Development</u>	
	<u>Delay (sec.)</u>	<u>LOS</u>
Lisbon Street @ Primary Site Driveway		
- Lisbon Street WB	2 secs.	A
- Lisbon Street EB	1 sec.	A
- Site Driveway SB	12 secs.	B
- Overall Intersection	3 secs.	A

The primary site entrance intersection with Lisbon Street is expected to operate overall at the “best” level of service (Level of Service A) under post-development travel conditions; experiencing overall very minimal intersection delay (3 seconds or less). Motorists leaving the site will encounter less than 12 seconds of average vehicle delay entering the Lisbon Street corridor.

**SIGHT DISTANCE**

The Maine Department of Transportation’s Highway Entrance and Driveway Rules, require the following sight distances:

**Sight Distance Standards**

<u>Speed Limit</u>	<u>Sight Distance</u>
<b>25 mph</b>	<b>200 feet</b>
30	250
35	305
40	360
<b>45</b>	<b>425</b>
50	495
55	570

The proposed re-configured and upgraded shared driveway with the adjoining property at 1904 Lisbon Street provides direct connections to both Lisbon Street and South Lisbon Road. Vehicle sight distance was measured at each proposed intersection to ensure acceptable sight distance is provided. Lisbon Street is posted at 45mph, which requires an unobstructed sight distance of 425-feet. Sight distance measurements in excess of 1,000-feet were observed in both directions of travel on Lisbon Street. South Lisbon Road is presently posted at 25mph, which requires a minimum sight distance of 200-feet. Measurements in excess of 400-feet were recorded in both directions of travel. All trees and vegetation located within 10-feet of edge of pavement along the full South Lisbon Road frontage of the proposed site must be removed and maintained to ensure acceptable sight distance is provided.

**SUMMARY**

1. The proposed Multi-Tenant project is expected to generate approximately 246 total site trips during the morning peak hour with about half of the trips entering the site and the other half exiting. This report assumes the majority of the site trips will utilize the primary site driveway entrance to access to or egress from the

proposed project site. A portion of the Dunkin' Donuts generated trips will likely exit the property through the proposed exit-only driveway onto Lisbon Street especially during peak time periods and a few other patrons of the site will utilize the access driveway connection to South Lisbon Road more for convenience versus actual travel desires.

2. MaineDOT's Traffic Safety Bureau's latest three-year (2016 through 2018) safety report for the section of Lisbon Street between Dyer Road and South Lisbon Road, a distance of 0.68 miles, shows there are no reported high crash locations in the defined study area.
3. The primary site entrance intersection with Lisbon Street is expected to operate overall at the "best" level of service (Level of Service A) under post-development travel conditions; experiencing overall very minimal intersection delay (3 seconds or less). Motorists leaving the site will encounter less than 12 seconds of average vehicle delay entering the Lisbon Street corridor (The mobility analysis completed for the primary site driveway intersection assigned all site generated trips through the main entrance to conservatively measure the traffic operational impacts of the proposed site). The results of the capacity analysis presented in Table 1 conclusively demonstrates the proposed site, at full occupancy, does not adversely impact present or future travel conditions along the Lisbon Street corridor.
4. Vehicle sightlines measured directionally from the centerline of the proposed primary site entrance at Lisbon Street meets and exceeds the minimum standard (425-feet) for a posted speed limit of 45mph; the current posted speed limit on Lisbon Street. The portion of South Lisbon Street at the proposed secondary site entrance driveway is posted at 25mph requiring a minimum unobstructed sight distance of 200-feet; sightline measurements in excess of 400-feet were determined for each direction of travel at the proposed South Lisbon Road site entrance. All trees and vegetation located within 10-feet of edge of pavement along the full South Lisbon Road frontage of the proposed site must be removed and maintained to ensure acceptable sight distance is provided.

**City of Lewiston  
Traffic Movement Permit**

Applicant: Connor Realty, LLC  
Developer: Connor Realty, LLC  
Project Location: 1896 Lisbon Street  
Lewiston, Maine 04240

Project: Multi-Tenant Building  
Identification #: XXX  
Permit Category: > 200 PCE  
Traffic Engineer: Traffic Solutions  
Attention: William J. Bray, PE  
17 Mountview Drive  
Gorham, Maine 04038

Pursuant to the provisions of 23 M.R.S.A. § 704-A and Chapter 305 of the Maine Department of Transportation's Regulations, with delegated review authority granted to the City of Lewiston, the City has considered the application of Connor Realty, LLC with supportive data, staff review, and other related materials on file.

**PROJECT DESCRIPTION**

Connor Realty, LLC will construct a 7,083 square foot multi-tenant building that will include a 2,163 square foot full-service Dunkin' Donuts store with a 900-square foot office area. The proposed structure will also include two rental units with Unit #1 at 1,980 square feet and Unit #2 at 2,040 square feet. The proposed project will be constructed on a 2.27+/- acre lot located at 1896 Lisbon Street in the City of Lewiston.

The project is expected to generate a total of 246 "passenger car equivalent" trips during the AM peak hour and 152 trips in the PM peak hour of the street.

**Findings**

Based upon a review of the files and related information, the City of Lewiston approves the Traffic Movement Permit application of Connor Realty, LLC subject to the following conditions:

**MITIGATION**

The following mitigation is intended to describe that conceptually shown on "Traffic Permit Plan" prepared by Stoneybrook Land Use, Inc. and SJR Engineering, Inc. dated March 5, 2020. Not all the mitigation discussed herein may be shown on that or any plan.

**On-Site Mitigation**

- A. The Applicant shall construct an internal (private) 30-foot wide driveway connection between Lisbon Street and South Lisbon Road that provides full access entrances onto both Lisbon Street and South Lisbon Road. A third driveway access, which is an exit-only driveway onto Lisbon Street, will be constructed approximately 285-feet west of the main entrance driveway. Traffic signage and pavement markings, as depicted on the conceptual site plan, will be installed in conformance with the latest edition of the Manual on Uniform Traffic Control Devices, as amended.
- B. All trees and low-level vegetation located within 10-feet of the existing edge of pavement along the full South Lisbon Road frontage of the proposed site will be removed and maintained, as necessary, to ensure acceptable sight distance is provided through the site entrance.

**Off-Site Mitigation – There is No Off-Site Mitigation Required**

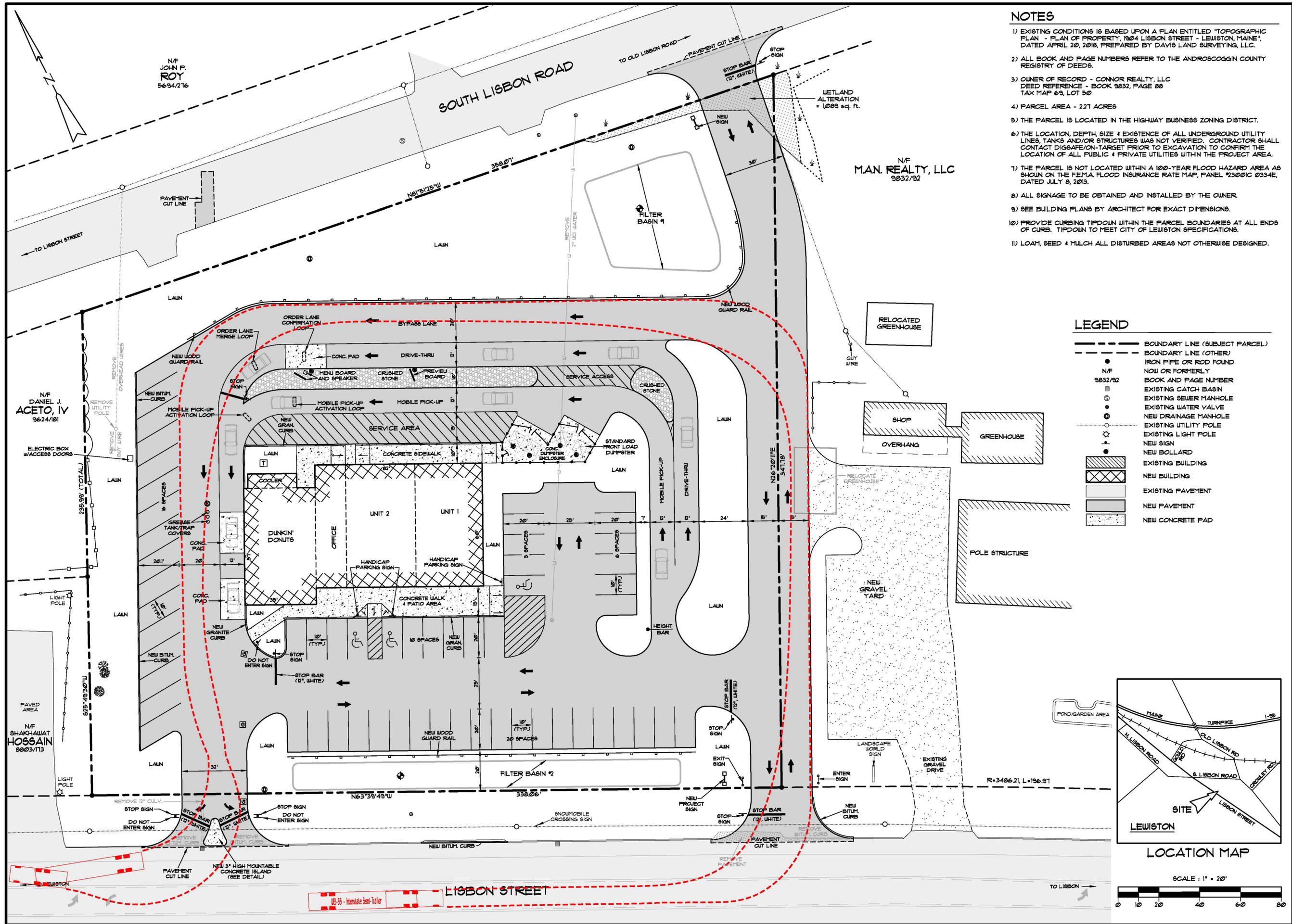
**Overall**

- A. Provide all necessary auxiliary signs and pavement markings to implement the improvements described herein according to State of Maine and/or National standards.
- B. All plantings and signs (permanent and 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 or plantings shall be allowed within the “*clear zone*” if they constitute a deadly fixed object.
- C. If any of the supporting data or representations for which this permit is based upon changes in any way or is found to be incorrect/inaccurate, the applicant shall request in writing from the City 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:

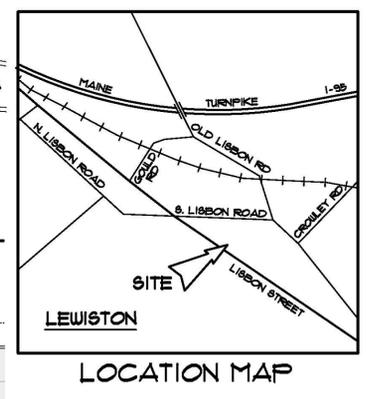
Date: \_\_\_\_\_

\_\_\_\_\_  
David Hediger  
Director, Planning and Code Enforcement  
City of Lewiston, Maine



- ### NOTES
- EXISTING CONDITIONS IS BASED UPON A PLAN ENTITLED 'TOPOGRAPHIC PLAN - PLAN OF PROPERTY, 1824 LISBON STREET - LEWISTON, MAINE', DATED APRIL 20, 2018, PREPARED BY DAVIS LAND SURVEYING, LLC.
  - ALL BOOK AND PAGE NUMBERS REFER TO THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS.
  - OWNER OF RECORD - CONNOR REALTY, LLC  
DEED REFERENCE - BOOK 3832, PAGE 88  
TAX MAP 69, LOT 50
  - PARCEL AREA - 2.21 ACRES
  - THE PARCEL IS LOCATED IN THE HIGHWAY BUSINESS ZONING DISTRICT.
  - 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.
  - THE PARCEL IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP, PANEL 230201C 0334E, DATED JULY 8, 2013.
  - ALL SIGNAGE TO BE OBTAINED AND INSTALLED BY THE OWNER.
  - SEE BUILDING PLANS BY ARCHITECT FOR EXACT DIMENSIONS.
  - PROVIDE CURBING TIPDOWN WITHIN THE PARCEL BOUNDARIES AT ALL ENDS OF CURB. TIPDOWN TO MEET CITY OF LEWISTON SPECIFICATIONS.
  - LOAM, SEED & MULCH ALL DISTURBED AREAS NOT OTHERWISE DESIGNED.

- ### LEGEND
- BOUNDARY LINE (SUBJECT PARCEL)
  - BOUNDARY LINE (OTHER)
  - IRON PIPE OR ROD FOUND
  - NOW OR FORMERLY
  - BOOK AND PAGE NUMBER
  - EXISTING CATCH BASIN
  - EXISTING SEWER MANHOLE
  - EXISTING WATER VALVE
  - NEW DRAINAGE MANHOLE
  - EXISTING UTILITY POLE
  - EXISTING LIGHT POLE
  - NEW SIGN
  - NEW BOLLARD
  - EXISTING BUILDING
  - NEW BUILDING
  - EXISTING PAVEMENT
  - NEW PAVEMENT
  - NEW CONCRETE PAD



PROGRESS  
PRINT

REV.	DATE	CHANGES

DO NOT MODIFY PLAN WITHOUT WRITTEN PERMISSION FROM SJR ENG., INC.

1836 Sun City Center Blvd., #300  
Sun City Center, FL 33577-6281

## Stoneybrook

Land Use, Inc.

16 THURSTON DRIVE  
MONMOUTH, MAINE 04259  
(207) 242-6248 tel  
steve@sjr.org.com

## SJR

ENGINEERING

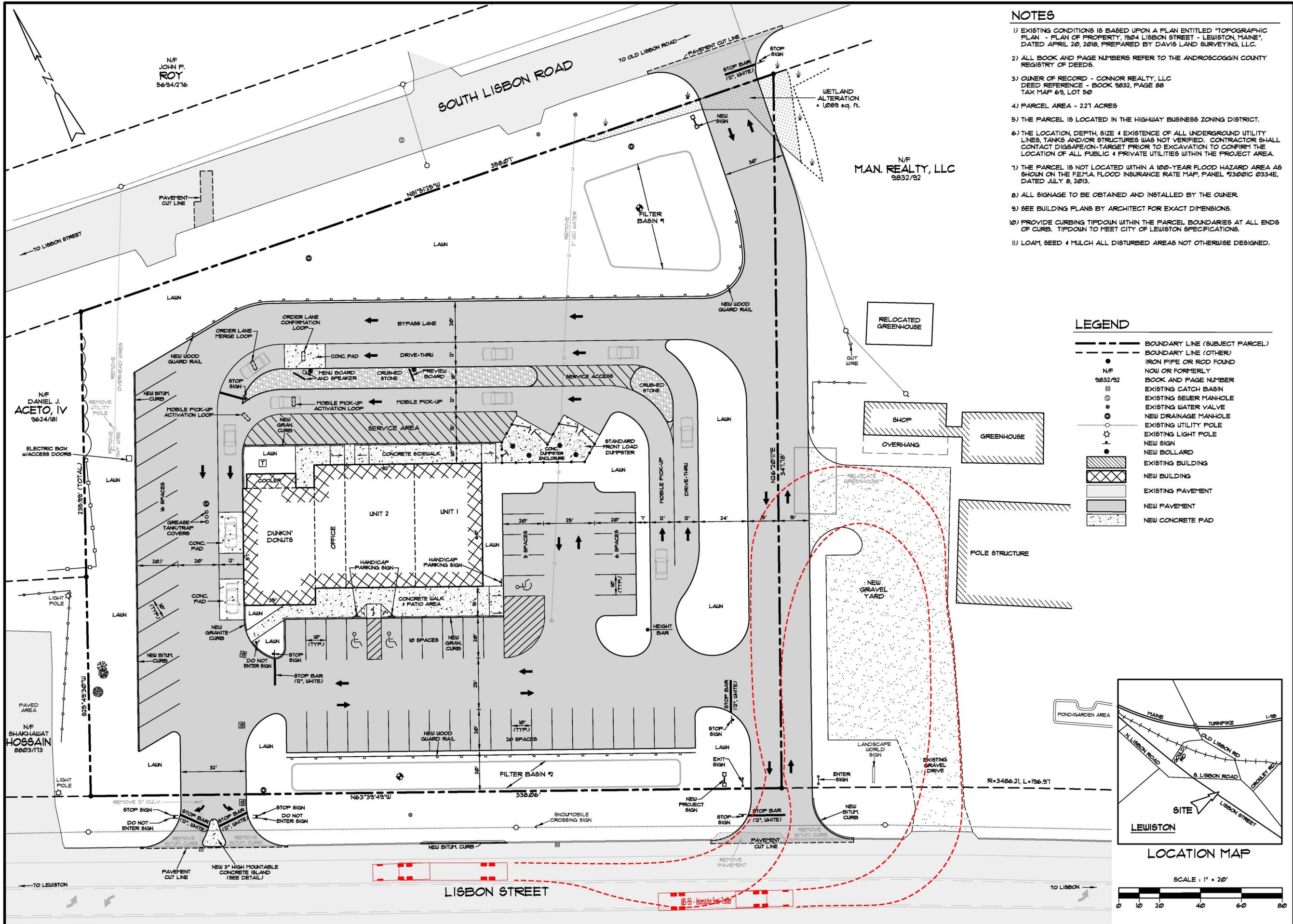
LEWISTON, MAINE  
PREPARED FOR

## CONNOR REALTY, LLC

1124 LISBON STREET - LEWISTON, ME 04240

DATE	PROJECT
MAR 2020	11-028
DRAWN BY	SCALE
BRJ	1" = 20'

SHEET 1

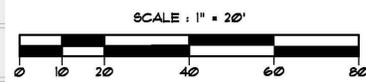
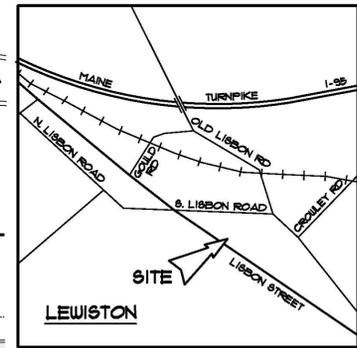


**NOTES**

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- ALL SIGNAGE TO BE OBTAINED AND INSTALLED BY THE OWNER.
- SEE BUILDING PLANS BY ARCHITECT FOR EXACT DIMENSIONS.
- PROVIDE CURBING TIPDOWN WITHIN THE PARCEL BOUNDARIES AT ALL ENDS OF CURB. TIPDOWN TO MEET CITY OF LEWISTON SPECIFICATIONS.
- LOAM, SEED & MULCH ALL DISTURBED AREAS NOT OTHERWISE DESIGNED.

**LEGEND**

- BOUNDARY LINE (SUBJECT PARCEL)
- - - BOUNDARY LINE (OTHER)
- IRON PIPE OR ROD FOUND
- N/F NOW OR FORMERLY
- 9832/92 BOOK AND PAGE NUMBER
- ⊕ EXISTING CATCH BASIN
- ⊕ EXISTING SEWER MANHOLE
- ⊕ EXISTING WATER VALVE
- ⊕ NEW DRAINAGE MANHOLE
- ⊕ EXISTING UTILITY POLE
- ⊕ EXISTING LIGHT POLE
- ⊕ NEW SIGN
- ⊕ NEW BOLLARD
- ▨ EXISTING BUILDING
- ▨ NEW BUILDING
- ▨ EXISTING PAVEMENT
- ▨ NEW PAVEMENT
- ▨ NEW CONCRETE PAD



PROGRESS PRINT

REV.	DATE	CHANGES

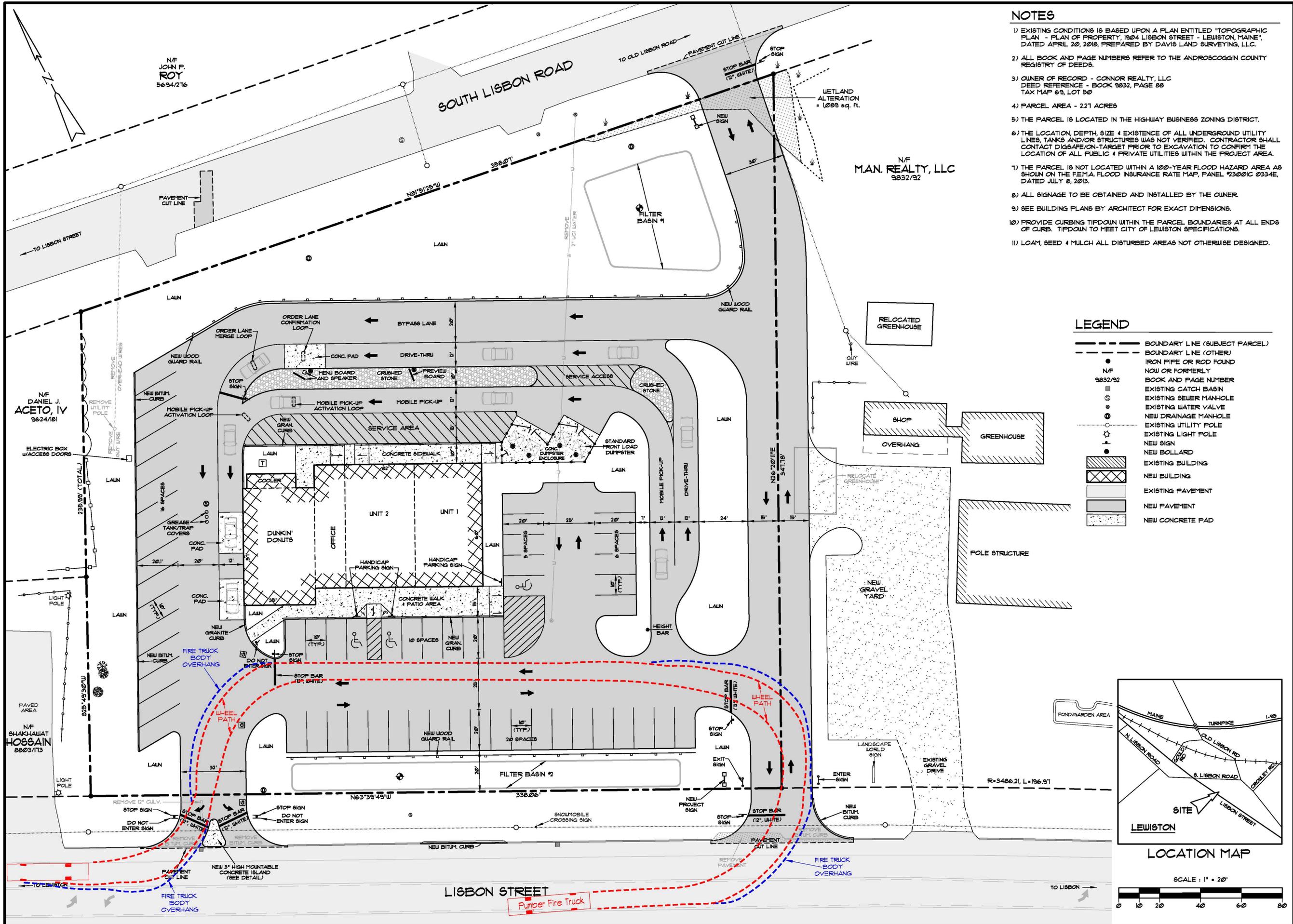
**Stoneybrook**  
Land Use, Inc.  
4846 Sun City Center Blvd., #300  
Sun City Center, FL 33577-6281

**SJR ENGINEERING, INC.**  
16 THURSTON DRIVE  
MONMOUTH, MAINE 04259  
(207) 242-6248 tel  
steve@s.jreng.com

**DELIVERY TRUCK PATH #2**  
1836 LISBON STREET  
LEWISTON, MAINE  
PREPARED FOR  
**CONNOR REALTY, LLC**  
1124 LISBON STREET - LEWISTON, ME 04240

DATE	PROJECT
MAR 2020	11-028
DRAWN BY	SCALE
BRJ	1" = 20'

**SHEET 1**

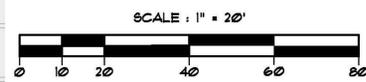
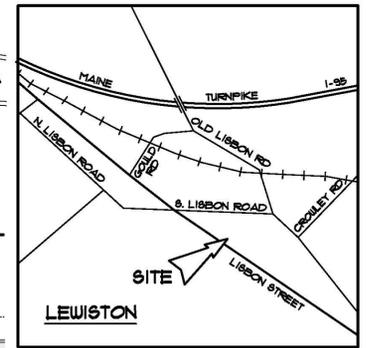


**NOTES**

- EXISTING CONDITIONS IS BASED UPON A PLAN ENTITLED 'TOPOGRAPHIC PLAN - PLAN OF PROPERTY, 1924 LISBON STREET - LEWISTON, MAINE', DATED APRIL 20, 2018, PREPARED BY DAVIS LAND SURVEYING, LLC.
- ALL BOOK AND PAGE NUMBERS REFER TO THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS.
- OWNER OF RECORD - CONNOR REALTY, LLC DEED REFERENCE - BOOK 9832, PAGE 88 TAX MAP 69, LOT 50
- PARCEL AREA - 2.21 ACRES
- THE PARCEL IS LOCATED IN THE HIGHWAY BUSINESS ZONING DISTRICT.
- 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.
- THE PARCEL IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP, PANEL 230201C 0334E, DATED JULY 8, 2013.
- ALL SIGNAGE TO BE OBTAINED AND INSTALLED BY THE OWNER.
- SEE BUILDING PLANS BY ARCHITECT FOR EXACT DIMENSIONS.
- PROVIDE CURBING TIPDOWN WITHIN THE PARCEL BOUNDARIES AT ALL ENDS OF CURB. TIPDOWN TO MEET CITY OF LEWISTON SPECIFICATIONS.
- LOAM, SEED & MULCH ALL DISTURBED AREAS NOT OTHERWISE DESIGNED.

**LEGEND**

- BOUNDARY LINE (SUBJECT PARCEL)
- BOUNDARY LINE (OTHER)
- IRON PIPE OR ROD FOUND
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- ⊕ NEW DRAINAGE MANHOLE
- ⊕ EXISTING UTILITY POLE
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- ⊕ NEW SIGN
- ⊕ NEW BOLLARD
- ▨ EXISTING BUILDING
- ▨ NEW BUILDING
- ▨ EXISTING PAVEMENT
- ▨ NEW PAVEMENT
- ▨ NEW CONCRETE PAD



PROGRESS PRINT

REV.	DATE	CHANGES

DO NOT MODIFY PLAN WITHOUT WRITTEN PERMISSION FROM S&J ENG., INC.

**Stoneybrook**  
Land Use, Inc.  
4846 Sun City Center Blvd., #300  
Sun City Center, FL 33577-6281

**S&J ENGINEERING, INC.**  
16 THURSTON DRIVE  
MONMOUTH, MAINE 04259  
(207) 242-6248 tel  
steves@sjeeng.com

**FIRE TRUCK ROUTE**  
1896 LISBON STREET  
LEWISTON, MAINE  
PREPARED FOR  
**CONNOR REALTY, LLC**  
1124 LISBON STREET - LEWISTON, ME 04240

DATE	PROJECT
MAR 2020	11-028
DRAWN BY	SCALE
BRJ	1" = 20'

**SHEET 1**

March 9, 2020

Mr. Mike Gotto  
Stoneybrook Consultants  
PO Box 459  
Turner, Maine 04282



Re: Water Quantity Analysis for Conner Realty, 1896 Lisbon Street, Lewiston, Maine

Dear Mike,

Conner Realty is proposing to construct a 7,083 sf building plus ancillary parking areas along the front and side of the building. It is anticipated that this project will start construction during the Spring of this construction season (2020).

The site was formerly a developed residential lot, but is currently undeveloped. The parcel is located between Lisbon Street and South Lisbon Road in Lewiston. It is located on tax map 69, lot 50. The parcel size is approximately 2.27 acres. Existing conditions have been surveyed by Davis land Surveying 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.

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 two stormwater soil filters within the parcel. Discharges from the ponds will then be directed to the existing storm drain system along Lisbon Street and South Lisbon Road drainage systems. 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 residence. The residence has since been removed leaving the site undeveloped at this time. Most of the site is considered grassed meadow at this time. This proposal will construct a 7,083 sf building with driveway entrances and associated paved parking surface capable of withstanding vehicle loads for construction. The topography of the existing site is shown at a one foot contour interval. The slope of the property varies from 1% along the flatter areas to 10% along the steeper slopes of the parcel.

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 Adams loamy sand (hydro group "A" soils), and Lamoine/Buxton complex (hydro group "C" 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

I have reviewed the drainage characteristics of the watershed area which includes proposed buildings, pavement, lawn areas, and meadows, as well upslope offsite watershed areas. The analysis requires post construction stormwater flow rates to be approximately equal to or less than the existing stormwater rates.

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 2/10/25 years. One day precipitation values of 3.0"/4.3"/5.4" have been used for each respective 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.

### **Watershed calculations (pre and post construction)**

Please see the attached plans and/or the smaller graphic worksheets for both the existing and proposed conditions to help determine location of the watershed. Based on the soils observed onsite (and confirmed by the medium soils intensity maps), we have determined areas of soils are hydrologically "A" rated soils and hydrologically "C" rate soils within our stormwater calculations.

### **Design Point A - Existing 15" South Lisbon Road culvert #1**

We have calculated the existing stormwater flows to the common design point at the existing 15" diameter culvert crossing South Lisbon Road. Existing flows at this location have been calculated to be 0.06/0.98/2.75 cfs for the 2/10/25 year storm events. From a stormwater viewpoint, these calculated flows are relatively small.

In the proposed condition, we have diverted development runoff water to a proposed soil filter pond located in the northeasterly corner of the parcel. The remaining upslope watershed is collected by ditch along South Lisbon Road and enters an existing 15" diameter culvert. Runoff water from the buildings, pavement, lawn/yard and pond area will be captured and treated in the soil filter pond.

A soil filter detention pond has been sized to accommodate and store flows for stormwater quantity and quality functions and to control flows to pre-development runoff conditions. As you might expect, we have

calculated significant increases in flow rates in the developed portion of the project for the 2/10/25 year storm events. By constructing the soil filter/detention pond and sizing the inlets to the stormwater control structure, stormwater flows are captured and contained. These increased flows are then stored (detained and treatment provided) within the pond area for short periods of time allowing existing peak flow rates to be maintained (or decreased).

**Soil Filter pond 1:** Our analysis indicates that the incoming flow rates to pond 1 are 1.73/3.06/4.23 cfs and are reduced to 0.06/0.69/1.78 cfs for the 2/10/25 year storm events at the culvert outlet from the pond. The soil filter ground elevation is set at elevation 201.0. The water elevation within the pond is expected to peak at elevations 202.02/202.23/202.44 for the 2/10/25 year storm events.

The soil filter/detention pond has a control manhole structure with a 12" diameter outlet pipe. Initial and ending runoff flows are designed to be infiltrated through the filter media within the pond. Storage between elevations 198.25 and 202.02 will infiltrate through the filter media and is considered the channel protection volume. Treated flows pass through a 1.1" hole at elevation 198.25 cut into the steel plate. The control manhole steel plate also has a 24" wide by 6" high opening at elevation 202.02 for stormwater discharge as detention flow. The inlet to the control manhole is a 15" pipe. A 15' wide emergency spillway is to be constructed at elevation 202.5. The top of the berm is to be constructed to elevation 203.5.

When hydraulically combining the detained flows of the soil filter pond and the uncontrolled offsite runoff at the design point, flows are reduced below pre-development conditions.

<b><u>Design Point 1</u></b>	2 Year event	10 Year event	25 Year event
Existing Conditions	0.06 cfs	0.98 cfs	2.75 cfs
Proposed Conditions	0.07 cfs	0.85 cfs	2.46 cfs

## Design Point B - Existing 24" Lisbon Street culvert #2

We have calculated the existing stormwater flows to the common design point at the existing 24" diameter culvert in the catch basin manhole structure along Lisbon Street. Existing flows at this location have been calculated to be 0.05/0.34/0.77 cfs for the 2/10/25 year storm events. Like Watershed A, these calculated flows are relatively small from a stormwater viewpoint.

In the proposed condition, we have diverted development runoff water to a proposed soil filter pond located in the southern sideline of the parcel along Lisbon Street. Runoff water from the buildings, pavement, lawn/yard and pond area will be captured and treated in the soil filter pond.

A soil filter detention pond has been sized to accommodate and store flows for stormwater quantity and quality functions and to control flows to pre-development runoff conditions. As you might expect, we have calculated significant increases in flow rates in the developed portion of the project for the 2/10/25 year storm events. By constructing the soil filter/detention pond and sizing the inlets to the stormwater control structure, stormwater flows are captured and contained. These increased flows are then stored (detained and treatment provided) within the pond area for short periods of time allowing existing peak flow rates to be maintained (or decreased).

**Soil Filter pond 2:** Our analysis indicates that the incoming flow rates to pond 1 are 0.78/1.47/2.08 cfs and are reduced to 0.02/0.27/0.76 cfs for the 2/10/25 year storm events at the culvert outlet from the pond. The soil filter ground elevation is set at elevation 204.5. The water elevation within the pond is expected to peak at elevations 205.40/205.61/205.80 for the 2/10/25 year storm events.

The soil filter/detention pond has a control manhole structure with a 12"

diameter outlet pipe. Initial and ending runoff flows are designed to be infiltrated through the filter media within the pond. Storage between elevations 202.1 and 205.5 will infiltrate through the filter media and is considered the channel protection volume. Treated flows pass through a 3/4" hole at elevation 202.1 cut into the steel plate. The control manhole steel plate also has a 24" wide by 2" high opening at elevation 205.5 for stormwater discharge as detention flow. The inlet to the control manhole is a 12" pipe. The top of the berm is to be constructed to elevation 207.25.

Proposed flows are reduced below pre-development conditions.

<u>Design Point 2</u>	2 Year event	10 Year event	25 Year event
Existing Conditions	0.05 cfs	0.34 cfs	0.75 cfs
Proposed Conditions	0.02 cfs	0.27 cfs	0.76 cfs

Please feel free to contact me if you have any questions concerning the calculations of stormwater from this project. It is important to note that proper erosion control and revegetation of disturbed areas are essential for the proper operation of the stormwater facilities. Maintenance of the yard impervious areas, careful attention to the pavement/seeded interface, and continued maintenance to the two soil filter pond systems must be a top priority in order for the system to function properly. Thank you for involving this firm on your project.

Sincerely yours,

  
Stephen Roberge, PE  
for SJR Engineering Inc.



# Conner Realty LLC

## 1896 Lisbon St., Lewiston

### Stormwater Project Summary

03-06-2020

#### Stormwater Flows at Design Point (Watershed A)

	<u>2 year</u>	<u>10 year</u>	<u>25 year</u>
Existing Conditions at Design Point	0.06 cfs	0.98 cfs	2.75 cfs
Proposed Conditions at Design Point	0.07 cfs	0.85 cfs	2.46 cfs

#### Stormwater Flows at Soil Filter Pond 1

(Construct Soil Filter Detention Pond)

	<u>2 year</u>	<u>10 year</u>	<u>25 year</u>
Soil filter Pond inflow/outflow	1.73/0.06 cfs	3.06/0.69 cfs	4.23/1.78 cfs
Elevation height of detained water in soil filter pond	202.02	202.23	202.44
Pond Storage	5,392 cf	6,832 cf	8,290 cf

The soil filter pond is expected to operate as a sediment pond during construction for water quality purposes. Flows entering into the filter pond must immediately pass through a level spreader to insure the full surface area of the pond is utilized for treatment. No water will flow from the pond (except filtered water through the underdrain filter system) until the water elevation reaches elevation 202.02. The control manhole structure consists of the manhole with center steel plate divider elevation. The steel plate has specific holes cut into it at specific elevations to regulate the flow of stormwater from the pond. Control structure 1 has a steel plate with a 1.1" hole at invert 198.25, and a 24" wide by 6" tall hole at elevation 202.02. The top of steel plate is at elevation 202.5. The control structure has a 15" inlet feed from the pond at invert 202.0. The 6" underdrain inlet into the control manhole is at elevation 198.25. The stormwater control structure has a 12" diameter outlet that discharges to an existing storm culvert under South Lisbon Road. A separate 15' wide emergency spillway has been designed at elevation 202.5. The soil filter surface is at elevation 201.0. The top of berm elevation is 203.5,

Water quality is enhanced by passing stormwater flows through the soil filter media, collection of the treated water by underdrain pipes, and underground cooling of the detained water by holding the required volume of water for 24 to 48 hours. The control for this is a 1.1" orifice located through the steel plate inside the control manhole. The retention time for this structure is 24.4 hours.

# Conner Realty LLC

## 1896 Lisbon St., Lewiston

### Stormwater Project Summary

03-06-2020

#### Stormwater Flows at Design Point (Watershed B)

	<u>2 year</u>	<u>10 year</u>	<u>25 year</u>
Existing Conditions at Design Point	0.05 cfs	0.34 cfs	0.77 cfs
Proposed Conditions at Design Point	0.02 cfs	0.27 cfs	0.76 cfs

#### Stormwater Flows at Soil Filter Pond 2

(Construct Soil Filter Detention Pond)

	<u>2 year</u>	<u>10 year</u>	<u>25 year</u>
Soil filter Pond inflow/outflow	0.78/0.02 cfs	1.47/0.27 cfs	2.08/0.76 cfs
Elevation height of detained water in soil filter pond	205.40	205.61	205.80
Pond Storage	2,778 cf	3,603 cf	4,391 cf

The soil filter pond is expected to operate as a sediment pond during construction for water quality purposes. Flows entering into the filter are spread to insure the full surface area of the pond is utilized for treatment. No water will flow from the pond (except filtered water through the underdrain filter system) until the water elevation reaches elevation 205.5. The control manhole structure consists of the manhole with center steel plate divider elevation. The steel plate has specific holes cut into it at specific elevations to regulate the flow of stormwater from the pond. Control structure 2 has a steel plate with a 3/4" hole at invert 202.10, and a 24" wide by 2" tall hole at elevation 205.50. The top of steel plate is at elevation 205.80. The control structure has a 12" inlet feed from the pond at invert 204.40. The 6" underdrain inlet into the control manhole is at elevation 202.10. The stormwater control structure has a 12" diameter outlet that discharges to an existing Catch Basin along Lisbon Street. The soil filter surface is at elevation 204.50. The top of berm elevation is 207.25.

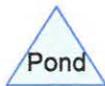
Water quality is enhanced by passing stormwater flows through the soil filter media, collection of the treated water by underdrain pipes, and underground cooling of the detained water by holding the required volume of water for 24 to 48 hours. The control for this is a 3/4" orifice located through the steel plate inside the control manhole. The retention time for this structure is 43.8 hours



Watershed A



Design Point A



## Existing Condition Watershed A

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Page 2

### Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.665	30	Meadow, non-grazed, HSG A (1S)
1.501	71	Meadow, non-grazed, HSG C (1S)
0.939	98	Unconnected pavement, HSG A (1S)
<b>5.105</b>	<b>55</b>	<b>TOTAL AREA</b>

**Existing Condition Watershed A**

Prepared by SJR Engineering Inc.

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Page 3

**Soil Listing (all nodes)**

Area (acres)	Soil Group	Subcatchment Numbers
3.604	HSG A	1S
0.000	HSG B	
1.501	HSG C	1S
0.000	HSG D	
0.000	Other	
<b>5.105</b>		<b>TOTAL AREA</b>

**Existing Condition Watershed A**

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**Ground Covers (all nodes)**

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
2.665	0.000	1.501	0.000	0.000	4.166	Meadow, non-grazed	15
0.939	0.000	0.000	0.000	0.000	0.939	Unconnected pavement	15
<b>3.604</b>	<b>0.000</b>	<b>1.501</b>	<b>0.000</b>	<b>0.000</b>	<b>5.105</b>	<b>TOTAL AREA</b>	

**Existing Condition Watershed A**

Type III 24-hr 2 Year storm event Rainfall=3.00"

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

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

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

**Subcatchment 1S: Watershed A**

Runoff Area=222,380 sf 18.40% Impervious Runoff Depth>0.07"

Flow Length=736' Tc=14.6 min UI Adjusted CN=50 Runoff=0.06 cfs 0.029 af

**Reach 2R: Design Point A**

Avg. Flow Depth=0.07' Max Vel=2.28 fps Inflow=0.06 cfs 0.029 af

15.0" Round Pipe n=0.013 L=50.0' S=0.0240 '/' Capacity=10.01 cfs Outflow=0.06 cfs 0.029 af

**Total Runoff Area = 5.105 ac Runoff Volume = 0.029 af Average Runoff Depth = 0.07"**  
**81.60% Pervious = 4.166 ac 18.40% Impervious = 0.939 ac**

**Existing Condition Watershed A**

Type III 24-hr 2 Year storm event Rainfall=3.00"

Prepared by SJR Engineering Inc.

Printed 3/7/2020

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Page 6

**Summary for Subcatchment 1S: Watershed A**

Runoff = 0.06 cfs @ 13.91 hrs, Volume= 0.029 af, Depth> 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2 Year storm event Rainfall=3.00"

Area (sf)	CN	Adj	Description
116,086	30		Meadow, non-grazed, HSG A
65,370	71		Meadow, non-grazed, HSG C
40,924	98		Unconnected pavement, HSG A
222,380	55	50	Weighted Average, UI Adjusted
181,456			81.60% Pervious Area
40,924			18.40% Impervious Area
40,924			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	110	0.0250	0.21		<b>Sheet Flow,</b> Range n= 0.130 P2= 3.00"
4.5	70	0.0570	0.26		<b>Sheet Flow,</b> Range n= 0.130 P2= 3.00"
0.1	72	0.0150	8.30	83.03	<b>Trap/Vee/Rect Channel Flow,</b> Bot.W=1.00' D=2.00' Z= 2.0 '/' Top.W=9.00' n= 0.022 Earth, clean & straight
0.0	14	0.0850	10.09	3.52	<b>Pipe Channel,</b> 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.013
0.3	145	0.0100	6.95	305.59	<b>Trap/Vee/Rect Channel Flow,</b> Bot.W=2.00' D=2.00' Z= 10.0 '/' Top.W=42.00' n= 0.022 Earth, clean & straight
0.2	50	0.0120	4.97	3.90	<b>Pipe Channel,</b> 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.3	135	0.0070	6.53	143.63	<b>Trap/Vee/Rect Channel Flow,</b> Bot.W=5.00' D=2.00' Z= 2.0 & 4.0 '/' Top.W=17.00' n= 0.022 Earth, clean & straight
0.1	30	0.0170	5.91	4.65	<b>Pipe Channel,</b> 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.2	110	0.0210	11.18	268.24	<b>Trap/Vee/Rect Channel Flow,</b> Bot.W=5.00' D=2.00' Z= 2.0 & 5.0 '/' Top.W=19.00' n= 0.022 Earth, clean & straight
14.6	736	Total			

**Existing Condition Watershed A**

Prepared by SJR Engineering Inc.

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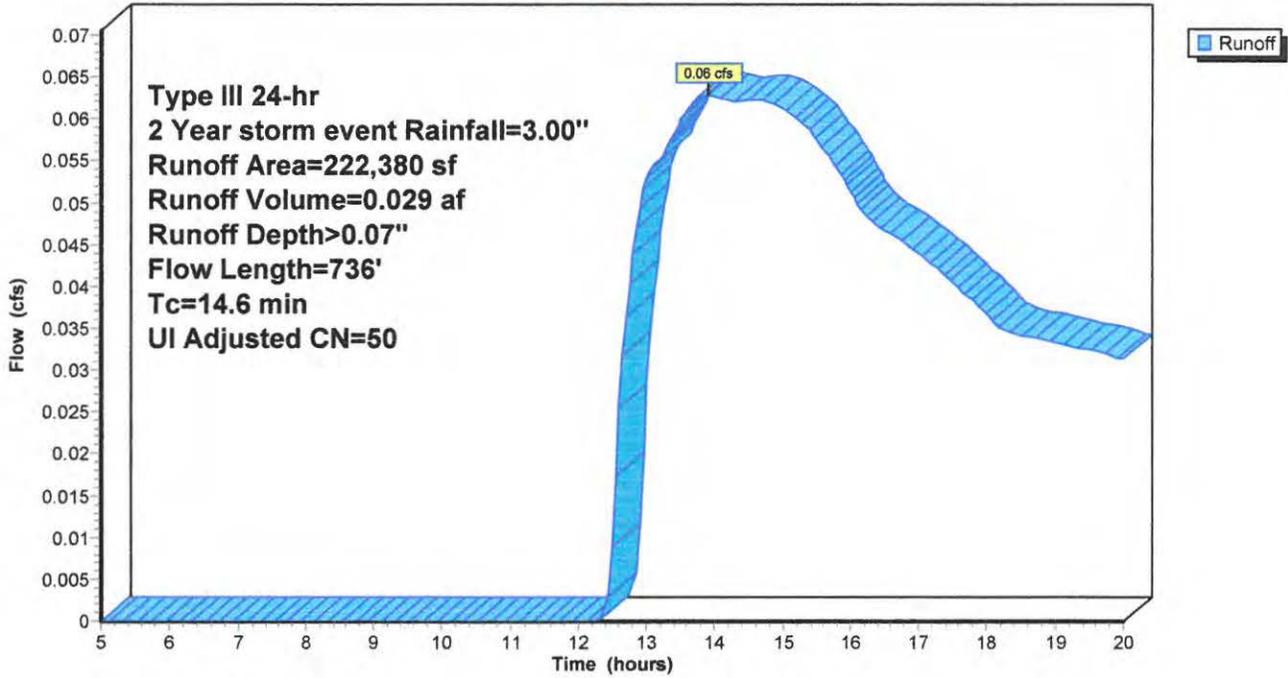
Type III 24-hr 2 Year storm event Rainfall=3.00"

Printed 3/7/2020

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**Subcatchment 1S: Watershed A**

Hydrograph



**Existing Condition Watershed A**

Prepared by SJR Engineering Inc.

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Type III 24-hr 2 Year storm event Rainfall=3.00"

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**Summary for Reach 2R: Design Point A**

Inflow Area = 5.105 ac, 18.40% Impervious, Inflow Depth > 0.07" for 2 Year storm event event  
Inflow = 0.06 cfs @ 13.91 hrs, Volume= 0.029 af  
Outflow = 0.06 cfs @ 13.92 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Max. Velocity= 2.28 fps, Min. Travel Time= 0.4 min  
Avg. Velocity = 2.05 fps, Avg. Travel Time= 0.4 min

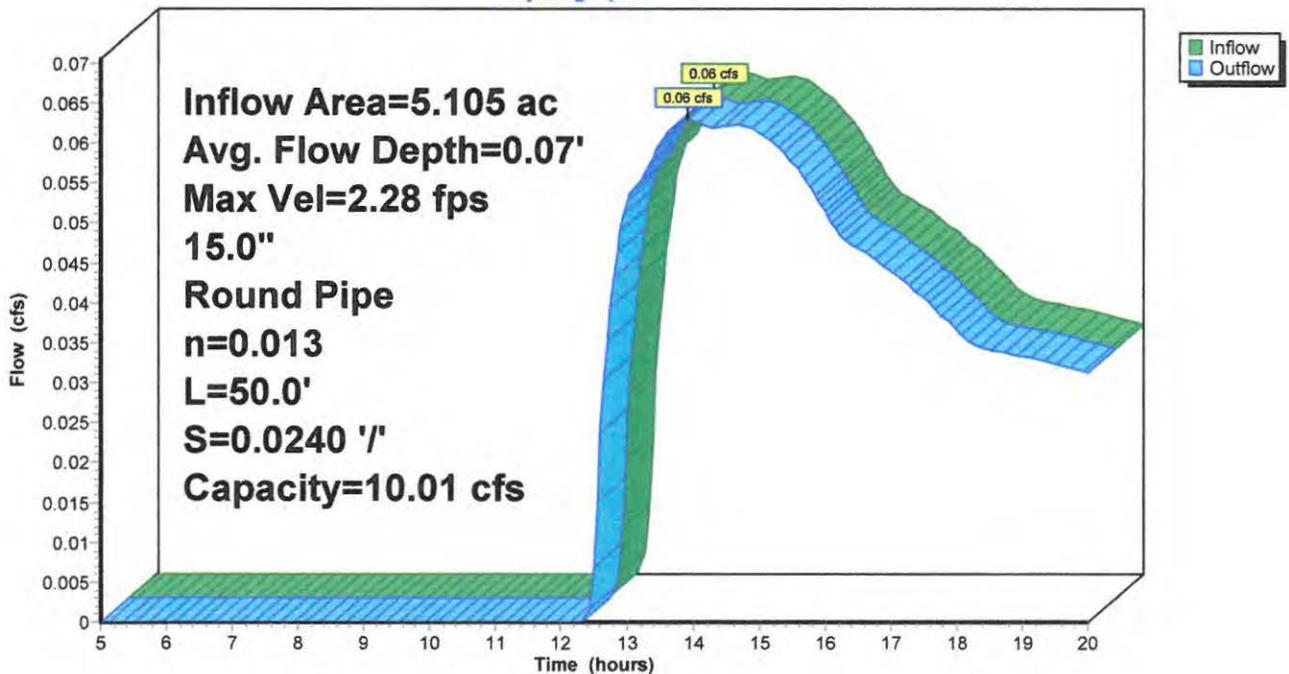
Peak Storage= 1 cf @ 13.91 hrs  
Average Depth at Peak Storage= 0.07'  
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 10.01 cfs

15.0" Round Pipe  
n= 0.013  
Length= 50.0' Slope= 0.0240 '/'  
Inlet Invert= 196.70', Outlet Invert= 195.50'



**Reach 2R: Design Point A**

**Hydrograph**



**Existing Condition Watershed A**

Type III 24-hr 10 Year storm event Rainfall=4.30"

Prepared by SJR Engineering Inc.

Printed 3/7/2020

HydroCAD® 10.00-25 s/n 00591 © 2019 HydroCAD Software Solutions LLC

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

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

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

**Subcatchment 1S: Watershed A**

Runoff Area=222,380 sf 18.40% Impervious Runoff Depth>0.37"

Flow Length=736' Tc=14.6 min UI Adjusted CN=50 Runoff=0.98 cfs 0.156 af

**Reach 2R: Design Point A**

Avg. Flow Depth=0.26' Max Vel=5.19 fps Inflow=0.98 cfs 0.156 af

15.0" Round Pipe n=0.013 L=50.0' S=0.0240 '/' Capacity=10.01 cfs Outflow=0.98 cfs 0.155 af

**Total Runoff Area = 5.105 ac Runoff Volume = 0.156 af Average Runoff Depth = 0.37"**  
**81.60% Pervious = 4.166 ac 18.40% Impervious = 0.939 ac**

**Existing Condition Watershed A**

Type III 24-hr 10 Year storm event Rainfall=4.30"

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**Summary for Subcatchment 1S: Watershed A**

Runoff = 0.98 cfs @ 12.41 hrs, Volume= 0.156 af, Depth> 0.37"

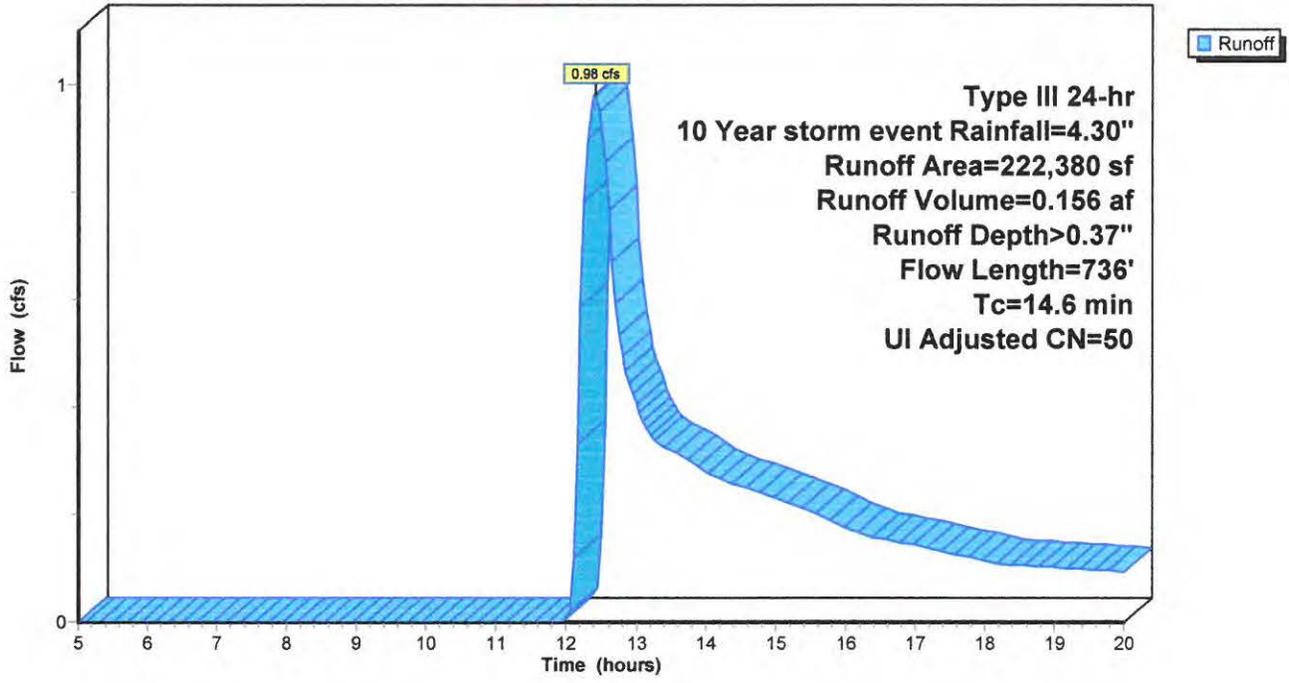
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10 Year storm event Rainfall=4.30"

Area (sf)	CN	Adj	Description
116,086	30		Meadow, non-grazed, HSG A
65,370	71		Meadow, non-grazed, HSG C
40,924	98		Unconnected pavement, HSG A
222,380	55	50	Weighted Average, UI Adjusted
181,456			81.60% Pervious Area
40,924			18.40% Impervious Area
40,924			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	110	0.0250	0.21		<b>Sheet Flow,</b> Range n= 0.130 P2= 3.00"
4.5	70	0.0570	0.26		<b>Sheet Flow,</b> Range n= 0.130 P2= 3.00"
0.1	72	0.0150	8.30	83.03	<b>Trap/Vee/Rect Channel Flow,</b> Bot.W=1.00' D=2.00' Z= 2.0 '/' Top.W=9.00' n= 0.022 Earth, clean & straight
0.0	14	0.0850	10.09	3.52	<b>Pipe Channel,</b> 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.013
0.3	145	0.0100	6.95	305.59	<b>Trap/Vee/Rect Channel Flow,</b> Bot.W=2.00' D=2.00' Z= 10.0 '/' Top.W=42.00' n= 0.022 Earth, clean & straight
0.2	50	0.0120	4.97	3.90	<b>Pipe Channel,</b> 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.3	135	0.0070	6.53	143.63	<b>Trap/Vee/Rect Channel Flow,</b> Bot.W=5.00' D=2.00' Z= 2.0 & 4.0 '/' Top.W=17.00' n= 0.022 Earth, clean & straight
0.1	30	0.0170	5.91	4.65	<b>Pipe Channel,</b> 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.2	110	0.0210	11.18	268.24	<b>Trap/Vee/Rect Channel Flow,</b> Bot.W=5.00' D=2.00' Z= 2.0 & 5.0 '/' Top.W=19.00' n= 0.022 Earth, clean & straight
14.6	736	Total			

Subcatchment 1S: Watershed A

Hydrograph



**Existing Condition Watershed A**

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Type III 24-hr 10 Year storm event Rainfall=4.30"

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**Summary for Reach 2R: Design Point A**

Inflow Area = 5.105 ac, 18.40% Impervious, Inflow Depth > 0.37" for 10 Year storm event event  
Inflow = 0.98 cfs @ 12.41 hrs, Volume= 0.156 af  
Outflow = 0.98 cfs @ 12.42 hrs, Volume= 0.155 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Max. Velocity= 5.19 fps, Min. Travel Time= 0.2 min  
Avg. Velocity = 3.22 fps, Avg. Travel Time= 0.3 min

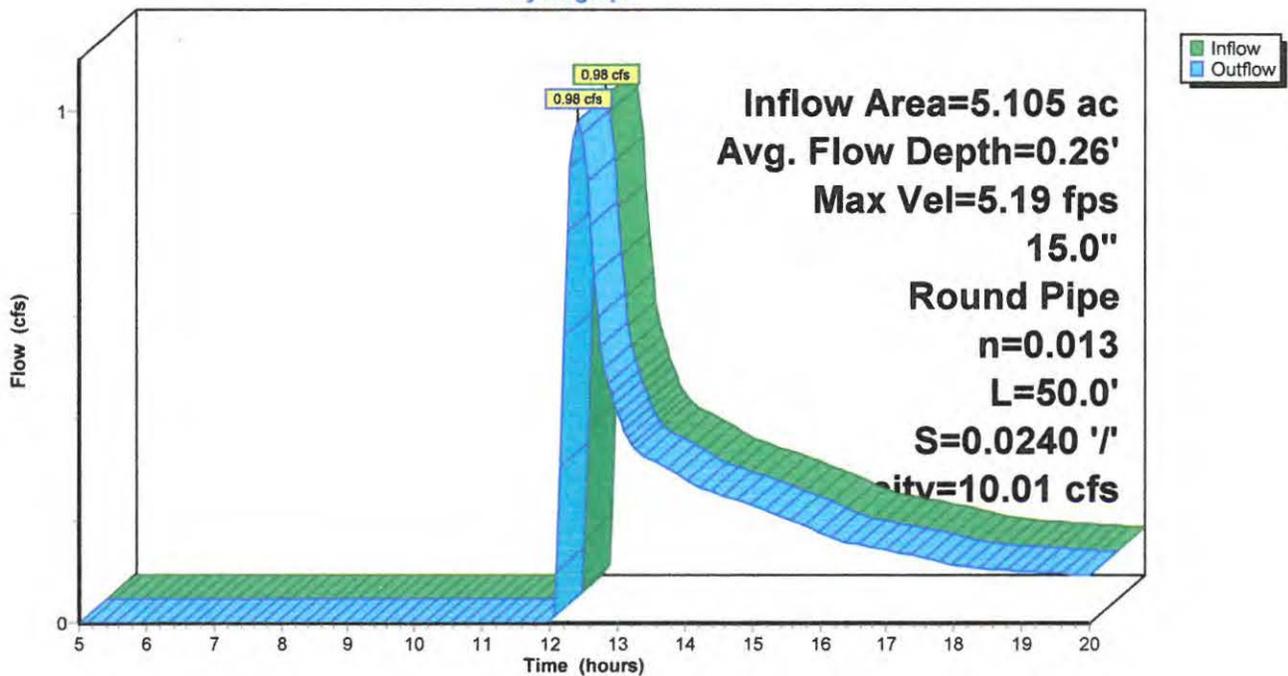
Peak Storage= 9 cf @ 12.41 hrs  
Average Depth at Peak Storage= 0.26'  
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 10.01 cfs

15.0" Round Pipe  
n= 0.013  
Length= 50.0' Slope= 0.0240 '/'  
Inlet Invert= 196.70', Outlet Invert= 195.50'



**Reach 2R: Design Point A**

Hydrograph



**Existing Condition Watershed A**

Type III 24-hr 25 Year storm event Rainfall=5.40"

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

**Subcatchment 1S: Watershed A**

Runoff Area=222,380 sf 18.40% Impervious Runoff Depth=0.76"  
Flow Length=736' Tc=14.6 min UI Adjusted CN=50 Runoff=2.75 cfs 0.322 af

**Reach 2R: Design Point A**

Avg. Flow Depth=0.45' Max Vel=6.95 fps Inflow=2.75 cfs 0.322 af  
15.0" Round Pipe n=0.013 L=50.0' S=0.0240 '/' Capacity=10.01 cfs Outflow=2.75 cfs 0.322 af

**Total Runoff Area = 5.105 ac Runoff Volume = 0.322 af Average Runoff Depth = 0.76"**  
**81.60% Pervious = 4.166 ac 18.40% Impervious = 0.939 ac**

**Existing Condition Watershed A**

Type III 24-hr 25 Year storm event Rainfall=5.40"

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**Summary for Subcatchment 1S: Watershed A**

Runoff = 2.75 cfs @ 12.27 hrs, Volume= 0.322 af, Depth> 0.76"

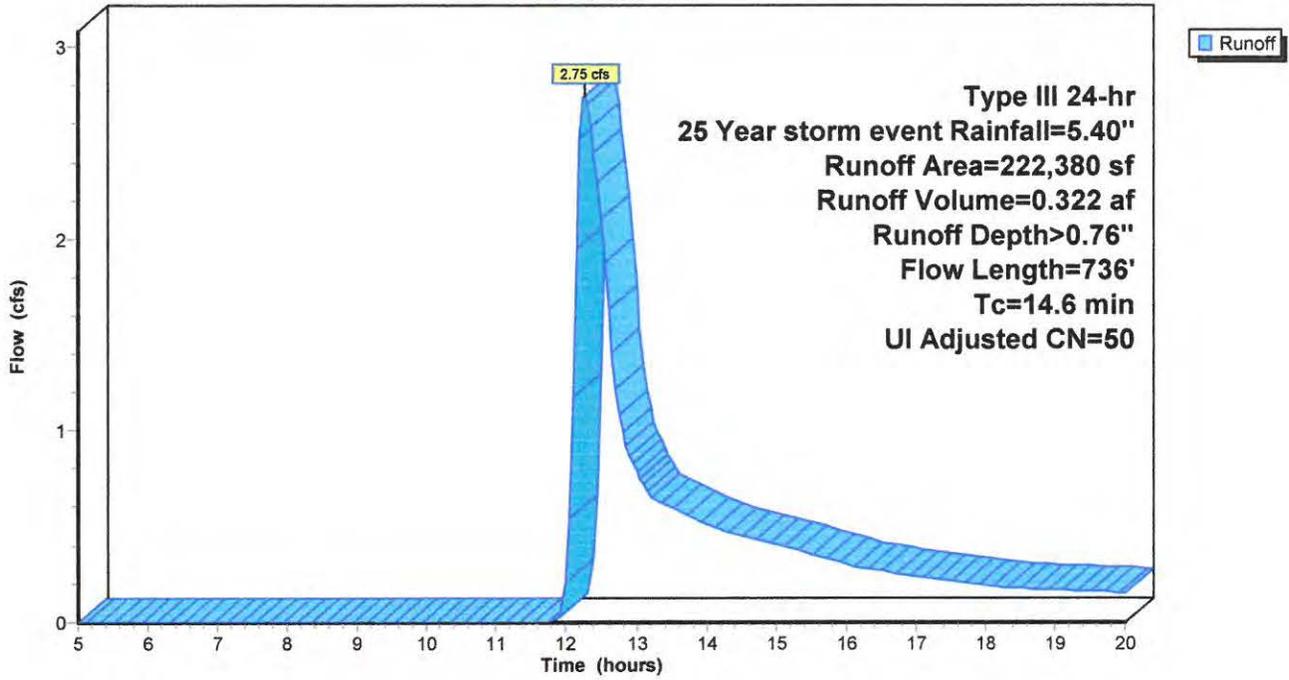
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 25 Year storm event Rainfall=5.40"

Area (sf)	CN	Adj	Description
116,086	30		Meadow, non-grazed, HSG A
65,370	71		Meadow, non-grazed, HSG C
40,924	98		Unconnected pavement, HSG A
222,380	55	50	Weighted Average, UI Adjusted
181,456			81.60% Pervious Area
40,924			18.40% Impervious Area
40,924			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	110	0.0250	0.21		<b>Sheet Flow,</b> Range n= 0.130 P2= 3.00"
4.5	70	0.0570	0.26		<b>Sheet Flow,</b> Range n= 0.130 P2= 3.00"
0.1	72	0.0150	8.30	83.03	<b>Trap/Vee/Rect Channel Flow,</b> Bot.W=1.00' D=2.00' Z= 2.0 '/' Top.W=9.00' n= 0.022 Earth, clean & straight
0.0	14	0.0850	10.09	3.52	<b>Pipe Channel,</b> 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.013
0.3	145	0.0100	6.95	305.59	<b>Trap/Vee/Rect Channel Flow,</b> Bot.W=2.00' D=2.00' Z= 10.0 '/' Top.W=42.00' n= 0.022 Earth, clean & straight
0.2	50	0.0120	4.97	3.90	<b>Pipe Channel,</b> 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.3	135	0.0070	6.53	143.63	<b>Trap/Vee/Rect Channel Flow,</b> Bot.W=5.00' D=2.00' Z= 2.0 & 4.0 '/' Top.W=17.00' n= 0.022 Earth, clean & straight
0.1	30	0.0170	5.91	4.65	<b>Pipe Channel,</b> 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.2	110	0.0210	11.18	268.24	<b>Trap/Vee/Rect Channel Flow,</b> Bot.W=5.00' D=2.00' Z= 2.0 & 5.0 '/' Top.W=19.00' n= 0.022 Earth, clean & straight
14.6	736	Total			

Subcatchment 1S: Watershed A

Hydrograph



**Existing Condition Watershed A**

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Type III 24-hr 25 Year storm event Rainfall=5.40"

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**Summary for Reach 2R: Design Point A**

Inflow Area = 5.105 ac, 18.40% Impervious, Inflow Depth > 0.76" for 25 Year storm event event  
Inflow = 2.75 cfs @ 12.27 hrs, Volume= 0.322 af  
Outflow = 2.75 cfs @ 12.27 hrs, Volume= 0.322 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Max. Velocity= 6.95 fps, Min. Travel Time= 0.1 min  
Avg. Velocity = 3.87 fps, Avg. Travel Time= 0.2 min

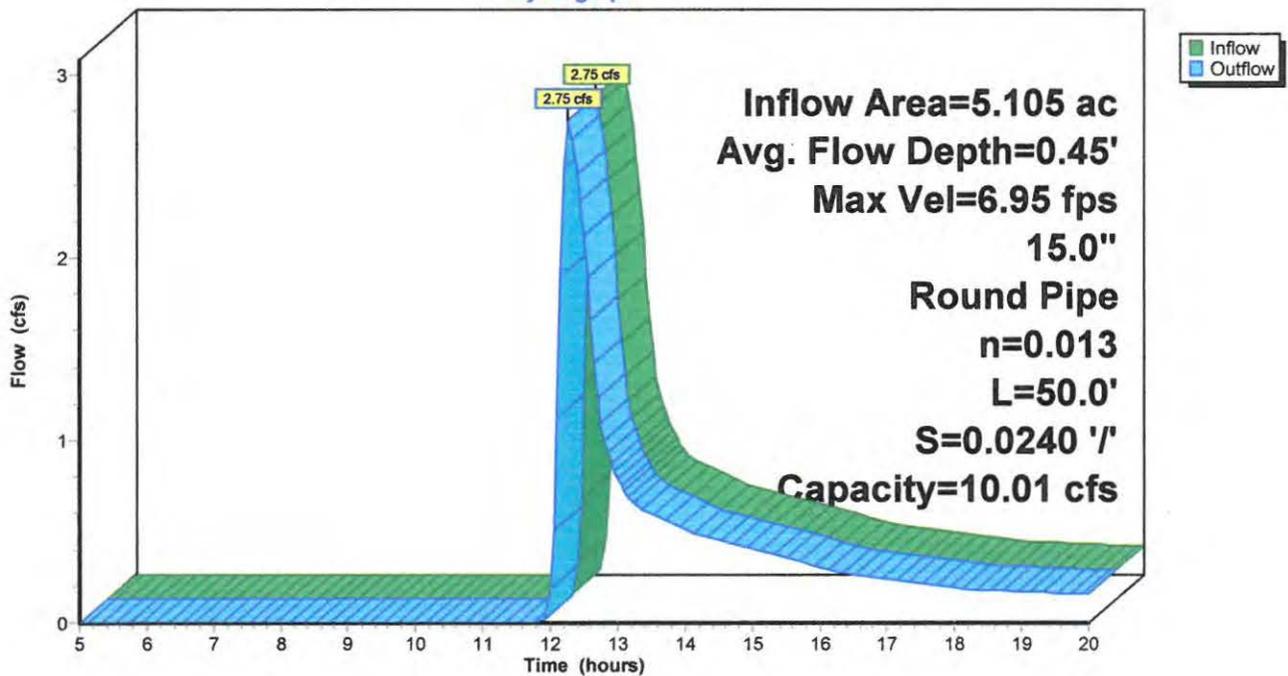
Peak Storage= 20 cf @ 12.27 hrs  
Average Depth at Peak Storage= 0.45'  
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 10.01 cfs

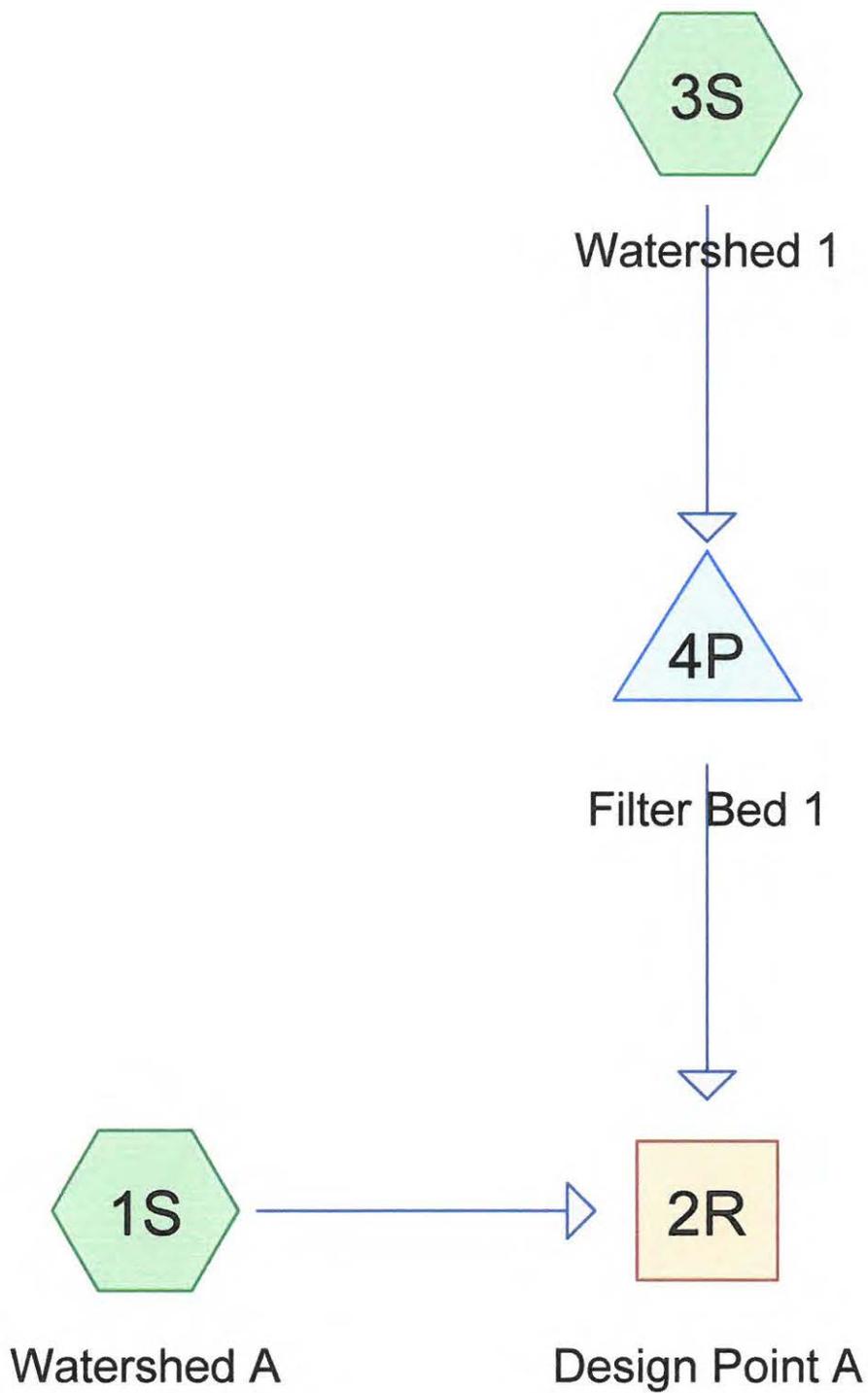
15.0" Round Pipe  
n= 0.013  
Length= 50.0' Slope= 0.0240 '/'  
Inlet Invert= 196.70', Outlet Invert= 195.50'



**Reach 2R: Design Point A**

Hydrograph





**Routing Diagram for Proposed Condition Watershed A**  
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**Proposed Condition Watershed A**

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**Area Listing (all nodes)**

Area (acres)	CN	Description (subcatchment-numbers)
2.416	30	Meadow, non-grazed, HSG A (1S, 3S)
0.803	71	Meadow, non-grazed, HSG C (1S, 3S)
0.876	98	Paved parking (3S)
0.163	98	Roofs (3S)
0.862	98	Unconnected pavement, HSG A (1S)
<b>5.119</b>	<b>62</b>	<b>TOTAL AREA</b>

**Proposed Condition Watershed A**

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**Soil Listing (all nodes)**

Area (acres)	Soil Group	Subcatchment Numbers
3.277	HSG A	1S, 3S
0.000	HSG B	
0.803	HSG C	1S, 3S
0.000	HSG D	
1.039	Other	3S
<b>5.119</b>		<b>TOTAL AREA</b>

**Proposed Condition Watershed A**

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**Ground Covers (all nodes)**

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
2.416	0.000	0.803	0.000	0.000	3.218	Meadow, non-grazed	1S, 3S
0.000	0.000	0.000	0.000	0.876	0.876	Paved parking	3S
0.000	0.000	0.000	0.000	0.163	0.163	Roofs	3S
0.862	0.000	0.000	0.000	0.000	0.862	Unconnected pavement	1S
<b>3.277</b>	<b>0.000</b>	<b>0.803</b>	<b>0.000</b>	<b>1.039</b>	<b>5.119</b>	<b>TOTAL AREA</b>	

**Proposed Condition Watershed A**

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

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

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

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

**Subcatchment 1S: Watershed A**

Runoff Area=155,896 sf 24.07% Impervious Runoff Depth>0.01"  
Flow Length=736' Tc=14.6 min UI Adjusted CN=45 Runoff=0.01 cfs 0.004 af

**Subcatchment 3S: Watershed 1**

Runoff Area=67,080 sf 67.46% Impervious Runoff Depth>1.33"  
Flow Length=450' Tc=20.4 min CN=83 Runoff=1.73 cfs 0.171 af

**Reach 2R: Design Point A**

Avg. Flow Depth=0.08' Max Vel=2.36 fps Inflow=0.07 cfs 0.053 af  
15.0" Round Pipe n=0.013 L=50.0' S=0.0240 '/' Capacity=10.01 cfs Outflow=0.07 cfs 0.053 af

**Pond 4P: Filter Bed 1**

Peak Elev=202.02' Storage=5,393 cf Inflow=1.73 cfs 0.171 af  
Outflow=0.06 cfs 0.048 af

**Total Runoff Area = 5.119 ac Runoff Volume = 0.175 af Average Runoff Depth = 0.41"**  
**62.88% Pervious = 3.218 ac 37.12% Impervious = 1.900 ac**

**Proposed Condition Watershed A**

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

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**Summary for Subcatchment 1S: Watershed A**

Runoff = 0.01 cfs @ 17.09 hrs, Volume= 0.004 af, Depth> 0.01"

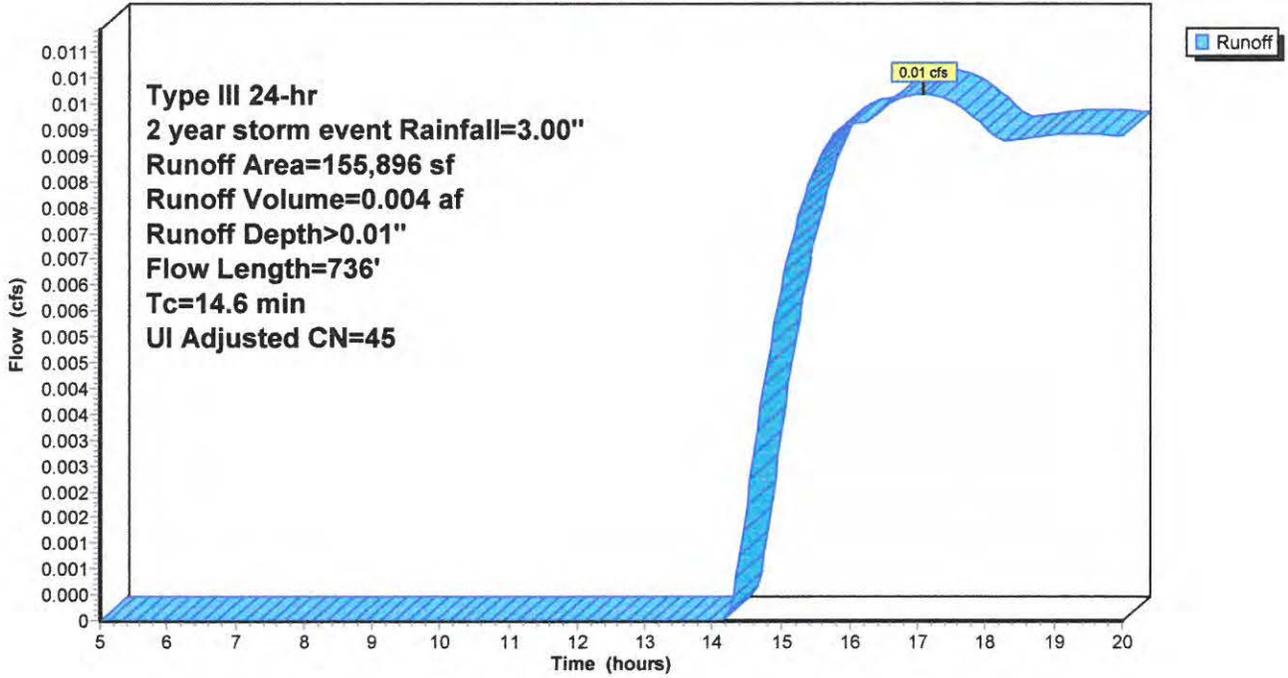
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2 year storm event Rainfall=3.00"

Area (sf)	CN	Adj	Description
95,099	30		Meadow, non-grazed, HSG A
23,270	71		Meadow, non-grazed, HSG C
37,527	98		Unconnected pavement, HSG A
155,896	52	45	Weighted Average, UI Adjusted
118,369			75.93% Pervious Area
37,527			24.07% Impervious Area
37,527			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	110	0.0250	0.21		<b>Sheet Flow,</b> Range n= 0.130 P2= 3.00"
4.5	70	0.0570	0.26		<b>Sheet Flow,</b> Range n= 0.130 P2= 3.00"
0.1	72	0.0150	8.30	83.03	<b>Trap/Vee/Rect Channel Flow,</b> Bot.W=1.00' D=2.00' Z= 2.0 '/' Top.W=9.00' n= 0.022 Earth, clean & straight
0.0	14	0.0850	10.09	3.52	<b>Pipe Channel,</b> 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.013
0.3	145	0.0100	6.95	305.59	<b>Trap/Vee/Rect Channel Flow,</b> Bot.W=2.00' D=2.00' Z= 10.0 '/' Top.W=42.00' n= 0.022 Earth, clean & straight
0.2	50	0.0120	4.97	3.90	<b>Pipe Channel,</b> 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.3	135	0.0070	6.53	143.63	<b>Trap/Vee/Rect Channel Flow,</b> Bot.W=5.00' D=2.00' Z= 2.0 & 4.0 '/' Top.W=17.00' n= 0.022 Earth, clean & straight
0.1	30	0.0170	5.91	4.65	<b>Pipe Channel,</b> 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.2	110	0.0210	11.18	268.24	<b>Trap/Vee/Rect Channel Flow,</b> Bot.W=5.00' D=2.00' Z= 2.0 & 5.0 '/' Top.W=19.00' n= 0.022 Earth, clean & straight
14.6	736	Total			

Subcatchment 1S: Watershed A

Hydrograph



**Proposed Condition Watershed A**

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

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**Summary for Subcatchment 3S: Watershed 1**

Runoff = 1.73 cfs @ 12.29 hrs, Volume= 0.171 af, Depth> 1.33"

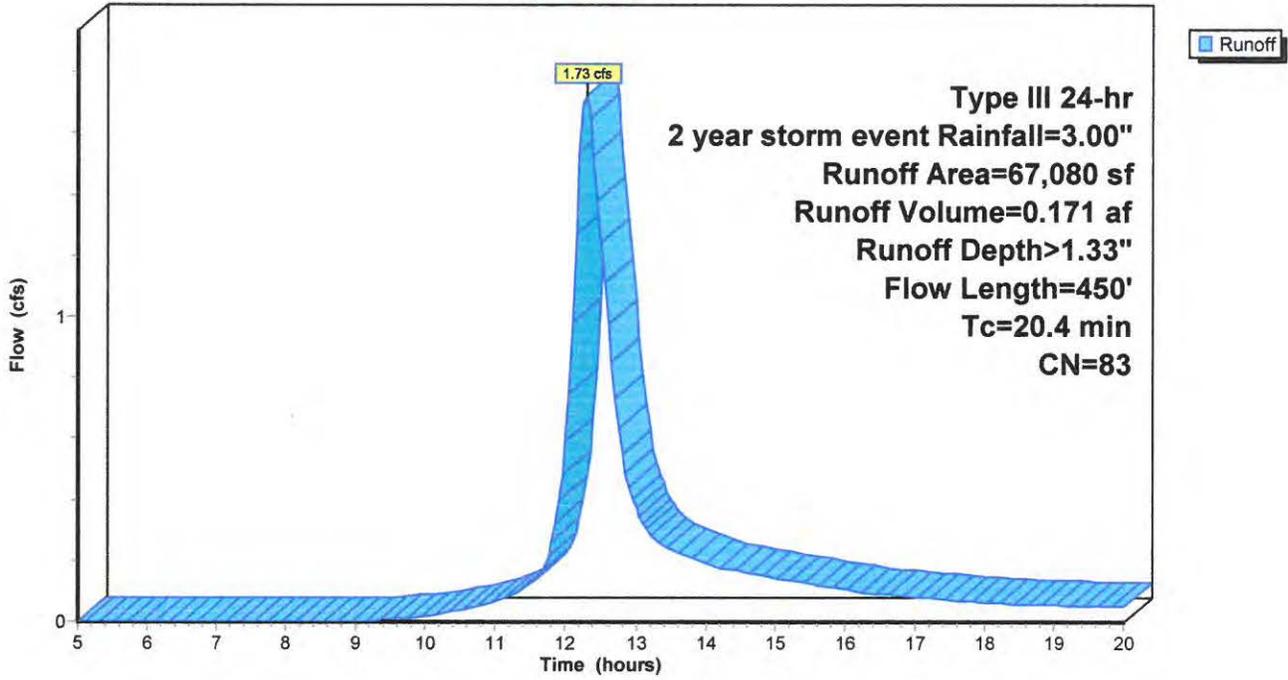
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2 year storm event Rainfall=3.00"

Area (sf)	CN	Description
10,134	30	Meadow, non-grazed, HSG A
11,694	71	Meadow, non-grazed, HSG C
* 7,083	98	Roofs
* 38,169	98	Paved parking
67,080	83	Weighted Average
21,828		32.54% Pervious Area
45,252		67.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	55	0.0200	1.18		<b>Sheet Flow,</b> Smooth surfaces n= 0.011 P2= 3.00"
1.2	150	0.0100	2.03		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
0.2	125	0.0200	10.16	121.89	<b>Trap/Vee/Rect Channel Flow,</b> Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.022 Earth, clean & straight
18.2	120	0.0050	0.11		<b>Sheet Flow,</b> Range n= 0.130 P2= 3.00"
20.4	450	Total			

Subcatchment 3S: Watershed 1

Hydrograph



**Proposed Condition Watershed A**

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

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**Summary for Reach 2R: Design Point A**

Inflow Area = 5.119 ac, 37.12% Impervious, Inflow Depth > 0.12" for 2 year storm event event  
Inflow = 0.07 cfs @ 17.11 hrs, Volume= 0.053 af  
Outflow = 0.07 cfs @ 17.13 hrs, Volume= 0.053 af, Atten= 0%, Lag= 1.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Max. Velocity= 2.36 fps, Min. Travel Time= 0.4 min  
Avg. Velocity = 2.16 fps, Avg. Travel Time= 0.4 min

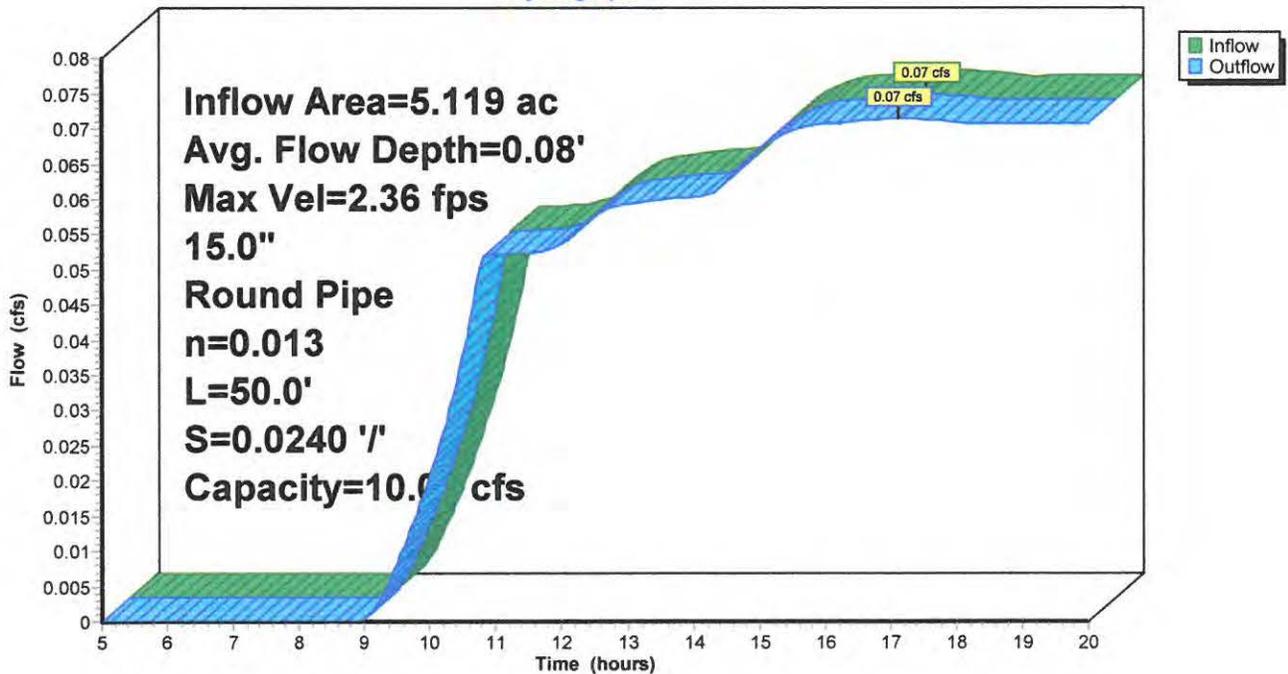
Peak Storage= 2 cf @ 17.13 hrs  
Average Depth at Peak Storage= 0.08'  
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 10.01 cfs

15.0" Round Pipe  
n= 0.013  
Length= 50.0' Slope= 0.0240 '/'  
Inlet Invert= 196.70', Outlet Invert= 195.50'



**Reach 2R: Design Point A**

**Hydrograph**



**Proposed Condition Watershed A**

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

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**Summary for Pond 4P: Filter Bed 1**

Inflow Area = 1.540 ac, 67.46% Impervious, Inflow Depth > 1.33" for 2 year storm event event  
 Inflow = 1.73 cfs @ 12.29 hrs, Volume= 0.171 af  
 Outflow = 0.06 cfs @ 18.15 hrs, Volume= 0.048 af, Atten= 96%, Lag= 351.9 min  
 Primary = 0.06 cfs @ 18.15 hrs, Volume= 0.048 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 202.02' @ 18.15 hrs Surf.Area= 6,661 sf Storage= 5,393 cf

Plug-Flow detention time= 198.6 min calculated for 0.048 af (28% of inflow)  
 Center-of-Mass det. time= 101.2 min ( 910.9 - 809.7 )

Volume	Invert	Avail.Storage	Storage Description
#1	198.25'	12,650 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
198.25	1	0	0
200.99	2	4	4
201.00	2,465	12	16
201.50	5,937	2,101	2,117
202.00	6,630	3,142	5,259
203.00	8,153	7,392	12,650

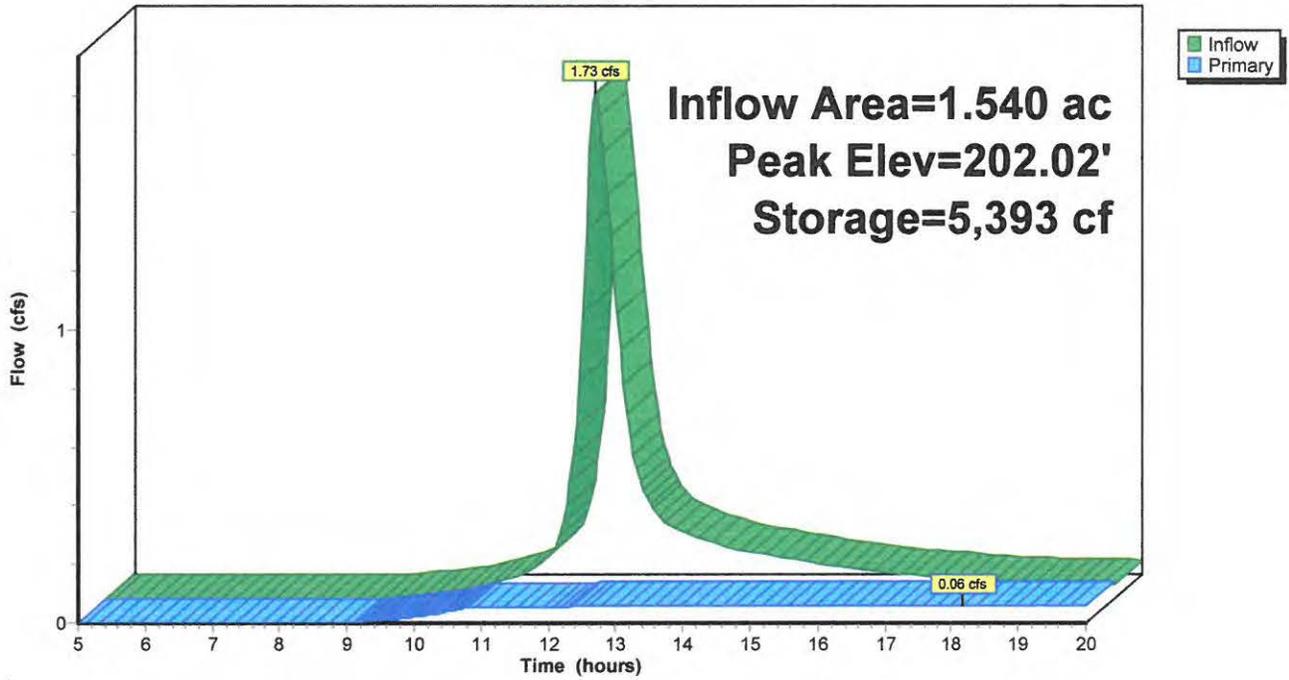
Device	Routing	Invert	Outlet Devices
#1	Primary	198.00'	12.0" Round Culvert L= 155.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 198.00' / 197.00' S= 0.0065 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	198.25'	1.1" Vert. Orifice/Grate C= 0.600
#3	Device 1	202.02'	24.0" W x 6.0" H Vert. Orifice/Grate C= 0.600
#4	Primary	202.50'	10.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.06 cfs @ 18.15 hrs HW=202.02' (Free Discharge)

- 1=Culvert (Passes 0.06 cfs of 5.32 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 0.06 cfs @ 9.29 fps)
- 3=Orifice/Grate (Orifice Controls 0.00 cfs @ 0.04 fps)
- 4=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

Pond 4P: Filter Bed 1

Hydrograph



**Proposed Condition Watershed A**

Type III 24-hr 10 year storm event Rainfall=4.30"

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

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

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

**Subcatchment 1S: Watershed A**

Runoff Area=155,896 sf 24.07% Impervious Runoff Depth>0.20"  
Flow Length=736' Tc=14.6 min UI Adjusted CN=45 Runoff=0.24 cfs 0.059 af

**Subcatchment 3S: Watershed 1**

Runoff Area=67,080 sf 67.46% Impervious Runoff Depth>2.37"  
Flow Length=450' Tc=20.4 min CN=83 Runoff=3.06 cfs 0.304 af

**Reach 2R: Design Point A**

Avg. Flow Depth=0.25' Max Vel=4.97 fps Inflow=0.85 cfs 0.236 af  
15.0" Round Pipe n=0.013 L=50.0' S=0.0240 ' / ' Capacity=10.01 cfs Outflow=0.85 cfs 0.236 af

**Pond 4P: Filter Bed 1**

Peak Elev=202.23' Storage=6,832 cf Inflow=3.06 cfs 0.304 af  
Outflow=0.69 cfs 0.177 af

**Total Runoff Area = 5.119 ac Runoff Volume = 0.364 af Average Runoff Depth = 0.85"**  
**62.88% Pervious = 3.218 ac 37.12% Impervious = 1.900 ac**

**Proposed Condition Watershed A**

Type III 24-hr 10 year storm event Rainfall=4.30"

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**Summary for Subcatchment 15: Watershed A**

Runoff = 0.24 cfs @ 12.53 hrs, Volume= 0.059 af, Depth> 0.20"

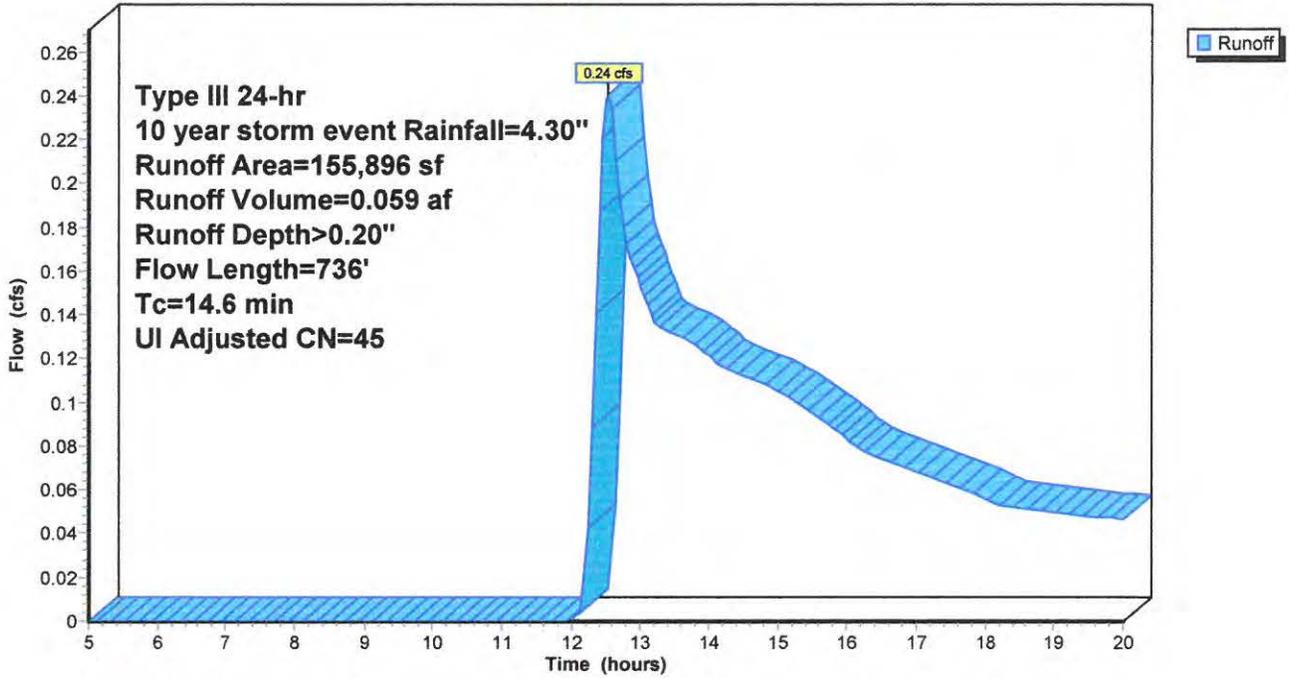
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10 year storm event Rainfall=4.30"

Area (sf)	CN	Adj	Description
95,099	30		Meadow, non-grazed, HSG A
23,270	71		Meadow, non-grazed, HSG C
37,527	98		Unconnected pavement, HSG A
155,896	52	45	Weighted Average, UI Adjusted
118,369			75.93% Pervious Area
37,527			24.07% Impervious Area
37,527			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	110	0.0250	0.21		<b>Sheet Flow,</b> Range n= 0.130 P2= 3.00"
4.5	70	0.0570	0.26		<b>Sheet Flow,</b> Range n= 0.130 P2= 3.00"
0.1	72	0.0150	8.30	83.03	<b>Trap/Vee/Rect Channel Flow,</b> Bot.W=1.00' D=2.00' Z= 2.0 '/' Top.W=9.00' n= 0.022 Earth, clean & straight
0.0	14	0.0850	10.09	3.52	<b>Pipe Channel,</b> 8.0" Round Area= 0.3 sf Perim= 2.1' n= 0.17' n= 0.013
0.3	145	0.0100	6.95	305.59	<b>Trap/Vee/Rect Channel Flow,</b> Bot.W=2.00' D=2.00' Z= 10.0 '/' Top.W=42.00' n= 0.022 Earth, clean & straight
0.2	50	0.0120	4.97	3.90	<b>Pipe Channel,</b> 12.0" Round Area= 0.8 sf Perim= 3.1' n= 0.25' n= 0.013
0.3	135	0.0070	6.53	143.63	<b>Trap/Vee/Rect Channel Flow,</b> Bot.W=5.00' D=2.00' Z= 2.0 & 4.0 '/' Top.W=17.00' n= 0.022 Earth, clean & straight
0.1	30	0.0170	5.91	4.65	<b>Pipe Channel,</b> 12.0" Round Area= 0.8 sf Perim= 3.1' n= 0.25' n= 0.013
0.2	110	0.0210	11.18	268.24	<b>Trap/Vee/Rect Channel Flow,</b> Bot.W=5.00' D=2.00' Z= 2.0 & 5.0 '/' Top.W=19.00' n= 0.022 Earth, clean & straight
14.6	736	Total			

Subcatchment 1S: Watershed A

Hydrograph



**Proposed Condition Watershed A**

Type III 24-hr 10 year storm event Rainfall=4.30"

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**Summary for Subcatchment 3S: Watershed 1**

Runoff = 3.06 cfs @ 12.28 hrs, Volume= 0.304 af, Depth> 2.37"

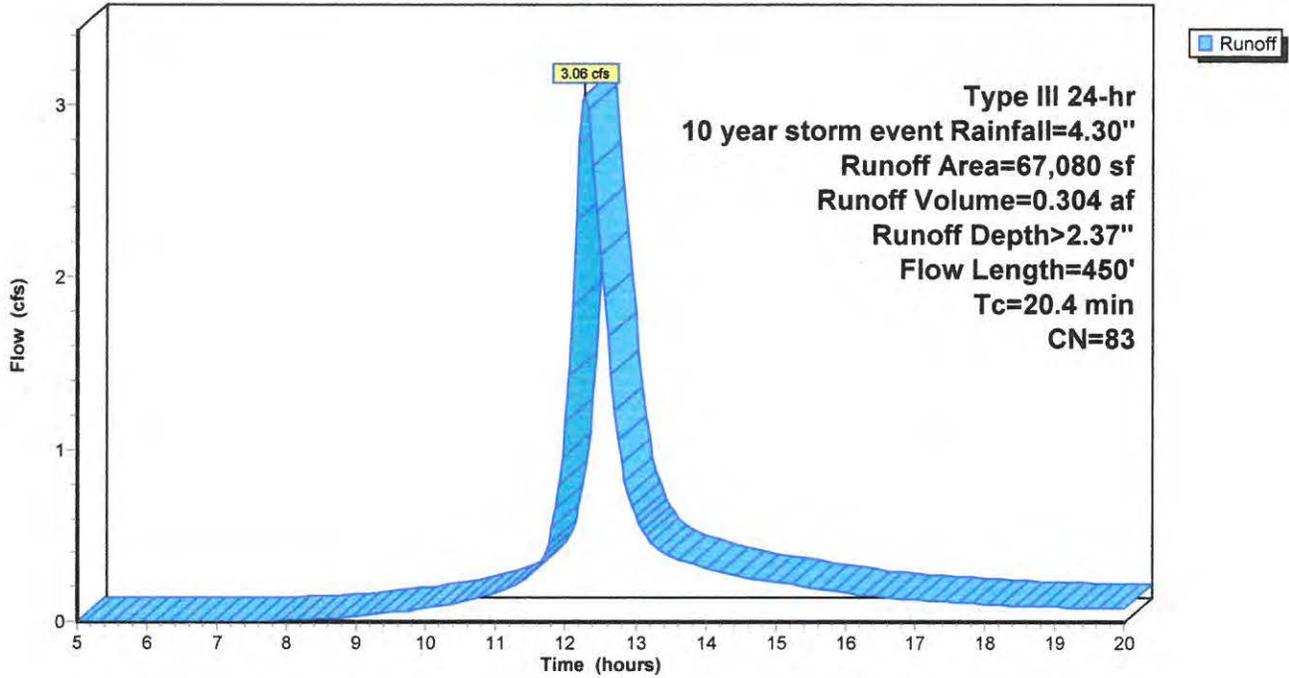
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10 year storm event Rainfall=4.30"

Area (sf)	CN	Description
10,134	30	Meadow, non-grazed, HSG A
11,694	71	Meadow, non-grazed, HSG C
* 7,083	98	Roofs
* 38,169	98	Paved parking
67,080	83	Weighted Average
21,828		32.54% Pervious Area
45,252		67.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	55	0.0200	1.18		<b>Sheet Flow,</b> Smooth surfaces n= 0.011 P2= 3.00"
1.2	150	0.0100	2.03		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
0.2	125	0.0200	10.16	121.89	<b>Trap/Vee/Rect Channel Flow,</b> Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.022 Earth, clean & straight
18.2	120	0.0050	0.11		<b>Sheet Flow,</b> Range n= 0.130 P2= 3.00"
20.4	450	Total			

Subcatchment 3S: Watershed 1

Hydrograph



### Summary for Reach 2R: Design Point A

Inflow Area = 5.119 ac, 37.12% Impervious, Inflow Depth > 0.55" for 10 year storm event event  
 Inflow = 0.85 cfs @ 12.91 hrs, Volume= 0.236 af  
 Outflow = 0.85 cfs @ 12.91 hrs, Volume= 0.236 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Max. Velocity= 4.97 fps, Min. Travel Time= 0.2 min  
 Avg. Velocity = 2.98 fps, Avg. Travel Time= 0.3 min

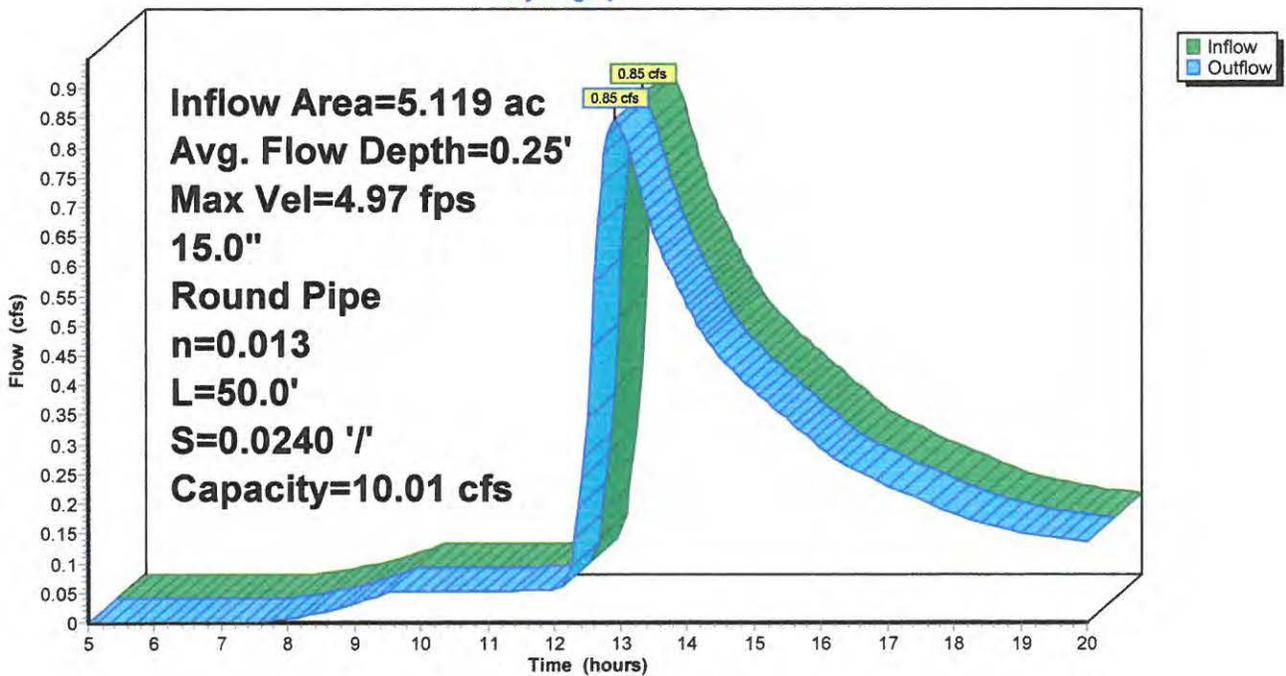
Peak Storage= 9 cf @ 12.91 hrs  
 Average Depth at Peak Storage= 0.25'  
 Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 10.01 cfs

15.0" Round Pipe  
 n= 0.013  
 Length= 50.0' Slope= 0.0240 '/'  
 Inlet Invert= 196.70', Outlet Invert= 195.50'



### Reach 2R: Design Point A

#### Hydrograph



Summary for Pond 4P: Filter Bed 1

Inflow Area = 1.540 ac, 67.46% Impervious, Inflow Depth > 2.37" for 10 year storm event event  
 Inflow = 3.06 cfs @ 12.28 hrs, Volume= 0.304 af  
 Outflow = 0.69 cfs @ 12.94 hrs, Volume= 0.177 af, Atten= 78%, Lag= 39.5 min  
 Primary = 0.69 cfs @ 12.94 hrs, Volume= 0.177 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 202.23' @ 12.94 hrs Surf.Area= 6,982 sf Storage= 6,832 cf

Plug-Flow detention time= 152.6 min calculated for 0.176 af (58% of inflow)  
 Center-of-Mass det. time= 77.8 min ( 874.6 - 796.7 )

Volume	Invert	Avail.Storage	Storage Description
#1	198.25'	12,650 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
198.25	1	0	0
200.99	2	4	4
201.00	2,465	12	16
201.50	5,937	2,101	2,117
202.00	6,630	3,142	5,259
203.00	8,153	7,392	12,650

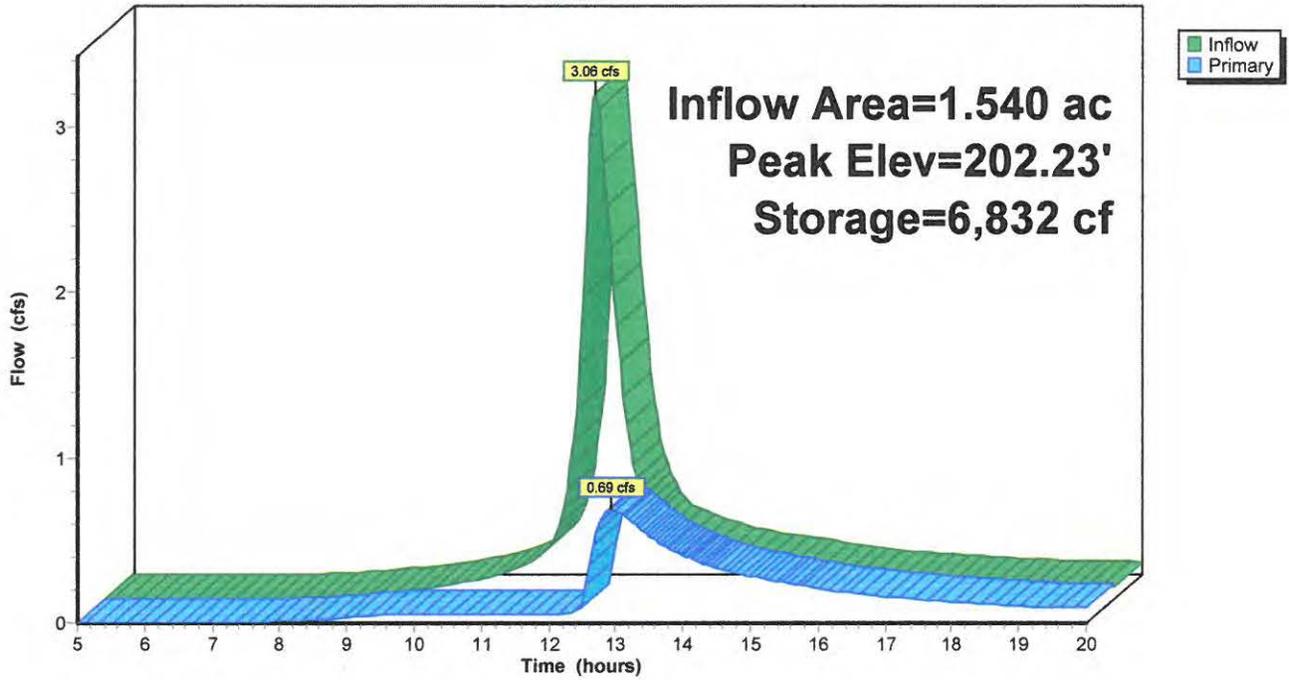
Device	Routing	Invert	Outlet Devices
#1	Primary	198.00'	12.0" Round Culvert L= 155.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 198.00' / 197.00' S= 0.0065 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	198.25'	1.1" Vert. Orifice/Grate C= 0.600
#3	Device 1	202.02'	24.0" W x 6.0" H Vert. Orifice/Grate C= 0.600
#4	Primary	202.50'	10.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.69 cfs @ 12.94 hrs HW=202.23' (Free Discharge)

- 1=Culvert (Passes 0.69 cfs of 5.46 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 0.06 cfs @ 9.55 fps)
- 3=Orifice/Grate (Orifice Controls 0.62 cfs @ 1.47 fps)
- 4=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

Pond 4P: Filter Bed 1

Hydrograph



**Proposed Condition Watershed A**

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

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

**Subcatchment 1S: Watershed A**

Runoff Area=155,896 sf 24.07% Impervious Runoff Depth=0.49"  
Flow Length=736' Tc=14.6 min UI Adjusted CN=45 Runoff=0.96 cfs 0.147 af

**Subcatchment 3S: Watershed 1**

Runoff Area=67,080 sf 67.46% Impervious Runoff Depth=3.31"  
Flow Length=450' Tc=20.4 min CN=83 Runoff=4.23 cfs 0.424 af

**Reach 2R: Design Point A**

Avg. Flow Depth=0.42' Max Vel=6.75 fps Inflow=2.46 cfs 0.441 af  
15.0" Round Pipe n=0.013 L=50.0' S=0.0240 '/' Capacity=10.01 cfs Outflow=2.46 cfs 0.441 af

**Pond 4P: Filter Bed 1**

Peak Elev=202.44' Storage=8,290 cf Inflow=4.23 cfs 0.424 af  
Outflow=1.78 cfs 0.295 af

**Total Runoff Area = 5.119 ac Runoff Volume = 0.571 af Average Runoff Depth = 1.34"**  
**62.88% Pervious = 3.218 ac 37.12% Impervious = 1.900 ac**

**Proposed Condition Watershed A**

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

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**Summary for Subcatchment 15: Watershed A**

Runoff = 0.96 cfs @ 12.39 hrs, Volume= 0.147 af, Depth> 0.49"

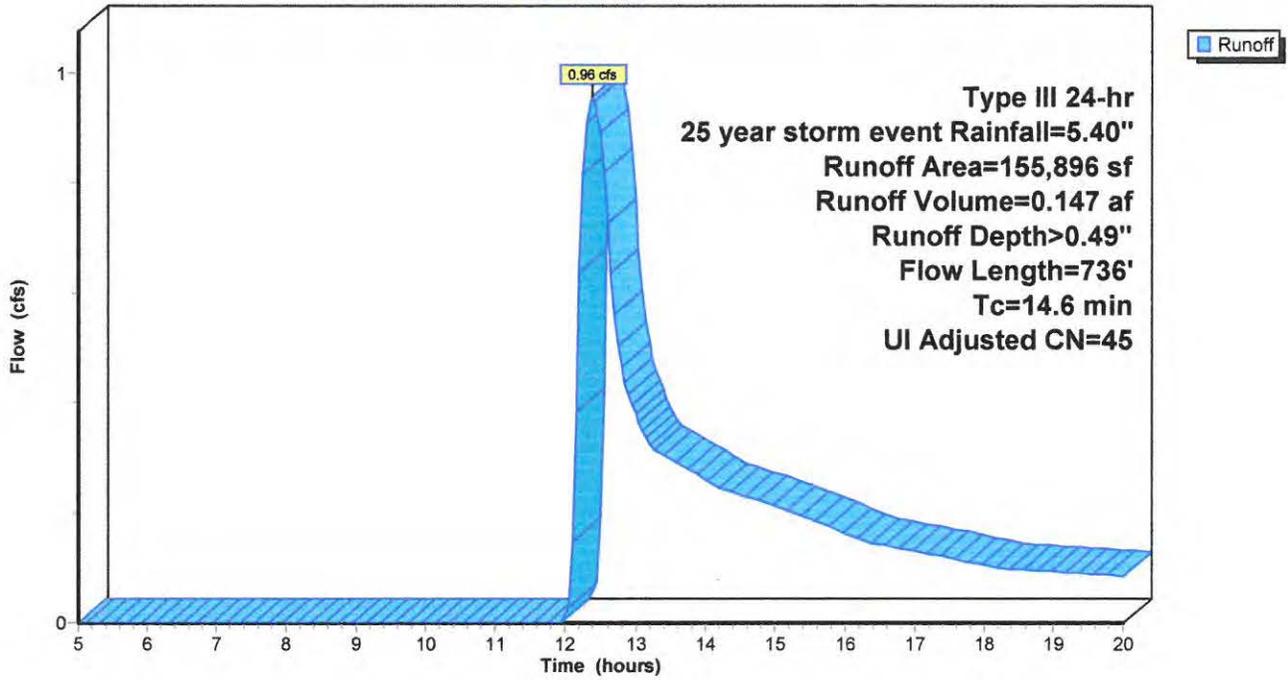
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25 year storm event Rainfall=5.40"

Area (sf)	CN	Adj	Description
95,099	30		Meadow, non-grazed, HSG A
23,270	71		Meadow, non-grazed, HSG C
37,527	98		Unconnected pavement, HSG A
155,896	52	45	Weighted Average, UI Adjusted
118,369			75.93% Pervious Area
37,527			24.07% Impervious Area
37,527			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	110	0.0250	0.21		<b>Sheet Flow,</b> Range n= 0.130 P2= 3.00"
4.5	70	0.0570	0.26		<b>Sheet Flow,</b> Range n= 0.130 P2= 3.00"
0.1	72	0.0150	8.30	83.03	<b>Trap/Vee/Rect Channel Flow,</b> Bot.W=1.00' D=2.00' Z= 2.0 '/' Top.W=9.00' n= 0.022 Earth, clean & straight
0.0	14	0.0850	10.09	3.52	<b>Pipe Channel,</b> 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.013
0.3	145	0.0100	6.95	305.59	<b>Trap/Vee/Rect Channel Flow,</b> Bot.W=2.00' D=2.00' Z= 10.0 '/' Top.W=42.00' n= 0.022 Earth, clean & straight
0.2	50	0.0120	4.97	3.90	<b>Pipe Channel,</b> 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.3	135	0.0070	6.53	143.63	<b>Trap/Vee/Rect Channel Flow,</b> Bot.W=5.00' D=2.00' Z= 2.0 & 4.0 '/' Top.W=17.00' n= 0.022 Earth, clean & straight
0.1	30	0.0170	5.91	4.65	<b>Pipe Channel,</b> 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.2	110	0.0210	11.18	268.24	<b>Trap/Vee/Rect Channel Flow,</b> Bot.W=5.00' D=2.00' Z= 2.0 & 5.0 '/' Top.W=19.00' n= 0.022 Earth, clean & straight
14.6	736	Total			

Subcatchment 1S: Watershed A

Hydrograph



Summary for Subcatchment 3S: Watershed 1

Runoff = 4.23 cfs @ 12.28 hrs, Volume= 0.424 af, Depth> 3.31"

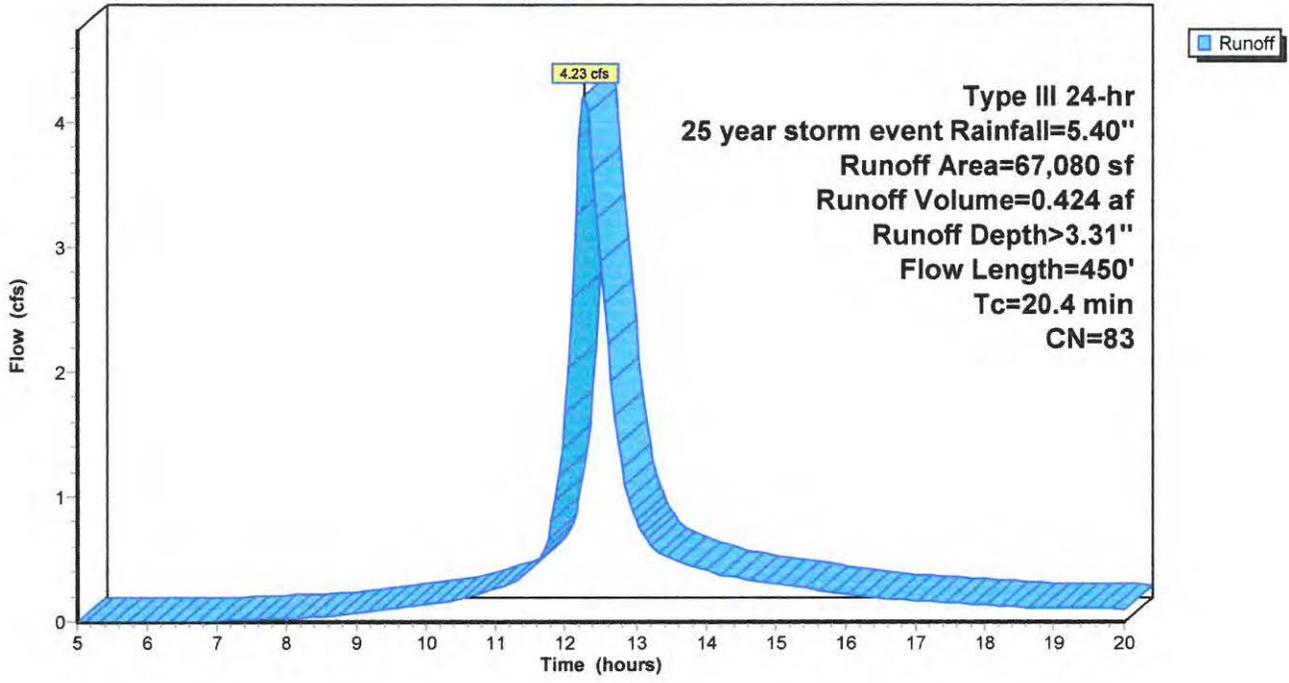
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 25 year storm event Rainfall=5.40"

Area (sf)	CN	Description
10,134	30	Meadow, non-grazed, HSG A
11,694	71	Meadow, non-grazed, HSG C
* 7,083	98	Roofs
* 38,169	98	Paved parking
67,080	83	Weighted Average
21,828		32.54% Pervious Area
45,252		67.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	55	0.0200	1.18		<b>Sheet Flow,</b> Smooth surfaces n= 0.011 P2= 3.00"
1.2	150	0.0100	2.03		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
0.2	125	0.0200	10.16	121.89	<b>Trap/Vee/Rect Channel Flow,</b> Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.022 Earth, clean & straight
18.2	120	0.0050	0.11		<b>Sheet Flow,</b> Range n= 0.130 P2= 3.00"
20.4	450	Total			

Subcatchment 3S: Watershed 1

Hydrograph



Summary for Reach 2R: Design Point A

Inflow Area = 5.119 ac, 37.12% Impervious, Inflow Depth > 1.03" for 25 year storm event event  
 Inflow = 2.46 cfs @ 12.59 hrs, Volume= 0.441 af  
 Outflow = 2.46 cfs @ 12.59 hrs, Volume= 0.441 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Max. Velocity= 6.75 fps, Min. Travel Time= 0.1 min  
 Avg. Velocity = 3.31 fps, Avg. Travel Time= 0.3 min

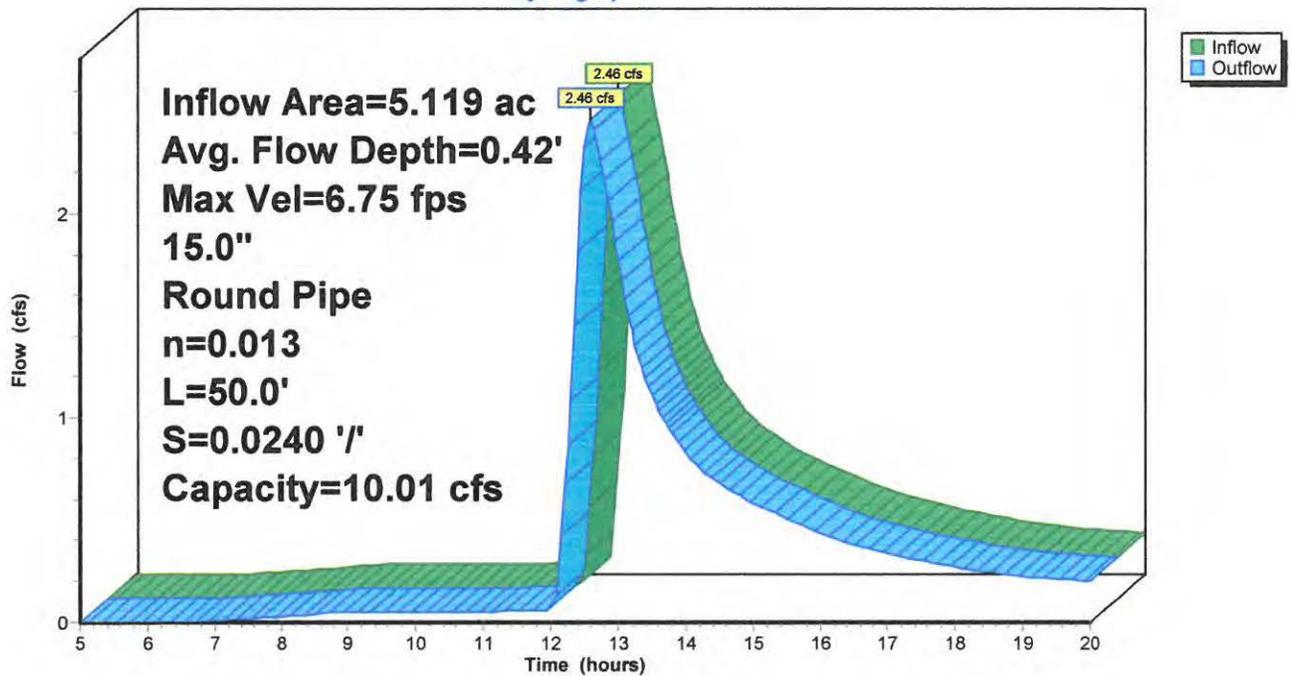
Peak Storage= 18 cf @ 12.59 hrs  
 Average Depth at Peak Storage= 0.42'  
 Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 10.01 cfs

15.0" Round Pipe  
 n= 0.013  
 Length= 50.0' Slope= 0.0240 '/'  
 Inlet Invert= 196.70', Outlet Invert= 195.50'



Reach 2R: Design Point A

Hydrograph



Summary for Pond 4P: Filter Bed 1

Inflow Area = 1.540 ac, 67.46% Impervious, Inflow Depth > 3.31" for 25 year storm event event  
 Inflow = 4.23 cfs @ 12.28 hrs, Volume= 0.424 af  
 Outflow = 1.78 cfs @ 12.68 hrs, Volume= 0.295 af, Atten= 58%, Lag= 24.1 min  
 Primary = 1.78 cfs @ 12.68 hrs, Volume= 0.295 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 202.44' @ 12.68 hrs Surf.Area= 7,293 sf Storage= 8,290 cf

Plug-Flow detention time= 125.3 min calculated for 0.295 af (69% of inflow)  
 Center-of-Mass det. time= 59.7 min ( 848.7 - 789.0 )

Volume	Invert	Avail.Storage	Storage Description
#1	198.25'	12,650 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
198.25	1	0	0
200.99	2	4	4
201.00	2,465	12	16
201.50	5,937	2,101	2,117
202.00	6,630	3,142	5,259
203.00	8,153	7,392	12,650

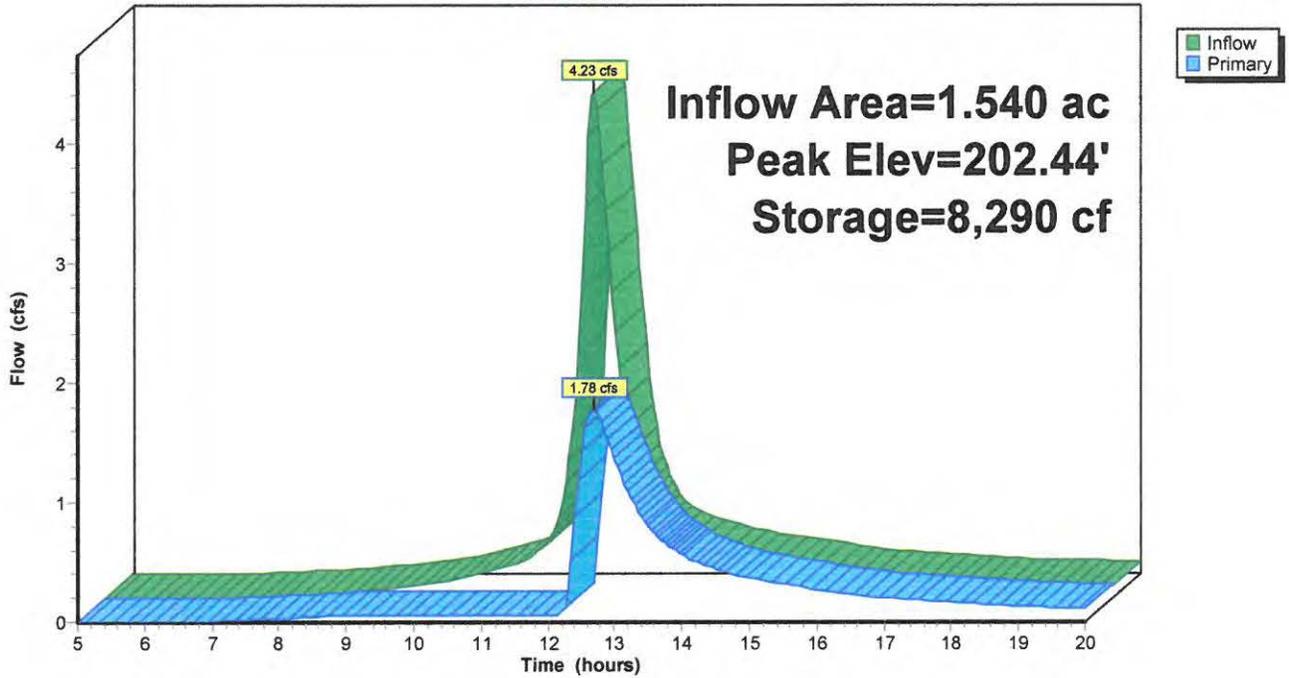
Device	Routing	Invert	Outlet Devices
#1	Primary	198.00'	12.0" Round Culvert L= 155.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 198.00' / 197.00' S= 0.0065 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	198.25'	1.1" Vert. Orifice/Grate C= 0.600
#3	Device 1	202.02'	24.0" W x 6.0" H Vert. Orifice/Grate C= 0.600
#4	Primary	202.50'	10.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

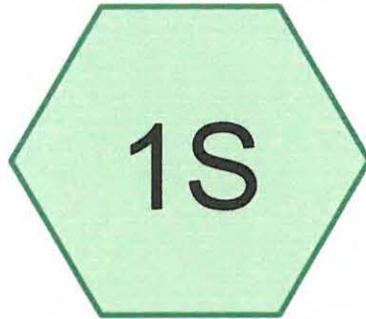
Primary OutFlow Max=1.78 cfs @ 12.68 hrs HW=202.43' (Free Discharge)

- 1=Culvert (Passes 1.78 cfs of 5.59 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 0.06 cfs @ 9.80 fps)
- 3=Orifice/Grate (Orifice Controls 1.71 cfs @ 2.07 fps)
- 4=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

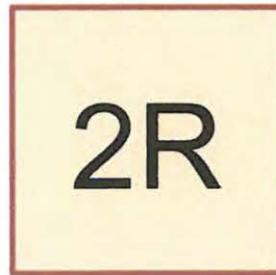
Pond 4P: Filter Bed 1

Hydrograph

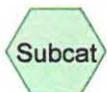




Watershed B



Design Point B



## Existing Condition Watershed B

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### Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.342	30	Meadow, non-grazed, HSG A (1S)
0.351	71	Meadow, non-grazed, HSG C (1S)
0.164	98	Unconnected pavement, HSG A (1S)
<b>0.856</b>	<b>60</b>	<b>TOTAL AREA</b>

**Existing Condition Watershed B**

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**Soil Listing (all nodes)**

Area (acres)	Soil Group	Subcatchment Numbers
0.505	HSG A	1S
0.000	HSG B	
0.351	HSG C	1S
0.000	HSG D	
0.000	Other	
<b>0.856</b>		<b>TOTAL AREA</b>

**Existing Condition Watershed B**

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**Ground Covers (all nodes)**

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.342	0.000	0.351	0.000	0.000	0.692	Meadow, non-grazed	15
0.164	0.000	0.000	0.000	0.000	0.164	Unconnected pavement	15
<b>0.505</b>	<b>0.000</b>	<b>0.351</b>	<b>0.000</b>	<b>0.000</b>	<b>0.856</b>	<b>TOTAL AREA</b>	

**Existing Condition Watershed B**

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**Pipe Listing (all nodes)**

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	2R	202.20	201.80	24.0	0.0167	0.013	12.0	0.0	0.0

**Existing Condition Watershed B**

Type III 24-hr 2 Year storm event Rainfall=3.00"

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

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

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

**Subcatchment 1S: Watershed B**

Runoff Area=37,289 sf 19.14% Impervious Runoff Depth>0.16"

Flow Length=317' Tc=13.7 min UI Adjusted CN=55 Runoff=0.05 cfs 0.011 af

**Reach 2R: Design Point B**

Avg. Flow Depth=0.08' Max Vel=1.98 fps Inflow=0.05 cfs 0.011 af

12.0" Round Pipe n=0.013 L=24.0' S=0.0167 '/' Capacity=4.60 cfs Outflow=0.05 cfs 0.011 af

**Total Runoff Area = 0.856 ac Runoff Volume = 0.011 af Average Runoff Depth = 0.16"**  
**80.86% Pervious = 0.692 ac 19.14% Impervious = 0.164 ac**

**Existing Condition Watershed B**

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Type III 24-hr 2 Year storm event Rainfall=3.00"

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**Summary for Subcatchment 1S: Watershed B**

Runoff = 0.05 cfs @ 12.49 hrs, Volume= 0.011 af, Depth> 0.16"

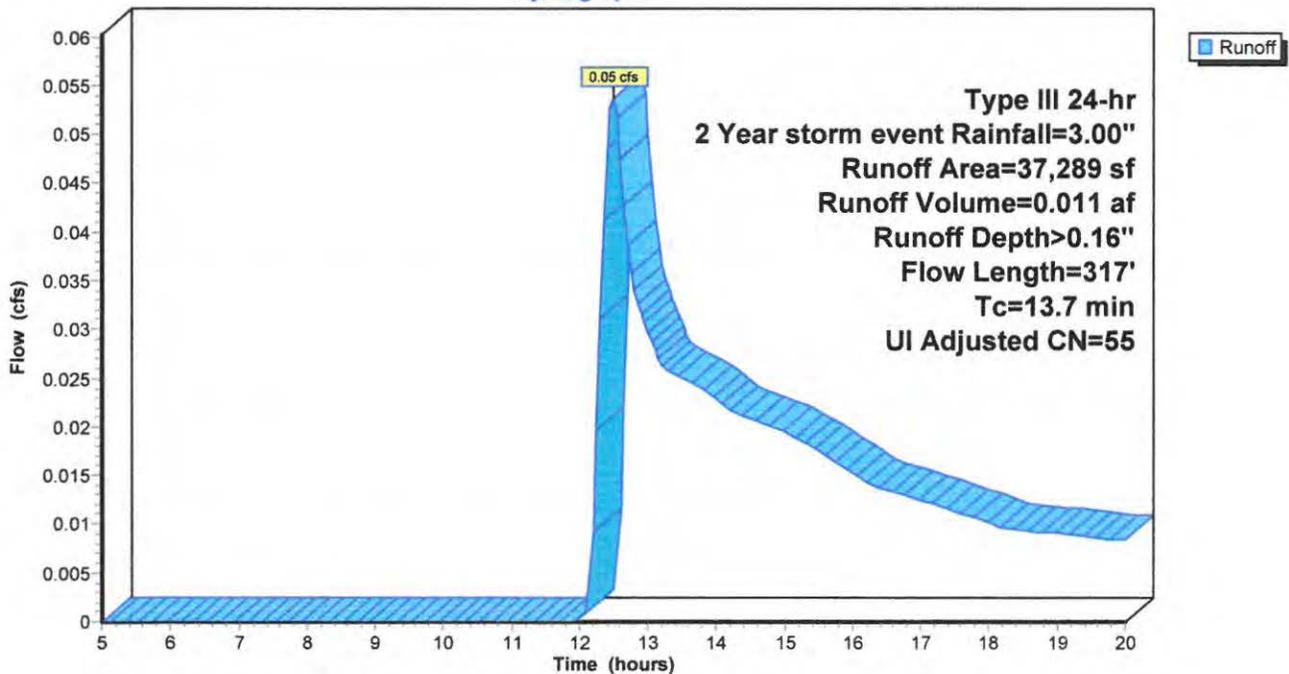
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2 Year storm event Rainfall=3.00"

Area (sf)	CN	Adj	Description
14,878	30		Meadow, non-grazed, HSG A
15,273	71		Meadow, non-grazed, HSG C
7,138	98		Unconnected pavement, HSG A
37,289	60	55	Weighted Average, UI Adjusted
30,151			80.86% Pervious Area
7,138			19.14% Impervious Area
7,138			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0100	0.14		<b>Sheet Flow,</b> Range n= 0.130 P2= 3.00"
1.2	112	0.0100	1.50		<b>Shallow Concentrated Flow,</b> Grassed Waterway Kv= 15.0 fps
0.6	105	0.0380	2.92		<b>Shallow Concentrated Flow,</b> Grassed Waterway Kv= 15.0 fps
13.7	317	Total			

**Subcatchment 1S: Watershed B**

Hydrograph



**Existing Condition Watershed B**

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Type III 24-hr 2 Year storm event Rainfall=3.00"

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**Summary for Reach 2R: Design Point B**

Inflow Area = 0.856 ac, 19.14% Impervious, Inflow Depth > 0.16" for 2 Year storm event event  
Inflow = 0.05 cfs @ 12.49 hrs, Volume= 0.011 af  
Outflow = 0.05 cfs @ 12.50 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Max. Velocity= 1.98 fps, Min. Travel Time= 0.2 min  
Avg. Velocity = 1.36 fps, Avg. Travel Time= 0.3 min

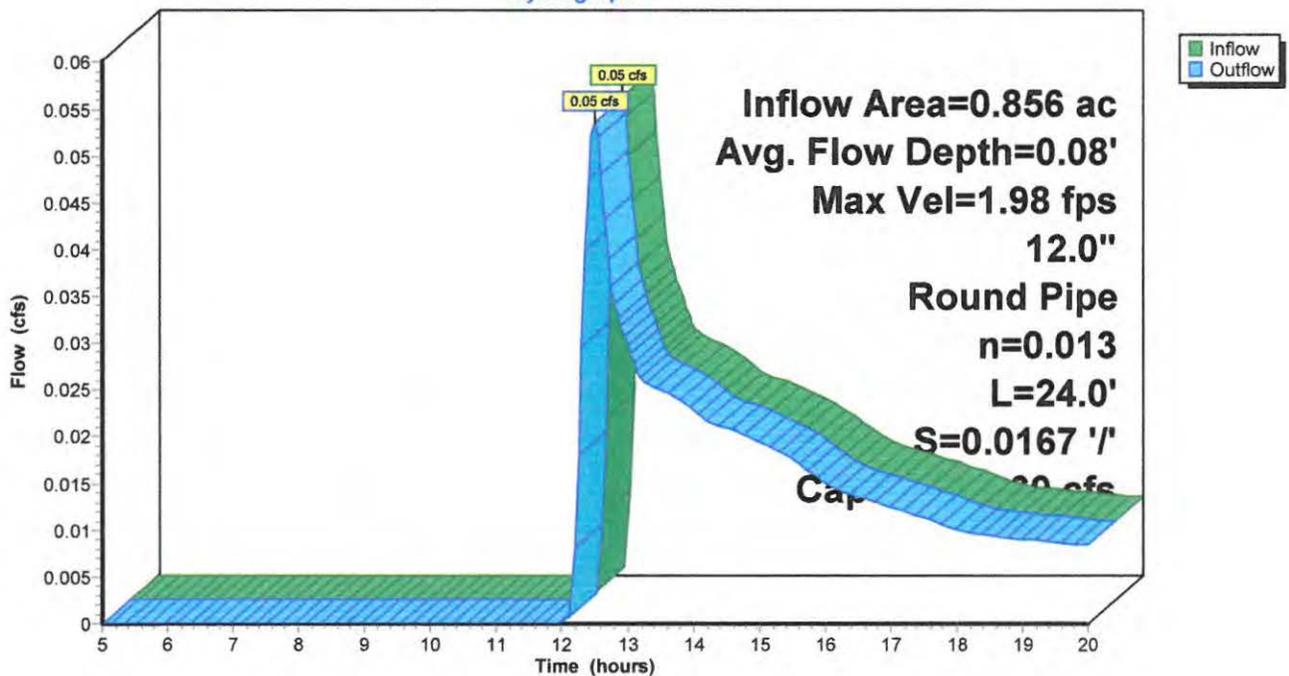
Peak Storage= 1 cf @ 12.49 hrs  
Average Depth at Peak Storage= 0.08'  
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.60 cfs

12.0" Round Pipe  
n= 0.013  
Length= 24.0' Slope= 0.0167 '/'  
Inlet Invert= 202.20', Outlet Invert= 201.80'



**Reach 2R: Design Point B**

**Hydrograph**



**Existing Condition Watershed B**

Type III 24-hr 10 Year storm event Rainfall=4.30"

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

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

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

**Subcatchment 1S: Watershed B**

Runoff Area=37,289 sf 19.14% Impervious Runoff Depth>0.57"

Flow Length=317' Tc=13.7 min UI Adjusted CN=55 Runoff=0.34 cfs 0.041 af

**Reach 2R: Design Point B**

Avg. Flow Depth=0.19' Max Vel=3.44 fps Inflow=0.34 cfs 0.041 af

12.0" Round Pipe n=0.013 L=24.0' S=0.0167 '/' Capacity=4.60 cfs Outflow=0.34 cfs 0.041 af

**Total Runoff Area = 0.856 ac Runoff Volume = 0.041 af Average Runoff Depth = 0.57"**  
**80.86% Pervious = 0.692 ac 19.14% Impervious = 0.164 ac**

**Existing Condition Watershed B**

Type III 24-hr 10 Year storm event Rainfall=4.30"

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**Summary for Subcatchment 1S: Watershed B**

Runoff = 0.34 cfs @ 12.26 hrs, Volume= 0.041 af, Depth> 0.57"

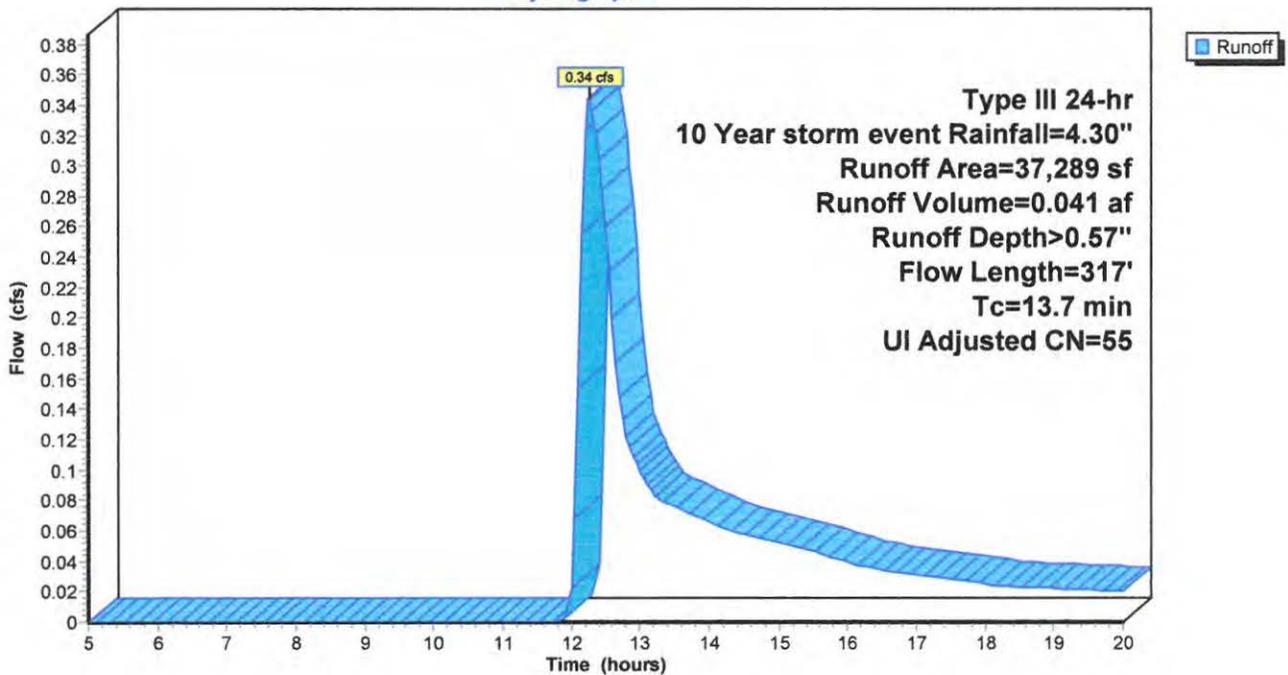
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10 Year storm event Rainfall=4.30"

Area (sf)	CN	Adj	Description
14,878	30		Meadow, non-grazed, HSG A
15,273	71		Meadow, non-grazed, HSG C
7,138	98		Unconnected pavement, HSG A
37,289	60	55	Weighted Average, UI Adjusted
30,151			80.86% Pervious Area
7,138			19.14% Impervious Area
7,138			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0100	0.14		<b>Sheet Flow,</b> Range n= 0.130 P2= 3.00"
1.2	112	0.0100	1.50		<b>Shallow Concentrated Flow,</b> Grassed Waterway Kv= 15.0 fps
0.6	105	0.0380	2.92		<b>Shallow Concentrated Flow,</b> Grassed Waterway Kv= 15.0 fps
13.7	317	Total			

**Subcatchment 1S: Watershed B**

Hydrograph



# Existing Condition Watershed B

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Type III 24-hr 10 Year storm event Rainfall=4.30"

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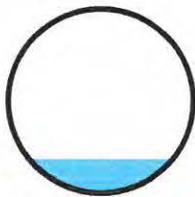
## Summary for Reach 2R: Design Point B

Inflow Area = 0.856 ac, 19.14% Impervious, Inflow Depth > 0.57" for 10 Year storm event event  
Inflow = 0.34 cfs @ 12.26 hrs, Volume= 0.041 af  
Outflow = 0.34 cfs @ 12.26 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Max. Velocity= 3.44 fps, Min. Travel Time= 0.1 min  
Avg. Velocity = 1.90 fps, Avg. Travel Time= 0.2 min

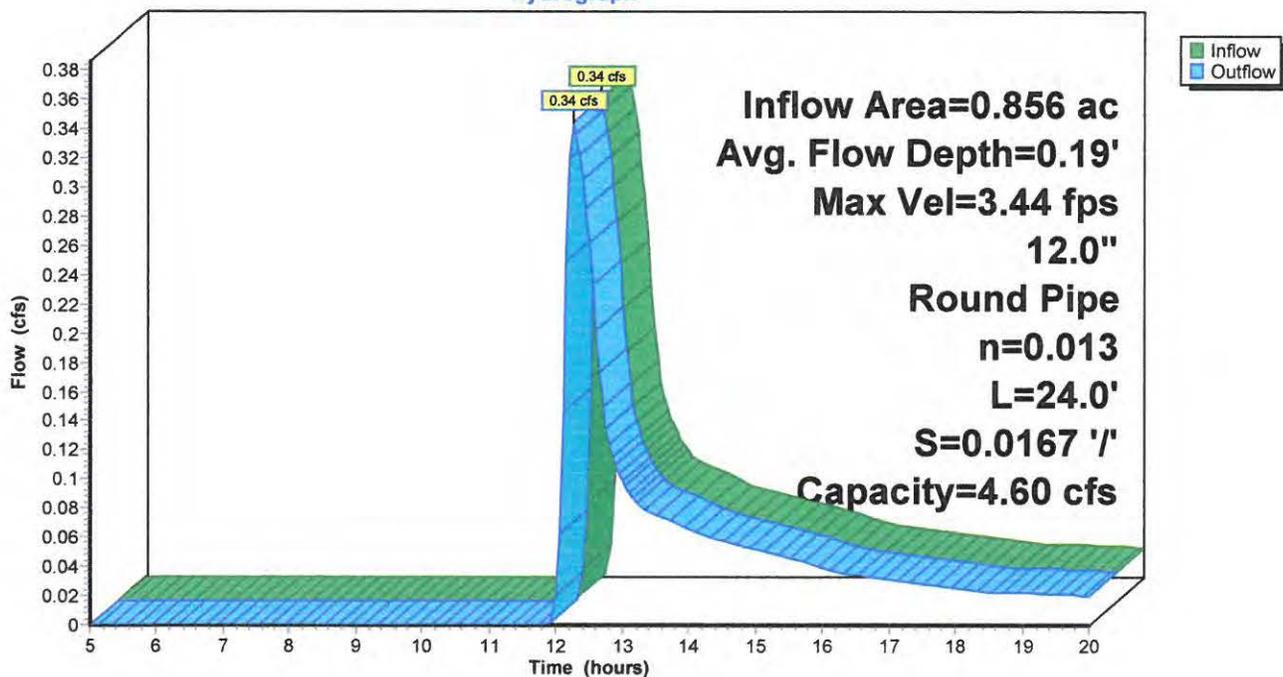
Peak Storage= 2 cf @ 12.26 hrs  
Average Depth at Peak Storage= 0.19'  
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.60 cfs

12.0" Round Pipe  
n= 0.013  
Length= 24.0' Slope= 0.0167 '/'  
Inlet Invert= 202.20', Outlet Invert= 201.80'



## Reach 2R: Design Point B

### Hydrograph



**Existing Condition Watershed B**

Type III 24-hr 25 Year storm event Rainfall=5.40"

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

**Subcatchment 1S: Watershed B**

Runoff Area=37,289 sf 19.14% Impervious Runoff Depth>1.06"  
Flow Length=317' Tc=13.7 min UI Adjusted CN=55 Runoff=0.77 cfs 0.075 af

**Reach 2R: Design Point B**

Avg. Flow Depth=0.28' Max Vel=4.34 fps Inflow=0.77 cfs 0.075 af  
12.0" Round Pipe n=0.013 L=24.0' S=0.0167 '/' Capacity=4.60 cfs Outflow=0.77 cfs 0.075 af

**Total Runoff Area = 0.856 ac Runoff Volume = 0.075 af Average Runoff Depth = 1.06"**  
**80.86% Pervious = 0.692 ac 19.14% Impervious = 0.164 ac**

**Existing Condition Watershed B**

Type III 24-hr 25 Year storm event Rainfall=5.40"

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**Summary for Subcatchment 1S: Watershed B**

Runoff = 0.77 cfs @ 12.22 hrs, Volume= 0.075 af, Depth> 1.06"

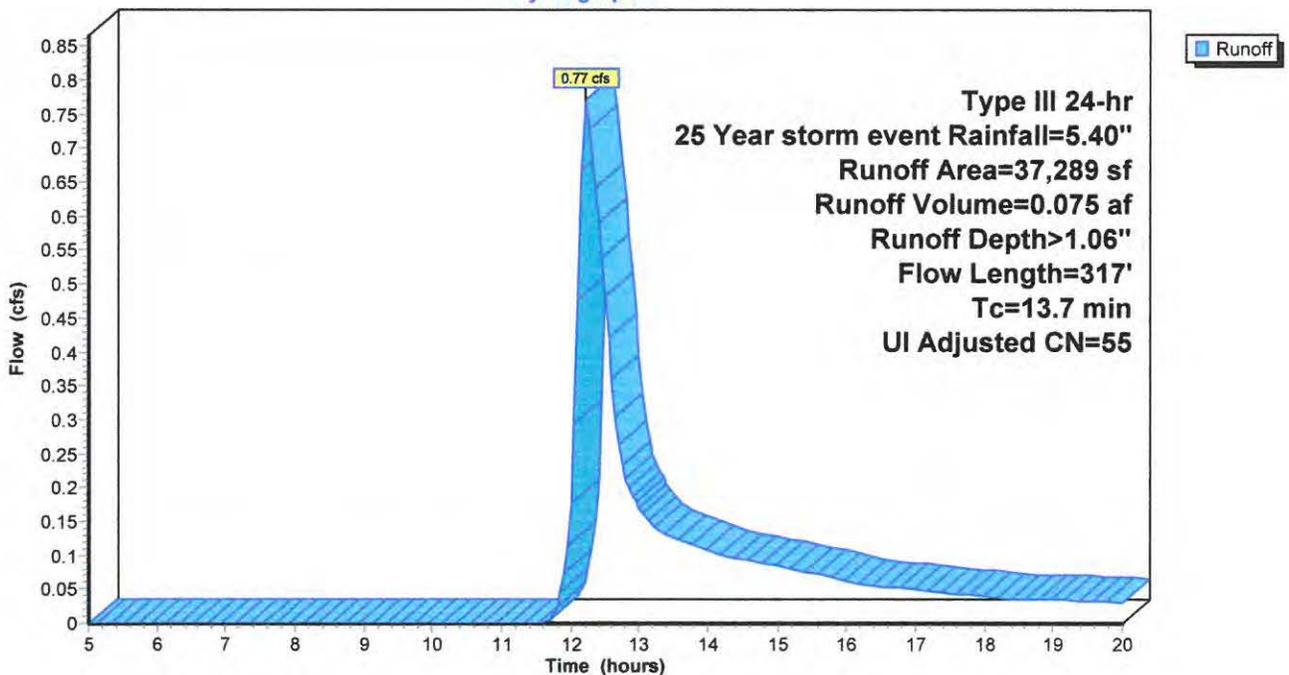
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25 Year storm event Rainfall=5.40"

Area (sf)	CN	Adj	Description
14,878	30		Meadow, non-grazed, HSG A
15,273	71		Meadow, non-grazed, HSG C
7,138	98		Unconnected pavement, HSG A
37,289	60	55	Weighted Average, UI Adjusted
30,151			80.86% Pervious Area
7,138			19.14% Impervious Area
7,138			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0100	0.14		<b>Sheet Flow,</b> Range n= 0.130 P2= 3.00"
1.2	112	0.0100	1.50		<b>Shallow Concentrated Flow,</b> Grassed Waterway Kv= 15.0 fps
0.6	105	0.0380	2.92		<b>Shallow Concentrated Flow,</b> Grassed Waterway Kv= 15.0 fps
13.7	317	Total			

**Subcatchment 1S: Watershed B**

Hydrograph



**Existing Condition Watershed B**

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Type III 24-hr 25 Year storm event Rainfall=5.40"

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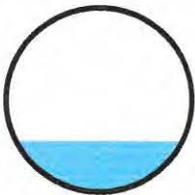
**Summary for Reach 2R: Design Point B**

Inflow Area = 0.856 ac, 19.14% Impervious, Inflow Depth > 1.06" for 25 Year storm event event  
 Inflow = 0.77 cfs @ 12.22 hrs, Volume= 0.075 af  
 Outflow = 0.77 cfs @ 12.22 hrs, Volume= 0.075 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Max. Velocity= 4.34 fps, Min. Travel Time= 0.1 min  
 Avg. Velocity = 2.22 fps, Avg. Travel Time= 0.2 min

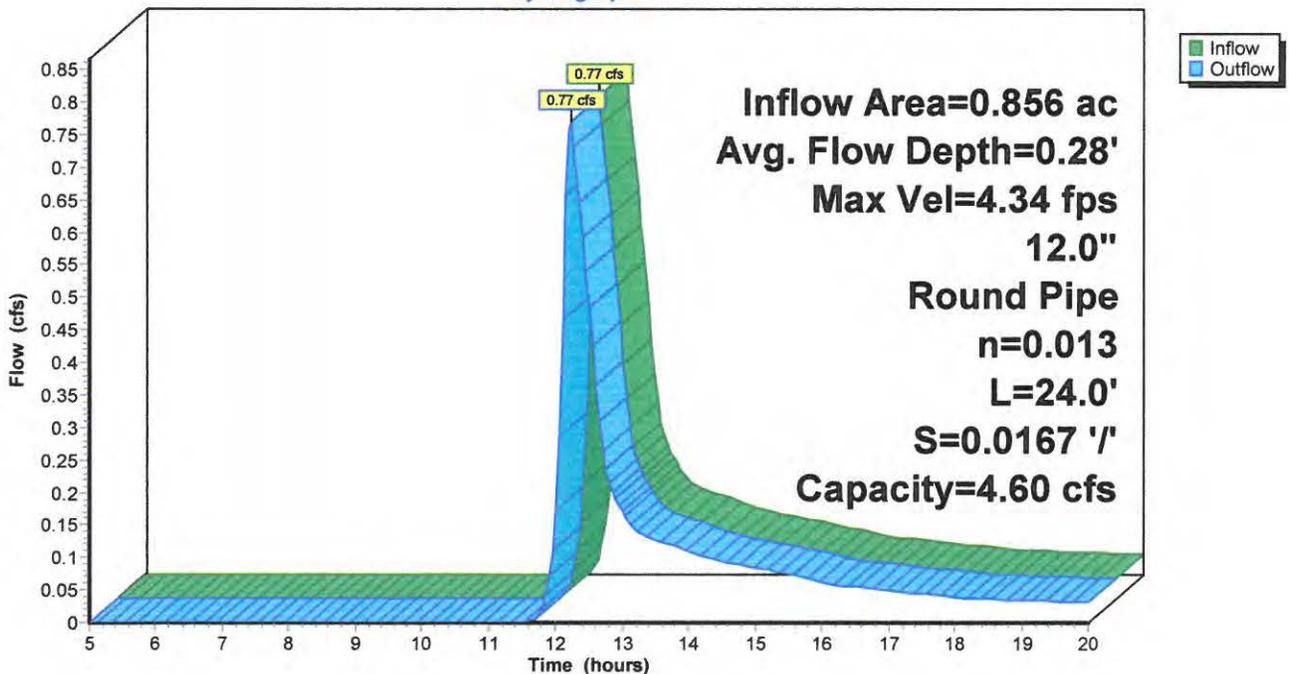
Peak Storage= 4 cf @ 12.22 hrs  
 Average Depth at Peak Storage= 0.28'  
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.60 cfs

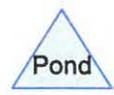
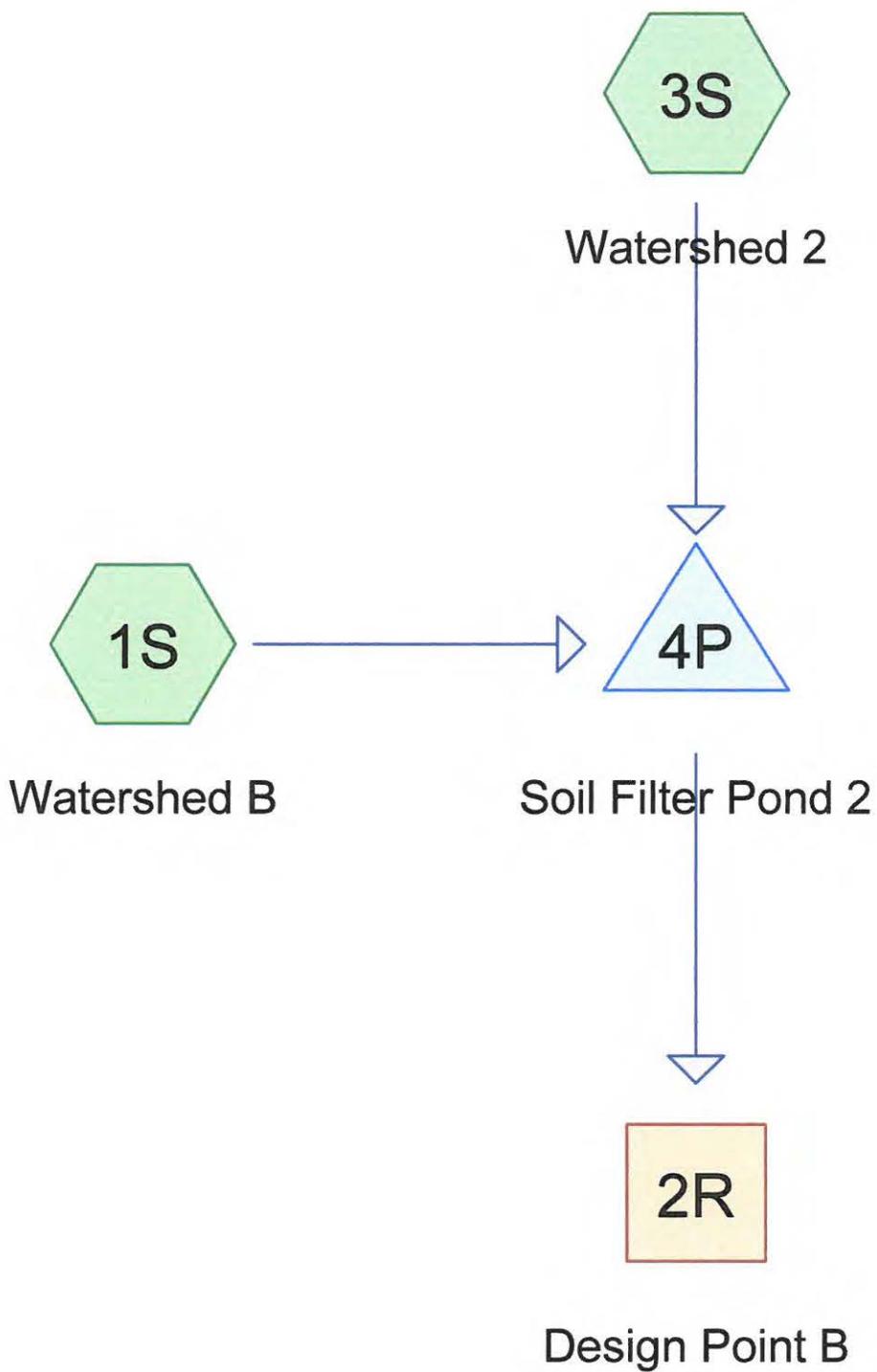
12.0" Round Pipe  
 n= 0.013  
 Length= 24.0' Slope= 0.0167 '/'  
 Inlet Invert= 202.20', Outlet Invert= 201.80'



**Reach 2R: Design Point B**

**Hydrograph**





**Routing Diagram for Proposed Condition Watershed B**  
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## Proposed Condition Watershed B

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### Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.177	39	>75% Grass cover, Good, HSG A (3S)
0.095	74	>75% Grass cover, Good, HSG C (3S)
0.100	71	Meadow, non-grazed, HSG C (1S)
0.350	98	Paved parking (3S)
0.124	98	Unconnected pavement, HSG A (1S)
<b>0.845</b>	<b>80</b>	<b>TOTAL AREA</b>

**Proposed Condition Watershed B**

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**Soil Listing (all nodes)**

Area (acres)	Soil Group	Subcatchment Numbers
0.300	HSG A	1S, 3S
0.000	HSG B	
0.194	HSG C	1S, 3S
0.000	HSG D	
0.350	Other	3S
<b>0.845</b>		<b>TOTAL AREA</b>

**Proposed Condition Watershed B**

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**Ground Covers (all nodes)**

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.177	0.000	0.095	0.000	0.000	0.271	>75% Grass cover, Good	3S
0.000	0.000	0.100	0.000	0.000	0.100	Meadow, non-grazed	1S
0.000	0.000	0.000	0.000	0.350	0.350	Paved parking	3S
0.124	0.000	0.000	0.000	0.000	0.124	Unconnected pavement	1S
<b>0.300</b>	<b>0.000</b>	<b>0.194</b>	<b>0.000</b>	<b>0.350</b>	<b>0.845</b>	<b>TOTAL AREA</b>	

**Proposed Condition Watershed B**

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**Pipe Listing (all nodes)**

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	1S	0.00	0.00	30.0	0.0400	0.012	12.0	0.0	0.0
2	2R	202.20	201.80	24.0	0.0167	0.013	12.0	0.0	0.0
3	4P	202.00	201.60	40.0	0.0100	0.012	12.0	0.0	0.0

**Proposed Condition Watershed B**

Type III 24-hr 2 Year storm Event Rainfall=3.00"

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

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

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

**Subcatchment 1S: Watershed B**

Runoff Area=9,732 sf 55.30% Impervious Runoff Depth>1.55"  
Flow Length=174' Tc=4.4 min CN=86 Runoff=0.45 cfs 0.029 af

**Subcatchment 3S: Watershed 2**

Runoff Area=27,078 sf 56.36% Impervious Runoff Depth>1.03"  
Flow Length=178' Tc=16.7 min CN=78 Runoff=0.57 cfs 0.053 af

**Reach 2R: Design Point B**

Avg. Flow Depth=0.05' Max Vel=1.53 fps Inflow=0.02 cfs 0.019 af  
12.0" Round Pipe n=0.013 L=24.0' S=0.0167 '/' Capacity=4.60 cfs Outflow=0.02 cfs 0.019 af

**Pond 4P: Soil Filter Pond 2**

Peak Elev=205.40' Storage=2,778 cf Inflow=0.78 cfs 0.082 af  
Outflow=0.02 cfs 0.019 af

**Total Runoff Area = 0.845 ac Runoff Volume = 0.082 af Average Runoff Depth = 1.17"**  
**43.92% Pervious = 0.371 ac 56.08% Impervious = 0.474 ac**

**Proposed Condition Watershed B**

Type III 24-hr 2 Year storm Event Rainfall=3.00"

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**Summary for Subcatchment 15: Watershed B**

Runoff = 0.45 cfs @ 12.07 hrs, Volume= 0.029 af, Depth> 1.55"

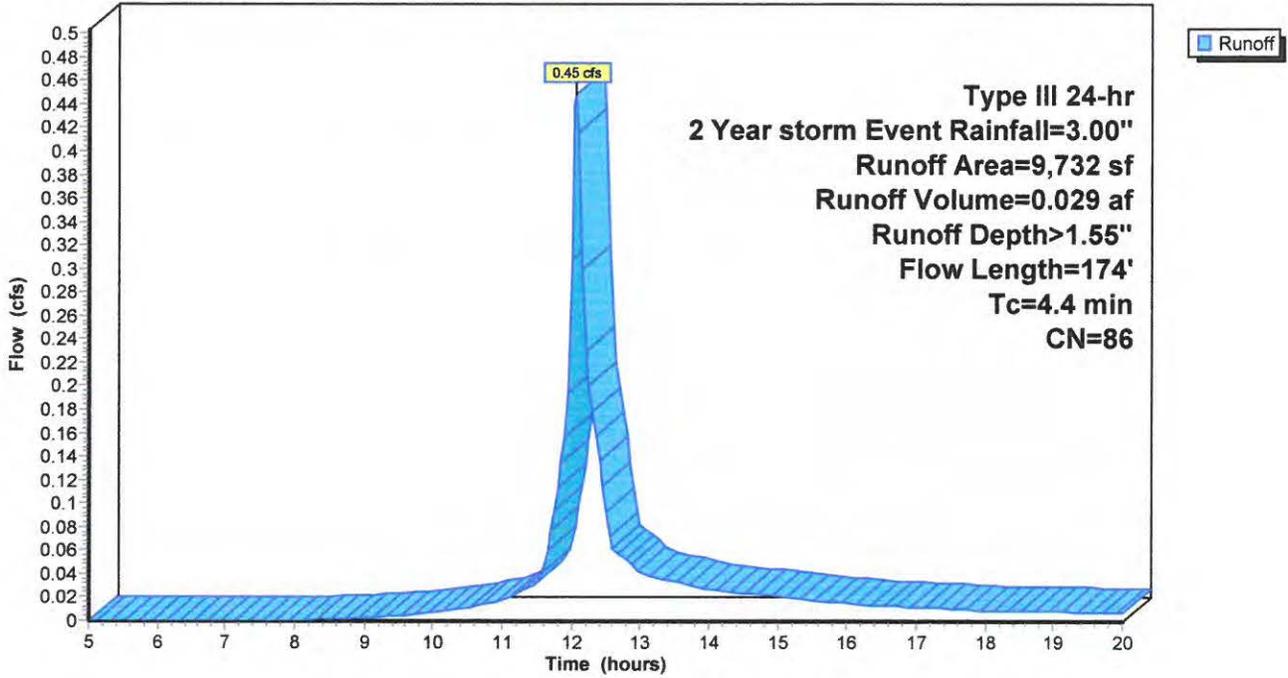
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2 Year storm Event Rainfall=3.00"

Area (sf)	CN	Description
4,350	71	Meadow, non-grazed, HSG C
5,382	98	Unconnected pavement, HSG A
9,732	86	Weighted Average
4,350		44.70% Pervious Area
5,382		55.30% Impervious Area
5,382		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	60	0.0100	0.91		<b>Sheet Flow,</b> Smooth surfaces n= 0.011 P2= 3.00"
2.9	30	0.0300	0.17		<b>Sheet Flow,</b> Range n= 0.130 P2= 3.00"
0.3	54	0.0400	3.00		<b>Shallow Concentrated Flow,</b> Grassed Waterway Kv= 15.0 fps
0.1	30	0.0400	9.83	7.72	<b>Pipe Channel,</b> 12.0" Round Area= 0.8 sf Perim= 3.1' n= 0.25' n= 0.012
4.4	174	Total			

Subcatchment 1S: Watershed B

Hydrograph



**Proposed Condition Watershed B**

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Type III 24-hr 2 Year storm Event Rainfall=3.00"

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**Summary for Subcatchment 3S: Watershed 2**

Runoff = 0.57 cfs @ 12.25 hrs, Volume= 0.053 af, Depth> 1.03"

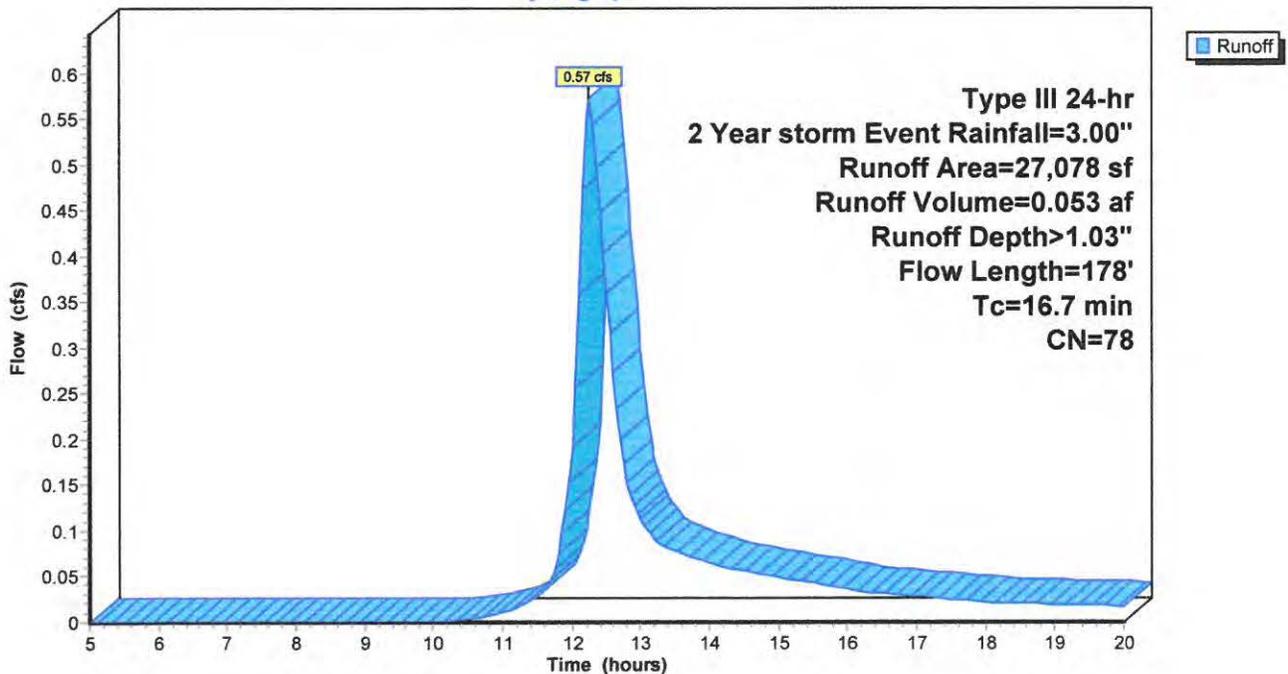
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2 Year storm Event Rainfall=3.00"

Area (sf)	CN	Description
7,700	39	>75% Grass cover, Good, HSG A
4,117	74	>75% Grass cover, Good, HSG C
* 15,261	98	Paved parking
27,078	78	Weighted Average
11,817		43.64% Pervious Area
15,261		56.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	78	0.0200	1.27		<b>Sheet Flow,</b> Smooth surfaces n= 0.011 P2= 3.00"
15.7	100	0.0050	0.11		<b>Sheet Flow,</b> Range n= 0.130 P2= 3.00"
16.7	178	Total			

**Subcatchment 3S: Watershed 2**

Hydrograph



**Proposed Condition Watershed B**

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Type III 24-hr 2 Year storm Event Rainfall=3.00"

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**Summary for Reach 2R: Design Point B**

Inflow Area = 0.845 ac, 56.08% Impervious, Inflow Depth > 0.26" for 2 Year storm Event event  
Inflow = 0.02 cfs @ 20.00 hrs, Volume= 0.019 af  
Outflow = 0.02 cfs @ 20.00 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Max. Velocity= 1.53 fps, Min. Travel Time= 0.3 min  
Avg. Velocity = 1.38 fps, Avg. Travel Time= 0.3 min

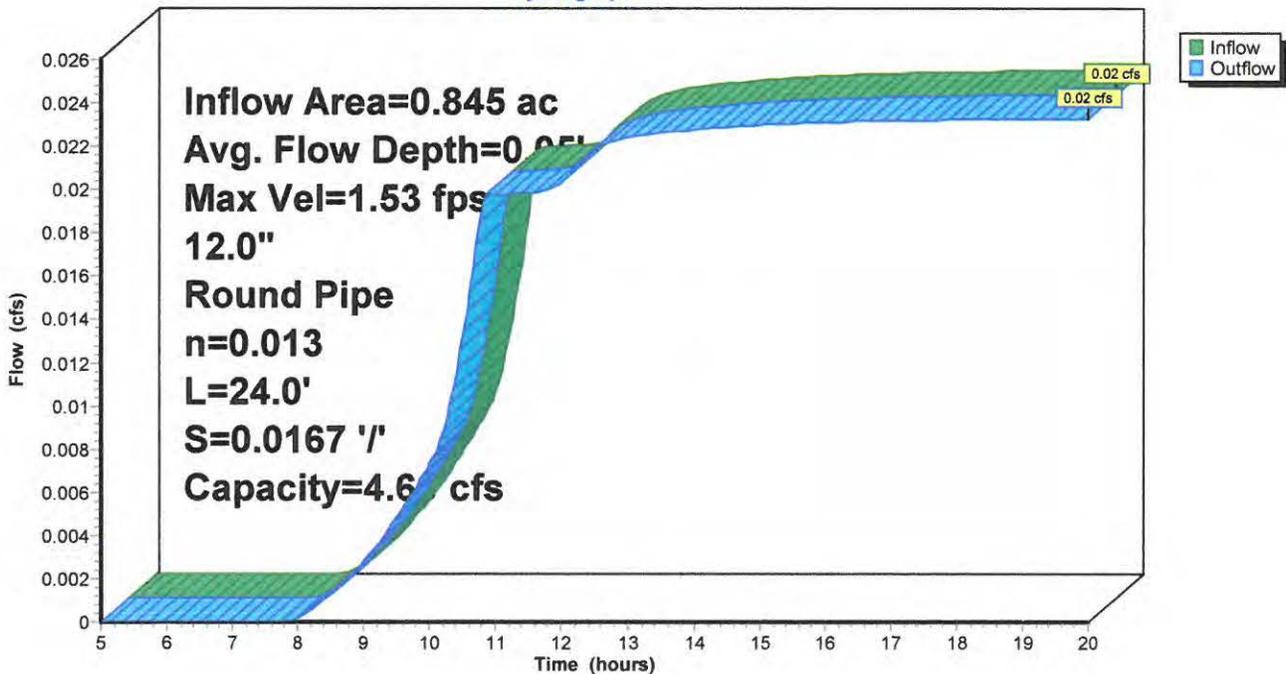
Peak Storage= 0 cf @ 20.00 hrs  
Average Depth at Peak Storage= 0.05'  
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.60 cfs

12.0" Round Pipe  
n= 0.013  
Length= 24.0' Slope= 0.0167 '/'  
Inlet Invert= 202.20', Outlet Invert= 201.80'



**Reach 2R: Design Point B**

**Hydrograph**



**Proposed Condition Watershed B**

Type III 24-hr 2 Year storm Event Rainfall=3.00"

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**Summary for Pond 4P: Soil Filter Pond 2**

Inflow Area = 0.845 ac, 56.08% Impervious, Inflow Depth > 1.17" for 2 Year storm Event event  
 Inflow = 0.78 cfs @ 12.20 hrs, Volume= 0.082 af  
 Outflow = 0.02 cfs @ 20.00 hrs, Volume= 0.019 af, Atten= 97%, Lag= 467.9 min  
 Primary = 0.02 cfs @ 20.00 hrs, Volume= 0.019 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 205.40' @ 20.00 hrs Surf.Area= 3,763 sf Storage= 2,778 cf

Plug-Flow detention time= 204.4 min calculated for 0.019 af (22% of inflow)  
 Center-of-Mass det. time= 98.5 min ( 907.3 - 808.7 )

Volume	Invert	Avail.Storage	Storage Description
#1	202.10'	14,629 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
202.10	1	0	0
204.49	2	4	4
204.50	2,465	12	16
205.00	3,074	1,385	1,401
206.00	4,784	3,929	5,330
207.00	13,815	9,300	14,629

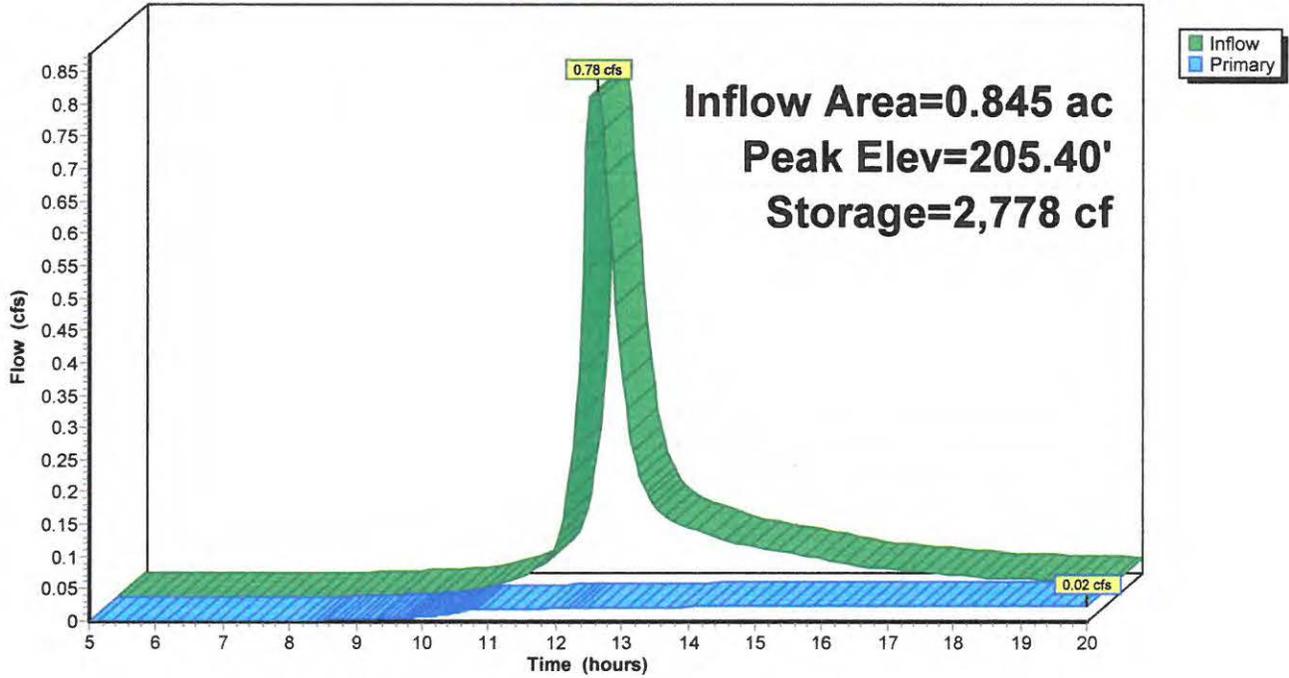
Device	Routing	Invert	Outlet Devices
#1	Primary	202.00'	12.0" Round Culvert L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 202.00' / 201.60' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	202.10'	0.7" Vert. Orifice/Grate C= 0.600
#3	Device 1	205.50'	24.0" W x 2.0" H Vert. Orifice/Grate C= 0.600
#4	Device 1	206.00'	48.0" W x 6.0" H Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.02 cfs @ 20.00 hrs HW=205.40' (Free Discharge)

- 1=Culvert (Passes 0.02 cfs of 6.44 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 0.02 cfs @ 8.71 fps)
- 3=Orifice/Grate ( Controls 0.00 cfs)
- 4=Orifice/Grate ( Controls 0.00 cfs)

Pond 4P: Soil Filter Pond 2

Hydrograph



**Proposed Condition Watershed B**

Type III 24-hr 10 Year storm Event Rainfall=4.30"

Prepared by SJR Engineering Inc.

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

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

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

**Subcatchment 1S: Watershed B**

Runoff Area=9,732 sf 55.30% Impervious Runoff Depth>2.65"  
Flow Length=174' Tc=4.4 min CN=86 Runoff=0.76 cfs 0.049 af

**Subcatchment 3S: Watershed 2**

Runoff Area=27,078 sf 56.36% Impervious Runoff Depth>1.97"  
Flow Length=178' Tc=16.7 min CN=78 Runoff=1.11 cfs 0.102 af

**Reach 2R: Design Point B**

Avg. Flow Depth=0.16' Max Vel=3.20 fps Inflow=0.27 cfs 0.077 af  
12.0" Round Pipe n=0.013 L=24.0' S=0.0167 '/' Capacity=4.60 cfs Outflow=0.27 cfs 0.077 af

**Pond 4P: Soil Filter Pond 2**

Peak Elev=205.61' Storage=3,603 cf Inflow=1.47 cfs 0.151 af  
Outflow=0.27 cfs 0.077 af

**Total Runoff Area = 0.845 ac Runoff Volume = 0.151 af Average Runoff Depth = 2.15"**  
**43.92% Pervious = 0.371 ac 56.08% Impervious = 0.474 ac**

**Proposed Condition Watershed B**

Type III 24-hr 10 Year storm Event Rainfall=4.30"

Prepared by SJR Engineering Inc.

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**Summary for Subcatchment 1S: Watershed B**

Runoff = 0.76 cfs @ 12.07 hrs, Volume= 0.049 af, Depth> 2.65"

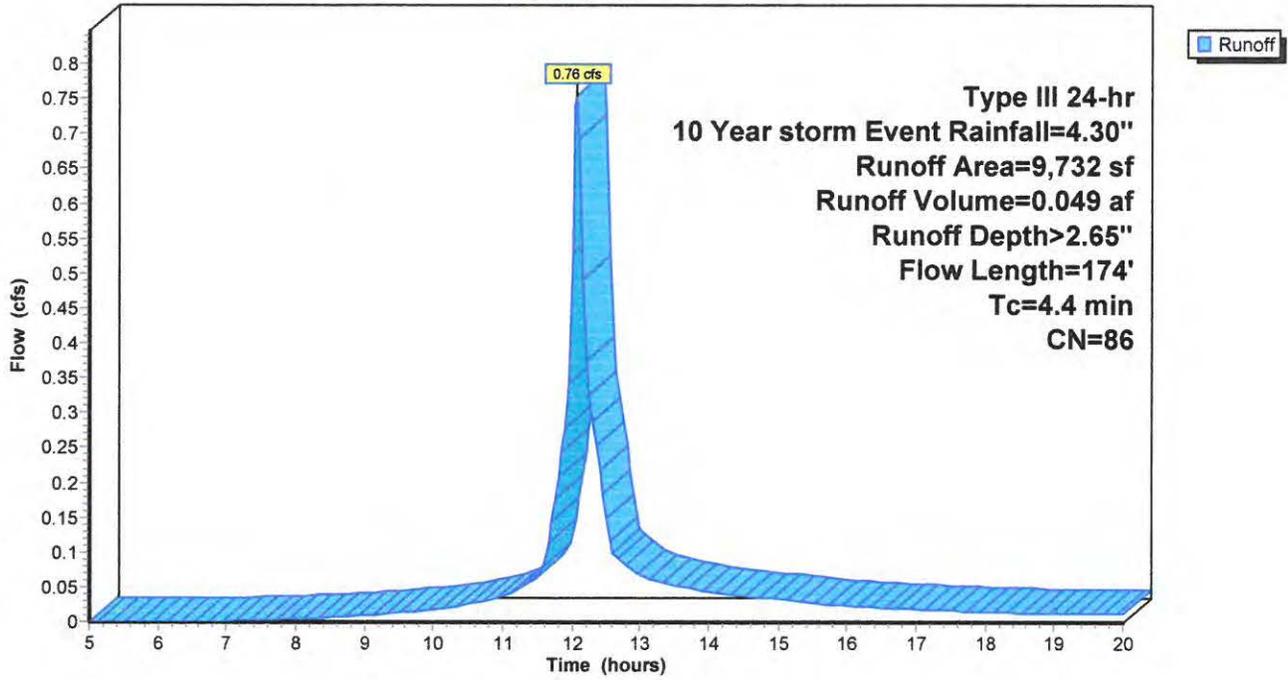
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10 Year storm Event Rainfall=4.30"

Area (sf)	CN	Description
4,350	71	Meadow, non-grazed, HSG C
5,382	98	Unconnected pavement, HSG A
9,732	86	Weighted Average
4,350		44.70% Pervious Area
5,382		55.30% Impervious Area
5,382		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	60	0.0100	0.91		<b>Sheet Flow,</b> Smooth surfaces n= 0.011 P2= 3.00"
2.9	30	0.0300	0.17		<b>Sheet Flow,</b> Range n= 0.130 P2= 3.00"
0.3	54	0.0400	3.00		<b>Shallow Concentrated Flow,</b> Grassed Waterway Kv= 15.0 fps
0.1	30	0.0400	9.83	7.72	<b>Pipe Channel,</b> 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
4.4	174	Total			

Subcatchment 1S: Watershed B

Hydrograph



**Proposed Condition Watershed B**

Prepared by SJR Engineering Inc.

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Type III 24-hr 10 Year storm Event Rainfall=4.30"

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**Summary for Subcatchment 3S: Watershed 2**

Runoff = 1.11 cfs @ 12.24 hrs, Volume= 0.102 af, Depth> 1.97"

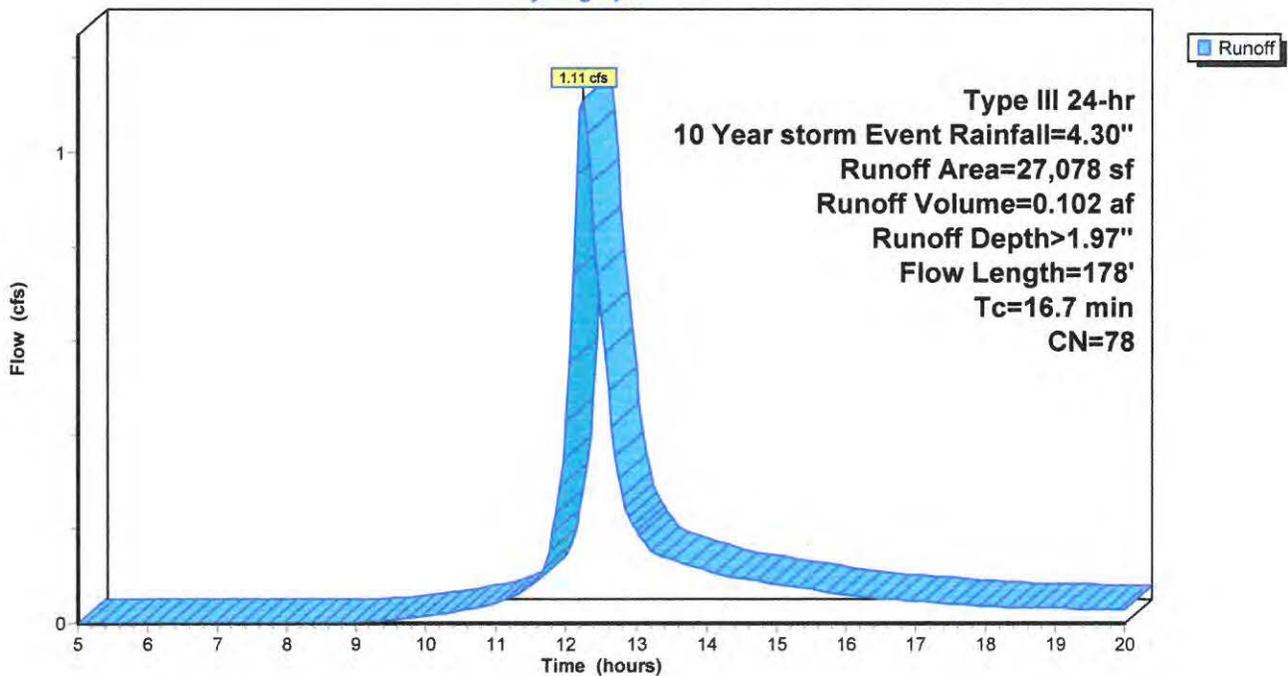
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10 Year storm Event Rainfall=4.30"

Area (sf)	CN	Description
7,700	39	>75% Grass cover, Good, HSG A
4,117	74	>75% Grass cover, Good, HSG C
* 15,261	98	Paved parking
27,078	78	Weighted Average
11,817		43.64% Pervious Area
15,261		56.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	78	0.0200	1.27		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"
15.7	100	0.0050	0.11		Sheet Flow, Range n= 0.130 P2= 3.00"
16.7	178	Total			

**Subcatchment 3S: Watershed 2**

Hydrograph



**Proposed Condition Watershed B**

Prepared by SJR Engineering Inc.

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Type III 24-hr 10 Year storm Event Rainfall=4.30"

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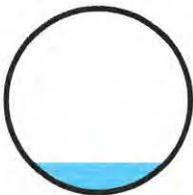
**Summary for Reach 2R: Design Point B**

Inflow Area = 0.845 ac, 56.08% Impervious, Inflow Depth > 1.10" for 10 Year storm Event event  
Inflow = 0.27 cfs @ 12.98 hrs, Volume= 0.077 af  
Outflow = 0.27 cfs @ 12.99 hrs, Volume= 0.077 af, Atten= 0%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Max. Velocity= 3.20 fps, Min. Travel Time= 0.1 min  
Avg. Velocity = 1.85 fps, Avg. Travel Time= 0.2 min

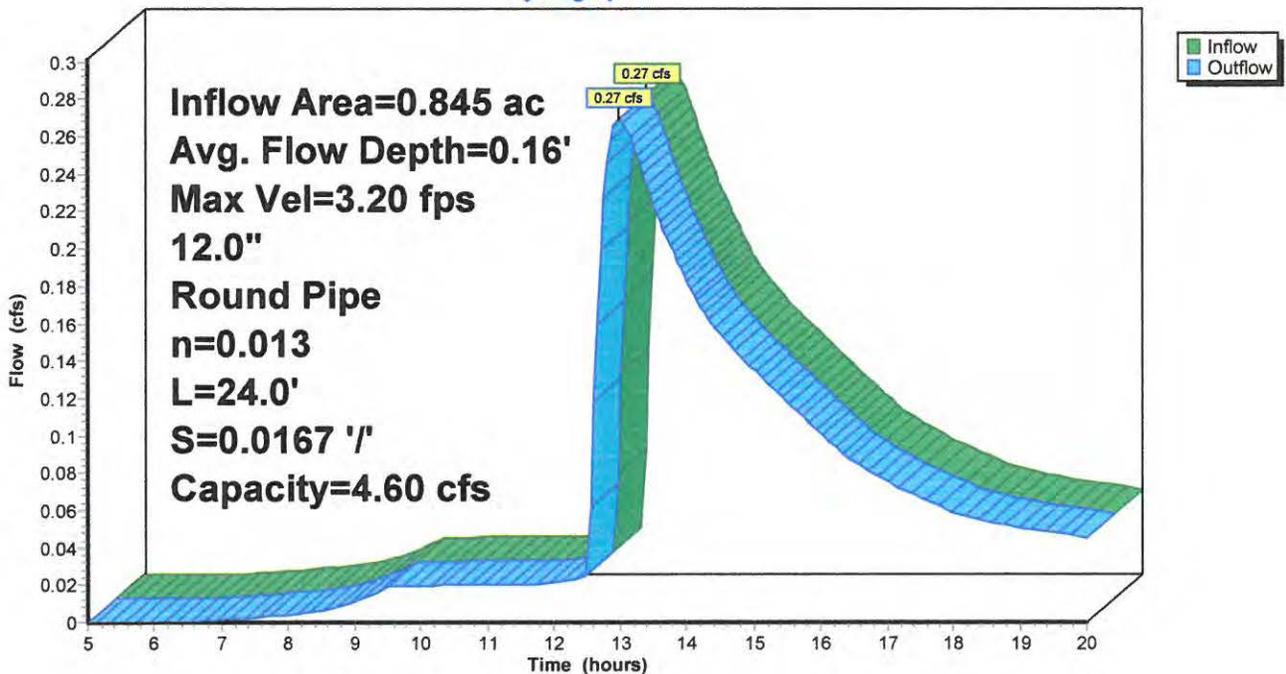
Peak Storage= 2 cf @ 12.99 hrs  
Average Depth at Peak Storage= 0.16'  
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.60 cfs

12.0" Round Pipe  
n= 0.013  
Length= 24.0' Slope= 0.0167 '/'  
Inlet Invert= 202.20', Outlet Invert= 201.80'



**Reach 2R: Design Point B**

**Hydrograph**



**Summary for Pond 4P: Soil Filter Pond 2**

Inflow Area = 0.845 ac, 56.08% Impervious, Inflow Depth > 2.15" for 10 Year storm Event event  
 Inflow = 1.47 cfs @ 12.20 hrs, Volume= 0.151 af  
 Outflow = 0.27 cfs @ 12.98 hrs, Volume= 0.077 af, Atten= 82%, Lag= 47.3 min  
 Primary = 0.27 cfs @ 12.98 hrs, Volume= 0.077 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 205.61' @ 12.98 hrs Surf.Area= 4,121 sf Storage= 3,603 cf

Plug-Flow detention time= 170.8 min calculated for 0.077 af (51% of inflow)  
 Center-of-Mass det. time= 89.0 min ( 884.8 - 795.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	202.10'	14,629 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
202.10	1	0	0
204.49	2	4	4
204.50	2,465	12	16
205.00	3,074	1,385	1,401
206.00	4,784	3,929	5,330
207.00	13,815	9,300	14,629

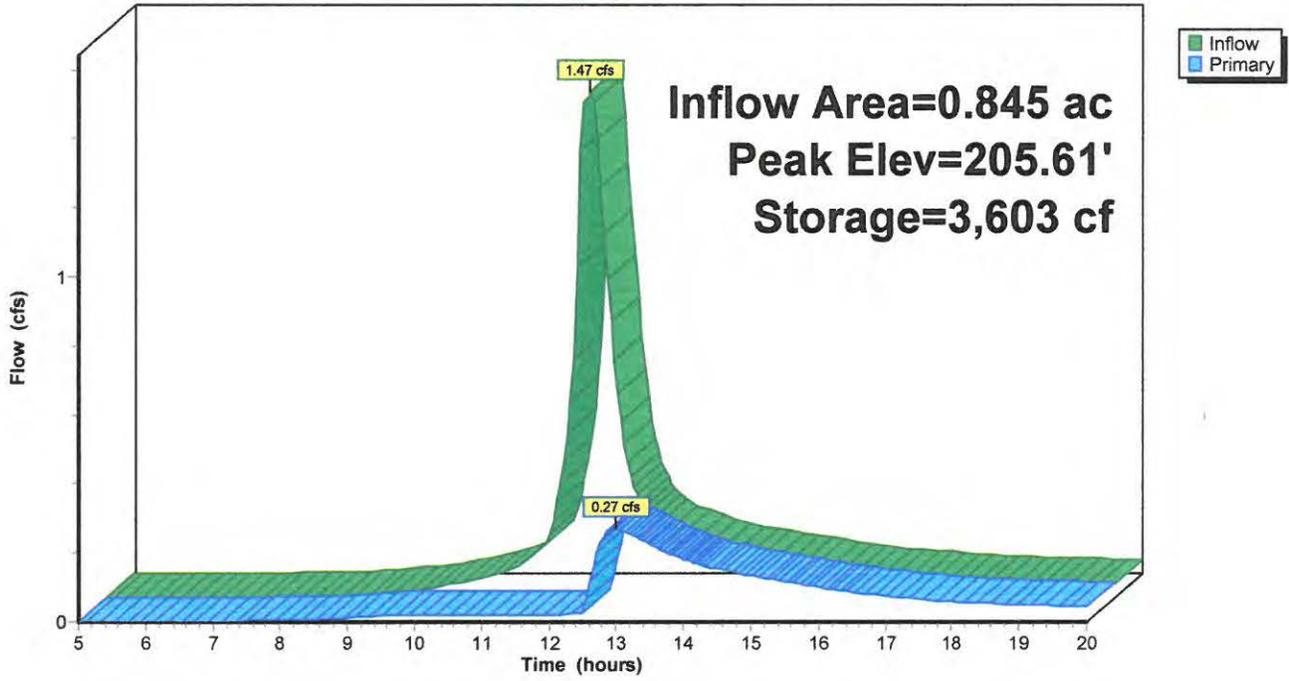
Device	Routing	Invert	Outlet Devices
#1	Primary	202.00'	12.0" Round Culvert L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 202.00' / 201.60' S= 0.0100 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	202.10'	0.7" Vert. Orifice/Grate C= 0.600
#3	Device 1	205.50'	24.0" W x 2.0" H Vert. Orifice/Grate C= 0.600
#4	Device 1	206.00'	48.0" W x 6.0" H Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.27 cfs @ 12.98 hrs HW=205.61' (Free Discharge)

- 1=Culvert (Passes 0.27 cfs of 6.67 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 0.02 cfs @ 8.99 fps)
- 3=Orifice/Grate (Orifice Controls 0.24 cfs @ 1.07 fps)
- 4=Orifice/Grate ( Controls 0.00 cfs)

Pond 4P: Soil Filter Pond 2

Hydrograph



**Proposed Condition Watershed B**

Type III 24-hr 25 Year storm Event Rainfall=5.40"

Prepared by SJR Engineering Inc.

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

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

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

**Subcatchment 1S: Watershed B**

Runoff Area=9,732 sf 55.30% Impervious Runoff Depth>3.62"  
Flow Length=174' Tc=4.4 min CN=86 Runoff=1.02 cfs 0.067 af

**Subcatchment 3S: Watershed 2**

Runoff Area=27,078 sf 56.36% Impervious Runoff Depth>2.84"  
Flow Length=178' Tc=16.7 min CN=78 Runoff=1.61 cfs 0.147 af

**Reach 2R: Design Point B**

Avg. Flow Depth=0.27' Max Vel=4.33 fps Inflow=0.76 cfs 0.140 af  
12.0" Round Pipe n=0.013 L=24.0' S=0.0167 '/' Capacity=4.60 cfs Outflow=0.76 cfs 0.139 af

**Pond 4P: Soil Filter Pond 2**

Peak Elev=205.80' Storage=4,391 cf Inflow=2.08 cfs 0.215 af  
Outflow=0.76 cfs 0.140 af

**Total Runoff Area = 0.845 ac Runoff Volume = 0.215 af Average Runoff Depth = 3.05"**  
**43.92% Pervious = 0.371 ac 56.08% Impervious = 0.474 ac**

**Proposed Condition Watershed B**

Type III 24-hr 25 Year storm Event Rainfall=5.40"

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**Summary for Subcatchment 15: Watershed B**

Runoff = 1.02 cfs @ 12.06 hrs, Volume= 0.067 af, Depth> 3.62"

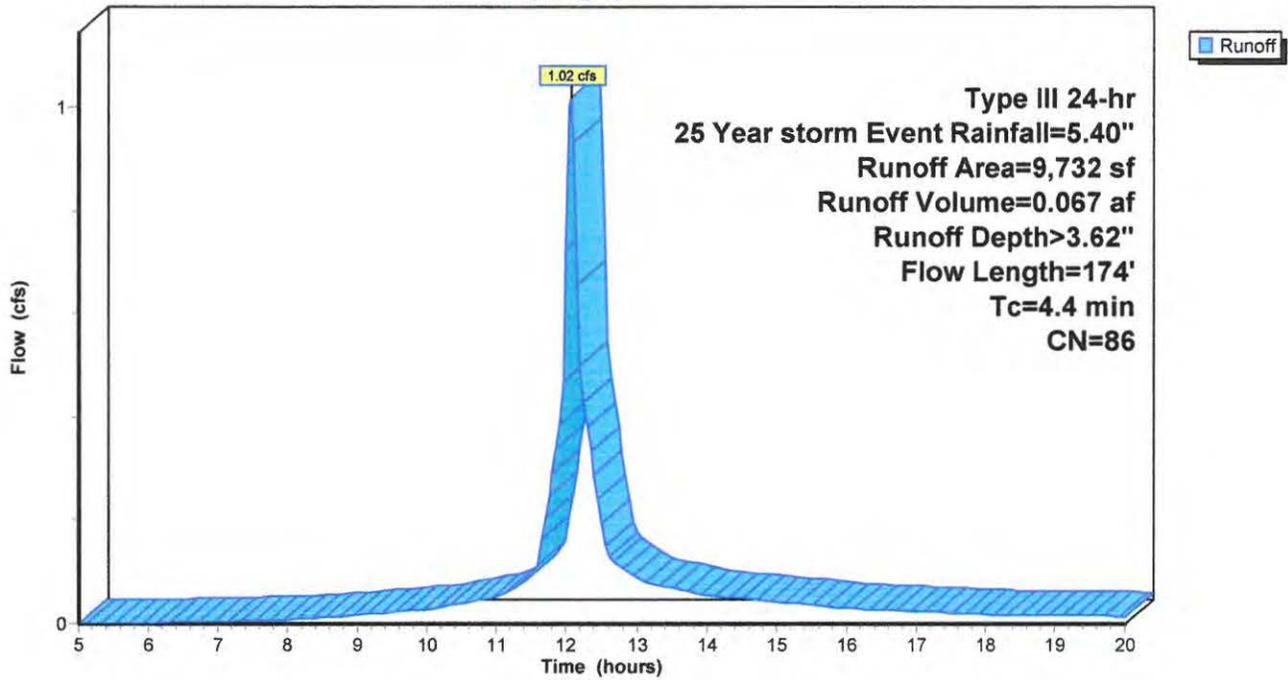
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 25 Year storm Event Rainfall=5.40"

Area (sf)	CN	Description
4,350	71	Meadow, non-grazed, HSG C
5,382	98	Unconnected pavement, HSG A
9,732	86	Weighted Average
4,350		44.70% Pervious Area
5,382		55.30% Impervious Area
5,382		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	60	0.0100	0.91		<b>Sheet Flow,</b> Smooth surfaces n= 0.011 P2= 3.00"
2.9	30	0.0300	0.17		<b>Sheet Flow,</b> Range n= 0.130 P2= 3.00"
0.3	54	0.0400	3.00		<b>Shallow Concentrated Flow,</b> Grassed Waterway Kv= 15.0 fps
0.1	30	0.0400	9.83	7.72	<b>Pipe Channel,</b> 12.0" Round Area= 0.8 sf Perim= 3.1' n= 0.25' n= 0.012
4.4	174	Total			

Subcatchment 1S: Watershed B

Hydrograph



**Proposed Condition Watershed B**

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Type III 24-hr 25 Year storm Event Rainfall=5.40"

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**Summary for Subcatchment 3S: Watershed 2**

Runoff = 1.61 cfs @ 12.23 hrs, Volume= 0.147 af, Depth> 2.84"

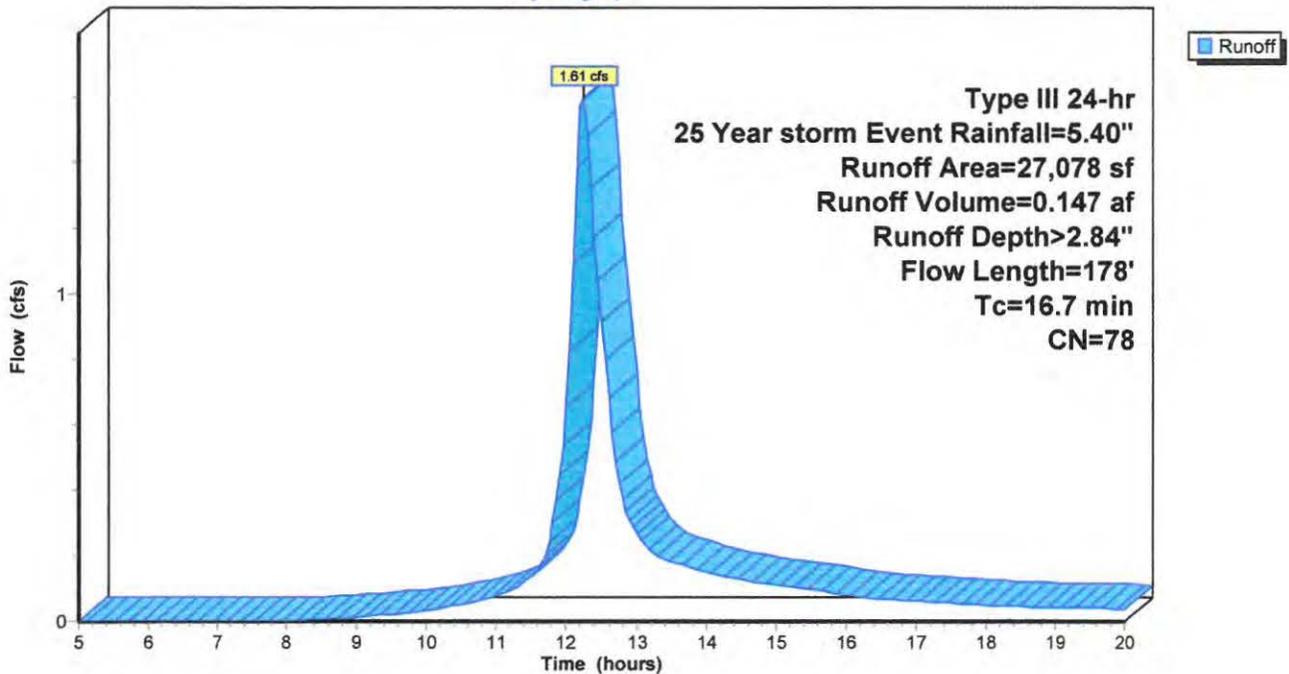
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 25 Year storm Event Rainfall=5.40"

Area (sf)	CN	Description
7,700	39	>75% Grass cover, Good, HSG A
4,117	74	>75% Grass cover, Good, HSG C
* 15,261	98	Paved parking
27,078	78	Weighted Average
11,817		43.64% Pervious Area
15,261		56.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	78	0.0200	1.27		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.00"
15.7	100	0.0050	0.11		Sheet Flow, Range n= 0.130 P2= 3.00"
16.7	178	Total			

**Subcatchment 3S: Watershed 2**

Hydrograph



**Proposed Condition Watershed B**

Prepared by SJR Engineering Inc.

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Type III 24-hr 25 Year storm Event Rainfall=5.40"

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**Summary for Reach 2R: Design Point B**

Inflow Area = 0.845 ac, 56.08% Impervious, Inflow Depth > 1.98" for 25 Year storm Event event  
Inflow = 0.76 cfs @ 12.63 hrs, Volume= 0.140 af  
Outflow = 0.76 cfs @ 12.63 hrs, Volume= 0.139 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Max. Velocity= 4.33 fps, Min. Travel Time= 0.1 min  
Avg. Velocity = 2.03 fps, Avg. Travel Time= 0.2 min

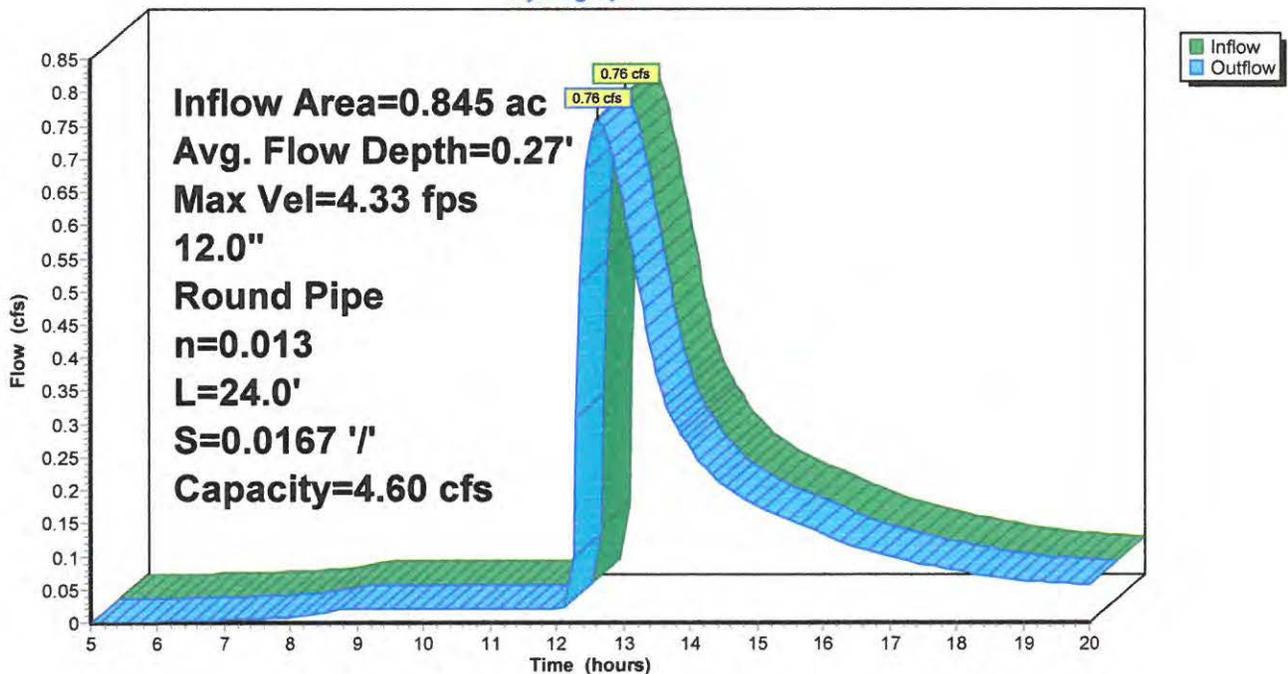
Peak Storage= 4 cf @ 12.62 hrs  
Average Depth at Peak Storage= 0.27'  
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.60 cfs

12.0" Round Pipe  
n= 0.013  
Length= 24.0' Slope= 0.0167 '/'  
Inlet Invert= 202.20', Outlet Invert= 201.80'



**Reach 2R: Design Point B**

**Hydrograph**



**Proposed Condition Watershed B**

Type III 24-hr 25 Year storm Event Rainfall=5.40"

Prepared by SJR Engineering Inc.

Printed 3/7/2020

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**Summary for Pond 4P: Soil Filter Pond 2**

Inflow Area = 0.845 ac, 56.08% Impervious, Inflow Depth > 3.05" for 25 Year storm Event event  
 Inflow = 2.08 cfs @ 12.19 hrs, Volume= 0.215 af  
 Outflow = 0.76 cfs @ 12.63 hrs, Volume= 0.140 af, Atten= 63%, Lag= 26.0 min  
 Primary = 0.76 cfs @ 12.63 hrs, Volume= 0.140 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 205.80' @ 12.63 hrs Surf.Area= 4,436 sf Storage= 4,391 cf

Plug-Flow detention time= 133.2 min calculated for 0.139 af (65% of inflow)  
 Center-of-Mass det. time= 62.8 min ( 850.9 - 788.1 )

Volume	Invert	Avail.Storage	Storage Description
#1	202.10'	14,629 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
202.10	1	0	0
204.49	2	4	4
204.50	2,465	12	16
205.00	3,074	1,385	1,401
206.00	4,784	3,929	5,330
207.00	13,815	9,300	14,629

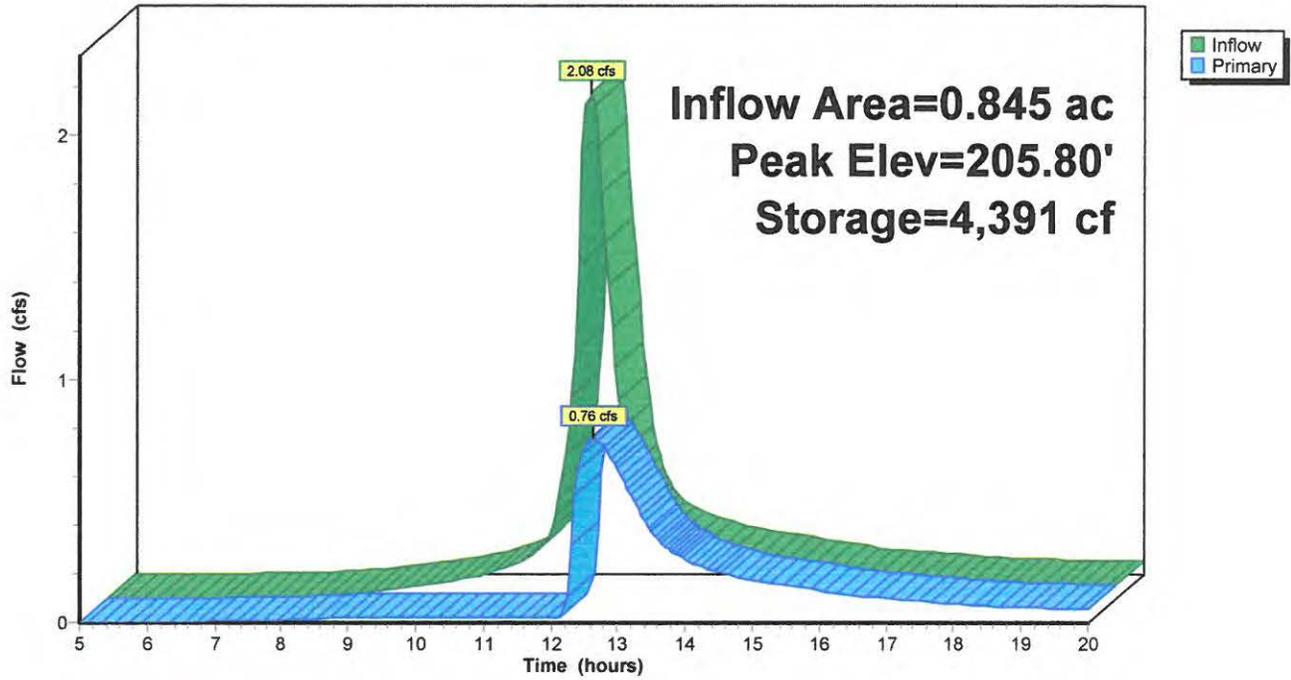
Device	Routing	Invert	Outlet Devices
#1	Primary	202.00'	12.0" Round Culvert L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 202.00' / 201.60' S= 0.0100 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	202.10'	0.7" Vert. Orifice/Grate C= 0.600
#3	Device 1	205.50'	24.0" W x 2.0" H Vert. Orifice/Grate C= 0.600
#4	Device 1	206.00'	48.0" W x 6.0" H Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.76 cfs @ 12.63 hrs HW=205.80' (Free Discharge)

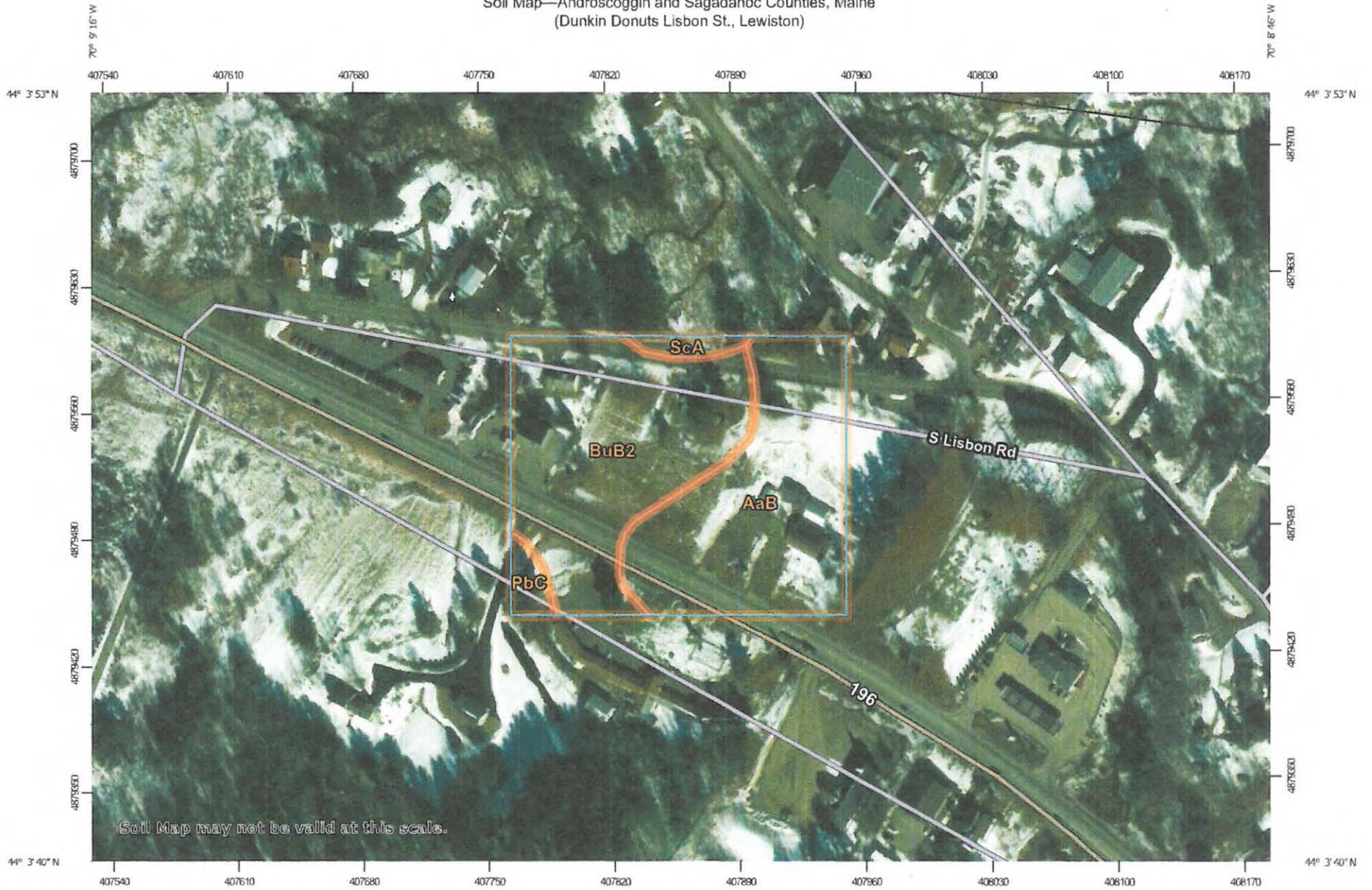
- 1=Culvert (Passes 0.76 cfs of 6.87 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 0.02 cfs @ 9.22 fps)
- 3=Orifice/Grate (Orifice Controls 0.74 cfs @ 2.21 fps)
- 4=Orifice/Grate ( Controls 0.00 cfs)

Pond 4P: Soil Filter Pond 2

Hydrograph



Soil Map—Androscoggin and Sagadahoc Counties, Maine  
(Dunkin Donuts Lisbon St., Lewiston)



Map Scale: 1:3,000 if printed on A landscape (11" x 8.5") sheet.

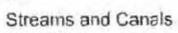


Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84



Soil Map—Androscoggin and Sagadahoc Counties, Maine  
(Dunkin Donuts Lisbon St., Lewiston)

### MAP LEGEND

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

### 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 20, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Oct 13, 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	3.3	45.4%
BuB2	Lamoine-Buxton complex, 0 to 8 percent slopes	3.6	49.7%
PbC	Paxton loam, 8 to 15 percent slopes	0.2	2.7%
ScA	Scantic silt loam, 0 to 3 percent slopes	0.2	2.2%
<b>Totals for Area of Interest</b>		<b>7.2</b>	<b>100.0%</b>

March 9, 2020

Mr. Mike Gotto  
Stoneybrook Consultants  
PO Box 459  
Turner, Maine 04282



Re: Water Quality Analysis for Conner Realty, 1896 Lisbon Street,  
Lewiston, Maine

Dear Mike,

Conner Realty is proposing to construct a 7,083 sf building plus ancillary parking and traffic maneuvering areas around the proposed building.

We have prepared a stormwater quantity analysis, under separate cover, in order to properly evaluate existing and proposed stormwater quantity impacts from the development. The Maine DEP Chapter 500 rules require that at least 80% of the site be treated through the use of wetponds, 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 2 combined soil filter/detention basins within the project.

### Water quality

We have designed the project to redirect impervious area runoff into a soil filter pond in the southerly end of the project. The total proposed disturbed area on the project parcel is 107867 sf. We have calculated 60,513 sf of the new impervious area (parking lot and building roof) and 33,645 sf of the landscaped area of the project would be treated through the proposed soil filter ponds. The remaining land is untreated lawns/meadows that are similar to the existing condition.

### **Soil Filter Pond 1**

The soil filter pond is a combined stormwater quality enhancement and stormwater quantity control. 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 contained within the pond and detained by orifices in the stormwater control manhole. Stormwater from the project is captured and treated through this filtering device (soil filter media).

A new soil filter pond 1 is to be constructed that has a ground elevation of 201.00 (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 45,252 sf of impervious area runoff and 21,828 sf of landscape area runoff will enter the pond. Therefore, we are required to have a minimum of 2,700 sf of surface filter area. We have provided 2,857 sf of available area within contour 201.0.

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 4499 cf of pond storage above the soil filter surface area (elevation 201.0). Our design has provided 5338 cf of storage area at elevation 201.9 (11" in depth).

Our pond treatment design has 5,338 cf of storage available to elevation 201.9. Storage between 201.0 and 201.9 will infiltrate through the soil filter media. Water quality enhancement flows are detained within the soil filter pond for approximately 24.7 hours by restricting the discharge flow through a small 1.1" orifice control that is located within the stormwater control structure. The pond has been designed to operate as a detention pond for calculated 2/10/25 year storm events in order to keep post development flows the same or less than pre-development flows.

## **Soil Filter Pond 2**

We have designed Pond 2 in the same fashion as Pond 1. Soil filter pond 2 is a combined stormwater quality enhancement and stormwater quantity control. 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 contained within the pond and detained by orifices in the stormwater control manhole. Stormwater from the project is captured and treated through this filtering device (soil filter media).

A new soil filter pond 2 is to be constructed that has a ground elevation of 204.5 (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 15,261 sf of impervious area runoff and 11,817 sf of landscape area runoff will enter the pond. Therefore, we are required to have a minimum of 999 sf of surface filter area. We have provided 2,465 sf of available area within contour 204.5.

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 1,666 cf of pond storage above the soil filter surface area (elevation 204.5). Our design has provided 2,927 cf of storage area at elevation 205.5 (12" in depth).

Our pond treatment design has 2927 cf of storage available to elevation 205.5. Storage between 204.5 and 205.5 will infiltrate through the soil filter media. Water quality enhancement flows are detained within the soil filter pond for approximately 40.6 hours by restricting the discharge flow through a small 3/4" orifice control that is located within the stormwater control structure. The pond has been designed to operate as a detention pond for calculated 2/10/25 year storm events in order to keep post development flows the same or less than pre-development flows.

## **95% Impervious treatment**

We have calculated 60,513 sf of project impervious area will be directed into the soil filter pond areas. The total impervious area on the project parcel has

been calculated to be 62,651 sf. Dividing these two numbers results in a 96.6% impervious area treatment meeting the required treatment standard.

**80% total site treatment**

We have calculated 94,158 sf proposed impervious and landscape area will be treated in the soil filter ponds. The project total disturbed area (proposed impervious and landscape area on the parcel) has been calculated to be 107,867 sf. Dividing the two numbers results in a project treatment ratio of 87.3%, which 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.





SJR ENGINEERING

Subject: SOIL FILTER POND 1+2

Job #: \_\_\_\_\_

	<u>IMPERV.</u>	<u>LANDSCAPE</u>	<u>TOTAL</u>
<u>WATERSHED 1</u>	45252	21828	67080
<u>WATER SITED 2</u>	15261	11817	27078
	60513	33645	94158

MINIMUM SIZE

BASIN 1  $45252(5\%) + 21828(2\%) = 27005\text{ SF}$   
28575 SF PROVIDED @ EL. 201.0

BASIN 2  $15261(5\%) + 11817(2\%) = 999\text{ SF}$   
2465 SF PROVIDED @ EL 204.5

LESS THAN 18" TREATMENT

BASIN 1  $45252(1/12) + 21828(1/12) = 4499\text{ CF}$   
5338 CF PROVIDED @ EL. 201.90  
BASIN BOTTOM EL 201.0

BASIN 2  $15261(1/12) + 11817(1/12) = 1666\text{ CF}$   
2927 CF PROVIDED @ EL 205.5  
BASIN BOTTOM EL 204.5

24-48 HOUR DETENTION

BASIN 1  $5338\text{ CF} / .06(60)(60) = 24.7\text{ HRS OK}$

BASIN 2  $2927\text{ CF} / .02(60)(60) = 40.6\text{ HRS OK}$

95% IMPERVIOUS TREATMENT80% DISTURBED AREA TREATMENT

# Conner Realty project, 1896 Lisbon St., Lewiston

## **Best Management Practices and Maintenance Plan**

Date: March 2020

Conner Realty 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**
  - Soil Filter media inspection and maintenance
  - Outlet Control Structure inspection and 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**
  - Structure inspection and maintenance
  - Inlet and Outlet inspection
  - Debris removal and disposal
- **Buffers/Landscaping**
  - Landscaping inspection and maintenance
  - Landscaping turf inspection and maintenance
  - Debris removal and disposal

The Owners representative will inspect the drainage system, 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 ponds after every major storm event in the first few months to ensure proper function. Thereafter, the soil filter basin should be inspected bi-annually to ensure that they draining within 24 hours. Sediment shall be removed from the sediment forebay when sediment is greater than 12" within the forebay. The removed sediment shall be hauled off site and disposed in an approved location.

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.



## 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 & 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 basins prior to turning project over to the Owners. After project turnover, the Owner shall be the responsible party for inspecting and maintaining proper functioning of all stormwater conveyance practices and measures. The Owner may assign an environmental manager to carry out specific tasks identified below.

### 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.

## **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.

## Post Construction Stormwater Management Plan

1896 LISBON STREET  
LEWISTON, MAINE

### MS4 Area

Stormwater discharge from two soil filters will enter into the City's MS4 Area. A qualified Third Party Inspector will be engaged by the Applicant's representative:

Conner Realty LLC  
1896 Lisbon Street  
Lewiston, Maine

at least annually to inspect the two soil filters and other stormwater related features in accordance with the approved Post-Construction Stormwater Management Plan (PCSMP). If the soil filters 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.

**EROSION AND SEDIMENT CONTROL**

The following plans are included in the Site Review Application to satisfy the Basic Standards Submission requirements:

Sheet 1	Site Plan
Sheet 2	Grading and Utility Plan
Sheet 3	Construction Details
Sheet 4	Notes + Details
Sheet 5	Filter Basin Details
Sheet WS-1	Existing Watershed
Sheet WS-2	Proposed Watershed

The Basic Standards herein are for temporary and permanent measures directly associated with the construction activities at the site.

Erosion and sediment control on Site will be implemented in accordance with the "Maine Erosion and Sediment Control BMPs" published by the MDEP. The following are general guidelines and preventative measures to control erosion and sediment during construction activities.

General Practices

- Sediment barriers (e.g., silt fence) will be installed prior to beginning soil disturbance activities (e.g., grubbing, grading) at the perimeter of the property. Sediment barriers will be maintained until the disturbed area is permanently stabilized.
- Exposed soils that will not be worked for more than 7 days will be stabilized with mulch or other non-erodible cover
- Erosion and sediment control features will be inspected and repaired weekly and before and after every storm event.
- All temporary soil stockpiles will be surrounded by silt fence and otherwise protected from creating down-slope sediment issues
- Temporary erosion and sediment control measures will be removed within 30 days after permanent stabilization is attained.

Temporary Erosion and Sediment Control Measures

Temporary erosion and sediment control measures will be in-place prior to beginning construction activities and will be maintained for the duration of the construction project. Silt fencing will be installed along the property lines adjacent to all disturbed areas.

Temporary Mulch/Vegetation

Exposed soil areas that will not be worked for more than 7 days will be mulched. Mulch shall consist of hay or straw that is air-dried, free of undesirable seeds and coarse materials. Mulch will be applied at 2 bales (70-90 pounds) per 1,000 square feet to cover 75-90% of the ground surface. Mulch will be kept moist or anchored in-place to prevent wind disturbance. Erosion control mix and chemical mulches with binder can also be used on site if applied in accordance with MDEP's BMPs.

Temporary vegetation will be used in areas that will not be brought to final grade for a year or less. Preparation of the seedbed will be necessary to ensure sufficient vegetative growth. Soil tests are recommended to determine the appropriate application rate of lime and fertilizer. If soil testing is not feasible, then fertilizer will be applied at a rate of 15 pounds per 1,000 square feet of 10-10-10 (N-P205-K20) or equivalent. Apply limestone (equivalent to 50% calcium plus magnesium oxide) at a rate of 150 pounds per 1,000 square feet. If the soil has been compacted during construction then the soil should be loosened to a depth of approximately 2 inches. Seeding recommendations are provided in the table below.

TEMPORARY GROUND STABILIZATION		
Seed	Pounds per 1,000 sq ft	Recommended Seeding Dates
Winter Rye	2.5	August 30-October 1
Oats	2.0	April 1-July 1 August 30-September 30
Annual Ryegrass	1.0	April 1-July 1
Sudangrass	1.0	May 15-August 30
Perennial	1.0	August 30-September 30

Note: Mulch shall be applied at the rates previously specified following the seed application.

Permanent Stabilization

Areas that will not be worked for more than one year or have been final graded will be permanently stabilized within 7 days. Permanent stabilization at this site will include road sub-base/pavement, permanent seeding, and permanent landscaping. Permanent seeding will be performed upon completion of construction activities. The type of seeding mix to be used for permanent seeding is noted on Sheet 4 NOTES AND DETAILS. All disturbed areas not otherwise stabilized shall be graded, smoothed, and prepared for final seeding. Four inches of loam (minimum) shall be spread over the disturbed areas and smoothed to a uniform surface. Soil tests are recommended to determine the appropriate application rate of lime and fertilizer. If soil testing is not feasible, then fertilizer can be applied at a rate of 15 pounds per 1,000 square feet of 10-20-20 (N-P205-K20) or equivalent. Apply

#### Post Construction Stormwater Management Plan

limestone (equivalent to 50% calcium plus magnesium oxide) at a rate of 150 pounds per 1,000 square feet. Both the lime and fertilizer should be worked into the ground to a depth of 4 inches as practical. The seedbed should be subsequently rolled to firm prior to seeding. Mulch will be applied at 2 bales (70-90 pounds) per 1,000 square feet to cover 75-90% of the ground surface. Mulch will be kept moist or anchored in-place to prevent wind disturbance. Erosion control mix and chemical mulches with binder can also be used on site if applied in accordance with MDEP's BMPs.

If hydro-seeding is used lime and fertilizer may be added with the seed and applied simultaneously. The use of straw mulch and adhesive material or 500 pounds of wood fiber mulch provides sufficient erosive protection. Seeding rates will be increased by 10% if hydro-seeding practices are employed.

All construction activities at the site are planned to be completed by or before the fall of 2020. In the event that construction occurs after 45 days prior to the first killing frost (October 15), dormant seeding will be performed. The seed mixture described on Sheet 4 Construction Details would be doubled. Mulch should be applied according to the temporary mulching practices discussed previously. Dormant seeding requires inspection in the Spring. All areas where cover is inadequate shall be immediately reseeded and mulched as soon as possible.

Erosion and sediment control features will not be removed until after all disturbed areas have been stabilized with permanent seeding exhibiting at least 90% vegetative cover.

#### Dust Control

Dust control methods will be employed on site to prevent movement of dust from exposed soil surfaces that could potentially create hazards to wildlife, humans, or plant life both onsite and offsite. Dust generated by activities at the Site, including dust associated with traffic to and from the Site, will be controlled by sweeping, paving, watering or other best management practices for control of fugitive emissions.

Preventive measures will include the following, as needed:

- Traffic will be restricted to predetermined routes (the existing driveways). Exit and entrance during construction will be limited to these locations.
- Natural vegetation and existing paved areas will be maintained to the extent practical.
- Excavation activities will be conducted in phases to reduce the area of land disturbed at any one time.
- Mulching and vegetative practices (e.g., temporary and permanent mulching, temporary and permanent vegetative cover) will be employed to reduce the need for dust control.

#### Post Construction Stormwater Management Plan

- Paved surfaces and roadways will be swept (e.g., mechanical sweeper) where necessary to prevent dust buildup.

Construction will begin immediately following the receipt of all necessary permits. The anticipated construction timeframe is spring-summer 2020.

### **INSPECTION AND MAINTENANCE PLAN**

#### Construction Inspections

Inspections and maintenance of erosion and sedimentation control measures and stormwater control facilities will be performed during construction. Inspections will include:

- Disturbed and impervious areas.
- Erosion Control Measures.
- Materials storage areas exposed to precipitation.
- Vehicle entry and exit locations.
- Catch Basins

These areas will be inspected at least once per week as well as before and after a storm event, and prior to completing permanent stabilization measures.

An inspection check list sheet is included at the end of this section. The Contractor will be responsible for maintaining and preserving all erosion and sediment control features associated with the Site during construction. Any problems, damage, or costs directly associated with the performance of or lack of erosion control measures and maintenance are the sole responsibility of the Contractor.

In addition to the above, the applicant will retain the services of a professional engineer to inspect the construction and stabilization of all stormwater management structures. If necessary, the inspecting engineer will interpret the pond's construction plan for the contractor. Once all stormwater management structures are constructed and stabilized, the inspecting engineer will notify the department in writing within 30 days to state that the pond has been completed.

#### Post-Construction Inspections

The site Applicant will be responsible for inspection and maintenance of erosion and sedimentation control measures, stormwater structures, and stormwater BMPs and/or ensuring that the inspection and maintenance tasks are completed after construction is completed. An inspection checklist is included at the end of this section.

### Post Construction Stormwater Management Plan

The Applicant shall pay for the services of the following qualified Third Party to conduct inspections of the site, as needed, for compliance with the provisions of the Erosion and Sedimentation Control Plan.

The Third Party inspector will provide the City of Lewiston and the Owner documentation on management of the stormwater facilities as required.

### Housekeeping

During and after construction, good housekeeping practices will be employed to minimize potential environmental impacts, specifically:

- **Spill Prevention:** Both petroleum and non-petroleum products utilized during construction will be stored in compatible and properly labeled containers. When not in use, these containers will be closed and stored in a secure area. A spill kit will be kept in close proximity to the secured area. Temporary fuel storage tanks mobilized to the site for construction will be double-walled. Both preventative and routine maintenance will be conducted to minimize the potential for fuel releases. These activities will be conducted offsite during construction.
- **Groundwater Protection:** Petroleum, non-petroleum, and other hazardous materials will not be handled on site.
- **Fugitive Sediment and Dust:** During construction, tracking of mud from construction vehicles into the public road will be minimized. During wet periods, the public road will be swept weekly, at a minimum, to control the amount of mud leaving the Site. During dry periods, fugitive sediment and dust will be controlled on site using a water truck, or calcium chloride application, as necessary.
- **Debris and other Materials.** Litter, construction debris and chemicals will be stored in a manner such that the exposure to stormwater is minimized. Litter and construction debris will be separated and containerized, as necessary, for proper disposal. Chemicals will be stored in compatible and properly labeled containers and stored in a secure area equipped with a spill kit.

CONSTRUCTION INSPECTION  
AND  
MAINTENANCE FORMS

**CONSTRUCTION**

**EROSION AND SEDIMENTATION CONTROL MAINTENANCE LOG**  
**1896 LISBON ST., LEWISTON, MAINE**

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		
<b>DATE:</b>	<b>BY:</b>	<b>COMPANY:</b>	<b>QUALS/POSITION:</b>

**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.) Inspect ponds for stability, visible erosion, vegetation growth, plugged inlets/outlets, functioning control structure, water discharge timing, soil filter media composition (see plans and BMP's)

## EROSION AND SEDIMENTATION CONTROL MAINTENANCE LOG

1896 LISBON ST., LEWISTON, MAINE

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		
Stormwater System	Yes / No		
<b>DATE:</b>	<b>BY:</b>	<b>COMPANY:</b>	<b>QUALS/POSITION:</b>

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.

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.) Inspect ponds for stability, visible erosion, vegetation growth, plugged inlets/outlets, functioning control structure, water discharge timing, soil filter media composition (see plans and BMP's)

# CITY OF LEWISTON

## Annual Stormwater Management Facilities Certification

I, \_\_\_\_\_, certify the following:

1. I am making this Annual Stormwater Management Facilities Certification for the following property:

1 1896 Lisbon Street, Lewiston, Maine

2. The owner of the Property is:

3. I am a Qualified Third-Party Inspector hired by the owner of the Property.

4. I have knowledge of erosion and sedimentation control and have reviewed approved Post-Construction Stormwater Management Plan for the property.

5. On \_\_\_\_\_, I inspected the Stormwater Management Facilities, including but not limited to two catch basins and other stormwater related facilities.

6. At the time of my inspection of the Stormwater Management Facilities on the Property, I identified the following needs for routine maintenance or deficiencies in the Stormwater Management Facilities:

7. On \_\_\_\_\_, the Owner 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 5 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: \_\_\_\_\_

By: \_\_\_\_\_

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

Personally appeared the above-named \_\_\_\_\_,  
of \_\_\_\_\_, and acknowledged the  
foregoing Annual Certification to be said person's free act and deed in said capacity.

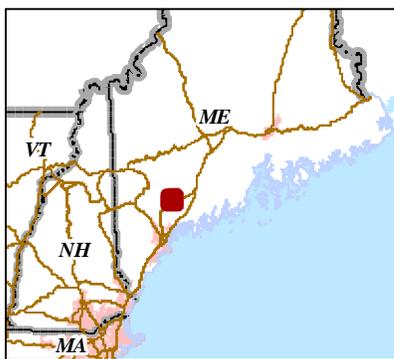
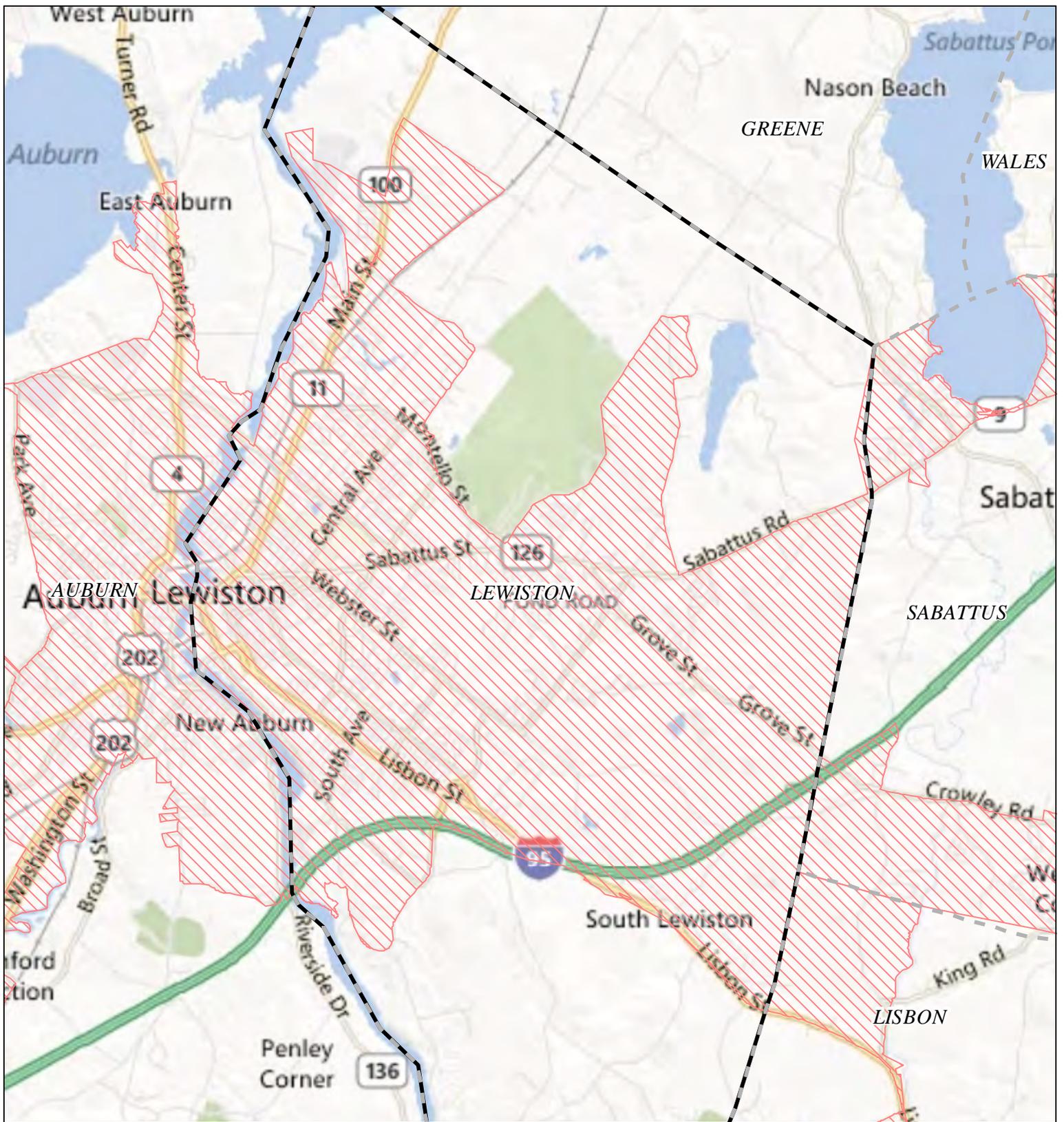
Before me, Notary Public, on this date: \_\_\_\_\_

Signature; \_\_\_\_\_

**Mail this certification to the City of Lewiston at the following  
address:**

Director of Planning and Code Enforcement  
City Building  
27 Pine Street  
Lewiston, Maine 04240

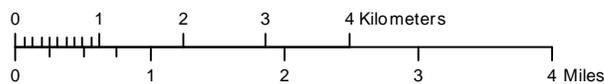
Director of Public Works  
103 Adams Avenue  
Lewiston, Maine 04240



NPDES Phase II Stormwater Program  
Automatically Designated MS4 Areas

**Lewiston ME**

 Regulated Area (2000 + 2010 Urbanized Area)



Town Population: 36 576  
Regulated Population: 33 768  
(Populations estimated from 2010 Census)



Urbanized Areas, Town Boundaries:  
US Census (2000, 2010)  
Base map © 2010 Microsoft Corporation  
and its data suppliers

**POST CONSTRUCTION STORMWATER MANAGEMENT PERFORMANCE GUARANTEE**

**Conner Realty LLC, 1896 Lisbon Street, Lewiston, Maine**

This performance guarantee is provided by Conner Realty, a corporation located in Lewiston, Maine 04243. Conner Realty, its successors, heirs, and assigns hereby acknowledge their legal obligation to repair, maintain, and replace the Stormwater Management Facilities at the “1896 Lisbon Street” project on the Lisbon Street property in accordance with the Conner Realty, 1896 Lisbon Street, Lewiston plan set and notes dated March 2020. This performance guarantee shall be valid until Conner Realty 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, catch basins, stormwater filter ponds, and ditching. 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.

\_\_\_\_\_  
Conner Realty

\_\_\_\_\_  
Date

\_\_\_\_\_  
Witness



**TEST PIT LOG**

Test Pit # **TP-1**

Project: New Building  
1896 Lisbon Street  
Lewiston, Maine

Project #: 20109  
Groundwater:  
Seepage at 3 ft

Contractor: Gendron Corporation

Ground Surface Elevation:

Equipment: Large Tracked Excavator

Reference: Grading and Utility Plan, March 2020, SJR Engineering

Summit Staff: B. Peterlein, P.E.

Date: 3/26/2020

Weather: Sunny

Depth (ft)	DESCRIPTION		
	ENGINEERING	GEOLOGIC/GENERAL	
1	Olive-Gray Silty CLAY, stiff, blocky, friable, moist, CL	GLACIAL MARINE	
2			
3			Slow seepage at 3 ft
4			
5			
6			Becomes gray at 6 ft
7	End of Test Pit at 7 ft		
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			



**TEST PIT LOG**

Test Pit # **TP-2**

Project: New Building  
1896 Lisbon Street  
Lewiston, Maine

Project #: 20109  
Groundwater:  
Seepage at 2 ft

Contractor: Gendron Corporation

Ground Surface Elevation:

Equipment: Large Tracked Excavator

Reference: Grading and Utility Plan, March 2020, SJR Engineering

Summit Staff: B. Peterlein, P.E.

Date: 3/26/2020

Weather: Sunny

Depth (ft)	DESCRIPTION	
	ENGINEERING	GEOLOGIC/GENERAL
1	Olive brown Silty SAND with Gravel, trace Clay, moist, compact, SM	FILL
2	Seepage at 2 ft	
3	Olive-brown Silty CLAY, stiff, blocky, mottled, friable, moist, CL	GLACIAL MARINE
4	Becomes olive-gray at 4 ft, damp to wet	
5		
6		
7		
8		
9		
10		
11	End of Test Pit at 11 ft	
12		
13		
14		
15		
16		
17		



**TEST PIT LOG**

Test Pit # **TP-3**

Project: New Building  
1896 Lisbon Street  
Lewiston, Maine

Project #: 20109  
Groundwater:  
Heavy seepage at 2.5 ft

Contractor: Gendron Corporation

Ground Surface Elevation:

Equipment: Large Tracked Excavator

Reference: Grading and Utility Plan, March 2020, SJR Engineering

Summit Staff: B. Peterlein, P.E.

Date: 3/26/2020

Weather: Sunny

Depth (ft)	DESCRIPTION	
	ENGINEERING	GEOLOGIC/GENERAL
1	Brown Silty SAND with Gravel, loose, damp, SM	FILL
2	Hit 4 inch thick concrete or granite slab	
3	Rounded Cobbles, free water seepage rapid	
4	End of Test Pit at 3 ft due to water	
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		



**TEST PIT LOG**

Test Pit # **TP-4**

Project: New Building  
1896 Lisbon Street  
Lewiston, Maine

Project #: 20109  
Groundwater:  
Seepage at 2 ft

Contractor: Gendron Corporation

Ground Surface Elevation:

Equipment: Large Tracked Excavator

Reference: Grading and Utility Plan, March 2020, SJR Engineering

Summit Staff: B. Peterlein, P.E.

Date: 3/26/2020

Weather: Sunny

Depth (ft)	DESCRIPTION	
	ENGINEERING	GEOLOGIC/GENERAL
1	Brown Silty SAND with Gravel, trace Clay, loose, damp, SM	FILL
2	Seepage slow at 2 ft	
3	Olive-brown Silty CLAY, trace very fine Sand in seams, stiff, blocky, mottled, CL	GLACIAL MARINE
4		
5		
6		
7		
8		
9		
10		
11	End of Test Pit at 10 ft	
12		
13		
14		
15		
16		
17		



**TEST PIT LOG**

Test Pit # **TP-5**

Project: New Building  
1896 Lisbon Street  
Lewiston, Maine

Project #: 20109  
Groundwater:  
Seepage at 1 ft

Contractor: Gendron Corporation

Ground Surface Elevation:

Equipment: Large Tracked Excavator

Reference: Grading and Utility Plan, March 2020, SJR Engineering

Summit Staff: B. Peterlein, P.E.

Date: 3/26/2020

Weather: Sunny

Depth (ft)	DESCRIPTION	
	ENGINEERING	GEOLOGIC/GENERAL
1	4" Dark brown Sandy SILT, trace rootlets, moist, ML	TOPSOIL
1	Brown Silty SAND, little Gravel, loose, moist, SM	FILL
2	Olive-brown Silty CLAY, stiff, blocky, mottled, CL	GLACIAL MARINE
3		
4		
5		
6		
6	End of Test Pit at 6 ft	
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		



**TEST PIT LOG**

Test Pit # **TP-6**

Project: New Building  
1896 Lisbon Street  
Lewiston, Maine

Project #: 20109  
Groundwater:  
Seepage at 3 ft

Contractor: Gendron Corporation

Ground Surface Elevation:

Equipment: Large Tracked Excavator

Reference: Grading and Utility Plan, March 2020, SJR Engineering

Summit Staff: B. Peterlein, P.E.

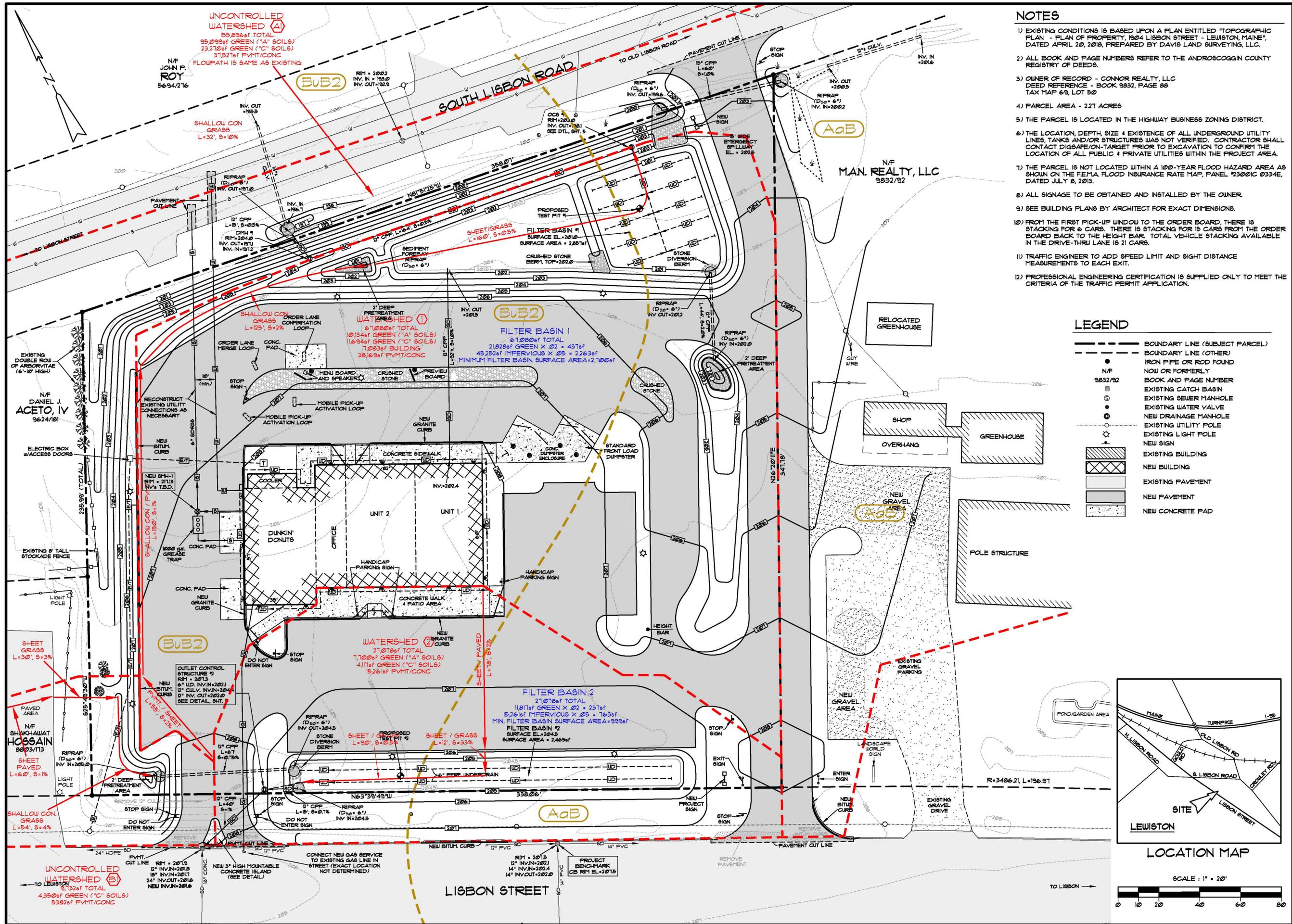
Date: 3/26/2020

Weather: Sunny

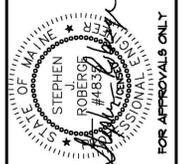
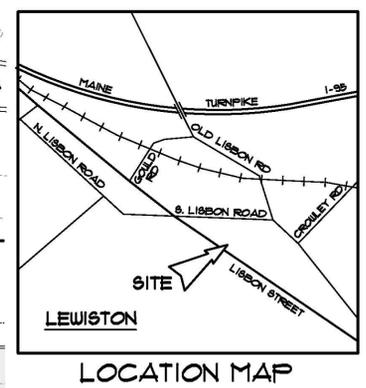
Depth (ft)	DESCRIPTION	
	ENGINEERING	GEOLOGIC/GENERAL
1	6" Dark brown Sandy SILT, trace rootlets, moist, ML	TOPSOIL
2	Olive-brown Silty SAND, little Gravel, loose, damp, SM	FILL
3	Brown fine Sandy SILT, loose, moist, ML Seepage at 3 ft	
4	Olive-brown Silty CLAY, firm, blocky, friable, damp, CL	GLACIAL MARINE
5		
6		
7		
8		
9		
10		
11	End of Test Pit at 10 ft	
12		
13		
14		
15		
16		
17		







- NOTES**
- EXISTING CONDITIONS IS BASED UPON A PLAN ENTITLED "TOPOGRAPHIC PLAN - PLAN OF PROPERTY, 1804 LISBON STREET - LEWISTON, MAINE", DATED APRIL 20, 2018, PREPARED BY DAVID LAND SURVEYING, LLC.
  - ALL BOOK AND PAGE NUMBERS REFER TO THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS.
  - OWNER OF RECORD - CONNOR REALTY, LLC  
 DEED REFERENCE - BOOK 9832, PAGE 88  
 TAX MAP 69, LOT 50
  - PARCEL AREA - 2.21 ACRES
  - THE PARCEL IS LOCATED IN THE HIGHWAY BUSINESS ZONING DISTRICT.
  - 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.
  - THE PARCEL IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP, PANEL 23020C 0334E, DATED JULY 8, 2013.
  - ALL SIGNAGE TO BE OBTAINED AND INSTALLED BY THE OWNER.
  - SEE BUILDING PLANS BY ARCHITECT FOR EXACT DIMENSIONS.
  - FROM THE FIRST PICK-UP WINDOW TO THE ORDER BOARD, THERE IS STACKING FOR 6 CARS. THERE IS STACKING FOR 15 CARS FROM THE ORDER BOARD BACK TO THE HEIGHT BAR. TOTAL VEHICLE STACKING AVAILABLE IN THE DRIVE-THRU LANE IS 21 CARS.
  - TRAFFIC ENGINEER TO ADD SPEED LIMIT AND SIGHT DISTANCE MEASUREMENTS TO EACH EXIT.
  - PROFESSIONAL ENGINEERING CERTIFICATION IS SUPPLIED ONLY TO MEET THE CRITERIA OF THE TRAFFIC PERMIT APPLICATION.



REV.	DATE	REVISIONS PER CITY REVIEW COMMENTS
1	4-11-20	CHANGES:

DO NOT MODIFY PLAN WITHOUT WRITTEN PERMISSION FROM S&R ENG., INC.

**Stoneybrook**  
 Land Use, Inc.  
 4846 Sun City Center Blvd., #300  
 Sun City Center, FL 33577-6281

**S&R ENGINEERING, INC.**  
 16 THURSTON DRIVE  
 MONMOUTH, MAINE 04259  
 (207) 242-6248 tel  
 steve@sreng.com

**S&R ENGINEERING**

**PROPOSED WATERSHED**  
 1836 LISBON STREET  
 LEWISTON, MAINE  
 PREPARED FOR  
**CONNOR REALTY, LLC**  
 1124 LISBON STREET - LEWISTON, ME 04240

DATE	PROJECT
MARCH 2020	11-028
DRAWN BY	SCALE
BRJ	1" = 20'

US-2

DATE: \_\_\_\_\_ LOCATION: \_\_\_\_\_  
 TYPE: \_\_\_\_\_ PROJECT: \_\_\_\_\_  
 CATALOG #: \_\_\_\_\_

# LNC2

SMALL LED LITEPAK

## FEATURES

- 60% more lumens and increased performance than smaller LNC models
- 3000K, 4000K and 5000K as well as Amber
- Type II, III and IV distributions available for a variety of application needs
- Quick-mount adapter allows easy installation/maintenance
- 347V and 480V versions for industrial applications and Canada
- Stock versions available for fast service
- Full cut-off, neighbor friendly, IDA approved
- Optional photocontrol for additional energy savings



## CONTROL TECHNOLOGY



## SPECIFICATIONS

### CONSTRUCTION

- Rugged die-cast aluminum housing protects components and provides an architectural appearance
- Casting thermally conducts LED heat to optimize performance and long life
- Powder paint finish provides durability in outdoor environments

### OPTICS

- Zero uplight distributions using individual acrylic
- LED optics provide IES type II, III and IV distributions. Optional (CS) acrylic diffuser available for reduced glare
- Prismatic refractor lens provides ~10% uplight for increased vertical footcandles and forward light projection ideal for security lighting
- L96 at 60,000hrs (Projected per IESNA TM-21-11), see table on page 3 for all values

### INSTALLATION

- Quick-mount adapter provides easy installation to wall or to recessed junction boxes (4" square junction box)
- Designed for direct j-box mount.
- Optional 1/2" conduit hubs available (standard for sensor, SiteSync and battery versions)

### ELECTRICAL

- 120V-277V universal voltage 50/60Hz 0-10V dimming drivers
- 347V and 480V dimmable driver option in 12L-070 configuration
- Minimum operating temperature is -40°C/-40°F (excludes 12L-035 and P15 configurations)
- Drivers have greater than .90 power factor and less than 20% Total Harmonic Distortion
- Driver RoHS and IP66
- 10kA surge protector
- 3000K CCT nominal, 4000K CCT nominal, 5000K CCT nominal (70 CRI)
- 9, 12 and 18 LED configurations available see pages 2 and 3 for electrical and photometric details

### CONTROLS

- Universal button photocontrol
- Occupancy sensor options available for complete on/off and dimming control
- SiteSync pre-commissioned wireless controls (with or without sensor)
- Integral Battery Backup provides emergency lighting for the required 90 minute path of egress
- Dual Driver and Dual Power Feed option for 18L-070 versions

### CERTIFICATIONS

- DLC® DesignLights Consortium Qualified, with some Premium Qualified configurations. Please refer to the DLC website for specific product qualifications at [www.designlights.org](http://www.designlights.org)
- Listed to UL1598 and CSAC22.2#250.0-24 for wet locations
- Made-to-order versions are IP-65 rated

### WARRANTY

- 5 year limited warranty
- See [HLI Standard Warranty](#) for additional information



## RELATED PRODUCTS

- Ø [LNC](#)      Ø [INC3](#)      Ø [LNC4](#)

KEY DATA	
Lumen Range	2600–4100
Wattage Range	29–42
Efficacy Range (LPW)	85–112
Fixture Projected Life (Hours)	L96>60K
Weights lbs. (kg)	9.6 (24.5)

# LNC2

SMALL LED LITEPAK

## ORDERING GUIDE

Example: LNC2-9L-3K-2-U-DB-PCU

CATALOG #

### ORDERING INFORMATION

Series	# LEDs	CCT/CRI	Drive Current	IES Distribution	Voltage	Mounting	Finish
LNC2 Small LitePak LNC2	<b>9L</b> 9 LEDs	<b>3K</b> 3000K nominal, 70 CRI	<b>070</b> 700mA	<b>2</b> Type II <sup>1</sup>	<b>U</b> 120-277V	Leave blank for down position <b>NV</b> Inverted <sup>2</sup>	<b>DB</b> Dark Bronze Textured
	<b>12L</b> 12 LEDs	<b>4K</b> 4000K nominal, 70 CRI	<b>035</b> 350mA (12L & 18L only)	<b>3</b> Type III <sup>1</sup>	<b>1</b> 120V		<b>BL</b> Black Textured
	<b>18L</b> 18 LEDs	<b>5K</b> 5000K nominal, 70 CRI		<b>4</b> Type IV <sup>1</sup>	<b>2</b> 208V		<b>GYS</b> Gray Smooth
	<b>P15</b> 15w Prismatic Refractor	<b>AM</b> Amber <sup>3</sup>		<b>FT</b> Forward Throw (Prismatic Refractor only)	<b>3</b> 240V		<b>PS</b> Platinum Silver Smooth
	<b>P25</b> 25w Prismatic Refractor				<b>4</b> 277V		<b>WH</b> White Textured
	<b>P35</b> 35w Prismatic Refractor				<b>5</b> 480V <sup>6</sup>		<b>CC</b> Custom Color
					<b>4</b> 347V <sup>6</sup>		

Control Options	
<b>SCP</b>	Occupancy Sensor Programmable (Dim) <sup>4,5</sup>
<b>PCU</b>	Universal Button Photocontrol
<b>SWP</b>	SiteSync Pre-Commission <sup>6</sup>
<b>SWPM</b>	SiteSync Pre-commission w/ OCC Sensor <sup>6,7</sup>
Specify SCP Height	
<b>8F</b>	Up to 8ft mount height
<b>20F</b>	Up to 20ft mount height

Options	
<b>EH</b>	Battery Backup Unit with Heater (-30°C) <sup>3</sup>
<b>E</b>	Battery Backup Unit (0°C) <sup>3</sup>
<b>F</b>	Fuse & Fuse-Holder (not available with Battery Backup) <sup>3</sup>
<b>CS</b>	Comfort Shield (N/A with Prismatic Refractor)
<b>2DR</b>	Dual Driver (18L - 700mA only)
<b>2PF</b>	Dual Power Feed (18L - 700mA only)
<b>CH</b>	Surface Conduit Hubs

Notes:

- IES distributions only available with 9L, 12L, and 18L versions
- Not available with occupancy sensor, battery backup or prismatic refractor options
- Must specify voltage (120 or 277 only for E & EH)
- Must order minimum of one remote control to program dimming settings, 0-10V fully adjustable dimming with automatic daylight calibration and different time delay settings, 120-277V only
- PCU option not applicable, included in sensor
- 18L - 700mA versions only. Not available with 2DR or 2PF options. Must specify group and zone information at time of order
- Specify time delay; dimming level and mounting height
- 12L - 700mA version only

### STOCK ORDERING INFORMATION

Catalog Number	Lumens	Wattage	Distribution	CCT/CRI	Voltage	Distribution	Weight lbs. (kg)	Finish	Options
LNC2-12LU-4K-3-DB	2,662	29W	3	4000K/70CRI	120-277V	Type 3	7.0 (13.3)	Bronze	*
LNC2-12LU-5K-3-DB	2,868	29W	3	5000K/70CRI	120-277V	Type 3	7.0 (13.3)	Bronze	*
LNC2-12LU-5K-3-DB-PC-U	2,868	29W	3	5000K/70CRI	120-277V	Type 3	7.0 (13.3)	Bronze	Photocell *
LNC2-18LU-4K-3-DB	3,806	42W	3	4000K/70CRI	120-277V	Type 3	7.0 (13.3)	Bronze	*
LNC2-18LU-5K-3-DB	4,106	42W	3	5000K/70CRI	120-277V	Type 3	7.0 (13.3)	Bronze	*
LNC2-18LU-5K-3-DB-PC-U	4,106	42W	3	5000K/70CRI	120-277V	Type 3	7.0 (13.3)	Bronze	Photocell *
LNC2-P35-4K-PCU	4,025	37W	FT	4000K/70CRI	120-277V	FT	7.0 (13.3)	Bronze	Photocell
LNC2-P35-PCU	4,108	37W	FT	5000K/70CRI	120-277V	FT	7.0 (13.3)	Bronze	Photocell

### REPLACEMENT PART - MADE TO ORDER

Catalog Number	Description
<input type="checkbox"/> LNC2-CS	Frosted acrylic comfort shield/lens, reduces glare and improves uniformity with only 15% lumen reduction
<input type="checkbox"/> SCP-Remote	Remote control for SCP option. Order at least one per project to program and control fixtures*

Notes:

\* IES distributions only available with 9L, 12L and 18L versions

# LNC2

SMALL LED LITEPAK

## PERFORMANCE DATA

### STANDARD 9, 12 AND 18L VERSIONS

# Of LEDs	Nominal Wattage	System Watts	Dist. Type	5K (5000K NOMINAL 70 CRI)					4K (4000K NOMINAL 70 CRI)					3K (3000K NOMINAL 80 CRI)				
				Lumens	LPW*	B	U	G	Lumens	LPW*	B	U	G	Lumens	LPW*	B	U	G
9	700mA	21W	2	2,083	97	1	0	1	2,072	97	1	0	1	1,927	90	1	0	1
			3	1,972	92	0	0	1	1,962	92	0	0	1	1,825	85	0	0	1
			4	2,097	98	0	0	1	2,087	98	0	0	1	1,941	91	0	0	1
12	350mA	14W	2	1,513	110	0	0	1	1,506	109	0	0	1	1,440	104	0	0	1
			3	1,433	104	0	0	1	1,426	103	0	0	1	1,364	99	0	0	1
			4	1,524	110	0	0	1	1,543	112	0	0	1	1,476	107	0	0	1
	700mA	29W	2	2,777	97	1	0	1	2,763	97	1	0	1	2,570	90	1	0	1
			3	2,629	92	1	0	1	2,616	91	1	0	1	2,433	85	1	0	1
			4	2,797	98	1	0	1	2,783	97	1	0	1	2,588	90	1	0	1
18	350mA	21W	2	2,270	107	1	0	1	2,259	106	1	0	1	2,074	97	1	0	1
			3	2,149	101	0	0	1	2,138	100	0	0	1	1,963	92	0	0	1
			4	2,286	107	0	0	1	2,275	107	0	0	1	2,125	100	0	0	1
	700mA	43W	2	4,261	99	1	0	1	4,240	98	1	0	1	3,943	91	1	0	1
			3	4,033	93	1	0	1	4,014	93	1	0	1	3,733	86	1	0	1
			4	4,290	99	1	0	1	4,270	99	1	0	1	3,971	92	1	0	1

### PRISMATIC REFRACTOR

# Of LEDs	Nominal Wattage	Dist. Type	5K (5000K NOMINAL 70 CRI)					4K (4000K NOMINAL 70 CRI)					3K (3000K NOMINAL 80 CRI)				
			Lumens	LPW*	B	U	G	Lumens	LPW*	B	U	G	Lumens	LPW*	B	U	G
1	15W	FT	1,741	132	0	3	2	1,706	129	0	3	2	1,648	125	0	3	2
	25W		2,929	117	1	3	2	2,806	112	1	3	2	2,773	111	1	3	2
	35W		4,108	112	1	3	3	4,025	110	1	3	3	3,889	106	1	3	3

Notes:  
 \* 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-user environment and application. LNC2-12L battery mode produces 1,546 initial lumens. Meets UL924 90 minute discharge pattern.

## PROJECTED LUMEN MAINTENANCE

### STANDARD 9, 12 AND 18L VERSIONS

Ambient Temperature	OPERATING HOURS					
	0	25,000	50,000	TM-21-11* L96 60,000	100,000	L70 (Hours)
25°C / 77°F	1.00	0.98	0.97	0.96	0.95	>791,000
40°C / 104°F	0.99	0.98	0.96	0.96	0.95	>635,000

### PRISMATIC REFRACTOR

Ambient Temperature	OPERATING HOURS					
	0	25,000	50,000	TM-21-11* L96 60,000	100,000	L70 (Hours)
25°C / 77°F	1.00	0.94	0.89	0.87	0.80	>160,000
40°C / 104°F	0.99	0.93	0.88	0.86	0.78	>150,000

\* Projected per IESNA TM-21-11 \* (Nichia 219B, 700mA, 85°C Ts, 10,000hrs). Data references the extrapolated performance projections for the LNC-12LU-5K base model in a 40°C ambient, based on 10,000 hours of LED testing per IESNA LM-80-08.

# LNC2

SMALL LED LITEPAK

## ELECTRICAL DATA

### STANDARD 9, 12 AND 18L VERSIONS

# OF LEDS	Drive Current (mA)	Input Voltage (V)	Oper. Current (Amps)	System Power (W)
9	700mA	120	0.18	21
		277	0.08	21
12	350mA	120	0.12	14
		277	0.05	14
	700mA	120	0.24	29
		277	0.10	29
		347	0.08	29
		480	0.06	29
18	350mA	120	0.18	21
		277	0.08	21
	700mA	120	0.36	43
		277	0.16	43

### PRISMATIC REFRACTOR

# OF LEDS	Drive Current (mA)	Input Voltage (V)	Oper. Current (Amps)	System Power (W)
1	350mA	120	0.11	13
		277	0.05	13
	600mA	120	0.21	25
		277	0.09	25
	900mA	120	0.31	37
		277	0.13	37

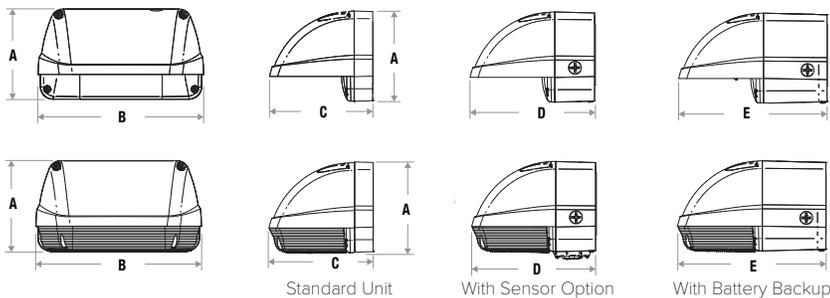
## LUMINAIRE AMBIENT TEMPERATURE FACTOR (LATF)

Standard 9, 12, 18L and Prismatic Versions

Ambient Temperature		Lumen Multiplier
0° C	32° F	1.02
10° C	50° F	1.01
20° C	68° F	1.00
25° C	77° F	1.00
30° C	86° F	1.00
40° C	104° F	0.99
50° C	122° F	0.98

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

## DIMENSIONS



A	B	C	D	E
5.54" (141 mm)	10.16" (258 mm)	6.33" (161 mm)	7.64" (194 mm)	9.10" (231 mm)

# LNC2

SMALL LED LITEPAK

## ADDITIONAL INFORMATION

### SHIPPING INFORMATION

Catalog Number	G.W(kg)/ CTN	Carton Dimensions			Carton Qty. per Master Pack
		Length Inch (cm)	Width Inch (cm)	Height Inch (cm)	
LNC2-12LU	14.3 (6.5)	14.5 (37)	11.4 (29)	8.4 (21.5)	2
LNC2-18LU	14.8 (6.7)	14.9 (38)	11.4 (29)	8.4 (21.5)	2

### NV - INVERTED MOUNTING OPTIONS



\*Requires Factory Installed Lens Option

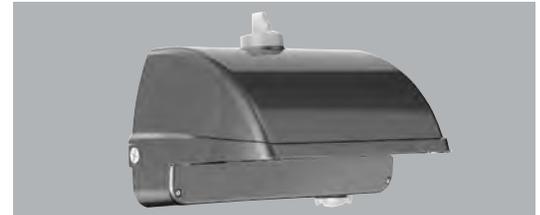
Inverted mounting capabilities for uplighting applications. Specially designed frosted acrylic diffuser option softens output, improves uniformity and protects LED lenses.

### SCP - PROGRAMMABLE OCCUPANCY SENSOR



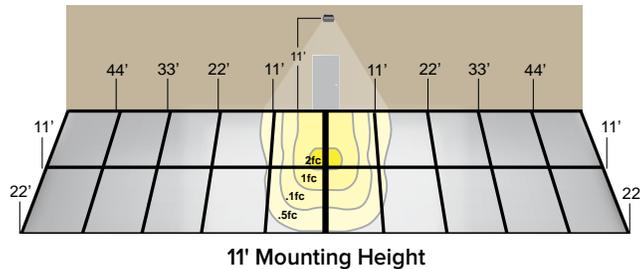
Sensor offers greater control and energy savings with SCP programmable sensor with adjustable delay and dimming levels (Factory default is 10%) Visit: <http://www.hubbellighting.com/solutions/controls/> for control application information

### SWP & SWPM - SITESYNC™



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 locations Group information, and Operating schedules. For more detailed information please visit [www.HubbellLighting.com/products/sitesync](http://www.HubbellLighting.com/products/sitesync) or contact Hubbell Lighting tech support at (800) 345-4928.

### LNC2 - BATTERY BACK UP



Provides Life Safety Code average illuminance of 1.0 fc. Assumes open space with no obstructions and mounting height of 11'.

Diagrams for illustration purposes only, please consult factory for application layout.

Battery backup units consume 6 watts when charging a dead battery and 2 watts during maintenance charging. EH (units with a heater) consume up to an additional 8 watts when charging if the battery temp is lower than 10°C

### E & EH EMERGENCY BATTERY BACKUP



Standard versions utilize 9, 12 or 18 High Power LEDs to generate 1,600 - 4,200 lumens in Normal Mode and use 4 LEDs for up to 700 lumens in Emergency Mode. Prismatic refractor versions utilize 1 COB LED to generate approximately 900 lumens in emergency mode.

## USE OF TRADEMARKS AND TRADE NAMES

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DATE: \_\_\_\_\_ LOCATION: \_\_\_\_\_  
 TYPE: \_\_\_\_\_ PROJECT: \_\_\_\_\_  
 CATALOG #: \_\_\_\_\_

# RATIO Series

AREA/SITE LIGHTER

## FEATURES

- Low profile LED area/site luminaire with a variety of IES distributions for lighting applications such as retail, commercial and campus parking lots
- Featuring Micro Strike Optics which maximizes target zone illumination with minimal losses at the house-side, reducing light trespass issues
- Visual comfort standard
- Compact and lightweight design with low EPA
- 3G rated for high vibration applications including bridges and overpasses
- Control options including photo control, occupancy sensing, NX Distributed Intelligence™ and 7-Pin with networked controls
- Best in class surge protection available



## RELATED PRODUCTS

- [Airo](#)  
 [Cimarron LED](#)  
 [Ratio Family](#)



## CONTROL TECHNOLOGY



## SPECIFICATIONS

### CONSTRUCTION

- Rectilinear form mimics the traditional shoebox form factor keeping a similar but updated style and appearance, ideal for retrofit applications
- Die-cast housing with hidden vertical heat fins that are optimal for heat dissipation while keeping a clean smooth outer surface
- Corrosion resistant, die-cast aluminum housing with powder coat paint finish

### OPTICS

- Entire optical aperture illuminates to create a larger luminous surface area resulting in a low glare appearance without sacrificing optical performance
- 80, 160, 320 or 480 midpower LEDs
- 3000K, 4000K or 5000K (70 CRI) CCT
- Zero uplight at 0 degrees of tilt
- Field rotatable optics

### INSTALLATION

- Standard square arm mount, compatible with B3 drill pattern
- Optional universal mounting block for ease of installation during retrofit applications. Available as an option or accessory for square and round poles.
- Knuckle arm fitter option available for 2-3/8" OD tenon. Max tilt of 60 degrees with 4 degree adjustable increments. (Restrictions apply for 7-pin options)

### ELECTRICAL

- Universal 120-277 VAC or 347-480 VAC input voltage, 50/60 Hz
- Ambient operating temperature -40°C to 40°C
- Drivers have greater than 90% power factor and less than 20% THD
- LED drivers have output power over-voltage, over-current protection and short circuit protection with auto recovery
- Field replaceable surge protection device provides 20kA protection meeting ANSI/IEEE C62.41.2 Category C High and Surge Location Category C3; Automatically takes fixture off-line for protection when device is compromised

### CONTROLS

- Photo control, occupancy sensor and wireless available for complete on/off and dimming control
- 7-pin ANSI C136.41-2013 photocontrol receptacle option available for twist lock photocontrols or wireless control modules (control accessories sold separately)
- 0-10V dimming leads available for use with control devices (provided by others, must specify lead length)
- SiteSync™ wireless control system is available via 7-pin See ordering information and details at: [www.hubbellighting.com/sitesync](http://www.hubbellighting.com/sitesync)
- NX Distributed Intelligence™ available with in fixture wireless control module, features dimming and occupancy sensor

### CONTROLS (CONT'D)

- wiSCAPE® available with in fixture wireless control module, features dimming and occupancy sensor via 7-pin

### CERTIFICATIONS

- DLC® (DesignLights Consortium Qualified, with some Premium Qualified configurations. Please refer to the DLC website for specific product qualifications at [www.designlights.org](http://www.designlights.org))
- Listed to UL1598 and CSA C22.2#250.0-24 for wet locations and 40°C ambient temperatures
- 3G rated for ANSI C136.31 high vibration applications
- Fixture is IP66 rated
- Meets IDA recommendations using 3K CCT configuration at 0 degrees of tilt

### WARRANTY

- 5 year limited warranty
- See [HLI Standard Warranty](#) for additional information

KEY DATA	
Lumen Range	3,000–32,000
Wattage Range	25–227
Efficacy Range (LPW)	118–155
Fixture Projected Life (Hours)	L70>238K
Weights lbs. (kg)	13.5–24 (6.1–10.9)

# RATIO SERIES

AREA/SITE LIGHTER

## ORDERING GUIDE

Example: RAR1-80L-25-3K7-2-UNV-ASQ-BL-NXWE-BC

CATALOG #

### ORDERING INFORMATION

Series	# LEDs - Wattage	CCT/CRI	Distribution	Optics Rotation	Voltage
<b>RAR1</b> Ratio Area Size 1	<b>80L-25</b> 25W - 3,000 Lumens	<b>3K7</b> 3000K, 70 CRI <b>4K7</b> 4000K, 70 CRI <b>5K7</b> 5000K, 70 CRI	<b>2</b> IES TYPE II <b>3</b> IES TYPE III <b>4W</b> IES TYPE IV <b>5QW</b> IES TYPE V	Blank for no rotation <b>L</b> Optic rotation left <b>R</b> Optic rotation right	<b>UNV</b> Universal 120-277V <b>120</b> 120V <b>208</b> 208V <b>240</b> 240V <b>277</b> 277V <b>347</b> 347V <b>480</b> 480V
	<b>80L-50</b> 50W - 6,000 Lumens				
	<b>160L-70</b> 70W - 9,000 Lumens				
	<b>160L-100</b> 100W - 12,000 Lumens				
<b>RAR2</b> Ratio Area Size 2	<b>320L-110</b> 110W - 15,000 Lumens				
	<b>320L-140</b> 140W - 18,000 Lumens				
	<b>320L-165</b> 165W - 21,000 Lumens				
	<b>480L-185</b> 185W - 24,000 Lumens				
	<b>480L-210</b> 210W - 27,000 Lumens				
	<b>480L-240</b> 240W - 30,000 Lumens				

### ORDERING INFORMATION CONTINUED

Mounting	Color	Control Options Network	Options
<b>ASQ</b> Arm mount for square pole/flat surface <b>ASQU</b> Universal arm mount for square pole/flat surface <b>Mounting Round Poles</b> <b>A_</b> Arm mount for round pole <sup>1</sup> <b>A_U</b> Universal arm mount for round pole <sup>1</sup> <b>Mounting Other</b> <b>WB</b> Wall bracket <b>MAF</b> Mast arm fitter for 2-3/8" OD horizontal arm <b>K</b> Knuckle	<b>BL</b> Black textured <b>DB</b> Dark bronze textured <b>GT</b> Graphite textured <b>GYS</b> Light gray smooth <b>PS</b> Platinum silver smooth <b>WH</b> White textured <b>CC</b> Custom color	<b>NXWE</b> NX Wireless Enabled (module + radio) <b>NXSPW_F</b> NX Wireless, PIR Occ. Sensor, Daylight Harvesting <sup>2</sup> <b>NXSP_F</b> NX, PIR Occ. Sensor, Daylight Harvesting <sup>2</sup> <b>Control Options Other</b> <b>SCP-40F</b> Programmable occupancy sensor <sup>4</sup> <b>7PR</b> 7-Pin twist lock receptacle <b>7PR-SC</b> 7-Pin receptacle with shorting cap <b>7PR-MD40F</b> Low voltage sensor for 7PR <b>7PR-TL</b> 7-Pin PCR with photocontrol	<b>BC</b> Backlight control <b>CD</b> Continuous dimming <b>F</b> Fusing (must specify voltage) <b>TB</b> Terminal block <b>2PF</b> 2 power feed with 2 drivers <sup>3</sup>

Notes:

- 1 Replace "\_" with "3" for 3.5"-4.13" OD pole, "4" for 4.18"-5.25" OD pole, "5" for 5.5"-6.5" OD pole
- 2 Replace "\_" with "14" for up to 14' mounting height, "30F" for 15-30' mounting height
- 3 Not available with 80 LED versions
- 4 At least one SCPREMOTE required to program SCP motion sensor

### STOCK ORDERING INFORMATION

Catalog Number	Lumens	Wattage	LED Count	CCT/CRI	Voltage	Distribution	Mounting	Finish
RAR1-100-4K-3	12,000	100W	160L	4000K/70CRI	120-277V	Type 3	Square Arm	Bronze
RAR1-100-4K-4W	12,000	100W	160L	4000K/70CRI	120-277V	Type 4W	Square Arm	Bronze
RAR2-140-4K-3	18,000	140W	320L	4000K/70CRI	120-277V	Type 3	Square Arm	Bronze
RAR2-140-4K-4W	18,000	140W	320L	4000K/70CRI	120-277V	Type 4W	Square Arm	Bronze
RAR2-165-4K-3	21,000	165W	320L	4000K/70CRI	120-277V	Type 3	Square Arm	Bronze
RAR2-165-4K-4W	21,000	165W	320L	4000K/70CRI	120-277V	Type 4W	Square Arm	Bronze

# RATIO SERIES

AREA/SITE LIGHTER

## OPTIONS AND ACCESSORIES - STOCK (ORDERED SEPARATELY)

Catalog Number	Description
<input type="checkbox"/> RARRPA3DB	Round pole adapter 3.5" to 4.13" for ASQ arm, 3.5" to 4.13" OD pole, dark bronze finish
<input type="checkbox"/> RARA3UDB	Universal mount for square pole or round pole 3.5" to 4.13", dark bronze finish
<input type="checkbox"/> RARBC80L	Ratio blacklight control 80L
<input type="checkbox"/> RARBC160L	Ratio blacklight control 160L
<input type="checkbox"/> RARBC320L	Ratio blacklight control 320L
<input type="checkbox"/> RARBC480L	Ratio blacklight control 480L

## ACCESSORIES AND REPLACEMENT PARTS - MADE TO ORDER

Catalog Number	Description
<input type="checkbox"/> RAR-ASQU-XX	Universal arm mount for square pole/flat surface <sup>2</sup>
<input type="checkbox"/> RAR-A_U-XX	Universal arm mount for round poles <sup>1,2</sup>
<input type="checkbox"/> RAR-RPA_-XX	Round pole adapter <sup>1,2</sup>
<input type="checkbox"/> SETAVP-XX	4" square pole top tenon adapter, 2 3/8" OD slipfitter <sup>2</sup>
<input type="checkbox"/> RETAVP-XX	4" round pole top tenon adapter; 2 3/8" OD slipfitter for max. Four fixtures (90o); order 4" round pole adapters separately <sup>2</sup>
<input type="checkbox"/> BIRD-SPIKE-3	Ratio size 1 bird deterrent/spikes
<input type="checkbox"/> BIRD-SPIKE-4	Ratio size 2 bird deterrent/spikes
<input type="checkbox"/> RARWB-XX	Wall bracket - use with Mast Arm Fitter or Knuckle <sup>2</sup>

1 Replace "-" with "3" for 3.5"-4.13" OD pole, "4" for 4.18"-5.25" OD pole, "5" for 5.5"-6.5" OD pole

2 Replace "XX" with desired color/paint finish

## CONTROLS

### Control Options

#### Standalone

<b>SW7PR</b>	SiteSync™ on fixture module via 7PR
<b>SWUSB</b>	SiteSync™ Software on USB
<b>SWTAB</b>	SiteSync™ Windows Tablet
<b>SWBRG</b>	SiteSync™ Wireless Bridge Node
<b>SWFC</b>	SiteSync™ Field Commission Serve
<b>SCPREMOTE</b>	Order at least one per project location to program and control

#### Networked – Wireless

<b>WIR-RME-L</b>	wiSCAPE External Fixture Module <sup>1,2</sup>
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#### NX Networked – Wireless

<b>NXOFM-1R1D-UNV</b>	NX Wireless, Daylight Harvesting, BLE, 7 pin twisted lock
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Notes:

- 1 Works with external networked photosensor
- 2 wiSCAPE Gateway required for system programming

# RATIO SERIES

AREA/SITE LIGHTER

## PERFORMANCE DATA

Description	Nominal Wattage	System Watts	Dist. Type	5K (5000K NOMINAL 70 CRI)					4K (4000K NOMINAL 70 CRI)					3K (3000K NOMINAL 80 CRI)				
				Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G
RAR1	25	25.4	2	3438	135	1	0	1	3445	136	1	0	1	3240	128	1	0	1
			3	3460	136	1	0	1	3467	136	1	0	1	3260	128	1	0	1
			4W	3406	134	1	0	1	3412	134	1	0	1	3209	126	1	0	1
			5QW	3483	137	2	0	1	3490	137	2	0	1	3282	129	2	0	1
	50	49.8	2	6310	127	1	0	2	6323	127	1	0	2	5946	120	1	0	2
			3	6349	128	1	0	2	6362	128	1	0	2	5983	120	1	0	2
			4W	6233	125	1	0	2	6245	126	1	0	2	5873	118	1	0	2
			5QW	6392	129	3	0	1	6405	129	3	0	1	6023	121	3	0	1
	70	68.4	2	9486	139	1	0	2	9505	139	1	0	2	8938	131	1	0	2
			3	9544	140	1	0	2	9563	140	1	0	2	8993	131	1	0	2
			4W	9395	137	1	0	2	9414	138	1	0	2	8853	129	1	0	2
			5QW	9608	140	4	0	2	9628	141	4	0	2	9054	132	4	0	2
	100	90.0	2	11976	133	2	0	2	12000	133	2	0	2	11285	125	2	0	2
			3	12050	134	2	0	2	12074	134	2	0	2	11354	126	2	0	2
			4W	11861	132	2	0	2	11885	132	2	0	2	11177	124	2	0	2
			5QW	12131	135	4	0	2	12155	135	4	0	2	11431	127	4	0	2
RAR2	110	100.3	2	15326	153	2	0	3	15357	153	2	0	3	14442	144	2	0	3
			3	15421	154	2	0	3	15452	154	2	0	3	14531	145	2	0	3
			4W	15180	151	2	0	2	15210	152	2	0	2	14304	143	2	0	2
			5QW	15525	155	4	0	2	15556	155	4	0	2	14629	146	4	0	2
	140	133.2	2	19395	146	2	0	3	19434	146	2	0	3	18276	137	2	0	3
			3	19515	147	2	0	3	19554	147	2	0	3	18389	138	2	0	3
			4W	19210	144	2	0	3	19248	145	2	0	3	18101	136	2	0	3
			5QW	19647	148	5	0	3	19686	148	5	0	3	18513	139	5	0	3
	165	153.6	2	21651	141	3	0	3	21695	141	3	0	3	20402	133	3	0	3
			3	21785	142	3	0	3	21828	142	3	0	3	20527	134	3	0	3
			4W	21444	140	3	0	3	21487	140	3	0	3	20206	132	3	0	3
			5QW	21932	143	5	0	3	21976	143	5	0	3	20666	135	5	0	3
	185	174.5	2	26046	149	3	0	3	26098	150	3	0	3	24543	141	3	0	3
			3	26207	150	3	0	3	26259	150	3	0	3	24694	142	3	0	3
			4W	25797	148	3	0	4	25849	148	3	0	4	24308	139	3	0	4
			5QW	26384	151	5	0	3	26437	152	5	0	3	24861	143	5	0	3
	210	198.2	2	28848	145	3	0	4	28906	146	3	0	4	27184	137	3	0	4
			3	29027	146	3	0	4	29085	147	3	0	4	27351	138	3	0	4
			4W	28572	144	3	0	4	28630	144	3	0	4	26924	136	3	0	4
			5QW	29222	147	5	0	4	29281	148	5	0	4	27536	139	5	0	4
	240	226.9	2	32087	141	3	0	4	32151	142	3	0	4	30235	133	3	0	4
			3	32285	142	3	0	4	32350	143	3	0	4	30422	134	3	0	4
			4W	31780	140	3	0	4	31844	140	3	0	4	29946	132	3	0	4
			5QW	32503	143	5	0	4	32568	144	5	0	4	30627	135	5	0	4

\* Lumen values are from photometric test 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-user environment and application.

# RATIO SERIES

AREA/SITE LIGHTER

## ELECTRICAL DATA

# OF LEDS	Nominal Wattage	Input Voltage	Oper. Current (Amps)	System Power (Watts)
RAR1	25	120	0.21	25.4
		208	0.12	
		240	0.11	
		277	0.09	
	50	120	0.42	49.8
		208	0.24	
		240	0.21	
		277	0.18	
	70	120	0.57	68.4
		208	0.33	
		240	0.29	
		277	0.25	
100	120	0.75	90.0	
	208	0.43		
	240	0.38		
	277	0.32		
RAR2	110	120	0.84	100.3
		208	0.48	
		240	0.42	
		277	0.36	
	140	120	1.11	133.2
		208	0.64	
		240	0.56	
		277	0.48	
	165	120	1.28	153.6
		208	0.74	
		240	0.64	
		277	0.55	
	185	120	1.45	174.5
		208	0.84	
		240	0.73	
		277	0.63	
	210	120	1.65	198.3
		208	0.95	
		240	0.83	
		277	0.72	
	240	120	1.89	226.9
		208	1.09	
		240	0.95	
		277	0.82	

## LUMINAIRE AMBIENT TEMPERATURE FACTOR (LATF)

Ambient Temperature		Lumen Multiplier
0° C	32° F	1.03
10° C	50° F	1.01
20° C	68° F	1.00
25° C	77° F	1.00
30° C	86° F	0.99
40° C	104° F	0.98
50° C	122° F	0.97

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

## PROJECTED LUMEN MAINTENANCE

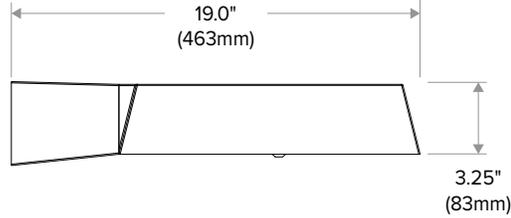
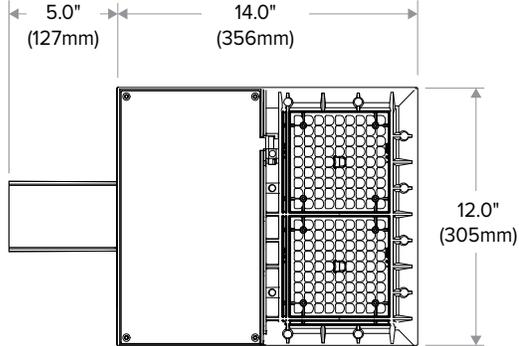
Ambient Temperature	OPERATING HOURS					
	0	25,000	TM-21-11 L90 36,000	50,000	100,000	L70 (Hours)
25°C / 77°F	1.00	0.97	0.95	0.93	0.86	238,000
40°C / 104°F	0.99	0.96	0.95	0.93	0.85	225,000

# RATIO SERIES

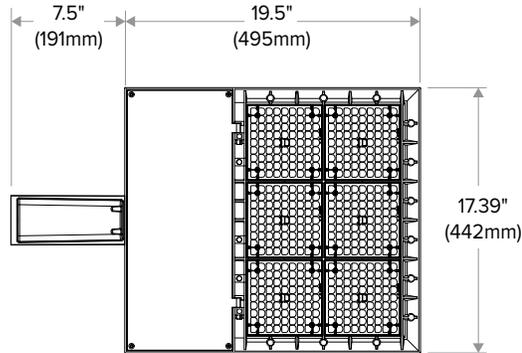
AREA/SITE LIGHTER

## DIMENSIONS

RAR1

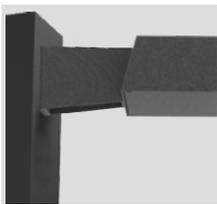


RAR2



## ADDITIONAL INFORMATION

### MOUNTING



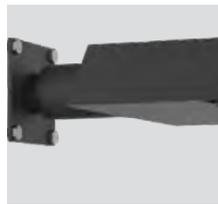
**Arm Mount** – Fixture ships with integral arm for ease of installation. Compatible with Hubbell Outdoor B3 drill pattern.



**MAF** – Fits 2-3/8" OD arms Roadway applications.



**Knuckle** – Knuckle mount 15° aiming angle increments for precise aiming and control, fits 2-3/8" tenons or pipes.



**Wall Mount** – Wall mount bracket designed for building mount applications.



**Universal Mounting** – Universal mounting block for ease of installation. Compatible with drill patterns from 2.5" to 4.5"

### 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 not interface with occupancy sensors

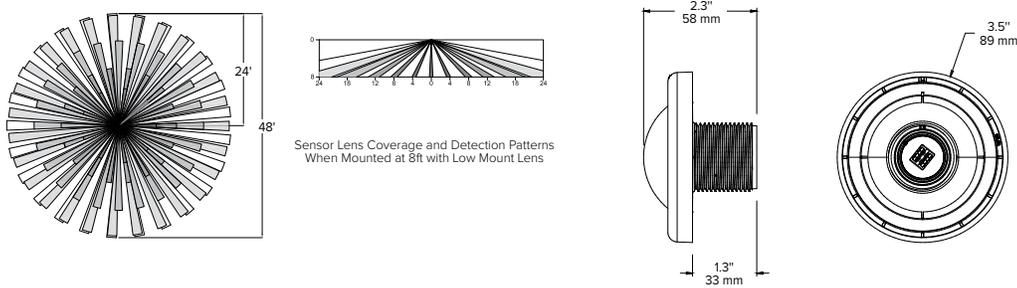


# RATIO SERIES

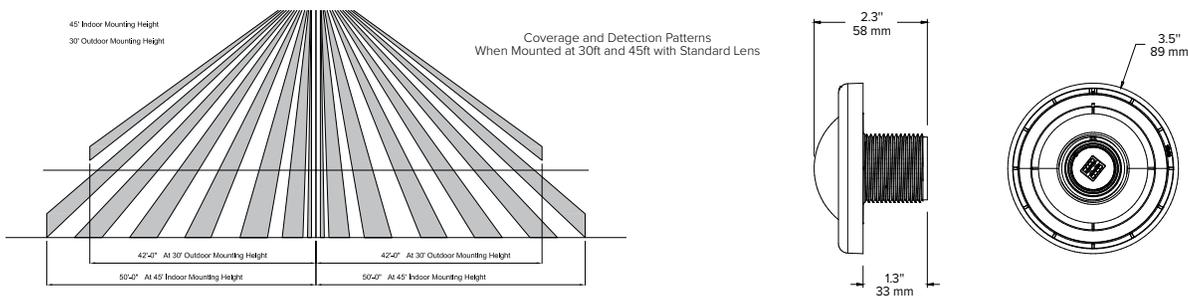
AREA/SITE LIGHTER

## ADDITIONAL INFORMATION (CONT'D)

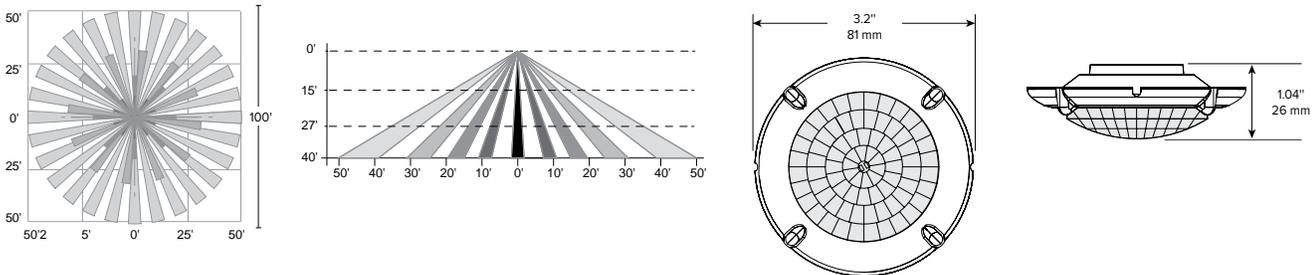
### NXSP-14F



### NXSP-30F



### SCP-40F



### RAR1 EPA

RAR-1	
EPA at 0°	EPA at 30°
.45ft. <sup>2</sup> .13m <sup>2</sup>	.56ft. <sup>2</sup> .17m <sup>2</sup>

### RAR2 EPA

RAR-2	
EPA at 0°	EPA at 30°
.55ft. <sup>2</sup> .17m <sup>2</sup>	1.48ft. <sup>2</sup> .45m <sup>2</sup>

### SHIPPING

Catalog Number	G.W(kg)/CTN	Carton Dimensions		
		Length Inch (cm)	Width Inch (cm)	Height Inch (cm)
RAR1	15 (6.8)	20.75 (52.7)	15.125 (38.4)	6.9375 (17.6)
RAR2	19 (8.6)	25 (63.5)	15.125 (38.4)	6.9375 (17.6)

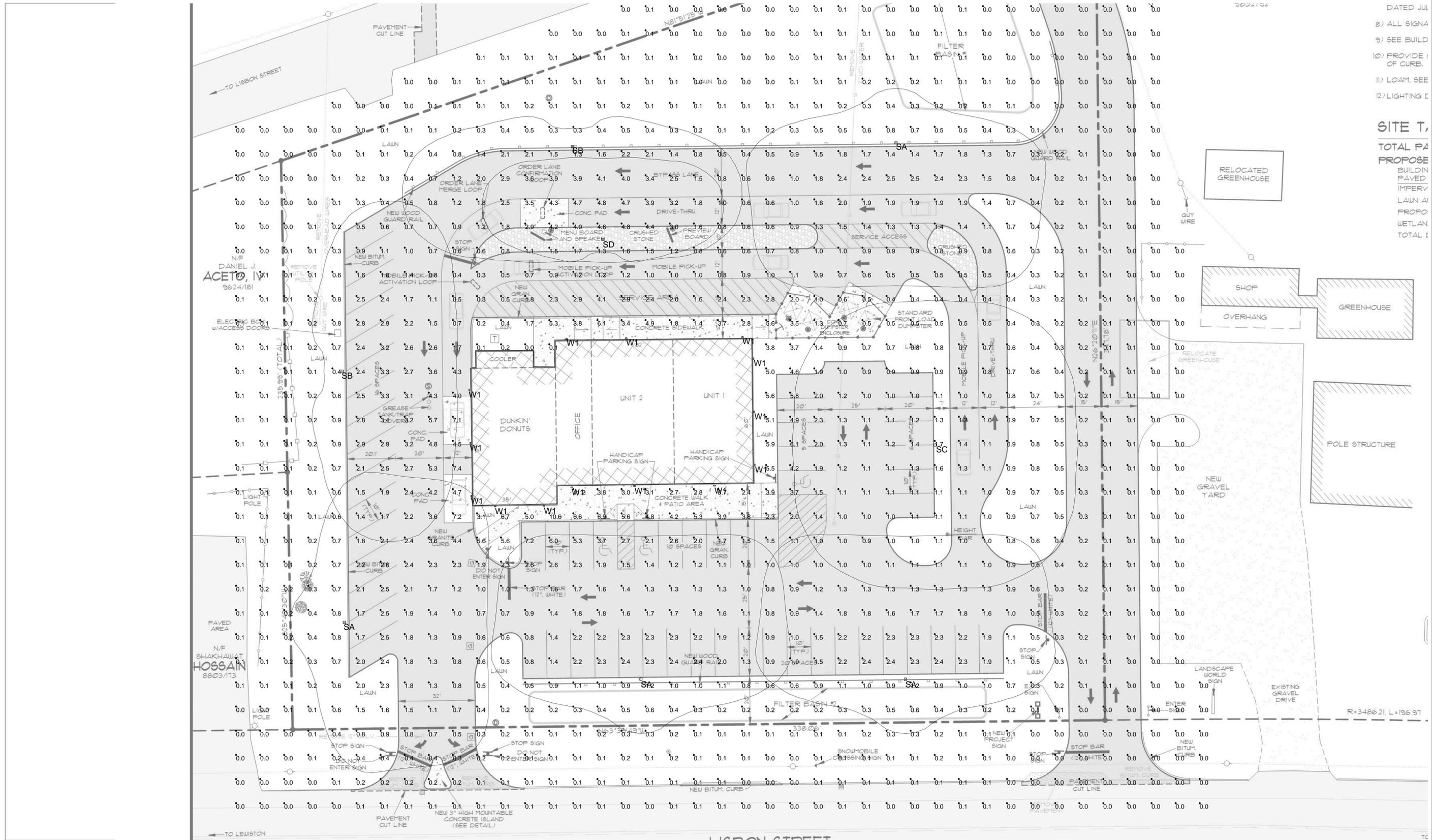
## USE OF TRADEMARKS AND TRADE NAMES

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Luminaire Schedule (note fixture catalogue numbers are not complete)						
Type	Symbol	Qty	Lum. Lumens	LLF	Lum. Watts	Description
SA	☐	4	11177	0.900	90	RAR1-160L-100-3K7-4W
SB	☐	2	11354	0.900	90	RAR1-160L-100-3K7-3
SC	☐	1	11431	0.900	90	RAR1-160L-100-3K7-5QW
SD	☐	1	5983	0.900	49.8	RAR1-80L-50-3K7-3
W1	☐	14	3971	0.900	43.227	LNC2-18L-3K-070-4

Calculation Summary					
Label	Avg	Max	Min	Avg/Min	Max/Min
SITE	0.89	11.2	0.0	N.A.	N.A.

- 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.



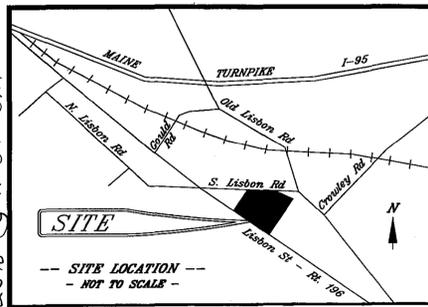
PLAN VIEW

DATED JUL 30 2020  
 8) ALL SIGNA  
 9) SEE BUILD  
 10) PROVIDE I  
 OF CURB.  
 11) LOAM, SEE  
 12) LIGHTING I

SITE T,  
 TOTAL PA  
 PROPOSE  
 BUILDIN  
 PAVED  
 IMPERV  
 LAWN AI  
 PROPO  
 WETLAN  
 TOTAL I

DUNKIN DONUTS - LISBON ST  
 LEWISTON, ME  
 SITE LIGHTING LAYOUT  
 GENERATED BY SWANEY LIGHTING, SCARBOROUGH ME - 207-883-7100 - swaneylighting.com  
 TITLE  
 CED AUBURN  
 SCALE NOT TO SCALE  
 SITE 3-3-20.AGI  
 Page 1 of 1  
 Date: 4/3/2020  
 SWANEY LIGHTING ASSOCIATES, INC.  
 NOTICE: THIS DRAWING IS THE EXCLUSIVE PROPERTY OF SWANEY LIGHTING ASSOCIATES. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM. THIS DRAWING IS TO BE USED FOR NO PURPOSE OTHER THAN AS DETAILED HEREIN. ANY VARIATION IN THE MANUFACTURING OF THE FIXTURES FROM THE PERFORMANCE SHOWN IN THIS FILE IS NOT THE RESPONSIBILITY OF THE MANUFACTURER. ITS USE FOR ANY OTHER PURPOSE IS NOT AUTHORIZED BY SWANEY LIGHTING ASSOCIATES.

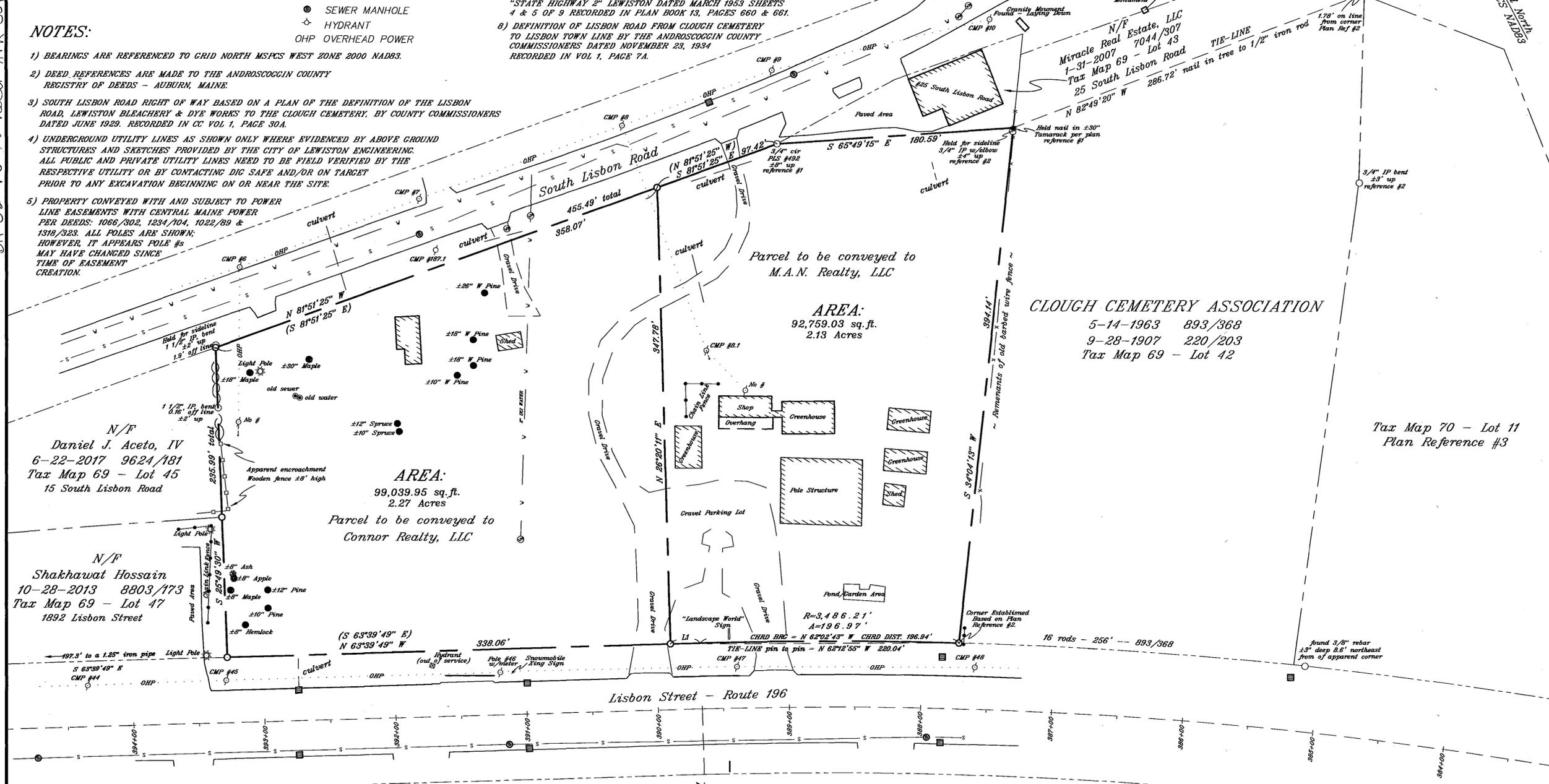
BK 52 PG 78 Rec'd APR 30, 2018 @ 11:09 am



- LEGEND:**
- IRON PIN FOUND
  - ◉ IRON PIN SET
  - MONUMENT FOUND
  - ⊕ WATER VALVE/GATE
  - ⊙ UTILITY POLE/LIGHT POLE
  - EDGE OF PAVEMENT
  - ▭ EXISTING BUILDING
  - X-X- FENCE LINE
  - N/F NOW OR FORMERLY
  - CATCH BASIN
  - CIR CAPPED IRON ROD
  - ⊙ SEWER MANHOLE
  - ⊙ HYDRANT
  - ⊙ OHP OVERHEAD POWER

- REFERENCES:**
- 1) PLAN OF PROPERTY DATED MARCH 4, 2004 FOR MIRACLE DRYWALL, INC. BY A.R.C.C. LAND SURVEYING, INC. - AUBURN, MAINE.
  - 2) PLAN OF PROPERTY & SITE PLAN DATED JULY 11, 2005 FOR MIRACLE DRYWALL, INC. BY A.R.C.C. LAND SURVEYING, INC. - AUBURN, MAINE.
  - 3) PLAN OF EXISTING CONDITIONS SURVEY DATED 2005 OF EDWARD P. GIVEN BY FOUR POINTS ASSOCIATES, INC.
  - 4) PLAN OF CLOUGH CEMETERY EXTENSION DATED 1907 RECORDED IN THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS IN PLAN BOOK 3, PAGE 106.
  - 5) PLAN OF STORE ADDITION DATED 9-19-1988 BY ROYAL ARCHITECTS FOUND ON FILE AT THE CITY OF LEWISTON PLANNING DEPARTMENT.
  - 6) STATE OF MAINE DEPARTMENT OF TRANSPORTATION RIGHT OF WAY MAP "STATE HIGHWAY 17" LEWISTON DATED APRIL 1990 SHEETS 10-12 OF 25 RECORDED IN PLAN BOOK 37, PAGES 86-88.
  - 7) MAINE STATE HIGHWAY COMMISSION RIGHT OF WAY MAP "STATE HIGHWAY 2" LEWISTON DATED MARCH 1953 SHEETS 4 & 5 OF 9 RECORDED IN PLAN BOOK 13, PAGES 660 & 661.
  - 8) DEFINITION OF LISBON ROAD FROM CLOUGH CEMETERY TO LISBON TOWN LINE BY THE ANDROSCOGGIN COUNTY COMMISSIONERS DATED NOVEMBER 23, 1934 RECORDED IN VOL 1, PAGE 7A.

- NOTES:**
- 1) BEARINGS ARE REFERENCED TO GRID NORTH MSPCS WEST ZONE 2000 NAD83.
  - 2) DEED REFERENCES ARE MADE TO THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS - AUBURN, MAINE.
  - 3) SOUTH LISBON ROAD RIGHT OF WAY BASED ON A PLAN OF THE DEFINITION OF THE LISBON ROAD, LEWISTON BLEACHERY & DYE WORKS TO THE CLOUGH CEMETERY, BY COUNTY COMMISSIONERS DATED JUNE 1929. RECORDED IN CC VOL 1, PAGE 30A.
  - 4) UNDERGROUND UTILITY LINES AS SHOWN ONLY WHERE EVIDENCED BY ABOVE GROUND STRUCTURES AND SKETCHES PROVIDED BY THE CITY OF LEWISTON ENGINEERING. ALL PUBLIC AND PRIVATE UTILITY LINES NEED TO BE FIELD VERIFIED BY THE RESPECTIVE UTILITY OR BY CONTACTING DIG SAFE AND/OR ON TARGET PRIOR TO ANY EXCAVATION BEGINNING ON OR NEAR THE SITE.
  - 5) PROPERTY CONVEYED WITH AND SUBJECT TO POWER LINE EASEMENTS WITH CENTRAL MAINE POWER PER DEEDS: 1066/302, 1234/104, 1022/89 & 1318/323. ALL POLES ARE SHOWN; HOWEVER, IT APPEARS POLE #S MAY HAVE CHANGED SINCE TIME OF EASEMENT CREATION.



**RECORDING INFORMATION:**  
 ANDROSCOGGIN COUNTY REGISTRY OF DEEDS - STATE OF MAINE  
 RECEIVED April 30, 2018 AT 11 HOUR 09 MIN. A.M.  
 AND RECORDED IN PLAN BOOK 52 PAGE 78  
 ATTEST Una M. Chouard REGISTRAR

**AREA: total**  
191,798.98 sq. ft.  
4.40 Acres

**~ LINE TABLE ~**

LINE	BEARING	DISTANCE
L1	N 63°39'49" E	W23.11'

Scale: 1" = 50'

**REVISIONS:**

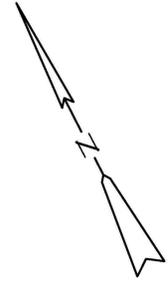
NO.	DATE	DESCRIPTION

**OWNER OF RECORD:**  
 Estate of Armande A. Poulin  
 12-22-1953 694/264  
 (8-17-1951 657/600)  
 Tax Map 69 - Lot 44

**CERTIFICATION:**  
 TO THE BEST OF MY KNOWLEDGE, I HAVE USED ORDINARY AND PROPER CARE TO OBTAIN CORRECT INFORMATION FROM THE RECORDS OF THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS AND THE RECORDS OF THE ANDROSCOGGIN COUNTY COMMISSIONERS AND TO THE PUBLIC AS REQUIRED UNDER THE STANDARDS OF PRACTICE AS IMPOSED BY THE BOARD OF ARCHITECTURE FOR PROFESSIONAL LAND SURVEYORS (M.R.S.A. TITLE 32, CHAPTER 20 DATED APRIL 2001) AND TO THE BEST OF MY BELIEF, THE INFORMATION IS TRUE AND CORRECT.  
 I, THE SURVEYOR, AM NOT PROVIDING ANY WARRANTY OR GUARANTEE OF ANY KIND, EXPRESS OR IMPLIED, REGARDING THE ACCURACY OF THIS SURVEY.  
 PLAN CHECKED BY: S.A.B. & J.M. FILED: 5-1-2018  
 PLAN PREPARED BY: S.A.B.

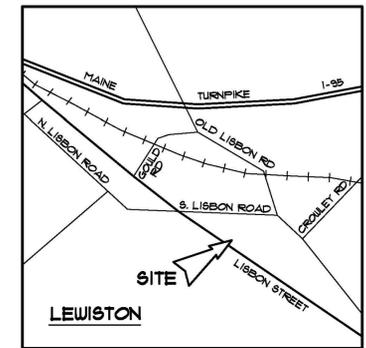
**DAVIS LAND SURVEYING, LLC**  
 64 OLD COUNTY ROAD  
 OXFORD, MAINE 04270  
 (207) 945-9991 office - (207) 945-9955 office - (207) 240-9949 cell  
 EMAIL: davis@dlssurveying.com  
 WEBSITE: www.dlssurveying.com  
 April 20, 2018  
 FILE: 540 JOB NO.: 17065 DISC. SURVEY 2018

**STANDARD BOUNDARY SURVEY**  
**PLAN OF PROPERTY**  
 1904 Lisbon Street - Lewiston, Maine  
**Connor Realty, LLC**  
 1124 Lisbon Street - Lewiston, Maine 04240

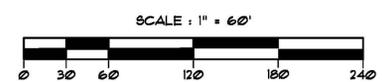


**NOTES**

- 1) BOUNDARY INFORMATION IS BASED UPON A PLAN ENTITLED "STANDARD BOUNDARY SURVEY - PLAN OF PROPERTY, 1924 LISBON STREET - LEWISTON, MAINE", DATED APRIL 20, 2018, RECORDED IN PLAN BOOK 52, PAGE 18.
- 2) ALL BOOK AND PAGE NUMBERS REFER TO THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS.
- 3) OWNER OF RECORD - CONNOR REALTY, LLC  
DEED REFERENCE - BOOK 9832, PAGE 88  
TAX MAP 63, LOT 50
- 4) PARCEL AREA - 2.27 ACRES
- 5) THE PARCEL IS LOCATED IN THE HIGHWAY BUSINESS ZONING DISTRICT.
- 6) THE AERIAL PHOTO BACKGROUND WAS TAKEN FROM THE MAINE OFFICE OF GIS AND IS DATED 2018.



LOCATION MAP



REV.	DATE	CHANGES
1	3-11-20	CHANGES TO PARKING LAYOUT

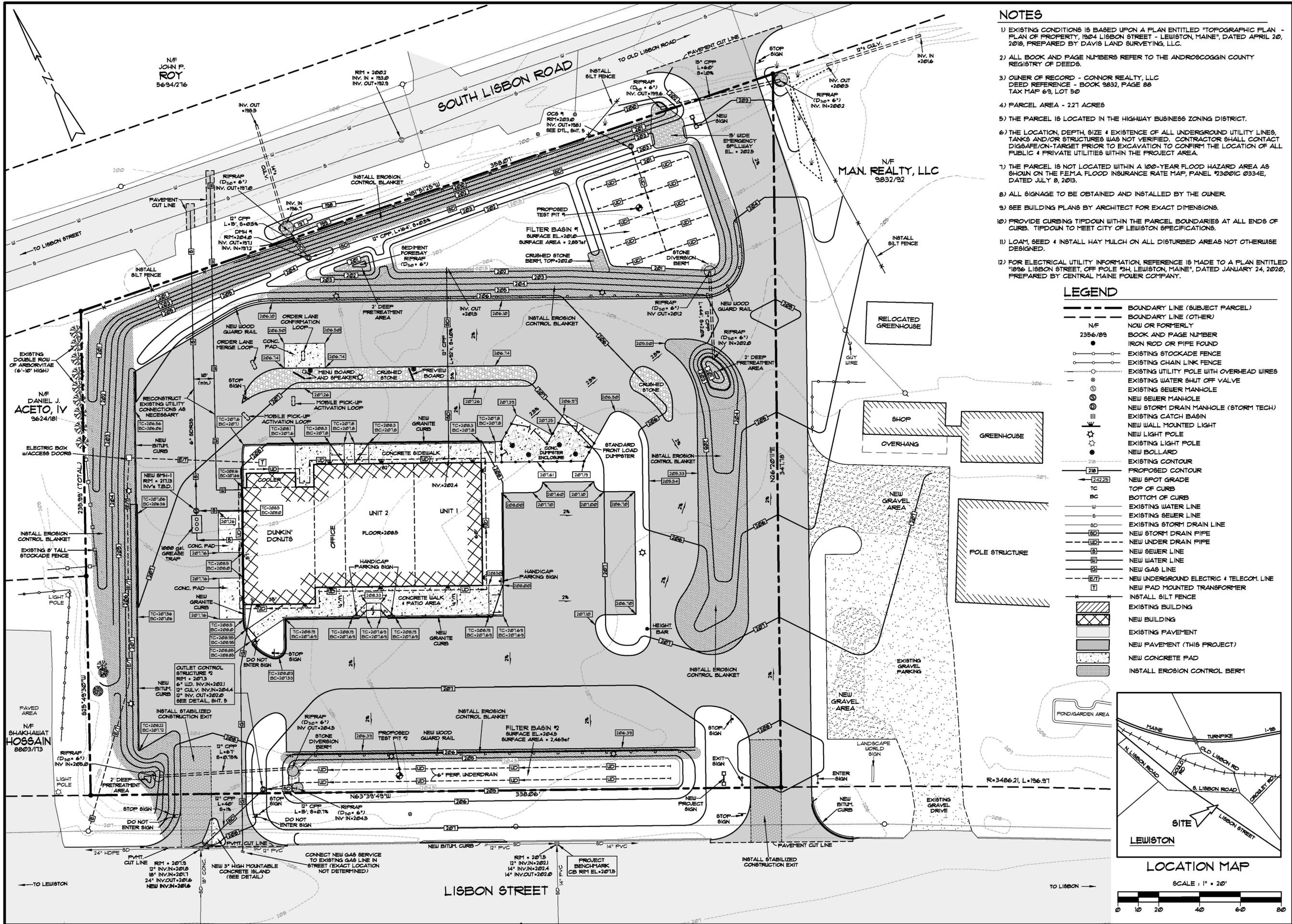
**Stoneybrook**  
Land Use, Inc.  
4846 Sun City Center Blvd., # 300  
Sun City Center, FL 33573-6281

**SJR ENGINEERING, INC.**  
16 THURSTON DRIVE  
MONROUTH, MAINE 04295  
(207) 242-6248 tel  
steve@s.sjr-eng.com

**2018 AERIAL GRAPHIC**  
1896 LISBON STREET  
LEWISTON, MAINE  
PREPARED FOR  
**CONNOR REALTY, LLC**  
1124 LISBON STREET - LEWISTON, ME 04240

DATE	PROJECT
FEB. 2020	17-028
DRAWN BY	SCALE
BRJ	1" = 60'



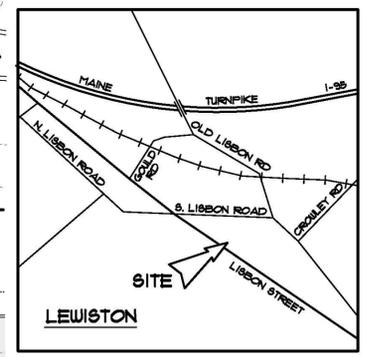


**NOTES**

- EXISTING CONDITIONS IS BASED UPON A PLAN ENTITLED "TOPOGRAPHIC PLAN - PLAN OF PROPERTY, 1804 LISBON STREET - LEWISTON, MAINE", DATED APRIL 20, 2018, PREPARED BY DAVIS LAND SURVEYING, LLC.
- ALL BOOK AND PAGE NUMBERS REFER TO THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS.
- OWNER OF RECORD - CONNOR REALTY, LLC  
DEED REFERENCE - BOOK 9832, PAGE 88  
TAX MAP 69, LOT 50
- PARCEL AREA - 2.21 ACRES
- THE PARCEL IS LOCATED IN THE HIGHWAY BUSINESS ZONING DISTRICT.
- 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.
- THE PARCEL IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP, PANEL 2300IC 0334E, DATED JULY 8, 2013.
- ALL SIGNAGE TO BE OBTAINED AND INSTALLED BY THE OWNER.
- SEE BUILDING PLANS BY ARCHITECT FOR EXACT DIMENSIONS.
- PROVIDE CURBING TYPED WITHIN THE PARCEL BOUNDARIES AT ALL ENDS OF CURB. TIPDOWN TO MEET CITY OF LEWISTON SPECIFICATIONS.
- LOAM, SEED & INSTALL HAY MULCH ON ALL DISTURBED AREAS NOT OTHERWISE DESIGNED.
- FOR ELECTRICAL UTILITY INFORMATION, REFERENCE IS MADE TO A PLAN ENTITLED "1896 LISBON STREET, OFF POLE #34, LEWISTON, MAINE", DATED JANUARY 24, 2020, PREPARED BY CENTRAL MAINE POWER COMPANY.

**LEGEND**

- BOUNDARY LINE (SUBJECT PARCEL)
- BOUNDARY LINE (OTHER)
- N/F NOW OR FORMERLY
- 2356/093 BOOK AND PAGE NUMBER
- IRON ROD OR PIPE FOUND
- EXISTING STOCKADE FENCE
- EXISTING CHAIN LINK FENCE
- EXISTING UTILITY POLE WITH OVERHEAD WIRES
- EXISTING WATER SHUT OFF VALVE
- EXISTING SEWER MANHOLE
- EXISTING STORM DRAIN MANHOLE (STORM TECH)
- EXISTING CATCH BASIN
- NEW WALL MOUNTED LIGHT
- NEW LIGHT POLE
- EXISTING LIGHT POLE
- NEW BOLLARD
- EXISTING CONTOUR
- PROPOSED CONTOUR
- TC NEW SPOT GRADE
- BC TOP OF CURB
- BC BOTTOM OF CURB
- EXISTING WATER LINE
- EXISTING SEWER LINE
- EXISTING STORM DRAIN LINE
- NEW STORM DRAIN PIPE
- NEW UNDER DRAIN PIPE
- NEW SEWER LINE
- NEW WATER LINE
- NEW GAS LINE
- NEW UNDERGROUND ELECTRIC & TELECOM. LINE
- NEW PAD MOUNTED TRANSFORMER
- INSTALL SILT FENCE
- EXISTING BUILDING
- NEW BUILDING
- EXISTING PAVEMENT
- NEW PAVEMENT (THIS PROJECT)
- NEW CONCRETE PAD
- INSTALL EROSION CONTROL BERM



REV.	DATE	DESCRIPTION
1	4-11-20	REVISIONS PER CITY REVIEW COMMENTS
2		CHANGES

DO NOT MODIFY PLAN WITHOUT WRITTEN PERMISSION FROM S&R ENG., INC.

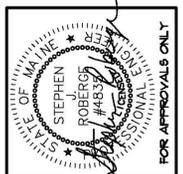
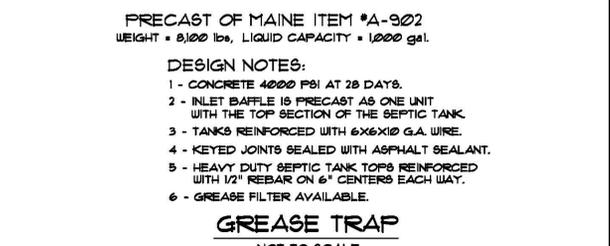
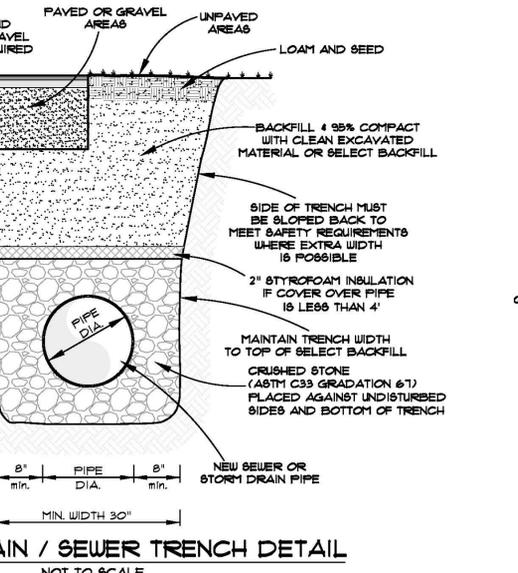
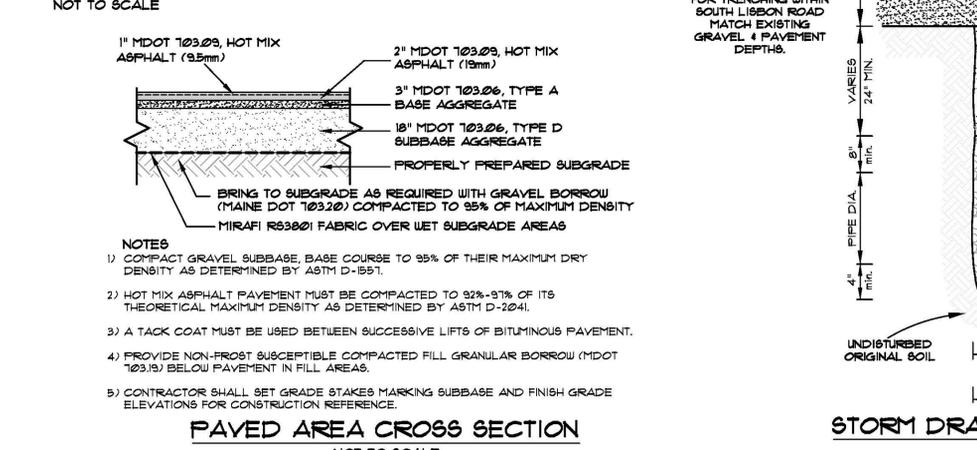
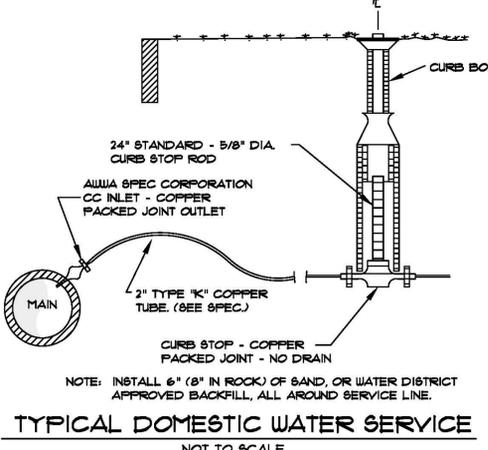
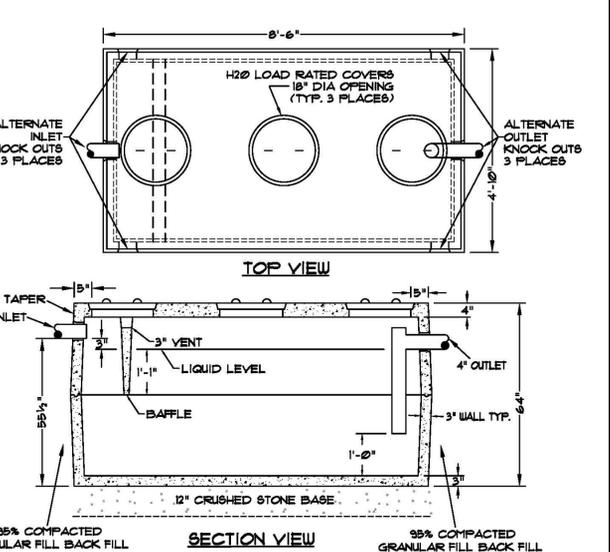
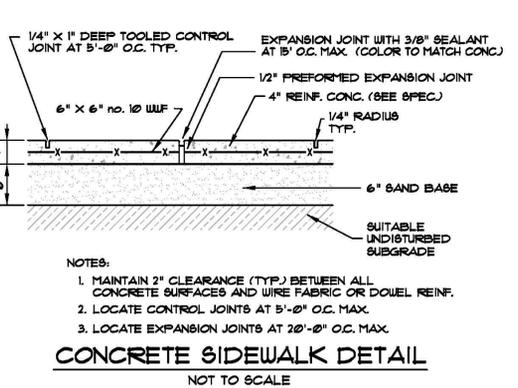
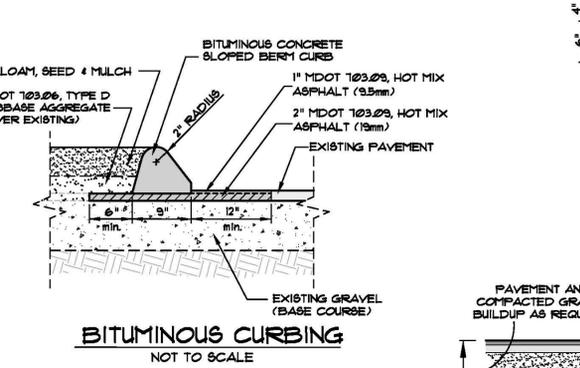
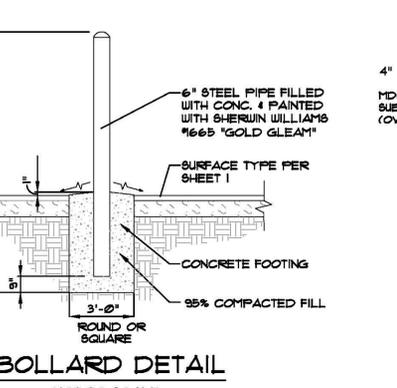
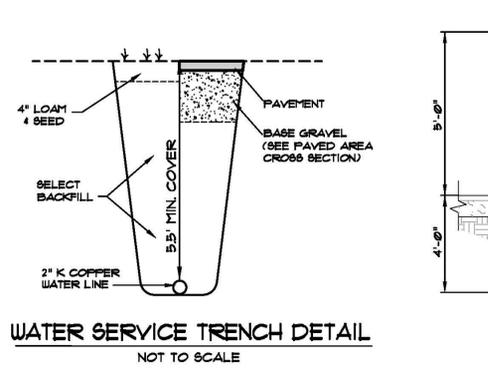
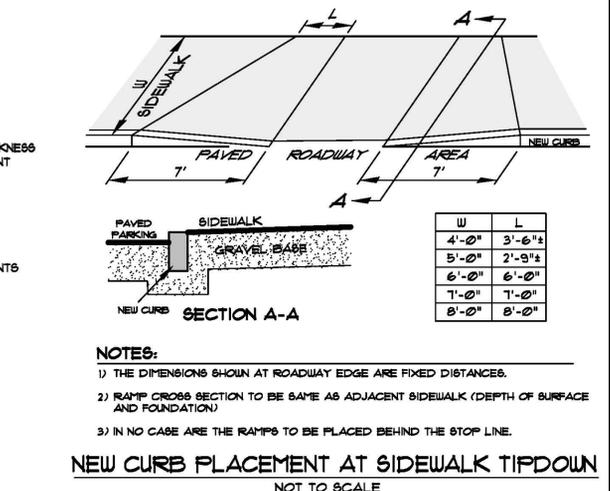
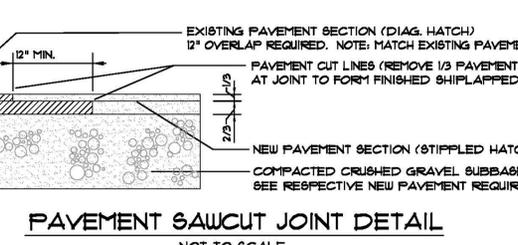
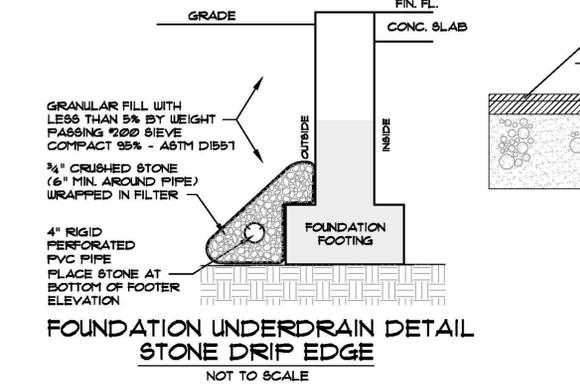
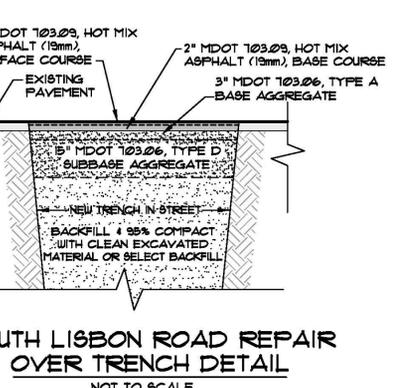
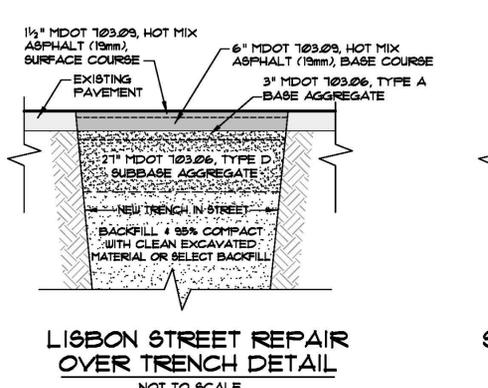
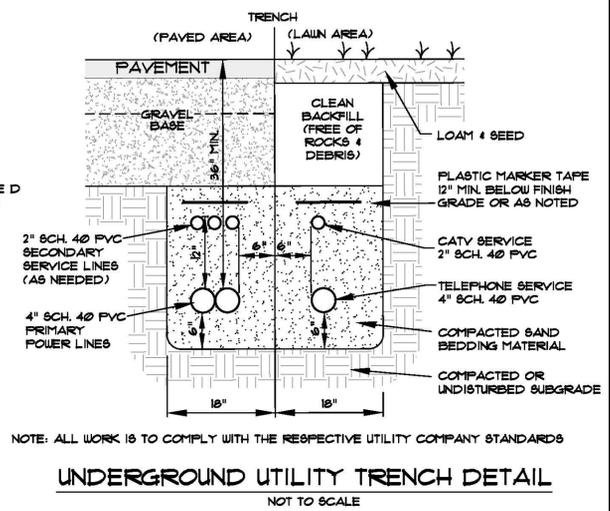
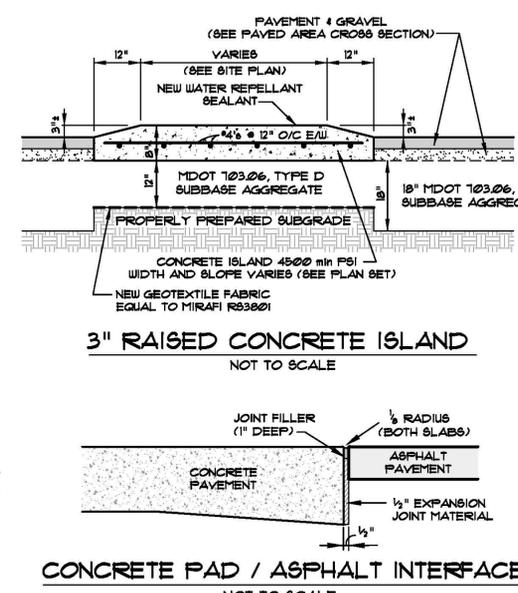
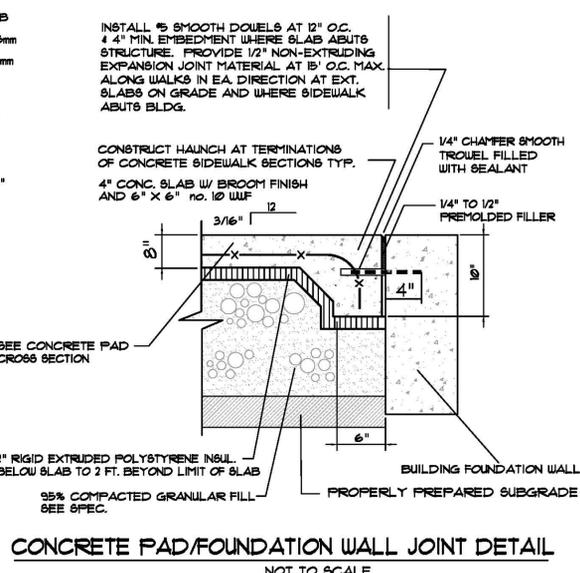
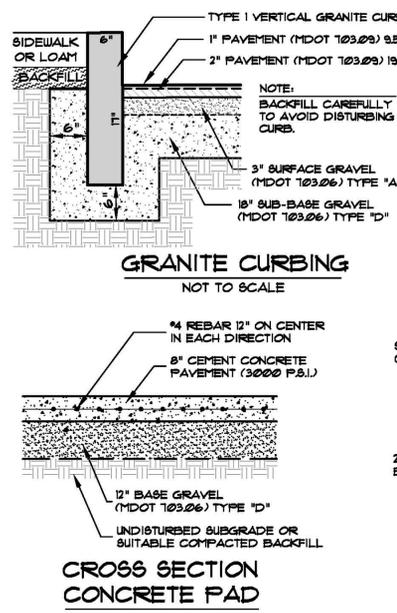
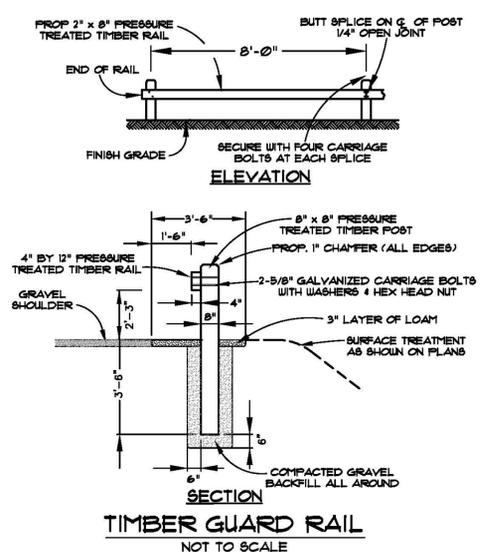
**Stoneybrook**  
Land Use, Inc.  
4846 Sun City Center Blvd., #300  
Sun City Center, FL 33577-6281

**S&R ENGINEERING, INC.**  
16 THURSTON DRIVE  
MONMOUTH, MAINE 04259  
(207) 242-6248 tel  
steve@sreng.com

**GRADING & UTILITY PLAN**  
1896 LISBON STREET  
LEWISTON, MAINE  
PREPARED FOR  
**CONNOR REALTY, LLC**  
1124 LISBON STREET - LEWISTON, ME 04240

DATE	PROJECT
MAR 2020	11-028
DRAWN BY	SCALE
BRJ	1" = 20'

**SHEET 2**



REV.	DATE	REVISIONS PER CITY REVIEW COMMENTS
1	4-11-20	CHANGES

DO NOT MODIFY PLAN WITHOUT WRITTEN PERMISSION FROM S&R ENG., INC.

**Stoneybrook**  
Land Use, Inc.  
4846 Sun City Center Blvd., #300  
Sun City Center, FL 33577-6281

**SJR ENGINEERING, INC.**  
16 THURSTON DRIVE  
MONMOUTH, MAINE 04259  
(207) 242-6248 tel  
steve@sjreng.com

**CONSTRUCTION DETAILS**  
1836 LISBON STREET  
LEWISTON, MAINE  
PREPARED FOR  
**CONNOR REALTY, LLC**  
1124 LISBON STREET - LEWISTON, ME 04240

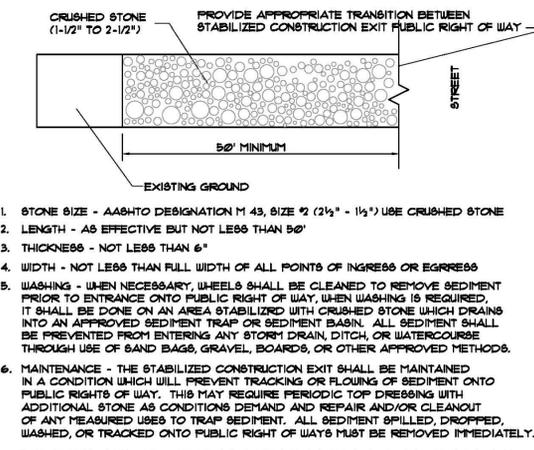
DATE	PROJECT
MAR 2020	11-028
DRAWN BY	SCALE
BRJ	N.T.S.

**SHEET 3**

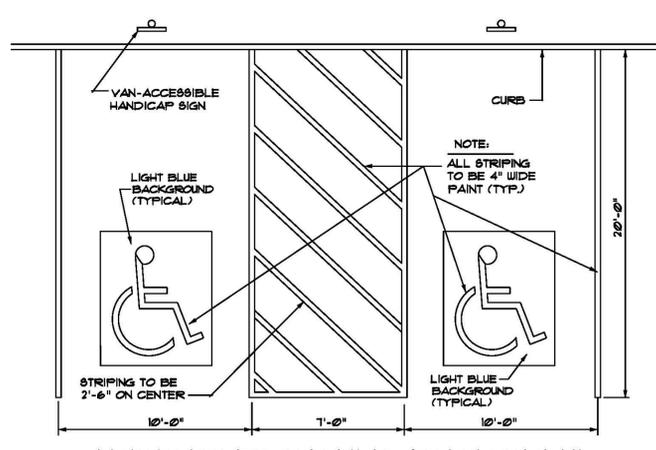
# GENERAL NOTES

- 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 ENTRIES 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:
 

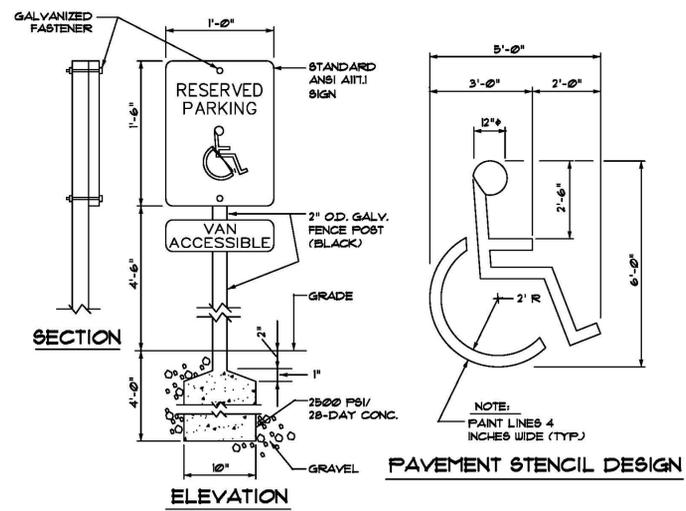
<b>DIG SAFE:</b> 1-888-344-1233	<b>TELECOMMUNICATIONS:</b> OXFORD NETWORKS 491 LISBON STREET LEWISTON, ME 04240 TEL: (207) 336-9311	<b>WATER AND SEWER:</b> KEVIN GAGNE LEWISTON PUBLIC WORKS DEPT. WATER AND SEWER DIVISION 103 ADAMS AVENUE LEWISTON, ME 04240 TEL: (207) 513-3203
<b>ELECTRICAL:</b> CENTRAL MAINE POWER 83 EDISON DRIVE AUGUSTA, ME 04336 TEL: (207) 775-918	<b>SPECTRUM:</b> 105 MT. AUBURN AVE. AUBURN, ME 04212 TEL: 1-888-406-1063	
<b>GA8:</b> 1075 FOREST AVENUE PORTLAND, ME 04104 TEL: (207) 151-8202	<b>FAIRPOINT COMMUNICATIONS:</b> 521 E. MOREHEAD ST. PORTLAND, ME 04101 TEL: 1-800-388-4466	
- 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 72 HOURS (3) BUT NOT MORE THAN THIRTY (30) DAYS PRIOR TO COMMENCEMENT OF EXCAVATION OR DEPLETION 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 US6 PUBLIC WORKS SYSTEMS.
- 5) CONTRACTORS SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE REQUIREMENTS OF 23 MRS.A 336(2)-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 CURBS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CITY. 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, TDEP 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 RESETTling 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.



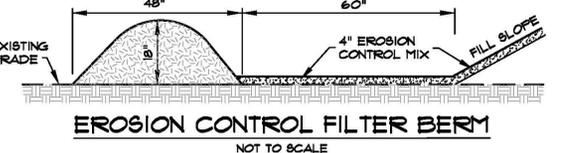
**STABILIZED CONSTRUCTION EXIT DETAIL**  
NOT TO SCALE



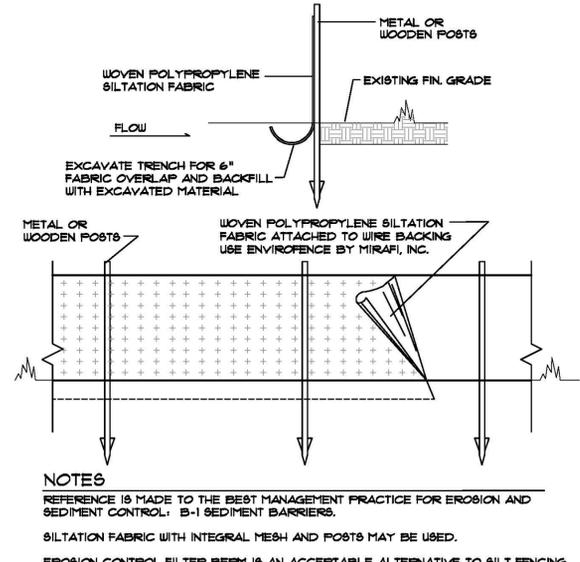
**HANDICAPPED PARKING SPACE DETAIL**  
NOT TO SCALE



**HANDICAP SIGN DETAIL**  
NOT TO SCALE



**EROSION CONTROL FILTER BERM**  
NOT TO SCALE



**SILT FENCE DETAIL**  
NOT TO SCALE

# 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 MUTCD.
- 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 STORM DRAIN. DEWATERING EFFORTS FROM STORMWATER SHALL NOT BE DISCHARGED TO THE SEWER OR COMBINED SYSTEM.
- 38) STORM DRAIN INVERTS FOR CROSBY 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 6"MS AND 15"MS 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 CONTRACTOR'S EXPENSE.
- 40) CONTRACTOR TO REPLACE OR RESET ALL DISTURBED CURBS 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 SAUCUIT 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 SAUCUITING 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, PAVED OR OTHER FACILITIES THAT COULD BE DAMAGED BY SETTLEMENT, LATERAL MOVEMENTS, UNDERPINNING, WASH-OUT 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, 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 GUARANTEE 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 RESPONSIBILITY 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 2008 (DEPLU 888) AND IN ACCORDANCE WITH THE STOREWATER 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 BERT 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-ERODIBLE COVER IF EXPOSED SOILS WILL NOT BE WORKED FOR MORE THAN 1 DAY. PERMANENT SEEDING SHALL TAKE PLACE WITHIN 1 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) VEGETATION 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 TESTING IS CRITICAL, FERTILIZER MIXTURE MAY BE APPLIED AT 1000 LBS PER ACRE OR 15 POUNDS PER SQUARE FOOT USING 10-20-20 (N-P-K) OR EQUIVALENT, APPLY GROUND LIMESTONE (EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF 3.3 TONS PER ACRE (50 LBS PER 1000 SF).
  - C) FOLLOWING SEED BED PREPARATION, DITCHES AND BARK SLOPES WILL BE SEEDED TO A MIXTURE OF 4% CREEPING RED FESCUE, 5% REDTOP AND 49% 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 SF. LAWN QUALITY 800 MAY BE SUBSTITUTED FOR SEED. SEED MIX SHALL CONTAIN 10% ANNUAL RYEGRASS.
  - D) HAY MULCH AT THE RATE OF 10-30 LBS PER 1000 SF OR A HYDRO-APPLICATION OF ASPHALT, WOOD OR PAPER FIBER SHALL BE APPLIED FOLLOWING SEEDING. A SUITABLE BINDER SUCH AS CURASOL OR R15 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.



FOR APPROVALS ONLY  
REV. I DATE: CHANGES:  
DO NOT MODIFY PLAN WITHOUT WRITTEN PERMISSION FROM S&R ENG., INC.

**Stoneybrook**  
Land Use, Inc.  
4846 Sun City Center Blvd., #300  
Sun City Center, FL 33577-6281

**SJR ENGINEERING, INC.**  
16 THURSTON DRIVE  
MONMOUTH, MAINE 04259  
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steves@sjreng.com

**SJR ENGINEERING**

**NOTES & DETAILS**  
1836 LISBON STREET  
LEWISTON, MAINE  
PREPARED FOR  
**CONNOR REALTY, LLC**  
1124 LISBON STREET - LEWISTON, ME 04240

DATE	PROJECT
MAR 2020	11-028
DRAWN BY	SCALE
BRJ	N.T.S.

# 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 SEEDING.

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 103.22 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 103.22 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 10' 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.

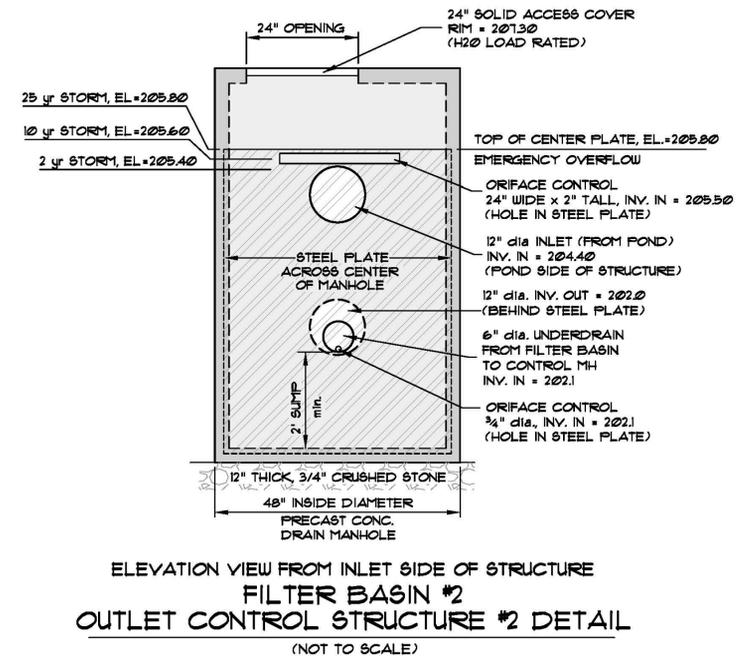
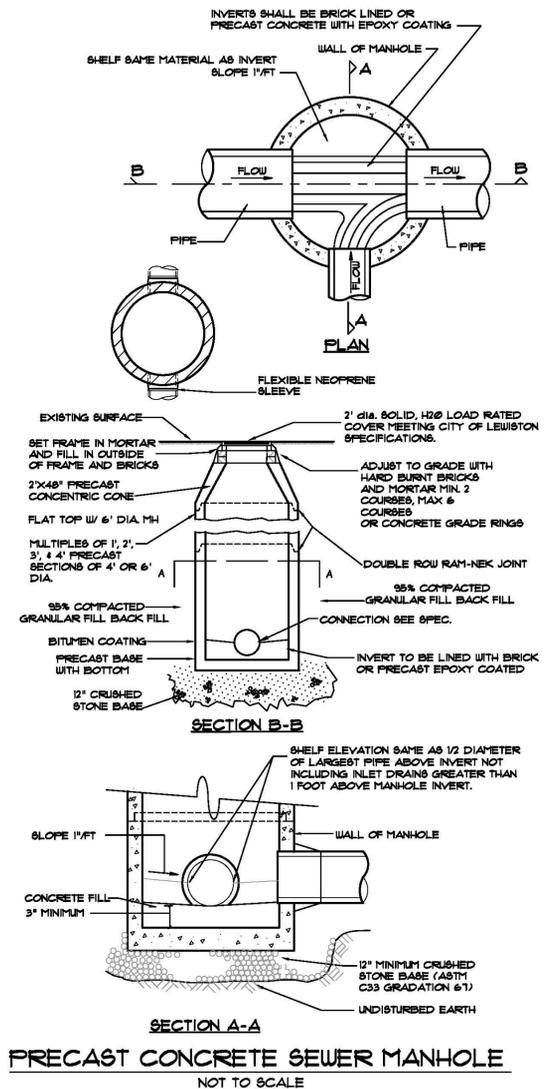
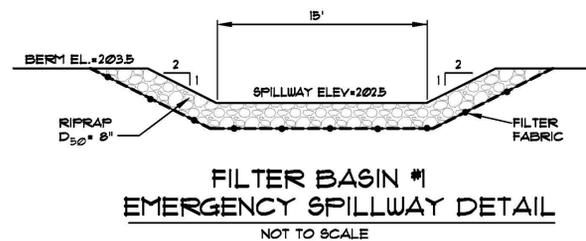
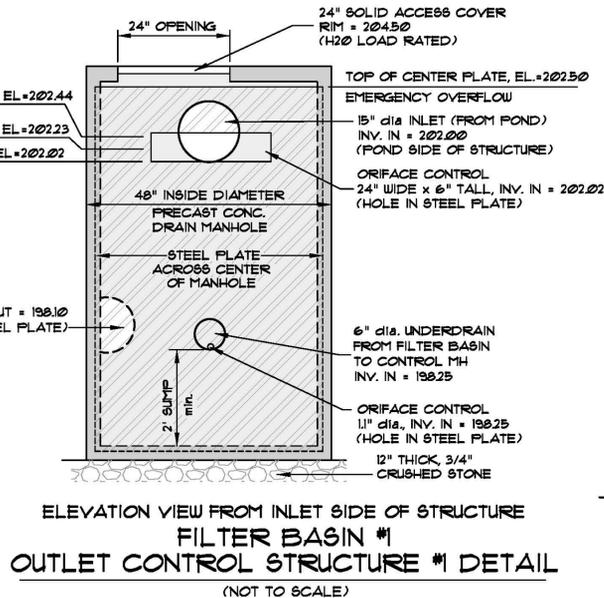
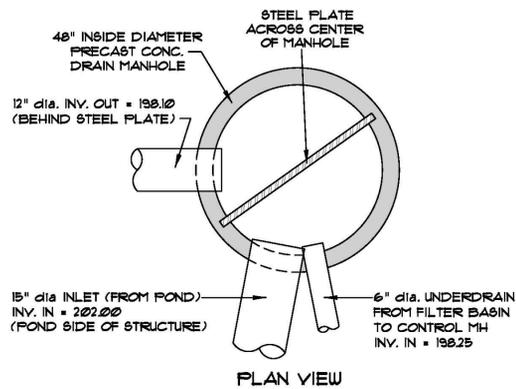
### SOIL FILTER MEDIA SPECIFICATIONS \*

FILTER MEDIA	SAND	TOPSOIL	MULCH
MIXTURE BY VOL.	50% (±5%)	25% (±5%)	25% (±5%)
SPECIFICATION	MEDOT SPEC. #103.01 FINE AGGREGATE FOR CONCRETE	USDA LOAMY SANDY TOPSOIL	WOODY FIBER & MODERATELY FINE SHREDDED BARK SUPER-MULCH OR EQUAL, ADJUSTED FOR MINERAL SOIL CONTENT WITH LESS THAN 5% PASSING THE #200 SIEVE
GRADATION			
SIEVE SIZE	% BY WEIGHT	% BY WEIGHT	% BY WEIGHT
3/8"	100	-	-
4	90-100	15-95	-
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.

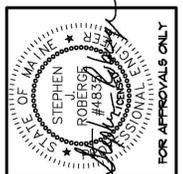
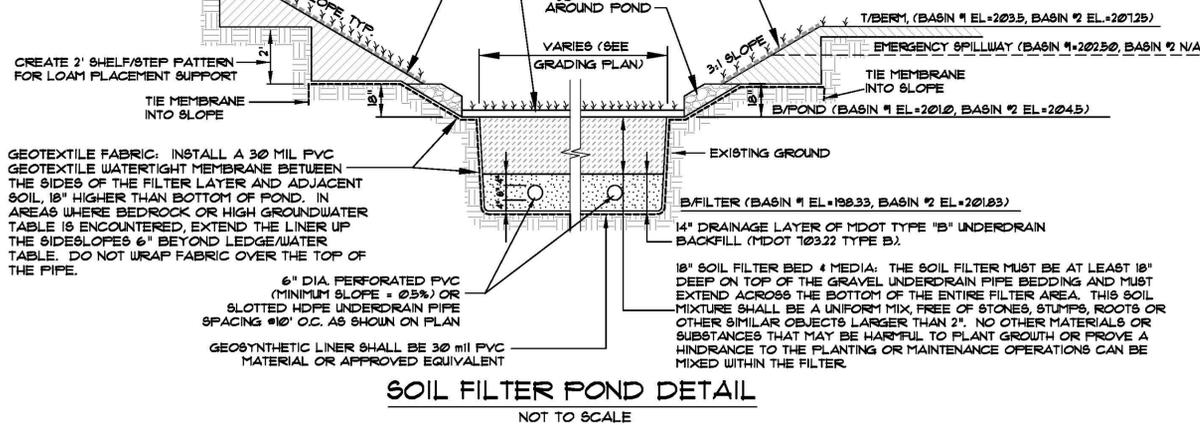


**NOTE:**  
FILTER POND SOIL FILTER DETAILS DEPICTS ELEVATIONS AT THE BOTTOM PERIMETER OF THE POND AND NOT THE LOW POINT OF THE POND. SEE SITE PLAN GRADING AND SECTION FOR LOW POINT OF ELEVATION (TYPICALLY NEAR THE CONTROL STRUCTURE)

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 & SEEDS WITH MIXTURE SHOWN BELOW  
 CREEPING RED FESCUE - 15 lbs/ACRE  
 TALL FESCUE - 15 lbs/ACRE  
 BIRDSFOOT TREFLOIL - 8 lbs/ACRE  
 PERENNIAL RYE GRASS - 5 lbs/ACRE  
 REDTOP OR CLOVER - 5 lbs/ACRE  
 TOTAL - 48 lbs/ACRE

NOTE: SEEDING LAYER SHALL BE COVERED WITH A THIN LAYER OF STRAW/HAY. SEEDING AREA SHALL BE KEPT MOIST UNTIL VEGETATION IS WELL ESTABLISHED.



DATE:	CHANGES:

**Stoneybrook**  
Land Use, Inc.  
48th & Sun City Center Blvd, #300  
Sun City Center, FL 33577-6281

**SJR ENGINEERING, INC.**  
16 THURSTON DRIVE  
MONMOUTH, MAINE 04259  
(207) 242-6248 tel  
steve@sje.org

**CONOR REALTY, LLC**  
1124 LISBON STREET - LEWISTON, ME 04240

DATE	PROJECT
MAR 2020	11-028
DRAWN BY	SCALE
BRJ	N.T.S.

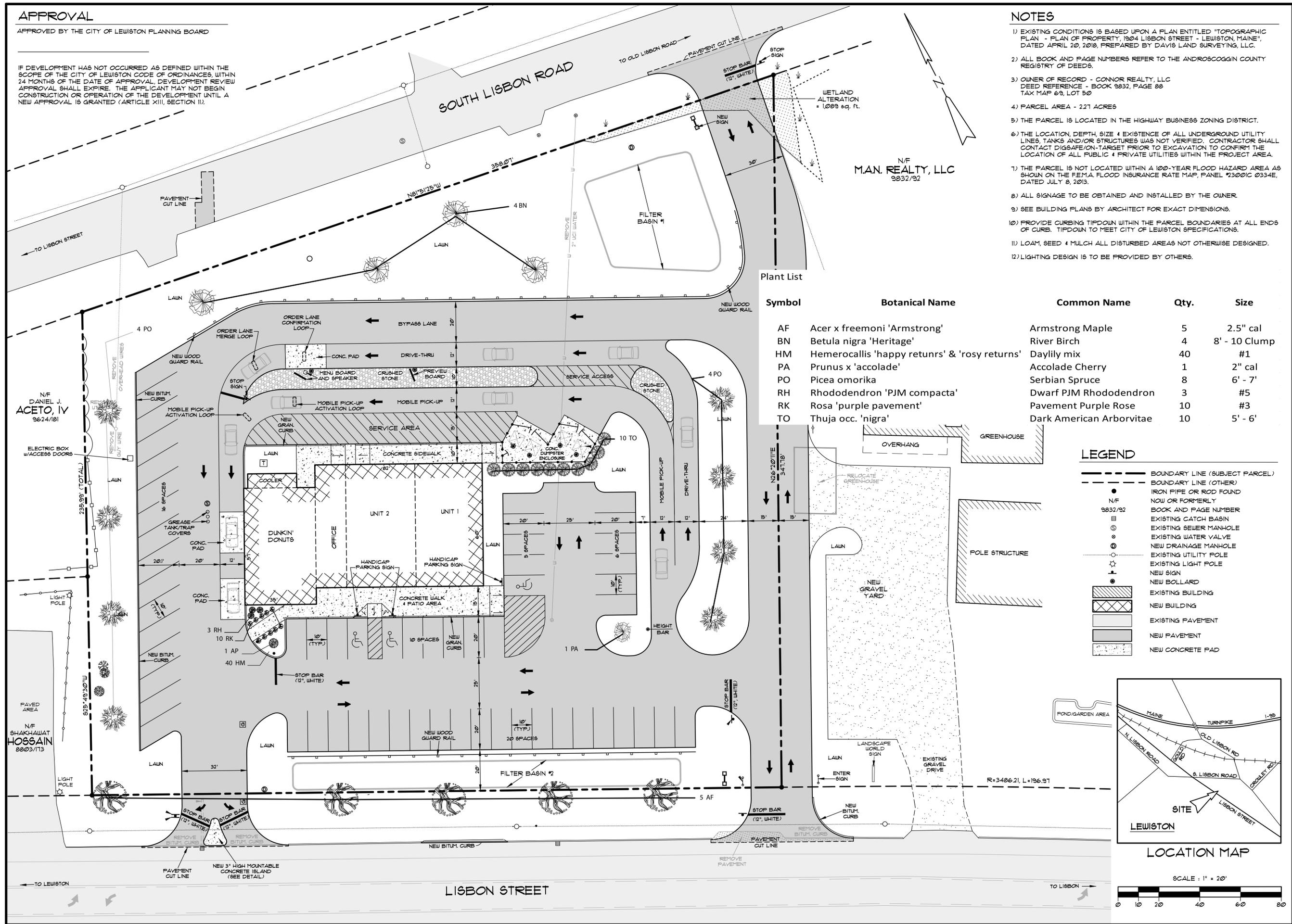
**APPROVAL**

APPROVED BY THE CITY OF LEWISTON PLANNING BOARD

IF DEVELOPMENT HAS NOT OCCURRED AS DEFINED WITHIN THE SCOPE OF THE CITY OF LEWISTON CODE OF ORDINANCES, WITHIN 24 MONTHS OF THE DATE OF APPROVAL, DEVELOPMENT REVIEW APPROVAL SHALL EXPIRE. THE APPLICANT MAY NOT BEGIN CONSTRUCTION OR OPERATION OF THE DEVELOPMENT UNTIL A NEW APPROVAL IS GRANTED (ARTICLE XIII, SECTION II).

**NOTES**

- EXISTING CONDITIONS IS BASED UPON A PLAN ENTITLED 'TOPOGRAPHIC PLAN - PLAN OF PROPERTY, 1904 LISBON STREET - LEWISTON, MAINE', DATED APRIL 20, 2018, PREPARED BY DAVIS LAND SURVEYING, LLC.
- ALL BOOK AND PAGE NUMBERS REFER TO THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS.
- OWNER OF RECORD - CONNOR REALTY, LLC DEED REFERENCE - BOOK 9832, PAGE 88 TAX MAP 69, LOT 50
- PARCEL AREA - 2.21 ACRES
- THE PARCEL IS LOCATED IN THE HIGHWAY BUSINESS ZONING DISTRICT.
- 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.
- THE PARCEL IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP, PANEL 123001C 0334E, DATED JULY 8, 2013.
- ALL SIGNAGE TO BE OBTAINED AND INSTALLED BY THE OWNER.
- SEE BUILDING PLANS BY ARCHITECT FOR EXACT DIMENSIONS.
- PROVIDE CURBING TIPDOWN WITHIN THE PARCEL BOUNDARIES AT ALL ENDS OF CURB. TIPDOWN TO MEET CITY OF LEWISTON SPECIFICATIONS.
- LOAM, SEED & MULCH ALL DISTURBED AREAS NOT OTHERWISE DESIGNED.
- LIGHTING DESIGN IS TO BE PROVIDED BY OTHERS.

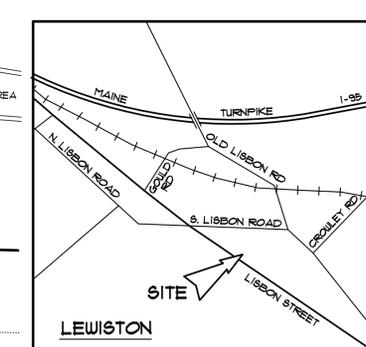


**Plant List**

Symbol	Botanical Name	Common Name	Qty.	Size
AF	Acer x freemoni 'Armstrong'	Armstrong Maple	5	2.5" cal
BN	Betula nigra 'Heritage'	River Birch	4	8' - 10 Clump
HM	Hemerocallis 'happy returns' & 'rosy returns'	Daylily mix	40	#1
PA	Prunus x 'accolade'	Accolade Cherry	1	2" cal
PO	Picea omorika	Serbian Spruce	8	6' - 7'
RH	Rhododendron 'PJM compacta'	Dwarf PJM Rhododendron	3	#5
RK	Rosa 'purple pavement'	Pavement Purple Rose	10	#3
TO	Thuja occ. 'nigra'	Dark American Arborvitae	10	5' - 6'

**LEGEND**

- BOUNDARY LINE (SUBJECT PARCEL)
- BOUNDARY LINE (OTHER)
- IRON PIPE OR ROD FOUND
- N/F NOW OR FORMERLY
- 9832/92 BOOK AND PAGE NUMBER
- ⊕ EXISTING CATCH BASIN
- ⊙ EXISTING SEWER MANHOLE
- ⊙ EXISTING WATER VALVE
- ⊙ NEW DRAINAGE MANHOLE
- ⊙ EXISTING UTILITY POLE
- ⊙ EXISTING LIGHT POLE
- ⊙ NEW SIGN
- ⊙ NEW BOLLARD
- ▨ EXISTING BUILDING
- ▨ NEW BUILDING
- ▨ EXISTING PAVEMENT
- ▨ NEW PAVEMENT
- ▨ NEW CONCRETE PAD



PROGRESS PRINT

REV.	DATE	CHANGES

DO NOT MODIFY PLAN WITHOUT WRITTEN PERMISSION FROM S.R. ENG., INC.

Stoneybrook

Land Use, Inc.  
4846 Sun City Center Blvd., #300  
Sun City Center, FL 33577-6281

DAVIS

LANDSCAPE COMPANY, INC.  
78 Lisbon Street  
Lisbon, Maine 04250  
(207) 353-4848  
www.davislandscape.com

Landscape Plan

1896 Lisbon Street  
Lewiston, ME 04240

Prepared for:  
**Connor Realty, LLC**  
1124 Lisbon Street - Lewiston, ME 04240

DATE	PROJECT
04-07-20	17-028
DRAWN BY	SCALE
CTD	1" = 20'

Sheet LS-1

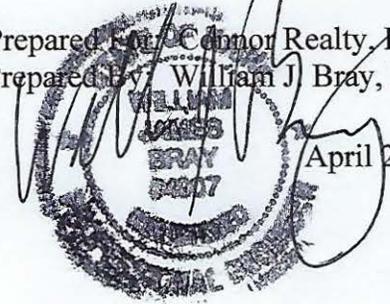
TRAFFIC IMPACT STUDY

FOR

PROPOSED

**Multi-Tenant  
Building**

Prepared For: Connor Realty, LLC  
Prepared By: William J. Bray, P.E.



April 2020

## **INTRODUCTION**

The proposed site, a 2.27± acre parcel, is located at 1896 Lisbon Street near the intersection with South Lisbon Road in the City of Lewiston. The proposed site is currently occupied with a vacant single-family house and shed that will be razed with development of the proposed project. This property shares access from both Lisbon Street and South Lisbon Road with the property located at 1904 Lisbon Street, along a narrow gravel drive. The adjoining parcel is occupied by Landscape World.

The Applicant is proposing to construct a multi-tenant building with a 2,163 square foot full-service Dunkin' Donuts Shop and a 900-foot adjoining office space. There will also be two separate rental units; Unit #1 is roughly 1,980 square feet in total area and Unit #2 programmed with a slightly larger foot print of 2,040 square feet. Both rental units will be marketed for either a retail, personal service or office use.

The proposed Dunkin' Donuts store building and site layout represent the Nextgen Prototype for all new Dunkin' franchises. The site design includes two drive-up windows, one order board and a mobile pick-up lane exclusively for "To Go" orders. Drivers with "To Go" orders will have a separate lane through the service area to by-pass the pick-up windows. Regular drive-through customers will have a stop sign at the merge point to allow a smooth traffic flow to the drive-up window.

The Applicant proposes to upgrade the existing shared access drive with the adjoining Landscape World that presently connects Lisbon Street with South Lisbon Road. The existing gravel driveway will be widened and paved to a width of 30-feet with two direct connections to the proposed multi-tenant building and the existing Landscape World site. Additionally, the existing parking area of the Landscape World parcel will be reconfigured to allow truck movements and better site circulation to/from the proposed upgraded access driveway connecting to the two city streets. A second restricted exit-only access drive is proposed for the multi-tenant building, which is located about 280-feet from the upgraded shared-access driveway.

The drive-thru lane provides vehicle stacking for a total of 21 vehicles as measured from the starting point of the Drive-thru and To-Go lanes to the first pick-up window. Additional vehicle stacking is available within the To-Go lane.

A total of 57 parking spaces are provided on-site to meet the parking requirements of the proposed Dunkin' store and the two rental units.

This report assumes full development of the proposed site will occur in early 2021.

## **EXISTING CONDITIONS**

**Existing Traffic:** A manual turning movement count was conducted on Friday, August 16, 2019 between the hours of 6:30 and 9:30 a.m. on Lisbon Street at the proposed site to establish weekday AM peak hour through traffic volumes on State Route 196 (a.k.a. Lisbon Street) at the proposed site driveway entrance. From a summary of the data, a peak hour of traffic (7:00 to 8:00 a.m.) was determined for the noted section of Lisbon Street. A copy of the peak hour count summary sheet is attached as an appendix to the report.

Traffic data collected during the months of July and August are generally representative of "peak" travel conditions and further adjustment is not required. Accordingly, the estimated 2019 design hour directional through traffic volumes for Lisbon Street during the AM peak hour at the proposed site driveway are presented as follows:

Westbound	= 558 vph
Eastbound	= 346 vph
Total Volume	= 904 vehicles per hour

**Existing Safety Trends:** The Maine Department of Transportation's (MaineDOT) Accident Records Section provided the most current three-year (2016 through 2018) safety records for the section of Lisbon Street between Dyer Road and South Lisbon Road. MaineDOT's report is presented as follows:

**2016 - 2018 Accident Summary  
Lisbon Street (Dyer Road to South Lisbon Road)**

<u>Location</u>	<u>Number of Accidents</u>	<u>Critical Rate Factor</u>
1. Lisbon Street @ Dyer Road	2	0.41
2. Lisbon Street @ South Lisbon Road	3	0.56
3. Lisbon Street btw. South Lisbon Road and Dyer Road	9	0.33

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 table shows, there are no identified high crash locations within the defined study area.

**SITE TRAFFIC**

**Site Trip Generation:** Trip generation estimates were prepared for the proposed multi-tenant building project applying standard trip rate information presented in the 7<sup>th</sup> edition of the Institute of Transportation Engineers (ITE) **TRIP GENERATION** publication and 2007 trip generation estimating formulas specifically developed for Dunkin' Donuts restaurants.

**Calculation Procedures**

*Trip estimates for the proposed site were based upon the following level of development:*

- *2,163sf Dunkin' Donuts with Drive-Thru*
- *900sf adjoining office space in Dunkin' Donuts Store*
- *1,980sf Fast-Food Restaurant w/o drive-thru window (Operating after 10:00 a.m. Sunday through Saturday)*
- *2,040sf Single Tenant Office Space*

Trip estimates for both the proposed projected Single Tenant Office space(s) and the Fast-food Restaurant spaces are based upon the following land-use codes as presented in the seventh edition of the ITE publication:

**Land Use #715 – Single Tenant Office Building**

- AM Peak Hour (Street) = 1.80 trips per 1,000sf of floor area
- PM Peak Hour (Street) = 1.73 trips per 1,000sf of floor area
- AM Peak Hour (Generator) = 1.80 trips per 1,000sf of floor area <sup>(1)</sup>
- PM Peak Hour (Generator) = 1.73 trips per 1,000sf of floor area <sup>(1)</sup>

**Land Use #933 – Fast-Food Restaurant w/o Drive-Through Window**

- AM Peak Hour (Street) = Not Applicable
- PM Peak Hour (Street) = 26.15 trips per 1,000sf of floor area
- AM Peak Hour (Generator) = 63.50 trips per 1,000sf of floor area
- PM Peak Hour (Generator) = 52.40 trips per 1,000sf of floor area

Trip generation for the proposed Dunkin' Donuts restaurant with drive-through lane in the AM peak hour of the street was calculated based upon the following formula presented in the 2007 Dunkin' Donuts Trip Generation Report:

$$Y = 0.1061x + 144.49$$

[Y = number of trips generated during the AM peak hour and x represents the Average Peak Hour Traffic Volume passing by the site]

The 2019 design hour traffic volume for Lisbon Street during the AM peak hour (Refer to attached traffic count summary sheet) at the proposed Dunkin' Donuts site is 904 vehicles. Accordingly, the estimated volume of traffic generated by the proposed Dunkin' Donuts site during the morning peak hour is **240** vehicle trips.

**NOTE:** Trip Generation for the remaining three peak hour time periods for the proposed Dunkin' Donuts store were determined based upon Land-Use #937 as presented in the 10<sup>th</sup> edition of the Institute of Transportation Engineers "TRIP GENERATION" publication. The following trip rates were applied in calculating the peak hour trips during the remaining peak hour time periods:

- PM Peak Hour (Street) = 43.38 trips per 1,000sf of floor area
- AM Peak Hour (Generator) = 97.96 trips per 1,000sf of floor area
- PM Peak Hour (Generator) = 37.43 trips per 1,000sf of floor area

Table 1, as follows, provides the expected trip generation values of each of the designated peak hour time periods:

**Table 1**  
**Peak Hour Trip Generation**  
**Summary**

<b>Peak Hour Trip Generation</b>	<b>Proposed Land-Use Identification</b>				
	<b>Dunkin' Donuts Store</b>	<b>Dunkin' Donuts Adjoining Office Space</b>	<b>Fast-Food w/o Drive-Thru Window Service</b>	<b>Single Tenant Office Space</b>	<b>Total Peak Hour Trips</b>
AM Peak Hour (Street)	240 trips	2 trips	n/a	4 trips	246 trips
PM Peak Hour (Street)	94 trips	2 trips	52 trips	4 trips	152 trips
AM Peak Hour (Generator)	212 trips	2 trips	126 trips	4 trips	344 trips
PM Peak Hour (Generator)	81 trips	2 trips	104 trips	4 trips	191 trips

The proposed multi-tenant building can be expected to generate a total of **246** trips during the AM peak hour of the street; **152** trips in the evening peak hour of the street and a total of **344** trips in the morning peak hour of the generator and, lastly, a total of **191** trips in the evening peak hour of the generator.

**Site Trip Composition:** The 2007 Gorrill-Palmer, Inc. study established that, on average, approximately 15% of the total trips generated by a Dunkin' Donuts site are "primary" or new trips to the area; 70% are "pass-by" trips or vehicle trips already on the roadway system and; 15% are "diverted-link" trips or existing trips on adjacent roadways that shift travel patterns. The diverted link trips generated by the proposed Dunkin' store are considered new or primary trips to the roadway system.

Traffic Solutions applied an average "pass-by" trip percentage of 43% for the proposed Fast-Food Restaurant w/o a drive-thru window service. This value was obtained from the 3<sup>rd</sup> edition of the ITE "TRIP GENERATION"

handbook for Land-Use #932 - High Turnover (Sit-Down) Restaurant. [A specific “pass-by” trip rate is not provided for the proposed fast-food restaurant land-use.]

Peak hour trips generated by the single-tenant office space are primary or “new” trips to the roadway system.

Table 2, as follows, presents the trip composition values for each of the proposed land-uses:

**Table 2**  
**Trip Composition Summary**

<u>Peak Hour Time</u>	<u>Total Trips</u>	<u>Primary Trips</u>	<u>Pass-By Trips</u>
<b>AM Peak Hour (Street)</b>			
- Dunkin' Donuts Store	240	72	168
- Dunkin' Office Space	2	2	0
- Fast-Food Rest. w/o Drive-Thru	n/a	n/a	n/a
- Single-Tenant Office Space	4	4	0
<b>Total</b>	<b>246</b>	<b>78</b>	<b>168</b>
<b>PM Peak Hour (Street)</b>			
- Dunkin' Donuts Store	94	28	66
- Dunkin' Office Space	2	2	0
- Fast-Food Rest. w/o Drive-Thru	52	30	22
- Single-Tenant Office Space	4	4	0
<b>Total</b>	<b>152</b>	<b>64</b>	<b>88</b>
<b>AM Peak Hour (Generator)</b>			
- Dunkin' Donuts Store	212	64	148
- Dunkin' Office Space	2	2	0
- Fast-Food Rest. w/o Drive-Thru	126	72	54
- Single-Tenant Office Space	4	4	0
<b>Total</b>	<b>344</b>	<b>142</b>	<b>202</b>
<b>PM Peak Hour (Generator)</b>			
- Dunkin' Donuts Store	81	25	56
- Dunkin' Office Space	2	2	0
- Fast-Food Rest. w/o Drive-Thru	104	60	44
- Single-Tenant Office Space	4	4	0
<b>Total</b>	<b>191</b>	<b>91</b>	<b>100</b>

Accordingly, the proposed site will generate: 168 “pass-by” and 78 “primary” trips in the morning peak hour of the street and a total of 88 “pass-by” and 64 “primary” trips in the evening peak hour of the street.

**Site Trip Distribution:** Trip distribution patterns were established for the proposed site uses based upon rates presented in both the 7<sup>th</sup> and 10<sup>th</sup> editions of the Institute of Transportation Engineers “TRIP GENERATION” publication and distribution patterns established for a Dunkin’ Donuts site as documented in the 2007 Gorrill-Palmer, Inc. trip rate study. The following summarizes that effort:

**Land-Use Code 715 – Single Tenant Office Building (7<sup>th</sup> Edition)**

- AM Peak Hour Street) = 89% enter/11% exit
- PM Peak Hour (Street) = 15% enter/85% exit
- AM Peak Hour (Generator) = N/A
- PM Peak Hour (Generator) = N/A

**Land-Use #933 – Fast-Food Restaurant w/o Drive-Thru Window (7<sup>th</sup> Edition)**

AM Peak Hour Street = N/A  
 PM Peak Hour (Street) = 51% enter/49% exit  
 AM Peak Hour (Generator) = 52% enter/48% exit  
 PM Peak Hour (Generator) = 51% enter/49% exit

**Dunkin’ Donuts**

AM Peak Hour Street = 50% enter/50% exit (2007 Dunkin’ Donuts Study)  
 PM Peak Hour (Street) = 53% enter/47% exit (LUC # 937 10<sup>th</sup> Edition)  
 AM Peak Hour (Generator) = 55% enter/45% exit (LUC # 937 10<sup>th</sup> Edition)  
 PM Peak Hour (Generator) = 52% enter/48% exit (LUC # 937 10<sup>th</sup> Edition)

Table 3, below, provides a summary of the site trip volumes projected to enter and exit the proposed Lisbon Street site during each noted peak hour time period. Separate values are estimated and presented for both the primary and “pass-by” trips. All “pass-by” trip values are based upon a 50% enter/50% exit distribution pattern, as required, based upon the definition of a “pass-by” trip. The trip distribution values presented for the primary trips are based upon the percentage values highlighted above.

**Table 3**  
**Peak Hour Trip Directional Distribution**  
**Summary**

<b><u>Peak Hour Time Period</u></b>	<b><u>Primary Trip</u></b>		<b><u>“Pass-By” Trip</u></b>		<b><u>Total Trips</u></b>	
	<b><u>Enter</u></b>	<b><u>Exit</u></b>	<b><u>Enter</u></b>	<b><u>Exit</u></b>	<b><u>Enter</u></b>	<b><u>Exit</u></b>
AM Peak Hour (Street)	41	37	84	84	125	121
PM Peak Hour (Street)	30	34	44	44	74	78
AM Peak Hour (Generator)	72	70	101	101	173	171
PM Peak Hour (Generator)	46	45	50	50	96	95

**NOTE:** City Staff and Consultant limited the traffic impact study requirements to include only the AM peak hour time period. Accordingly, the remaining content of this study is limited to the AM peak hour time period with no additional reference to other peak hour time periods.

**Site Trip Assignment:** Site trips generated by the proposed multi-tenant building were directionally assigned to the Lisbon Street corridor based upon existing vehicle splits measured at the proposed site. The directional assignment percentages applied in the AM peak hour were based upon peak hour traffic count data collected on August 16, 2019. Accordingly, site trips were directionally assigned to the Lisbon Street corridor applying a 65% westbound/35% eastbound directional split. Minor adjustments in the actual volume of traffic traveling in either direction on ME 196 (a.k.a. Lisbon Street) were applied to account for a few expected site trips that will use South Lisbon Road to ingress/egress the proposed multi-tenant site.

Figure 1 is a “stick-diagram” that illustratively presents the travel assignment for the AM peak hour of the street condition.

**2021 POST-DEVELOPMENT TRAFFIC**

**Annual Growth:** The Traffic Impact Study has been prepared based upon a projected build-out year of 2021. MaineDOT’s traffic count station located at the Lisbon town line presents average annual daily traffic data for multiple years starting in 2012 and continuing through 2017. The yearly traffic data, which is highlighted and summarized on the attached excerpt from MaineDOT’s traffic count report, suggests very little growth (less than a quarter percent per year) has occurred in the corridor during the noted time period.

However, to conservatively measure traffic impacts of the proposed multi-tenant project an annual growth rate of 1% per year was applied to estimate 2021 design hour traffic volumes for Lisbon Street at the site driveway intersection. The estimated 2021 directional design hour traffic volumes for Lisbon Street at the site driveway are summarized as follows:

Westbound = 569 vph  
 Eastbound = 353 vph  
**Total = 922 vehicles per hour**

**Other Development Traffic:** Traffic generated by projects that have been approved (or submitted for approval) 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. City staff advised that construction phase trips generated by the proposed Lisbon Street Solar Project should be considered as other development trips impacting the study corridor.

VHB Engineers, site engineers for the proposed solar project located at 1875 Lisbon Street, have provided written documentation in their site application that the peak staffing portion of the site construction will generate about 93 peak hour trips in the AM peak hour. Traffic Solutions has assumed that during the morning peak hour roughly 90% of the trips enter the site and 10% exit. The construction trips were assigned to the Lisbon Street corridor applying the same directional splits used in the assignment of the site trips. The other development trips impacting the proposed multi-use tenant site are estimated as follows:

Westbound = 29 vph  
 Eastbound = 3 vph  
**Total = 32 vehicles per hour**

**2021 Post-Development Traffic:** 2021 Post-Development traffic forecasts for the AM peak hour were projected for the primary site driveway intersection at Lisbon Street combining the 2021 design hour travel forecasts and Other Development volumes with the site generated trips for the AM peak hour, as highlighted on Figure 1. Figure 2 presents the estimated 2021 post-development traffic forecasts for the site driveway intersection with Lisbon Street.

**MOBILITY ANALYSIS**

Capacity analyses of the projected 2021 Post-Development traffic condition projected for the primary site driveway intersection with Lisbon Street was performed utilizing the Synchro and SimTraffic computer models. Level 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**

<u>Level of Service</u>	<u>Total Control Delay (sec/veh)</u>
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

Table 1, as follows, provides the results of the capacity analyses conducted for the primary site driveway intersection with Lisbon Street.

**Table 1**  
**Level of Service Summary**  
**2021 Post-Development Condition**  
**[AM Peak Hour]**

<u>Intersection/Approach</u>	<u>2021 Post-Development</u>	
	<u>Delay (sec.)</u>	<u>LOS</u>
Lisbon Street @ Primary Site Driveway		
- Lisbon Street WB	2 secs.	A
- Lisbon Street EB	1 sec.	A
- Site Driveway SB	12 secs.	B
- Overall Intersection	3 secs.	A

The primary site entrance intersection with Lisbon Street is expected to operate overall at the “best” level of service (Level of Service A) under post-development travel conditions; experiencing overall very minimal intersection delay (3 seconds or less). Motorists leaving the site will encounter less than 12 seconds of average vehicle delay entering the Lisbon Street corridor.

**SIGHT DISTANCE**

The Maine Department of Transportation’s Highway Entrance and Driveway Rules, require the following sight distances:

**Sight Distance Standards**

<u>Speed Limit</u>	<u>Sight Distance</u>
<b>25 mph</b>	<b>200 feet</b>
30	250
35	305
40	360
<b>45</b>	<b>425</b>
50	495
55	570

The proposed re-configured and upgraded shared driveway with the adjoining property at 1904 Lisbon Street provides direct connections to both Lisbon Street and South Lisbon Road. Vehicle sight distance was measured at each proposed intersection to ensure acceptable sight distance is provided. Lisbon Street is posted at 45mph, which requires an unobstructed sight distance of 425-feet. Sight distance measurements in excess of 1,000-feet were observed in both directions of travel on Lisbon Street. South Lisbon Road is presently posted at 25mph, which requires a minimum sight distance of 200-feet. Measurements in excess of 400-feet were recorded in both directions of travel. All trees and vegetation located within 10-feet of edge of pavement along the full South Lisbon Road frontage of the proposed site must be removed and maintained to ensure acceptable sight distance is provided.

**SUMMARY**

1. The proposed Multi-Tenant project is expected to generate approximately 246 total site trips during the morning peak hour with about half of the trips entering the site and the other half exiting. This report assumes the majority of the site trips will utilize the primary site driveway entrance to access to or egress from the

proposed project site. A portion of the Dunkin' Donuts generated trips will likely exit the property through the proposed exit-only driveway onto Lisbon Street especially during peak time periods and a few other patrons of the site will utilize the access driveway connection to South Lisbon Road more for convenience versus actual travel desires.

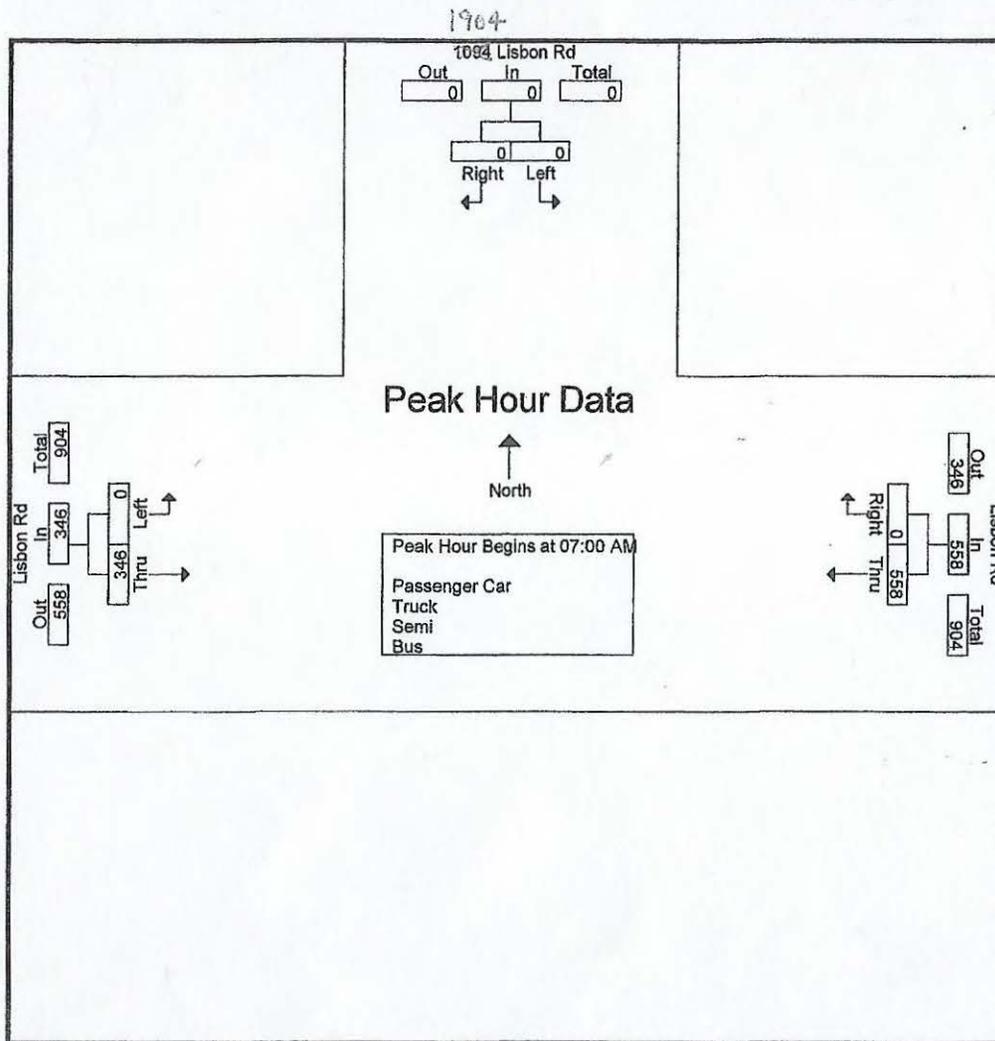
2. MaineDOT's Traffic Safety Bureau's latest three-year (2016 through 2018) safety report for the section of Lisbon Street between Dyer Road and South Lisbon Road, a distance of 0.68 miles, shows there are no reported high crash locations in the defined study area.
3. The primary site entrance intersection with Lisbon Street is expected to operate overall at the "best" level of service (Level of Service A) under post-development travel conditions; experiencing overall very minimal intersection delay (3 seconds or less). Motorists leaving the site will encounter less than 12 seconds of average vehicle delay entering the Lisbon Street corridor (The mobility analysis completed for the primary site driveway intersection assigned all site generated trips through the main entrance to conservatively measure the traffic operational impacts of the proposed site). The results of the capacity analysis presented in Table 1 conclusively demonstrates the proposed site, at full occupancy, does not adversely impact present or future travel conditions along the Lisbon Street corridor.
4. Vehicle sightlines measured directionally from the centerline of the proposed primary site entrance at Lisbon Street meets and exceeds the minimum standard (425-feet) for a posted speed limit of 45mph; the current posted speed limit on Lisbon Street. The portion of South Lisbon Street at the proposed secondary site entrance driveway is posted at 25mph requiring a minimum unobstructed sight distance of 200-feet; sightline measurements in excess of 400-feet were determined for each direction of travel at the proposed South Lisbon Road site entrance. All trees and vegetation located within 10-feet of edge of pavement along the full South Lisbon Road frontage of the proposed site must be removed and maintained to ensure acceptable sight distance is provided.

# Traffic Solutions

17 Mountview Drive  
Gorham, ME 04038

Lewiston 1904 Lisbon Rd  
August 16, 2019 AM  
Light Rain  
Count by Jen Gilbert

File Name : Lewiston 1904 Lisbon Rd 8-16-19 AM  
Site Code : 00816192  
Start Date : 8/16/2019  
Page No : 6

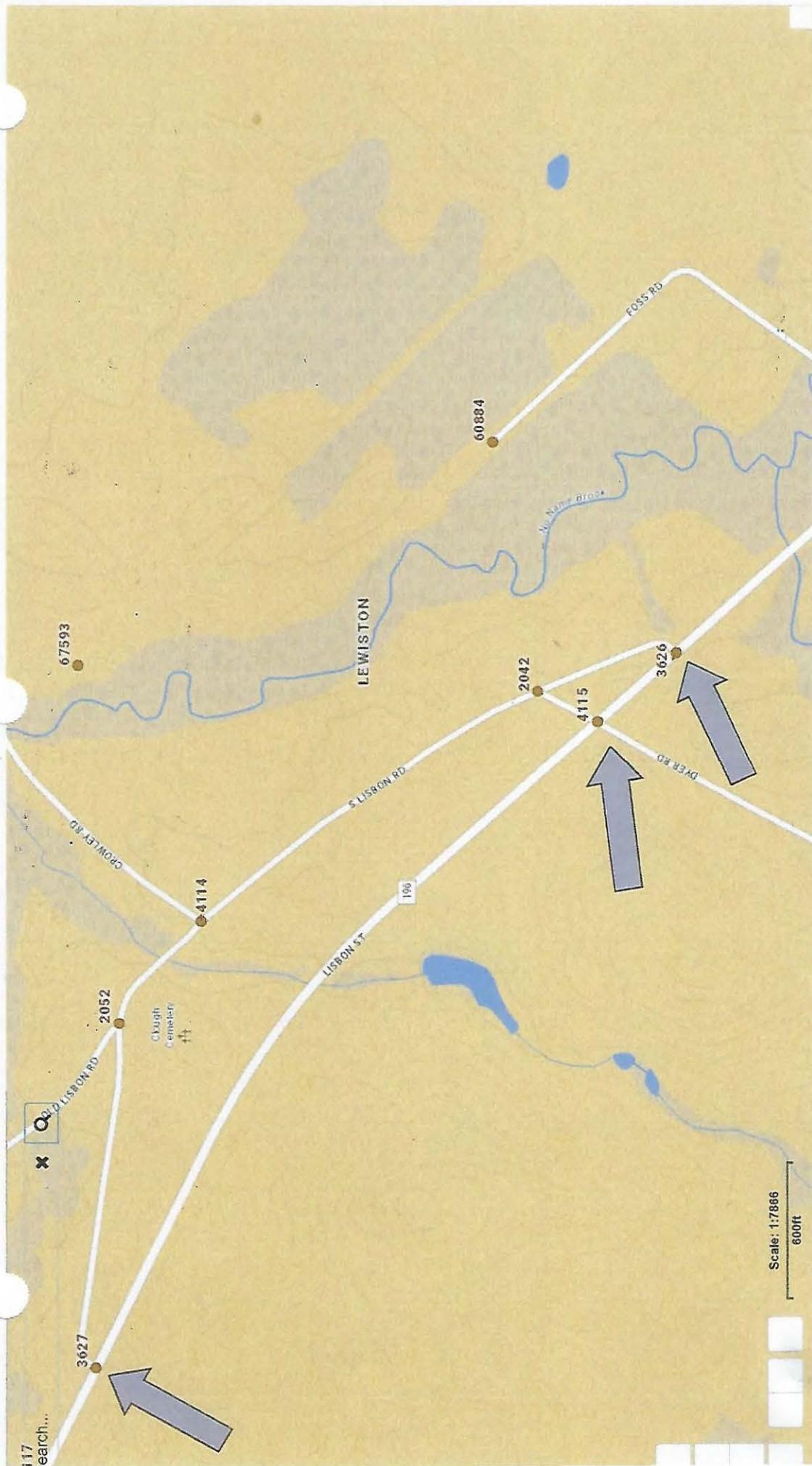


$$558 + 346 = 904$$

$$y = 0.1061x + 144.49$$

$$y = 0.1061(904) + 144.49 = 240$$

Trips



# Crash Summary Report

Report Selections and Input Parameters

## REPORT SELECTIONS

Crash Summary I     Section Detail     Crash Summary II     1320 Public     1320 Private     1320 Summary

## REPORT DESCRIPTION

Lewiston: Lisbon St/Rte 196 from intersection with Dyer Rd (node 4115) to intersection with western end of S Lisbon Rd (node 3627)

## REPORT PARAMETERS

Year 2016, Start Month 1 through Year 2018 End Month: 12

Route: **0196X**

Start Node: **4115**

Start Offset: **0**

Exclude First Node

End Node: **3627**

End Offset: **0**

Exclude Last Node

# Crash Summary I

Nodes																
Node	Route - MP	Node Description	U/R	Total Crashes	K	Injury Crashes				PD	Percent Annual M Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF	
4115	0196X - 14.55	Int of DYER RD LISBON ST	2	2	0	0	0	0	0	2	0.0	4.466	0.15	0.37	0.00	
													Statewide Crash Rate: 0.14			
3627	0196X - 15.23	Int of LISBON ST S LISBON RD	2	3	0	0	0	1	1	1	50.0	4.918	0.20	0.36	0.00	
													Statewide Crash Rate: 0.14			
<b>Study Years: 3.00</b>				<b>NODE TOTALS:</b>		5	0	0	0	1	3	20.0	9.384	0.18	0.30	0.58

# Crash Summary I

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Sections					Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF	
								K	A	B	C	PD						
3627	4115	3117515	0 - 0.68	0196X - 14.55 ST RTE 196	0.68	2	9	0	0	0	2	7	22.2	0.02988	100.40	308.01	0.00	
				Statewide Crash Rate: 193.81														
<b>Study Years: 3.00</b>					<b>Section Totals:</b>		0.68	9	0	0	0	2	7	22.2	0.02988	100.40	308.01	0.33
					<b>Grand Totals:</b>		0.68	14	0	0	0	3	10	21.4	0.02988	156.18	432.47	0.36

The following information is presented to demonstrate that the proposed project adheres to the criteria presented in Article XIII, Section 4 of the Lewiston Zoning and Land Use Code.

**(a) Utilization of the site.**

The siting of Project facilities has considered the natural capabilities of the site to support development while considering natural resources. Wetlands, steep slopes and floodplains have been avoided to the extent practical. No unique natural resources have been identified within the Project area. Natural drainage patterns will be maintained to the extent practicable and the Project area will be maintained as meadow during the operation of the Project.

**(b) Traffic movement into and out of the development area.**

During construction, the Project will increase traffic on municipal roads, but these effects will be temporary in nature and relatively minor. Standard trucking methods will be used to transport materials and equipment to the Project site. Construction trailers, construction equipment and laydown areas will be sited so as to avoid or minimize environmental impact.

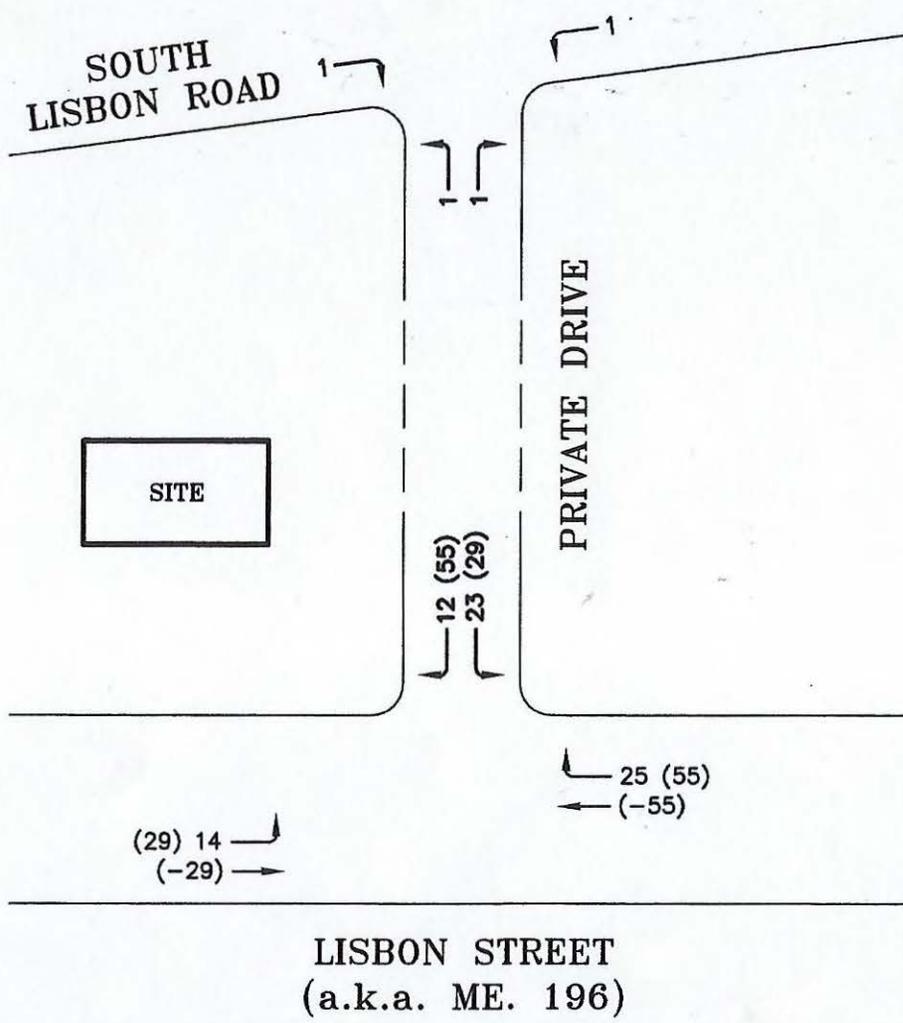
The magnitude of traffic produced by a proposed development is typically estimated by applying the size of a project against the applicable trip generation contained in the Institute of Transportation Engineers Trip Generation Manual. However, this manual does not include trip generation rates for solar farms. As such, traffic impacts during construction and operations were estimated using information publicly submitted for other solar projects. Two recent projects (Sanford Airport and Farmington Solar) submitted applications for larger projects (<20 MW). These projects reported that their traffic during peak construction are approximately 100-125 construction personnel and 10-15 office staff onsite equating to maximum staffing levels of 140 personnel per day. Assuming a conservative carpool estimate of 1.5 personnel, they concluded that this would generate approximately 93 auto trips during the morning and evening. However, they also noted that the likely hours of construction meant that the arrival of construction staff would not coincide with peak morning commuting hours. These number are consistent with traffic reports generated for sites in other regions. Based on these estimated data as well as the smaller size of this Project, the construction of the Project is not expected to generate more than 100 trips during peak hours but the Applicant will obtain a Traffic Permit if the contractor selected for the work believes there will be more than 100 one-way trips during construction.

After construction, the site will generally be unmanned, except for mowing and maintenance. In the event of an issue requiring troubleshooting or maintenance, it is anticipated that a two-person team will visit the site. For mowing and general maintenance (e.g., fence inspections), the work will generally take place on a twice annually, or quarterly basis, with a small number of vehicles. The road network as presented on the attached site plans is adequate for this level of traffic.

## 2017 Maine Transportation Count Book

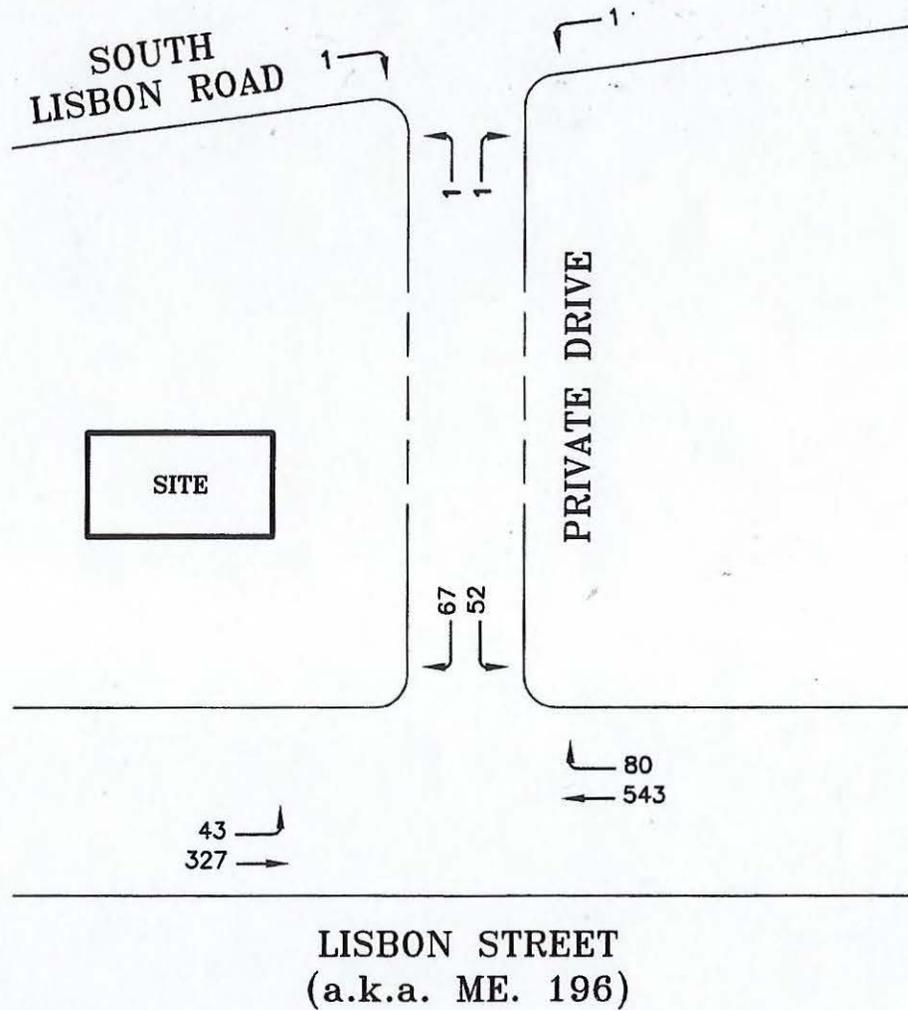
## Androscoggin

TOWN	STA	ROAD-PN	LOCATION	GROUP	AADT12	AADT13	AADT14	AADT15	AADT16	AADT17
LEWISTON	03306	20399-5	SOUTH AVE SW/O SR 196 (LISBON ST)	I	-	-	3990 C	-	-	5780 C
LEWISTON	19002	0011X-1	SR 11/100/202 (MAIN) NE/O STRAWBERRY AVE	I	-	-	18800 S	-	-	-
LEWISTON	02802	0011X-1	SR 11/100/202 (MAIN)(NB) NE/O HAMMOND ST	I	-	-	7850 T	-	-	7680 C
LEWISTON	02812	0011S-1	SR 11/100/202 (MAIN)(SB) NE/O HAMMOND ST	I	-	-	7540 T	-	-	7840 C
LEWISTON	08601	0011X-1	SR 11/100/US 202 (MAIN) N/O HOLLAND ST	I	-	-	15830 C	-	-	-
LEWISTON	19102	0011X-1	SR 11/100/US 202 (MAIN) NE/O RIVERSIDE	I	-	17300 S	-	-	-	-
LEWISTON	18906	0011X-1	SR 11/100/US 202 (MAIN) SW/O SWITZERLAND	I	-	-	11810 C	-	-	-
LEWISTON	08806	0011X-1	SR 11/100/US 202 (NB) SW/O RUSSELL ST EB	I	-	-	16180 C	-	-	7930 C
LEWISTON	08816	0011X-6	SR 11/100/US 202 (SB) SW/O RUSSELL ST EB	I	-	-	-	-	-	8280 C
LEWISTON	19106	0202X-6	SR 11/100/US 202 SW/O RIVERSIDE ST	I	-	-	-	-	-	15730 C
LEWISTON	02806	0011X-1	SR 11/100/US 202 SW/O SR 126 NE/O CUT	I	-	-	17130 T	-	-	-
LEWISTON	15801	0011X-1	SR 11/100/US 202(MAIN) N/O PETTINGILL ST	I	-	-	21730 C	-	-	23510 C
LEWISTON	09001	0011X-1	SR 11/100/US202(MAIN ST) N/O MONTELLO ST	I	18280 A	18470 A	18040 A	-	-	-
LEWISTON	10902	0011X-1	SR 11/US 202 (MAIN ST) NE/O BATES ST	I	-	-	23230 C	-	-	-
LEWISTON	05603	0126X-2	SR 126 (SABATTUS ST) E/O CENTRAL AVE	I	-	-	7400 T	-	-	-
LEWISTON	05703	0126X-2	SR 126 (SABATTUS ST) E/O COLLEGE ST	I	-	-	9520 T	-	-	-
LEWISTON	06803	0126X-2	SR 126 (SABATTUS ST) E/O GROVE ST	I	-	-	10540 T	-	-	9790 C
LEWISTON	02903	0126X-2	SR 126 (SABATTUS ST) E/O OAK ST	I	-	-	10240 T	-	-	-
LEWISTON	06503	0126X-2	SR 126 (SABATTUS ST) E/O OLD GREENE RD	I	-	-	18780 C	-	-	-
LEWISTON	07203	0126X-2	SR 126 (SABATTUS ST) E/O POND RD	I	-	-	11000 T	-	-	-
LEWISTON	06203	0126X-2	SR 126 (SABATTUS ST) E/O RUSSELL ST	I	-	-	22460 C	-	-	20340 C
LEWISTON	05608	0126X-2	SR 126 (SABATTUS ST) NW/O ASH ST	I	-	-	8070 T	-	-	-
LEWISTON	25207	0126X-2	SR 126 (SABATTUS ST) W/O BRADFORD ST	I	-	19880 S	-	-	-	-
LEWISTON	06807	0126X-2	SR 126 (SABATTUS ST) W/O GROVE ST	I	-	-	15270 T	-	-	-
LEWISTON	02907	0126X-2	SR 126 (SABATTUS ST) W/O OAK ST	I	-	-	-	-	-	10590 C
LEWISTON	07207	0126X-2	SR 126 (SABATTUS ST) W/O POND RD	I	-	-	10460 T	-	-	-
LEWISTON	06207	0126X-2	SR 126 (SABATTUS ST) W/O RUSSELL ST	I	-	-	12870 C	-	-	11750 C
LEWISTON	02804	0126X-2	SR 126(EB) SE/O SR11/100/US202(NW/O CUT)	I	-	-	1020 T	-	-	-
LEWISTON	02814	0126W-2	SR 126(WB) SE/O SR11/100/US202(NW/O CUT)	I	-	-	5260 T	-	-	-
LEWISTON	01304	0196S-1	SR 196 (CANAL ST)(OW) SE/O CEDAR ST RMP	I	-	-	-	-	-	9030 C
LEWISTON	10600	0196X-1	SR 196 (LISBON RD) @ LISBON TL	I	11830 A	11680 A	11850 A	11980 A	12080 A	11980 A
LEWISTON	09703	0196X-1	SR 196 (LISBON ST) E/O WESTMINSTER ST	I	-	-	15430 C	-	-	16150 C



**LEGEND**  
 XX = PRIMARY TRIP  
 (XX) = PASS-BY TRIP

**SITE TRIP ASSIGNMENT  
 AM PEAK HOUR  
 FIGURE 1**



2021 POST-DEVELOPMENT TRAFFIC  
 AM PEAK HOUR  
 FIGURE 2

E:\LAND PROJECTS\34000\34399 TRAFFIC SOLUTIONS\CONNOR REALTY\PLANSET\CONNOR REALTY FIGS.DWG

Project Name and Location <b>CONNOR REALTY, LLC          MULTI-TENANT BUILDING</b>	
DATE: APRIL, 2020	FIGURE: 2

<b>TRAFFIC SOLUTIONS</b> 17 MOUNTVIEW DRIVE, GORHAM, MAINE 04038
---

Summary of All Intervals

Run Number	2	3	4	6	7	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4
Vehs Entered	1153	1164	1130	1159	1147	1151
Vehs Exited	1152	1168	1131	1161	1145	1151
Starting Vehs	11	15	8	11	9	11
Ending Vehs	12	11	7	9	11	10
Travel Distance (mi)	372	375	363	378	367	371
Travel Time (hr)	10.3	10.4	10.3	10.5	10.5	10.4
Total Delay (hr)	1.3	1.3	1.4	1.4	1.5	1.4
Total Stops	135	158	142	128	151	142
Fuel Used (gal)	12.5	12.8	12.4	12.7	12.4	12.6

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15
Volumes adjusted by Growth Factors.	

Run Number	2	3	4	6	7	Avg
Vehs Entered	276	264	264	246	272	265
Vehs Exited	275	274	264	244	260	263
Starting Vehs	11	15	8	11	9	11
Ending Vehs	12	5	8	13	21	10
Travel Distance (mi)	90	88	85	80	84	85
Travel Time (hr)	2.4	2.4	2.3	2.1	2.4	2.3
Total Delay (hr)	0.2	0.3	0.2	0.2	0.3	0.2
Total Stops	31	38	32	26	45	35
Fuel Used (gal)	3.0	2.9	2.8	2.6	2.9	2.8

**Interval #2 Information Recording**

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Run Number	2	3	4	6	7	Avg
Vehs Entered	322	320	309	336	330	324
Vehs Exited	321	304	304	341	341	322
Starting Vehs	12	5	8	13	21	10
Ending Vehs	13	21	13	8	10	13
Travel Distance (mi)	102	100	98	111	107	104
Travel Time (hr)	3.0	2.8	2.9	3.2	3.2	3.0
Total Delay (hr)	0.5	0.3	0.5	0.6	0.6	0.5
Total Stops	33	45	42	35	46	40
Fuel Used (gal)	3.5	3.5	3.4	3.7	3.8	3.6

**Interval #3 Information Recording**

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	2	3	4	6	7	Avg
Vehs Entered	292	303	274	289	276	287
Vehs Exited	292	313	278	284	273	288
Starting Vehs	13	21	13	8	10	13
Ending Vehs	13	11	9	13	13	11
Travel Distance (mi)	94	98	90	92	89	92
Travel Time (hr)	2.6	2.8	2.6	2.6	2.4	2.6
Total Delay (hr)	0.3	0.4	0.4	0.4	0.3	0.3
Total Stops	36	44	31	35	28	35
Fuel Used (gal)	3.0	3.4	3.1	3.1	2.9	3.1

**Interval #4 Information Recording**

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	2	3	4	6	7	Avg
Vehs Entered	263	277	283	288	269	276
Vehs Exited	264	277	285	292	271	278
Starting Vehs	13	11	9	13	13	11
Ending Vehs	12	11	7	9	11	10
Travel Distance (mi)	85	90	90	95	87	89
Travel Time (hr)	2.4	2.5	2.5	2.6	2.5	2.5
Total Delay (hr)	0.3	0.3	0.3	0.3	0.3	0.3
Total Stops	35	31	37	32	32	33
Fuel Used (gal)	2.9	3.0	3.1	3.2	2.8	3.0

---

1: Lisbon (196) & Dev Drway Performance by approach

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Approach	EB	WB	SB	All
Denied Del/Veh (s)	0.2	0.5	0.2	0.4
Total Del/Veh (s)	1.0	2.4	12.0	2.9

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Total Network Performance

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Denied Del/Veh (s)	0.4
Total Del/Veh (s)	3.9

Intersection: 1: Lisbon (196) & Dev Drway

Movement	EB	WB	SB
Directions Served	L	TR	LR
Maximum Queue (ft)	58	8	101
Average Queue (ft)	15	0	47
95th Queue (ft)	44	6	79
Link Distance (ft)	1106	645	394
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

Lanes, Volumes, Timings  
 1: Lisbon (196) & Dev Drway

04/09/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↗		↘	↘
Traffic Volume (vph)	43	327	543	80	52	67
Future Volume (vph)	43	327	543	80	52	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Friction			0.983		0.924	
Flt Protected	0.950				0.979	
Satd. Flow (prot)	1656	1743	1779	0	1719	0
Flt Permitted	0.950				0.979	
Satd. Flow (perm)	1656	1743	1779	0	1719	0
Link Speed (mph)		45	45		25	
Link Distance (ft)		1129	678		429	
Travel Time (s)		17.1	10.3		11.7	
Peak Hour Factor	0.92	0.92	0.84	0.84	0.85	0.85
Heavy Vehicles (%)	9%	9%	5%	5%	0%	0%
Adj. Flow (vph)	47	355	646	95	61	79
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	355	741	0	140	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane			Yes			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	49.4% ICU Level of Service A
Analysis Period (min)	15

**City of Lewiston  
Traffic Movement Permit**

Applicant: Connor Realty, LLC  
Developer: Connor Realty, LLC  
Project Location: 1896 Lisbon Street  
Lewiston, Maine 04240

Project: Multi-Tenant Building  
Identification #: XXX  
Permit Category: > 200 PCE  
Traffic Engineer: Traffic Solutions  
Attention: William J. Bray, PE  
17 Mountview Drive  
Gorham, Maine 04038

Pursuant to the provisions of 23 M.R.S.A. § 704-A and Chapter 305 of the Maine Department of Transportation's Regulations, with delegated review authority granted to the City of Lewiston, the City has considered the application of Connor Realty, LLC with supportive data, staff review, and other related materials on file.

**PROJECT DESCRIPTION**

Connor Realty, LLC will construct a 7,083 square foot multi-tenant building that will include a 2,163 square foot full-service Dunkin' Donuts store with a 900-square foot office area. The proposed structure will also include two rental units with Unit #1 at 1,980 square feet and Unit #2 at 2,040 square feet. The proposed project will be constructed on a 2.27+/- acre lot located at 1896 Lisbon Street in the City of Lewiston.

The project is expected to generate a total of 246 "passenger car equivalent" trips during the AM peak hour and 152 trips in the PM peak hour of the street.

**Findings**

Based upon a review of the files and related information, the City of Lewiston approves the Traffic Movement Permit application of Connor Realty, LLC subject to the following conditions:

**MITIGATION**

The following mitigation is intended to describe that conceptually shown on "Traffic Permit Plan" prepared by Stoneybrook Land Use, Inc. and SJR Engineering, Inc. dated March 5, 2020. Not all the mitigation discussed herein may be shown on that or any plan.

**On-Site Mitigation**

- A. The Applicant shall construct an internal (private) 30-foot wide driveway connection between Lisbon Street and South Lisbon Road that provides full access entrances onto both Lisbon Street and South Lisbon Road. A third driveway access, which is an exit-only driveway onto Lisbon Street, will be constructed approximately 285-feet west of the main entrance driveway. Traffic signage and pavement markings, as depicted on the conceptual site plan, will be installed in conformance with the latest edition of the Manual on Uniform Traffic Control Devices, as amended.

- B. All trees and low-level vegetation located within 10-feet of the existing edge of pavement along the full South Lisbon Road frontage of the proposed site will be removed and maintained, as necessary, to ensure acceptable sight distance is provided through the site entrance.

**Off-Site Mitigation – There is No Off-Site Mitigation Required**

**Overall**

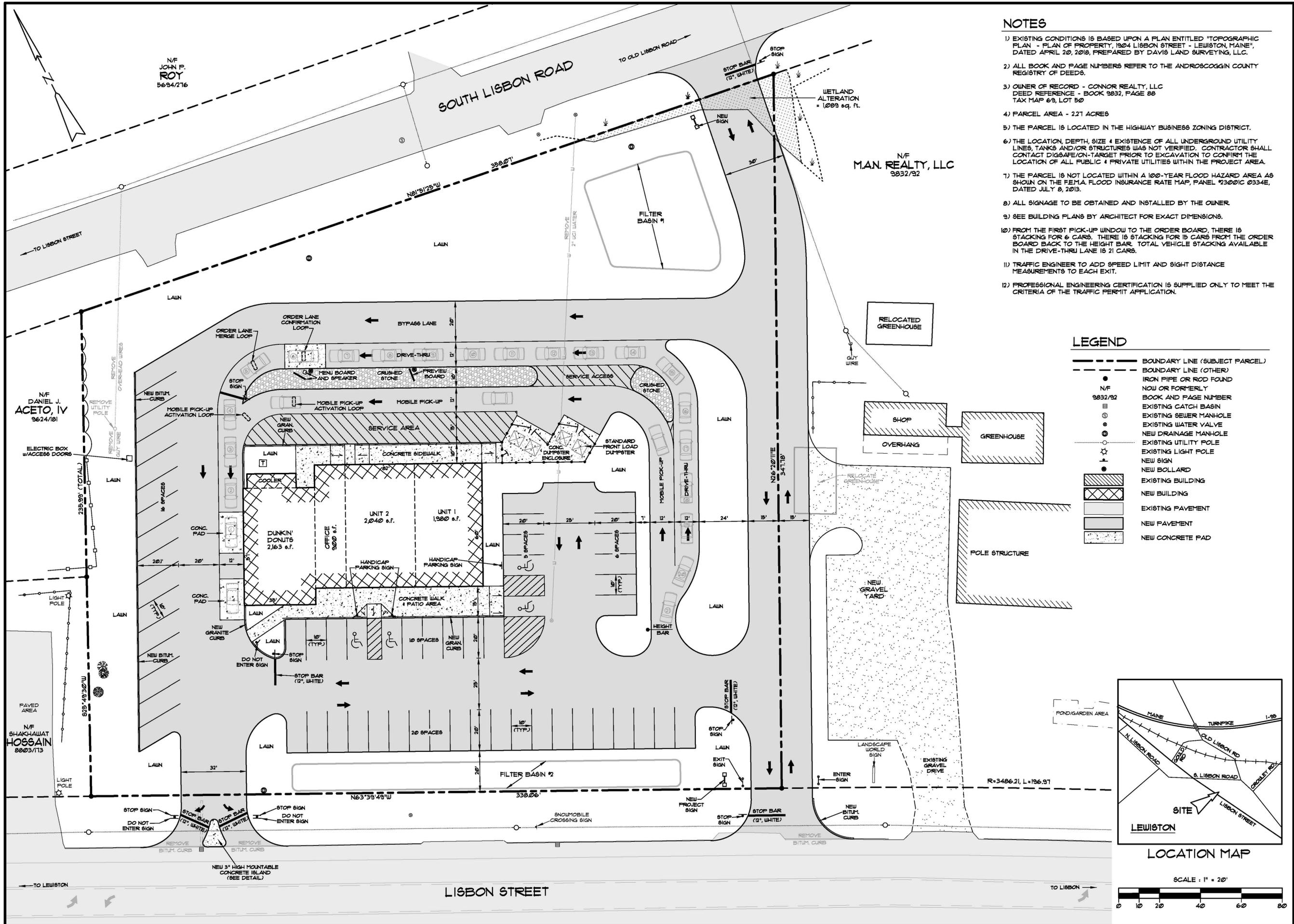
- A. Provide all necessary auxiliary signs and pavement markings to implement the improvements described herein according to State of Maine and/or National standards.
- B. All plantings and signs (permanent and temporary) shall be placed and maintained such that they do not block available sight distances and do not violate the State’s “Installations and Obstructions” law. No signage or plantings shall be allowed within the “clear zone” if they constitute a deadly fixed object.
- C. If any of the supporting data or representations for which this permit is based upon changes in any way or is found to be incorrect/inaccurate, the applicant shall request in writing from the City 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: \_\_\_\_\_

David Hediger  
Director, Planning and Code Enforcement  
City of Lewiston, Maine

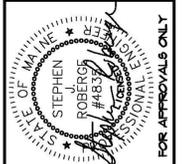
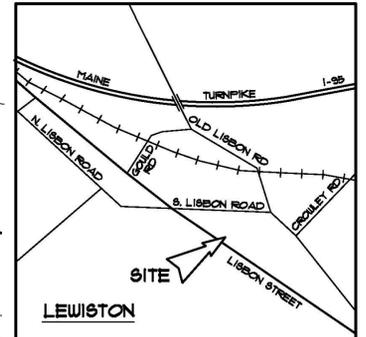


**NOTES**

- EXISTING CONDITIONS IS BASED UPON A PLAN ENTITLED "TOPOGRAPHIC PLAN - PLAN OF PROPERTY, 1824 LISBON STREET - LEWISTON, MAINE", DATED APRIL 20, 2018, PREPARED BY DAVIS LAND SURVEYING, LLC.
- ALL BOOK AND PAGE NUMBERS REFER TO THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS.
- OWNER OF RECORD - CONNOR REALTY, LLC  
DEED REFERENCE - BOOK 9832, PAGE 88  
TAX MAP 63, LOT 50
- PARCEL AREA - 2.21 ACRES
- THE PARCEL IS LOCATED IN THE HIGHWAY BUSINESS ZONING DISTRICT.
- 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.
- THE PARCEL IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP, PANEL #23021C 0334E, DATED JULY 8, 2013.
- ALL SIGNAGE TO BE OBTAINED AND INSTALLED BY THE OWNER.
- SEE BUILDING PLANS BY ARCHITECT FOR EXACT DIMENSIONS.
- FROM THE FIRST PICK-UP WINDOW TO THE ORDER BOARD, THERE IS STACKING FOR 6 CARS. THERE IS STACKING FOR 15 CARS FROM THE ORDER BOARD BACK TO THE HEIGHT BAR. TOTAL VEHICLE STACKING AVAILABLE IN THE DRIVE-THRU LANE IS 21 CARS.
- TRAFFIC ENGINEER TO ADD SPEED LIMIT AND SIGHT DISTANCE MEASUREMENTS TO EACH EXIT.
- PROFESSIONAL ENGINEERING CERTIFICATION IS SUPPLIED ONLY TO MEET THE CRITERIA OF THE TRAFFIC PERMIT APPLICATION.

**LEGEND**

- BOUNDARY LINE (SUBJECT PARCEL)
- BOUNDARY LINE (OTHER)
- IRON PIPE OR ROD FOUND
- N/F 9832/92 NOW OR FORMERLY
- BOOK AND PAGE NUMBER
- EXISTING CATCH BASIN
- ⊙ EXISTING SEWER MANHOLE
- ⊕ EXISTING WATER VALVE
- ⊖ NEW DRAINAGE MANHOLE
- ⊗ EXISTING UTILITY POLE
- ⊙ EXISTING LIGHT POLE
- ⊕ NEW SIGN
- ⊖ NEW BOLLARD
- ▨ EXISTING BUILDING
- ▩ NEW BUILDING
- ▭ EXISTING PAVEMENT
- ▮ NEW PAVEMENT
- ▯ NEW CONCRETE PAD



REV.	DATE	CHANGES
1	3-5-20	CHANGES TO PARKING AREAS
2		CHANGES

DO NOT MODIFY PLAN WITHOUT WRITTEN PERMISSION FROM S&R ENG., INC.

**Stoneybrook**  
Land Use, Inc.  
4846 Sun City Center Blvd., #300  
Sun City Center, FL 33573-6281

**S&R ENGINEERING, INC.**  
16 THURSTON DRIVE  
MONMOUTH, MAINE 04295  
(207) 242-6248 tel  
steves@jreng.com

**TRAFFIC PERMIT PLAN**  
1896 LISBON STREET  
LEWISTON, MAINE  
PREPARED FOR  
**CONNOR REALTY, LLC**  
1124 LISBON STREET - LEWISTON, ME 04240

DATE	PROJECT
FEB. 2020	17-028
DRAWN BY	SCALE
BRJ	1" = 20'

**SHEET 1**



# CITY OF LEWISTON

## Department of Planning & Code Enforcement

TO: Lewiston Planning Board  
 FROM: Douglas Greene, AICP, RLA, City Planner  
 DATE: April 27, 2020  
 RE: Agenda Item 4b, East Merrill Road Zone Change Request

A petition submitted by David Langelier, property owner of 10 East Merrill Road, seeks to change the zoning from Agricultural Rural (AR) to Low-Density Residential (LDR) for properties located at 949 College Street, 2 East Merrill Road, 4 East Merrill Road, 6 East Merrill Road, 8 East Merrill Road, 10 East Merrill Road, and portions of 1 East Merrill Road, 3 East Merrill Road and 5 East Merrill Road. The properties proposed to be rezoned are shown as hatched on the map below and were created in 1988 with the Latulippe Subdivision revision 2.



The proposed zone change for a portion of the Latulippe Subdivision is shown as hatched.

The applicant, David Langelier, submitted this zone change request, in part, to modify the front and side building setback requirements for the construction of a residence and accessory structures at 10 East Merrill Road. The split zoning of the Latulippe Subdivision directly impacts 3 other properties, 1, 3 and 5 East Merrill Road.

## **BACKGROUND AND HISTORY**

The applicant has provided Exhibit C in the application that provides a history of how the split zoning of Rural Agricultural (RA) and Low-Density Residential came about. This area of Lewiston had been zoned agricultural for many years. A zoning map from 1985 shows some changes to the area with Industrial (I) zoning to the southwest and a Residential (R8) zone to the south. In 1988, an area on the east side of College Street up to the intersection of Merrill Road was zoned to Low-Density Residential (LDR) zoning, and an area to the east was zoned to Office Service (OS). The next zoning map (1990) shows a new road, East Merrill Road, near the location of the Rural (R) and LDR zones. Finally, the last zoning map (1991) shows the lotting of the Latulippe Subdivision. Staff looked at the subdivision history in the area and found the original 1973 Latulippe Subdivision, a rural type of development, as amended in 1988 in a low-density residential development pattern. The Agricultural and Low-Density Residential zoning splits the development but not down the centerline of the new East Merrill Road.

## **ZONING MAP AMENDMENT APPLICATION**

Mr. Langelier, the applicant, met with Staff to discuss his desire to rezone his property from Rural Agriculture (RA) to Low-Density Residential (LDR) in order to meet building setback for the construction of a garage and house at the end of a frontage right of way. In discussing his zone change request, it was felt a more appropriate approach would be to request a zone change for the entire Latulippe Subdivision to LDR by removing the split zoning.

The application submitted to the Planning Board includes a petition to amend the zoning map, an ordinance to change zoning boundaries, the reasons for the proposed amendment, a statement how the request complies with the Comprehensive Plan, and a map showing the proposed change to the zoning map.

## **STAFF REVIEW and COMMENTS**

In its review, the Staff recognizes that the primary purpose of this zone change request is to reconcile a disparity of a low-density subdivision that is split zoned Rural Agriculture and Low Density Residential districts. The Comprehensive Plan on page 33, describes low-density type development as, "Further from downtown, neighborhoods take on a suburban pattern with cul-de-sacs and limited entry points. These low-density neighborhoods started developing in the 1950s, utilizing a suburban form that was supported by the City's zoning and land use codes." The Staff sees the split zoning of the Latulippe Subdivision as an unintended oversight.

## **STAFF RECOMMENDATION**

Staff recommends the Planning Board send a favorable recommendation to the City Council for the proposed zoning map amendment to change the properties zoned Rural Agriculture (RA) in the Latulippe Subdivision to Low-Density Residential (LDR).

## **ACTION NECESSARY**

Make a motion to send a favorable recommendation to the City Council for the zoning application to change properties zoned Rural Agriculture (RA) in the Latulippe Subdivision to Low-Density Residential (LDR) with the findings:

1. The application meets the requirements of Article XVII, Amendment and Other Legal Provision, Section 5 Amendments.
2. The purpose and intent of the 1988 amended Latulippe Subdivision was to create a low-density type development.

3. The rezoning of the portion of the Latulippe Subdivision currently zoned Rural Agriculture (RA) to Low-Density Residential will bring the development into conformance with the Comprehensive Plan's description of a low-density type development (pg. 33).
4. The portion of the Latulippe Subdivision zoned Low-Density Residential in 1988, did not anticipate that the subsequent low-density development (Latulippe Subdivision rev. 2) would extend into land zoned Rural Agriculture and create split-zoned properties.

April 3, 2020

Lewiston Planning Board  
City Council Chambers  
27 Pine Street  
Lewiston, ME 04240

**Re: East Merrill Subdivision Rezoning Request**

Dear Sir or Madam:

On behalf of my client, David Langelier, I submit the attached Petition to Amend the Zoning and Land Use Code for the City of Lewiston. This request asks this Board to rezone properties located in a single subdivision on East Merrill Road. The subdivision and the effected properties are depicted on maps enclosed herewith.

My client has the particular interest of modifying the setback requirements for his property located at 10 East Merrill Road, but this rezoning petition benefits more than his property alone. Several properties located in the subdivision, namely 1, 3, and 5 East Merrill, are “split zoned” i.e. the lots are divided by the Rural Agricultural (RA) and Low Density Residential (LDR) boundaries. In addition, lots across the street from one another, of the same type, purpose and use, are zoned differently.

These properties originally came into existence in 1973 as the “Latulippe Development” at that time consisted of large rural lots zoned as Agricultural, now referred to as Rural. In 1988 the City of Lewiston revised its zoning maps, and divided the area at issue between Agricultural and Low Density Agricultural, seemingly along the lot lines described in the 1973 Latulippe plan. Later in 1988, however, the Latulippe plan was amended to add a number of lots and a road. Unfortunately, this subdivision was now divided between Agricultural and Low Density Residential and some lots as described above were bisected by that existing 1988 zoning line. The zoning was never modified to recognize the subdivision amendment and the inconsistency was carried forward to the current 1991 zoning map depicting the land. This progression is detailed in the map series attached to the Petition as “Exhibit C”.

In order to correct the discrepancy created by the split and mixed zoning in the subdivision, we hereby request that all lots in the subdivision, as listed on the Petition attached hereto, are re-zoned as LDR. This will resolve the inconsistencies, and better serve the actual lot usage in the subdivision. Furthermore, this change in zoning is supported by and in conformity with the City of Lewiston’s Comprehensive Plan, as further detailed in the attached Petition.

Please do not hesitate to contact me with any questions or concerns you may have regarding the enclosed materials.

Sincerely,

Emma Burgess Roy, Esq.  
ISAACSON & RAYMOND, P.A.

EBR  
Enclosures

## AN ORDINANCE PERTAINING TO ZONING BOUNDARIES

### THE CITY OF LEWISTON HEREBY ORDAINS:

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

#### APPENDIX A

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

#### Sec. 1. Zoning Map

The City of Lewiston hereby ordains that the official Zoning Map of the City of Lewiston be amended by rezoning the properties located at 2 East Merrill Road (*See* Androscoggin County Registry of Deeds at Book 3925, Page 169), 949 College Street (*See* Said Registry at Book 5260, Page 121), 4 East Merrill Road (*See* Said Registry at Book 7643, Page 4), 6 East Merrill Road (*See* Said Registry at Book 5118, Page 348), 8 East Merrill Road (*See* Said Registry at Book 8090, Page 56), 10 East Merrill Road (*See* Said Registry at Book 9672, Page 251), and portions of 1 East Merrill Road (*See* Said Registry at Book 7396, Page 246), 3 East Merrill Road (*See* Said Registry at Book 6600, Page 58), and 5 East Merrill Road (*See* Said Registry at Book 4016, Page 298); as described in the Map attached hereto as Exhibit “A” and depicted on Land Use and Space and Bulk Chart attached hereto as Exhibit “B”, from the Rural Agriculture (RA) to Low Density Residential (LDR).

#### REASONS FOR THE PROPOSED AMENDMENT

The reasons for the proposed amendment includes correcting the split zoning of the Latulippe Subdivision, which will permit lot owners to make reasonable modifications and additions to the structures on their land. Said purpose is in compliance with the City of Lewiston’s Legacy Lewiston Comprehensive Plan (hereinafter the “Plan”), which states “[f]urther from downtown, neighborhoods take on suburban pattern with cul-de-sacs and limited points of entry. These low-density neighborhoods started developing in the 1950s, utilizing a suburban a form that was supported by the City’s zoning and land use code.” *See* Legacy Lewiston Comprehensive Plan at Page 33.

The proposed amendment would correct a split in zoning as to 1, 3, and 5 East Merrill Road. All three properties are currently both Low Density Residential and Rural Agricultural. This split in zoning creates uncertainty for the subject properties in complying with the zoning and land use code.

Rezoning the entire Latulippe Subdivision to Low-Density Residential (LDR) will align the neighborhood character with the appropriate zoning.

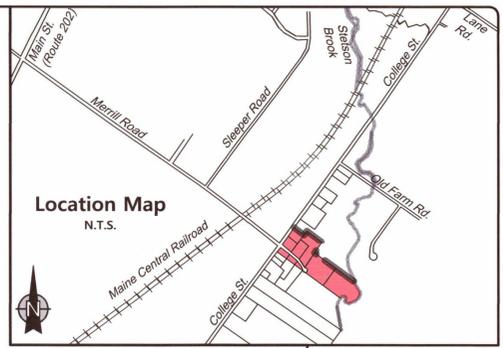
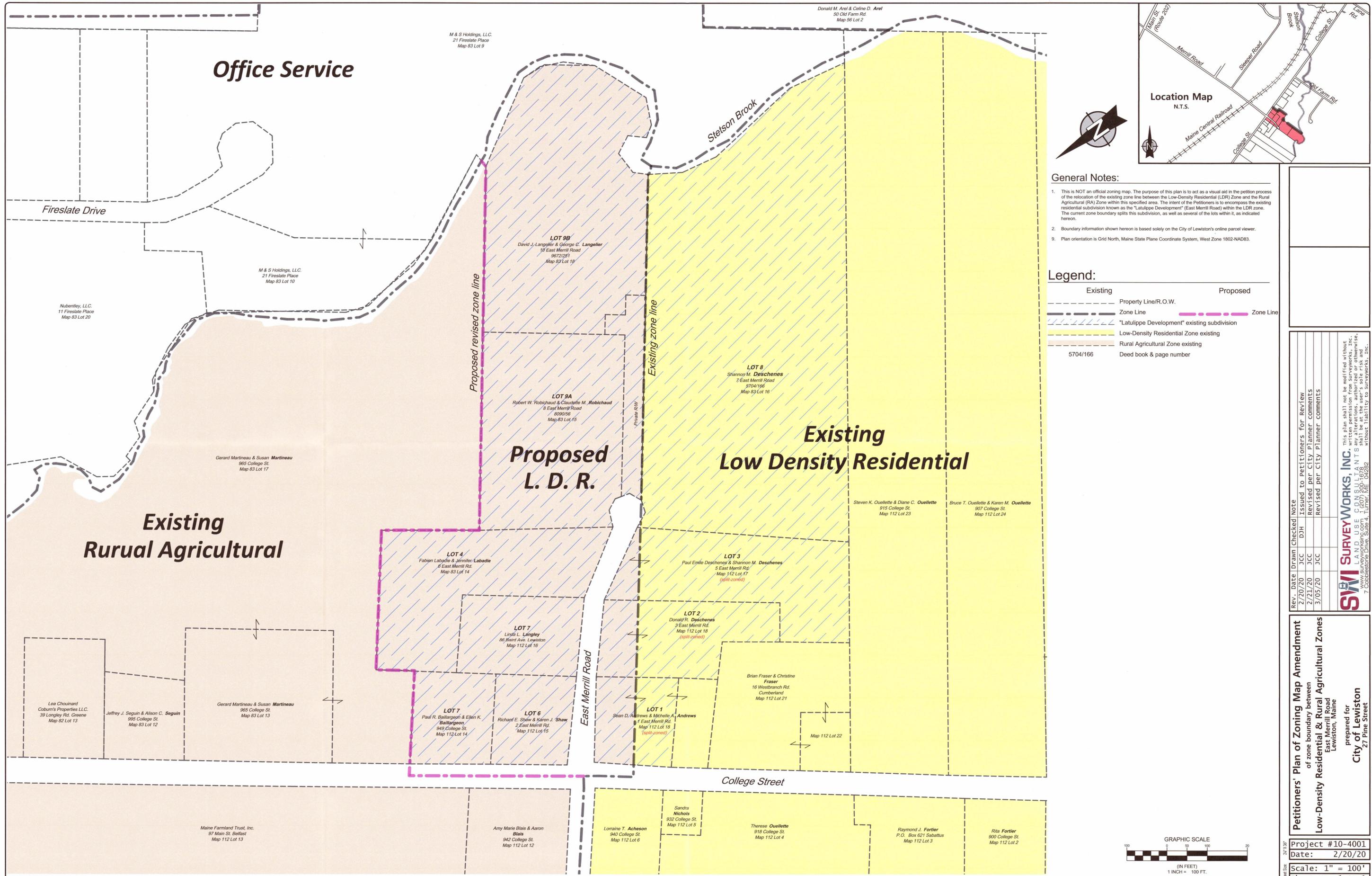
## CONFORMANCE WITH THE COMPREHENSIVE PLAN

The City Council of the City of Lewiston hereby determines that the change to the Zoning Map is in conformance with the Comprehensive Plan for the following reasons:

- 1) The properties are currently zoned partly Rural Agricultural (RA), while some lots are partially or entirely zoned as Low Density Residential LDR).
- 2) The Legacy Lewiston Comprehensive Plan describes Low-Density development as, “[f]urther from downtown, neighborhoods take on suburban pattern with cul-de-sacs and limited points of entry. These low-density neighborhoods started developing in the 1950s, utilizing a suburban a form that was supported by the City’s zoning and land use code.” *See* Legacy Lewiston Comprehensive Plan at Page 33.
- 3) The Latulippe Subdivision revision (1988) was planned and approved as a low density neighborhood not as an agricultural type subdivision.

We therefore believe the new zoning will meet the purposes of the LDR zone. Below is a table showing how the Rural Agricultural (AR) District compares to the Low Density Residential (LDR) District.

# EXHIBIT A



- General Notes:**
- This is NOT an official zoning map. The purpose of this plan is to act as a visual aid in the petition process of the relocation of the existing zone line between the Low-Density Residential (LDR) Zone and the Rural Agricultural (RA) Zone within this specified area. The intent of the Petitioners is to encompass the existing residential subdivision known as the "Latulipe Development" (East Merrill Road) within the LDR zone. The current zone boundary splits this subdivision, as well as several of the lots within it, as indicated hereon.
  - Boundary information shown hereon is based solely on the City of Lewiston's online parcel viewer.
  - Plan orientation is Grid North, Maine State Plane Coordinate System, West Zone 1802-NAD83.

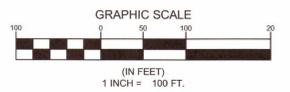
- Legend:**
- Existing: Property Line/R.O.W. (dashed line), Zone Line (dotted line), "Latulipe Development" existing subdivision (diagonal hatching), Low-Density Residential Zone existing (yellow shading), Rural Agricultural Zone existing (tan shading), 5704/166 (Deed book & page number)
  - Proposed: Zone Line (pink dashed line)

Rev. date	Drawn	Checked	Note
2/20/20	JCC	DDH	Issued to Petitioners for review
2/21/20	JCC	JCC	Revised per City Planner comments
3/05/20	JCC	JCC	Revised per City Planner comments

**SWI SURVEYWORKS, INC.**  
 A PROFESSIONAL CORPORATION  
 7 Cobblestone Drive, Suite 4, Turner, ME 04282  
 www.surveysw.com  
 This plan shall not be modified without written permission from Surveyworks, Inc. Any changes to this plan shall be at the user's sole risk and without liability to Surveyworks, Inc.

**Petitioners' Plan of Zoning Map Amendment**  
 of zone boundary between  
**Low-Density Residential & Rural Agricultural Zones**  
 East Merrill Road  
 Lewiston, Maine  
 prepared for  
**City of Lewiston**  
 27 Pine Street

Project #10-4001  
 Date: 2/20/20  
 Scale: 1" = 100'  
 Sheet No. 1 OF 1



# Zone Change Request

**Sec. 22. Land Use Requirements.**

(a) Land Use Requirements - All buildings or structures hereafter erected, reconstructed, altered, enlarged, or relocated, and uses of premises shall be in conformity with the provisions of this Code. No building, structures, land or water area shall be used for any purpose or in any manner except as permitted within the District in which such building, structure, land and water area is located. The District designation for a particular site shall be determined and apply to all land shown on the "Official Zoning Map, City of Lewiston" \_

Key to Table:

(P) Allowed/Permitted (the use must be in conformance with all applicable sections of the Zoning and Land Use Code)

(C) Allowed/Permitted only after the issuance of a conditional use permit in accordance with Article X of this Code (the use must be in conformance with all applicable sections of the Zoning and Land Use Code)

**Blank/Empty Column** Use not allowed/permitted space and bulk requirement not applicable

Land Use Table: All Zoning Districts 02.20.2020	Rural Agricultural (RA)	Low Density Residential (LDR)
<b>USES(15)(33)</b>		
Accessory use or structure	P	P
<b>Commercial-Service</b>		
Veterinary facilities excluding kennels and humane societies		
Veterinary facilities including kennels and humane societies	C	
Nursery School	C	C
Small day care facilities	C	P(22)
Day care centers	C	
Day care centers accessory to public schools, religious facilities, multifamily or mixed res. developments, and mobile home parks		C(22)
Business and professional offices including research, experimental, testing laboratories, engineering, research, management and related services		
Restaurants		
Drinking places		
Adult business establishments		
Hotels, motels, inns		
Movie theaters except drive-in theaters		

Places of indoor assembly, amusement or culture		
Art and crafts studios		
Personal Services		
Retail stores		
Neighborhood retail stores		
Lumber and building materials dealer		
Gasoline service stations		
Gasoline service stations which are a part of and subordinate to a retail use		
New and used car dealers		
Recreational vehicle, mobile home dealers		
Equipment dealers and equipment repair		
Automotive services including repair		
Registered dispensary(27)		
Registered primary caregivers engaged in the cultivations of medical marijuana for two to five registered patients.		
Tattoo Establishments		
Marijuana store(27)		
<b>Industrial</b>		
Light industrial uses		
Industrial uses		
Building and construction contractors		
Fuel oil dealers and related facilities		
Wholesale sales, warehousing and distribution facilities and self-storage facilities		
Self storage facilities		
Commercial solid waste disposal facilities		
Junkyards and auto graveyards		
Recycling and reprocessing facilities		
Private industrial/commercial developments(23)		
Marijuana cultivation, manufacturing, testing, nurseries, and registered dispensary (27)		
<b>Transportation</b>		
Airports or heliports	C	
Commercial parking facilities		
Transit and ground transportation facilities		
Transportation facilities		
<b>Public and Utility</b>		
Pumping stations, standpipes or other water supply uses involving facilities located on or above the ground surface and towers for municipal use	P	P
Utility structures	C	C
Municipal buildings and facilities	C	C

Preservation of historic areas; emergency and fire protection activities; bridges and public roadways		
Dams		
<b>Land Use Table: All Zoning Districts 02.20.2020</b>	<b>Rural Agricultural (RA)</b>	<b>Low Density Residential (LDR)</b>
<b>Institutional</b>		
Religious facilities	P	P
Cemeteries	P	P
Congregate care/assisted living facilities, institutions for the handicapped, nursing or convalescent homes, group care facilities		
Hospitals, medical clinics		
Museums, libraries, and non-profit art galleries and theaters		
Academic institutions, including buildings or structures for classroom, administrative, laboratory, dormitories, art, theater, dining services, library, bookstores, athletic facilities and student recreational uses, together with buildings accessory to the foregoing permitted principal buildings or structures		
Civic and social organizations		
Public community meeting and civic function buildings including auditoriums		
<b>Residential</b>		
Single-family detached dwellings on individual residential lots	P(8)	P
Mobile homes on individual residential lots	P(8)	
Two-family dwellings		
Multifamily dwellings in accordance with the standards of Article XIII		
Single-Family attached dwelling in accordance with the standards of Article XIII	C	
Mixed single-family residential developments in accordance with the standards of Article XIII	C	P
Mixed residential developments in accordance with the standards of Article XIII		P
Mixed use structures		
Lodging houses		
Home occupations	P	P
Bed and breakfast establishments as a home occupation	P	P

In-law apartments in accordance with the standards of Article XII	P	P
Single family cluster development	P	P
Family day care home	P	P
Shelters		
Dormitories		
<b>Natural Resource</b>		
Agriculture	P(8)	
Farm Stands	P	
Forest management and timber harvesting activities in accordance with the standards of Article XIII	P	P
Earth material removal	C	
Community gardens(20)	P	P
Water dependent uses, e.g. docks and marinas		
Non-residential structures for educational, scientific or nature interpretation purposes, containing a maximum floor area of not more than ten thousand (10,000) square feet		
<b>Recreation</b>		
Campgrounds	C	
Public or private facilities for nonintensive outdoor recreation	C	C
Commercial outdoor recreation and drive-in theaters		
Fitness and recreational sports centers as listed under NAICS Code 713940		

**Space and Bulk Table: All Zoning District 10.06.16**

<b>Dimensional Requirements (13)</b>	<b>Rural Agricultural I (RA)</b>	<b>Low Density Residential (LDR)</b>
<b>Minimum lot size with public sewer</b>		
Single family detached (24)	60,000 sf	10,000 sf
Single family attached	20 acres	
Two-family dwellings		
Single family cluster development	20 acres	5 acres
Mixed single family residential development (14)	20 acres	5 acres
Mixed residential development (14)		5 acres
Multifamily dwellings		
Mixed use structures		
Agriculture	120,000 sf	
Religious facilities	120,000 sf	40,000 sf
Veterinary facilities	120,000 sf	
Other uses	40,000	20,000 sf
All permitted uses		

<b>Minimum lot size without public sewer (3)</b>		
Single family detached, mobile homes on individual lots (24)	60,000 sf	40,000 sf
Single family attached	60,000 sf	
Two-family dwellings		
Single family cluster development (1)	20 acres	5 acres
Mixed single family residential development (14)	20 acres	5 acres
Mixed residential development (14)		5 acres
Multifamily dwellings		
Mixed use structures		
Agriculture	120,000 sf	
Religious facilities	120,000 sf	40,000 sf
Veterinary facilities	120,000 sf	
Other uses	4,000	40,000 sf
<b>Minimum net lot area per d.u. with public sewer</b>		
Single family detached	60,000 sf	
Single family attached	60,000 sf	
Two-family dwellings		
Mixed single family residential development (14)	60,000 sf	7,000 sf
Mixed residential development (14)		7,000 sf
Multifamily dwellings		
Mixed use structures		
All permitted residential uses		
<b>Minimum net lot area per d.u. without public sewer</b>		
Single family detached, mobile homes on individual lots	60,000 sf	
Single family attached	60,000 sf	
Two-family dwellings		
Mixed single family residential development (14)	60,000 sf	20,000 sf
Mixed residential development (14)		20,000 sf
Multifamily dwellings		
Mixed use structures		
All permitted residential uses		
<b>Minimum frontage</b>		
Single family detached, mobile homes -	200 ft	100 ft
Single family attached	200 ft	
Two-family dwellings		
Single family cluster development (with multiple vehicular accesses)	200 ft (50 feet)	200 ft (50 ft)
Mixed single family residential development (with multiple vehicular accesses)	200 ft (50 feet)	200 ft (50 ft)
Mixed residential development (with multiple vehicular accesses) (14)		200 ft (50 ft)

Multifamily dwellings (with multiple vehicular accesses)		
Mixed use structures		
Agriculture	250 ft	
Religious facilities	250 ft	200 ft
Veterinary facilities		
Other uses	200	100 ft
All permitted uses		
<b>Minimum front setback</b>		
Single family detached, mobile homes on individual lots	25 ft	20 ft
Single family attached	50 ft	
Two-family dwellings		
Single family cluster development	50 ft	50 ft
Mixed single family residential development (14)	50 ft	50 ft
Mixed residential development (14)		50 ft

**Space and Bulk Table: All Zoning District 10.06.16**

<b>Dimensional Requirements (13)</b>	<b>Rural Agricultural I (RA)</b>	<b>Low Density Residential (LDR)</b>
Multifamily dwellings		
Mixed use structures		
Agriculture	50 ft	
Religious facilities	25 ft	50 ft
Veterinary facilities	25 ft	
Other uses	25 ft	20 ft
All permitted uses		
<b>Minimum front yard</b>		
Single family detached, mobile homes on individual lots	25 ft	20 ft
Single family attached	50 ft	
Two-family dwellings		
Single family cluster development	50 ft	50 ft
Mixed single family residential development (14)	50 ft	50 ft
Mixed residential development (14)		50 ft
Multifamily dwellings		
Mixed use structures	25 ft	
Religious facilities	25 ft	20 ft
Veterinary facilities	25 ft	
Other uses	25 ft	20 ft
All permitted uses		
<b>Minimum side and rear setback</b>		
Single family detached, mobile homes on individual lots	25 ft	10 ft
Single family attached		
Two-family dwellings		
Single family cluster development	50 ft	30 ft
Mixed single family residential development (14)	50 ft	30 ft
Mixed residential development (14)		30 ft

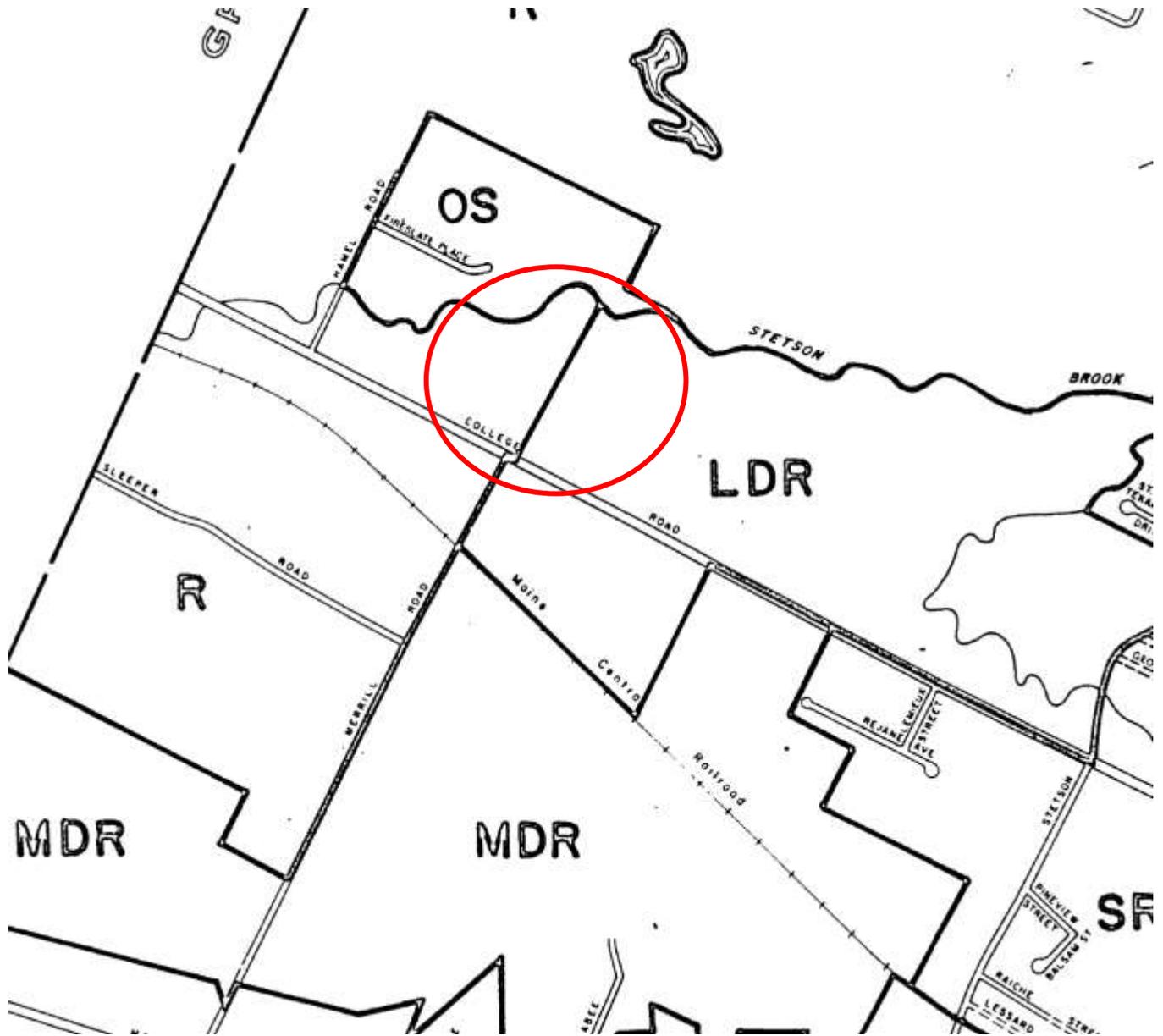
Multifamily dwellings		
Religious facilities	50 ft	50 ft
Mixed use structures		
Veterinary facilities	50 ft	
Farm structures for keeping of animals	100 ft	
Other uses	50 ft	25 ft
All permitted uses		
<b>Minimum side and rear yard</b>		
Single family detached, mobile homes on individual lots	10 ft	10 ft
Single family attached	50 ft	
Two-family dwellings		
Single family cluster development		
Mixed single family residential development (14)	50 ft	30 ft
Mixed residential development (14)	50 ft	30 ft
Multifamily dwellings		30 ft
Mixed use structures		
Religious facilities		25ft
Veterinary facilities	25 ft	25 ft
Farm structures for keeping of animals	25 ft	
Other uses	25 ft	
All permitted uses	25 ft	25 ft
<b>Maximum height</b>		
Agriculture	75 ft	
	35 ft	35 ft
Other permitted uses		
Hospital, nursing homes and medical offices		
<b>Ratios</b>		
Maximum lot coverage	0.15	0.3
Maximum impervious coverage		

Exhibit C

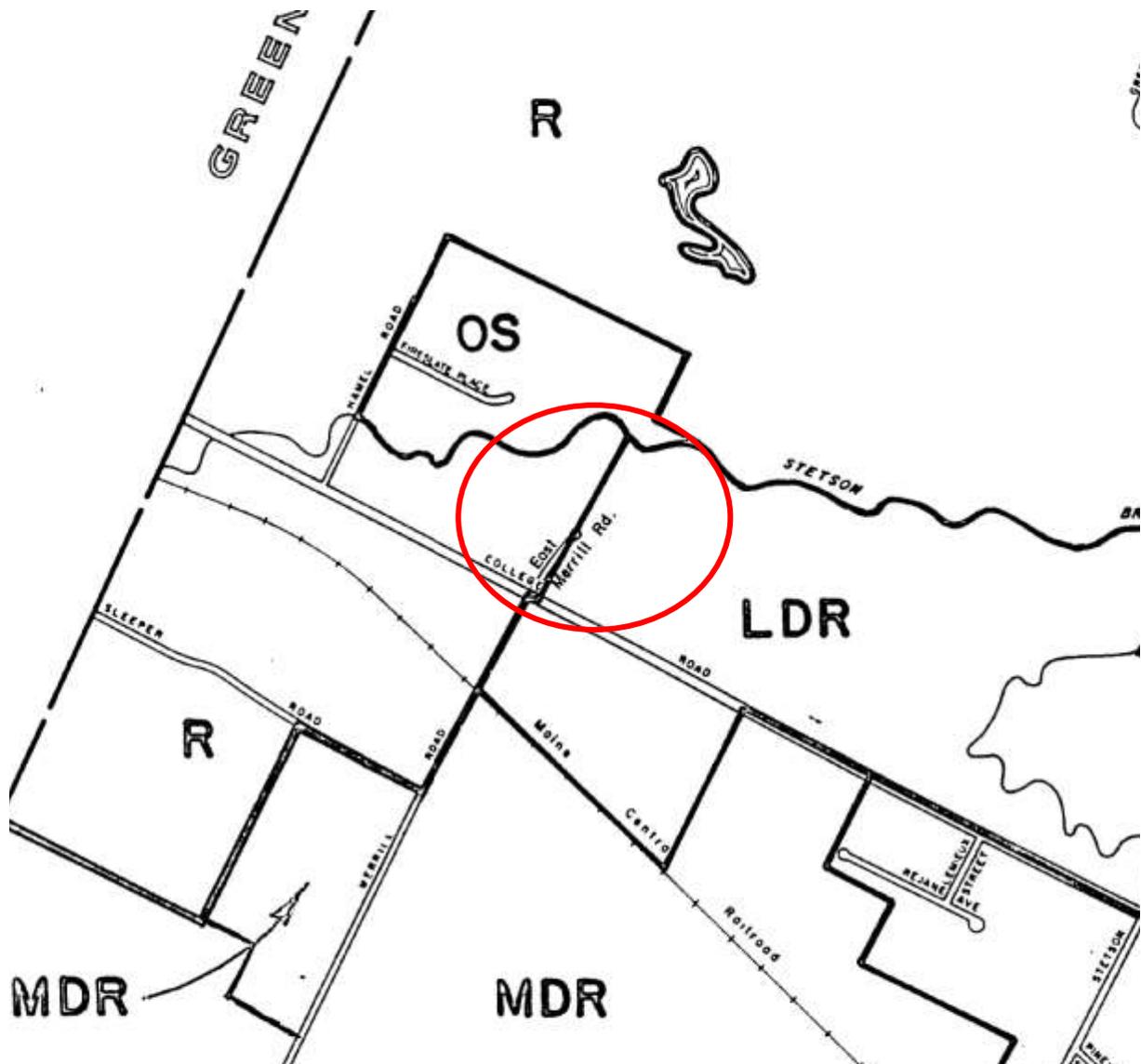
Zoning Mapping and Land Subdivisions in the East Merrill Road Area



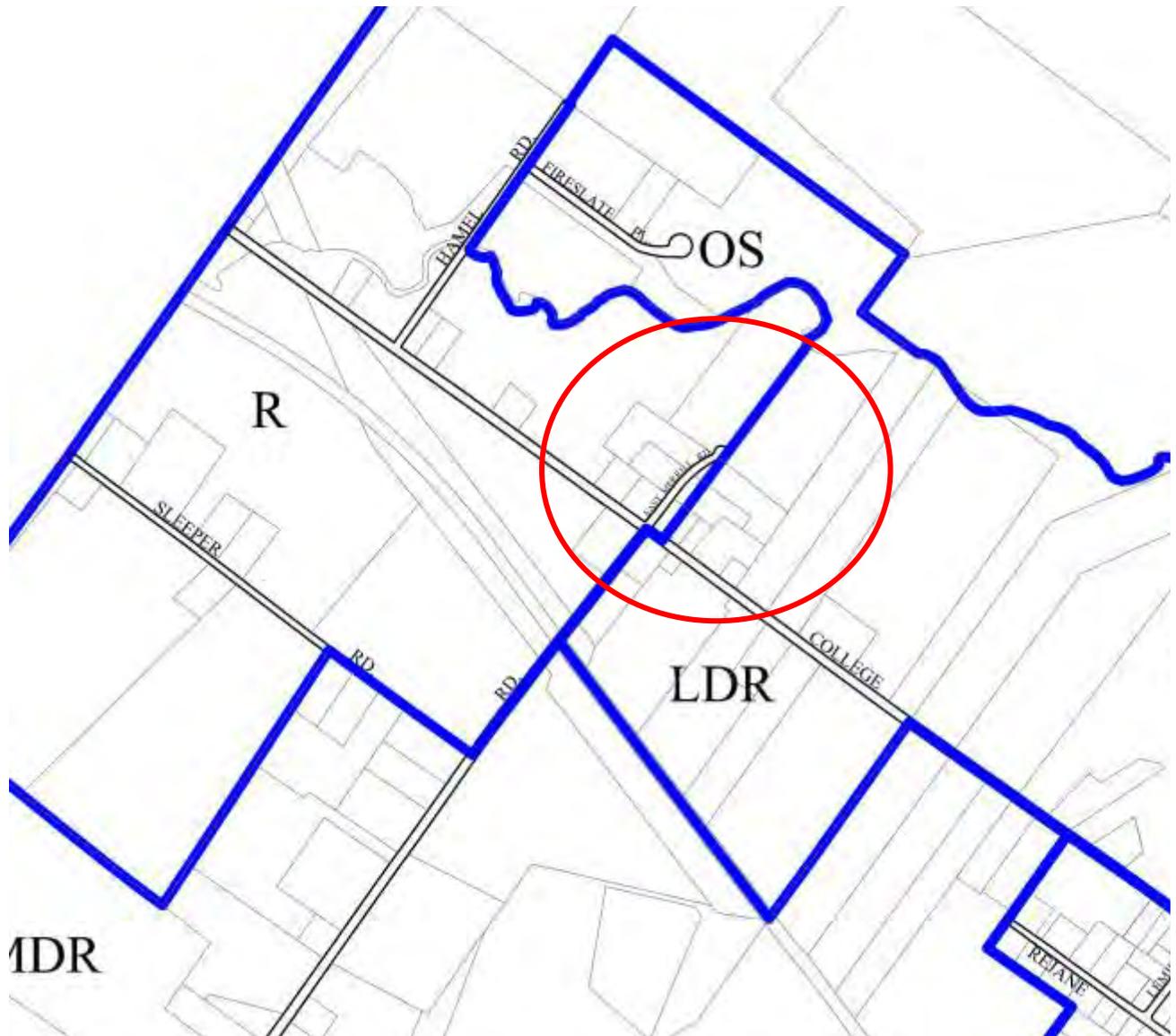
In 1985, the area under consideration for the zone change (red circle) was Zoned Ag (A)



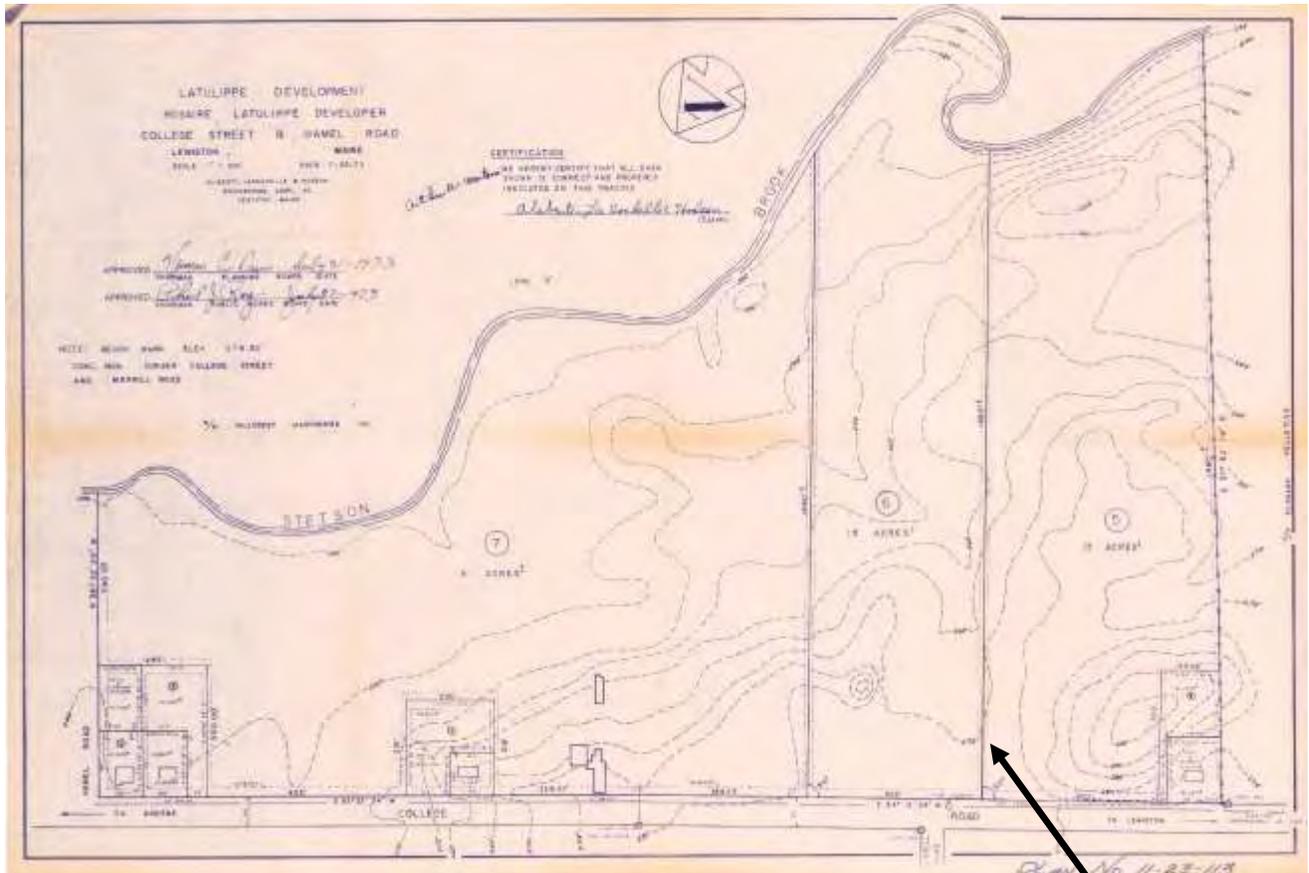
The January 1988 zoning map now shows the proposed zone change area (red circle) as both Low Density Residential (LDR) and Rural (R) zoning.



The 1990 zoning map now shows East Merrill Road with LDR on one side and R on the other. The October 1988 Latulippe Subdivision has not made it on this zoning map.



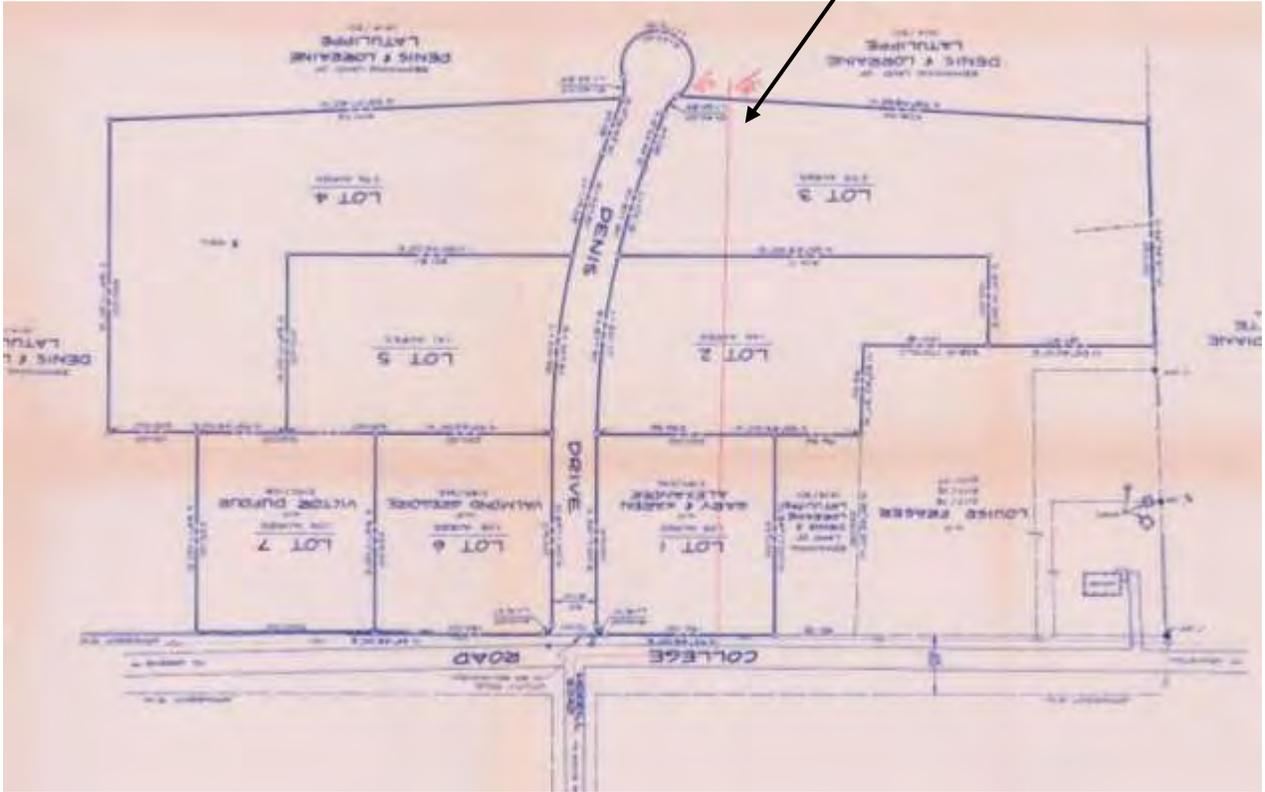
The 1991 zoning map now shows East Merrill Road with the lots created with the Latulippe Subdivision (Rev. 2).



The original Latulippe Development (1973) as a rural subdivision.

This lot line appears to be the basis for the zone line established in 1988

Zone line (red) for AG and LDR



The Latulippe Development revision 2 from October 1988 shows the subdivision as it (generally) appears today. Note the red line on the plan showing the split zone line between AG and LDR zones.

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

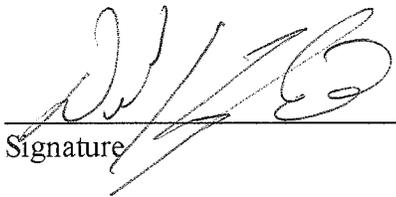
Pursuant to Appendix A, Article XVII, Section 5, Amendments, of the City of Lewiston Zoning and Land Use Code, we the undersigned residents of the City of Lewiston, being eighteen (18) year of age or older, do hereby petition the City of Lewiston to amend Article III, Official Map for the zoning of properties located at 2 East Merrill Road, 949 College Street, 4 East Merrill Road, 6 East Merrill Road, 8 East Merrill Road, 10 East Merrill Road, and portions of 1 East Merrill, 3 East Merrill and 5 East Merrill Road from Rural Agricultural (RA) District to Low-Density Residential District (LDR), which would permit the Uses and Space and Bulk standards as per Article XI, Article XI, District Regulations as described and shown in the exhibits attached hereto:

	SIGNATURE	PRINTED NAME	PHYSICAL STREET ADDRESS (No PO Boxes)	DATE
1		GEORGE C. LANGELIER	56 LAURIER ST	3/6/2020
2		Carol A. Langelier	56 LAURIER ST.	3/6/2020
3		Karen Shaw	2 E. Merrill Rd	3/7/2020
4		ROBERT ROBICHAUD CLAUDETTE	8 E MERRILL	3/7/2020
5		R. Robichaud	8 E MERRILL	3-7-20
6		Christine Robichaud	8 EAST MERRILL RD	3-7-2020
7		Julie Nolan	3 E Merrill Rd	3-7-2020
8		Jennifer Cumber	2161 Lisbon Lot 7	3-7-2020
9		Donald R. Langolia	3 E Merrill Rd	3-7-2020
10		Richard F. Shaw	2 - E - MERRILL RD	3-9-2020
11		PAUL BAILLARGEON	949 COLLEGE RD	3-9/20
12		Sean Andrews	1 E Merrill Rd,	3/9/2020
13		Michelle Andrews	1 E Merrill Rd	3/9/2020
14		FABIEN LABADIE	6 E Merrill Rd	3/15/2020
15				

16				
17				
18				
19				
20				

**CIRCULATOR'S VERIFICATION**

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

  
 \_\_\_\_\_  
 Signature

David Langelier  
 \_\_\_\_\_  
 Printed Name of Circulator

3/15/20  
 \_\_\_\_\_  
 Date

**REGISTRAR'S CERTIFICATION**

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

Total Valid: 13

Total Invalid: 1

  
 \_\_\_\_\_  
 Signature of Registrar/Deputy Registrar

Date: 3-23-20



## CITY OF LEWISTON

### Department of Planning & Code Enforcement

TO: Lewiston Planning Board

FROM: Douglas Greene, AICP, RLA, City Planner

DATE: April 27, 2020

RE: Agenda Item 4c, Development Review and Conditional Use application for a Solar Facility at 1043-1045 Main Street

---

VHB Engineers, an agent for NextGrid Inc., has submitted a Development Review and Conditional Use Application to construct a 4.004 MWdc solar facility covering 17.25 acres at 1043-1045 Main Street.

#### PROJECT DESCRIPTION

The properties at 1043 and 1045 Main Street are a total of 58 acres in size and has street frontage along the east side of Main Street and the northern side of Stetson Road. The applicant has a purchase and sales agreement for both properties. Access to the project is proposed through a 20-foot wide gravel access road that is approximately 1,000 feet north from the intersection of Main Street and Stetson Road. The access road leads to a 20 foot-wide, T turn-around provided for emergency vehicles. A security fence and entrance gate will limit access to the site.

The site work for the project will involve clearing 7.64 acres of trees, disturb a total of 17.25 acres through grading and have no wetland impacts. The estimated size of the solar array is approximately 200,200 sf. (4.60 ac.) and contain approximately 10,010 panels. Subject to Planning Board approval and selection by the Maine Public Utilities Commission (PUC) competitive bid process (award date of 8/31/20), the applicant would like to start work by September of 2020 with construction lasting around 8 months. Traffic during construction will involve 100-125 construction personnel and 10-15 office staff, with an estimated trip generation of approximately 93 trips during the AM and PM peak hours. Once the project is operational, the facility will be unmanned with the exception of a small crew for mowing and maintenance.

The panel area will be graded and seeded in the fall, which will allow the vegetation to be established prior to the installation of the panels in the spring. Once in operation, the area underneath and between the panels will be mowed no more than twice a year, and maintained as erosion controlling meadow growth. The 4.004 MWdc of electricity generated will be interconnected to the Central Maine Power distribution circuit.

The solar facility project and surrounding area is zoned Highway Business (HB). Four nearby properties are legally non-conforming residential uses and are either directly adjacent (1079 and 1083 Main Street) or across Main Street (940 and 1043 Main Street) from the solar project.

## TYPES OF APPROVALS

The Planning Board and City Council recently approved a zoning text amendment adding solar facilities to a new use category, utility structures, as a conditional use in all zoning districts. Large scale conditional use projects are also considered major development review projects.

Development Review Approval- The Planning Board needs to review and approve the development review application using Article XIII, Development Review and Standards, Section 4, Approval Criteria. The applicant has included a narrative in their application that addresses each of the approval criteria.

Conditional Use Approval- The Planning Board needs to review and approve the conditional use application using Article X, Conditional Uses, Section 3, Standards for Conditional Use Permits. Conditional Use Standards, in general, look to ensure that the proposed development will not negatively impact surrounding property values or produce noise, odors, vibrations, or create negative transportation, visual or environmental impacts. The applicant has included a narrative in their application that addresses the Standards for Conditional Use Permits.

Local Delegated Review- The City of Lewiston has delegated review authority for the approval of stormwater management for projects with areas of disturbance under 20 acres and impervious areas under one acre. The project is required to comply with DEP's Chapter 500 Stormwater Management Rule.

### Other State and Federal Permits-

The applicant is also seeking federal and state approval for:

- Maine Natural Resources Protection Act Permit (NRPA)
- Maine Storm Water Permit by Rule
- Maine Stormwater Construction General Permit
- U.S. Army Corps of Engineers Section 404 Permit

## STAFF REVIEW and COMMENTS

The Staff discussed the following items during the Staff Review process:

1. Several corrections to the site plan were requested and made. (Signature block, additional notes, etc.)
2. Decommissioning- Many communities require large solar projects such as this to provide a means to decommission and remove the equipment at such time that the facility is no longer in operation after 12 months. The applicant has added a note to the site plan regarding a commitment to decommission the project.
3. A note added to the revised plans now states that construction activity will occur from 7 am until 7 pm or from sunrise to sunset whichever is less. The staff notes that the noise ordinance applies during the work day as well.
4. At the request of Public Works, the applicant has provided plans stamped by a Maine Licensed Professional Engineer.
5. Public Works requested final calculations for all stormwater calculations. The applicant has asked that details for the sizing of silt socks, location of BMP, and a stormwater operation and maintenance plan be developed and approved by the City of Lewiston

before the issuance of any permit approvals and before construction activity can begin. Public Works has agreed with the request.

6. The staff notified the applicant two properties directly across Main Street were residential uses. A revised landscape plan (sheet 2) has been submitted that provides an evergreen buffer on the project side of Main Street that adequately screens any negative visual impacts to 940 and 1040 Main Street.

All other review comments from city staff have been addressed to Staff's satisfaction with revisions provided by the applicant.

#### **STAFF RECOMMENDATION**

Staff recommends APPROVAL of the proposed project with the following condition.

1. The applicant shall provide details for the sizing of silt socks, location of BMP, and a stormwater operation and maintenance plan be developed and approved by the City of Lewiston before the issuance of any permit approvals and before construction activity can begin.

#### **ACTION NECESSARY**

Make a motion that the application submitted by VHB on behalf of NextGrid, Inc. to construct a 4.004 MWdc solar facility covering 17.25 acres at 1043 and 1045 Main Street meets all of the necessary criteria and standards contained in the Zoning and Land Use Code, including, but not limited to Article XIII, Development Review and Standards, Section 4, Approval Criteria and Article X, Conditional Uses, Section 3, Standards for Conditional Use Permits and that approval be granted (including if any, specific conditions raised by the Planning Board or Staff).



April 20, 2020

Ref: 55304.00

Doug Greene  
Deputy Director / City Planner  
27 Pine St., 3rd Floor  
Lewiston, ME 04240

Re: **Application for Site Plan Review  
1043-1045 Main Street Solar Project**

Dear Mr. Greene:

On behalf of NextGrid (Applicant), Vanasse, Hangen, Brustlin, Inc. (VHB) is pleased to submit a revised Development Review and Conditional Use application for the 1043-1045 Main Street Solar Project (the Project) to be located at 1043-1045 Main Street in Lewiston, Maine. We appreciate the input provided by City of Lewiston staff on our initial submission and for ease of review have provided our responses to these requests with this letter.

Please find enclosed 12 hard copies of the required application form and the following Attachments:

- Development Review and Standards Narrative (Provided as Attachment A)
- Conditional Use Permit Narrative (Provided as Attachment B)
- Copy of redacted lease agreement (Provided as Attachment C)
- Soil report (Provided as Attachment D)
- Site Plans for existing conditions and the proposed Project

As we discussed, we are providing nine copies of the Site Plans printed 11" x 17" sheets and three "full-size" copies.

**Project Overview:**

NextGrid is proposing to install and operate a 4.004 MWdc solar array at 1043-1045 Main Street in Lewiston, Maine that will interconnect into the Central Maine Power distribution circuit. The Project is participating in a Maine Public Utilities Commission (PUC) competitive bid process for clean energy. Under this process, an applicant must have all of their non-ministerial permits in hand by June 11, 2020 with an expected award date of August 31, 2020.

Thank you for your timely review of the enclosed materials. Please do not hesitate to contact me at GPaquette@VHB.com or (207) 889-3102, if you have any questions regarding the Project. We look forward to meeting with the Planning Board to discuss the Project.

Sincerely,

A handwritten signature in blue ink, appearing to read "Gil Paquette".

Gil Paquette  
Director, Energy/Environmental Services



## RESPONSE TO CITY OF LEWISTON STAFF COMMENTS ON 1043-1045 MAIN STREET PROJECT

### Planning Staff comments

**1. Add Planning Board approval/signature block to plans (Sheet 1).**

Approval/signature block has been added to Sheet 1 of Site Plan.

**2. Change the title of the plan to Site Plan (Sheet 1 and 2) and remove Erosion and Sediment Control Plan**

Plan titles have been revised per comment.

**3. Need to add notes to Site Plan(s). (Purpose of plan, maintenance of grounds and any stormwater facilities, decommissioning, etc.)**

Additional General Notes have been added to the Site Plan. For decommissioning, the following note has been added:

*"Decommissioning of the Project shall commence after 12 consecutive months of no power generation at the facility except in the case of a natural disaster, act of violence, or other event which results in the absence of electrical generation for 12 months. The Applicant or its successor as owner of the Project at that time will be solely responsible for decommissioning the Project, which will consist of:*

- *Be responsible for all decommissioning costs;*
- *Obtain any additional permits required for the decommissioning, removal, and legal disposal of Project components prior to commencement of decommissioning activities;*
- *Remove and dispose of all above-ground infrastructure, including arrays, inverter structures, concrete foundations and pads, and fences, and grade and revegetate in accordance with permits and in compliance with all applicable rules and regulations then in effect governing the disposal thereof;*
- *Remove all hazardous materials and transport them to be disposed of by licensed contractors at an appropriate facility in accordance with rules and regulations governing the disposal of such materials; and*
- *Removed materials shall be recycled and/or salvaged to the maximum extent practical and all waste streams shall be managed in accordance with the State of Maine's solid waste requirements.*

**4. Add property information to the adjacent properties.**

Property owner information has been added to the Site Plan sheets.

**5. Add driveway width.**

Width of existing driveways has been added to the Site Plan.

**6. Determine the status of DEP approval. (under 20 acres of disturbed area, 12.2 ac proposed)**

Attachment A for the application has been updated to confirm that, based on the area of disturbance, a Site Location of Development permit is not required. The following language has been added: *The area of disturbance is under 20 acres and therefore a Site Location of Development permit is not required.*

**7. Provide all required state and federal permits prior to the issuance of a building permit.**

Comment noted.

**8. What will the hours of operation be during construction?**

Sheet 1 of the Site Plan, Attachment A, Section (b) and Attachment B, Sections 1 (b) and (c) have all been updated for all three applications with the following language: *Construction will occur from 7am until 7pm or from sunrise to sunset, whichever is less.*

**9. Show the location of the inverter on the property.**

The location of the PV inverter is now shown on the Site Plan.

**10. Please provide mature heights of evergreens shown in the landscape plan. [Main and Lisbon]**

The Landscaping plans now provide the expected mature height for all trees.

**Public Works Comments**

**1. Plans should be stamped and signed by a Maine Licensed Professional Engineer**

The revised plans are signed and sealed by a Maine Licensed Professional Engineer.

**2. Provide calculations for sizing of silt sock as shown on the detail**

The drawings provided in the application are intended to be permit-level design. Once the Project is approved, issued-for-construction drawings will be developed that provide the level of detail requested in this comment. To address this issue, the following language has been added to Sheet 1 of the Site Plan: *Prior to any development activity or permit approvals, the stormwater and erosion control elements of the site plans will be reviewed and approved by the City of Lewiston.*

In addition, the following language has been added to Attachment A of the application: *The Site Plans provided are intended to be permit-level design. Details such as the sizing of silt socks, location of BMPs such as vegetated soil filters and ditch turn-around buffers, and a stormwater BMP operation and maintenance plan will be developed as part of the issued-for-construction plans and associated materials. The Applicant will provide this documentation for City review and comment prior to construction.*

**3. Provide plans/calculations/narrative to address the requirements of Article XIII, Section 4(f)**

Attachment A has been updated to reflect that the Applicants are seeking a waiver from the requirements related to plans / calculations, which is consistent with what the Maine Department of Environmental Protection has required in Permit-by-Rule applications for solar sites.

**4. Plan Details include vegetated soil filter and ditch turnout buffer. Please indicate the locations of these BMPs on the site plans.**

Please see response to Comment #2.

**5. It is assumed that the site will be maintained as a meadow for stormwater treatment purposes and not mowed more than twice a year. Please add appropriate notes for stormwater buffers/mowing.**

Yes, this is correct. The following note has been added to Sheet 1 of the Site Plan: *The site will be maintained as meadow for stormwater treatment purposes and not mowed more than twice a year.*

**6. Provide a stormwater BMP operation and maintenance plan.**

Please see response Comment #2.

**7. Typical gravel road section detail should be revised for a 20-foot wide gravel road as shown on the site plan.**

The Site Plan has been revised to show the expanded width for the gravel roads.

**Fire Department Comment:**

- 1. Add note to plan Sheet 1, "Access road through the site shall be kept clear year round."**

This note has been added.



# Development Review Application

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



**PROJECT NAME:** 1043-1045 Main Street Solar Project

**PROPOSED DEVELOPMENT ADDRESS:** 1043-1045 Main Street, Lewiston ME 04240

**PARCEL ID#:** RE00014122 / RE00014123

**REVIEW TYPE:**      **Site Plan/Special Exception**                       **Site Plan Amendment**   
                                  **Subdivision**     **Subdivision Amendment**

**PROJECT DESCRIPTION:** Applicant proposed to develop a solar farm array on the property. The project is designed to maximize solar energy output, minimize impacts on the environment and surrounding land uses, and comply with federal, state and local land use regulations.

**CONTACT INFORMATION:**

**Applicant** NextGrid, Inc

**Name:** Daniel Serber  
**Address:** PO Box 7775, San Francisco, CA  
**Zip Code** 94120  
**Work #:** 415-612-2969  
**Cell #:** \_\_\_\_\_  
**Fax #:** \_\_\_\_\_  
**Home #:** \_\_\_\_\_  
**Email:** daniel@nextgrid.com

**Project Representative**  
VHB

**Name:** Gil Paquette  
**Address:** 500 Southborough Dr, Suite 105B, S. Portland, ME  
**Zip Code** 04106-6928  
**Work #:** 207-889-3102  
**Cell #:** 207-310-1996  
**Fax #:** 207-253-5596  
**Home #:** \_\_\_\_\_  
**Email:** gpaquette@vhb.com

**Property Owner**

**Name:** LA Quarry LLC / George Schott  
**Address:** PO Box 9340, Auburn ME  
**Zip Code** 04210  
**Work #:** \_\_\_\_\_  
**Cell #:** \_\_\_\_\_  
**Fax #:** \_\_\_\_\_  
**Home #:** \_\_\_\_\_  
**Email:** \_\_\_\_\_

**Other professional representatives for the project (surveyors, engineers, etc.),**

**Name:** \_\_\_\_\_  
**Address:** \_\_\_\_\_  
**Zip Code** \_\_\_\_\_  
**Work #:** \_\_\_\_\_  
**Cell #:** \_\_\_\_\_  
**Fax #:** \_\_\_\_\_  
**Home #:** \_\_\_\_\_  
**Email:** \_\_\_\_\_

# 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	0	sq. ft.
Proposed Total Impervious Area	21,732	sq. ft.
Proposed Impervious Net Change	21,732	sq. ft.
Impervious surface ratio existing	0	% of lot area
Impervious surface ratio proposed	0.86	% of lot area

## BUILDING AREA/LOT COVERAGE

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

## ZONING

Existing \_\_\_\_\_  
 Proposed, if applicable \_\_\_\_\_  
 Highway Business \_\_\_\_\_

## LAND USE

Existing \_\_\_\_\_ Vacant \_\_\_\_\_  
 Proposed \_\_\_\_\_ Utility \_\_\_\_\_

## RESIDENTIAL, IF APPLICABLE

Existing Number of Residential Units	0
Proposed Number of Residential Units	0
Subdivision, Proposed Number of Lots	0

## PARKING SPACES

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

## ESTIMATED COST OF PROJECT

~\$5,290,000

## DELEGATED REVIEW AUTHORITY CHECKLIST

### SITE LOCATION OF DEVELOPMENT AND STORMWATER MANAGEMENT

Existing Impervious Area	0	sq. ft.
Proposed Disturbed Area	751,432	sq. ft.
Proposed Impervious Area	21,732	sq. ft.

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

### TRAFFIC ESTIMATE

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

Total traffic estimated in the peak hour-proposed (Since July 1, 1997) See Attachment A \_\_\_\_\_ 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: 58 acres / 2,526,480 square feet(sf).

<b>Regulations</b>	<u>Required/Allowed</u>	<u>Provided</u>
Min Lot Area	40,000 sf	/ 2,526,480 sf
Street Frontage	150 ft	/ 679.0 ft
Min Front Yard	20 ft	/ 50 ft
Min Rear Yard	20 ft	/ 22 ft
Min Side Yard	20 ft	/ 50 ft
Max. Building Height	65 ft	/ 10 ft (array)
Use Designation	Utility	/ Utility
Parking Requirement	1 space/ per _____ square feet of floor area	
Total Parking:	0	/ 0
Overlay zoning districts (if any):	_____ / _____ / _____	
Urban impaired stream watershed?	YES/NO If yes, watershed name <u>No</u>	

## DEVELOPMENT REVIEW APPLICATION SUBMISSION

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

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

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

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

**Auburn:** [www.auburnmaine.org](http://www.auburnmaine.org) under City Departments/ Planning and Permitting/Land Use Division/ [Zoning Ordinance](#)

**Lewiston:** <http://www.ci.lewiston.me.us/clerk/ordinances.htm> Refer to Appendix A of the Code of Ordinances

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

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

Signature of Applicant: 	Date: April 14, 2020
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# Development Review Checklist

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



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

**PROJECT NAME:** 1043-1045 Main Street Solar Project

**PROPOSED DEVELOPMENT ADDRESS and PARCEL #:** 1043-1045 Main Street, Lewiston  
(Parcel ID: RE00014122 / RE00014123)

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

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

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

## **Attachment A**

### **Narrative and Review of Article XIII Section 4 Criteria**

## DEVELOPMENT REVIEW AND STANDARDS NARRATIVE

NextGrid Renewable Energy (Applicant) is proposing to install and operate a 4.004 MWdc solar array (Project) at 1043 – 1045 Main Street in Lewiston, ME (City). The proposed Project includes solar panels, associated electrical equipment, perimeter fencing and site access. The facility will interconnect into the Central Maine Power distribution circuit. The Project would be built under the Affordability of Clean Energy for Homeowners and Businesses under Efficiency Maine Trust and would provide a long-term, stably priced renewable power resource which would benefit local municipal electric departments and their taxpayers. Pending approvals, the Project is anticipated to start work by September 7, 2020, with an anticipated construction period of 8 months in duration. The current uses of the lot are agriculture and undeveloped (including forestry). A portion of the forested sections of the lot will be cleared to allow for construction of the project. A copy of the lease agreement is provided as Attachment C to this application.

Construction of the Project will begin with establishing base lines and demarcating the Project limit of work. Following installation of temporary erosion and sediment control measures such as silt fence and erosion control mix (ECM), the site will be cleared and grubbed as necessary. The design of erosion and sedimentation control measures will be based on the Maine Erosion & Sediment Control Handbook for Construction: Best Management Practices (BMPs). Gravel access roads or entranceways will then be constructed, along with proposed stormwater management features. The perimeter fence will be installed, followed by installation of solar panels. Posts will first be installed for attachment of the racking system, then installation of solar panels and aboveground and underground conductors will occur. Solar panels will be underlain with herbaceous vegetation. The final number of panels will be based on site conditions as determined during construction and may vary slightly from the permit drawings. Individual foundation excavations will then be made and concrete pads will be installed for the placement of electrical equipment such as transformers and inverters. Any necessary final grading, site stabilization, vegetation management and landscaping will then be conducted.

The Applicant's agent met with City staff on February 6, 2020 to discuss the Project. One of the attendees was the Lewiston Fire Chief, who provided input on the Project's road design.

Anticipated federal and state permits include:

- Maine Natural Resources Protection Act Permit
- Maine Stormwater Permit by Rule (though City of Lewiston as Delegated Authority)
- Maine Stormwater Construction General Permit
- U.S. Army Corps of Engineers Section 404 permit

The area of disturbance is under 20 acres and therefore a Site Location of Development permit is not required.

The following information is presented to demonstrate that the proposed project adheres to the criteria presented in Article XIII, Section 4 of the Lewiston Zoning and Land Use Code.

**(a) *Utilization of the site.***

The siting of Project facilities has considered the natural capabilities of the site to support development while considering natural resources. Wetlands, steep slopes and floodplains have been avoided to the extent practical. No unique natural resources have been identified within the Project area. Natural drainage patterns will be maintained to the extent practicable and the Project area will be maintained as meadow during the operation of the Project.

**(b) *Traffic movement into and out of the development area.***

During construction, the Project will increase traffic on municipal roads, but these effects will be temporary in nature and relatively minor. Standard trucking methods will be used to transport materials and equipment to the Project site. Construction trailers, construction equipment and laydown areas will be sited so as to avoid or minimize environmental impact. Construction will occur from 7am until 7pm or from sunrise to sunset, whichever is less.

The magnitude of traffic produced by a proposed development is typically estimated by applying the size of a project against the applicable trip generation contained in the Institute of Transportation Engineers Trip Generation Manual. However, this manual does not include trip generation rates for solar farms. As such, traffic impacts during construction and operations were estimated using information publicly submitted for other solar projects. Two recent projects (Sanford Airport and Farmington Solar) submitted applications for larger projects (<20 MW). These projects reported that their traffic during peak construction are approximately 100-125 construction personnel and 10-15 office staff onsite equating to maximum staffing levels of 140 personnel per day. Assuming a conservative carpool estimate of 1.5 personnel, they concluded that this would generate approximately 93 auto trips during the morning and evening. However, they also noted that the likely hours of construction meant that the arrival of construction staff would not coincide with peak morning commuting hours. These number are consistent with traffic reports generated for sites in other regions. Based on these estimated data as well as the smaller size of this Project, the construction of the Project is not expected to generate more than 100 trips during peak hours but the Applicant will obtain a Traffic Permit if the contractor selected for the work believes there will be more than 100 one-way trips during construction.

After construction, the site will generally be unmanned, except for mowing and maintenance. In the event of an issue requiring troubleshooting or maintenance, it is anticipated that a two-person team will visit the site. For mowing and general maintenance (e.g., fence inspections), the work will generally take place on a twice annually, or quarterly basis, with a small number of vehicles. The road network as presented on the attached site plans is adequate for this level of traffic.

**(c) Access into the site.**

Access into the site will be through a gated entrance road, which will adhere to the “City of Lewiston’s Policy for the Design and Construction of Streets and Sidewalk” at the point of intersection with City roads.

**(d) Internal vehicular circulation.**

The Project will include construction of a gated entrance road. Once the Project is in operation, there will be limited vehicular use on the site which will consist largely of pick-up trucks and associated trailers. The City Fire Department will have access to Project gate keys through Knox boxes. A 16-foot buffer will be maintained between arrays and the perimeter fencing to accommodate vehicles, primarily pickup trucks or other passenger vehicles, in the event of an emergency.

**(e) Pedestrian circulation.**

The facility will be fenced to prevent unauthorized access. The installation of the fencing will not impede access to any known resources for which pedestrian access would be desirable.

**(f) Stormwater management.**

The project will disturb one acre or more of area during construction and therefore will be required to demonstrate compliance with Maine Department of Environmental Protection’s (DEP) Chapter 500 Stormwater Management Rule (“Chapter 500”).

“Impervious area” is defined by DEP as “the total area of a parcel covered with a low-permeability material, such as asphalt, concrete, and gravel roadways.” Consistent with this definition, the total impervious area calculated for the project includes areas covered by concrete equipment pads, gravel access roadways, and the ground-driven post mounts for the solar panels. DEP has previously deemed that the solar panels themselves are not considered impervious. Of the total Project area (~17.25 acres), the total impervious area, which includes roadways, concrete pads, and mounting posts for panels, will be ~0.50 acres (2.90%) and the impervious area as a ratio to the lot as a whole (58 acres) will be 0.86%.

“Developed area” is defined by DEP as “an impervious area, landscaped area, or unvegetated area; developed area includes all disturbed areas except an area that is returned to a condition that existed prior to the disturbance and is revegetated within one calendar year of being disturbed, provided the area is not mowed more than twice per year.” During a DEP Solar Round Table meeting held on February 5, 2020, DEP confirmed that the area under solar panels is not considered developed as long as it is revegetated after construction and does not get mowed more than twice a year. As such, the developed area would also be ~0.08 acres.

Because the Project will not result in greater than one acre of impervious area, or five or more acres of developed area, the Project is subject to the basic stormwater standards set forth in Chapter 500. To demonstrate compliance with the basic standards outlined in Chapter 500, in most locations a project would be required to submit a stormwater permit-by-rule (PBR) application to DEP. For other solar projects, the information included in stormwater PBR applications is identical that provided to the City, including the Erosion and Sediment Control Site Plan and Details.

Overall, though the Project has a large footprint, the Project will result in little impervious or developed area. In general, areas disturbed adjacent to the access roads will be permanently stabilized through seeding and the majority of the site will be maintained as meadow. Accordingly, the Applicant requests that the City of Lewiston's Director of Public Works waive the requirements of Article XIII Section 4(f). If this request is not acceptable, the Applicants would request that the City Planning Board condition approval of the Project on the submission of a stormwater design that meets the requirements of Section 4(f) or a lesser standard as agreed upon by the Director of Public Works.

The Site Plans provided are intended to be permit-level design. Details such as the sizing of silt socks, location of BMPs such as vegetated soil filters and ditch turn-around buffers, and a stormwater BMP operation and maintenance plan will be developed as part of the issued-for-construction plans and associated materials. The Applicant will provide this documentation for City review and comment prior to construction.

**(g)     *Erosion control.***

An erosion and sedimentation control plan (E&SC) will be implemented before construction. The E&SC Plan will include erosion control measures that will be incorporated into the construction and restoration phases of the Project to minimize potential adverse impacts.

Overall, though the Project has a large footprint, the Project will result in little impervious area. In general, areas disturbed adjacent to the access roads will be permanently stabilized through seeding and the majority of the site will be maintained as meadow.

Erosion and Sediment control measures are presented on the attached site plans.

**(h)     *Water supply.***

The facility will not be manned and therefore no water supply facilities are required.

**(i)     *Sewage disposal.***

The facility will not be manned and therefore no sewage disposal system is required.

**(j) Utilities.**

Overhead utility poles have been sited to allow for the most efficient connection with the nearby substation.

**(k) Natural features.**

Disturbance of soils (grading, removal of soil, and importation of gravel materials) will be minimized to the greatest extent practicable. A vegetative buffer will be maintained to the extent possible so as to serve as a natural wind barrier. The Project site is not located in an area that has been identified as having significant habitat or aesthetic value.

**(l) Groundwater protection.**

The Project is not anticipated to have any impact on the quality and quantity of groundwater available to abutting properties. No water supply wells or sewage disposal facilities will be installed on the site and the Project area will be maintained as meadow.

**(m) Water and air pollution.**

During the Project's construction phase there will be minor and temporary air emissions from construction equipment and vehicle emissions, and brief discharges of dust generated by general construction activities. Dust will be monitored during the construction period (particularly on access roads and during drilling operations for blasting), and actions will be taken to reduce or avoid increasing the amount of fugitive dust in the air by the use of water sprayers, or other non-intrusive means as needed. If burning is used to dispose of wood wastes (brush/slash) from the site, there may be short-instance smoke emissions (during the day). The Applicant will consult with the City Fire Department prior to any burning operations and obtain any necessary permits and/or approvals.

During operations, the Project is not expected to adversely affect or degrade air quality, as solar panels generate electricity that is distributed to the regional grid without producing air emissions. There will be no appreciable air emissions from operations vehicle exhaust and dust from driving on access roads. No emissions sources associated with operation of the Project require an air permit.

The proposed Project will not have an unreasonable effect on runoff/infiltration relationships, and the proposed Project will not have an unreasonable adverse effect on surface or ground water quality.

**(n) Exterior lighting.**

No exterior lighting is proposed for the solar facility at this time.

**(o) Waste disposal.**

Construction of the Project is expected to generate cardboard waste (e.g. broken-down solar panel boxes) and clean wood waste (e.g. wood pallets). Recycling and reuse will be the preferred method of disposing

of these solar panel delivery materials. A licensed disposal facility will be contracted to accept and recycle or dispose of waste generated from the Project. Solid waste during operation of the facility is expected to be limited to materials associated with the replacement of equipment and a similar contracting arrangement will be made with a licensed disposal facility. No hazardous waste will be generated by the Project.

**(p) *Lot layout.***

The Project layout is presented in the attached site plans.

**(q) *Landscaping.***

The Project design and layout has maximized use of existing topography and vegetation to shield proposed facilities from view from adjacent areas to minimize its visual impact on the surrounding area. Landscaping plans have been provided. Vegetative plantings will be established along the northwest section of the Project area to provide a visual buffer for the residential home in the vicinity. The Applicant believes, with the concurrence of the City, that no additional landscaping is necessary at this site to meet existing standards.

**(r) *Shoreland relationship.***

The Project is not located along or in close proximity to any shoreland area.

**(s) *Open space.***

In order to comply with the National Electric Safety Code (NESC) and protect critical infrastructure equipment, no public use of the Project area will be allowed.

**(t) *Technical and financial capacity.***

Technical Capacity

NextGrid Inc develops, constructs and operates solar power and battery storage power facilities across the United States. Currently they have over 100 projects totaling over 200MW in MA, ME, NJ, DC, CA, NC, PA, MD CO in development, construction or operation. Of these, 59 projects are operational, 20 projects in active construction and 81 projects in earlier stages of development. In 2019 the NextGrid team launched Grid Builders LLC, which provides integrated construction functionality to the project development cycle.

Financial Capacity

In June of 2019, Madison Energy Investments, LLC and NextGrid Inc. entered into an exclusive long-term relationship whereby Madison Energy Investments, LLC agreed to purchase all of NextGrid Inc's renewable energy projects throughout the country. Madison Energy Investments, LLC currently operates

a \$250M fund, backed by Stonepeak Infrastructure Partners, to construct and own solar energy and storage projects in the US.

**(u) *Buffering.***

The Project has been designed so as to adhere to applicable set-back requirements. No service or storage areas are proposed.

**(v) *Compliance with district regulations.***

The Project is a utility use, which will provide renewable energy to the grid. The Project is consistent with district regulations.

**(w) *Design consistent with performance standards.***

The Project as designed is consistent with the applicable performance standards of Article XII of the Lewiston Zoning and Land Use Code.

Timber harvesting standards

Timber harvesting shall comply with the state department of conservation standards for forest regeneration, established pursuant to 12 M.R.S.A., ch. 805, subchapter III-A, as amended. Approximately 7.64 acres of trees will be cleared to allow for the construction of the Project. During operation, trees will be periodically trimmed so as not to affect or impede the solar project operations.

Walls and fences

Utility-scale PV solar energy facilities must comply with the National Electrical Code and National Fire Protection Code, which include protective fencing that is at least seven feet high or six feet high with at least one foot of barbed wire at the top of the fence around generating stations and substations. The Applicant therefore requests that the height of fencing be determined based on applicable codes and regulations at the time of construction.

Signs

Signage will be limited to that which is required to promote public safety around the facility, including access warnings.

Off-street parking and loading

No off-street parking is proposed for this Project.

Environmental performance standards

Sound generated by the Project would consist of: (1) short-term duration during construction and (2) sound during normal facility operations. Construction noise levels will exceed ambient conditions at times, mainly when the equipment is in operation in close proximity to the Project site boundary. Construction noise will not be unusual, but rather typical of noise associated with any residential or commercial development. The equipment used is not generally operated continuously, nor is all of the

equipment always operated simultaneously. There will therefore be times when no equipment is operating and noise will be at ambient levels. Construction activities are scheduled to occur mostly during daytime hours, when many people are at work and away from home.

During Project operation, concurrent operation of the solar plant site components and the on-site substation should be assumed to be limited to daytime hours only. After sunset, when the plant no longer receives solar radiation, the substation transformer will not be operational, the inverters will not produce noise and the pad-mounted transformers will be energized but likely operating under low noise condition using natural draft cooling (no fans) due to reduced nighttime heat loads. The intervening ground cover and vegetation should provide for sound attenuation.

The Project will not result in any adverse effects associated with noise, smoke, vibration, odors, air pollution, or electrical disturbance or interference.

As per Article XII, the following performance standards relate to usage activities that are not applicable to the Project:

- Shoreland area standards
- Earth material removal standards (as Applicant will have permit)
- Community garden standards
- Swimming pool standards
- Wind energy conversion systems
- Adult business establishment, tattoo establishment, and drinking place standards
- Frontage right-of-way provisions
- In-law apartment standards
- Campground standards
- Installation of mobile homes on individual lots standards
- Installation of mobile homes in mobile home parks standards
- Erosion and sedimentation control standards (as Applicant will have permit)
- Improvement standards
- Child care facility standards
- Residential design standards for the downtown residential and riverfront districts

#### Decommissioning

Commercial-scale solar fields are designed for a minimum expected operational life of 20 years but may operate for 25 to 30 years or more. As the solar field approaches the end of its operational life, it is expected that technological advances will make more efficient and cost-effective solar arrays that will economically drive the replacement of the existing solar arrays. Therefore, decommissioning of the Project shall commence after 12 consecutive months of no power generation at the facility except in the case of a natural disaster, act of violence, or other event which results in the absence of electrical generation for 12 months. The Applicant or its successor as owner of the Project at that time will be solely responsible for decommissioning the Project.

For decommissioning, the owner shall:

- Be responsible for all decommissioning costs;

- Obtain any additional permits required for the decommissioning, removal, and legal disposal of Project components prior to commencement of decommissioning activities;
- Remove and dispose of all above-ground infrastructure, including arrays, inverter structures, concrete foundations and pads, and fences, and grade and revegetate in accordance with permits and in compliance with all applicable rules and regulations then in effect governing the disposal thereof;
- Remove all hazardous materials and transport them to be disposed of by licensed contractors at an appropriate facility in accordance with rules and regulations governing the disposal of such materials; and
- Removed materials shall be recycled and/or salvaged to the maximum extent practical and all waste streams shall be managed in accordance with the State of Maine's solid waste requirements.

The decommissioning and restoration processes consist of the removal of above-ground structures; grading, to the extent necessary; restoration of topsoil (if needed) and seeding. The process of removing structures involves evaluating and categorizing all components and materials into categories of recondition and reuse, salvage, recycling and disposal. The Project consists of numerous materials that can be recycled, including steel, aluminum, glass, copper and plastics. In the interest of increased efficiency and minimal transportation impacts, components and material may be stored on-site until the bulk of similar components or materials are ready for transport. The components and material will be transported to the appropriate facilities for reconditioning, salvage, recycling, or disposal. Above-ground structures include the panels, racks, inverters, pads and any interconnection facilities located on the property. At the time of decommissioning, a plan will be submitted for continued beneficial use of any components to be left on site, including roads.

While it is not possible to estimate the future costs of decommissioning with any precision, given the costs and salvage values of components today it is reasonable to assume that the cost of decommissioning the solar arrays will be largely offset by the salvage value of the solar panels and components.

**Attachment B**

**Review of Article X Section 3 Approval Criteria**

## CONDITIONAL USE PERMIT NARRATIVE

The following information is presented to demonstrate that the proposed project adheres to the standards presented in Section 3 of Article X of the Lewiston Zoning and Land Use Code.

- (1) **Neither the proposed use nor the proposed site upon which the use will be located is of such a character that the use will have significant adverse impact upon the value or quiet possession of surrounding properties greater than would normally occur from such a use in the zoning district. The board may not find that this standard is satisfied unless it finds that:**
  - a. **The size of the proposed use is comparable to surrounding uses; and**

The Project design and layout has maximized use of existing topography and vegetation to shield proposed facilities from view from adjacent areas to minimize its visual impact on the surrounding area. The Project is located next to an existing utility facility.

- b. **The amount and type of traffic to be generated, hours of operation, expanse of pavement, and the number of parking spaces are comparable to surrounding uses; and**

During construction, the Project will temporarily increase traffic on municipal roads, but these effects will be temporary in nature and relatively minor. Standard trucking methods will be used to transport materials and equipment to the Project site. Construction trailers, construction equipment and laydown areas will be sited so as to avoid or minimize environmental impact. Construction will occur from 7am until 7pm or from sunrise to sunset, whichever is less.

Project operations are anticipated to have *de minimis* effects on traffic. There will be no full-time staff required to be located at the Site for operation of the solar energy center. On-site personnel visits are anticipated to be largely limited to managing the property grounds and associated solar facilities in accordance with any permitting requirements and maintenance of equipment as recommended by manufacturer specifications.

The Project will not require permanent parking spaces for construction or operation. During construction, most construction personnel will park at the temporary laydown area. Some parking will occur within the Project development area where construction activities are occurring, including for equipment delivery, loading, and unloading; these areas will be spread out through the Project. After construction, the site will generally be unmanned, except for mowing and maintenance.

- c. The generation of noise, dust, odor, vibration, glare, smoke, litter and other nuisances is comparable to surrounding uses; and**

Noise

Sound generated by the Project would consist of: (1) short-term duration during construction and (2) sound during normal facility operations. Construction noise levels will exceed ambient conditions at times, mainly when the equipment is in operation in close proximity to the Project site boundary. Construction noise will not be unusual, but rather typical of noise associated with any residential or commercial development. The equipment used is not generally operated continuously, nor is all of the equipment always operated simultaneously. There will therefore be times when no equipment is operating and noise will be at ambient levels. Construction activities are scheduled to occur mostly during daytime hours, when many people are at work and away from home. Specifically, construction will occur from 7am until 7pm or from sunrise to sunset, whichever is less.

During Project operation, concurrent operation of the solar plant site components and the on-site substation should be assumed to be limited to daytime hours only. In terms of estimating noise, the frequency of most inverters is 50-60 Hz, the same as AC electricity in home or commercial buildings. A study conducted by the Massachusetts Clean Energy Center found that the average Leq sound levels at a distance of 10 feet from the inverter face varied over the range of 48 dBA to 61 dBA for two sites and in the range of 59 to 72 dBA for a third site. Sound levels along the fenced boundary of the PV arrays were generally at background levels, though a faint inverter hum could be heard at some locations along the boundary during the day. After sunset, when the plant no longer receives solar radiation, the inverters will not produce noise and the pad-mounted transformers will be energized but likely operating under low noise condition using natural draft cooling (no fans) due to reduced nighttime heat loads. The intervening ground cover and vegetation should provide for sound attenuation.

Glare

Solar panels are designed to absorb light and although the glass in early panels put off light equal to a windshield on a car they are now standard with anti-glare coating in all instances. Modern panels have a standard anti-glare coating which guarantee that the max reflection is 2% whereas residential windows reflect at 3%.

Other

Once the Project is operational, it will not generate any dust, odor, vibration, smoke, litter or other nuisances.

- d. The impact of the use on the quality and quantity of groundwater available to abutting properties is comparable to surrounding uses; and**

The Project is not anticipated to have any impact on the quality and quantity of groundwater available to abutting properties. No wells will be installed on the site and the Project area will be maintained as meadow.

- e. **Unusual physical characteristics of the site, including size of the lot, shape of the lot, topography, and soils, do not aggravate adverse impacts upon surrounding properties.**

There are no unusual physical characteristics associated with the site that would aggravate adverse impacts upon surrounding properties.

- (2) **Vehicular and pedestrian access to, into and within the site will be safe and will not be overburdened or create hazards because they are inadequate. The board may not find that this standard is satisfied unless it finds that:**

- a. **Vehicular access to the site will be on roads which have adequate capacity to accommodate the additional traffic generated by the development.**

- 1. **Adequate capacity means that:**

- (i) **Intersections on major access routes to the site within one-half mile of any entrance road will function after development at a minimum at Level of Service C; or**
- (ii) **If they are functioning at a Level of Service D or lower prior to the development, the project will not reduce the current level of service.**

After construction, the site will generally be unmanned, except for mowing and maintenance. In the event of an issue requiring troubleshooting or maintenance, it is anticipated that a two-person team will visit the site. For mowing and general maintenance (e.g., fence inspections), the work will generally take place on a twice annually, or quarterly basis, with a small number of vehicles. The road network as presented on the attached site plans is adequate for this level of traffic. The facility will be fenced, therefore there will be no pedestrian access to the Project area.

- 2. **The board of appeals or planning board may approve a conditional use permit for an application not meeting this requirement if the applicant demonstrates that:**

- (i) **A public agency has committed funds to construct the improvements necessary to bring the level of access to said standard, or**
- (ii) **The applicant will assume financial responsibility for the improvements necessary to bring the level of service to said standard and will guarantee the completion of the improvements within one year of approval of the permit.**

Not applicable (see previous response).

- b. The topography of the site shall permit the construction of all driveways, entrances or proposed streets to meet the standards of the City of Lewiston's Policy for the Design and Construction of Streets and Sidewalks.**

The topography of the Project area is generally level and will allow for roads to meet applicable standards for a private roadway system. No sidewalks are proposed.

- c. Facilities are present to assure the safety of pedestrians passing by or through the site.**

The facility will be fenced to prevent unauthorized access. The installation of the fencing will not impede access to any known resources for which pedestrian access would be desirable.

- (3) Municipal or other facilities serving the proposed use will not be overburdened or create hazards because they are inadequate. The board may not find that this standard is satisfied unless it finds that:**

- a. The capacity of sewerage and water supply systems is adequate to accommodate the proposed use;**

No water supply or wastewater disposal systems will be required for this Project. During construction, anticipated water usage will include use of bottled drinking water or water trucked in from municipal sources for construction personnel and dust abatement. Water for dust abatement and HDDs will be from publicly accessible, off-site water sources, excluding streams, brooks, and groundwater sources. Water for dust abatement will be distributed via a tanker truck.

There will be no full-time staff required to be located at the Project site for operation of the solar energy center. On-site personnel visits are anticipated to be largely limited to managing the property grounds and associated solar facilities in accordance with any permitting requirements and maintenance of equipment as recommended by manufacturer specifications. Therefore no water supply or sewage disposal facilities are proposed.

- b. The capacity of the storm drainage system is adequate to accommodate the proposed use; and**

Overall, though the Project has a large footprint, the Project will result in little impervious area. In general, areas disturbed adjacent to the access roads will be permanently stabilized through seeding and the majority of the site will be maintained as meadow.

- c. **The ability of the fire department to provide necessary protection services to the site and development is adequate.**

The Project will include construction of a gated entrance road. The City fire department will have access to Project gate keys through Knox boxes. A 16-foot buffer will be maintained between arrays and the perimeter fencing to accommodate vehicles, primarily pickup trucks or other passenger vehicles, in the event of an emergency.

- (4) **The soils on the proposed site shall have adequate capacity and stability to support all loadings, including fill, developed by the proposed use and the use will not cause unreasonable soil erosion or reduction in the capacity of the land to hold water to the extent that a dangerous or unhealthy condition may result on the site or upon the land of abutters or the environment. In considering whether this standard is satisfied, the board shall take into account the elevation above sea level of the site and surrounding properties, its relation to flood plains, the slope and vegetation of the land and their effects on drainage.**

A soil report generated by the Natural Resource Conservation Service is provided in Attachment D. The dominant soils types on-site are classified as Swanton fine sandy loam, 0 to 3 percent slopes (SzA), Scantic silt loam, 0 to 3 percent slopes (ScA), Hartland very fine sandy loam, 8 to 15 percent slopes, eroded (HfC2), and Adams loamy sand, 8 to 15 percent slopes (AaC). No water supply or wastewater disposal systems will be required for this Project.

The racking system for the array will be mounted on posts installed into the ground. For the dominant soils types in the Project area, the depth to a restrictive feature (e.g. bedrock) is more than 80 inches and so it is anticipated that the mounting poles will be driven into the ground in these areas. If obstacles are encountered, it is anticipated that a screw type post will be used to overcome bedrock or large boulders or, if necessary, a hole will be drilled into the bedrock and grout employed to adhere the post to the substrate.

The Applicant has a vested interest in ensuring that soils are suitable for the development and will complete geotechnical borings prior to construction to determine the precise installation approach for each mounting pole. There is nothing in the publicly available data that suggests there would be any insurmountable obstacles to installation of the array system. As such, given the nature of this Project and its construction needs, with concurrence from the Planning Board a formal soil survey will not be conducted at this time.

In terms of grading, the existing topography and vegetation will be retained to the greatest extent practicable. Site layout was developed to target areas that are conducive to solar array installation; however, some localized grading will be necessary to ensure array areas are in accordance with the tolerances of array racking equipment (approximately 15% or less) and to accommodate safe construction and operations. The construction sequencing will be performed such that earth materials are exposed for a minimum amount of time before they are covered, seeded, or otherwise stabilized to prevent erosion. The stabilization of cut/fill slopes will be

provided in accordance with the Maine Erosion and Sediment Control BMPs Manual. Erosion control blankets shall be installed at the drip edge of solar panels to minimize erosion from stormwater runoff and on all slopes steeper than 1-foot rise to 3-foot horizontal. Additional erosion control measures shall be installed where working adjacent to environmentally sensitive areas. The Applicant does not anticipate any grading will be necessary after construction has been completed, based on the experience of other solar facilities.

- (5) The scale and design of the proposed structures with respect to materials, scale and massing shall be compatible with existing structures within 500 feet of the site in areas where the existing structures are of a similar scale and architectural treatment.**

The Project is consistent with the utility infrastructure to the north of the Project area. There are no other existing structures in the near vicinity that are comparable in terms of scale and architectural treatment.

**Attachment C**

**Purchase Option (Redacted)**



## Option to Purchase Agreement

### Commercial Terms

Effective Date	August 6, 2019
Duration of Offer	Valid until August 20, 2019
Seller	George Schott & LA Quarry, LLC
Buyer	NextGrid Inc
Listed Brokers	Tim Millett & Craig Young
Property	1043-1051 Main St Lewiston, ME see exhibit A
Purchase Price	[REDACTED]
Rent	[REDACTED] per year, paid quarterly [REDACTED] payments
Option Deposit	[REDACTED] applicable to Purchase Price & non-refundable
Development Term	11:59 PM on the date 12 months from the Effective date.

Seller Notices	Buyer Notices
George Schott PO Box 9340 Auburn, ME 04210	NextGrid, Inc. PO Box 7775 #73069 San Francisco, CA 94120-7775

This Option to Purchase Agreement ("**Agreement**"), specifically including and incorporating herein, the "Commercial Terms" section, is dated as of the Effective Date and is entered into by and between Seller and Buyer (each a "**Party**" and together, the "**Parties**").

1. **Grant of Option to Purchase.** The Seller hereby grants to Buyer a First Right of Refusal ("FROR") and irrevocable option ("Option") to purchase the Real Property ("**Property**") described in this Agreement upon the terms and conditions herein.

2. **Property.** The property to be sold consists of (a) the land and all the buildings, other improvements and fixtures on the land; (b) all of the Seller's rights relating to the land; and (c) all personal property specifically included in this contract. The real property to be sold is defined under Property in the Commercial Terms of this agreement and more specifically in Exhibit A.

3. **Rent.** The Development Term ("**Development Term**") begins on the Effective Date of this agreement. During the Development term and for any extension thereof, Buyer will pay Rent ("**Rent**") to Seller in quarterly installments. The Rent payments are non-refundable, and not applicable to the Purchase Price, and are paid as consideration, along with other good and valuable consideration, for exclusive rights to pursue Development Approvals, as hereinafter defined, during this period. For the avoidance of doubt, there will be no physical changes to the Property during the Development Term without prior written consent of the Seller.

4. **Exercise of Option.** The Buyer may exercise this Option to purchase at any time before the end of the Development Term through Buyer giving notice in writing to the Seller addressed to the contact address above. After receiving such notice, within a reasonable period of time, the Parties will, in good faith, negotiate deposit, closing, and other relevant terms not already agreed to herein.

5. **Purchase Price.** Upon exercise of the Option to purchase the Property upon the terms herein, the Buyer agrees to buy said Property for the Purchase Price ("**Purchase Price**") listed in the Commercial Terms.

6. **Time and Place of Closing.** Due to the nature of this Option to Purchase Agreement, the closing date cannot be made final at this time. However, should Buyer exercise such Option, shortly thereafter, the Buyer and Seller agree to the Estimated Closing Date ("**Closing Date**") for the closing, which in no event shall be more than Sixty (60) days from Buyer exercising such Option. Both parties will fully cooperate so the closing can take place on or before the estimated date. All purchase money is due by the Closing Date and at the time of Closing. All transfer tax shall be paid by Buyer.

7. **Development Approvals, Contingencies**

(a) The Purchase Price is based on the assumption that Buyer will be able to obtain any and all governmental or quasi-governmental permits, approvals, variances, entitlements and the like, with all appeal periods thereon having expired with no appeal having been filed, including without limitation any and all relief, findings, orders and the like with respect to environmental requirements or restrictions (cumulatively, the "**Development Approvals**") in order to develop, construct, use and operate a solar facility on the Property in accordance with its development plan (the "**Project**"). Outlined below are some of the major development steps and contingencies necessary for Buyer to proceed:

- **Environmental & Entitlements Assessment:** Professional Wetland Delineation and Testing, ALTA Survey

- **System Design and Layout:** Engineer Electrical, Site Layout & Civil Engineering Plans
- **Utility Interconnection:** Utility Review, Impact Study and Approval
- **Permitting:** Town Building Permits
- **Regulatory Contingencies:** PUC and Federal Licenses, Programs, and Tax Incentives

(b) **Development Approvals Condition.** Buyer, at Buyer's sole cost and expense, may seek to obtain any and all Development Approvals. It shall be a condition of Buyer's obligation to consummate the transaction contemplated hereunder (the "**Development Approvals Condition**") that such Development Approvals shall be received on or before the expiration of the Development Term, and such Development Approvals shall be satisfactory to Buyer in its sole and absolute discretion. Buyer may waive the Development Approvals Condition at any time at Buyer's sole option, by delivery of written notice from Buyer to Seller.

(c) **Seller Cooperation; Non-Opposition.** Seller shall cooperate with Buyer in its process of obtaining Development Approvals, including without limitation executing any applications for Development Approvals if so required as fee owner of the Property, provided that no such cooperation shall subject Seller to any cost, expense and is legal. Neither Seller, nor any employee, officer, director, representative, or agent of Seller acting in its official capacity on Seller's behalf shall object before any governmental authority, by means of appeals or oral or written opposition or by knowingly funding any person for the purpose of objecting by means of appeals or oral or written opposition, to Buyer's development of the Property.

(d) **Buyer Termination Right.** If the Development Approvals Condition is not satisfied by the end of the Development Term, or if at any time prior to the Development Term, as the same may be extended, Buyer determines in its sole discretion that the Development Approvals Condition is unlikely to be satisfied, Buyer may terminate this Agreement in its sole discretion by delivery of written notice of such election to Seller and the Listed Broker given on or before the Development Term, as the same may be extended, neither party shall have any further liability or obligation to the other hereunder, except to provide Seller with all engineering studies, surveys, and other pertinent due diligence information. In the event that the Buyer does not exercise its rights hereunder, or otherwise terminates said rights, Buyer shall execute any documents reasonably requested by Seller to evidence termination of the Option in appropriate format for recordation in the Androscoggin County Registry of Deeds. In the event that Buyer fails or refuses to execute such documentation, the parties hereto agree that Seller may execute an Affidavit indicating the termination of this Agreement and record the same in said Registry, and the recording of said Affidavit shall be effective to evidence termination of this Agreement.

8. **Transfer of Ownership.** Should Buyer exercise its Option to purchase, the Seller will transfer ownership of the property to the Buyer at the Closing. The Seller will give the Buyer a properly executed quitclaim deed with covenant. If the Seller is a corporation, it will also deliver a corporate resolution authorizing the sale.

9. **Access and Indemnity.** Buyer, its mortgage lender (if any) and their agents shall have the right to enter upon the Property after notice to Seller (which may be oral) at reasonable times for purposes of inspection, measurement, and appraisal. Seller shall also permit entry upon the Property by an engineer or land surveyor for the purpose of plotting bounds and taking measurements. All such entries shall, at Seller's option, take place in the presence of Seller or Seller's broker, and the number of such entries shall not exceed five. Buyer shall indemnify Seller and hold Seller harmless from all actions, suits, claims, liabilities, losses, damages, and costs, including reasonable attorneys' fees, arising from (a) any

personal injury suffered by Buyer, its mortgage lender, and their agents, on or about the Property, or (b) property damage to the Property caused by such entries. Buyer shall return the Property to its condition prior to any such inspections.

10. **Seller's Representations.** Seller warrants and represents to Buyer as follows:

(a) Seller has no knowledge of existence, at any time, of any violations of any building and zoning laws applicable to the Property and Seller warrants and represents that it has not received any notice or inquiry from any local or state governmental authority or representative thereof claiming or inquiring into the existence of any such violation.

(b) Seller is aware of no lawsuits or demands against the Seller that would affect Seller's ability to convey the Property hereunder;

(c) During the time Seller has owned the Property, to the best of the Sellers knowledge, no hazardous or toxic substances have been used or incorporated into the Property by Seller in violation of any applicable laws; and Seller is not aware of the use or incorporation into the Property of any hazardous or toxic substances in the Property, at any time, by anyone else;

(d) During the time Seller has owned the Property, to the best of the Sellers knowledge, no insulation or other materials containing urea-formaldehyde or similar chemicals have been used or incorporated into the Property and no pesticide containing chlordane or related chemicals has been used in the Property. To the best of Seller's knowledge, Seller is not aware of the use or incorporation into the Property of any insulation or other materials containing urea-formaldehyde or similar chemicals or the use of any pesticide containing chlordane or related chemicals in the Property, at any time, by anyone else.

(e) There is no pending Seller bankruptcy, mortgage foreclosure, or other proceeding that might in any material way impact adversely on the Seller's ability to perform on the closing date;

(f) Seller is aware of no underground storage tanks or other subsurface facilities on the Property;

(g) Seller is aware of no pending or threatened takings affecting the Property;  
and

(h) The Property are not subject to any outstanding agreements with any party pursuant to which any such party may acquire an interest in the Property.

11. **Financially Able to Close.** Buyer represents that it has sufficient funds to complete a purchase should it exercise its Option to purchase Property.

12. **Accuracy of Representations.** All representations and warranties made by Seller & Buyer in this Agreement shall be true and complete and accurate as at the date thereof and as of the date of the

closing, with the same force and effect as though such representations and warranties had been made on and as of the closing. Each such representation and warranty shall survive the delivery of the deed.

13. **Title.** Without limitation of any other provisions in this Agreement, the Property shall not be considered to be in compliance with the provisions of this Agreement with respect to title unless:

(a) All structures and improvements on the Property and all means of access to the Property shall be wholly within the boundary lines of the Property and shall not encroach on, upon or under the property of any other person or entity;

(b) No building, structure or improvement, including any driveway(s), garages, septic systems and wells or property of any kind belonging to any other person or entity shall encroach upon or under the Property;

(c) Title to the Property is insurable, for the benefit of Buyer, by a title insurance company reasonably acceptable to Buyer in a fee owner's policy of title insurance, at normal premium rates, on the American Land Title Association form currently in use, subject only to those printed exceptions to title normally included in the "jacket" to such form or policy, the standard so-called "Schedule B" exceptions, and subject to such restrictions, easements, or other matters which do not interfere with Buyer's intended use of the Property

(d) The Property have vehicular and pedestrian access to a public way, duly laid out or accepted as such by the town or city in which the Property are located; and

(e) There are no restrictions, easements, agreements, or other matters affecting the Property which interfere with the current use and enjoyment of the Property.

14. **Affidavits and Indemnities Necessary for Closing.** Seller agrees to execute at closing all affidavits and indemnifications to Buyer's title insurance company and/or Buyer's mortgage lender (if any) as reasonably required, including, but not limited to, affidavits indemnifying against claims or workmen and materialmen and parties in possession. , .

15. **Conveyancing Standards.** Any matter or practice arising under or relating to this Agreement which is the subject of a title standard or a practice standard of the Real Estate Bar Association of Maine at the time for delivery of the deed shall be governed by such title standard or practice standard to the extent applicable, provided, however, that Buyer shall not be required to purchase the Property if, irrespective of such standard, title is not insurable in accordance with paragraph entitled "Title", subparagraph (c).

16. **No Broker.** Seller warrants to Buyer that it has dealt with no broker or other person entitled to a broker's commission in connection with the transaction contemplated by this Agreement except the Listed Brokers and it agrees to hold harmless from and indemnify Buyer against all damages, claims, losses and liabilities, including legal fees, incurred by Buyer as a result of the failure of this warranty. Buyer warrants to Seller that it has dealt with no broker or other person entitled to a broker's commission in connection with the transaction contemplated by this Agreement and it agrees to hold harmless from and indemnify Seller against all damages, claims, losses and liabilities, including legal fees, incurred by Seller as a result of the failure of this warranty.

17. **Dispute Resolution.** Buyer and Seller agree to mediate any dispute or claim arising out of this Agreement, or in any resulting transaction, before resorting to arbitration or court action.

(a) **Mediation.** If a dispute arises, between or among the Parties, and it is not resolved prior to or after recording, the Parties shall first proceed in good faith to submit the matter to mediation. Costs related to mediation shall be mutually shared between or among the Parties. Unless otherwise agreed in mediation, the Parties retain their rights to proceed to arbitration or litigation.

(b) **Arbitration.** The Parties agree that any dispute or claim in law or equity arising between them out of this Agreement or any resulting transaction, which is not settled through mediation, shall be decided by neutral, binding arbitration. The arbitrator is required to be a retired judge or justice, or an attorney with at least five (5) years of residential real estate law experience unless the Parties mutually agree to a different arbitrator. Under arbitration, the Parties shall have the right to discovery in accordance with Maine law. Judgment upon the award of the arbitrator(s) may be entered into any court having jurisdiction. Enforcement of this Agreement to arbitrate shall be governed by the Federal Arbitration Act. Any arbitration shall be held in Auburn, Maine.

(c) **Exclusions.** The following matters shall be excluded from the mediation and arbitration: (i) a judicial or non-judicial foreclosure or other action or proceeding to enforce a deed, mortgage or installment land sale contract as defined in accordance with Maine law; (ii) an unlawful detainer action, forcible entry detainer, eviction action, or equivalent; (iii) the filing or enforcement of a mechanic's lien; and (iv) any matter that is within the jurisdiction of a probate, small claims or bankruptcy court. The filing of a court action to enable the recording of a notice of pending action, for order of attachment, receivership, injunction, or other provisional remedies, shall not constitute a waiver or violation of the mediation and arbitration provisions of this Section.

18. **Assignability.**

Buyer shall not assign any of its rights, duties or obligations under this Agreement without the prior consent of Seller, which consent shall not be unreasonably withheld, conditioned or delayed. Notwithstanding the foregoing, Buyer may, without consent from Seller, assign any of its rights, duties or obligations under this Agreement: (i) to a Financing Party, (ii) to one or more of its Affiliates of equal or greater creditworthiness as Buyer, (iii) to one or more third parties in connection with a collateral assignment of rights, mortgage, pledge or otherwise, (iv) to any Person or entity succeeding to all or substantially all of the stock or assets of Buyer, provided that such assignee can provide reasonable evidence of its financial and technical wherewithal to perform the obligations of assignor, or (v) to a successor entity in a merger or acquisition transaction. In order to facilitate financing of the System, Seller agrees to enter into a consent and assignment agreement with Buyer's Financing Party reasonably required by Buyer and such Financing Party on terms reasonably acceptable to Seller. An assignment by either Party in accordance with this Section shall relieve the assignor of its obligations hereunder, except with respect to undisputed payments due by the assignor as of the effective date of the assignment, which obligations shall be performed by assignor or assignee as a condition precedent to such assignment.

19. **Governing Law.** This Agreement shall be interpreted in accordance with the laws in the State of Maine. All disputes shall be resolved in courts of the State of Maine.

20. **Risk of Loss.** The Seller is responsible for any damage to the property, except for normal wear and tear until the closing. If there is damage, the Buyer can proceed with the closing or terminate this Agreement. .

21. **Complete Agreement.** This contract is the entire and only agreement between the Buyer and the Seller, replaces and cancels any previous agreements between the Buyer and the Seller and can only be changed by an agreement in writing signed by both Buyer and Seller. The Seller states that the Seller has not made any other contract to sell the property to anyone else.

22. **Parties Liable.** This contract is binding upon all parties who sign it and all who succeed to their rights and responsibilities.

23. **Notices.** All notices under this contract must be in writing. The notices must be delivered personally, mailed by certified mail, return receipt requested, or overnight courier, to the other party at the address written in this contract, or to that party's attorney, and be received by that party. Notices delivered personally shall be deemed delivered upon receipt. Notices sent by certified mail shall be deemed delivered on the date of receipt or the date of first rejection. Notices sent via overnight mail shall be deemed delivered 1 day after deposit to the overnight delivery service.

***REMAINDER OF PAGE INTENTIONALLY LEFT BLANK – SIGNATURE PAGE FOLLOWS***

IN WITNESS WHEREOF, the Parties have executed this Agreement on the day and year set forth above as the Effective Date.

**NextGrid Inc and Assigns**

DocuSigned by:  
By: *Aaron Culig*  
60A9A78DB85D418

Name: Aaron Culig

Date: 8/8/2019

**Seller**

Signature: *George P. S. Gott*

Name: *George P S Gott*

Date: *8-8-19*

Exhibit A



*PROPERTY ADDRESS*

*1043-1051 Main Street*

*Lewiston, ME*

*ZONING HB- Highway Business*

*OWNER OF RECORD George Schott & LA Quarry, LLC UTILITIES Municipal water & sewer*

*ASSESSORS REFERENCE Map 167, Lot 069, 070, 071 & 073 REAL ESTATE TAXES \$16,345.91  
(2018/2019)*

*REGISTRY OF DEEDS*

*6419/67, 6453/77, 6644/95 &*

*9285/232*

*ASSESSED VALUE*

*Bldg. [REDACTED]*

*Land [REDACTED]*

*Total [REDACTED]*

*LOT SIZE 64.08± Acres ASKING PRICE [REDACTED]*

**Attachment D**

**Soil Report**



United States  
Department of  
Agriculture

**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for Androscoggin and Sagadahoc Counties, Maine

## Main Street-Lewiston Soil Report



# Preface

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Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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# How Soil Surveys Are Made

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Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

## Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

## Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

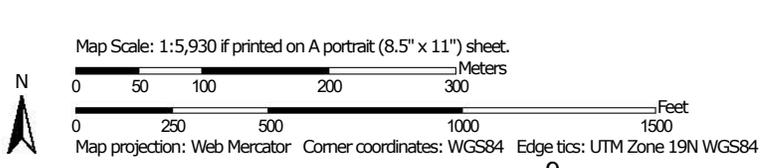
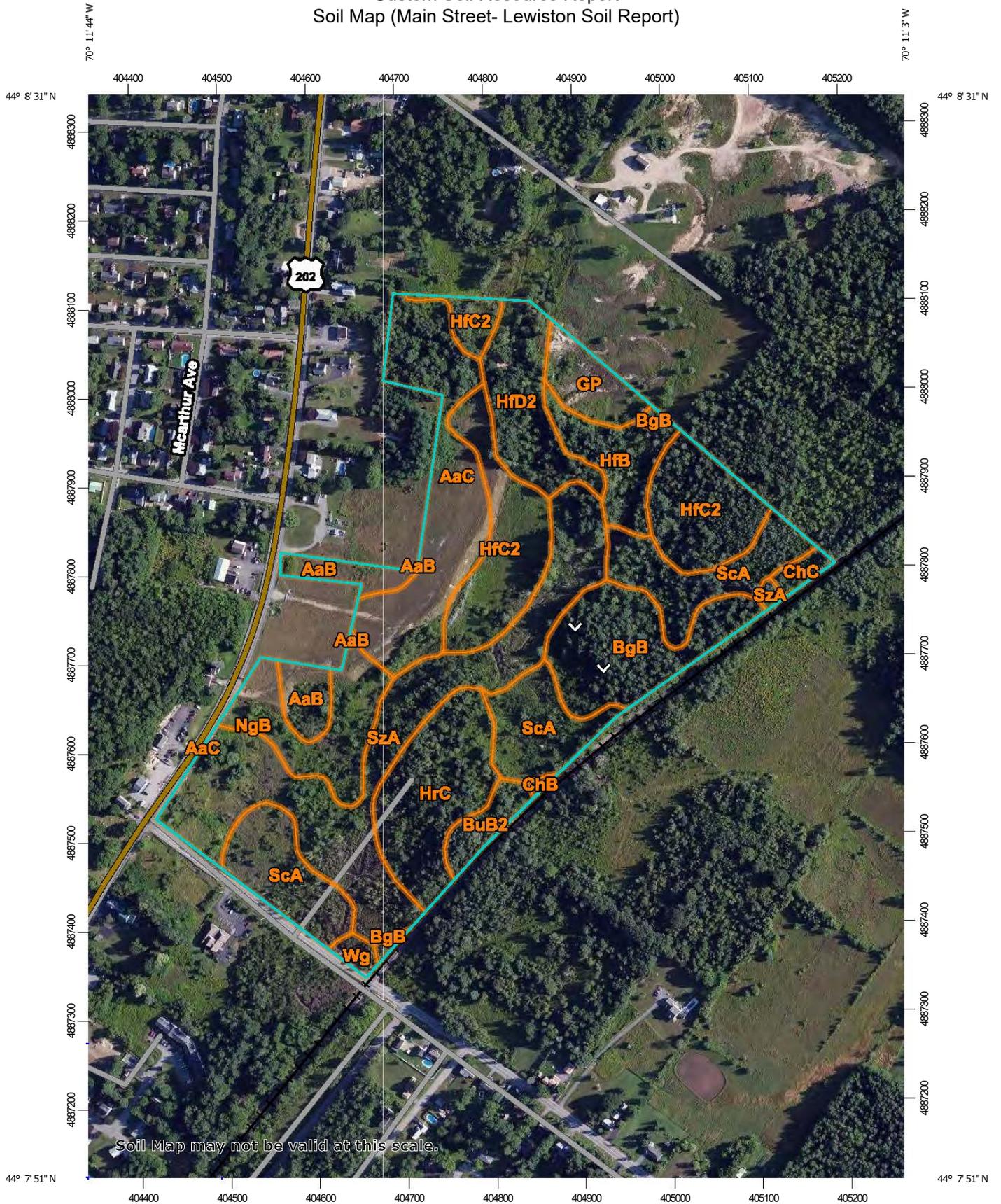
# Soil Map

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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

# Custom Soil Resource Report

## Soil Map (Main Street- Lewiston Soil Report)



### 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 20, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 20, 2010—Aug 29, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

**MAP LEGEND**

**MAP INFORMATION**

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend (Main Street- Lewiston Soil Report)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AaB	Adams loamy sand, 0 to 8 percent slopes	2.0	3.2%
AaC	Adams loamy sand, 8 to 15 percent slopes	7.1	11.3%
BgB	Nicholville very fine sandy loam, 0 to 8 percent slopes	5.3	8.3%
BuB2	Lamoine-Buxton complex, 0 to 8 percent slopes	1.1	1.7%
ChB	Charlton very stony fine sandy loam, 0 to 8 percent slopes	0.1	0.1%
ChC	Charlton very stony fine sandy loam, 8 to 15 percent slopes	0.4	0.7%
GP	Sand and gravel pits	1.8	2.8%
HfB	Hartland very fine sandy loam, 2 to 8 percent slopes	2.5	4.0%
HfC2	Hartland very fine sandy loam, 8 to 15 percent slopes, eroded	8.7	13.7%
HfD2	Hartland very fine sandy loam, 15 to 25 percent slopes, eroded	3.8	5.9%
HrC	Lyman-Tunbridge complex, 8 to 15 percent slopes, rocky	5.2	8.1%
NgB	Ninigret fine sandy loam, 0 to 8 percent slopes	3.7	5.8%
ScA	Scantic silt loam, 0 to 3 percent slopes	9.0	14.2%
SzA	Swanton fine sandy loam, 0 to 3 percent slopes	12.3	19.4%
Wg	Whately fine sandy loam	0.4	0.6%
<b>Totals for Area of Interest</b>		<b>63.4</b>	<b>100.0%</b>

## Map Unit Descriptions (Main Street- Lewiston Soil Report)

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

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

## Custom Soil Resource Report

according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

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An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## Androscoggin and Sagadahoc Counties, Maine

### AaB—Adams loamy sand, 0 to 8 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2wqn9

*Elevation:* 10 to 2,000 feet

*Mean annual precipitation:* 31 to 95 inches

*Mean annual air temperature:* 27 to 52 degrees F

*Frost-free period:* 90 to 160 days

*Farmland classification:* Farmland of statewide importance

#### Map Unit Composition

*Adams and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Adams

##### Setting

*Landform:* Outwash terraces

*Landform position (two-dimensional):* Backslope, summit

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Sandy glaciofluvial deposits

##### Typical profile

*Ap - 0 to 7 inches:* loamy sand

*Bs - 7 to 21 inches:* sand

*BC - 21 to 27 inches:* sand

*C - 27 to 65 inches:* sand

##### Properties and qualities

*Slope:* 0 to 8 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Somewhat excessively drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (1.42 to 14.17 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline (0.0 to 1.9 mmhos/cm)

*Available water storage in profile:* Low (about 3.6 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3s

*Hydrologic Soil Group:* A

*Hydric soil rating:* No

#### Minor Components

##### Croghan

*Percent of map unit:* 5 percent

*Landform:* Outwash terraces

## Custom Soil Resource Report

*Landform position (two-dimensional):* Foothlope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Hydric soil rating:* No

### **Colton**

*Percent of map unit:* 5 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Backslope, summit  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### **Allagash**

*Percent of map unit:* 3 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### **Nicholville**

*Percent of map unit:* 2 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Foothlope, toeslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Hydric soil rating:* No

## **AaC—Adams loamy sand, 8 to 15 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2wqn8  
*Elevation:* 10 to 2,000 feet  
*Mean annual precipitation:* 31 to 95 inches  
*Mean annual air temperature:* 27 to 52 degrees F  
*Frost-free period:* 90 to 160 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Adams and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

## Description of Adams

### Setting

*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Backslope, summit  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Sandy glaciofluvial deposits

### Typical profile

*Ap - 0 to 7 inches:* loamy sand  
*Bs - 7 to 21 inches:* sand  
*BC - 21 to 27 inches:* sand  
*C - 27 to 65 inches:* sand

### Properties and qualities

*Slope:* 8 to 15 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Somewhat excessively drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (1.42 to 14.17 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline (0.0 to 1.9 mmhos/cm)  
*Available water storage in profile:* Low (about 3.6 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4e  
*Hydrologic Soil Group:* A  
*Hydric soil rating:* No

## Minor Components

### Colton

*Percent of map unit:* 8 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Summit, backslope  
*Landform position (three-dimensional):* Base slope, side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### Croghan

*Percent of map unit:* 3 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Hydric soil rating:* No

### Nicholville

*Percent of map unit:* 2 percent  
*Landform:* Outwash terraces

## Custom Soil Resource Report

*Landform position (two-dimensional):* Foothlope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### **Sheepscot**

*Percent of map unit:* 2 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Foothlope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

## **BgB—Nicholville very fine sandy loam, 0 to 8 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2yjg5  
*Elevation:* 20 to 2,300 feet  
*Mean annual precipitation:* 34 to 50 inches  
*Mean annual air temperature:* 37 to 45 degrees F  
*Frost-free period:* 90 to 160 days  
*Farmland classification:* Farmland of statewide importance

### **Map Unit Composition**

*Nicholville and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Nicholville**

#### **Setting**

*Landform:* Lakebeds (relict)  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Coarse-silty glaciomarine deposits

#### **Typical profile**

*Ap - 0 to 7 inches:* very fine sandy loam  
*Bs - 7 to 19 inches:* very fine sandy loam  
*BC - 19 to 30 inches:* very fine sandy loam  
*C - 30 to 65 inches:* loamy very fine sand

#### **Properties and qualities**

*Slope:* 0 to 8 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Moderately well drained

## Custom Soil Resource Report

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.14 to 1.42 in/hr)

*Depth to water table:* About 18 to 30 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline (0.0 to 1.9 mmhos/cm)

*Available water storage in profile:* High (about 10.3 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2e

*Hydrologic Soil Group:* C

*Hydric soil rating:* No

### Minor Components

#### Croghan

*Percent of map unit:* 5 percent

*Landform:* Lakebeds (relict)

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil rating:* No

#### Roundabout, somewhat poorly drained

*Percent of map unit:* 5 percent

*Landform:* Lakebeds (relict)

*Landform position (two-dimensional):* Footslope, toeslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil rating:* No

#### Salmon

*Percent of map unit:* 3 percent

*Landform:* Lakebeds (relict)

*Landform position (two-dimensional):* Backslope, summit

*Landform position (three-dimensional):* Side slope, crest

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Hydric soil rating:* No

#### Roundabout

*Percent of map unit:* 2 percent

*Landform:* Lakebeds (relict)

*Landform position (two-dimensional):* Footslope, toeslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Linear

*Across-slope shape:* Concave

*Hydric soil rating:* Yes

## **BuB2—Lamoine-Buxton complex, 0 to 8 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2x1bv  
*Elevation:* 10 to 490 feet  
*Mean annual precipitation:* 33 to 60 inches  
*Mean annual air temperature:* 36 to 52 degrees F  
*Frost-free period:* 90 to 160 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Lamoine and similar soils:* 60 percent  
*Buxton and similar soils:* 25 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Lamoine**

#### **Setting**

*Landform:* Marine terraces, river valleys  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Fine glaciomarine deposits

#### **Typical profile**

*Ap - 0 to 7 inches:* silt loam  
*Bw - 7 to 13 inches:* silt loam  
*Bg - 13 to 24 inches:* silty clay loam  
*Cg - 24 to 65 inches:* silty clay

#### **Properties and qualities**

*Slope:* 0 to 8 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Somewhat poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.14 in/hr)  
*Depth to water table:* About 6 to 17 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline (0.0 to 1.9 mmhos/cm)  
*Available water storage in profile:* Moderate (about 7.6 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3w  
*Hydrologic Soil Group:* C/D  
*Hydric soil rating:* No

## Description of Buxton

### Setting

*Landform:* Marine terraces, river valleys  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Parent material:* Fine glaciomarine deposits

### Typical profile

*Ap - 0 to 7 inches:* silt loam  
*Bw1 - 7 to 18 inches:* silt loam  
*Bw2 - 18 to 23 inches:* silty clay loam  
*BC - 23 to 35 inches:* silty clay loam  
*C - 35 to 65 inches:* silty clay

### Properties and qualities

*Slope:* 5 to 8 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Moderately well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.14 in/hr)  
*Depth to water table:* About 17 to 24 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline (0.0 to 1.9 mmhos/cm)  
*Available water storage in profile:* High (about 9.1 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3e  
*Hydrologic Soil Group:* C/D  
*Hydric soil rating:* No

## Minor Components

### Scantic

*Percent of map unit:* 10 percent  
*Landform:* Marine terraces, river valleys  
*Landform position (two-dimensional):* Toeslope, footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

### Buxton, > 8% slopes

*Percent of map unit:* 3 percent  
*Landform:* Marine terraces, river valleys  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### Ragmuff

*Percent of map unit:* 1 percent

## Custom Soil Resource Report

*Landform:* River valleys, marine terraces  
*Landform position (two-dimensional):* Backslope, shoulder  
*Landform position (three-dimensional):* Base slope, side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### **Biddeford**

*Percent of map unit:* 1 percent  
*Landform:* Marine terraces, river valleys  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Ecological site:* Marine Terrace Depression (F144BY002ME)  
*Hydric soil rating:* Yes

## **ChB—Charlton very stony fine sandy loam, 0 to 8 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 9kcx  
*Elevation:* 10 to 3,500 feet  
*Mean annual precipitation:* 34 to 50 inches  
*Mean annual air temperature:* 37 to 46 degrees F  
*Frost-free period:* 60 to 160 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Charlton and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Charlton**

#### **Setting**

*Landform:* Till plains  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Coarse-loamy supraglacial meltout till derived from mica schist

#### **Typical profile**

*H1 - 0 to 7 inches:* fine sandy loam  
*H2 - 7 to 24 inches:* fine sandy loam  
*H3 - 24 to 65 inches:* fine sandy loam

#### **Properties and qualities**

*Slope:* 3 to 8 percent  
*Percent of area covered with surface fragments:* 1.6 percent  
*Depth to restrictive feature:* More than 80 inches

## Custom Soil Resource Report

*Natural drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 6.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Moderate (about 6.0 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* A  
*Hydric soil rating:* No

### Minor Components

#### Tunbridge

*Percent of map unit:* 3 percent  
*Hydric soil rating:* No

#### Woodbridge

*Percent of map unit:* 3 percent  
*Landform:* Hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

#### Leicester

*Percent of map unit:* 3 percent  
*Landform:* Till plains  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

#### Hollis

*Percent of map unit:* 2 percent  
*Landform:* Hills  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Interfluve, crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

#### Paxton

*Percent of map unit:* 2 percent  
*Landform:* Drumlinoid ridges  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Interfluve, crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

#### Hermon

*Percent of map unit:* 2 percent  
*Landform:* Till plains

## Custom Soil Resource Report

*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### ChC—Charlton very stony fine sandy loam, 8 to 15 percent slopes

#### Map Unit Setting

*National map unit symbol:* 9kcy  
*Elevation:* 10 to 3,500 feet  
*Mean annual precipitation:* 34 to 50 inches  
*Mean annual air temperature:* 37 to 46 degrees F  
*Frost-free period:* 60 to 160 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Charlton and similar soils:* 86 percent  
*Minor components:* 14 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Charlton

##### Setting

*Landform:* Till plains  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Coarse-loamy supraglacial meltout till derived from mica schist

##### Typical profile

*H1 - 0 to 7 inches:* fine sandy loam  
*H2 - 7 to 24 inches:* fine sandy loam  
*H3 - 24 to 65 inches:* fine sandy loam

##### Properties and qualities

*Slope:* 8 to 15 percent  
*Percent of area covered with surface fragments:* 1.6 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 6.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Moderate (about 6.0 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* A

## Custom Soil Resource Report

*Hydric soil rating:* No

### Minor Components

#### **Woodbridge**

*Percent of map unit:* 5 percent

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil rating:* No

#### **Paxton**

*Percent of map unit:* 3 percent

*Landform:* Drumlinoid ridges

*Landform position (two-dimensional):* Summit, shoulder

*Landform position (three-dimensional):* Interfluve, crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

#### **Tunbridge**

*Percent of map unit:* 2 percent

*Hydric soil rating:* No

#### **Hollis**

*Percent of map unit:* 2 percent

*Landform:* Hills

*Landform position (two-dimensional):* Summit, shoulder

*Landform position (three-dimensional):* Interfluve, crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

#### **Charlton, stone cove > 3 percent**

*Percent of map unit:* 1 percent

*Landform:* Till plains

*Landform position (three-dimensional):* Dip

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

#### **Hermon**

*Percent of map unit:* 1 percent

*Landform:* Till plains

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

## **GP—Sand and gravel pits**

### **Map Unit Setting**

*National map unit symbol:* 9kd4  
*Elevation:* 10 to 2,200 feet  
*Mean annual precipitation:* 30 to 48 inches  
*Mean annual air temperature:* 37 to 46 degrees F  
*Frost-free period:* 70 to 160 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Sand and gravel pits:* 90 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Sand And Gravel Pits**

#### **Typical profile**

*H1 - 0 to 6 inches:* extremely gravelly sand  
*H2 - 6 to 60 inches:* extremely gravelly sand

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 8s  
*Hydric soil rating:* No

### **Minor Components**

#### **Adams**

*Percent of map unit:* 5 percent  
*Landform:* Outwash terraces  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

#### **Hinckley**

*Percent of map unit:* 5 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

## HfB—Hartland very fine sandy loam, 2 to 8 percent slopes

### Map Unit Setting

*National map unit symbol:* 9kd6

*Elevation:* 10 to 1,750 feet

*Mean annual precipitation:* 34 to 48 inches

*Mean annual air temperature:* 37 to 46 degrees F

*Frost-free period:* 80 to 160 days

*Farmland classification:* Farmland of statewide importance

### Map Unit Composition

*Hartland and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Hartland

#### Setting

*Landform:* Lakebeds

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Coarse-silty glaciolacustrine deposits

#### Typical profile

*H1 - 0 to 10 inches:* very fine sandy loam

*H2 - 10 to 19 inches:* very fine sandy loam

*H3 - 19 to 28 inches:* very fine sandy loam

*H4 - 28 to 65 inches:* very fine sandy loam

#### Properties and qualities

*Slope:* 2 to 8 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 2.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* High (about 11.8 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2e

*Hydrologic Soil Group:* B

*Hydric soil rating:* No

**Minor Components**

**Belgrade**

*Percent of map unit:* 7 percent  
*Landform:* Lakebeds  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

**Melrose**

*Percent of map unit:* 3 percent  
*Landform:* Stream terraces  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

**Roundabout**

*Percent of map unit:* 3 percent  
*Landform:* Lakebeds  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

**Hartland, slopes > 8 percent**

*Percent of map unit:* 1 percent  
*Landform:* Lakebeds  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

**Hartland, slopes < 2 percent**

*Percent of map unit:* 1 percent  
*Landform:* Lakebeds  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

## **HfC2—Hartland very fine sandy loam, 8 to 15 percent slopes, eroded**

### **Map Unit Setting**

*National map unit symbol:* 9kd7  
*Elevation:* 10 to 1,750 feet  
*Mean annual precipitation:* 34 to 48 inches  
*Mean annual air temperature:* 37 to 46 degrees F  
*Frost-free period:* 80 to 160 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Hartland and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Hartland**

#### **Setting**

*Landform:* Lakebeds  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Coarse-silty glaciolacustrine deposits

#### **Typical profile**

*H1 - 0 to 10 inches:* very fine sandy loam  
*H2 - 10 to 19 inches:* very fine sandy loam  
*H3 - 19 to 28 inches:* very fine sandy loam  
*H4 - 28 to 65 inches:* very fine sandy loam

#### **Properties and qualities**

*Slope:* 8 to 15 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 2.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* High (about 11.8 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4e  
*Hydrologic Soil Group:* B  
*Hydric soil rating:* No

**Minor Components**

**Belgrade**

*Percent of map unit:* 7 percent  
*Landform:* Lakebeds  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

**Melrose**

*Percent of map unit:* 4 percent  
*Landform:* Stream terraces  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

**Hartland, slopes < 8 percent**

*Percent of map unit:* 2 percent  
*Landform:* Lakebeds  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

**Hartland, slopes > 15 percent**

*Percent of map unit:* 1 percent  
*Landform:* Lakebeds  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

**Roundabout**

*Percent of map unit:* 1 percent  
*Landform:* Lakebeds  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Hydric soil rating:* No

## **HfD2—Hartland very fine sandy loam, 15 to 25 percent slopes, eroded**

### **Map Unit Setting**

*National map unit symbol:* 9kd8  
*Elevation:* 10 to 900 feet  
*Mean annual precipitation:* 34 to 48 inches  
*Mean annual air temperature:* 43 to 46 degrees F  
*Frost-free period:* 90 to 160 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Hartland and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Hartland**

#### **Setting**

*Landform:* Lakebeds  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Coarse-silty glaciolacustrine deposits

#### **Typical profile**

*H1 - 0 to 10 inches:* very fine sandy loam  
*H2 - 10 to 19 inches:* very fine sandy loam  
*H3 - 19 to 28 inches:* very fine sandy loam  
*H4 - 28 to 65 inches:* very fine sandy loam

#### **Properties and qualities**

*Slope:* 15 to 25 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 2.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* High (about 11.8 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6e  
*Hydrologic Soil Group:* B  
*Hydric soil rating:* No

**Minor Components**

**Belgrade**

*Percent of map unit:* 5 percent  
*Landform:* Lakebeds  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

**Hartland, slopes < 15 percent**

*Percent of map unit:* 3 percent  
*Landform:* Lakebeds  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

**Suffield**

*Percent of map unit:* 3 percent  
*Landform:* Marine terraces  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Hartland, slopes > 25 percent**

*Percent of map unit:* 2 percent  
*Landform:* Lakebeds  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

**Melrose**

*Percent of map unit:* 2 percent  
*Landform:* Stream terraces  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

**HrC—Lyman-Tunbridge complex, 8 to 15 percent slopes, rocky**

**Map Unit Setting**

*National map unit symbol:* 2x1cy

## Custom Soil Resource Report

*Elevation:* 0 to 520 feet

*Mean annual precipitation:* 36 to 65 inches

*Mean annual air temperature:* 36 to 52 degrees F

*Frost-free period:* 90 to 160 days

*Farmland classification:* Farmland of statewide importance

### Map Unit Composition

*Lyman and similar soils:* 45 percent

*Tunbridge and similar soils:* 40 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Lyman

#### Setting

*Landform:* Hills, ridges

*Landform position (two-dimensional):* Backslope, shoulder, summit

*Landform position (three-dimensional):* Crest, nose slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Loamy supraglacial till derived from granite and gneiss and/or loamy supraglacial till derived from phyllite and/or loamy supraglacial till derived from mica schist

#### Typical profile

*Oe - 0 to 1 inches:* moderately decomposed plant material

*A - 1 to 3 inches:* loam

*E - 3 to 5 inches:* fine sandy loam

*Bhs - 5 to 7 inches:* loam

*Bs1 - 7 to 11 inches:* loam

*Bs2 - 11 to 18 inches:* channery loam

*R - 18 to 79 inches:* bedrock

#### Properties and qualities

*Slope:* 8 to 15 percent

*Percent of area covered with surface fragments:* 1.5 percent

*Depth to restrictive feature:* 11 to 24 inches to lithic bedrock

*Natural drainage class:* Somewhat excessively drained

*Capacity of the most limiting layer to transmit water (Ksat):* Very low to high (0.00 to 14.03 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* Low (about 3.2 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6s

*Hydrologic Soil Group:* D

*Hydric soil rating:* No

### Description of Tunbridge

#### Setting

*Landform:* Hills, ridges

*Landform position (two-dimensional):* Backslope, summit, shoulder

*Landform position (three-dimensional):* Side slope, crest

## Custom Soil Resource Report

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Parent material:* Loamy supraglacial till derived from granite and gneiss and/or loamy supraglacial till derived from phyllite and/or loamy supraglacial till derived from mica schist

### Typical profile

*Oe - 0 to 3 inches:* moderately decomposed plant material

*Oa - 3 to 5 inches:* highly decomposed plant material

*E - 5 to 8 inches:* fine sandy loam

*Bhs - 8 to 11 inches:* fine sandy loam

*Bs - 11 to 26 inches:* fine sandy loam

*BC - 26 to 28 inches:* fine sandy loam

*R - 28 to 79 inches:* bedrock

### Properties and qualities

*Slope:* 8 to 15 percent

*Percent of area covered with surface fragments:* 1.5 percent

*Depth to restrictive feature:* 21 to 41 inches to lithic bedrock

*Natural drainage class:* Well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Very low to high (0.00 to 14.03 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* Low (about 5.6 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6s

*Hydrologic Soil Group:* C

*Hydric soil rating:* No

### Minor Components

#### Ragmuff

*Percent of map unit:* 5 percent

*Landform:* Ridges, hills

*Landform position (two-dimensional):* Backslope, footslope

*Landform position (three-dimensional):* Base slope, side slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil rating:* No

#### Abram

*Percent of map unit:* 5 percent

*Landform:* Ridges, hills

*Landform position (two-dimensional):* Summit, shoulder

*Landform position (three-dimensional):* Nose slope, crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

#### Peru

*Percent of map unit:* 4 percent

*Landform:* Ridges, hills

*Landform position (two-dimensional):* Backslope, footslope

## Custom Soil Resource Report

*Landform position (three-dimensional):* Base slope, side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### **Rock outcrop**

*Percent of map unit:* 1 percent  
*Landform:* Ridges, hills  
*Landform position (two-dimensional):* Shoulder, summit  
*Landform position (three-dimensional):* Nose slope, crest, free face  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

## **NgB—Ninigret fine sandy loam, 0 to 8 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 9kdx  
*Elevation:* 10 to 2,800 feet  
*Mean annual precipitation:* 30 to 55 inches  
*Mean annual air temperature:* 37 to 46 degrees F  
*Frost-free period:* 70 to 195 days  
*Farmland classification:* All areas are prime farmland

### **Map Unit Composition**

*Ninigret and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Ninigret**

#### **Setting**

*Landform:* Outwash terraces  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Parent material:* Coarse-loamy glaciofluvial deposits derived from slate

#### **Typical profile**

*H1 - 0 to 8 inches:* fine sandy loam  
*H2 - 8 to 28 inches:* fine sandy loam  
*H3 - 28 to 65 inches:* loamy fine sand

#### **Properties and qualities**

*Slope:* 0 to 8 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Moderately well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 2.00 in/hr)  
*Depth to water table:* About 18 to 36 inches

## Custom Soil Resource Report

*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Moderate (about 8.7 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 2w  
*Hydrologic Soil Group:* C  
*Hydric soil rating:* No

### Minor Components

#### Agawam

*Percent of map unit:* 5 percent  
*Landform:* Outwash plains  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

#### Adams

*Percent of map unit:* 3 percent  
*Landform:* Outwash terraces  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

#### Elmwood

*Percent of map unit:* 2 percent  
*Landform:* Stream terraces  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

#### Naumburg

*Percent of map unit:* 2 percent  
*Landform:* Outwash plains  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

#### Scarboro

*Percent of map unit:* 2 percent  
*Landform:* Outwash plains  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* Yes

#### Ninigret, slopes > 8 percent

*Percent of map unit:* 1 percent  
*Landform:* Outwash terraces  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Convex

## Custom Soil Resource Report

*Across-slope shape:* Linear  
*Hydric soil rating:* No

### **ScA—Scantic silt loam, 0 to 3 percent slopes**

#### **Map Unit Setting**

*National map unit symbol:* 2slv3  
*Elevation:* 10 to 900 feet  
*Mean annual precipitation:* 33 to 60 inches  
*Mean annual air temperature:* 39 to 45 degrees F  
*Frost-free period:* 90 to 160 days  
*Farmland classification:* Not prime farmland

#### **Map Unit Composition**

*Scantic and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### **Description of Scantic**

##### **Setting**

*Landform:* Marine terraces, river valleys  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Glaciomarine deposits

##### **Typical profile**

*Ap - 0 to 9 inches:* silt loam  
*Bg1 - 9 to 16 inches:* silty clay loam  
*Bg2 - 16 to 29 inches:* silty clay  
*Cg - 29 to 65 inches:* silty clay

##### **Properties and qualities**

*Slope:* 0 to 3 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)  
*Depth to water table:* About 0 to 12 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Moderate (about 6.3 inches)

##### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4w  
*Hydrologic Soil Group:* D  
*Hydric soil rating:* Yes

**Minor Components**

**Lamoine**

*Percent of map unit:* 8 percent  
*Landform:* River valleys, marine terraces  
*Landform position (three-dimensional):* Riser, rise  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

**Biddeford**

*Percent of map unit:* 3 percent  
*Landform:* Marine terraces, river valleys  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave, linear  
*Ecological site:* Marine Terrace Depression (F144BY002ME)  
*Hydric soil rating:* Yes

**Roundabout**

*Percent of map unit:* 2 percent  
*Landform:* River valleys, marine terraces  
*Landform position (three-dimensional):* Tread, talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* Yes

**Buxton**

*Percent of map unit:* 2 percent  
*Landform:* Marine terraces, river valleys  
*Landform position (three-dimensional):* Riser, rise  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

**SzA—Swanton fine sandy loam, 0 to 3 percent slopes**

**Map Unit Setting**

*National map unit symbol:* 9kfn  
*Elevation:* 10 to 2,100 feet  
*Mean annual precipitation:* 33 to 60 inches  
*Mean annual air temperature:* 37 to 46 degrees F  
*Frost-free period:* 90 to 195 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Swanton and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

## Description of Swanton

### Setting

*Landform:* Outwash plains  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Parent material:* Loamy glaciolacustrine deposits and/or marine deposits

### Typical profile

*H1 - 0 to 7 inches:* fine sandy loam  
*H2 - 7 to 22 inches:* fine sandy loam  
*H3 - 22 to 65 inches:* silty clay loam

### Properties and qualities

*Slope:* 0 to 3 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately high (0.00 to 0.20 in/hr)  
*Depth to water table:* About 0 to 18 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* High (about 9.0 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4w  
*Hydrologic Soil Group:* D  
*Hydric soil rating:* Yes

## Minor Components

### Scantic

*Percent of map unit:* 5 percent  
*Landform:* Marine terraces, river valleys  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* Yes

### Whately

*Percent of map unit:* 3 percent  
*Landform:* Outwash plains  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

### Elmwood

*Percent of map unit:* 3 percent  
*Landform:* Stream terraces  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

**Naumburg**

*Percent of map unit:* 2 percent  
*Landform:* Outwash plains  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

**Wonsqueak**

*Percent of map unit:* 2 percent  
*Landform:* Swamps  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

**Wg—Whately fine sandy loam**

**Map Unit Setting**

*National map unit symbol:* 9kfr  
*Elevation:* 10 to 2,100 feet  
*Mean annual precipitation:* 33 to 60 inches  
*Mean annual air temperature:* 37 to 46 degrees F  
*Frost-free period:* 90 to 160 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Whately and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Whately**

**Setting**

*Landform:* Outwash plains  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Parent material:* Coarse-loamy glaciolacustrine deposits

**Typical profile**

*Oa - 0 to 5 inches:* moderately decomposed plant material  
*H1 - 5 to 9 inches:* fine sandy loam  
*H2 - 9 to 29 inches:* fine sandy loam  
*H3 - 29 to 65 inches:* silty clay loam

**Properties and qualities**

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches

## Custom Soil Resource Report

*Natural drainage class:* Very poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately high (0.00 to 0.20 in/hr)  
*Depth to water table:* About 0 to 6 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*Available water storage in profile:* High (about 9.9 inches)

### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 5w  
*Hydrologic Soil Group:* D  
*Hydric soil rating:* Yes

### **Minor Components**

#### **Swanton**

*Percent of map unit:* 6 percent  
*Landform:* Outwash plains  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

#### **Wonsqueak**

*Percent of map unit:* 3 percent  
*Landform:* Swamps  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

#### **Scantic**

*Percent of map unit:* 3 percent  
*Landform:* Marine terraces, river valleys  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* Yes

#### **Biddeford**

*Percent of map unit:* 2 percent  
*Landform:* Marine terraces, coastal plains  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* Yes

#### **Whately, slopes > 3 percent**

*Percent of map unit:* 1 percent  
*Landform:* Outwash plains  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

## Custom Soil Resource Report

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- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2\\_053374](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374)
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## Custom Soil Resource Report

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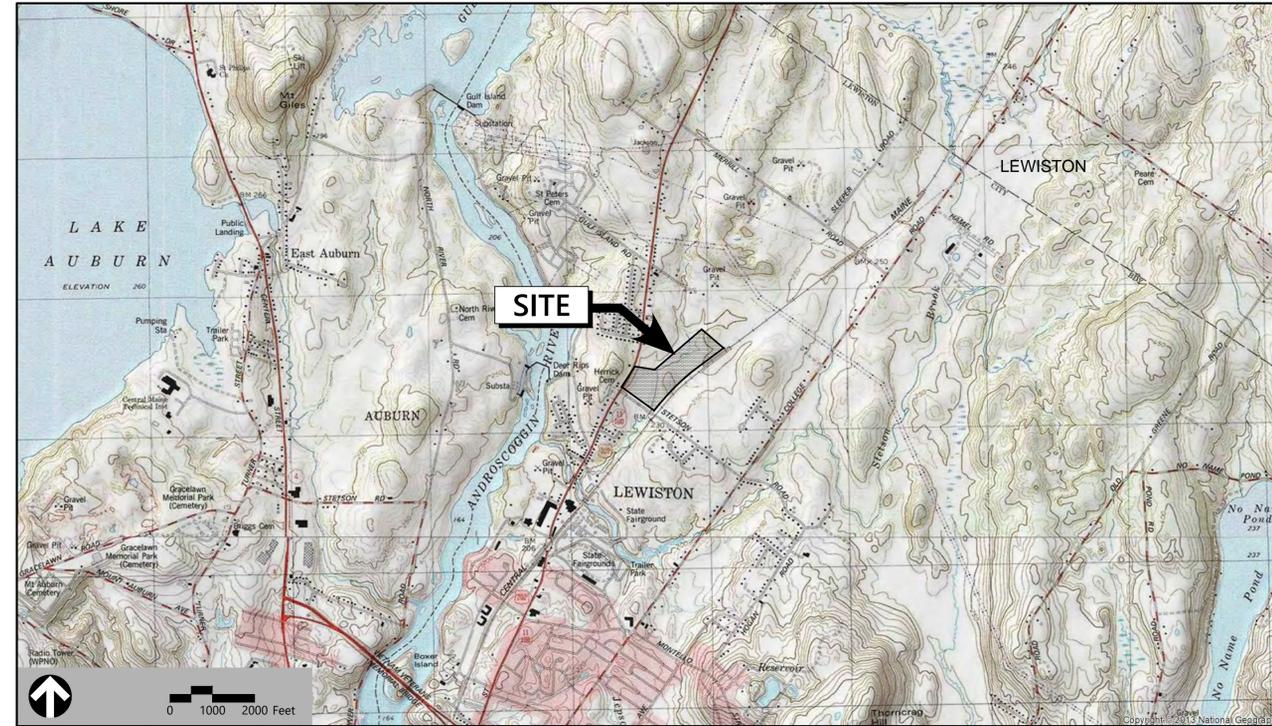
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# Site Plans

Issued for Permitting  
 Date Issued February 28, 2020  
 Latest Issue April 14, 2020

## NextGrid Solar Farm

1043-1045 Main Street  
 Lewiston, Maine 04240



500 Southborough Drive  
 Suite 105B  
 South Portland, ME 04106  
 207.889.3150

### Owners

George Schott  
 LA Quarry LLC  
 P.O. Box 9340  
 Auburn, ME 04210

### Applicant

NextGrid Inc.  
 P.O. Box 7775 #73069  
 San Francisco, CA 94120

### Assessor's Information:

Map 167, Lot 71  
 Map 167, Lot 73

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C1.0	Legend and General Notes	April 14, 2020
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C2.0A	Master Plan (With Aerial)	April 14, 2020
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C2.2	Site Plan 2	April 14, 2020
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C4.1	Site Plan 1	April 14, 2020
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500 Southborough Drive  
Suite 105B  
South Portland, ME 04106  
207.889.3150

**Legend**

Exist.	Prop.	Exist.	Prop.	
				CONCRETE
				HEAVY DUTY PAVEMENT
				BUILDINGS
				RIPRAP
				CONSTRUCTION EXIT
				TOP OF CURB ELEVATION
				BOTTOM OF CURB ELEVATION
				SPOT ELEVATION
				TOP & BOTTOM OF WALL ELEVATION
				BORING LOCATION
				TEST PIT LOCATION
				MONITORING WELL
				UNDERDRAIN
				DRAIN
				ROOF DRAIN
				SEWER
				FORCE MAIN
				OVERHEAD WIRE
				WATER
				FIRE PROTECTION
				DOMESTIC WATER
				GAS
				ELECTRIC
				STEAM
				TELEPHONE
				FIRE ALARM
				CABLE TV
				CATCH BASIN CONCENTRIC
				CATCH BASIN ECCENTRIC
				DOUBLE CATCH BASIN CONCENTRIC
				DOUBLE CATCH BASIN ECCENTRIC
				GUTTER INLET
				DRAIN MANHOLE CONCENTRIC
				DRAIN MANHOLE ECCENTRIC
				TRENCH DRAIN
				PLUG OR CAP
				CLEANOUT
				FLARED END SECTION
				HEADWALL
				SEWER MANHOLE CONCENTRIC
				SEWER MANHOLE ECCENTRIC
				CURB STOP & BOX
				WATER VALVE & BOX
				TAPPING SLEEVE, VALVE & BOX
				SIAMESE CONNECTION
				FIRE HYDRANT
				WATER METER
				POST INDICATOR VALVE
				WATER WELL
				GAS GATE
				GAS METER
				ELECTRIC MANHOLE
				ELECTRIC METER
				LIGHT POLE
				TELEPHONE MANHOLE
				TRANSFORMER PAD
				UTILITY POLE
				GUY POLE
				GUY WIRE & ANCHOR
				HAND HOLE
				PULL BOX
				MATCHLINE
				BUILDING
				BUILDING ENTRANCE
				LOADING DOCK
				BOLLARD
				DUMPSTER PAD
				SIGN
				DOUBLE SIGN
				STEEL GUARDRAIL
				WOOD GUARDRAIL
				PATH
				TREE LINE
				WIRE FENCE
				FENCE
				STOCKADE FENCE
				STONE WALL
				RETAINING WALL
				STREAM / POND / WATER COURSE
				DETENTION BASIN
				HAY BALES
				SILT FENCE
				SILT SOCK / STRAW WATTLE
				MINOR CONTOUR
				MAJOR CONTOUR
				PARKING COUNT
				COMPACT PARKING STALLS
				DOUBLE YELLOW LINE
				STOP LINE
				CROSSWALK
				ACCESSIBLE CURB RAMP
				ACCESSIBLE PARKING
				VAN-ACCESSIBLE PARKING

**Abbreviations**

General	
ABAN	ABANDON
ACR	ACCESSIBLE CURB RAMP
ADJ	ADJUST
APPROX	APPROXIMATE
BIT	BITUMINOUS
BS	BOTTOM OF SLOPE
BWLL	BROKEN WHITE LANE LINE
CONC	CONCRETE
DYCL	DOUBLE YELLOW CENTER LINE
EL	ELEVATION
ELEV	ELEVATION
EX	EXISTING
FDN	FOUNDATION
FFE	FIRST FLOOR ELEVATION
GRAN	GRANITE
GTD	GRADE TO DRAIN
LA	LANDSCAPE AREA
LOD	LIMIT OF DISTURBANCE
MAX	MAXIMUM
MIN	MINIMUM
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
PERF	PERFORATED
PROP	PROPOSED
REM	REMOVE
RET	RETAIN
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
SWEL	SOLID WHITE EDGE LINE
SWLL	SOLID WHITE LANE LINE
TS	TOP OF SLOPE
TYP	TYPICAL
Utility	
CB	CATCH BASIN
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
DCB	DOUBLE CATCH BASIN
DMH	DRAIN MANHOLE
CIP	CAST IRON PIPE
COND	CONDUIT
DIP	DUCTILE IRON PIPE
FES	FLARED END SECTION
FM	FORCE MAIN
F&G	FRAME AND GRATE
F&C	FRAME AND COVER
GI	GUTTER INLET
GT	GREASE TRAP
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HH	HANDHOLE
HW	HEADWALL
HYD	HYDRANT
INV	INVERT ELEVATION
I=	INVERT ELEVATION
LP	LIGHT POLE
MES	METAL END SECTION
PIV	POST INDICATOR VALVE
PWW	PAVED WATER WAY
PVC	POLYVINYLCHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
R=	RIM ELEVATION
RIM=	RIM ELEVATION
SMH	SEWER MANHOLE
TSV	TAPPING SLEEVE, VALVE AND BOX
UG	UNDERGROUND
UP	UTILITY POLE

**Purpose of Plans**

- THE PURPOSE OF THIS PLAN IS TO SHOW THE DEVELOPMENT OF A SOLAR FARM IN LEWISTON, MAINE.

**General**

- CONTRACTOR SHALL NOTIFY "DIG-SAFE" (811 OR 1-888-344-7233) AT LEAST 72 HOURS BEFORE EXCAVATING.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS.
- ACCESSIBLE ROUTES, PARKING SPACES, RAMPS, SIDEWALKS AND WALKWAYS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE FEDERAL AMERICANS WITH DISABILITIES ACT AND WITH STATE AND LOCAL LAWS AND REGULATIONS (WHICHEVER ARE MORE STRINGENT).
- AREAS DISTURBED DURING CONSTRUCTION AND NOT RESTORED WITH IMPERVIOUS SURFACES (BUILDINGS, PAVEMENTS, WALKS, ETC.) SHALL RECEIVE 6 INCHES LOAM AND SEED.
- WORK WITHIN THE LOCAL RIGHTS-OF-WAY SHALL CONFORM TO LOCAL MUNICIPAL STANDARDS. WORK WITHIN STATE RIGHTS-OF-WAY SHALL CONFORM TO THE LATEST EDITION OF THE STATE HIGHWAY DEPARTMENTS STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
- UPON AWARD OF CONTRACT, CONTRACTOR SHALL MAKE NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK INDICATED ON THE DRAWINGS, IN THE SPECIFICATIONS, AND IN THE CONTRACT DOCUMENTS. DO NOT CLOSE OR OBSTRUCT ROADWAYS, SIDEWALKS, AND FIRE HYDRANTS, WITHOUT APPROPRIATE PERMITS.
- TRAFFIC SIGNAGE AND PAVEMENT MARKINGS SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
- IN THE EVENT THAT SUSPECTED CONTAMINATED SOIL, GROUNDWATER, AND OTHER MEDIA ARE ENCOUNTERED DURING EXCAVATION AND CONSTRUCTION ACTIVITIES BASED ON VISUAL, OLFACTORY, OR OTHER EVIDENCE, THE CONTRACTOR SHALL STOP WORK IN THE VICINITY OF THE SUSPECT MATERIAL TO AVOID FURTHER CONTAMINATION. THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY SO THAT THE APPROPRIATE TESTING AND SUBSEQUENT ACTION CAN BE TAKEN.
- CONTRACTOR SHALL PREVENT DUST, SEDIMENT, AND DEBRIS FROM EXITING THE SITE AND SHALL BE RESPONSIBLE FOR CLEANUP, REPAIRS AND CORRECTIVE ACTION IF SUCH OCCURS.
- DAMAGE RESULTING FROM CONSTRUCTION LOADS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
- CONTRACTOR SHALL CONTROL STORMWATER RUNOFF DURING CONSTRUCTION TO PREVENT ADVERSE IMPACTS TO OFF SITE AREAS, AND SHALL BE RESPONSIBLE TO REPAIR RESULTING DAMAGES, IF ANY, AT NO COST TO OWNER.
- THIS PROJECT DISTURBS MORE THAN ONE ACRE OF LAND AND FALLS WITHIN THE MPDES MAINE CONSTRUCTION GENERAL PERMIT (MCGP) PROGRAM. PRIOR TO THE START OF CONSTRUCTION CONTRACTOR IS TO FILE A NOTICE OF INTENT WITH THE MDEP AND PREPARE AN EROSION AND SEDIMENT CONTROL PLAN IN ACCORDANCE WITH THE MPDES REGULATIONS.

**Utilities**

- THE LOCATIONS, SIZES, AND TYPES OF EXISTING UTILITIES ARE SHOWN AS AN APPROXIMATE REPRESENTATION ONLY. THE OWNER OR ITS REPRESENTATIVE(S) HAVE NOT INDEPENDENTLY VERIFIED THIS INFORMATION AS SHOWN ON THE PLANS. THE UTILITY INFORMATION SHOWN DOES NOT GUARANTEE THE ACTUAL EXISTENCE, SERVICEABLE NATURE, OR OTHER DATA CONCERNING THE UTILITIES, NOR DOES IT GUARANTEE AGAINST THE POSSIBILITY THAT ADDITIONAL UTILITIES MAY BE PRESENT THAT ARE NOT SHOWN ON THE PLANS. PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY AND DETERMINE THE EXACT LOCATIONS, SIZES, AND ELEVATIONS OF THE POINTS OF CONNECTIONS TO EXISTING UTILITIES AND SHALL CONFIRM THAT THERE ARE NO INTERFERENCES WITH EXISTING UTILITIES AND THE PROPOSED UTILITY ROUTES, INCLUDING ROUTES WITHIN THE PUBLIC RIGHTS OF WAY.
- WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, OR EXISTING CONDITIONS DIFFER FROM THOSE SHOWN SUCH THAT THE WORK CANNOT BE COMPLETED AS INTENDED, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED IN WRITING TO THE OWNER'S REPRESENTATIVE FOR THE RESOLUTION OF THE CONFLICT AND CONTRACTOR'S FAILURE TO NOTIFY PRIOR TO PERFORMING ADDITIONAL WORK RELEASES OWNER FROM OBLIGATIONS FOR ADDITIONAL PAYMENTS WHICH OTHERWISE MAY BE WARRANTED TO RESOLVE THE CONFLICT.
- SET CATCH BASIN RIMS, AND INVERTS OF SEWERS, DRAINS, AND DITCHES IN ACCORDANCE WITH ELEVATIONS ON THE GRADING AND UTILITY PLANS.
- RIM ELEVATIONS FOR DRAIN AND SEWER MANHOLES, WATER VALVE COVERS, GAS GATES, ELECTRIC AND TELEPHONE PULL BOXES, AND MANHOLES, AND OTHER SUCH ITEMS, ARE APPROXIMATE AND SHALL BE SET/RESET AS FOLLOWS:
  - PAVEMENTS AND CONCRETE SURFACES: FLUSH
  - ALL SURFACES ALONG ACCESSIBLE ROUTES: FLUSH
  - LANDSCAPE, LOAM AND SEED, AND OTHER EARTH SURFACE AREAS: ONE INCH ABOVE SURROUNDING AREA AND TAPER EARTH TO THE RIM ELEVATION.
- THE LOCATION, SIZE, DEPTH, AND SPECIFICATIONS FOR CONSTRUCTION OF PROPOSED PRIVATE UTILITY SERVICES SHALL BE INSTALLED ACCORDING TO THE REQUIREMENTS PROVIDED BY, AND APPROVED BY, THE RESPECTIVE UTILITY COMPANY (GAS, TELEPHONE, ELECTRIC, FIRE ALARM, ETC.). FINAL DESIGN LOADS AND LOCATIONS TO BE COORDINATED WITH OWNER AND DESIGN REPRESENTATIVE.
- CONTRACTOR SHALL MAKE ARRANGEMENTS FOR AND SHALL BE RESPONSIBLE FOR PAYING FEES FOR POLE RELOCATION AND FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, FIRE ALARM, AND ANY OTHER PRIVATE UTILITIES, WHETHER WORK IS PERFORMED BY CONTRACTOR OR BY THE UTILITIES COMPANY.
- UTILITY PIPE MATERIALS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED ON THE PLAN:
  - STORM DRAINAGE PIPES SHALL BE SMOOTH INTERIOR CORRUGATED HIGH DENSITY POLYETHYLENE (HDPE) UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR AND SHALL FURNISH EXCAVATION, INSTALLATION, AND BACKFILL OF ELECTRICAL FURNISHED SITEWORK RELATED ITEMS SUCH AS PULL BOXES, CONDUITS, DUCT BANKS, LIGHT POLE BASES, AND CONCRETE PADS. SITE CONTRACTOR SHALL FURNISH CONCRETE ENCASUREMENT OF DUCT BANKS IF REQUIRED BY THE UTILITY COMPANY AND AS INDICATED ON THE DRAWINGS.
- ALL DRAINAGE AND SANITARY STRUCTURE INTERIOR DIAMETERS (4" MIN.) SHALL BE DETERMINED BY THE MANUFACTURER BASED ON THE PIPE CONFIGURATIONS SHOWN ON THESE PLANS AND LOCAL MUNICIPAL STANDARDS. FOR MANHOLES THAT ARE 20 FEET IN DEPTH AND GREATER, THE MINIMUM DIAMETER SHALL BE 5 FEET.

**Layout and Materials**

- DIMENSIONS ARE FROM THE EDGE OF GRAVEL, EDGE OF CONCRETE, UNLESS OTHERWISE NOTED.
- SEE ELECTRICAL DRAWINGS FOR EXACT PANEL DIMENSIONS.
- PROPOSED BOUNDS AND ANY EXISTING PROPERTY LINE MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE SET OR RESET BY A PROFESSIONAL LAND SURVEYOR (PLS).
- PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL VERIFY EXISTING PAVEMENT AND/OR GRAVEL DRIVE ELEVATIONS AT INTERFACE WITH PROPOSED DRIVES, AND EXISTING GROUND ELEVATIONS ADJACENT TO DRAINAGE OUTLETS TO ASSURE PROPER TRANSITIONS BETWEEN EXISTING AND PROPOSED FACILITIES.

**Demolition**

- CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING MANMADE SURFACE FEATURES WITHIN THE LIMIT OF WORK INCLUDING BUILDINGS, STRUCTURES, PAVEMENTS, SLABS, CURBING, FENCES, UTILITY POLES, SIGNS, ETC. UNLESS INDICATED OTHERWISE ON THE DRAWINGS. REMOVE AND DISPOSE OF EXISTING UTILITIES, FOUNDATIONS AND UNSUITABLE MATERIAL BENEATH AND FOR A DISTANCE OF 10 FEET BEYOND THE PROPOSED BUILDING FOOTPRINT INCLUDING EXTERIOR COLUMNS.
- EXISTING UTILITIES SHALL BE TERMINATED, UNLESS OTHERWISE NOTED, IN CONFORMANCE WITH LOCAL, STATE AND INDIVIDUAL UTILITY COMPANY STANDARD SPECIFICATIONS AND DETAILS. THE CONTRACTOR SHALL COORDINATE UTILITY SERVICE DISCONNECTS WITH THE UTILITY REPRESENTATIVES.
- CONTRACTOR SHALL DISPOSE OF DEMOLITION DEBRIS IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES AND STATUTES.
- THE DEMOLITION LIMITS DEPICTED IN THE PLANS IS INTENDED TO AID THE CONTRACTOR DURING THE BIDDING AND CONSTRUCTION PROCESS AND IS NOT INTENDED TO DEPICT EACH AND EVERY ELEMENT OF DEMOLITION. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING THE DETAILED SCOPE OF DEMOLITION BEFORE SUBMITTING ITS BID/PROPOSAL TO PERFORM THE WORK AND SHALL MAKE NO CLAIMS AND SEEK NO ADDITIONAL COMPENSATION FOR CHANGED CONDITIONS OR UNFORESEEN OR LATENT SITE CONDITIONS RELATED TO ANY CONDITIONS DISCOVERED DURING EXECUTION OF THE WORK.
- UNLESS OTHERWISE SPECIFICALLY PROVIDED ON THE PLANS OR IN THE SPECIFICATIONS, THE ENGINEER HAS NOT PREPARED DESIGNS FOR AND SHALL HAVE NO RESPONSIBILITY FOR THE PRESENCE, DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF HAZARDOUS MATERIALS, TOXIC WASTES OR POLLUTANTS AT THE PROJECT SITE. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY CLAIMS OF LOSS, DAMAGE, EXPENSE, DELAY, INJURY OR DEATH ARISING FROM THE PRESENCE OF HAZARDOUS MATERIAL AND CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE ENGINEER FROM ANY CLAIMS MADE IN CONNECTION THEREWITH. MOREOVER, THE ENGINEER SHALL HAVE NO ADMINISTRATIVE OBLIGATIONS OF ANY TYPE WITH REGARD TO ANY CONTRACTOR AMENDMENT INVOLVING THE ISSUES OF PRESENCE, DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF ASBESTOS OR OTHER HAZARDOUS MATERIALS.

**Existing Conditions Information**

- BASE PLAN: THE PROPERTY LINES AND TOPOGRAPHY HAVE BEEN PROVIDED BY MAINE GIS. TOPOGRAPHY IS BASED ON 2M DEM LIDAR FLIGHTS BETWEEN THE YEARS OF 2006 - 2013.
  - DELINEATION OF THE WETLANDS AND PLACEMENT OF THE FLAGS WAS PERFORMED BY: VHB DURING NOVEMBER 2019.
  - FLAGS MARKING THE WETLANDS WERE LOCATED BY: VHB USING GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) RECEIVERS WITH SUB-METER ACCURACY.
  - APPROXIMATE WETLANDS WERE MAPPED USING TOPOGRAPHY, VEGETATION AND SOILS INFORMATION AS GUIDELINES.
- TOPOGRAPHY: ELEVATIONS ARE BASED ON NGVD 88.

**Document Use**

- THESE PLANS AND CORRESPONDING CADD DOCUMENTS ARE INSTRUMENTS OF PROFESSIONAL SERVICE, AND SHALL NOT BE USED, IN WHOLE OR IN PART, FOR ANY PURPOSE OTHER THAN FOR WHICH IT WAS CREATED WITHOUT THE EXPRESSED, WRITTEN CONSENT OF VHB. ANY UNAUTHORIZED USE, REUSE, MODIFICATION OR ALTERATION, INCLUDING AUTOMATED CONVERSION OF THIS DOCUMENT SHALL BE AT THE USER'S SOLE RISK WITHOUT LIABILITY OR LEGAL EXPOSURE TO VHB.
- CONTRACTOR SHALL NOT RELY SOLELY ON ELECTRONIC VERSIONS OF PLANS, SPECIFICATIONS, AND DATA FILES THAT ARE OBTAINED FROM THE DESIGNER, BUT SHALL VERIFY LOCATION OF PROJECT FEATURES IN ACCORDANCE WITH THE PAPER COPIES OF THE PLANS AND SPECIFICATIONS THAT ARE SUPPLIED AS PART OF THE CONTRACT DOCUMENTS.
- SYMBOLS AND LEGENDS OF PROJECT FEATURES ARE GRAPHIC REPRESENTATIONS AND ARE NOT NECESSARILY SCALED TO THEIR ACTUAL DIMENSIONS OR LOCATIONS ON THE DRAWINGS. THE CONTRACTOR SHALL REFER TO THE DETAIL SHEET DIMENSIONS, MANUFACTURERS' LITERATURE, SHOP DRAWINGS AND FIELD MEASUREMENTS OF SUPPLIED PRODUCTS FOR LAYOUT OF THE PROJECT FEATURES.

**NextGrid Solar Farm**  
1043-1045 Main Street  
Lewiston, Maine 04240

No.	Revision	Date	Aspct.
1	REVISED FOR CITY OF LEWISTON REVIEW	4/14/20	DHF

Designed by	PG	Checked by	CG
Issued for		Date	

**Permitting** February 28, 2020

**Not Approved for Construction**

Drawing Title  
**Legend and General Notes**

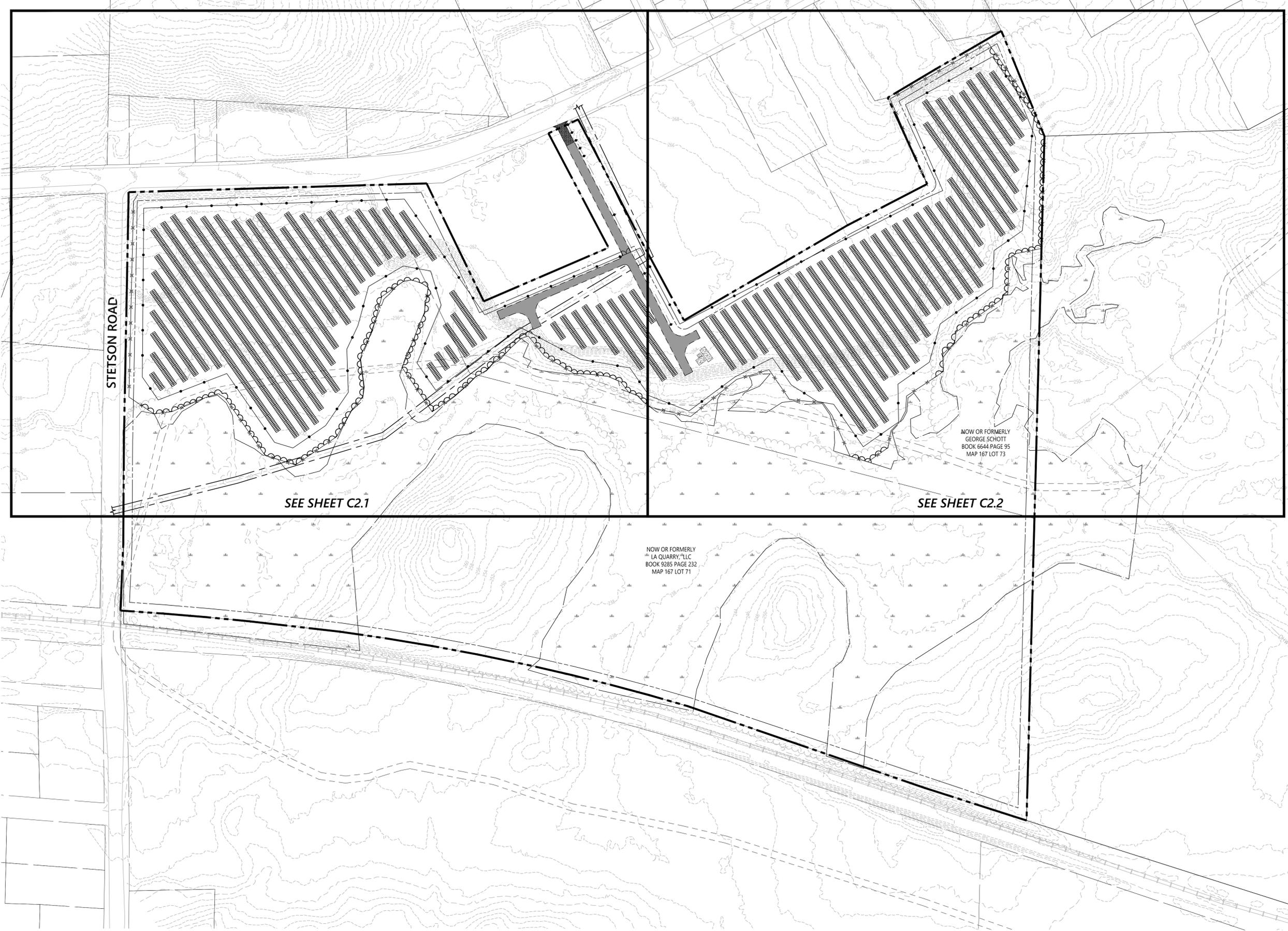
Drawing Number  
**C1.0**

Sheet 1 of 12

Project Number  
55304.06

4/14/2020





STETSON ROAD

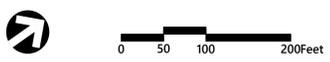
MAIN STREET (Route 202)

SEE SHEET C2.1

SEE SHEET C2.2

NOW OR FORMERLY  
GEORGE SCHOTT  
BOOK 6644 PAGE 95  
MAP 167 LOT 73

NOW OR FORMERLY  
LA QUARRY, LLC  
BOOK 9285 PAGE 232  
MAP 167 LOT 71



**NextGrid Solar Farm**  
1043-1045 Main Street  
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Drawing Title  
**Master Plan**



Drawing Number  
**C2.0**  
Sheet 2 of 12

Project Number  
55304.06



500 Southborough Drive  
Suite 105B  
South Portland, ME 04106  
207.889.3150



### NextGrid Solar Farm

1043-1045 Main Street  
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Not Approved for Construction

Master Plan  
(With Aerial)



Sheet **C2.0A** of 3  
Project Number 55304.06

### Zoning Summary Chart

Zoning District(S):	Highway Business (HB)	
Zoning Regulation Requirements	Required*	Provided**
FRONTAGE	150 Feet	679 Feet
FRONT YARD SETBACK	20 Feet	50 Feet
SIDE YARD SETBACK	20 Feet	50 Feet
REAR YARD SETBACK	20 Feet	22 Feet

\* ZONING REGULATION REQUIREMENTS AS SPECIFIED IN THE CITY OF LEWISTON CODE OF ORDINANCES, APPENDIX A, ZONING & LAND USE CODE, SECTION 23, SPACE AND BULK REQUIREMENTS.  
 \*\* BASED ON CONSOLIDATED LOT.

### Wetland Impact Summary

Type Of Impact	Area (SF)	Area (AC)
WETLAND VEGETATION ALTERED	0	0
WETLAND FILL	0	0
<b>TOTAL</b>	<b>0</b>	<b>0</b>

### Project Data

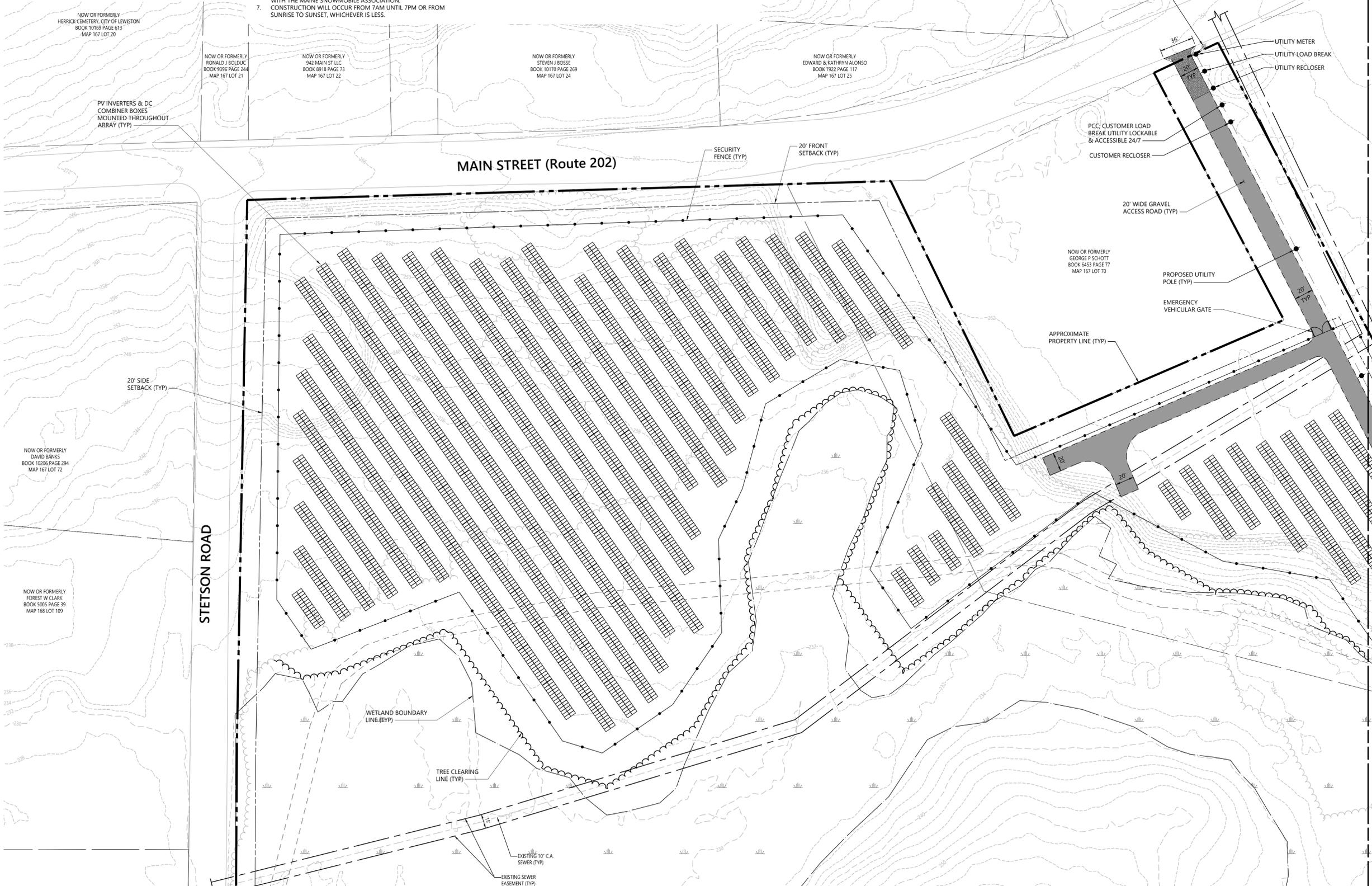
Type Of Impact	Area (SF)	Area (AC)
TREE CLEARING AREA	298,085	6.84
TOTAL IMPERVIOUS AREA	21,732	0.50
TOTAL DEVELOPED AREA	21,732	0.50
TOTAL LOT AREA	2,526,480±	58
TOTAL PROJECT AREA	751,432	17.25

### General Notes:

- PHOTOVOLTAIC ARRAY CONSISTS OF 10,010 SOLAR PANELS, PROVIDING APPROXIMATELY 4,004 Kw DC POWER.
- ACCESS ROAD THROUGH THE SITE SHALL BE KEPT CLEAR YEAR ROUND. THE SITE WILL BE MAINTAINED AS MEADOW FOR STORMWATER TREATMENT PURPOSES AND NOT MOWED MORE THAN TWICE A YEAR.
- PRIOR TO ANY DEVELOPMENT ACTIVITY, THE STORMWATER AND EROSION CONTROL ELEMENTS OF THE SITE PLANS WILL BE REVIEWED AND APPROVED BY THE CITY OF LEWISTON.
- WORK WITHIN SEWER EASEMENT TO BE COORDINATED WITH UTILITY OWNER.
- RELOCATION OF EXISTING SNOWMOBILE TRAIL TO BE COORDINATED WITH THE MAINE SNOWMOBILE ASSOCIATION.
- CONSTRUCTION WILL OCCUR FROM 7AM UNTIL 7PM OR FROM SUNRISE TO SUNSET, WHICHEVER IS LESS.

### Decommissioning Notes:

- DECOMMISSIONING OF THE PROJECT SHALL COMMENCE AFTER 12 CONSECUTIVE MONTHS OF NO POWER GENERATION AT THE FACILITY EXCEPT IN THE CASE OF A NATURAL DISASTER, ACT OF VIOLENCE, OR OTHER EVENT WHICH RESULTS IN THE ABSENCE OF ELECTRICAL GENERATION FOR 12 MONTHS. THE APPLICANT OR ITS SUCCESSOR AS OWNER OF THE PROJECT AT THAT TIME WILL BE SOLELY RESPONSIBLE FOR DECOMMISSIONING THE PROJECT, WHICH WILL CONSIST OF:
  - BE RESPONSIBLE FOR ALL DECOMMISSIONING COSTS;
  - OBTAIN ANY ADDITIONAL PERMITS REQUIRED FOR THE DECOMMISSIONING, REMOVAL, AND LEGAL DISPOSAL OF PROJECT COMPONENTS PRIOR TO COMMENCEMENT OF DECOMMISSIONING ACTIVITIES;
  - REMOVE AND DISPOSE OF ALL ABOVE-GROUND INFRASTRUCTURE, INCLUDING ARRAYS, INVERTER STRUCTURES, CONCRETE FOUNDATIONS AND PADS, AND FENCES, AND REVEGETATE IN ACCORDANCE WITH PERMITS AND IN COMPLIANCE WITH ALL APPLICABLE RULES AND REGULATIONS THEN IN EFFECT GOVERNING THE DISPOSAL THEREOF;
  - REMOVE ALL HAZARDOUS MATERIALS AND TRANSPORT THEM TO BE DISPOSED OF BY LICENSED CONTRACTORS AT AN APPROPRIATE FACILITY IN ACCORDANCE WITH RULES AND REGULATIONS GOVERNING THE DISPOSAL OF SUCH MATERIALS; AND REMOVED MATERIALS SHALL BE RECYCLED AND/OR SALVAGED TO THE MAXIMUM EXTENT PRACTICAL AND ALL WASTE STREAMS SHALL BE MANAGED IN ACCORDANCE WITH THE STATE OF MAINE'S SOLID WASTE REQUIREMENTS.



Match Line  
See Sheet C2.2

vhb.com  
 500 Southborough Drive  
 Suite 105B  
 South Portland, ME 04106  
 207.889.3150

CITY OF LEWISTON APPROVAL

Planning Board Chair \_\_\_\_\_ Date \_\_\_\_\_



**NextGrid Solar Farm**  
 1043-1045 Main Street  
 Lewiston, Maine 04240

No.	Revision	Date	Aspd.
1	REVISED FOR CITY OF LEWISTON REVIEW	4/14/20	DHF
Designed by	NO	Checked by	CG
Issued for	Permitting	Date	February 28, 2020

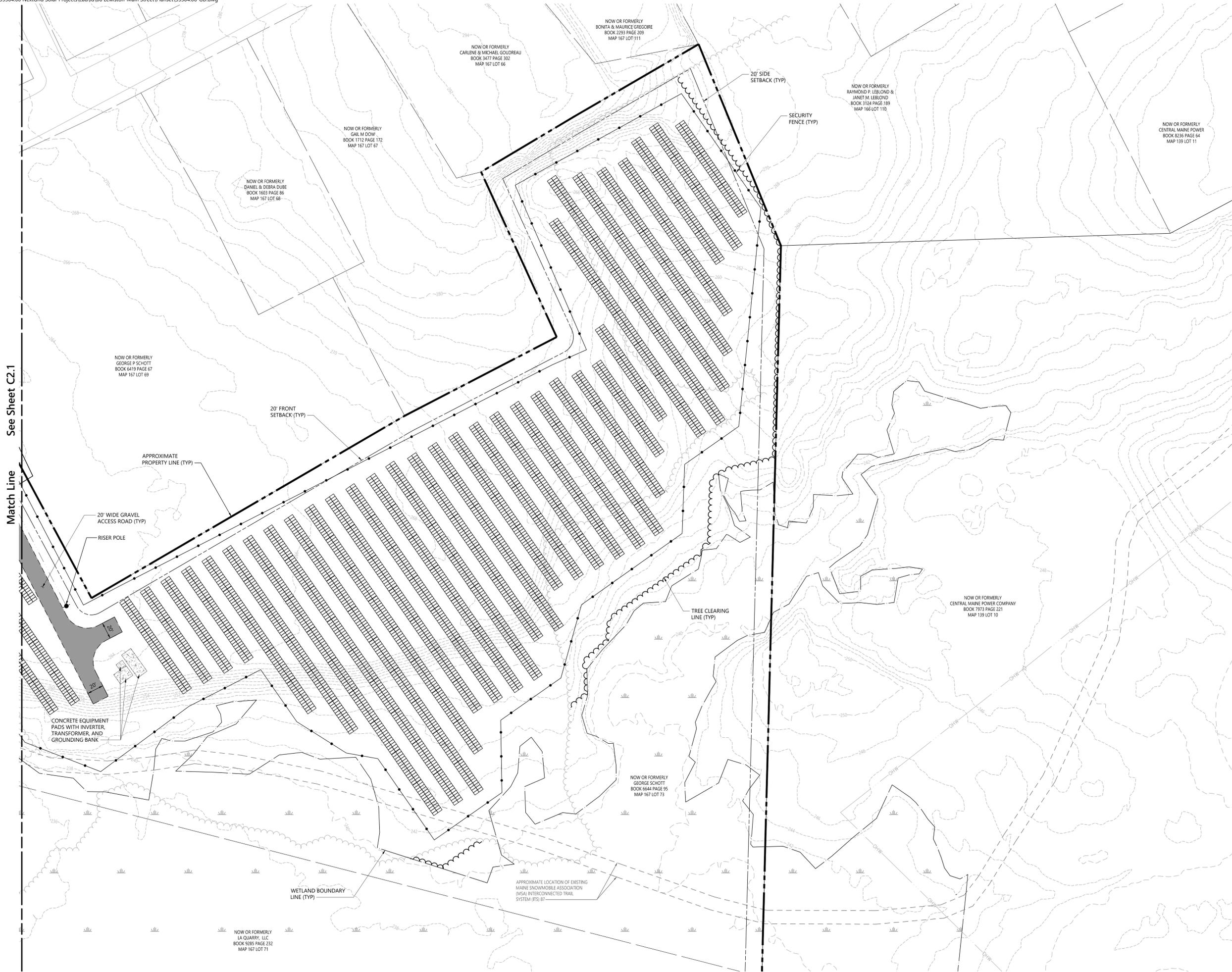
Not Approved for Construction  
 Drawing Title  
**Site Plan 1**



Sheet **C2.1** of 4  
 Project Number  
 55304.06



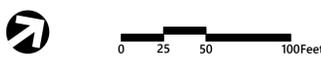
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Suite 105B  
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See Sheet C2.1

Match Line

CITY OF LEWISTON APPROVAL	
Planning Board Chair	Date



### NextGrid Solar Farm

1043-1045 Main Street  
Lewiston, Maine 04240

No.	Revision	Date	App'd.

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	NO		CG

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Drawing Title  
**Site Plan 2**

Drawing Number



# C2.2

Sheet 5 of 12

Project Number  
55304.06

**Project Data**

Type Of Impact	Area (SF)	Area (AC)
TREE CLEARING AREA	298,085	6.84
TOTAL IMPERVIOUS AREA	21,732	0.50
TOTAL DEVELOPED AREA	21,732	0.50
TOTAL LOT AREA	2,526,480±	58
TOTAL PROJECT AREA	751,432	17.25

**General Notes:**

1. PHOTOVOLTAIC ARRAY CONSISTS OF 10,010 SOLAR PANELS, PROVIDING APPROXIMATELY 4,004 Kw DC POWER.
2. AREAS DISTURBED DURING CONSTRUCTION SHALL BE REVEGETATED AND MAINTAINED AS A MEADOW AND SHALL NOT BE MOWED MORE THAN TWICE PER YEAR.
3. REFER TO DRAWING C4.2 FOR EROSION AND SEDIMENT CONTROL DETAILS.



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Match Line See Sheet C3.2



**NextGrid Solar Farm**  
1043-1045 Main Street  
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Not Approved for Construction  
Erosion & Sediment  
Control Plan 1



**C3.1**

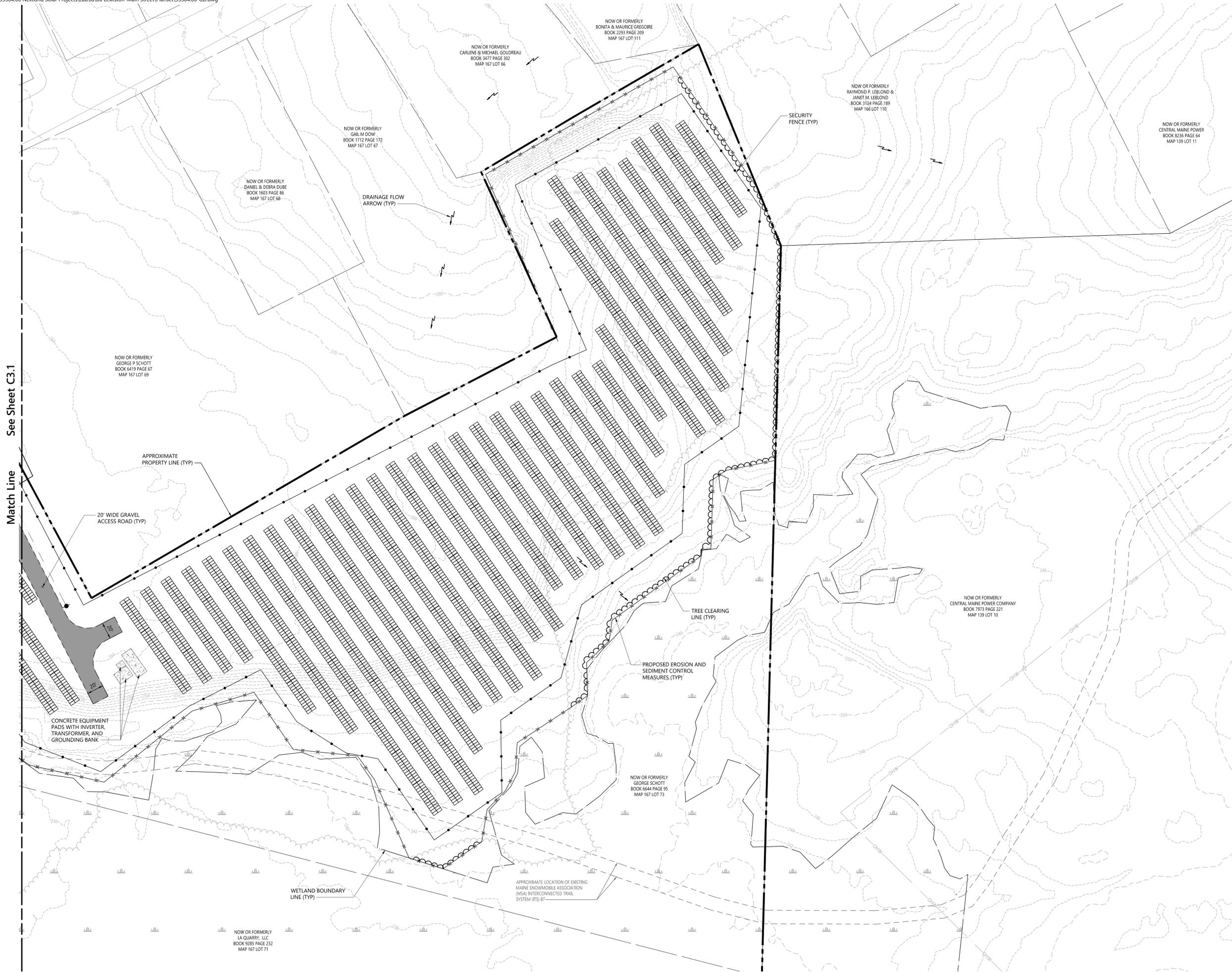
Sheet 4 of 12

Project Number  
55304.06

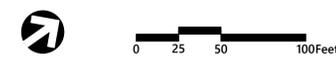
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Match Line See Sheet C3.1



### NextGrid Solar Farm

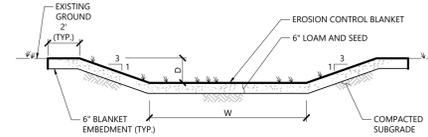
1043-1045 Main Street  
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Not Approved for Construction  
Erosion & Sediment  
Control Plan 2

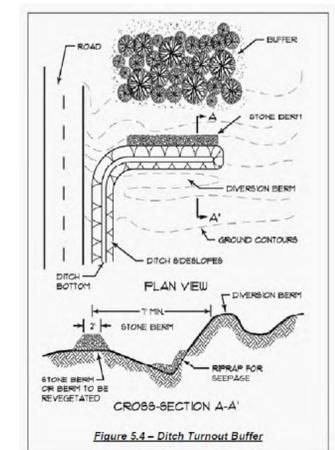


**C3.2**  
Sheet 5 of 12  
Project Number 55304.06



SWALE DESIGNATION	W	D

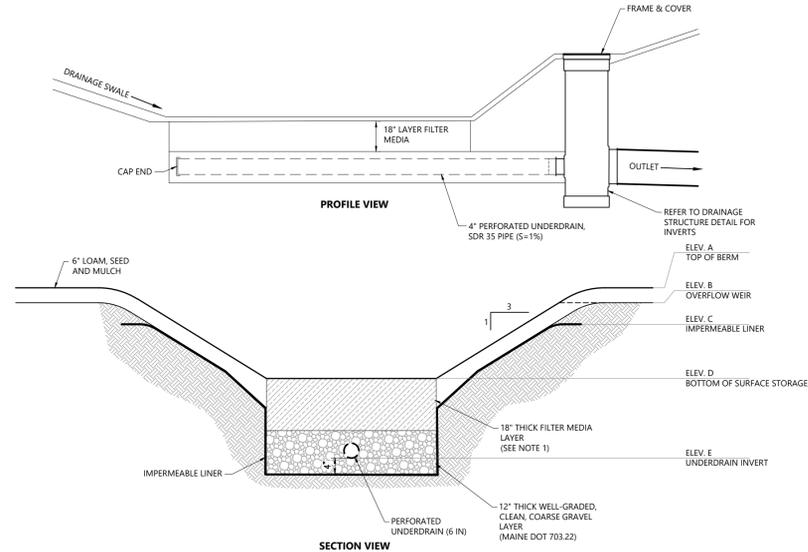
**Grassed Swale** 1/16  
N.T.S. Source: VHB LD\_171



**Figure 5.4 - Ditch Turnout Buffer**

- Stone Berm Specifications:** The stone berm to which the ditch turn-out delivers the runoff must be at least 20 feet in length and must be constructed along the contour. It must be at least one-foot high and two feet across the top with 2:1 side slopes.
- Stone Size:** The stone must be coarse enough that it will not clog with sediment. Stone for stone bermed level lip spreaders must consist of sound durable rock that will not disintegrate by exposure to water or weather. Fieldstone, rough quarried stone, blasted ledge rock or tailings may be used. The rock must be well graded with a median size of approximately 3 inches and a maximum size of 6 inches. See Table 5.4 above.

**Ditch Turnout Buffer** 1/16  
N.T.S. Source: MDEP LD\_171



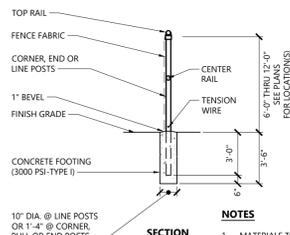
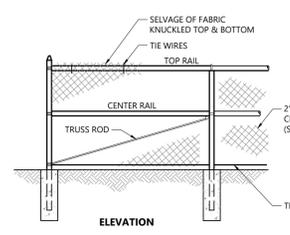
ELEVATION TABLE	VSF #	A	B	C	D	E

**NOTES**

- VEGETATED SOIL FILTER REQUIREMENTS PER MAINE DEP CHAPTER 500, LATEST EDITION. MINIMUM REQUIREMENTS PER THE DEVELOPMENT.
  - DRAIN TIME = 24-48 HOURS, ASSUMES AN RATE OF 3 INCHES/HOUR.
- FILTER MEDIA SHALL CONSIST (BY VOLUME) OF:
  - 50% SAND (ASTM C-33 CONCRETE SAND).
  - 20% SANDY LOAM TO FINE SANDY LOAM CONFORMING TO THE FOLLOWING GRADATION:
 

SIEVE (ASTM D422)	PERCENT PASSING BY WEIGHT
NO. 4	75-95
NO. 10	60-90
NO. 40	35-85
NO. 200	20-70
200 (CLAY SIZE)	< 2.0
  - 30% MATURE COMPOSTED WOODY FIBERS AND FINE SHREDDED BARK MULCH, SUPERHUMUS OR EQUIVALENT.
  - RESULTING MIXTURE SHALL HAVE 8% TO 12% PASSING THE NO. 200 SIEVE AND A CLAY CONTENT OF LESS THAN 2%.
- FILTER MEDIA SHALL BE FIELD TESTED TO INSURE DRAINAGE WITHIN 24 TO 48 HOURS AND HAVE SUFFICIENT FINES TO ENSURE FILTRATION OF FINE PARTICLES. GRADATION SHALL BE ADJUSTED, IF REQUIRED, TO MEET THE REQUIRED DRAIN TIME, ADJUSTED GRADATIONS AND DRAINAGE TIME SHALL BE SUBMITTED TO DESIGN ENGINEER FOR REVIEW AND APPROVAL.
- IMPERMEABLE LINER SHALL CONSIST OF HIGH-STRENGTH 30 MIL POLYETHYLENE MEMBRANE WITH BONDED SEAMS AND TEXTURED SURFACE.
- BOTTOM OF BASIN SHALL BE SEEDED WITH A CONSERVATION TYPE SEED MIX AND MULCHED.
- PERFORATED UNDERDRAIN PIPE SHALL BE LAID AS SHOWN IN PLAN VIEW. NO GREATER THAN 15' ON CENTER, TO DRAIN THE ENTIRE FILTER AREA.

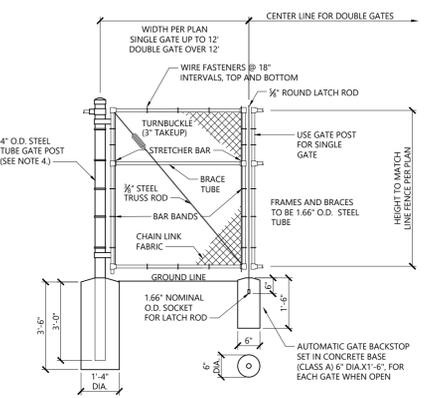
**Vegetated Soil Filter (VSF) Detail** 2/17  
N.T.S. Source: VHB LD\_480



**NOTES**

- MATERIALS TO BE SUPPLIED AND INSTALLED IN CONFORMANCE WITH 'CHAIN LINK MANUFACTURERS' INSTITUTE' PRODUCT MANUAL.
- FENCE VISIBLE FROM THE MAIN ENTRANCE SHALL BE GREEN VINYL COATED.

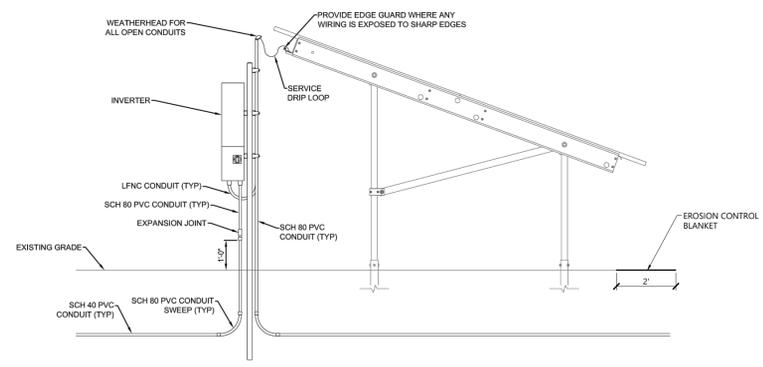
**7' Chain Link Fence** 1/16  
N.T.S. Source: VHB LD\_480



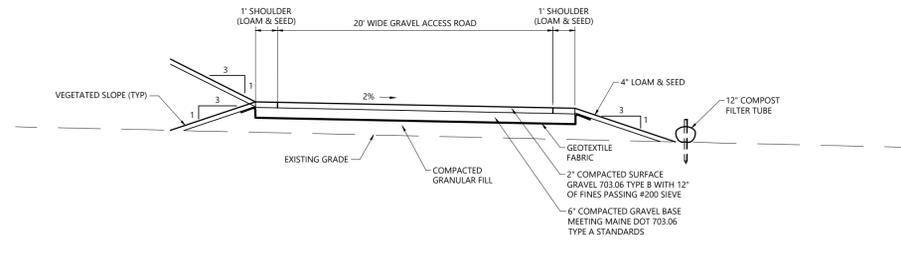
**NOTES**

- CHAIN LINK FABRIC FOR GATES TO BE THE SAME AS REQUIRED FOR FENCE.
- GATE POST BASE-PORTLAND CEMENT CONCRETE (3000 PSI).
- FENCE FABRIC, POSTS, FRAMEWORKS, AND HARDWARE SHALL BE GALVANIZED STEEL PER SPECIFICATIONS.
- GATE POSTS TO BE USED ON EACH SIDE OF SINGLE AND DOUBLE GATE OPENINGS.

**Chain Link Fence Gate** 1/16  
N.T.S. Source: VHB LD\_482



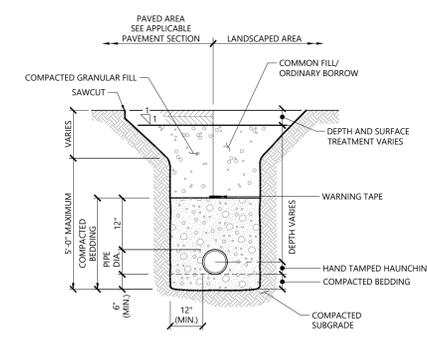
**Inverter and Array Detail (Side)** 1/16  
N.T.S. Source: VHB LD\_300



**NOTES**

- GRAVEL ACCESS ROAD SHALL HAVE A SURFACE BEARING CAPACITY OF 20,000 LBS (MR).

**Gravel Access Road - Typical Section** 1/16  
N.T.S. Source: VHB LD\_300



**NOTES**

- WHERE UTILITY TRENCHES ARE CONSTRUCTED THROUGH DETENTION BASIN BERMS OR OTHER SUCH SPECIAL SECTIONS, PLACE TRENCH BACKFILL WITH MATERIALS SIMILAR TO THE SPECIAL SECTION REQUIREMENTS.
- USE METALLIC TRACING/WARNING TAPE OVER ALL PIPES.

**Utility Trench** 1/16  
N.T.S. Source: VHB REV LD\_300

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**Permitting** February 28, 2020

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**Site Details**

Drawing Number

**C4.1**

Sheet 8 of 12

Project Number 55304.06

4/14/2020



**Construction Sequence**

1. SURVEY AND STAKE LIMITS OF CLEARING AND GRUBBING.
2. SURVEY AND STAKE (50 FT OC) LIMITS OF CLEARING AND DISTURBANCE.
3. INSTALL TEMPORARY EROSION CONTROL MEASURES (SILT FENCING, SILT SOCKS, CONSTRUCTION EXITS, ETC).
4. CLEAR AND GRUB WITHIN LIMIT OF ACCESS ROAD. LIMITS OF CLEARING INDICATE AREAS WHERE TREES WILL BE CUT AND STUMPS WILL REMAIN IN THE GROUND.
5. STRIP LOAM AND PAVEMENT OR RECLAIM EXISTING PAVEMENT WITHIN LIMITS OF WORK AND STOCKPILE EXCESS MATERIAL.
6. CONSTRUCT TEMPORARY SEDIMENTATION BERMS AS REQUIRED.
7. INSTALL DRAINAGE SYSTEM, AND OTHER UTILITIES IN ACCORDANCE WITH THE PLANS AND DETAILS.
8. PERFORM FINAL / FINE GRADING INCLUDING SLOPE STABILIZATION BLANKETS.
9. PERFORM ALL REMAINING SITE CONSTRUCTION (I.E. CONCRETE AND GRAVEL AREAS).
10. LOAM AND SEED ALL DISTURBED AREAS.
11. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER FINAL SURFACING IS INSTALLED, AND LANDSCAPING AREAS ARE ESTABLISHED AND STABILIZED.
12. CLEAN ALL DRAINAGE BASINS, STRUCTURES, PIPES, AND SUMPS WITHIN THE PROJECT LIMITS OF ALL SILT AND DEBRIS

**General**

1. CONTRACTOR SHALL READ, BE FAMILIAR WITH, AND SHALL FOLLOW THE MAINE EROSION AND SEDIMENT CONTROL BMPs MANUAL (LATEST EDITION) AND MAINE EROSION AND SEDIMENT CONTROL FIELD GUIDE FOR CONTRACTORS (LATEST EDITION), AND SHALL BE ACCOUNTABLE TO THE THIRD PARTY INSPECTOR FOR THE PROJECT AND THE MAINE DEP IN ACCORDANCE WITH MAINE DEP REGULATIONS.
2. PRIOR TO STARTING ANY OTHER WORK ON THE SITE, THE CONTRACTOR SHALL NOTIFY APPROPRIATE AGENCIES AND SHALL INSTALL TEMPORARY EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS IDENTIFIED IN FEDERAL, STATE, AND LOCAL APPROVAL DOCUMENTS PERTAINING TO THIS PROJECT.
3. CONTRACTOR SHALL BE FULLY RESPONSIBLE TO CONTROL CONSTRUCTION SUCH THAT SEDIMENTATION SHALL NOT AFFECT REGULATORY PROTECTED AREAS, WHETHER SUCH SEDIMENTATION IS CAUSED BY WATER, WIND, OR DIRECT DEPOSIT.
4. MINIMUM TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL MEASURES ARE SHOWN ON THE EROSION AND SEDIMENTATION CONTROL PLAN. THE CONTRACTOR SHALL ADHERE TO THE MINIMUM PROVISIONS SHOWN. ADDITIONALLY, TEMPORARY MEASURES SHALL BE SELECTED AND CONSTRUCTED BY THE CONTRACTOR IN CONSULTATION WITH THE ENGINEER TO ACCOMMODATE CHANGING FIELD CONDITIONS THAT DEVELOP DURING CONSTRUCTION.
5. PUMPED WATER FROM DEWATERING ACTIVITIES SHALL BE DISCHARGED INTO SETTLING BASINS, FILTER BAGS OR OTHER APPROVED METHODS PRIOR TO DISCHARGE INTO THE ON-SITE STORMWATER MANAGEMENT SYSTEM. ALL WATER FROM DEWATERING ACTIVITIES SHALL BE RECHARGED ON-SITE OR DIRECTED TO THE DETENTION BASIN FOR DISCHARGE.
6. NO MORE THAN 1 ACRE SHOULD BE UNSTABILIZED AT ONE TIME WITHOUT REGULAR INSPECTION OR LIMITED TO AN AREA THAT CAN BE MULCHED IN ONE DAY.

**Seeding/Mulching**

1. FERTILIZER, SUPERPHOSPHATE, AND LIME SHALL BE APPLIED AT RATES RECOMMENDED BY THE TESTING AGENCY AND APPROVED BY THE ENGINEER.
2. PERMANENT SEED SHALL BE SUPPLIED IN THE FOLLOWING PROPORTIONS AND APPLIED AT A RATE OF FIVE POUNDS PER 1,000 SF:  
SEED TYPE (% PROPORTION/% GERMINATION MIN./% PURITY MIN.)  
CREEPING FESCUE (50/85/90)  
KENTUCKY BLUEGRASS (40/85/90)  
MANHATTAN PERENNIAL RYE (10/90/95)
3. TEMPORARY SEED SHALL BE SUPPLIED IN THE FOLLOWING PROPORTIONS AND APPLIED AT A RATE OF 100 POUNDS PER ACRE:  
SEED TYPE (% WEIGHT MIN./% GERMINATION MIN.)  
WINTER RYE (80/85)  
RED FESCUE - CREEPING (4/80)  
PERENNIAL RYE GRASS (3/90)  
RED CLOVER (3/90)
4. MULCH SHALL BE APPLIED TO AREAS IMMEDIATELY AFTER THEY HAVE BEEN SEEDED. MULCH SHALL CONSIST OF HAY, STRAW, HYDR-MULCH, EROSION CONTROL BLANKETS, EROSION CONTROL MIX OR APPROVED EQUAL.
5. HAY OR STRAW MULCH SHALL BE AIR-DRIED, AND FREE OF UNDESIRABLE SEEDS AND COARSE MATERIALS. MULCH SHALL BE APPLIED AT A MINIMUM RATE OF 75 LB PER 1,000 SF. MULCH SHALL BE ANCHORED WITH NETTING WHEN APPLIED TO SLOPES LESS THAN 15 PERCENT.
6. EROSION CONTROL BLANKETS SHALL BE PROVIDED ON ALL SLOPES STEEPER THAN OF 1-FOOT RISE TO 3-FEET HORIZONTAL. BLANKETS SHALL BE SCISSOR BY (NORTH AMERICAN GREEN; CURLEX BLANKETS (AMERICAN EXCELSIOR COMPANY); POLYAUITE STYLE 465 GT (SYNTHETIC INDUSTRIES); OR APPROVED EQUIVALENT. BLANKETS SHALL BE SECURED AS RECOMMENDED BY THE MANUFACTURER.
7. EROSION CONTROL MIX SHALL MEET THE FOLLOWING STANDARDS:  
A. ORGANIC MATTER CONTENT SHALL BE BETWEEN 80%-100%, DRY WEIGHT BASIS.  
B. PARTICLE SIZE BY WEIGHT: 100% PASSING THE 6" SCREEN  
C. ORGANIC PORTION SHALL BE FIBROUS AND ELONGATED  
D. SOLUBLE SALTS CONTENT SHALL BE < 4.0 MMHOS/CM AND  
E. pH SHALL BE BETWEEN 5.0 AND 8.0.

**Temporary Erosion Control Measures**

1. CONTRACTOR SHALL PERFORM CONSTRUCTION SEQUENCING SUCH THAT EARTH MATERIALS ARE EXPOSED FOR A MINIMUM AMOUNT OF TIME BEFORE THEY ARE COVERED, SEEDED, OR OTHERWISE STABILIZED TO PREVENT EROSION. AREAS REMAINING UNSTABILIZED FOR A PERIOD OF MORE THAN 15 DAYS SHALL BE TEMPORARILY MULCHED. TOTAL EXPOSED AREAS SHALL BE LIMITED TO NO MORE THAN CAN BE MULCHED IN ONE DAY.
2. TEMPORARY MULCH SHALL BE APPLIED TO UNSTABILIZED AREAS WITHIN 100-FT OF STREAMS, WETLANDS, AND OTHER WATER RESOURCES WITHIN 3 DAYS OF EXPOSING SOIL AND PRIOR TO ANY STORM EVENT.
3. DUST SHALL BE CONTROLLED THROUGH THE USE OF WATER.
4. CONTRACTOR SHALL PROVIDE TEMPORARY SILTATION/DEWATERING BASINS, IF NECESSARY AND/OR AS DIRECTED BY THE ENGINEER, TO CONTROL SEDIMENTATION AND STORMWATER RUNOFF DURING THE CONSTRUCTION PERIOD. CONTRACTOR SHALL SUBMIT PROPOSED BASIN LOCATIONS, DESIGNS, ETC. TO THE ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION.
5. EARTH MATERIAL STOCKPILES SHALL BE LOCATED IN AREAS THAT HAVE A MINIMUM POTENTIAL FOR EROSION AND KEPT AS FAR AWAY AS POSSIBLE FROM EXISTING DRAINAGE COURSES, PROTECTED NATURAL RESOURCES, TREE DRIP LINES AND OUTSIDE OF THE 100 YEAR FLOOD PLAIN. SEDIMENT BARRIERS SHALL BE INSTALLED DOWNGRADIENT OF STOCKPILES. STORMWATER SHOULD BE DIRECTED AWAY FROM STOCKPILE LOCATIONS.
6. REPAIR, CLEAN, AND REPLACE ANY SEDIMENT CONTROLS DAMAGED DURING AND/OR AFTER RAINFALL EVENTS.
7. EROSION CONTROL BLANKETS SHALL BE PLACED IN THE FLOW LINE OF ALL VEGETATED SWALES NOT OTHERWISE PROTECTED BY STONE.
8. EROSION CONTROL BLANKETS OR NETTING OVER LOOSE MULCH SHALL BE APPLIED TO ALL VEGETATED SLOPES GREATER THAN 3:1.
9. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:  
A. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;  
B. A MINIMUM OF 90% VEGETATED GROWTH HAS BEEN ESTABLISHED;  
C. A MINIMUM OF 3-INCHES OF NON-EROSIVE MATERIAL, SUCH AS STONE OR RIPRAP, HAS BEEN INSTALLED;  
D. EROSION CONTROL BLANKETS OR EROSION CONTROL MIX HAVE BEEN PROPERLY INSTALLED.

**Permanent Erosion Control Measures**

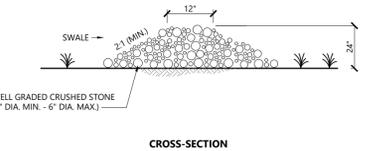
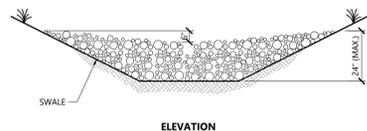
1. THE CONTRACTOR SHALL SUBMIT A WRITTEN MANUAL PREPARED FOR THE OWNER, THAT OUTLINES A SCHEDULE FOR PROPER MAINTENANCE OF THE LAWNS. THIS SCHEDULE SHOULD INCLUDE TIMING AND METHODS FOR MOWING, WATERING, AERATION, FERTILIZATION, LIMING, AND OTHER LAWN MAINTENANCE OPERATIONS.
2. SEEDING SHALL BE DONE BETWEEN APRIL 1 TO JUNE 1, OR BETWEEN AUGUST 15 TO OCTOBER 15.
3. ALL DISTURBED AREAS NOT COVERED BY BUILDINGS, PAVING, OR OTHERWISE DEVELOPED, SHALL BE COVERED WITH 6 INCHES LOAM AND SEED.

**Winter Construction**

1. WINTER CONSTRUCTION PERIOD: OCTOBER 15 THRU APRIL 15.
2. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT A MAXIMUM OF 1 ACRE OF THE SITE IS UNSTABILIZED AT ANY ONE TIME OR LIMITED TO AN AREA THAT CAN BE MULCHED IN ONE DAY.
3. HAY AND STRAW MULCH SHALL BE APPLIED AT A RATE OF 150 LB PER 1,000 SF OR 3 TONS/ACRE. MULCH SHALL BE APPLIED AND ANCHORED SO THAT THE GROUND SURFACE IS NOT VISIBLE THROUGHOUT THE MULCH. MULCH SHALL NOT BE APPLIED OVER SNOW.
4. MULCH SHALL NOT BE APPLIED WHERE THE SNOW DEPTH EXCEEDS ONE INCH. SNOW SHALL BE REMOVED PRIOR TO APPLICATION.
5. EROSION CONTROL BLANKETS SHALL BE APPLIED TO ALL VEGETATED SLOPES GREATER THAN 3:1.
6. A DOUBLE ROW OF SEDIMENT BARRIERS SHALL BE INSTALLED WITHIN 75 FEET OF A PROTECTED NATURAL RESOURCE.
7. DURING PERIODS WHEN TEMPERATURES ARE ABOVE FREEZING, AREAS SHALL BE FINE GRADED AND PROTECTED WITH EITHER MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL THE FINAL TREATMENT CAN BE APPLIED.
8. AFTER NOVEMBER 1 EXPOSED AREAS THAT HAVE BEEN LOAMED AND FINAL GRADED MAY BE DORMANT SEEDED AT A RATE OF 3 TIME THE PERMANENT SEED RATE AFTER THE FIRST KILLING FROST AND OVERWINTER MULCHED OR ANCHORED WITH EROSION CONTROL BLANKETS.
9. WINTER INSPECTIONS SHALL BE PERFORMED ONE A WEEK AND AFTER EACH RAINFALL, SNOWSTORM, OR THAW FOR VEGETATION GROWTH, EROSION, AND MAINTENANCE NEEDS.  
A. ALL AREAS INSUFFICIENTLY VEGETATED (LESS THAN 75% CATCH) SHALL BE STABILIZED FOR OVERWINTER PROTECTION.

**Site Inspection & Maintenance**

1. CONTRACTOR SHALL INSPECT AND MAINTAIN EROSION CONTROL MEASURES ON A WEEKLY BASIS AND BEFORE AND AFTER EACH STORM EVENT.
2. CONTRACTOR SHALL MAINTAIN WRITTEN INSPECTION AND MAINTENANCE LOGS FOR THE EROSION CONTROL MEASURES FOR THE DURATION OF THE CONSTRUCTION PERIOD. LOGS SHALL BE MADE AVAILABLE TO THE OWNER, ENGINEER, MUNICIPALITY, AND MAINE DEP UPON REQUEST.
3. TEMPORARY MULCHING: ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED TO AREAS WHERE LESS THAN 90% OF THE SOIL SURFACE IS COVERED WITH MULCH.
4. CATCH BASIN/SILT SACK SEDIMENT TRAPS: SEDIMENT SHALL BE REMOVED FROM TRAPS WHEN ACCUMULATION DEPTH IS GREATER THAN OR EQUAL TO 1/2 THE DESIGN DEPTH OF THE TRAP. TRAPS SHALL BE REPLACED IF THE ARE DAMAGED, TORN, ETC.
5. SILT SOCK BARRIERS, SILT FENCE BARRIERS AND STONE CHECK DAMS, SILT SOCK BARRIERS, SILT FENCE AND STONE CHECK DAMS SHALL BE REPAIRED IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM. SEDIMENT TRAPPED BEHIND BARRIERS/CHECK DAM SHALL BE REMOVED WHEN SEDIMENT DEPTH REACHES 6 INCHES. BARRIERS SHALL BE REPLACES WITH A TEMPORARY CHECK DAM IF THERE ARE SIGNS OF UNDERCUTTING OR IMPOUNDING LARGE VOLUMES OF WATER BEHIND THEM.
6. EROSION CONTROL BLANKETS: IF WASHOUTS OR BREAKAGE OCCURS, SLOPES SHALL BE REPAIRED, AND BLANKETS SHALL BE RE-INSTALLED.
7. STABILIZED CONSTRUCTION EXITS: EXITS SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. IF EXIT BECOMES INEFFECTIVE IT SHALL BE RECONSTRUCTED AND/OR REPLACED.
8. TEMPORARY SEDIMENTATION/DEWATERING BASINS: SEDIMENT IN TEMPORARY BASINS SHALL BE REMOVED AS NECESSARY DEPENDING ON THEIR USE AND DESIGN.
9. UPON COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF PERMANENT GROUND COVER, CONTRACTOR SHALL REMOVE AND DISPOSE OF EROSION CONTROL MEASURES AND CLEAN SEDIMENT AND DEBRIS FROM ENTIRE DRAINAGE SYSTEMS.
10. LONG-TERM MAINTENANCE OF THE PERMANENT EROSION CONTROL MEASURES SHALL BE THE RESPONSIBILITY OF THE OWNER.

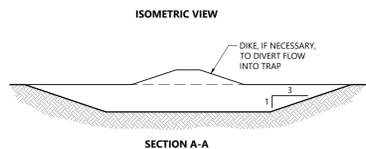
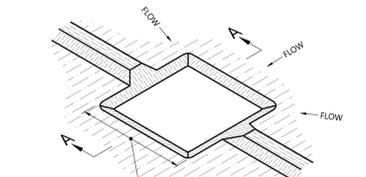


**NOTES**

1. TOP OF DOWNGRADIENT CHECKDAM AND BOTTOM OF UPGRADIENT CHECKDAM TO BE SET AT THE SAME ELEVATION.
2. STONE CHECKDAMS MAY BE REMOVED WHEN 90% OF THE VEGETATIVE COVER IS ESTABLISHED.

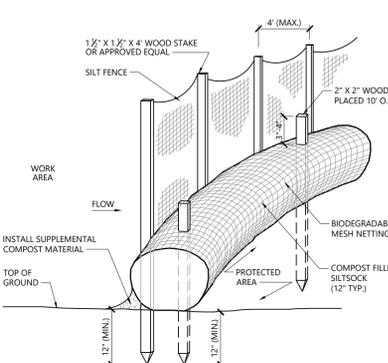
**Temporary Stone Checkdam**

N.T.S. Source: VHB REV



**NOTES**

1. THE TRAP SHALL BE INSTALLED AS CLOSE TO THE DISTURBED AREA OR SOURCE OF SEDIMENT AS POSSIBLE.
2. THE MAXIMUM CONTRIBUTING DRAINAGE AREA TO THE TRAP SHALL BE LESS THAN 5 ACRES.
3. THE MINIMUM VOLUME OF THE TRAP SHALL BE 3,600 CUBIC FEET OF STORAGE FOR EACH ACRE OF DRAINAGE AREA.
4. THE SIDE SLOPES OF THE TRAP SHALL BE 3:1 OR FLATTER, AND SHALL BE STABILIZED IMMEDIATELY AFTER THEIR CONSTRUCTION.
5. THE OUTFLET OF THE TRAP SHALL BE A MINIMUM OF ONE FOOT BELOW THE CREST OF THE TRAP AND SHALL DISCHARGE TO A STABILIZED AREA.
6. THE TRAP SHALL BE CLEANED WHEN 50 PERCENT OF THE ORIGINAL VOLUME IS FILLED.
7. THE MATERIALS REMOVED FROM THE TRAP SHALL BE PROPERLY DISPOSED OF AND STABILIZED.



**NOTES**

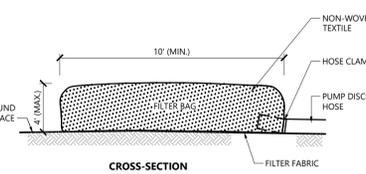
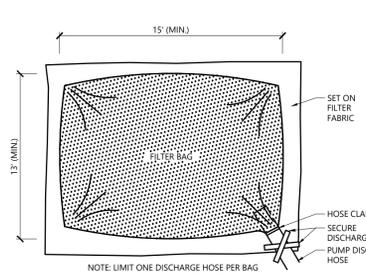
1. SILT SOCK SHALL BE FILTREXX SILT SOCK, OR APPROVED EQUAL.
2. SILT SOCKS SHALL OVERLAP A MINIMUM OF 12 INCHES.
3. SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.
4. COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.
5. IF NON BIODEGRADABLE NETTING IS USED THE NETTING SHALL BE COLLECTED AND DISPOSED OF OFFSITE.

**Siltsock / Silt Fence Barrier**

N.T.S. Source: VHB REV LD\_658-A

**Temporary Sediment Trap**

N.T.S. Source: NH Stormwater Manual



**NOTES**

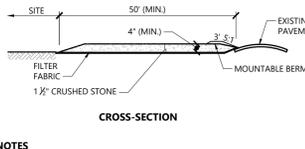
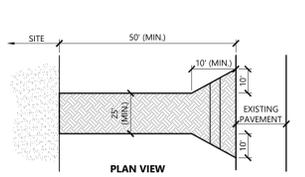
1. BAG TO BE USED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

**Dewatering Filter Bag**

N.T.S. Source: VHB REV LD\_691

**Stabilized Construction Exit**

N.T.S. Source: VHB REV LD\_682

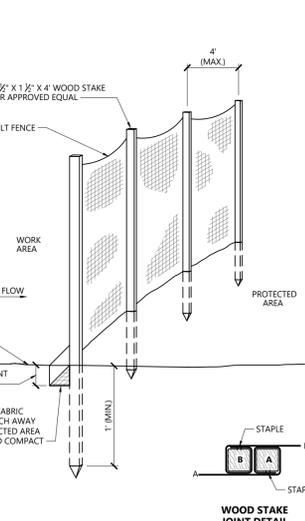


**NOTES**

1. EXIT WIDTH SHALL BE A TWENTY-FIVE (25) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
2. THE EXIT SHALL BE MAINTAINED IN A CONDITION WHICH SHALL 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 OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY. BERM SHALL BE PERMITTED, PERIODIC INSPECTION AND MAINTENANCE SHALL BE PROVIDED AS NEEDED.
3. STABILIZED CONSTRUCTION EXIT SHALL BE REMOVED PRIOR TO FINAL FINISH MATERIALS BEING INSTALLED.

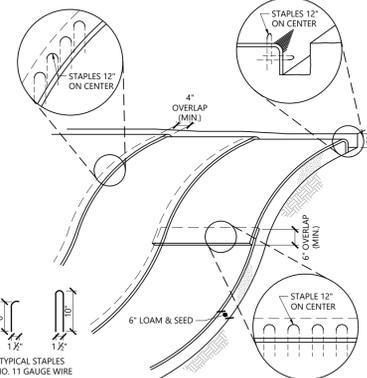
**Silt Fence Barrier**

N.T.S. Source: VHB REV LD\_650



**Erosion Control Blanket Slope Installation**

N.T.S. Source: VHB REV LD\_680



**NOTES**

1. BEGIN AT THE TOP OF BLANKET INSTALLATION AREA BY ANCHORING BLANKET IN A 6" DEEP TRENCH BACKFILL AND COMPACT TRENCH AFTER STARTING.
2. ROLL THE BLANKET DOWN THE SWALE IN THE DIRECTION OF THE WATER FLOW.
3. THE EDGES OF BLANKETS MUST BE STAPLED WITH APPROX. 4 INCH OVERLAP WHERE 2 OR MORE STRIP WIDTHS ARE REQUIRED.
4. WHEN BLANKETS MUST BE SPICED DOWN THE SWALE, PLACE UPPER BLANKET END OVER LOWER END WITH 6 INCH (MIN.) OVERLAP AND STAPLE BOTH TOGETHER.
5. METHOD OF INSTALLATION SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS.
6. EROSION CONTROL BLANKETS SHALL BE USED IN ALL AREAS WHERE SLOPES EXCEED 3:1.

**NextGrid Solar Farm**  
1043-1045 Main Street  
Lewiston, Maine 04240

No.	Revision	Date	Appr.

1	REVISED FOR CITY OF LEWISTON REVIEW	4/14/20	DHF
Designed by	PG	Checked by	CG
Issued for		Date	

Permitting February 28, 2020

**Not Approved for Construction**

**Erosion and Sediment Control Notes and Details**

Drawing Number

**C4.2**

Sheet 9 of 12

Project Number 55304.06

4/14/2020



MAIN STREET (Route 202)

Adjacent Single Family Residence

Adjacent Commercial

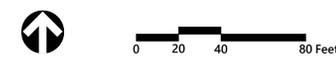
Adjacent Single Family Residence

Adjacent Commercial

Note: Provide 6' diameter mulch ring @ each tree location (typ.)

PLANT SCHEDULE

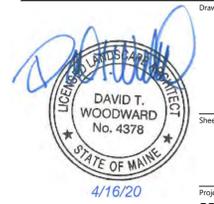
TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS	MATURE HEIGHT
	AF	22	Abies fraseri	Fraser Fir	B & B	7'-8' Ht., Closely Matching, Straight, Full to Base	25' HT. to 40' HT.
	JC	39	Juniperus virginiana 'Cupressifolia'	Hillspire Juniper	5 - 6' HT.	Closely Matching, Straight, Full to Base	15' HT. to 30' HT.
	PIC DEN	16	Picea glauca 'Densata'	Black Hills Spruce	7'-8' Ht.	Closely Matching, Straight, Full to Base	20' HT. to 30' HT.
	PF	6	Picea pungens 'Fat Albert'	Fat Albert Colorado Spruce	7'-8' Ht.	Closely Matching, Straight, Full to Base	10' HT. to 15' HT.
	TE	28	Thuja occidentalis 'Emerald'	Emerald Arborvitae	5'-6' Ht.	Closely Matching, Straight, Full to Base	12' HT. to 14' HT.



**NextGrid Solar Farm**  
1043-1045 Main Street  
Lewiston, Maine 04240

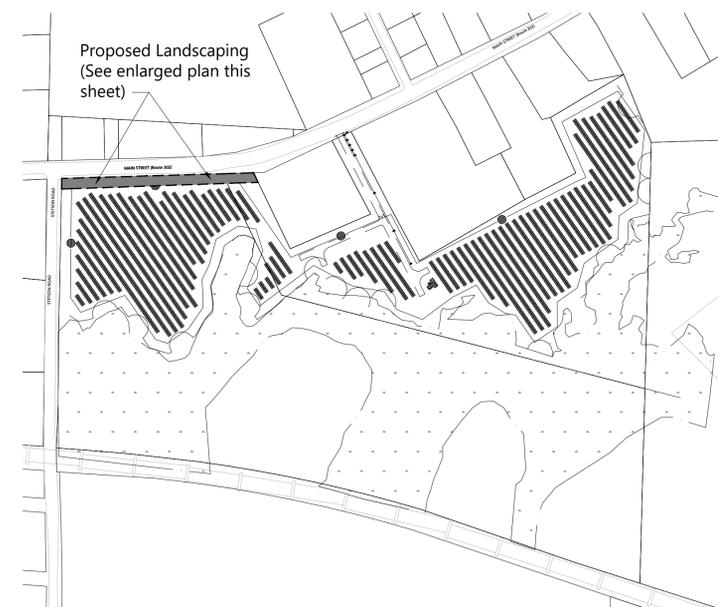
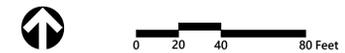
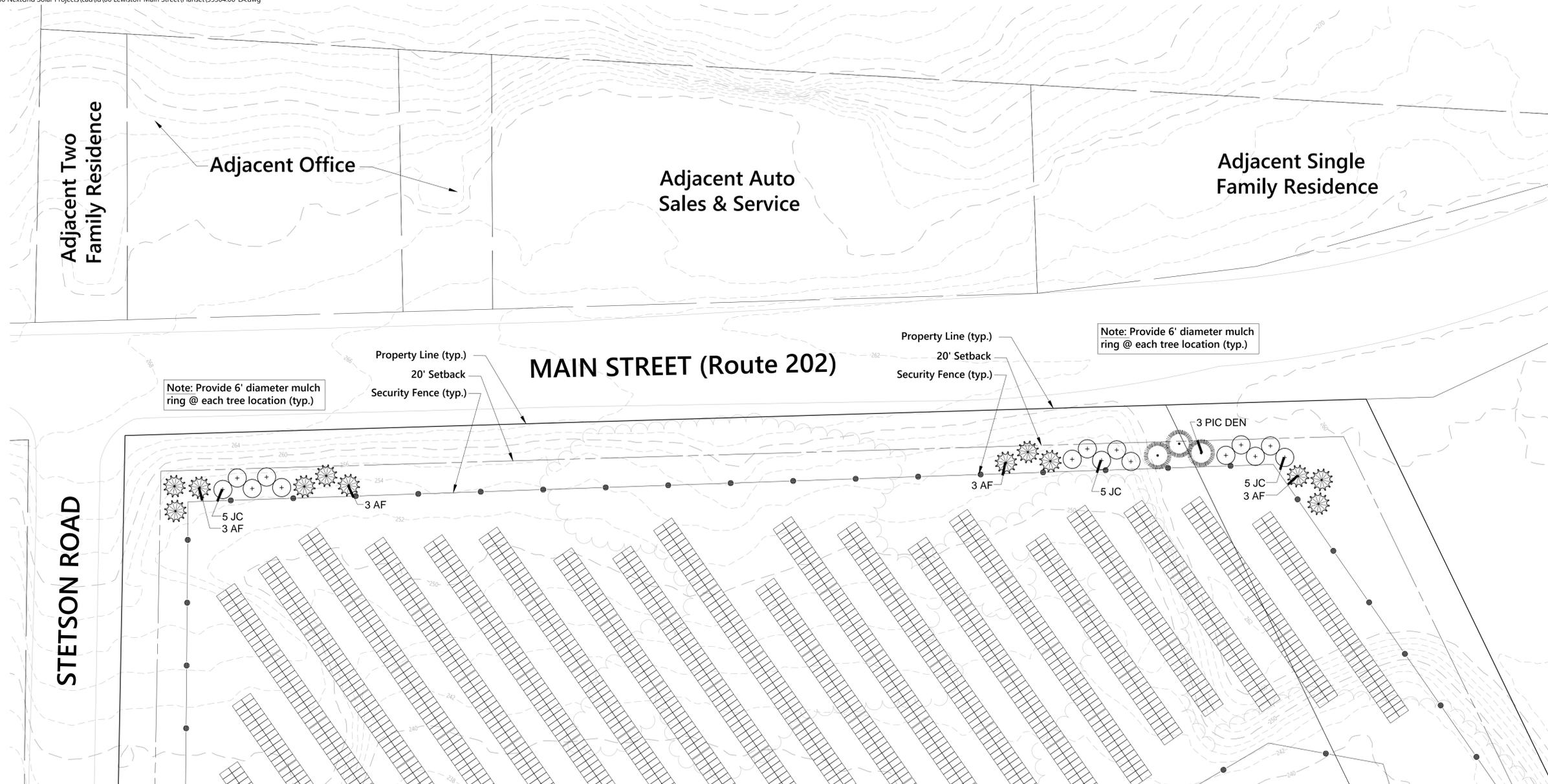
No.	Revision	Date	App'd.
1	REVISED FOR CITY OF LEWISTON REVIEW	4/14/20	DW
Designed by	DW	Checked by	GP
Issued for	Permitting	Date	February 28, 2020

Not Approved for Construction  
Drawing Title  
**Landscape Plan**



DAVID T. WOODWARD  
No. 4378  
STATE OF MAINE

Sheet **L-1** of 12  
Project Number 55304.06



**NextGrid Solar Farm**  
1043-1045 Main Street  
Lewiston, Maine 04240

No.	Revision	Date	App'd.
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Designed by		Checked by	
DW		GP	
Issued for		Date	
Permitting		February 28, 2020	

Not Approved for Construction  
Drawing Title  
**Landscaping Plan**

DAVID T. WOODWARD  
LICENSED LANDSCAPE ARCHITECT  
STATE OF MAINE  
No. 4378  
4/16/20

**L-2**

Sheet 11 of 12

Project Number  
55304.06

**Tree Protection**

- EXISTING TREES TO REMAIN SHALL BE PROTECTED WITH TEMPORARY CONSTRUCTION FENCE. ERECT FENCE AT EDGE OF THE TREE DRIPLINE PRIOR TO START OF CONSTRUCTION.
- CONTRACTOR SHALL NOT OPERATE VEHICLES WITHIN THE TREE PROTECTION AREA. CONTRACTOR SHALL NOT STORE VEHICLES OR MATERIALS, OR DISPOSE OF ANY WASTE MATERIALS, WITHIN THE TREE PROTECTION AREA.
- DAMAGE TO EXISTING TREES CAUSED BY THE CONTRACTOR SHALL BE REPAIRED BY A CERTIFIED ARBORIST AT THE CONTRACTOR'S EXPENSE.

**Edge of Woods Clearing**

- EXISTING TREES TO REMAIN SHALL BE PROTECTED WITH TEMPORARY EROSION CONTROL FENCE AND HAY BALE BARRIER. ERECT BARRIER AT EDGE OF THE EARTHWORK CUT LINE PRIOR TO TREE CLEARING. LAY OUT THIS LINE BY FIELD SURVEY.

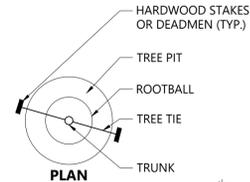
**Planting Notes**

- ALL PROPOSED PLANTING LOCATIONS SHALL BE STAKED AS SHOWN ON THE PLANS FOR FIELD REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
- CONTRACTOR SHALL VERIFY LOCATIONS OF ALL BELOW GRADE AND ABOVE GROUND UTILITIES AND NOTIFY OWNERS REPRESENTATIVE OF CONFLICTS.
- NO PLANT MATERIALS SHALL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA. CONTRACTOR SHALL NOTIFY OWNER'S REPRESENTATIVE OF ANY CONFLICT.
- A 3-INCH DEEP MULCH PER SPECIFICATION SHALL BE INSTALLED UNDER ALL TREES AND SHRUBS, AND IN ALL PLANTING BEDS, UNLESS OTHERWISE INDICATED ON THE PLANS, OR AS DIRECTED BY OWNER'S REPRESENTATIVE.
- ALL TREES SHALL BE BALLED AND BURLAPPED, UNLESS OTHERWISE NOTED IN THE DRAWINGS OR SPECIFICATION, OR APPROVED BY THE OWNER'S REPRESENTATIVE.
- FINAL QUANTITY FOR EACH PLANT TYPE SHALL BE AS GRAPHICALLY SHOWN ON THE PLAN. THIS NUMBER SHALL TAKE PRECEDENCE IN CASE OF ANY DISCREPANCY BETWEEN QUANTITIES SHOWN ON THE PLANT LIST AND ON THE PLAN. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES BETWEEN THE NUMBER OF PLANTS SHOWN ON THE PLANT LIST AND PLANT LABELS PRIOR TO BIDDING.

**Plant Maintenance Notes**

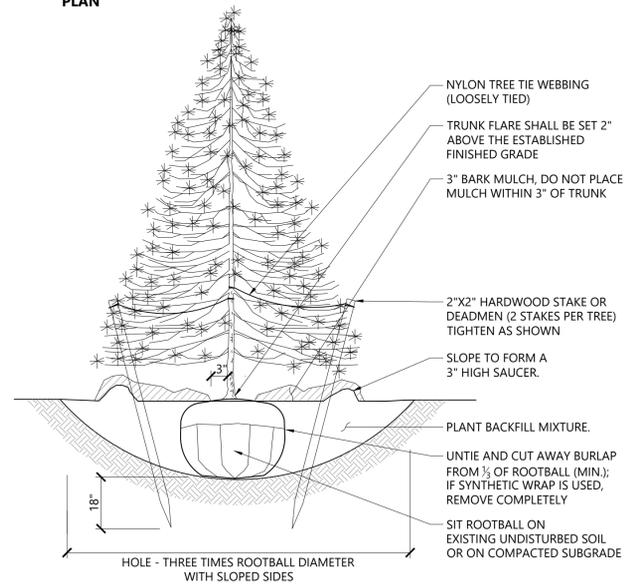
- CONTRACTOR SHALL PROVIDE COMPLETE MAINTENANCE OF THE LAWNS AND PLANTINGS. NO IRRIGATION IS PROPOSED FOR THIS SITE. THE CONTRACTOR SHALL SUPPLY SUPPLEMENTAL WATERING FOR NEW LAWNS AND PLANTINGS DURING THE ONE YEAR PLANT GUARANTEE PERIOD.
- CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR, AND EQUIPMENT FOR THE COMPLETE LANDSCAPE MAINTENANCE WORK. WATER SHALL BE PROVIDED BY THE CONTRACTOR.
- WATERING SHALL BE REQUIRED DURING THE GROWING SEASON, WHEN NATURAL RAINFALL IS BELOW ONE INCH PER WEEK.
- WATER SHALL BE APPLIED IN SUFFICIENT QUANTITY TO THOROUGHLY SATURATE THE SOIL IN THE ROOT ZONE OF EACH PLANT.
- CONTRACTOR SHALL REPLACE DEAD OR DYING PLANTS AT THE END OF THE ONE YEAR GUARANTEE PERIOD. CONTRACTOR SHALL TURN OVER MAINTENANCE TO THE FACILITY MAINTENANCE STAFF AT THAT TIME.

- ANY PROPOSED PLANT SUBSTITUTIONS MUST BE REVIEWED BY LANDSCAPE ARCHITECT AND APPROVED IN WRITING BY THE OWNER'S REPRESENTATIVE.
- ALL PLANT MATERIALS INSTALLED SHALL MEET THE SPECIFICATIONS OF THE "AMERICAN STANDARDS FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN AND CONTRACT DOCUMENTS.
- ALL PLANT MATERIALS SHALL BE GUARANTEED FOR ONE YEAR FOLLOWING DATE OF FINAL ACCEPTANCE.
- AREAS DESIGNATED "LOAM & SEED" SHALL RECEIVE MINIMUM 6" OF LOAM AND SPECIFIED SEED MIX. LAWNS OVER 2:1 SLOPE SHALL BE PROTECTED WITH EROSION CONTROL FABRIC.
- ALL DISTURBED AREAS NOT OTHERWISE NOTED ON CONTRACT DOCUMENTS SHALL BE LOAM AND SEEDED OR MULCHED AS DIRECTED BY OWNER'S REPRESENTATIVE.
- THIS PLAN IS INTENDED FOR PLANTING PURPOSES. REFER TO SITE / CIVIL DRAWINGS FOR ALL OTHER SITE CONSTRUCTION INFORMATION.



**NOTES**

- STAKING IS NOT REQUIRED FOR TREES UNDER 10' HIGH.
- PAINT TOP OF STAKES ORANGE OR REFLECTIVE RED TAPE.



**Evergreen Tree Planting**

1/16

N.T.S.

Source: VHB

LD\_604



**TREEGATOR® JR. PRO**  
SLOW RELEASE WATERING BAG FOR EVERGREENS, TREES AND SHRUBS

**BENEFITS:**

- Ideal for newly planted trees, evergreens or shrubs.
- Reduces transplant and drought shock.
- 100% absorption eliminates water waste.
- Install and fill in minutes with no tools required.
- Just place, fill, and walk away!
- Color and low-profile blends with landscape.
- Removable dual emitter system.
- Deep water saturation with every application.
- Fill just 1 to 2 times per week, or as needed.\*\*
- Promotes deep root growth.
- Made in the U.S.A. with a 3-year limited warranty.

\*\*REFER TO WATERING CAPACITY / FREQUENCY CHART SHOWN BELOW

**DESCRIPTION:**

Professionally water any newly planted tree or shrub with a Treegator® Jr. Pro Slow Release Watering Bag! Dual emitters continuously provides water over a 5 to 8 hour time period with no run-off. Brown color and low profile blends with existing landscape and reduces visibility while in use. Installs in minutes with no tools. Requires filling just 1 to 2 times per week. Just place, fill, and walk away!

**SPECS:**

Fits plantings up to 5 inches in trunk caliper.  
Made of brown PVC with "gator-skin" embossing.  
Removable dual PVC emitters.  
Continuously waters for 5 to 8 hours.  
Convenient handle allows for easy filling.  
Recommended for use on a level surface or properly built mulch pile to ensure proper drainage.

**DIRECTIONS FOR USE:**

Place Treegator® Jr. Pro on flat ground, or on top of a properly built mulch pile (recommended).  
Wrap both sides of bag around trunk.  
Open the top of the red fill valve cap and insert hose.  
Lift up on handle and fill with water to desired level.  
While lifting on handle, remove hose end, and close red fill valve cap tightly and securely.  
Bag will be empty in approximately 5 to 8 hours.  
Fill bag 1 to 2 times per week, or as needed.  
When not in use, remove from around planting, and store in a cool, dry place until next use.  
Do not use in temperatures below 40 degrees Fahrenheit.

**MEASUREMENTS:**

Full - 35" diameter x 6" high

**WATERING CAPACITY / FREQUENCY CHART:**

Treegator® Jr. Pro	Trunk Caliper (diameter)	Recommended Fills per Week
 15 gallon capacity	1 to 2 inch (3 to 5 cm)	1 Fill per Week
	2 to 3 inch (5 to 8 cm)	2 Fills per Week
	4 to 5 inch (10 to 13 cm)	3 Fills per Week



**NextGrid Solar Farm**  
1043-1045 Main Street  
Lewiston, Maine 04240

No.	Revision	Date	Apprd.
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Designed by DW		Checked by GP	
Issued for Permitting		Date February 28, 2020	

Not Approved for Construction  
Drawing Title  
**Landscape Notes and Details**

Sheet 12 of 12  
Project Number 55304.06  
4/16/20



**L-3**

**Treegator Jr. Pro at Evergreen Trees**

N.T.S.

Source: Treegator



## CITY OF LEWISTON

### Department of Planning & Code Enforcement

TO: Lewiston Planning Board

FROM: Douglas Greene, AICP, RLA, City Planner

DATE: April 27, 2020

RE: Agenda Item 4d, Development Review and Conditional Use application for a Solar Facility at 1875 Lisbon Street

---

VHB Engineers, an agent for NextGrid Inc. has submitted a Development Review and Conditional Use Application to construct a 1.879 MWdc solar facility covering 13.19 acres on a property located at 1875 Lisbon Street.

#### PROJECT DESCRIPTION

The property at 1875 Lisbon Street is a vacant parcel, zoned Highway Business (HB) District, and contains an access road that leads to 1875 Lisbon Street (rear), which is owned by Central Maine Power (CMP) Company and is the location of a large electric substation. The applicant has an option to purchase the property from the owner, 1875 Lisbon Road, LLC. Access to the project is from the CMP access road, which is located a few hundred feet away from Lisbon Street. A short, 20 foot-wide access road into the project has a "T turn-around" provided for emergency vehicles. A security fence and entrance gate will limit access to the site.

The site work for the project will involve clearing 7.84 acres of trees, disturb a total of 9.55 acres through grading, and have 3,943 sf. of wetland impacts. The estimated size of the solar array is approximately 95,160 sf. (2.18 ac.) and contains an estimated 4,758 panels. Subject to Planning Board approval and selection by the Maine Public Utilities Commission (PUC) competitive bid process (award date of 8/31/20), the applicant would like to start work by September of 2020 with construction lasting around eight months. Traffic during construction will involve 100-125 construction personnel and 10-15 office staff with an estimated trip generation of approximately 93 trips during the AM and PM peak hours. Once the project is operational, the facility will be unmanned, with the exception of a small crew for mowing and maintenance.

The panel area will be graded and seeded in the fall, which will allow the vegetation to become established before the installation of the panels in the spring. Once in operation, the area underneath and between panels will be mowed no more than twice yearly and maintained as erosion controlling meadow growth. The 1.879 MWdc of electricity generated will interconnect into the Central Maine Power distribution circuit.

The solar facility project and surrounding area along Lisbon Street are zoned HB. An adjacent, legal non-conforming residential use at 1891 Lisbon Street is south of the project, and the applicant is providing a mixed, evergreen planting to buffer that property.

## TYPES OF APPROVALS

The Planning Board and City Council recently approved a zoning text amendment adding solar facilities to a new use category, utility structures, as a conditional use in all zoning districts. Large scale conditional use projects such as this, are considered major development review projects.

Development Review Approval- the Planning Board needs to review and approve the development review application using Article XIII, Development Review and Standards, Section 4, Approval Criteria. The applicant has included a narrative in their application that addresses each of the approval criteria.

Conditional Use Approval- the Planning Board needs to review and approve the conditional use application using Article X, Conditional Uses, Section 3, Standards for Conditional Use Permits. Conditional Use Standards, in general, look to ensure that the proposed development will not negatively impact surrounding property values or produce noise, odors, vibrations, or create negative transportation, visual or environmental impacts. The applicant submitted a narrative the addresses the Standards for Conditional Use Permits.

One of the main concerns by the Staff on the project complying with the Conditional Use standards was avoiding negative visual impacts on surrounding residential uses. The applicant has provided evergreen buffering to screen the visual effect of the solar facility at 1891 Lisbon Street.

Local Delegated Review- The City of Lewiston has delegated review authority for the approval of stormwater management for projects with areas of disturbance under 20 acres and impervious areas under one acre. The project is required to comply with DEP's Chapter 500 Stormwater Management Rule.

### Other State and Federal Permits-

The applicant is also seeking federal and state approval for:

- Maine Natural Resources Protection Act Permit (NRPA)
- Maine Storm Water Permit by Rule
- Maine Stormwater Construction General Permit
- U.S. Army Corps of Engineers Section 404 Permit

## STAFF REVIEW and COMMENTS

The Staff discussed the following items during the Staff Review process:

1. Several corrections to the site plan were requested and made. (Signature block, additional notes, etc.)
2. Decommissioning- Many communities require large solar projects such as this to provide a means to decommission and remove the equipment at such time that the facility is no longer is in operation after 12 months. The applicant has added a note to the site plan regarding a commitment to decommission the project if necessary.
3. A note added to the revised plans now states that construction activity will occur from 7 am until 7 pm or from sunrise to sunset, whichever is less. TheStaff notes that noise ordinance still applies during work hours.

4. At the request of Public Works, the applicant has provided plans stamped by a Maine Licensed Professional Engineer.
5. Public Works requested final calculations for all stormwater calculations. The applicant has asked that details for the sizing of silt socks, location of BMPs, and a stormwater operation and maintenance plan are developed and approved by the City of Lewiston before the issuance of any permit approvals, and construction activity can begin. Public Works has agreed with the request.

All other review comments from city staff have been addressed to Staff's satisfaction with revisions provided by the applicant.

#### **STAFF RECOMMENDATION**

Staff recommends **APPROVAL** of the proposed project with the following condition.

1. The applicant will provide details the sizing of silt socks, location of BMPs, and a stormwater operation and maintenance plan are developed and approved by the City of Lewiston before the issuance of any permit approvals, and construction activity can begin.

#### **ACTION NECESSARY**

Make a motion that the application submitted by VHB on behalf of NextGrid, Inc. to construct a 1.879 MWdc solar facility covering 13.19 acres at 1875 Lisbon Street meets all of the necessary criteria and standards contained in the Zoning and Land Use Code, including, but not limited to Article XIII, Development Review and Standards, Section 4, Approval Criteria and Article X, Conditional Uses, Section 3, Standards for Conditional Use Permits and that approval be granted (including if any, specific conditions raised by the Planning Board or Staff).



April 20, 2020

Ref: 55304.00

Doug Greene  
Deputy Director / City Planner  
27 Pine St., 3rd Floor  
Lewiston, ME 04240

Re: **Application for Site Plan Review  
Lisbon Street Solar Project**

Dear Mr. Greene:

On behalf of NextGrid, Inc. (NextGrid), Vanasse, Hangen, Brustlin, Inc. (VHB) is pleased to submit a revised Development Review and Conditional Use application for the Lisbon Street Solar Project (the Project) to be located at 1875 Lisbon Street in Lewiston, Maine. We appreciate the input provided by City of Lewiston staff on our initial submission and for ease of review have provided our responses to these requests with this letter.

Please find enclosed 12 hard copies of the required application form and the following Attachments:

- Development Review and Standards Narrative (Provided as Attachment A)
- Conditional Use Permit Narrative (Provided as Attachment B)
- Copy of redacted lease agreement (Provided as Attachment C)
- Soil report (Provided as Attachment D)
- Site Plans for existing conditions and the proposed Project

As we discussed, we are providing nine copies of the Site Plans printed 11" x 17" sheets and three "full-size" copies.

**Project Overview:**

NextGrid is proposing to install and operate a 1.879 MWdc solar array at 1875 Lisbon Street in Lewiston, Maine that will interconnect into the Central Maine Power distribution circuit. Project is participating in a Maine Public Utilities Commission (PUC) competitive bid process for clean energy. Under this process, an applicant must have all of their non-ministerial permits in hand by June 11, 2020 with an expected award date of August 31, 2020.

Thank you for your timely review of the enclosed materials. Please do not hesitate to contact me at GPaquette@VHB.com or (207) 889-3102, if you have any questions regarding the Project. We look forward to meeting with the Planning Board to discuss the Project.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Gil Paquette', is written over a light blue circular stamp.

Gil Paquette  
Director, Energy/Environmental Services



## RESPONSE TO CITY OF LEWISTON STAFF COMMENTS ON LISBON STREET PROJECT

### Planning Staff comments

**1. Add Planning Board approval/signature block to plans (Sheet 1).**

Approval/signature block has been added to Sheet 1 of Site Plan.

**2. Change the title of the plan to Site Plan (Sheet 1 and 2) and remove Erosion and Sediment Control Plan**

Plan titles have been revised per comment.

**3. Need to add notes to Site Plan(s). (Purpose of plan, maintenance of grounds and any stormwater facilities, decommissioning, etc.)**

Additional General Notes have been added to the Site Plan. For decommissioning, the following note has been added:

*"Decommissioning of the Project shall commence after 12 consecutive months of no power generation at the facility except in the case of a natural disaster, act of violence, or other event which results in the absence of electrical generation for 12 months. The Applicant or its successor as owner of the Project at that time will be solely responsible for decommissioning the Project, which will consist of:*

- *Be responsible for all decommissioning costs;*
- *Obtain any additional permits required for the decommissioning, removal, and legal disposal of Project components prior to commencement of decommissioning activities;*
- *Remove and dispose of all above-ground infrastructure, including arrays, inverter structures, concrete foundations and pads, and fences, and grade and revegetate in accordance with permits and in compliance with all applicable rules and regulations then in effect governing the disposal thereof;*
- *Remove all hazardous materials and transport them to be disposed of by licensed contractors at an appropriate facility in accordance with rules and regulations governing the disposal of such materials; and*
- *Removed materials shall be recycled and/or salvaged to the maximum extent practical and all waste streams shall be managed in accordance with the State of Maine's solid waste requirements.*

**4. Add property information to the adjacent properties.**

Property owner information has been added to the Site Plan sheets.

**5. Add driveway width.**

Width of existing driveways has been added to the Site Plan.

**6. Determine the status of DEP approval. (under 20 acres of disturbed area, 12.2 ac proposed)**

Attachment A for the application has been updated to confirm that, based on the area of disturbance, a Site Location of Development permit is not required. The following language has been added: *The area of disturbance is under 20 acres and therefore a Site Location of Development permit is not required.*

**7. Provide all required state and federal permits prior to the issuance of a building permit.**

Comment noted.

**8. What will the hours of operation be during construction?**

Sheet 1 of the Site Plan, Attachment A, Section (b) and Attachment B, Sections 1 (b) and (c) have all been updated for all three applications with the following language: *Construction will occur from 7am until 7pm or from sunrise to sunset, whichever is less.*

**9. Show the location of the inverter on the property.**

The PV inverters will be mounted throughout the array.

**10. Please provide mature heights of evergreens shown in the landscape plan.**

The Landscaping plans now provide the expected mature height for all trees.

**Public Works Comments**

**1. Plans should be stamped and signed by a Maine Licensed Professional Engineer**

The revised plans are signed and sealed by a Maine Licensed Professional Engineer.

**2. Provide calculations for sizing of silt sock as shown on the detail**

The drawings provided in the application are intended to be permit-level design. Once the Project is approved, issued-for-construction drawings will be developed that provide the level of detail requested in this comment. To address this issue, the following language has been added to Sheet 1 of the Site Plan: *Prior to any development activity or permit approvals, the stormwater and erosion control elements of the site plans will be reviewed and approved by the City of Lewiston.*

In addition, the following language has been added to Attachment A of the application: *The Site Plans provided are intended to be permit-level design. Details such as the sizing of silt socks, location of BMPs such as vegetated soil filters and ditch turn-around buffers, and a stormwater BMP operation and maintenance plan will be developed as part of the issued-for-construction plans and associated materials. The Applicant will provide this documentation for City review and comment prior to construction.*

**3. Provide plans/calculations/narrative to address the requirements of Article XIII, Section 4(f)**

Attachment A has been updated to reflect that the Applicants are seeking a waiver from the requirements related to plans / calculations, which is consistent with what the Maine Department of Environmental Protection has required in Permit-by-Rule applications for solar sites.

**4. Plan Details include vegetated soil filter and ditch turnout buffer. Please indicate the locations of these BMPs on the site plans.**

Please see response to Comment #2.

**5. It is assumed that the site will be maintained as a meadow for stormwater treatment purposes and not mowed more than twice a year. Please add appropriate notes for stormwater buffers/mowing.**

Yes, this is correct. The following note has been added to Sheet 1 of the Site Plan: *The site will be maintained as meadow for stormwater treatment purposes and not mowed more than twice a year.*

**6. Provide a stormwater BMP operation and maintenance plan.**

Please see response Comment #2.

**Fire Department Comment:**

- 1. Add note to plan Sheet 1, "Access road through the site shall be kept clear year round.**

This note has been added.

- 2. Please provide a 20' wide access drive**

The width of the access road on site has been increased to 20' wide for the Lisbon Street project.



# 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	0	sq. ft.
Proposed Total Impervious Area	7,247	sq. ft.
Proposed Impervious Net Change	7,247	sq. ft.
Impervious surface ratio existing	0	% of lot area
Impervious surface ratio proposed	0.1	% of lot area

## BUILDING AREA/LOT COVERAGE

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

## ZONING

Existing	
Proposed, if applicable	Highway Business

## LAND USE

Existing	Vacant
Proposed	Utility

## RESIDENTIAL, IF APPLICABLE

Existing Number of Residential Units	0
Proposed Number of Residential Units	0
Subdivision, Proposed Number of Lots	0

## PARKING SPACES

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

## ESTIMATED COST OF PROJECT

~\$2,500,000

## DELEGATED REVIEW AUTHORITY CHECKLIST

### SITE LOCATION OF DEVELOPMENT AND STORMWATER MANAGEMENT

Existing Impervious Area	0	sq. ft.
Proposed Disturbed Area	416,009	sq. ft.
Proposed Impervious Area	7,247	sq. ft.

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

### TRAFFIC ESTIMATE

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

Total traffic estimated in the peak hour-proposed (Since July 1, 1997) See Attachment A \_\_\_\_\_ 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: 13.1 acres / 570,552 square feet(sf).

<b>Regulations</b>	<u>Required/Allowed</u>	<u>Provided</u>
Min Lot Area	20,000 sf	/ 570,552 sf
Street Frontage	150 ft	/ 162 ft
Min Front Yard	20 ft	/ 91 ft
Min Rear Yard	20 ft	/ 45
Min Side Yard	20 ft	/ 20
Max. Building Height	65 ft	/ 10 ft (array)
Use Designation	Utility	/ Utility
Parking Requirement	1 space/ per _____ square feet of floor area	
Total Parking:	0	/ 0
Overlay zoning districts (if any):	_____ / _____ / _____	
Urban impaired stream watershed?	YES/NO If yes, watershed name <u>No</u>	

## DEVELOPMENT REVIEW APPLICATION SUBMISSION

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

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

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

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

**Auburn:** [www.auburnmaine.org](http://www.auburnmaine.org) under City Departments/ Planning and Permitting/Land Use Division/ [Zoning Ordinance](#)

**Lewiston:** <http://www.ci.lewiston.me.us/clerk/ordinances.htm> Refer to Appendix A of the Code of Ordinances

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

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

Signature of Applicant: 	Date: April 14, 2020
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# Development Review Checklist

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



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

**PROJECT NAME:** Lisbon Street Solar Project

**PROPOSED DEVELOPMENT ADDRESS and PARCEL #:** 1875 Lisbon Street, Lewiston (Parcel ID: RE00007265)

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

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

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

## **Attachment A**

### **Narrative and Review of Article XIII Section 4 Criteria**

## DEVELOPMENT REVIEW AND STANDARDS NARRATIVE

NextGrid Renewable Energy (Applicant) is proposing to install and operate a 1.879 MWdc solar array at 1875 Lisbon Street in City of Lewiston (City), Maine. The proposed Project includes solar panels, associated electrical equipment, perimeter fencing and site access. The facility will interconnect into the Central Maine Power distribution circuit. The Project would be built under the Affordability of Clean Energy for Homeowners and Businesses under Efficiency Maine Trust and would provide a long-term, stably priced renewable power resource which would benefit local municipal electric departments and their taxpayers. Pending approvals, the Project is anticipated to start work by September 7, 2020, with an anticipated construction period of 8 months in duration. The current uses of the lot are agriculture and undeveloped (including forestry). A portion of the forested sections of the lot will be cleared to allow for construction of the project. A copy of the lease agreement is provided as Attachment C to this application.

Construction of the Project will begin with establishing base lines and demarcating the Project limit of work. Following installation of temporary erosion and sediment control measures such as silt fence and erosion control mix (ECM), the site will be cleared and grubbed as necessary. The design of erosion and sedimentation control measures will be based on the Maine Erosion & Sediment Control Handbook for Construction: Best Management Practices (BMPs). Gravel access roads or entranceways will then be constructed, along with proposed stormwater management features. The perimeter fence will be installed, followed by installation of solar panels. Posts will first be installed for attachment of the racking system, then installation of solar panels and aboveground and underground conductors will occur. Solar panels will be underlain with herbaceous vegetation. The final number of panels will be based on site conditions as determined during construction and may vary slightly from the permit drawings. Individual foundation excavations will then be made and concrete pads will be installed for the placement of electrical equipment such as transformers and inverters. Any necessary final grading, site stabilization, vegetation management and landscaping will then be conducted.

The Applicant's agent met with City staff on February 6, 2020 to discuss the Project. One of the attendees was the Lewiston Fire Chief, who provided input on the Project's road design.

Anticipated federal and state permits include:

- Maine Natural Resources Protection Act Permit
- Maine Stormwater Permit by Rule (though City of Lewiston as Delegated Authority)
- Maine Stormwater Construction General Permit
- U.S. Army Corps of Engineers Section 404 permit

The area of disturbance is under 20 acres and therefore a Maine Site Location of Development permit is not required.

The following information is presented to demonstrate that the proposed project adheres to the criteria presented in Article XIII, Section 4 of the Lewiston Zoning and Land Use Code.

**(a)     *Utilization of the site.***

The siting of Project facilities has considered the natural capabilities of the site to support development while considering natural resources. Wetlands, steep slopes and floodplains have been avoided to the extent practical. No unique natural resources have been identified within the Project area. Natural drainage patterns will be maintained to the extent practicable and the Project area will be maintained as meadow during the operation of the Project.

**(b)     *Traffic movement into and out of the development area.***

During construction, the Project will increase traffic on municipal roads, but these effects will be temporary in nature and relatively minor. Standard trucking methods will be used to transport materials and equipment to the Project site. Construction trailers, construction equipment and laydown areas will be sited so as to avoid or minimize environmental impact. Construction will occur from 7am until 7pm or from sunrise to sunset, whichever is less.

The magnitude of traffic produced by a proposed development is typically estimated by applying the size of a project against the applicable trip generation contained in the Institute of Transportation Engineers Trip Generation Manual. However, this manual does not include trip generation rates for solar farms. As such, traffic impacts during construction and operations were estimated using information publicly submitted for other solar projects. Two recent projects (Sanford Airport and Farmington Solar) submitted applications for larger projects (<20 MW). These projects reported that their traffic during peak construction are approximately 100-125 construction personnel and 10-15 office staff onsite equating to maximum staffing levels of 140 personnel per day. Assuming a conservative carpool estimate of 1.5 personnel, they concluded that this would generate approximately 93 auto trips during the morning and evening. However, they also noted that the likely hours of construction meant that the arrival of construction staff would not coincide with peak morning commuting hours. These number are consistent with traffic reports generated for sites in other regions. Based on these estimated data as well as the smaller size of this Project, the construction of the Project is not expected to generate more than 100 trips during peak hours but the Applicant will obtain a Traffic Permit if the contractor selected for the work believes there will be more than 100 one-way trips during construction.

After construction, the site will generally be unmanned, except for mowing and maintenance. In the event of an issue requiring troubleshooting or maintenance, it is anticipated that a two-person team will visit the site. For mowing and general maintenance (e.g., fence inspections), the work will generally take place on a twice annually, or quarterly basis, with a small number of vehicles. The road network as presented on the attached site plans is adequate for this level of traffic.

**(c) Access into the site.**

Access into the site will be through a gated entrance road, which will adhere to the “City of Lewiston’s Policy for the Design and Construction of Streets and Sidewalk” at the point of intersection with the CMP access road.

**(d) Internal vehicular circulation.**

The Project will include construction of a gated entrance road. Once the Project is in operation, there will be limited vehicular use on the site which will consist largely of pick-up trucks and associated trailers. The City Fire Department will have access to Project gate keys through Knox boxes. A 16-foot buffer will be maintained between arrays and the perimeter fencing to accommodate vehicles, primarily pickup trucks or other passenger vehicles, in the event of an emergency.

**(e) Pedestrian circulation.**

The facility will be fenced to prevent unauthorized access. The installation of the fencing will not impede access to any known resources for which pedestrian access would be desirable.

**(f) Stormwater management.**

The project will disturb one acre or more of area during construction and therefore will be required to demonstrate compliance with Maine Department of Environmental Protection’s (DEP) Chapter 500 Stormwater Management Rule (“Chapter 500”).

“Impervious area” is defined by DEP as “the total area of a parcel covered with a low-permeability material, such as asphalt, concrete, and gravel roadways.” Consistent with this definition, the total impervious area calculated for the project includes areas covered by concrete equipment pads, gravel access roadways, and the ground-driven post mounts for the solar panels. DEP has previously deemed that the solar panels themselves are not considered impervious. Of the total Project area (~9.55 acres), the total impervious area, which includes roadways, concrete pads, and mounting posts for panels, will be ~0.17 acres (1.78%) and the impervious area as a ratio to the lot as a whole (13.10) will be 0.01%.

“Developed area” is defined by DEP as “an impervious area, landscaped area, or unvegetated area; developed area includes all disturbed areas except an area that is returned to a condition that existed prior to the disturbance and is revegetated within one calendar year of being disturbed, provided the area is not mowed more than twice per year.” During a DEP Solar Round Table meeting held on February 5, 2020, DEP confirmed that the area under solar panels is not considered developed as long as it is revegetated after construction and does not get mowed more than twice a year. As such, the developed area would also be ~0.08 acres.

Because the Project will not result in greater than one acre of impervious area, or five or more acres of developed area, the Project is subject to the basic stormwater standards set forth in Chapter 500. To

demonstrate compliance with the basic standards outlined in Chapter 500, in most locations a project would be required to submit a stormwater permit-by-rule (PBR) application to DEP. For other solar projects, the information included in stormwater PBR applications is identical that provided to the City, including the Erosion and Sediment Control Site Plan and Details.

Overall, though the Project has a large footprint, the Project will result in little impervious or developed area. In general, areas disturbed adjacent to the access roads will be permanently stabilized through seeding and the majority of the site will be maintained as meadow. Accordingly, the Applicant requests that the City of Lewiston's Director of Public Works waive the requirements of Article XIII Section 4(f). If this request is not acceptable, the Applicants would request that the City Planning Board condition approval of the Project on the submission of a stormwater design that meets the requirements of Section 4(f) or a lesser standard as agreed upon by the Director of Public Works.

The Site Plans provided are intended to be permit-level design. Details such as the sizing of silt socks, location of BMPs such as vegetated soil filters and ditch turn-around buffers, and a stormwater BMP operation and maintenance plan will be developed as part of the issued-for-construction plans and associated materials. The Applicant will provide this documentation for City review and comment prior to construction.

**(g) *Erosion control.***

An erosion and sedimentation control plan (E&SC) will be implemented before construction. The E&SC Plan will include erosion control measures that will be incorporated into the construction and restoration phases of the Project to minimize potential adverse impacts.

Overall, though the Project has a large footprint, the Project will result in little impervious area. In general, areas disturbed adjacent to the access roads will be permanently stabilized through seeding and the majority of the site will be maintained as meadow.

Erosion and Sediment control measures are presented on the attached site plans.

**(h) *Water supply.***

The facility will not be manned and therefore no water supply facilities are required.

**(i) *Sewage disposal.***

The facility will not be manned and therefore no sewage disposal system is required.

**(j) *Utilities.***

Overhead utility poles have been sited to allow for the most efficient connection with the nearby substation.

**(k) *Natural features.***

Disturbance of soils (grading, removal of soil, and importation of gravel materials) will be minimized to the greatest extent practicable. A vegetative buffer will be maintained around the Project area to the extent possible so as to serve as a natural wind barrier. The Project site is not located in an area that has been identified as having significant habitat or aesthetic value.

**(l) *Groundwater protection.***

The Project is not anticipated to have any impact on the quality and quantity of groundwater available to abutting properties. No water supply wells or sewage disposal facilities will be installed on the site and the Project area will be maintained as meadow.

**(m) *Water and air pollution.***

During the Project's construction phase there will be minor and temporary air emissions from construction equipment and vehicle emissions, and brief discharges of dust generated by general construction activities. Dust will be monitored during the construction period (particularly on access roads and during drilling operations for blasting), and actions will be taken to reduce or avoid increasing the amount of fugitive dust in the air by the use of water sprayers, or other non-intrusive means as needed. If burning is used to dispose of wood wastes (brush/slash) from the site, there may be short-instance smoke emissions (during the day). The Applicant will consult with the City Fire Department prior to any burning operations and obtain any necessary permits and/or approvals.

During operations, the Project is not expected to adversely affect or degrade air quality, as solar panels generate electricity that is distributed to the regional grid without producing air emissions. There will be no appreciable air emissions from operations vehicle exhaust and dust from driving on access roads. No emissions sources associated with operation of the Project require an air permit.

The proposed Project will not have an unreasonable effect on runoff/infiltration relationships, and the proposed Project will not have an unreasonable adverse effect on surface or ground water quality.

**(n) *Exterior lighting.***

No exterior lighting is proposed for the solar facility at this time.

**(o) *Waste disposal.***

Construction of the Project is expected to generate cardboard waste (e.g. broken-down solar panel boxes) and clean wood waste (e.g. wood pallets). Recycling and reuse will be the preferred method of disposing of these solar panel delivery materials. A licensed disposal facility will be contracted to accept and recycle or dispose of waste generated from the Project. Solid waste during operation of the facility is expected to be limited to materials associated with the replacement of equipment and a similar contracting

arrangement will be made with a licensed disposal facility. No hazardous waste will be generated by the Project.

**(p) *Lot layout.***

The Project layout is presented in the attached site plans.

**(q) *Landscaping.***

The Project design and layout has maximized use of existing topography and vegetation to shield proposed facilities from view from adjacent areas to minimize its visual impact on the surrounding area. Landscaping plans have been provided. Vegetative plantings will be established along the southeast corner of the Project area to provide a visual buffer for the residential home in the vicinity. The Applicant believes, with the concurrence of the City, that no additional landscaping is necessary at this site to meet existing standards.

**(r) *Shoreland relationship.***

The Project is not located along or in close proximity to any shoreland area.

**(s) *Open space.***

In order to comply with the National Electric Safety Code (NESC) and protect critical infrastructure equipment, no public use of the Project area will be allowed.

**(t) *Technical and financial capacity.***

Technical Capacity

NextGrid Inc develops, constructs and operates solar power and battery storage power facilities across the United States. Currently they have over 100 projects totaling over 200MW in MA, ME, NJ, DC, CA, NC, PA, MD CO in development, construction or operation. Of these, 59 projects are operational, 20 projects in active construction and 81 projects in earlier stages of development. In 2019 the NextGrid team launched Grid Builders LLC, which provides integrated construction functionality to the project development cycle.

Financial Capacity

In June of 2019, Madison Energy Investments, LLC and NextGrid Inc. entered into an exclusive long-term relationship whereby Madison Energy Investments, LLC agreed to purchase all of NextGrid Inc's renewable energy projects throughout the country. Madison Energy Investments, LLC currently operates a \$250M fund, backed by Stonepeak Infrastructure Partners, to construct and own solar energy and storage projects in the US.

**(u) *Buffering.***

The Project has been designed so as to adhere to applicable set-back requirements. No service or storage areas are proposed.

**(v) *Compliance with district regulations.***

The Project is a utility use, which will provide renewable energy to the grid. The Project is consistent with district regulations.

**(w) *Design consistent with performance standards.***

The Project as designed is consistent with the applicable performance standards of Article XII of the Lewiston Zoning and Land Use Code.

Timber harvesting standards

Timber harvesting shall comply with the state department of conservation standards for forest regeneration, established pursuant to 12 M.R.S.A., ch. 805, subchapter III-A, as amended. Approximately 7.84 acres of trees will be cleared to allow for the construction of the Project. During operation, trees will be periodically trimmed so as not to affect or impede the solar project operations.

Walls and fences

Utility-scale PV solar energy facilities must comply with the National Electrical Code and National Fire Protection Code, which include protective fencing that is at least seven feet high or six feet high with at least one foot of barbed wire at the top of the fence around generating stations and substations. The Applicant therefore requests that the height of fencing be determined based on applicable codes and regulations at the time of construction.

Signs

Signage will be limited to that which is required to promote public safety around the facility, including access warnings.

Off-street parking and loading

No off-street parking is proposed for this Project.

Environmental performance standards

Sound generated by the Project would consist of: (1) short-term duration during construction and (2) sound during normal facility operations. Construction noise levels will exceed ambient conditions at times, mainly when the equipment is in operation in close proximity to the Project site boundary. Construction noise will not be unusual, but rather typical of noise associated with any residential or commercial development. The equipment used is not generally operated continuously, nor is all of the equipment always operated simultaneously. There will therefore be times when no equipment is operating

and noise will be at ambient levels. Construction activities are scheduled to occur mostly during daytime hours, when many people are at work and away from home.

During Project operation, concurrent operation of the solar plant site components and the on-site substation should be assumed to be limited to daytime hours only. After sunset, when the plant no longer receives solar radiation, the substation transformer will not be operational, the inverters will not produce noise and the pad-mounted transformers will be energized but likely operating under low noise condition using natural draft cooling (no fans) due to reduced nighttime heat loads. The intervening ground cover and vegetation should provide for sound attenuation.

The Project will not result in any adverse effects associated with noise, smoke, vibration, odors, air pollution, or electrical disturbance or interference.

As per Article XII, the following performance standards relate to usage activities that are not applicable to the Project:

- Shoreland area standards
- Earth material removal standards (as Applicant will have permit)
- Community garden standards
- Swimming pool standards
- Wind energy conversion systems
- Adult business establishment, tattoo establishment, and drinking place standards
- Frontage right-of-way provisions
- In-law apartment standards
- Campground standards
- Installation of mobile homes on individual lots standards
- Installation of mobile homes in mobile home parks standards
- Erosion and sedimentation control standards (as Applicant will have permit)
- Improvement standards
- Child care facility standards
- Residential design standards for the downtown residential and riverfront districts

#### Decommissioning

Commercial-scale solar fields are designed for a minimum expected operational life of 20 years but may operate for 25 to 30 years or more. As the solar field approaches the end of its operational life, it is expected that technological advances will make more efficient and cost-effective solar arrays that will economically drive the replacement of the existing solar arrays. Therefore, decommissioning of the Project shall commence after 12 consecutive months of no power generation at the facility except in the case of a natural disaster, act of violence, or other event which results in the absence of electrical generation for 12 months. The Applicant or its successor as owner of the Project at that time will be solely responsible for decommissioning the Project.

For decommissioning, the owner shall:

- Be responsible for all decommissioning costs;
- Obtain any additional permits required for the decommissioning, removal, and legal disposal of Project components prior to commencement of decommissioning activities;
- Remove and dispose of all above-ground infrastructure, including arrays, inverter structures, concrete foundations and pads, and fences, and grade and revegetate in accordance with permits and in compliance with all applicable rules and regulations then in effect governing the disposal thereof;
- Remove all hazardous materials and transport them to be disposed of by licensed contractors at an appropriate facility in accordance with rules and regulations governing the disposal of such materials; and
- Removed materials shall be recycled and/or salvaged to the maximum extent practical and all waste streams shall be managed in accordance with the State of Maine's solid waste requirements.

The decommissioning and restoration processes consist of the removal of above-ground structures; grading, to the extent necessary; restoration of topsoil (if needed) and seeding. The process of removing structures involves evaluating and categorizing all components and materials into categories of recondition and reuse, salvage, recycling and disposal. The Project consists of numerous materials that can be recycled, including steel, aluminum, glass, copper and plastics. In the interest of increased efficiency and minimal transportation impacts, components and material may be stored on-site until the bulk of similar components or materials are ready for transport. The components and material will be transported to the appropriate facilities for reconditioning, salvage, recycling, or disposal. Above-ground structures include the panels, racks, inverters, pads and any interconnection facilities located on the property. At the time of decommissioning, a plan will be submitted for continued beneficial use of any components to be left on site, including roads.

While it is not possible to estimate the future costs of decommissioning with any precision, given the costs and salvage values of components today it is reasonable to assume that the cost of decommissioning the solar arrays will be largely offset by the salvage value of the solar panels and components.

**Attachment B**

**Review of Article X Section 3 Approval Criteria**

## CONDITIONAL USE PERMIT NARRATIVE

The following information is presented to demonstrate that the proposed project adheres to the standards presented in Section 3 of Article X of the Lewiston Zoning and Land Use Code.

- (1) **Neither the proposed use nor the proposed site upon which the use will be located is of such a character that the use will have significant adverse impact upon the value or quiet possession of surrounding properties greater than would normally occur from such a use in the zoning district. The board may not find that this standard is satisfied unless it finds that:**

- a. **The size of the proposed use is comparable to surrounding uses; and**

The Project design and layout has maximized use of existing topography and vegetation to shield proposed facilities from view from adjacent areas to minimize its visual impact on the surrounding area. The Project is located next to an existing utility facility.

- b. **The amount and type of traffic to be generated, hours of operation, expanse of pavement, and the number of parking spaces are comparable to surrounding uses; and**

During construction, the Project will temporarily increase traffic on municipal roads, but these effects will be temporary in nature and relatively minor. Standard trucking methods will be used to transport materials and equipment to the Project site. Construction trailers, construction equipment and laydown areas will be sited so as to avoid or minimize environmental impact. Construction will occur from 7am until 7pm or from sunrise to sunset, whichever is less.

Project operations are anticipated to have *de minimis* effects on traffic. There will be no full-time staff required to be located at the Site for operation of the solar energy center. On-site personnel visits are anticipated to be largely limited to managing the property grounds and associated solar facilities in accordance with any permitting requirements and maintenance of equipment as recommended by manufacturer specifications.

The Project will not require permanent parking spaces for construction or operation. During construction, most construction personnel will park at the temporary laydown area. Some parking will occur within the Project development area where construction activities are occurring, including for equipment delivery, loading, and unloading; these areas will be spread out through the Project. After construction, the site will generally be unmanned, except for mowing and maintenance.

- c. The generation of noise, dust, odor, vibration, glare, smoke, litter and other nuisances is comparable to surrounding uses; and**

Noise

Sound generated by the Project would consist of: (1) short-term duration during construction and (2) sound during normal facility operations. Construction noise levels will exceed ambient conditions at times, mainly when the equipment is in operation in close proximity to the Project site boundary. Construction noise will not be unusual, but rather typical of noise associated with any residential or commercial development. The equipment used is not generally operated continuously, nor is all of the equipment always operated simultaneously. There will therefore be times when no equipment is operating and noise will be at ambient levels. Construction activities are scheduled to occur mostly during daytime hours, when many people are at work and away from home. Specifically, construction will occur from 7am until 7pm or from sunrise to sunset, whichever is less.

During Project operation, concurrent operation of the solar plant site components and the on-site substation should be assumed to be limited to daytime hours only. In terms of estimating noise, the frequency of most inverters is 50-60 Hz, the same as AC electricity in home or commercial buildings. A study conducted by the Massachusetts Clean Energy Center found that the average Leq sound levels at a distance of 10 feet from the inverter face varied over the range of 48 dBA to 61 dBA for two sites and in the range of 59 to 72 dBA for a third site. Sound levels along the fenced boundary of the PV arrays were generally at background levels, though a faint inverter hum could be heard at some locations along the boundary during the day. After sunset, when the plant no longer receives solar radiation, the inverters will not produce noise and the pad-mounted transformers will be energized but likely operating under low noise condition using natural draft cooling (no fans) due to reduced nighttime heat loads. The intervening ground cover and vegetation should provide for sound attenuation.

Glare

Solar panels are designed to absorb light and although the glass in early panels put off light equal to a windshield on a car they are now standard with anti-glare coating in all instances. Modern panels have a standard anti-glare coating which guarantee that the max reflection is 2% whereas residential windows reflect at 3%.

Other

Once the Project is operational, it will not generate any dust, odor, vibration, smoke, litter or other nuisances.

- d. The impact of the use on the quality and quantity of groundwater available to abutting properties is comparable to surrounding uses; and**

The Project is not anticipated to have any impact on the quality and quantity of groundwater available to abutting properties. No wells will be installed on the site and the Project area will be maintained as meadow.

- e. **Unusual physical characteristics of the site, including size of the lot, shape of the lot, topography, and soils, do not aggravate adverse impacts upon surrounding properties.**

There are no unusual physical characteristics associated with the site that would aggravate adverse impacts upon surrounding properties.

- (2) **Vehicular and pedestrian access to, into and within the site will be safe and will not be overburdened or create hazards because they are inadequate. The board may not find that this standard is satisfied unless it finds that:**

- a. **Vehicular access to the site will be on roads which have adequate capacity to accommodate the additional traffic generated by the development.**

- 1. **Adequate capacity means that:**

- (i) **Intersections on major access routes to the site within one-half mile of any entrance road will function after development at a minimum at Level of Service C; or**
- (ii) **If they are functioning at a Level of Service D or lower prior to the development, the project will not reduce the current level of service.**

After construction, the site will generally be unmanned, except for mowing and maintenance. In the event of an issue requiring troubleshooting or maintenance, it is anticipated that a two-person team will visit the site. For mowing and general maintenance (e.g., fence inspections), the work will generally take place on a twice annually, or quarterly basis, with a small number of vehicles. The road network as presented on the attached site plans is adequate for this level of traffic. The facility will be fenced, therefore there will be no pedestrian access to the Project area.

- 2. **The board of appeals or planning board may approve a conditional use permit for an application not meeting this requirement if the applicant demonstrates that:**

- (i) **A public agency has committed funds to construct the improvements necessary to bring the level of access to said standard, or**
- (ii) **The applicant will assume financial responsibility for the improvements necessary to bring the level of service to said standard and will guarantee the completion of the improvements within one year of approval of the permit.**

Not applicable (see previous response).

- b. The topography of the site shall permit the construction of all driveways, entrances or proposed streets to meet the standards of the City of Lewiston's Policy for the Design and Construction of Streets and Sidewalks.**

The topography of the Project area is generally level and will allow for roads to meet applicable standards for a private roadway system. No sidewalks are proposed.

- c. Facilities are present to assure the safety of pedestrians passing by or through the site.**

The facility will be fenced to prevent unauthorized access. The installation of the fencing will not impede access to any known resources for which pedestrian access would be desirable.

- (3) Municipal or other facilities serving the proposed use will not be overburdened or create hazards because they are inadequate. The board may not find that this standard is satisfied unless it finds that:**

- a. The capacity of sewerage and water supply systems is adequate to accommodate the proposed use;**

No water supply or wastewater disposal systems will be required for this Project. During construction, anticipated water usage will include use of bottled drinking water or water trucked in from municipal sources for construction personnel and dust abatement. Water for dust abatement and HDDs will be from publicly accessible, off-site water sources, excluding streams, brooks, and groundwater sources. Water for dust abatement will be distributed via a tanker truck.

There will be no full-time staff required to be located at the Project site for operation of the solar energy center. On-site personnel visits are anticipated to be largely limited to managing the property grounds and associated solar facilities in accordance with any permitting requirements and maintenance of equipment as recommended by manufacturer specifications. Therefore no water supply or sewage disposal facilities are proposed.

- b. The capacity of the storm drainage system is adequate to accommodate the proposed use; and**

Overall, though the Project has a large footprint, the Project will result in little impervious area. In general, areas disturbed adjacent to the access roads will be permanently stabilized through seeding and the majority of the site will be maintained as meadow.

- c. The ability of the fire department to provide necessary protection services to the site and development is adequate.**

The Project will include construction of a gated entrance road. The City fire department will have access to Project gate keys through knox boxes. A 16-foot buffer will be maintained between arrays and the

perimeter fencing to accommodate vehicles, primarily pickup trucks or other passenger vehicles, in the event of an emergency.

- (4) The soils on the proposed site shall have adequate capacity and stability to support all loadings, including fill, developed by the proposed use and the use will not cause unreasonable soil erosion or reduction in the capacity of the land to hold water to the extent that a dangerous or unhealthy condition may result on the site or upon the land of abutters or the environment. In considering whether this standard is satisfied, the board shall take into account the elevation above sea level of the site and surrounding properties, its relation to flood plains, the slope and vegetation of the land and their effects on drainage.**

A soil report generated by the Natural Resource Conservation Service is provided in Attachment D. The dominant soils types on-site are classified as Paxton loam, 8 to 15 percent slopes (PbC) and Lamoine-Buxton complex, 0 to 8 percent slopes (BuB2). No water supply or wastewater disposal systems will be required for this Project.

The racking system for the array will be mounted on posts installed into the ground. For the Lamoine-Buxton complex soils type, the depth to a restrictive feature (e.g. bedrock) is more than 80 inches and so it is anticipated that the mounting poles will be driven into the ground in these areas. For the Paxton loam complex the soil report states that it is 18 to 40 inches to a restrictive feature (densic material). In these soils it is anticipated that a screw type post will be used to overcome bedrock or large boulders or, if necessary, a hole will be drilled into the bedrock and grout employed to adhere the post to the substrate.

The Applicant has a vested interest in ensuring that soils are suitable for the development and will complete geotechnical borings prior to construction to determine the precise installation approach for each mounting pole. There is nothing in the publicly available data that suggests there would be any insurmountable obstacles to installation of the array system. As such, given the nature of this Project and its construction needs, with concurrence from the Planning Board a formal soil survey will not be conducted at this time.

In terms of grading, the existing topography and vegetation will be retained to the greatest extent practicable. Site layout was developed to target areas that are conducive to solar array installation; however, some localized grading will be necessary to ensure array areas are in accordance with the tolerances of array racking equipment (approximately 15% or less) and to accommodate safe construction and operations. The construction sequencing will be performed such that earth materials are exposed for a minimum amount of time before they are covered, seeded, or otherwise stabilized to prevent erosion. The stabilization of cut/fill slopes will be provided in accordance with the Maine Erosion and Sediment Control BMPs Manual. Erosion control blankets shall be installed at the drip edge of solar panels to minimize erosion from stormwater runoff and on all slopes steeper than 1-foot rise to 3-foot horizontal. Additional erosion control measures shall be installed where working adjacent to environmentally sensitive areas. The Applicant does not anticipate any grading will be necessary after construction has been completed, based on the experience of other solar facilities.

- (5) The scale and design of the proposed structures with respect to materials, scale and massing shall be compatible with existing structures within 500 feet of the site in areas where the existing structures are of a similar scale and architectural treatment.**

The Project is consistent with the utility infrastructure to the north of the Project area. There are no other existing structures in the near vicinity that are comparable in terms of scale and architectural treatment.

**Attachment C**

**Purchase Option (Redacted)**



## Option to Purchase Agreement

### Commercial Terms

Effective Date	August 8, 2019
Duration of Offer	Valid until August 9 <sup>th</sup> 2019
Seller	1875 Lisbon Road, LLC
Buyer	NextGrid Inc
Listed Brokers	Tim Millett & Chris Paszyc
Property	1875 Lisbon Rd Lewiston, ME see exhibit A
Purchase Price	[REDACTED]
Rent	[REDACTED] per month. First five (5) months paid in advance upon Effective Date of Contract
Option Deposit	[REDACTED] applicable to Purchase Price & non-refundable
Development Term	11:59 PM on the date 12 months from the Effective date.

Seller Notices	Buyer Notices
<p>Gendron Realty Properties 45 Alfred Plourde Parkway P.O. Box 1915 Lewiston, Maine 04241-1915</p>	<p>NextGrid, Inc. PO Box 7775 #73069 San Francisco, CA 94120-7775</p>

This Option to Purchase Agreement ("**Agreement**"), specifically including and incorporating herein, the "Commercial Terms" section, is dated as of the Effective Date and is entered into by and between Seller and Buyer (each a "**Party**" and together, the "**Parties**").

1. **Grant of Option to Purchase.** The Seller hereby grants to Buyer a First Right of Refusal ("FROR") and irrevocable option ("Option") to purchase the Real Property ("**Property**") described in this Agreement upon the terms and conditions herein.

2. **Property.** The property to be sold consists of (a) the land and all the buildings, other improvements and fixtures on the land; (b) all of the Seller's rights relating to the land; and (c) all personal property specifically included in this contract. The real property to be sold is defined under Property in the Commercial Terms of this agreement and more specifically in Exhibit A.

3. **Rent.** The Development Term ("**Development Term**") begins on the Effective Date of this agreement. During the Development term and for any extension thereof, Buyer will pay Rent ("**Rent**") to Seller in monthly installments with the first five (5) payments due upon the Effective Date of Contract. The Rent payments are non-refundable and not applicable to the Purchase Price and are paid as consideration, along with other good and valuable consideration, for exclusive rights to pursue Development Approvals, as hereinafter defined, during this period. For the avoidance of doubt, there will be no physical changes to the Property during the Development Term without prior written consent of the Seller.

4. **Exercise of Option.** The Buyer may exercise this Option to purchase at any time before the end of the Development Term through Buyer giving notice in writing to the Seller addressed to the contact address above. After receiving such notice, within a reasonable period of time, the Parties will, in good faith, negotiate deposit, closing, and other relevant terms not already agreed to herein.

5. **Purchase Price.** Upon exercise of the Option to purchase the Property upon the terms herein, the Buyer agrees to buy said Property for the Purchase Price ("**Purchase Price**") listed in the Commercial Terms.

6. **Time and Place of Closing.** Due to the nature of this Option to Purchase Agreement, the closing date cannot be made final at this time. However, should Buyer exercise such Option, shortly thereafter, the Buyer and Seller agree to the Estimated Closing Date ("**Closing Date**") for the closing, in no event shall be more than Sixty (60) days from Buyer exercising such Option. Both parties willfully cooperate so the closing can take place on or before the estimated date. All purchase money is due by the Closing Date and at the time of Closing. All transfer tax shall be paid by the Buyer.

7. **Development Approvals, Contingencies**

(a) The Purchase Price is based on the assumption that Buyer will be able to obtain any and all governmental or quasi-governmental permits, approvals, variances, entitlements and the like, with all appeal periods thereon having expired with no appeal having been filed, including without limitation any and all relief, findings, orders and the like with respect to environmental requirements or restrictions (cumulatively, the "**Development Approvals**") in order to develop, construct, use and operate a solar facility on the Property in accordance with its development plan (the "**Project**"). Outlined below are some of the major development steps and contingencies necessary for Buyer to proceed:

- **Environmental & Entitlements Assessment:** Professional Wetland Delineation and Testing, ALTA Survey
- **System Design and Layout:** Engineer Electrical, Site Layout & Civil Engineering Plans
- **Utility Interconnection:** Utility Review, Impact Study and Approval
- **Permitting:** Town Building Permits
- **Regulatory Contingencies:** PUC and Federal Licenses, Programs, and Tax Incentives

(b) **Development Approvals Condition.** Buyer, at Buyer's sole cost and expense, may seek to obtain any and all Development Approvals. It shall be a condition of Buyer's obligation to consummate the transaction contemplated hereunder (the "**Development Approvals Condition**") that such Development Approvals shall be received on or before the the expiration of the Development Term and such Development Approvals shall be satisfactory to Buyer in its sole and absolute discretion. Buyer may waive the Development Approvals Condition at any time at Buyer's sole option, by delivery of written notice from Buyer to Seller.

(c) **Seller Cooperation; Non-Opposition.** Seller shall cooperate with Buyer in its process of obtaining Development Approvals, including without limitation executing any applications for Development Approvals if so required as fee owner of the Property, provided that no such cooperation shall subject Seller to any cost, expense and is legal. Neither Seller, nor any employee, officer, director, representative, or agent of Seller acting in its official capacity on Seller's behalf shall object before any governmental authority, by means of appeals or oral or written opposition or by knowingly funding any person for the purpose of objecting by means of appeals or oral or written opposition, to Buyer's development of the Property.

(d) **Buyer Termination Right.** If the Development Approvals Condition is not satisfied by the end of the Development Term, or if at any time prior to the Development Term, as the same may be extended, Buyer determines in its sole discretion that the Development Approvals Condition is unlikely to be satisfied, Buyer may terminate this Agreement in its sole discretion by delivery of written notice of such election to Seller and the Listed Broker given on or before the Development Term, as the same may be extended, neither party shall have any further liability or obligation to the other hereunder, except to provide Seller with all engineering studies, surveys, and other pertinent due diligence information. In the event that the Buyer does not exercise its rights hereunder, or otherwise terminates said rights, Buyer shall execute any documents reasonably requested by Seller to evidence termination of the Option in appropriate format for recordation in the Androscoggin County Registry of Deeds. In the event that Buyer fails or refuses to execute such documentation, the parties hereto agree that Seller may execute an Affidavit indicating the termination of this Agreement and record the same in said Registry, and the recording of said Affidavit shall be effective to evidence termination of this Agreement.

8. **Transfer of Ownership.** Should Buyer exercise its Option to purchase, at the closing, the Seller will transfer ownership of the property to the Buyer at the Closing. The Seller will give the Buyer a properly executed a quitclaim deed with covenant. If the Seller is a corporation, it will also deliver a corporate resolution authorizing the sale.

9. **Access and Indemnity.** Buyer, its mortgage lender (if any) and their agents shall have the right to enter upon the Property after notice to Seller (which may be oral) at reasonable times for purposes of inspection, measurement, and appraisal. Seller shall also permit entry upon the Property by an engineer or land surveyor for the purpose of plotting bounds and taking measurements. All such entries shall, at Seller's option, take place in the presence of Seller or Seller's broker, and the number of such

entries shall not exceed five. Buyer shall indemnify Seller and hold Seller harmless from all actions, suits, claims, liabilities, losses, damages, and costs, including reasonable attorneys' fees, arising from (a) any personal injury suffered by Buyer, its mortgage lender, and their agents, on or about the Property, or (b) property damage to the Property caused by such entries. Buyer shall return the Property to its condition prior to any such inspections.

10. **Seller's Representations.** Seller warrants and represents to Buyer as follows:

(a) Seller has no knowledge of existence, at any time, of any violations of any building and zoning laws applicable to the Property and Seller warrants and represents that it has not received any notice or inquiry from any local or state governmental authority or representative thereof claiming or inquiring into the existence of any such violation.

(b) Seller is aware of no lawsuits or demands against the Seller that would affect Seller's ability to convey the Property hereunder;

(c) During the time Seller has owned the Property, to the best of the Sellers knowledge, no hazardous or toxic substances have been used or incorporated into the Property by Seller in violation of any applicable laws; and Seller is not aware of the use or incorporation into the Property of any hazardous or toxic substances in the Property, at any time, by anyone else;

(d) During the time Seller has owned the Property, to the best of the Sellers knowledge, no insulation or other materials containing urea-formaldehyde or similar chemicals have been used or incorporated into the Property and no pesticide containing chlordane or related chemicals has been used in the Property. To the best of Seller's knowledge, Seller is not aware of the use or incorporation into the Property of any insulation or other materials containing urea-formaldehyde or similar chemicals or the use of any pesticide containing chlordane or related chemicals in the Property, at any time, by anyone else.

(e) There is no pending Seller bankruptcy, mortgage foreclosure, or other proceeding that might in any material way impact adversely on the Seller's ability to perform on the closing date;

(f) Seller is aware of no underground storage tanks or other subsurface facilities on the Property;

(g) Seller is aware of no pending or threatened takings affecting the Property;  
and

(h) The Property are not subject to any outstanding agreements with any party pursuant to which any such party may acquire an interest in the Property.

11. **Financially Able to Close.** Buyer represents that it has sufficient funds to complete a purchase should it exercise its Option to purchase Property.

12. **Accuracy of Representations.** All representations and warranties made by Seller & Buyer in this Agreement shall be true and complete and accurate as at the date thereof and as of the date of the closing, with the same force and effect as though such representations and warranties had been made on and as of the closing. Each such representation and warranty shall survive the delivery of the deed.

13. **Title.** Without limitation of any other provisions in this Agreement, the Property shall not be considered to be in compliance with the provisions of this Agreement with respect to title unless:

(a) All structures and improvements on the Property and all means of access to the Property shall be wholly within the boundary lines of the Property and shall not encroach on, upon or under the property of any other person or entity;

(b) No building, structure or improvement, including any driveway(s), garages, septic systems and wells or property of any kind belonging to any other person or entity shall encroach upon or under the Property;

(c) Title to the Property is insurable, for the benefit of Buyer, by a title insurance company reasonably acceptable to Buyer in a fee owner's policy of title insurance, at normal premium rates, on the American Land Title Association form currently in use, subject only to those printed exceptions to title normally included in the "jacket" to such form or policy, the standard so-called "Schedule B" exceptions, and subject to such restrictions, easements, or other matters which do not interfere with Buyer's intended use of the Property

(d) The Property have vehicular and pedestrian access to a public way, duly laid out or accepted as such by the town or city in which the Property are located; and

(e) There are no restrictions, easements, agreements, or other matters affecting the Property which interfere with the current use and enjoyment of the Property.

14. **Affidavits and Indemnities Necessary for Closing.** Seller agrees to execute at closing all affidavits and indemnifications to Buyer's title insurance company and/or Buyer's mortgage lender (if any) as reasonably required, including, but not limited to, affidavits indemnifying against claims or workmen and materialmen and parties in possession, the purchase price and allocation of the same.

15. **Conveyancing Standards.** Any matter or practice arising under or relating to this Agreement which is the subject of a title standard or a practice standard of the Real Estate Bar Association of Maine at the time for delivery of the deed shall be governed by such title standard or practice standard to the extent applicable, provided, however, that Buyer shall not be required to purchase the Property if, irrespective of such standard, title is not insurable in accordance with paragraph entitled "Title", subparagraph (c).

16. **Broker.** Buyer agrees to pay all brokerage fees associated with the purchase of the subject property.

17. **Dispute Resolution.** Buyer and Seller agree to mediate any dispute or claim arising out of this Agreement, or in any resulting transaction, before resorting to arbitration or court action.

(a) **Mediation.** If a dispute arises, between or among the Parties, and it is not resolved prior to or after recording, the Parties shall first proceed in good faith to submit the matter to

mediation. Costs related to mediation shall be mutually shared between or among the Parties. Unless otherwise agreed in mediation, the Parties retain their rights to proceed to arbitration or litigation.

**(b) Arbitration.** The Parties agree that any dispute or claim in law or equity arising between them out of this Agreement or any resulting transaction, which is not settled through mediation, shall be decided by neutral, binding arbitration. The arbitrator is required to be a retired judge or justice, or an attorney with at least five (5) years of residential real estate law experience unless the Parties mutually agree to a different arbitrator. Under arbitration, the Parties shall have the right to discovery in accordance with Maine law. Judgment upon the award of the arbitrator(s) may be entered into any court having jurisdiction. Enforcement of this Agreement to arbitrate shall be governed by the Federal Arbitration Act. Any arbitration shall be held in Lewiston, Maine.

**(c) Exclusions.** The following matters shall be excluded from the mediation and arbitration: (i) a judicial or non-judicial foreclosure or other action or proceeding to enforce a deed, mortgage or installment land sale contract as defined in accordance with Maine law; (ii) an unlawful detainer action, forcible entry detainer, eviction action, or equivalent; (iii) the filing or enforcement of a mechanic's lien; and (iv) any matter that is within the jurisdiction of a probate, small claims or bankruptcy court. The filing of a court action to enable the recording of a notice of pending action, for order of attachment, receivership, injunction, or other provisional remedies, shall not constitute a waiver or violation of the mediation and arbitration provisions of this Section.

**18. Assignability.**

Buyer shall not assign any of its rights, duties or obligations under this Agreement without the prior consent of Seller, which consent shall not be unreasonably withheld, conditioned or delayed. Notwithstanding the foregoing, Buyer may, without consent from Seller, assign any of its rights, duties or obligations under this Agreement: (i) to a Financing Party, (ii) to one or more of its Affiliates of equal or greater creditworthiness as Buyer, (iii) to one or more third parties in connection with a collateral assignment of rights, mortgage, pledge or otherwise, (iv) to any Person or entity succeeding to all or substantially all of the stock or assets of Buyer, provided that such assignee can provide reasonable evidence of its financial and technical wherewithal to perform the obligations of assignor, or (v) to a successor entity in a merger or acquisition transaction. In order to facilitate financing of the System, Seller agrees to enter into a consent and assignment agreement with Buyer's Financing Party reasonably required by Buyer and such Financing Party on terms reasonably acceptable to Seller. An assignment by either Party in accordance with this Section shall relieve the assignor of its obligations hereunder, except with respect to undisputed payments due by the assignor as of the effective date of the assignment, which obligations shall be performed by assignor or assignee as a condition precedent to such assignment.

**19. Governing Law.** This Agreement shall be interpreted in accordance with the laws in the State of Maine. All disputes shall be resolved in courts of the State of Maine.

**20. Risk of Loss.** The Seller is responsible for any damage to the property, except for normal wear and tear until the closing. If there is damage, the Buyer can proceed with the closing or terminate this Agreement.

**21. Complete Agreement.** This contract is the entire and only agreement between the Buyer and the Seller, replaces and cancels any previous agreements between the Buyer and the Seller and can

only be changed by an agreement in writing signed by both Buyer and Seller. The Seller states that the Seller has not made any other contract to sell the property to anyone else.

22. **Parties Liable.** This contract is binding upon all parties who sign it and all who succeed to their rights and responsibilities.

23. **Notices.** All notices under this contract must be in writing. The notices must be delivered personally, mailed by certified mail, return receipt requested, or overnight courier, to the other party at the address written in this contract, or to that party's attorney, and be received by that party. Notices delivered personally shall be deemed delivered upon receipt. Notices sent by certified mail shall be deemed delivered on the date of receipt or the date of first rejection. Notices sent via overnight mail shall be deemed delivered 1 day after deposit to the overnight delivery service.

***REMAINDER OF PAGE INTENTIONALLY LEFT BLANK – SIGNATURE PAGE FOLLOWS***

**IN WITNESS WHEREOF**, the Parties have executed this Agreement on the day and year set forth above as the Effective Date.

**NextGrid Inc and Assigns**

DocuSigned by:  
By: Aaron Culig  
60A9A75DB85D418...

Name: Aaron Culig

Date: 8/8/2019

**Seller, 1875 Lisbon Road, LLC**

Signature: David M. Gendron

Name: David M. Gendron

Date: 8/14/19

Exhibit A



**PROPERTY ADDRESS**

*1875 Lisbon Road Lewiston, ME*

*ZONING HB- Highway Business (HB)*

*OWNER OF RECORD- 1875 Lisbon Road, LLC*

*UTILITIES- Municipal water & sewer*

*ASSESSORS REFERENCE- Map 69, Lot 02*

*REAL ESTATE TAXES [REDACTED] (2018/2019)*

*REGISTRY OF DEEDS REFERENCE- 7999/225*

**ASSESSED VALUE**

*Land: [REDACTED]*

*Total: [REDACTED]*

*LOT SIZE 13.19± Acres*

*PURCHASE PRICE- [REDACTED]*

## **Attachment D**

### **Soil Report**



United States  
Department of  
Agriculture

**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for Androscoggin and Sagadahoc Counties, Maine

## Libson Road-Lewiston Soil Map



# Preface

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Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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# How Soil Surveys Are Made

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Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

## Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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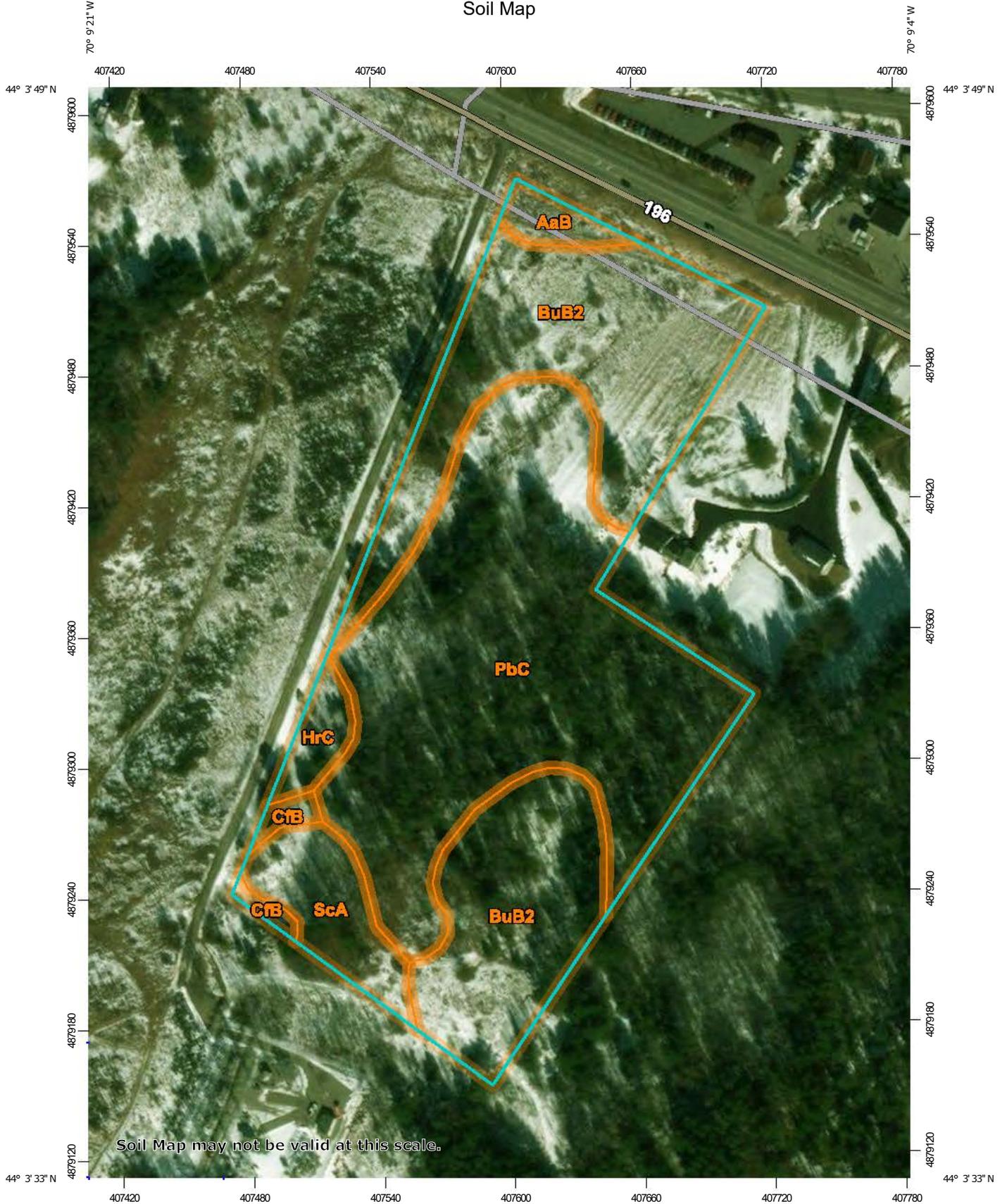
identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

---

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

# Custom Soil Resource Report Soil Map



Map Scale: 1:2,430 if printed on A portrait (8.5" x 11") sheet.



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 20, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Oct 13, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

**MAP LEGEND**

**MAP INFORMATION**

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	0.3	1.9%
BuB2	Lamoine-Buxton complex, 0 to 8 percent slopes	5.2	39.7%
CfB	Charlton fine sandy loam, 0 to 8 percent slopes	0.2	1.2%
HrC	Lyman-Tunbridge complex, 8 to 15 percent slopes, rocky	0.3	2.4%
PbC	Paxton loam, 8 to 15 percent slopes	6.4	48.5%
ScA	Scantic silt loam, 0 to 3 percent slopes	0.8	6.3%
<b>Totals for Area of Interest</b>		<b>13.2</b>	<b>100.0%</b>

## Map Unit Descriptions

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

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it

## Custom Soil Resource Report

was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## Androscoggin and Sagadahoc Counties, Maine

### AaB—Adams loamy sand, 0 to 8 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2wqn9

*Elevation:* 10 to 2,000 feet

*Mean annual precipitation:* 31 to 95 inches

*Mean annual air temperature:* 27 to 52 degrees F

*Frost-free period:* 90 to 160 days

*Farmland classification:* Farmland of statewide importance

#### Map Unit Composition

*Adams and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Adams

##### Setting

*Landform:* Outwash terraces

*Landform position (two-dimensional):* Backslope, summit

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Sandy glaciofluvial deposits

##### Typical profile

*Ap - 0 to 7 inches:* loamy sand

*Bs - 7 to 21 inches:* sand

*BC - 21 to 27 inches:* sand

*C - 27 to 65 inches:* sand

##### Properties and qualities

*Slope:* 0 to 8 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Somewhat excessively drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (1.42 to 14.17 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline (0.0 to 1.9 mmhos/cm)

*Available water storage in profile:* Low (about 3.6 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3s

*Hydrologic Soil Group:* A

*Hydric soil rating:* No

#### Minor Components

##### Croghan

*Percent of map unit:* 5 percent

*Landform:* Outwash terraces

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*Landform position (two-dimensional):* Foothlope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Hydric soil rating:* No

### **Colton**

*Percent of map unit:* 5 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Backslope, summit  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### **Allagash**

*Percent of map unit:* 3 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### **Nicholville**

*Percent of map unit:* 2 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Foothlope, toeslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Hydric soil rating:* No

## **BuB2—Lamoine-Buxton complex, 0 to 8 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2x1bv  
*Elevation:* 10 to 490 feet  
*Mean annual precipitation:* 33 to 60 inches  
*Mean annual air temperature:* 36 to 52 degrees F  
*Frost-free period:* 90 to 160 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Lamoine and similar soils:* 60 percent  
*Buxton and similar soils:* 25 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

## Custom Soil Resource Report

### Description of Lamoine

#### Setting

*Landform:* Marine terraces, river valleys  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Fine glaciomarine deposits

#### Typical profile

*Ap - 0 to 7 inches:* silt loam  
*Bw - 7 to 13 inches:* silt loam  
*Bg - 13 to 24 inches:* silty clay loam  
*Cg - 24 to 65 inches:* silty clay

#### Properties and qualities

*Slope:* 0 to 8 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Somewhat poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.14 in/hr)  
*Depth to water table:* About 6 to 17 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline (0.0 to 1.9 mmhos/cm)  
*Available water storage in profile:* Moderate (about 7.6 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3w  
*Hydrologic Soil Group:* C/D  
*Hydric soil rating:* No

### Description of Buxton

#### Setting

*Landform:* Marine terraces, river valleys  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Parent material:* Fine glaciomarine deposits

#### Typical profile

*Ap - 0 to 7 inches:* silt loam  
*Bw1 - 7 to 18 inches:* silt loam  
*Bw2 - 18 to 23 inches:* silty clay loam  
*BC - 23 to 35 inches:* silty clay loam  
*C - 35 to 65 inches:* silty clay

#### Properties and qualities

*Slope:* 5 to 8 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Moderately well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.14 in/hr)

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*Depth to water table:* About 17 to 24 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline (0.0 to 1.9 mmhos/cm)  
*Available water storage in profile:* High (about 9.1 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3e  
*Hydrologic Soil Group:* C/D  
*Hydric soil rating:* No

### Minor Components

#### Scantic

*Percent of map unit:* 10 percent  
*Landform:* Marine terraces, river valleys  
*Landform position (two-dimensional):* Toeslope, footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

#### Buxton, > 8% slopes

*Percent of map unit:* 3 percent  
*Landform:* Marine terraces, river valleys  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

#### Ragmuff

*Percent of map unit:* 1 percent  
*Landform:* River valleys, marine terraces  
*Landform position (two-dimensional):* Backslope, shoulder  
*Landform position (three-dimensional):* Base slope, side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

#### Biddeford

*Percent of map unit:* 1 percent  
*Landform:* Marine terraces, river valleys  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Ecological site:* Marine Terrace Depression (F144BY002ME)  
*Hydric soil rating:* Yes

## **CfB—Charlton fine sandy loam, 0 to 8 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 9kct  
*Elevation:* 10 to 3,500 feet  
*Mean annual precipitation:* 34 to 50 inches  
*Mean annual air temperature:* 37 to 46 degrees F  
*Frost-free period:* 60 to 160 days  
*Farmland classification:* All areas are prime farmland

### **Map Unit Composition**

*Charlton and similar soils:* 89 percent  
*Minor components:* 11 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Charlton**

#### **Setting**

*Landform:* Till plains  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Coarse-loamy supraglacial meltout till derived from mica schist

#### **Typical profile**

*H1 - 0 to 7 inches:* fine sandy loam  
*H2 - 7 to 24 inches:* fine sandy loam  
*H3 - 24 to 65 inches:* fine sandy loam

#### **Properties and qualities**

*Slope:* 3 to 8 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 6.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Moderate (about 6.2 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 2e  
*Hydrologic Soil Group:* A  
*Hydric soil rating:* No

**Minor Components**

**Woodbridge**

*Percent of map unit:* 4 percent  
*Landform:* Hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

**Hollis**

*Percent of map unit:* 2 percent  
*Landform:* Hills  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Interfluve, crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Rock outcrop**

*Percent of map unit:* 1 percent  
*Hydric soil rating:* No

**Leicester**

*Percent of map unit:* 1 percent  
*Landform:* Till plains  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

**Tunbridge**

*Percent of map unit:* 1 percent  
*Landform:* Till plains  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Rise  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Paxton**

*Percent of map unit:* 1 percent  
*Landform:* Drumlinoid ridges  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Interfluve, crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Charlton, slopes > 8 percent**

*Percent of map unit:* 1 percent  
*Landform:* Till plains  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

## **HrC—Lyman-Tunbridge complex, 8 to 15 percent slopes, rocky**

### **Map Unit Setting**

*National map unit symbol:* 2x1cy

*Elevation:* 0 to 520 feet

*Mean annual precipitation:* 36 to 65 inches

*Mean annual air temperature:* 36 to 52 degrees F

*Frost-free period:* 90 to 160 days

*Farmland classification:* Farmland of statewide importance

### **Map Unit Composition**

*Lyman and similar soils:* 45 percent

*Tunbridge and similar soils:* 40 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Lyman**

#### **Setting**

*Landform:* Hills, ridges

*Landform position (two-dimensional):* Backslope, shoulder, summit

*Landform position (three-dimensional):* Crest, nose slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Loamy supraglacial till derived from granite and gneiss and/or loamy supraglacial till derived from phyllite and/or loamy supraglacial till derived from mica schist

#### **Typical profile**

*Oe - 0 to 1 inches:* moderately decomposed plant material

*A - 1 to 3 inches:* loam

*E - 3 to 5 inches:* fine sandy loam

*Bhs - 5 to 7 inches:* loam

*Bs1 - 7 to 11 inches:* loam

*Bs2 - 11 to 18 inches:* channery loam

*R - 18 to 79 inches:* bedrock

#### **Properties and qualities**

*Slope:* 8 to 15 percent

*Percent of area covered with surface fragments:* 1.5 percent

*Depth to restrictive feature:* 11 to 24 inches to lithic bedrock

*Natural drainage class:* Somewhat excessively drained

*Capacity of the most limiting layer to transmit water (Ksat):* Very low to high (0.00 to 14.03 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* Low (about 3.2 inches)

## Custom Soil Resource Report

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* D  
*Hydric soil rating:* No

### Description of Tunbridge

#### Setting

*Landform:* Hills, ridges  
*Landform position (two-dimensional):* Backslope, summit, shoulder  
*Landform position (three-dimensional):* Side slope, crest  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Parent material:* Loamy supraglacial till derived from granite and gneiss and/or loamy supraglacial till derived from phyllite and/or loamy supraglacial till derived from mica schist

#### Typical profile

*Oe - 0 to 3 inches:* moderately decomposed plant material  
*Oa - 3 to 5 inches:* highly decomposed plant material  
*E - 5 to 8 inches:* fine sandy loam  
*Bhs - 8 to 11 inches:* fine sandy loam  
*Bs - 11 to 26 inches:* fine sandy loam  
*BC - 26 to 28 inches:* fine sandy loam  
*R - 28 to 79 inches:* bedrock

#### Properties and qualities

*Slope:* 8 to 15 percent  
*Percent of area covered with surface fragments:* 1.5 percent  
*Depth to restrictive feature:* 21 to 41 inches to lithic bedrock  
*Natural drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to high (0.00 to 14.03 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Low (about 5.6 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* C  
*Hydric soil rating:* No

### Minor Components

#### Ragmuff

*Percent of map unit:* 5 percent  
*Landform:* Ridges, hills  
*Landform position (two-dimensional):* Backslope, footslope  
*Landform position (three-dimensional):* Base slope, side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

## Custom Soil Resource Report

### **Abram**

*Percent of map unit:* 5 percent  
*Landform:* Ridges, hills  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Nose slope, crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### **Peru**

*Percent of map unit:* 4 percent  
*Landform:* Ridges, hills  
*Landform position (two-dimensional):* Backslope, footslope  
*Landform position (three-dimensional):* Base slope, side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### **Rock outcrop**

*Percent of map unit:* 1 percent  
*Landform:* Ridges, hills  
*Landform position (two-dimensional):* Shoulder, summit  
*Landform position (three-dimensional):* Nose slope, crest, free face  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

## **PbC—Paxton loam, 8 to 15 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 9kf1  
*Elevation:* 10 to 3,500 feet  
*Mean annual precipitation:* 34 to 50 inches  
*Mean annual air temperature:* 37 to 46 degrees F  
*Frost-free period:* 60 to 160 days  
*Farmland classification:* Farmland of statewide importance

### **Map Unit Composition**

*Paxton and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Paxton**

#### **Setting**

*Landform:* Drumlinoid ridges  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Interfluve, crest  
*Down-slope shape:* Convex

## Custom Soil Resource Report

*Across-slope shape:* Convex

*Parent material:* Coarse-loamy lodgment till derived from mica schist

### Typical profile

*H1 - 0 to 8 inches:* loam

*H2 - 8 to 20 inches:* fine sandy loam

*H3 - 20 to 65 inches:* gravelly fine sandy loam

### Properties and qualities

*Slope:* 8 to 15 percent

*Depth to restrictive feature:* 18 to 40 inches to densic material

*Natural drainage class:* Well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.60 in/hr)

*Depth to water table:* About 24 to 42 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* Very low (about 2.9 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3e

*Hydrologic Soil Group:* C

*Hydric soil rating:* No

### Minor Components

#### Woodbridge

*Percent of map unit:* 5 percent

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil rating:* No

#### Charlton

*Percent of map unit:* 4 percent

*Landform:* Till plains

*Landform position (three-dimensional):* Dip

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

#### Tunbridge

*Percent of map unit:* 2 percent

*Landform:* Till plains

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Rise

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

#### Leicester

*Percent of map unit:* 2 percent

*Landform:* Till plains

*Landform position (three-dimensional):* Talf

*Down-slope shape:* Concave

## Custom Soil Resource Report

*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

### **Paxton, slopes > 15 percent**

*Percent of map unit:* 1 percent  
*Landform:* Drumlinoid ridges  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Interfluve, crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### **Paxton, slopes < 8 percent**

*Percent of map unit:* 1 percent  
*Landform:* Drumlinoid ridges  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Interfluve, crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

## **ScA—Scantic silt loam, 0 to 3 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2slv3  
*Elevation:* 10 to 900 feet  
*Mean annual precipitation:* 33 to 60 inches  
*Mean annual air temperature:* 39 to 45 degrees F  
*Frost-free period:* 90 to 160 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Scantic and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Scantic**

#### **Setting**

*Landform:* Marine terraces, river valleys  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Glaciomarine deposits

#### **Typical profile**

*Ap - 0 to 9 inches:* silt loam  
*Bg1 - 9 to 16 inches:* silty clay loam  
*Bg2 - 16 to 29 inches:* silty clay  
*Cg - 29 to 65 inches:* silty clay

## Custom Soil Resource Report

### Properties and qualities

*Slope:* 0 to 3 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)  
*Depth to water table:* About 0 to 12 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Moderate (about 6.3 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4w  
*Hydrologic Soil Group:* D  
*Hydric soil rating:* Yes

### Minor Components

#### Lamoine

*Percent of map unit:* 8 percent  
*Landform:* River valleys, marine terraces  
*Landform position (three-dimensional):* Riser, rise  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

#### Biddeford

*Percent of map unit:* 3 percent  
*Landform:* Marine terraces, river valleys  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave, linear  
*Ecological site:* Marine Terrace Depression (F144BY002ME)  
*Hydric soil rating:* Yes

#### Roundabout

*Percent of map unit:* 2 percent  
*Landform:* River valleys, marine terraces  
*Landform position (three-dimensional):* Tread, talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* Yes

#### Buxton

*Percent of map unit:* 2 percent  
*Landform:* Marine terraces, river valleys  
*Landform position (three-dimensional):* Riser, rise  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

## Custom Soil Resource Report

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## Custom Soil Resource Report

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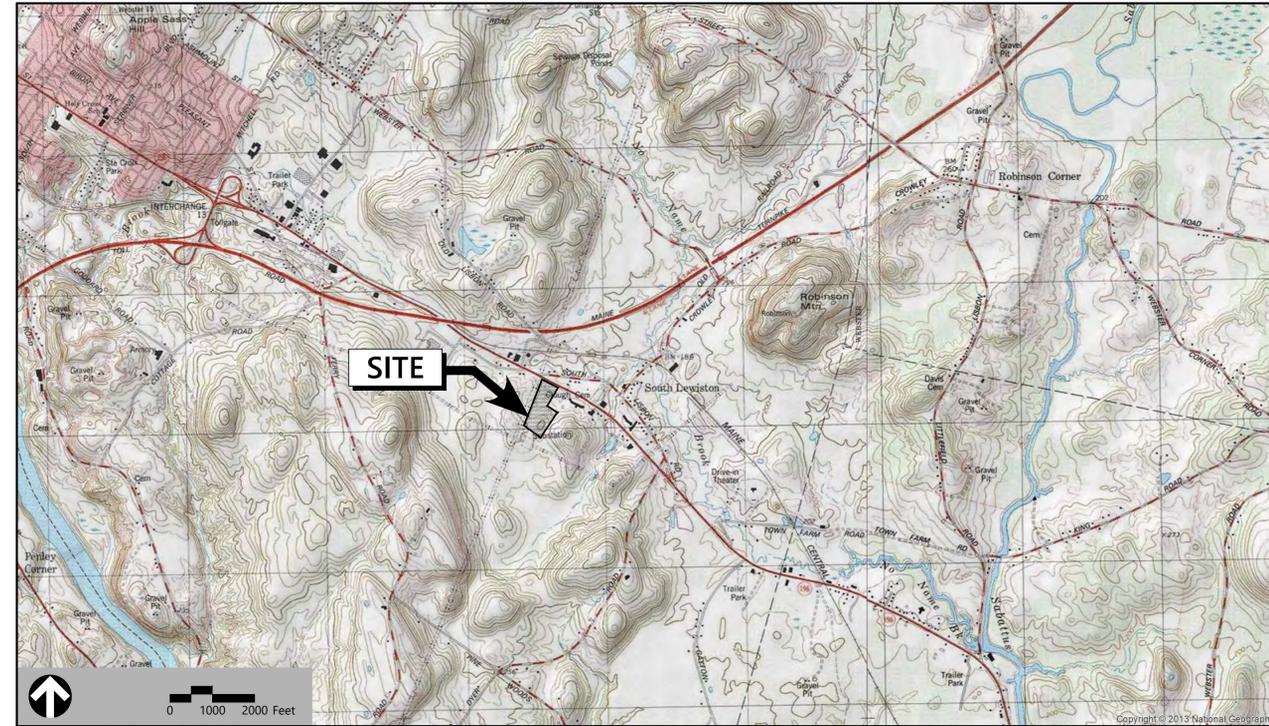
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# Site Plans

Issued for     Permitting  
 Date Issued    February 28, 2020  
 Latest Issue    April 14, 2020

## NextGrid Solar Farm

1875 Lisbon Street  
 Lewiston, Maine 04240



500 Southborough Drive  
 Suite 105B  
 South Portland, ME 04106  
 207.889.3150

### Owners

1875 Lisbon Road LLC  
 P.O. Box 1915  
 Lewiston, ME 04241

### Applicant

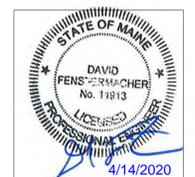
NextGrid Inc.  
 P.O. Box 7775 #73069  
 San Francisco, CA 94120

### Assessor's Information:

Map 069, Lot 002

### Sheet Index

No.	Drawing Title	Latest Issue
C1.0	Legend and General Notes	April 14, 2020
C2.1	Site Plan	April 14, 2020
C2.1A	Site Plan (With Aerial)	April 14, 2020
C2.2	Erosion & Sediment Control Plan	April 14, 2020
C3.1	Site Details	April 14, 2020
C3.2	Erosion & Sediment Control Notes & Details	April 14, 2020
L-1	Landscape Plan	April 14, 2020
L-2	Landscape Notes and Details	April 14, 2020





500 Southborough Drive  
Suite 105B  
South Portland, ME 04106  
207.889.3150

Legend

Legend table with columns for 'Exist.' and 'Prop.' symbols and descriptions for various site features like property lines, easements, curbs, and utilities.

Abbreviations

Abbreviations table listing symbols for general items (ABAN, ACR, ADJ, etc.) and utility items (CB, CMP, CO, etc.).

Purpose of Plans

- 1. THE PURPOSE OF THIS PLAN IS TO SHOW THE DEVELOPMENT OF A SOLAR FARM IN LEWISTON, MAINE.

General

- 1. CONTRACTOR SHALL NOTIFY "DIG-SAFE" (811 OR 1-888-344-7233) AT LEAST 72 HOURS BEFORE EXCAVATING.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS.
3. ACCESSIBLE ROUTES, PARKING SPACES, RAMPS, SIDEWALKS AND WALKWAYS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE FEDERAL AMERICANS WITH DISABILITIES ACT AND WITH STATE AND LOCAL LAWS AND REGULATIONS (WHICHEVER ARE MORE STRINGENT).

Demolition

- 1. CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING MANMADE SURFACE FEATURES WITHIN THE LIMIT OF WORK INCLUDING BUILDINGS, STRUCTURES, PAVEMENTS, SLABS, CURBING, FENCES, UTILITY POLES, SIGNS, ETC. UNLESS INDICATED OTHERWISE ON THE DRAWINGS, REMOVE AND DISPOSE OF EXISTING UTILITIES, FOUNDATIONS AND UNSUITABLE MATERIAL BENEATH AND FOR A DISTANCE OF 10 FEET BEYOND THE PROPOSED BUILDING FOOTPRINT INCLUDING EXTERIOR COLUMNS.
2. EXISTING UTILITIES SHALL BE TERMINATED, UNLESS OTHERWISE NOTED, IN CONFORMANCE WITH LOCAL, STATE AND INDIVIDUAL UTILITY COMPANY STANDARD SPECIFICATIONS AND DETAILS. THE CONTRACTOR SHALL COORDINATE UTILITY SERVICE DISCONNECTS WITH THE UTILITY REPRESENTATIVES.

Existing Conditions Information

- 1. BASE PLAN: THE PROPERTY LINES AND TOPOGRAPHY HAVE BEEN PROVIDED BY MAINE GIS. TOPOGRAPHY IS BASED ON 2M DEM LIDAR FLIGHTS BETWEEN THE YEARS OF 2006 - 2013.
A. DELINEATION OF THE WETLANDS AND PLACEMENT OF THE FLAGS WAS PERFORMED BY: VHB DURING NOVEMBER 2019.
B. FLAGS MARKING THE WETLANDS WERE LOCATED BY: VHB USING GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) RECEIVERS WITH SUB-METER ACCURACY.
C. APPROXIMATE WETLANDS WERE MAPPED USING TOPOGRAPHY, VEGETATION AND SOILS INFORMATION AS GUIDELINES.

Document Use

- 1. THESE PLANS AND CORRESPONDING CADD DOCUMENTS ARE INSTRUMENTS OF PROFESSIONAL SERVICE, AND SHALL NOT BE USED, IN WHOLE OR IN PART, FOR ANY PURPOSE OTHER THAN FOR WHICH IT WAS CREATED WITHOUT THE EXPRESSED, WRITTEN CONSENT OF VHB. ANY UNAUTHORIZED USE, REUSE, MODIFICATION OR ALTERATION, INCLUDING AUTOMATED CONVERSION OF THIS DOCUMENT SHALL BE AT THE USER'S SOLE RISK WITHOUT LIABILITY OR LEGAL EXPOSURE TO VHB.
2. CONTRACTOR SHALL NOT RELY SOLELY ON ELECTRONIC VERSIONS OF PLANS, SPECIFICATIONS, AND DATA FILES THAT ARE OBTAINED FROM THE DESIGNER, BUT SHALL VERIFY LOCATION OF PROJECT FEATURES IN ACCORDANCE WITH THE PAPER COPIES OF THE PLANS AND SPECIFICATIONS THAT ARE SUPPLIED AS PART OF THE CONTRACT DOCUMENTS.

Utilities

- 1. THE LOCATIONS, SIZES, AND TYPES OF EXISTING UTILITIES ARE SHOWN AS AN APPROXIMATE REPRESENTATION ONLY. THE OWNER OR ITS REPRESENTATIVE(S) HAVE NOT INDEPENDENTLY VERIFIED THIS INFORMATION AS SHOWN ON THE PLANS. THE UTILITY INFORMATION SHOWN DOES NOT GUARANTEE THE ACTUAL EXISTENCE, SERVICEABLE NATURE, OR OTHER DATA CONCERNING THE UTILITIES, NOR DOES IT GUARANTEE AGAINST THE POSSIBILITY THAT ADDITIONAL UTILITIES MAY BE PRESENT THAT ARE NOT SHOWN ON THE PLANS. PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY AND DETERMINE THE EXACT LOCATIONS, SIZES, AND ELEVATIONS OF THE POINTS OF CONNECTIONS TO EXISTING UTILITIES AND SHALL CONFIRM THAT THERE ARE NO INTERFERENCES WITH EXISTING UTILITIES AND THE PROPOSED UTILITY ROUTES, INCLUDING ROUTES WITHIN THE PUBLIC RIGHTS OF WAY.
2. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, OR EXISTING CONDITIONS DIFFER FROM THOSE SHOWN SUCH THAT THE WORK CANNOT BE COMPLETED AS INTENDED, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED IN WRITING TO THE OWNER'S REPRESENTATIVE FOR THE RESOLUTION OF THE CONFLICT AND CONTRACTOR'S FAILURE TO NOTIFY PRIOR TO PERFORMING ADDITIONAL WORK RELEASES OWNER FROM OBLIGATIONS FOR ADDITIONAL PAYMENTS WHICH OTHERWISE MAY BE WARRANTED TO RESOLVE THE CONFLICT.

Layout and Materials

- 1. DIMENSIONS ARE FROM THE EDGE OF GRAVEL, EDGE OF CONCRETE, UNLESS OTHERWISE NOTED.
2. SEE ELECTRICAL DRAWINGS FOR EXACT PANEL DIMENSIONS.
3. PROPOSED BOUNDS AND ANY EXISTING PROPERTY LINE MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE SET OR RESET BY A PROFESSIONAL LAND SURVEYOR (PLS).
4. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL VERIFY EXISTING PAVEMENT AND/OR GRAVEL DRIVE ELEVATIONS AT INTERFACE WITH PROPOSED DRIVES, AND EXISTING GROUND ELEVATIONS ADJACENT TO DRAINAGE OUTLETS TO ASSURE PROPER TRANSITIONS BETWEEN EXISTING AND PROPOSED FACILITIES.

NextGrid Solar Farm  
1875 Lisbon St  
Lewiston, Maine 04240

Revision table with columns for No., Revision, Date, and Aspd.

Designed by PG Checked by CG

Issued for Permitting Date February 28, 2020

Not Approved for Construction  
Legend and General Notes



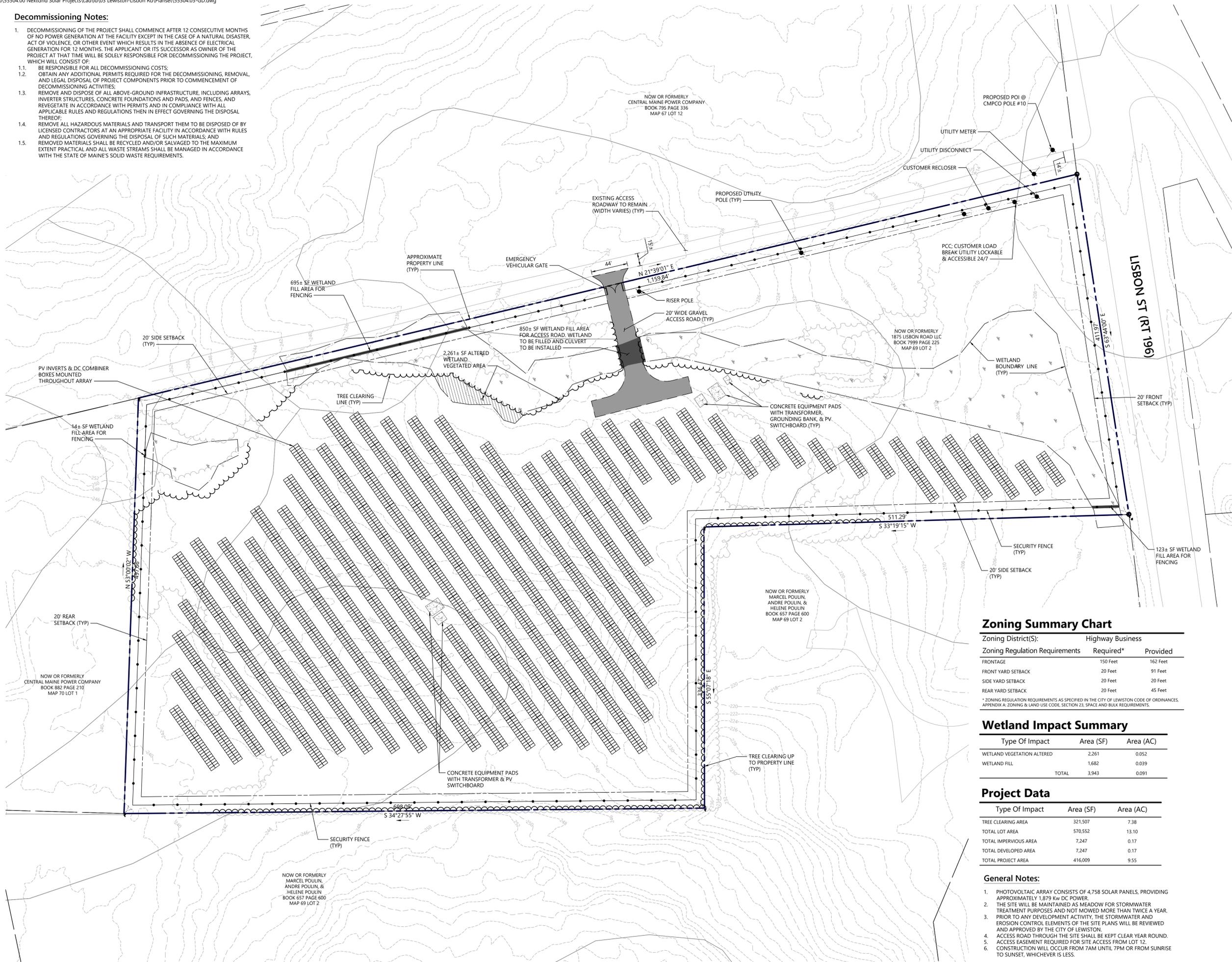
C1.0

Sheet 1 of 8

Project Number 55304.03

**Decommissioning Notes:**

1. DECOMMISSIONING OF THE PROJECT SHALL COMMENCE AFTER 12 CONSECUTIVE MONTHS OF NO POWER GENERATION AT THE FACILITY EXCEPT IN THE CASE OF A NATURAL DISASTER, ACT OF VIOLENCE, OR OTHER EVENT WHICH RESULTS IN THE ABSENCE OF ELECTRICAL GENERATION FOR 12 MONTHS. THE APPLICANT OR ITS SUCCESSOR AS OWNER OF THE PROJECT AT THAT TIME WILL BE SOLELY RESPONSIBLE FOR DECOMMISSIONING THE PROJECT, WHICH WILL CONSIST OF:
  - 1.1. BE RESPONSIBLE FOR ALL DECOMMISSIONING COSTS;
  - 1.2. OBTAIN ANY ADDITIONAL PERMITS REQUIRED FOR THE DECOMMISSIONING, REMOVAL, AND LEGAL DISPOSAL OF PROJECT COMPONENTS PRIOR TO COMMENCEMENT OF DECOMMISSIONING ACTIVITIES;
  - 1.3. REMOVE AND DISPOSE OF ALL ABOVE-GROUND INFRASTRUCTURE, INCLUDING ARRAYS, INVERTER STRUCTURES, CONCRETE FOUNDATIONS AND PADS, AND FENCES, AND REVEGETATE IN ACCORDANCE WITH PERMITS AND IN COMPLIANCE WITH ALL APPLICABLE RULES AND REGULATIONS THEN IN EFFECT GOVERNING THE DISPOSAL THEREOF;
  - 1.4. REMOVE ALL HAZARDOUS MATERIALS AND TRANSPORT THEM TO BE DISPOSED OF BY LICENSED CONTRACTORS AT AN APPROPRIATE FACILITY IN ACCORDANCE WITH RULES AND REGULATIONS GOVERNING THE DISPOSAL OF SUCH MATERIALS; AND REMOVED MATERIALS SHALL BE RECYCLED AND/OR SALVAGED TO THE MAXIMUM EXTENT PRACTICAL AND ALL WASTE STREAMS SHALL BE MANAGED IN ACCORDANCE WITH THE STATE OF MAINE'S SOLID WASTE REQUIREMENTS.



500 Southborough Drive  
Suite 105B  
South Portland, ME 04106  
207.889.3150

**CITY OF LEWISTON APPROVAL**

Planning Board Chair \_\_\_\_\_ Date \_\_\_\_\_



**Zoning Summary Chart**

Zoning District(S):	Highway Business	
Zoning Regulation Requirements	Required*	Provided
FRONTAGE	150 Feet	162 Feet
FRONT YARD SETBACK	20 Feet	91 Feet
SIDE YARD SETBACK	20 Feet	20 Feet
REAR YARD SETBACK	20 Feet	45 Feet

\* ZONING REGULATION REQUIREMENTS AS SPECIFIED IN THE CITY OF LEWISTON CODE OF ORDINANCES, APPENDIX A: ZONING & LAND USE CODE, SECTION 23, SPACE AND BULK REQUIREMENTS.

**Wetland Impact Summary**

Type Of Impact	Area (SF)	Area (AC)
WETLAND VEGETATION ALTERED	2,261	0.052
WETLAND FILL	1,682	0.039
<b>TOTAL</b>	<b>3,943</b>	<b>0.091</b>

**Project Data**

Type Of Impact	Area (SF)	Area (AC)
TREE CLEARING AREA	321,507	7.38
TOTAL LOT AREA	570,552	13.10
TOTAL IMPERVIOUS AREA	7,247	0.17
TOTAL DEVELOPED AREA	7,247	0.17
TOTAL PROJECT AREA	416,009	9.55

**General Notes:**

1. PHOTOVOLTAIC ARRAY CONSISTS OF 4,798 SOLAR PANELS, PROVIDING APPROXIMATELY 1,879 KW DC POWER.
2. THE SITE WILL BE MAINTAINED AS MEADOW FOR STORMWATER TREATMENT PURPOSES AND NOT MOWED MORE THAN TWICE A YEAR. PRIOR TO ANY DEVELOPMENT ACTIVITY, THE STORMWATER AND EROSION CONTROL ELEMENTS OF THE SITE PLANS WILL BE REVIEWED AND APPROVED BY THE CITY OF LEWISTON.
3. ACCESS ROAD THROUGH THE SITE SHALL BE KEPT CLEAR YEAR ROUND.
4. ACCESS EASEMENT REQUIRED FOR SITE ACCESS FROM LOT 12.
5. CONSTRUCTION WILL OCCUR FROM 7AM UNTIL 7PM OR FROM SUNRISE TO SUNSET, WHICHEVER IS LESS.

**NextGrid Solar Farm**  
1875 Lisbon St  
Lewiston, Maine 04240

No.	Revision	Date	Aspd.
1	REVISED FOR CITY OF LEWISTON REVIEW	4/14/20	DHF

Designed by: NO  
Checked by: CG  
Issued for: \_\_\_\_\_ Date: \_\_\_\_\_

**Permitting** February 28, 2020

**Not Approved for Construction**

Site Plan

Drawing Title

Sheet \_\_\_\_\_ of \_\_\_\_\_

Project Number  
55304.03

STATE OF MAINE  
DAVID FENSINGER  
No. 11813  
LICENSED PROFESSIONAL ENGINEER  
4/14/2020

**C2.1**

Sheet \_\_\_\_\_ of \_\_\_\_\_

Project Number  
55304.03



**CITY OF LEWISTON APPROVAL**

Planning Board Chair \_\_\_\_\_ Date \_\_\_\_\_



**NextGrid Solar Farm**  
1875 Lisbon St  
Lewiston, Maine 04240

No.	Revision	Date	Aspd.
1	REVISED FOR CITY OF LEWISTON REVIEW	4/14/20	DHF
Designed by	NO	Checked by	CG

Issued for: **Permitting** Date: **February 28, 2020**

Not Approved for Construction

**Site Plan (With Aerial)**

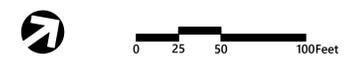
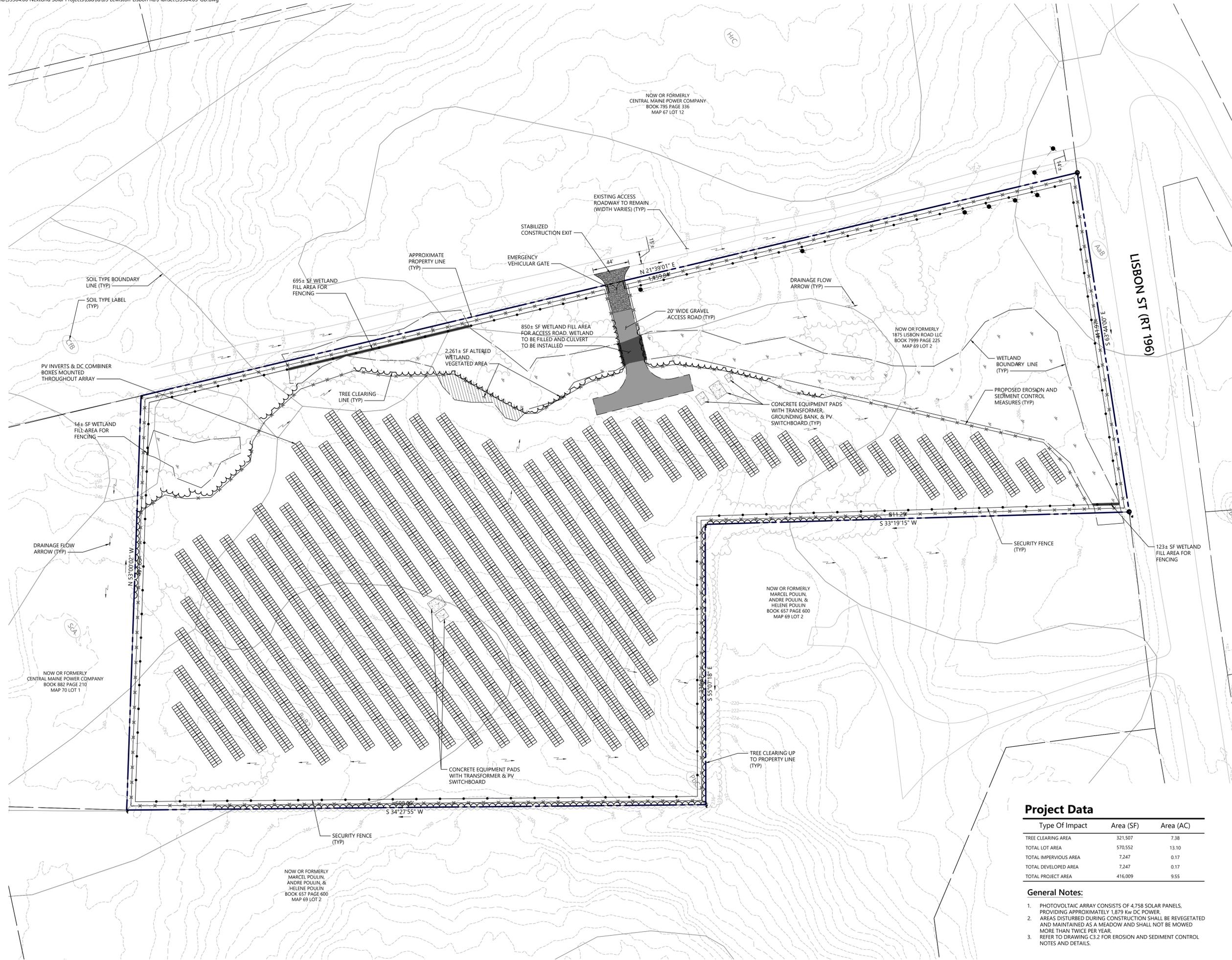
Drawing Number: **C2.1A**

Sheet 3 of 8

Project Number: 55304.03

Date: 4/14/2020





**NextGrid Solar Farm**  
1875 Lisbon St  
Lewiston, Maine 04240

No.	Revision	Date	Aspd.
1	REVISED FOR CITY OF LEWISTON REVIEW	4/14/20	DHF
Designed by		CG	Checked by
Issued for		Permitting	DF
		Date	February 28, 2020

Not Approved for Construction  
Erosion and Sediment Control Plan

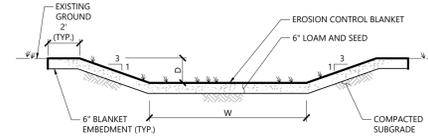
**Project Data**

Type Of Impact	Area (SF)	Area (AC)
TREE CLEARING AREA	321,507	7.38
TOTAL LOT AREA	570,552	13.10
TOTAL IMPERVIOUS AREA	7,247	0.17
TOTAL DEVELOPED AREA	7,247	0.17
TOTAL PROJECT AREA	416,009	9.55

- General Notes:**
- PHOTOVOLTAIC ARRAY CONSISTS OF 4,758 SOLAR PANELS, PROVIDING APPROXIMATELY 1,879 Kw DC POWER.
  - AREAS DISTURBED DURING CONSTRUCTION SHALL BE REVEGETATED AND MAINTAINED AS A MEADOW AND SHALL NOT BE MOWED MORE THAN TWICE PER YEAR.
  - REFER TO DRAWING C3.2 FOR EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.

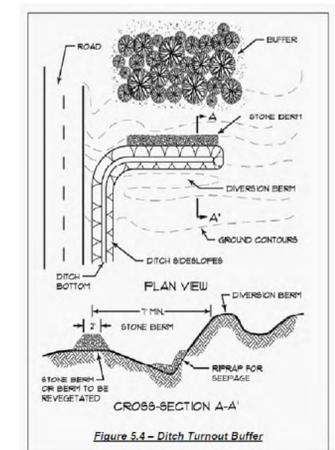


**C2.2**  
Sheet 4 of 8  
Project Number 55304.03



SWALE TABLE		
SWALE DESIGNATION	W	D

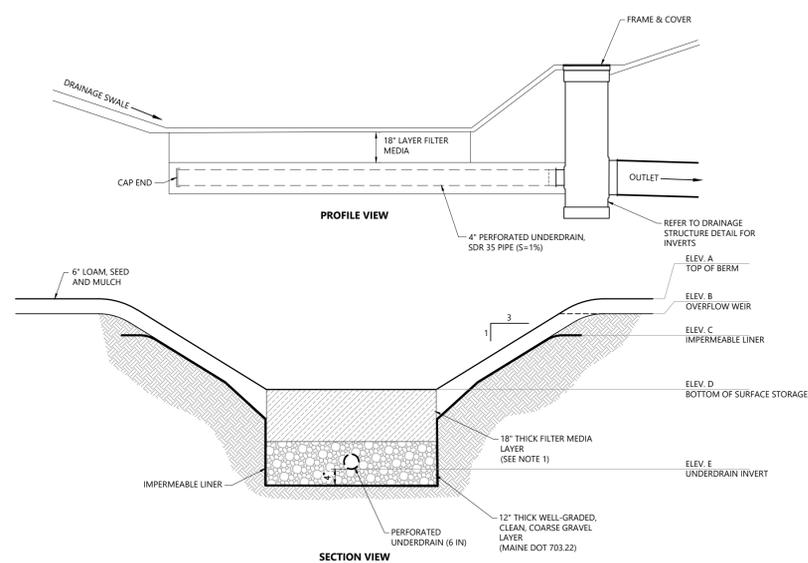
**Grassed Swale** 1/16  
N.T.S. Source: VHB LD\_171



**Figure 5.4 - Ditch Turnout Buffer**

- Stone Berm Specifications:** The stone berm to which the ditch turn-out delivers the runoff must be at least 20 feet in length and must be constructed along the contour. It must be at least one-foot high and two feet across the top with 2:1 side slopes.
- Stone Size:** The stone must be coarse enough that it will not clog with sediment. Stone for stone bermed level lip spreaders must consist of sound durable rock that will not disintegrate by exposure to water or weather. Fieldstone, rough quarried stone, blasted ledge rock or tailings may be used. The rock must be well graded with a median size of approximately 3 inches and a maximum size of 6 inches. See Table 5.4 above.

**Ditch Turnout Buffer** 1/16  
N.T.S. Source: MDEP LD\_171



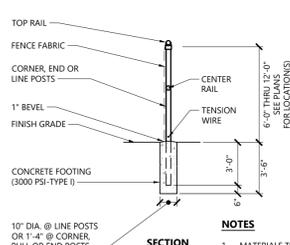
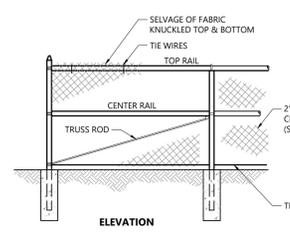
ELEVATION TABLE					
VSF #	A	B	C	D	E

**NOTES**

- VEGETATED SOIL FILTER REQUIREMENTS PER MAINE DEP CHAPTER 500, LATEST EDITION. MINIMUM DRAIN TIME = 24-48 HOURS, ASSUMES AN RATE OF 3 INCHES/HOUR.
- FILTER MEDIA SHALL CONSIST (BY VOLUME) OF:
  - 50% SAND (ASTM C-33 CONCRETE SAND).
  - 20% SANDY LOAM TO FINE SANDY LOAM CONFORMING TO THE FOLLOWING GRADATION:
 

SIEVE (ASTM D422)	PERCENT PASSING BY WEIGHT
NO. 4	75-95
NO. 10	60-90
NO. 40	35-85
NO. 200	20-70
200 (CLAY SIZE)	< 2.0
  - 30% MATURE COMPOSTED WOODY FIBERS AND FINE SHREDDED BARK MULCH, SUPERHUMUS OR EQUIVALENT.
  - RESULTING MIXTURE SHALL HAVE 8% TO 12% PASSING THE NO. 200 SIEVE AND A CLAY CONTENT OF LESS THAN 2%.
- FILTER MEDIA SHALL BE FIELD TESTED TO INSURE DRAINAGE WITHIN 24 TO 48 HOURS AND HAVE SUFFICIENT FINES TO ENSURE FILTRATION OF FINE PARTICLES. GRADATION SHALL BE ADJUSTED, IF REQUIRED, TO MEET THE REQUIRED DRAIN TIME. ADJUSTED GRADATIONS AND DRAINAGE TIME SHALL BE SUBMITTED TO DESIGN ENGINEER FOR REVIEW AND APPROVAL.
- IMPERMEABLE LINER SHALL CONSIST OF HIGH-STRENGTH 30 MIL POLYETHYLENE MEMBRANE WITH BONDED SEAMS AND TEXTURED SURFACE.
- BOTTOM OF BASIN SHALL BE SEEDED WITH A CONSERVATION TYPE SEED MIX AND MULCHED.
- PERFORATED UNDERDRAIN PIPE SHALL BE LAID AS SHOWN IN PLAN VIEW. NO GREATER THAN 15' ON CENTER, TO DRAIN THE ENTIRE FILTER AREA.

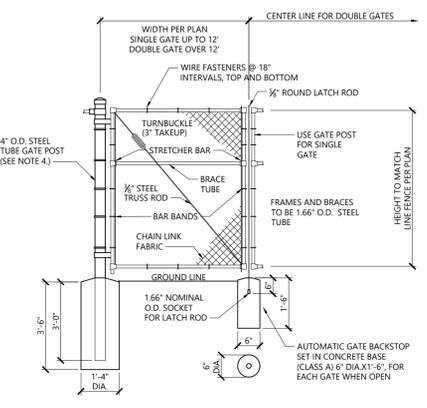
**Vegetated Soil Filter (VSF) Detail** 2/17  
N.T.S. Source: VHB LD\_480



**NOTES**

- MATERIALS TO BE SUPPLIED AND INSTALLED IN CONFORMANCE WITH 'CHAIN LINK MANUFACTURERS' INSTITUTE' PRODUCT MANUAL.
- FENCE VISIBLE FROM THE MAIN ENTRANCE SHALL BE GREEN VINYL COATED.

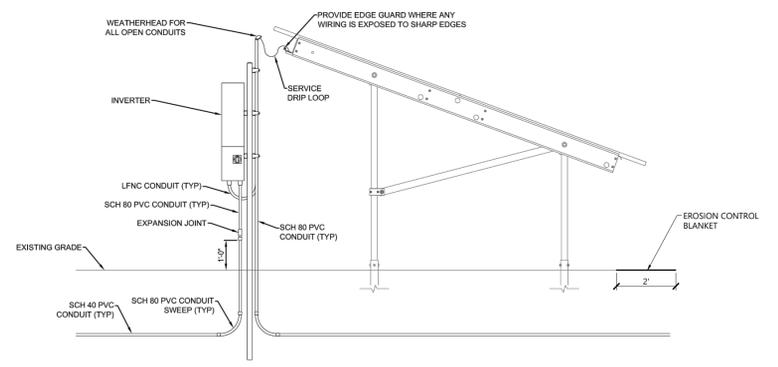
**7' Chain Link Fence** 1/16  
N.T.S. Source: VHB LD\_480



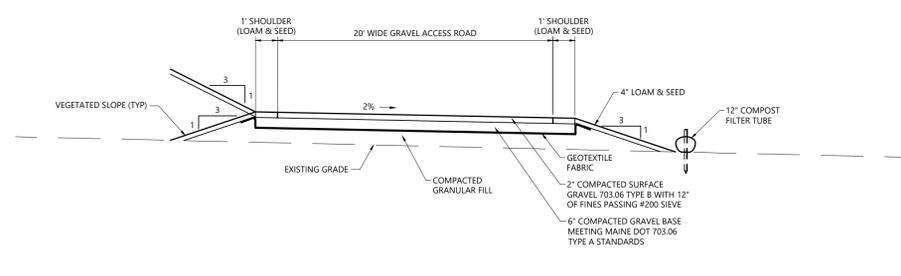
**NOTES**

- CHAIN LINK FABRIC FOR GATES TO BE THE SAME AS REQUIRED FOR FENCE.
- GATE POST BASE-PORTLAND CEMENT CONCRETE (3000 PSI).
- FENCE FABRIC, POSTS, FRAMEWORKS, AND HARDWARE SHALL BE GALVANIZED STEEL PER SPECIFICATIONS.
- GATE POSTS TO BE USED ON EACH SIDE OF SINGLE AND DOUBLE GATE OPENINGS.

**Chain Link Fence Gate** 1/16  
N.T.S. Source: VHB LD\_482



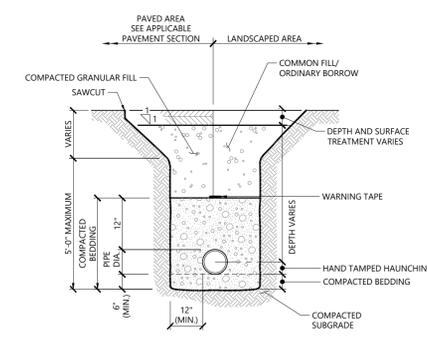
**Inverter and Array Detail (Side)** 1/16  
N.T.S. Source: VHB LD\_300



**NOTES**

- GRAVEL ACCESS ROAD SHALL HAVE A SURFACE BEARING CAPACITY OF 20,000 LBS (MR).

**Gravel Access Road - Typical Section** 1/16  
N.T.S. Source: VHB LD\_300



**NOTES**

- WHERE UTILITY TRENCHES ARE CONSTRUCTED THROUGH DETENTION BASIN BERMS OR OTHER SUCH SPECIAL SECTIONS, PLACE TRENCH BACKFILL WITH MATERIALS SIMILAR TO THE SPECIAL SECTION REQUIREMENTS.
- USE METALLIC TRACING/WARNING TAPE OVER ALL PIPES.

**Utility Trench** 1/16  
N.T.S. Source: VHB REV LD\_300

**NextGrid Solar Farm**  
1875 Lisbon St  
Lewiston, Maine 04240

No.	Revision	Date	Appr.

DESIGNED BY: PG  
CHECKED BY: CG  
DATE: 4/14/20

ISSUED FOR: Permitting February 28, 2020

NOT APPROVED FOR CONSTRUCTION

**Site Details**



**C3.1**  
Sheet 5 of 8

Project Number: 55304.03

**Construction Sequence**

1. SURVEY AND STAKE LIMITS OF CLEARING AND GRUBBING.
2. SURVEY AND STAKE (50 FT OC) LIMITS OF CLEARING AND DISTURBANCE.
3. INSTALL TEMPORARY EROSION CONTROL MEASURES (SILT FENCING, SILT SOCKS, CONSTRUCTION EXITS, ETC).
4. CLEAR AND GRUB WITHIN LIMIT OF ACCESS ROAD. LIMITS OF CLEARING INDICATE AREAS WHERE TREES WILL BE CUT AND STUMPS WILL REMAIN IN THE GROUND.
5. STRIP LOAM AND PAVEMENT OR RECLAIM EXISTING PAVEMENT WITHIN LIMITS OF WORK AND STOCKPILE EXCESS MATERIAL.
6. CONSTRUCT TEMPORARY SEDIMENTATION BERMS AS REQUIRED.
7. INSTALL DRAINAGE SYSTEM, AND OTHER UTILITIES IN ACCORDANCE WITH THE PLANS AND DETAILS.
8. PERFORM FINAL / FINE GRADING INCLUDING SLOPE STABILIZATION BLANKETS.
9. PERFORM ALL REMAINING SITE CONSTRUCTION, (I.E. CONCRETE AND GRAVEL AREAS).
10. LOAM AND SEED ALL DISTURBED AREAS.
11. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER FINAL SURFACING IS INSTALLED, AND LANDSCAPING AREAS ARE ESTABLISHED AND STABILIZED.
12. CLEAN ALL DRAINAGE BASINS, STRUCTURES, PIPES, AND SUMPS WITHIN THE PROJECT LIMITS OF ALL SILT AND DEBRIS

**General**

1. CONTRACTOR SHALL READ, BE FAMILIAR WITH, AND SHALL FOLLOW THE MAINE EROSION AND SEDIMENT CONTROL BMPs MANUAL (LATEST EDITION) AND MAINE EROSION AND SEDIMENT CONTROL FIELD GUIDE FOR CONTRACTORS (LATEST EDITION), AND SHALL BE ACCOUNTABLE TO THE THIRD PARTY INSPECTOR FOR THE PROJECT AND THE MAINE DEP IN ACCORDANCE WITH MAINE DEP REGULATIONS.
2. PRIOR TO STARTING ANY OTHER WORK ON THE SITE, THE CONTRACTOR SHALL NOTIFY APPROPRIATE AGENCIES AND SHALL INSTALL TEMPORARY EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS IDENTIFIED IN FEDERAL, STATE, AND LOCAL APPROVAL DOCUMENTS PERTAINING TO THIS PROJECT.
3. CONTRACTOR SHALL BE FULLY RESPONSIBLE TO CONTROL CONSTRUCTION SUCH THAT SEDIMENTATION SHALL NOT AFFECT REGULATORY PROTECTED AREAS, WHETHER SUCH SEDIMENTATION IS CAUSED BY WATER, WIND, OR DIRECT DEPOSIT.
4. MINIMUM TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL MEASURES ARE SHOWN ON THE EROSION AND SEDIMENTATION CONTROL PLAN. THE CONTRACTOR SHALL ADHERE TO THE MINIMUM PROVISIONS SHOWN. ADDITIONALLY, TEMPORARY MEASURES SHALL BE SELECTED AND CONSTRUCTED BY THE CONTRACTOR IN CONSULTATION WITH THE ENGINEER TO ACCOMMODATE CHANGING FIELD CONDITIONS THAT DEVELOP DURING CONSTRUCTION.
5. PUMPED WATER FROM DEWATERING ACTIVITIES SHALL BE DISCHARGED INTO SETTLING BASINS, FILTER BAGS OR OTHER APPROVED METHODS PRIOR TO DISCHARGE INTO THE ON-SITE STORMWATER MANAGEMENT SYSTEM. ALL WATER FROM DEWATERING ACTIVITIES SHALL BE RECHARGED ON-SITE OR DIRECTED TO THE DETENTION BASIN FOR DISCHARGE.
6. NO MORE THAN 1 ACRE SHOULD BE UNSTABILIZED AT ONE TIME WITHOUT REGULAR INSPECTION OR LIMITED TO AN AREA THAT CAN BE MULCHED IN ONE DAY.

**Seeding/Mulching**

1. FERTILIZER, SUPERPHOSPHATE, AND LIME SHALL BE APPLIED AT RATES RECOMMENDED BY THE TESTING AGENCY AND APPROVED BY THE ENGINEER.
2. PERMANENT SEED SHALL BE SUPPLIED IN THE FOLLOWING PROPORTIONS AND APPLIED AT A RATE OF FIVE POUNDS PER 1,000 SF:  
SEED TYPE (% PROPORTION/% GERMINATION MIN./% PURITY MIN.)  
CREEPING FESCUE (50/85/90)  
KENTUCKY BLUEGRASS (40/85/90)  
MANHATTAN PERENNIAL RYE (10/90/95)
3. TEMPORARY SEED SHALL BE SUPPLIED IN THE FOLLOWING PROPORTIONS AND APPLIED AT A RATE OF 100 POUNDS PER ACRE:  
SEED TYPE (% WEIGHT MIN./% GERMINATION MIN.)  
WINTER RYE (80/85)  
RED FESCUE - CREEPING (4/80)  
PERENNIAL RYE GRASS (3/90)  
RED CLOVER (3/90)
4. MULCH SHALL BE APPLIED TO AREAS IMMEDIATELY AFTER THEY HAVE BEEN SEEDED. MULCH SHALL CONSIST OF HAY, STRAW, HYDRO-MULCH, EROSION CONTROL BLANKETS, EROSION CONTROL MIX OR APPROVED EQUAL.
5. HAY OR STRAW MULCH SHALL BE AIR-DRIED, AND FREE OF UNDESIRABLE SEEDS AND COARSE MATERIALS. MULCH SHALL BE APPLIED AT A MINIMUM RATE OF 75 LB PER 1,000 SF. MULCH SHALL BE ANCHORED WITH NETTING WHEN APPLIED TO SLOPES LESS THAN 15 PERCENT.
6. EROSION CONTROL BLANKETS SHALL BE PROVIDED ON ALL SLOPES STEEPER THAN OF 1-FOOT RISE TO 3-FEET HORIZONTAL. BLANKETS SHALL BE SCISSOR BY (NORTH AMERICAN GREEN; CURLEX BLANKETS (AMERICAN EXCELSIOR COMPANY); POLYUTE STYLE 465 GT (SYNTHETIC INDUSTRIES); OR APPROVED EQUIVALENT. BLANKETS SHALL BE SECURED AS RECOMMENDED BY THE MANUFACTURER.
7. EROSION CONTROL MIX SHALL MEET THE FOLLOWING STANDARDS:  
A. ORGANIC MATTER CONTENT SHALL BE BETWEEN 80%-100%, DRY WEIGHT BASIS.  
B. PARTICLE SIZE BY WEIGHT: 100% PASSING THE 6" SCREEN  
C. ORGANIC PORTION SHALL BE FIBROUS AND ELONGATED  
D. SOLUBLE SALTS CONTENT SHALL BE < 4.0 MMHOS/CM AND  
E. pH SHALL BE BETWEEN 5.0 AND 8.0.

**Temporary Erosion Control Measures**

1. CONTRACTOR SHALL PERFORM CONSTRUCTION SEQUENCING SUCH THAT EARTH MATERIALS ARE EXPOSED FOR A MINIMUM AMOUNT OF TIME BEFORE THEY ARE COVERED, SEEDED, OR OTHERWISE STABILIZED TO PREVENT EROSION. AREAS REMAINING UNSTABILIZED FOR A PERIOD OF MORE THAN 15 DAYS SHALL BE TEMPORARILY MULCHED. TOTAL EXPOSED AREAS SHALL BE LIMITED TO NO MORE THAN CAN BE MULCHED IN ONE DAY.
2. TEMPORARY MULCH SHALL BE APPLIED TO UNSTABILIZED AREAS WITHIN 100-FT OF STREAMS, WETLANDS, AND OTHER WATER RESOURCES WITHIN 3 DAYS OF EXPOSING SOIL AND PRIOR TO ANY STORM EVENT.
3. DUST SHALL BE CONTROLLED THROUGH THE USE OF WATER.
4. CONTRACTOR SHALL PROVIDE TEMPORARY SILTATION/DEWATERING BASINS, IF NECESSARY AND/OR AS DIRECTED BY THE ENGINEER, TO CONTROL SEDIMENTATION AND STORMWATER RUNOFF DURING THE CONSTRUCTION PERIOD. CONTRACTOR SHALL SUBMIT PROPOSED BASIN LOCATIONS, DESIGNS, ETC. TO THE ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION.
5. EARTH MATERIAL STOCKPILES SHALL BE LOCATED IN AREAS THAT HAVE A MINIMUM POTENTIAL FOR EROSION AND KEPT AS FAR AWAY AS POSSIBLE FROM EXISTING DRAINAGE COURSES, PROTECTED NATURAL RESOURCES, TREE DRIP LINES AND OUTSIDE OF THE 100 YEAR FLOOD PLAIN. SEDIMENT BARRIERS SHALL BE INSTALLED DOWNGRADIENT OF STOCKPILES. STORMWATER SHOULD BE DIRECTED AWAY FROM STOCKPILE LOCATIONS.
6. REPAIR, CLEAN, AND REPLACE ANY SEDIMENT CONTROLS DAMAGED DURING AND/OR AFTER RAINFALL EVENTS.
7. EROSION CONTROL BLANKETS SHALL BE PLACED IN THE FLOW LINE OF ALL VEGETATED SWALES NOT OTHERWISE PROTECTED BY STONE.
8. EROSION CONTROL BLANKETS OR NETTING OVER LOOSE MULCH SHALL BE APPLIED TO ALL VEGETATED SLOPES GREATER THAN 3:1.
9. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:  
A. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;  
B. A MINIMUM OF 90% VEGETATED GROWTH HAS BEEN ESTABLISHED;  
C. A MINIMUM OF 3-INCHES OF NON-EROSIVE MATERIAL, SUCH AS STONE OR RIPRAP, HAS BEEN INSTALLED;  
D. EROSION CONTROL BLANKETS OR EROSION CONTROL MIX HAVE BEEN PROPERLY INSTALLED.

**Permanent Erosion Control Measures**

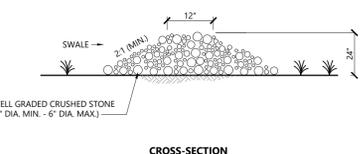
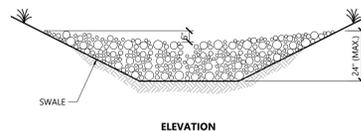
1. THE CONTRACTOR SHALL SUBMIT A WRITTEN MANUAL PREPARED FOR THE OWNER, THAT OUTLINES A SCHEDULE FOR PROPER MAINTENANCE OF THE LAWN. THIS SCHEDULE SHOULD INCLUDE TIMING AND METHODS FOR MOWING, WATERING, AERATION, FERTILIZATION, LIMING, AND OTHER LAWN MAINTENANCE OPERATIONS.
2. SEEDING SHALL BE DONE BETWEEN APRIL 1 TO JUNE 1, OR BETWEEN AUGUST 15 TO OCTOBER 15.
3. ALL DISTURBED AREAS NOT COVERED BY BUILDINGS, PAVING, OR OTHERWISE DEVELOPED, SHALL BE COVERED WITH 6 INCHES LOAM AND SEED.

**Winter Construction**

1. WINTER CONSTRUCTION PERIOD: OCTOBER 15 THRU APRIL 15.
2. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT A MAXIMUM OF 1 ACRE OF THE SITE IS UNSTABILIZED AT ANY ONE TIME OR LIMITED TO AN AREA THAT CAN BE MULCHED IN ONE DAY.
3. HAY AND STRAW MULCH SHALL BE APPLIED AT A RATE OF 150 LB PER 1,000 SF OR 3 TONS/ACRE. MULCH SHALL BE APPLIED AND ANCHORED SO THAT THE GROUND SURFACE IS NOT VISIBLE THROUGHOUT THE MULCH. MULCH SHALL NOT BE APPLIED OVER SNOW.
4. MULCH SHALL NOT BE APPLIED WHERE THE SNOW DEPTH EXCEEDS ONE INCH. SNOW SHALL BE REMOVED PRIOR TO APPLICATION.
5. EROSION CONTROL BLANKETS SHALL BE APPLIED TO ALL VEGETATED SLOPES GREATER THAN 3:1.
6. A DOUBLE ROW OF SEDIMENT BARRIERS SHALL BE INSTALLED WITHIN 75 FEET OF A PROTECTED NATURAL RESOURCE.
7. DURING PERIODS WHEN TEMPERATURES ARE ABOVE FREEZING, AREAS SHALL BE FINE GRADED AND PROTECTED WITH EITHER MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL THE FINAL TREATMENT CAN BE APPLIED.
8. AFTER NOVEMBER 1 EXPOSED AREAS THAT HAVE BEEN LOAMED AND FINAL GRADED MAY BE DORMANT SEEDED AT A RATE OF 3 TIME THE PERMANENT SEED RATE AFTER THE FIRST KILLING FROST AND OVERWINTER MULCHED OR ANCHORED WITH EROSION CONTROL BLANKETS.
9. WINTER INSPECTIONS SHALL BE PERFORMED ONE A WEEK AND AFTER EACH RAINFALL, SNOWSTORM, OR THAW FOR VEGETATION GROWTH, EROSION, AND MAINTENANCE NEEDS.  
A. ALL AREAS INSUFFICIENTLY VEGETATED (LESS THAN 75% CATCH) SHALL BE STABILIZED FOR OVERWINTER PROTECTION.

**Site Inspection & Maintenance**

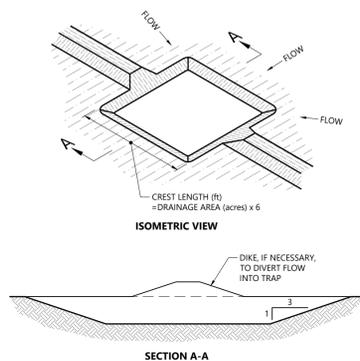
1. CONTRACTOR SHALL INSPECT AND MAINTAIN EROSION CONTROL MEASURES ON A WEEKLY BASIS AND BEFORE AND AFTER EACH STORM EVENT.
2. CONTRACTOR SHALL MAINTAIN WRITTEN INSPECTION AND MAINTENANCE LOGS FOR THE EROSION CONTROL MEASURES FOR THE DURATION OF THE CONSTRUCTION PERIOD. LOGS SHALL BE MADE AVAILABLE TO THE OWNER, ENGINEER, MUNICIPALITY, AND MAINE DEP UPON REQUEST.
3. TEMPORARY MULCHING: ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED TO AREAS WHERE LESS THAN 90% OF THE SOIL SURFACE IS COVERED WITH MULCH.
4. CATCH BASIN/SILT SACK SEDIMENT TRAPS: SEDIMENT SHALL BE REMOVED FROM TRAPS WHEN ACCUMULATION DEPTH IS GREATER THAN OR EQUAL TO 1/2 THE DESIGN DEPTH OF THE TRAP. TRAPS SHALL BE REPLACED IF THE ARE DAMAGED, TORN, ETC.
5. SILT SOCK BARRIERS, SILT FENCE BARRIERS AND STONE CHECK DAMS: SILT SOCK BARRIERS, SILT FENCE AND STONE CHECK DAMS SHALL BE REPAIRED IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM. SEDIMENT TRAPPED BEHIND BARRIERS/CHECK DAM SHALL BE REMOVED WHEN SEDIMENT DEPTH REACHES 6 INCHES. BARRIERS SHALL BE REPLACES WITH A TEMPORARY CHECK DAM IF THERE ARE SIGNS OF UNDERCUTTING OR IMPOUNDING LARGE VOLUMES OF WATER BEHIND THEM.
6. EROSION CONTROL BLANKETS: IF WASHOUTS OR BREAKAGE OCCURS, SLOPES SHALL BE REPAIRED, AND BLANKETS SHALL BE RE-INSTALLED.
7. STABILIZED CONSTRUCTION EXITS: EXITS SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. IF EXIT BECOMES INEFFECTIVE IT SHALL BE RECONSTRUCTED AND/OR REPLACED.
8. TEMPORARY SEDIMENTATION/DEWATERING BASINS: SEDIMENT IN TEMPORARY BASINS SHALL BE REMOVED AS NECESSARY DEPENDING ON THEIR USE AND DESIGN.
9. UPON COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF PERMANENT GROUND COVER, CONTRACTOR SHALL REMOVE AND DISPOSE OF EROSION CONTROL MEASURES AND CLEAN SEDIMENT AND DEBRIS FROM ENTIRE DRAINAGE SYSTEMS.
10. LONG-TERM MAINTENANCE OF THE PERMANENT EROSION CONTROL MEASURES SHALL BE THE RESPONSIBILITY OF THE OWNER.



- NOTES**
1. TOP OF DOWNGRADIENT CHECKDAM AND BOTTOM OF UPGRADIENT CHECKDAM TO BE SET AT THE SAME ELEVATION.
  2. STONE CHECKDAMS MAY BE REMOVED WHEN 90% OF THE VEGETATIVE COVER IS ESTABLISHED.

**Temporary Stone Checkdam**

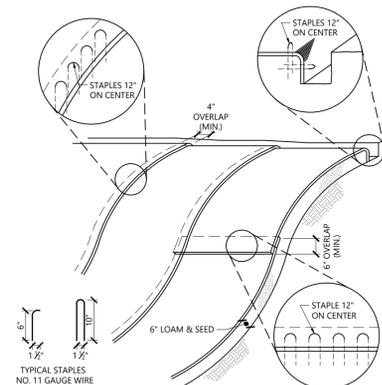
N.T.S. Source: VHB REV



- NOTES**
1. THE TRAP SHALL BE INSTALLED AS CLOSE TO THE DISTURBED AREA OR SOURCE OF SEDIMENT AS POSSIBLE.
  2. THE MAXIMUM CONTRIBUTING DRAINAGE AREA TO THE TRAP SHALL BE LESS THAN 5 ACRES.
  3. THE MINIMUM VOLUME OF THE TRAP SHALL BE 3,600 CUBIC FEET OF STORAGE FOR EACH ACRE OF DRAINAGE AREA.
  4. THE SIDE SLOPES OF THE TRAP SHALL BE 3:1 OR FLATTER, AND SHALL BE STABILIZED IMMEDIATELY AFTER THEIR CONSTRUCTION.
  5. THE OUTLET OF THE TRAP SHALL BE A MINIMUM OF ONE FOOT BELOW THE CREST OF THE TRAP AND SHALL DISCHARGE TO A STABILIZED AREA.
  6. THE TRAP SHALL BE CLEANED WHEN 50 PERCENT OF THE ORIGINAL VOLUME IS FILLED.
  7. THE MATERIALS REMOVED FROM THE TRAP SHALL BE PROPERLY DISPOSED OF AND STABILIZED.

**Siltsock / Silt Fence Barrier**

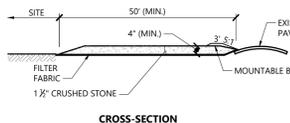
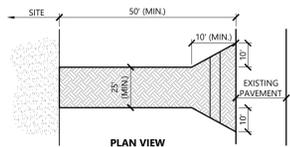
N.T.S. Source: VHB REV LD\_658-A



- NOTES**
1. BEGIN AT THE TOP OF BLANKET INSTALLATION AREA BY ANCHORING BLANKET IN A 6" DEEP TRENCH BACKFILL AND COMPACT TRENCH AFTER STAPLING.
  2. ROLL THE BLANKET DOWN THE SWALE IN THE DIRECTION OF THE WATER FLOW.
  3. THE EDGES OF BLANKETS MUST BE STAPLED WITH APPROX. 4" INCH OVERLAP WHERE 2 OR MORE STRIP WIDTHS ARE REQUIRED.
  4. WHEN BLANKETS MUST BE SPICED DOWN THE SWALE, PLACE UPPER BLANKET END OVER LOWER END WITH 6 INCH (MIN.) OVERLAP AND STAPLE BOTH TOGETHER.
  5. METHOD OF INSTALLATION SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS.
  6. EROSION CONTROL BLANKETS SHALL BE USED IN ALL AREAS WHERE SLOPES EXCEED 3:1.

**Erosion Control Blanket Slope Installation**

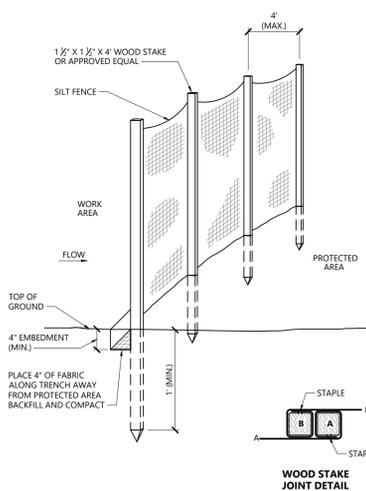
N.T.S. Source: VHB REV LD\_680



- NOTES**
1. EXIT WIDTH SHALL BE A TWENTY-FIVE (25) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
  2. THE EXIT SHALL BE MAINTAINED IN A CONDITION WHICH SHALL 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 OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY. BERM SHALL BE PERMITTED, PERIODIC INSPECTION AND MAINTENANCE SHALL BE PROVIDED AS NEEDED.
  3. STABILIZED CONSTRUCTION EXIT SHALL BE REMOVED PRIOR TO FINAL FINISH MATERIALS BEING INSTALLED.

**Stabilized Construction Exit**

N.T.S. Source: VHB REV LD\_682

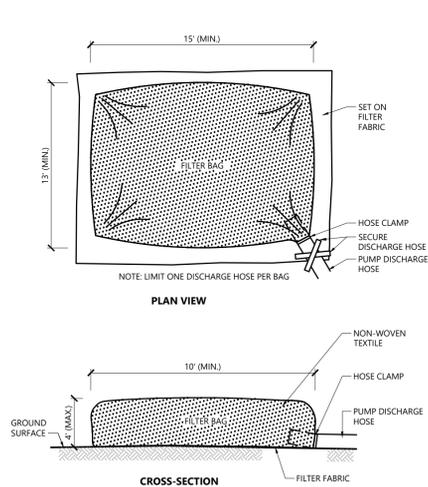


**Silt Fence Barrier**

N.T.S. Source: VHB REV LD\_650

**Temporary Sediment Trap**

N.T.S. Source: NH Stormwater Manual



- NOTES**
1. BAG TO BE USED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

**Dewatering Filter Bag**

N.T.S. Source: VHB REV LD\_691

**NextGrid Solar Farm**

1875 Lisbon St  
Lewiston, Maine 04240

No.	Revision	Date	Appr.
1	REVISED FOR CITY OF LEWISTON REVIEW	4/14/20	DHF

Permitting February 28, 2020

**Not Approved for Construction**

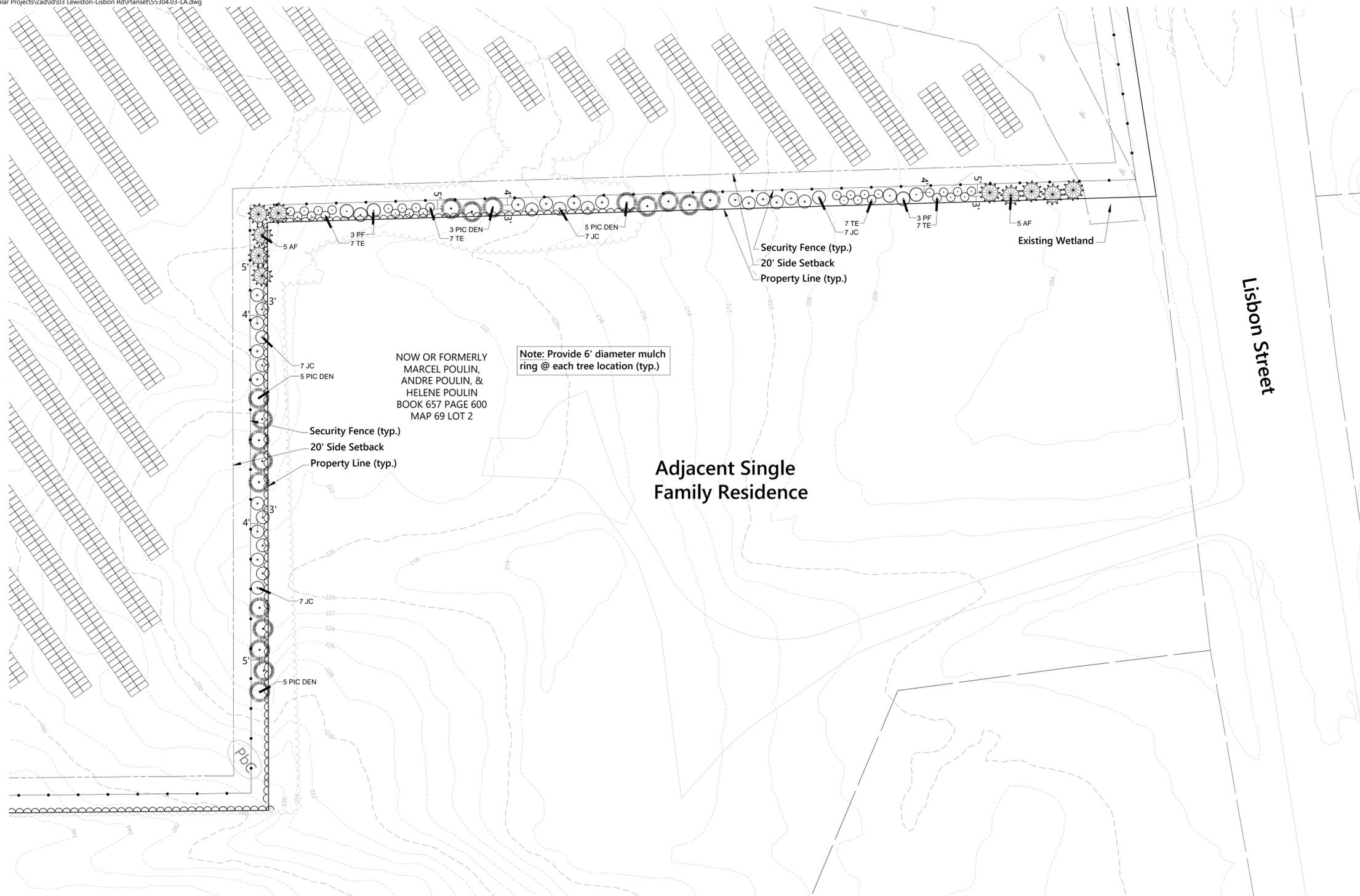
**Erosion and Sediment Control Notes and Details**



**C3.2**

Sheet 6 of 8

Project Number 55304.03



NOW OR FORMERLY  
MARCEL POULIN,  
ANDRE POULIN, &  
HELENE POULIN  
BOOK 657 PAGE 600  
MAP 69 LOT 2

Note: Provide 6' diameter mulch  
ring @ each tree location (typ.)

Adjacent Single  
Family Residence

Lisbon Street



**NextGrid Solar Farm**  
1875 Lisbon St  
Lewiston, Maine 04240

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Designed by	DW	Checked by	GP
Issued for	Permitting	Date	February 28, 2020

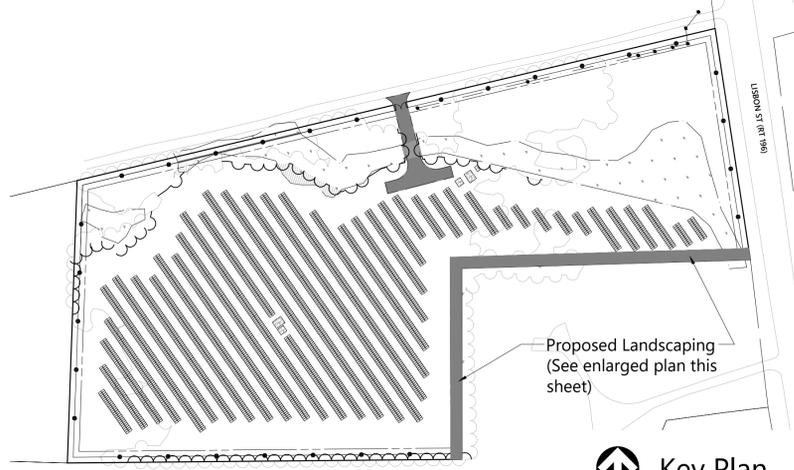
Not Approved for Construction  
Drawing Title  
**Landscape Plan**

Project Number  
**55304.03**

4/16/20

**PLANT SCHEDULE**

TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS	MATURE HEIGHT
	AF	10	Abies fraseri	Fraser Fir	7'-8' Ht.	As Shown	Straight, Full to Base	25' HT. to 40' HT.
	JC	28	Juniperus virginiana 'Cupressifolia'	Hillspire Juniper	5'-6' Ht.	As Shown	Straight, Full to Base	15' HT. to 30' HT.
	PIC DEN	18	Picea glauca 'Densata'	Black Hills Spruce	7'-8' Ht.	As Shown	Straight, Full to Base	20' HT. to 30' HT.
	PF	6	Picea pungens 'Fat Albert'	Fat Albert Colorado Spruce	7'-8' Ht.	As Shown	Straight, Full to Base	10' HT. to 15' HT.
	TE	28	Thuja occidentalis 'Emerald'	Emerald Arborvitae	5'-6' Ht.	As Shown	Straight, Full to Base	12' HT. to 14' HT.



Proposed Landscaping  
(See enlarged plan this  
sheet)

**Key Plan**  
N.T.S.

DAVID T. WOODWARD  
No. 4378  
STATE OF MAINE  
LICENSED LANDSCAPE ARCHITECT

**L-1**

Sheet 7 of 8

**Tree Protection**

- EXISTING TREES TO REMAIN SHALL BE PROTECTED WITH TEMPORARY CONSTRUCTION FENCE. ERECT FENCE AT EDGE OF THE TREE DRIPLINE PRIOR TO START OF CONSTRUCTION.
- CONTRACTOR SHALL NOT OPERATE VEHICLES WITHIN THE TREE PROTECTION AREA. CONTRACTOR SHALL NOT STORE VEHICLES OR MATERIALS, OR DISPOSE OF ANY WASTE MATERIALS, WITHIN THE TREE PROTECTION AREA.
- DAMAGE TO EXISTING TREES CAUSED BY THE CONTRACTOR SHALL BE REPAIRED BY A CERTIFIED ARBORIST AT THE CONTRACTOR'S EXPENSE.

**Edge of Woods Clearing**

- EXISTING TREES TO REMAIN SHALL BE PROTECTED WITH TEMPORARY EROSION CONTROL FENCE AND HAY BALE BARRIER. ERECT BARRIER AT EDGE OF THE EARTHWORK CUT LINE PRIOR TO TREE CLEARING. LAY OUT THIS LINE BY FIELD SURVEY.

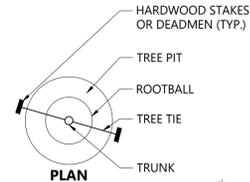
**Planting Notes**

- ALL PROPOSED PLANTING LOCATIONS SHALL BE STAKED AS SHOWN ON THE PLANS FOR FIELD REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
- CONTRACTOR SHALL VERIFY LOCATIONS OF ALL BELOW GRADE AND ABOVE GROUND UTILITIES AND NOTIFY OWNERS REPRESENTATIVE OF CONFLICTS.
- NO PLANT MATERIALS SHALL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA. CONTRACTOR SHALL NOTIFY OWNER'S REPRESENTATIVE OF ANY CONFLICT.
- A 3-INCH DEEP MULCH PER SPECIFICATION SHALL BE INSTALLED UNDER ALL TREES AND SHRUBS, AND IN ALL PLANTING BEDS, UNLESS OTHERWISE INDICATED ON THE PLANS, OR AS DIRECTED BY OWNER'S REPRESENTATIVE.
- ALL TREES SHALL BE BALLED AND BURLAPPED, UNLESS OTHERWISE NOTED IN THE DRAWINGS OR SPECIFICATION, OR APPROVED BY THE OWNER'S REPRESENTATIVE.
- FINAL QUANTITY FOR EACH PLANT TYPE SHALL BE AS GRAPHICALLY SHOWN ON THE PLAN. THIS NUMBER SHALL TAKE PRECEDENCE IN CASE OF ANY DISCREPANCY BETWEEN QUANTITIES SHOWN ON THE PLANT LIST AND ON THE PLAN. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES BETWEEN THE NUMBER OF PLANTS SHOWN ON THE PLANT LIST AND PLANT LABELS PRIOR TO BIDDING.

- ANY PROPOSED PLANT SUBSTITUTIONS MUST BE REVIEWED BY LANDSCAPE ARCHITECT AND APPROVED IN WRITING BY THE OWNER'S REPRESENTATIVE.
- ALL PLANT MATERIALS INSTALLED SHALL MEET THE SPECIFICATIONS OF THE "AMERICAN STANDARDS FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN AND CONTRACT DOCUMENTS.
- ALL PLANT MATERIALS SHALL BE GUARANTEED FOR ONE YEAR FOLLOWING DATE OF FINAL ACCEPTANCE.
- AREAS DESIGNATED "LOAM & SEED" SHALL RECEIVE MINIMUM 6" OF LOAM AND SPECIFIED SEED MIX. LAWNS OVER 2:1 SLOPE SHALL BE PROTECTED WITH EROSION CONTROL FABRIC.
- ALL DISTURBED AREAS NOT OTHERWISE NOTED ON CONTRACT DOCUMENTS SHALL BE LOAM AND SEEDED OR MULCHED AS DIRECTED BY OWNER'S REPRESENTATIVE.
- THIS PLAN IS INTENDED FOR PLANTING PURPOSES. REFER TO SITE / CIVIL DRAWINGS FOR ALL OTHER SITE CONSTRUCTION INFORMATION.

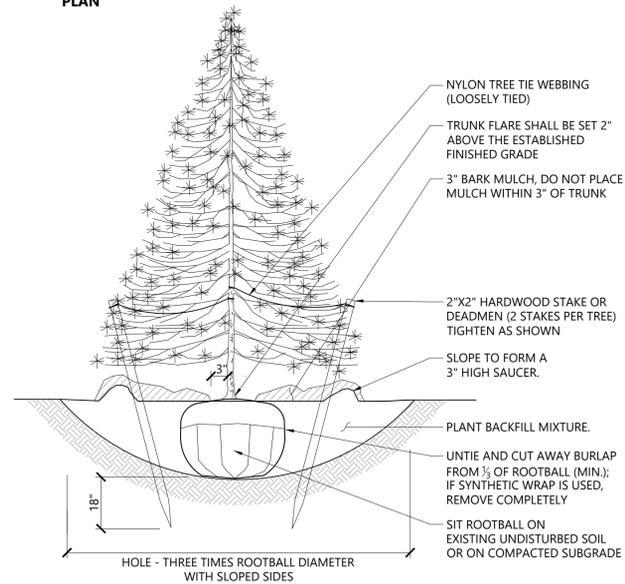
**Plant Maintenance Notes**

- CONTRACTOR SHALL PROVIDE COMPLETE MAINTENANCE OF THE LAWNS AND PLANTINGS. NO IRRIGATION IS PROPOSED FOR THIS SITE. THE CONTRACTOR SHALL SUPPLY SUPPLEMENTAL WATERING FOR NEW LAWNS AND PLANTINGS DURING THE ONE YEAR PLANT GUARANTEE PERIOD.
- CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR, AND EQUIPMENT FOR THE COMPLETE LANDSCAPE MAINTENANCE WORK. WATER SHALL BE PROVIDED BY THE CONTRACTOR.
- WATERING SHALL BE REQUIRED DURING THE GROWING SEASON, WHEN NATURAL RAINFALL IS BELOW ONE INCH PER WEEK.
- WATER SHALL BE APPLIED IN SUFFICIENT QUANTITY TO THOROUGHLY SATURATE THE SOIL IN THE ROOT ZONE OF EACH PLANT.
- CONTRACTOR SHALL REPLACE DEAD OR DYING PLANTS AT THE END OF THE ONE YEAR GUARANTEE PERIOD. CONTRACTOR SHALL TURN OVER MAINTENANCE TO THE FACILITY MAINTENANCE STAFF AT THAT TIME.



**NOTES**

- STAKING IS NOT REQUIRED FOR TREES UNDER 10' HIGH.
- PAINT TOP OF STAKES ORANGE OR REFLECTIVE RED TAPE.



**Evergreen Tree Planting**

1/16

N.T.S.

Source: VHB

LD\_604



**TREGATOR® JR. PRO**  
SLOW RELEASE WATERING BAG FOR EVERGREENS, TREES AND SHRUBS

**BENEFITS:**

- Ideal for newly planted trees, evergreens or shrubs.
- Reduces transplant and drought shock.
- 100% absorption eliminates water waste.
- Install and fill in minutes with no tools required.
- Just place, fill, and walk away!
- Color and low-profile blends with landscape.
- Removable dual emitter system.
- Deep water saturation with every application.
- Fill just 1 to 2 times per week, or as needed.\*\*
- Promotes deep root growth.
- Made in the U.S.A. with a 3-year limited warranty.

\*\*REFER TO WATERING CAPACITY / FREQUENCY CHART SHOWN BELOW

**DESCRIPTION:**

Professionally water any newly planted tree or shrub with a Tregator® Jr. Pro Slow Release Watering Bag! Dual emitters continuously provides water over a 5 to 8 hour time period with no run-off. Brown color and low profile blends with existing landscape and reduces visibility while in use. Installs in minutes with no tools. Requires filling just 1 to 2 times per week. Just place, fill, and walk away!

**SPECS:**

Fits plantings up to 5 inches in trunk caliper.  
Made of brown PVC with "gator-skin" embossing.  
Removable dual PVC emitters.  
Continuously waters for 5 to 8 hours.  
Convenient handle allows for easy filling.  
Recommended for use on a level surface or properly built mulch pile to ensure proper drainage.

**DIRECTIONS FOR USE:**

Place Tregator® Jr. Pro on flat ground, or on top of a properly built mulch pile (recommended).  
Wrap both sides of bag around trunk.  
Open the top of the red fill valve cap and insert hose.  
Lift up on handle and fill with water to desired level.  
While lifting on handle, remove hose end, and close red fill valve cap tightly and securely.  
Bag will be empty in approximately 5 to 8 hours.  
Fill bag 1 to 2 times per week, or as needed.  
When not in use, remove from around planting, and store in a cool, dry place until next use.  
Do not use in temperatures below 40 degrees Fahrenheit.

**MEASUREMENTS:**

Full - 35" diameter x 6" high

**WATERING CAPACITY / FREQUENCY CHART:**

Tregator® Jr. Pro	Trunk Caliper (diameter)	Recommended Fills per Week
 15 gallon capacity	<b>1 to 2 inch</b> (2 to 5 cm)	<b>1 Fill per Week</b>
	<b>2 to 3 inch</b> (5 to 8 cm)	<b>2 Fills per Week</b>
	<b>4 to 5 inch</b> (10 to 13 cm)	<b>3 Fills per Week</b>

**Tregator Jr. Pro at Evergreen Trees**

N.T.S.

Source: Tregator

**NextGrid Solar Farm**  
1875 Lisbon St  
Lewiston, Maine 04240

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Designed by DW		Checked by GP	
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**Not Approved for Construction**

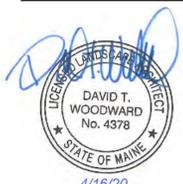
**Landscape Notes and Details**

Drawing Number

**L-2**

Sheet 8 of 8

4/16/20





## CITY OF LEWISTON

### Department of Planning & Code Enforcement

TO: Lewiston Planning Board

FROM: Douglas Greene, AICP, RLA, City Planner

DATE: April 27, 2020

RE: Agenda Item 4e, Development Review and Conditional Use application for a Solar Facility at 265 Merrill Road

---

VHB Engineers, an agent for NextGrid Inc., has submitted a Development Review and Conditional Use Application to construct a 5.55 MWdc solar facility covering 19.81 acres at 265 Merrill Road.

#### PROJECT DESCRIPTION

The property at 265 Merrill Road is a large 215.7-acre parcel, located on the west side of Main Street and the northern most part of Lewiston next to the boundary of the Town of Greene. The western side of the property is along the Androscoggin River. The applicant has a purchase and sales agreement to construct the solar facility project. The Staff has discussed the need to ensure that if the property the project is located on is owned by NextGrid, Inc., the new parcel will have to meet all zoning space and bulk standards, including street frontage. Access to the project is proposed through a 16-foot wide gravel access road that begins at the end of Merrill Road and leads to a 20 foot-wide, T turn-around” provided for emergency vehicles. A secondary 12-foot wide access road leads further back into the project to serve maintenance personnel and has a 16-foot T turn-around. A security fence and entrance gate will limit access to the site.

The site work for the project will involve clearing 6.2 acres of trees, disturb a total of 19.81 acres through grading and impact a total of 3,943 sf. of wetland. The estimated size of the solar array is approximately 293,923 sf. (6.75 ac.) and contain approximately 14,696 panels. Subject to Planning Board approval and selection by the Maine Public Utilities Commission (PUC) competitive bid process (award date of 8/31/20), the applicant would like to start work by September of 2020 with construction lasting around 8 months. Traffic during construction will involve 100-125 construction personnel and 10-15 office staff, with an estimated trip generation of approximately 93 trips during the AM and PM peak hours. Once the project is operational, the facility will be unmanned with the exception of mowing and maintenance.

The panel area will be graded and seeded in the fall, which will allow the vegetation to be established prior to the installation of the panels in the spring. Once in operation, the area underneath and between the panels will be mowed no more than twice a year, and maintained as erosion controlling meadow growth. The 5.55 MWdc of electricity generated will be interconnected to the Central Maine Power distribution circuit.

The solar facility project area is remote and approximately 500 feet away from the nearest residence at 291 Merrill Road.

#### TYPES OF APPROVALS

The Planning Board and City Council recently approved a zoning text amendment adding solar facilities to a new use category, utility structures, as a conditional use in all zoning districts. Large scale conditional use projects such are also considered major development review projects.

Development Review Approval- the Planning Board needs to review and approve the development review application using Article XIII, Development Review and Standards, Section 4, Approval Criteria. The applicant has included a narrative in their application that addresses each of the approval criteria.

Conditional Use Approval- the Planning Board needs to review and approve the conditional use application using Article X, Conditional Use, Section 3, Standards for Conditional Use Approval. Conditional use standards for approval, in general, look to ensure that the proposed development will not negatively impact surrounding property values or produce noise, odors, vibrations, or create negative visual or environmental impacts.

Local Delegated Review- The City of Lewiston has delegated review authority for the approval of stormwater management for projects with areas of disturbance under 20 acres and impervious areas under one acre.

#### Other State and Federal Permits-

The applicant is also seeking federal and state approval for:

- Maine Natural Resources Protection Act Permit (NRPA)
- Maine Storm Water Permit by Rule
- Maine Stormwater Construction General Permit
- U.S. Army Corps of Engineers Section 404 Permit

#### STAFF REVIEW and COMMENTS

The Staff discussed the following items during the Staff Review process:

1. Several corrections to the site plan were requested and made. (Signature block, additional notes, etc.)
2. Decommissioning- Many communities require large solar projects such as this to provide a means to decommission and remove the equipment at such time that the facility is no longer is in operation after 12 months. The applicant has added a note to the site plan regarding a commitment to decommission the project.
3. A note added to the revised plans now states that construction activity will occur from 7 am until 7 pm or from sunrise to sunset, whichever is less.
4. At the request of Public Works, the applicant has provided plans stamped by a Maine Licensed Professional Engineer.
5. Public Works requested final calculations for all stormwater calculations. The applicant has asked that details for the sizing of silt socks, location of BMP, and a stormwater operation and maintenance plan be developed and approved by the City of Lewiston before the issuance of any permit approvals before construction activity can begin. Public Works has agreed with the request.

6. A site visit revealed the portion of Merrill Road, from Main Street to the proposed access road, is deteriorated. Public Works has a contract in place to repave this section of the road and expects the work to be done in the coming months. In order to ensure that newly paved portion of Merrill Road is not damaged by heavy equipment during construction, the applicant has agreed to add a note to the site plan stating, “Prior to construction activity, the developer will document the condition of Merrill Road from its intersection of Main Street to the development site’s access road and issue a bond or letter of credit for any necessary maintenance or repairs to damage caused by development activity associated with the project.”
7. The Fire Department has agreed to allow a 16-foot wide access road instead of a desired 20-foot wide access with the addition of extra depth of gravel and a note stating that the access road will kept clear year-round.

All other review comments from city staff have been addressed to Staff’s satisfaction with revisions provided by the applicant.

#### **STAFF RECOMMENDATION**

Staff recommends **APPROVAL** of the proposed project.

#### **ACTION NECESSARY**

Make a motion that the application submitted by VHB on behalf of NextGrid, Inc. to construct a 5.55 MWdc solar facility covering 19.81 acres at 265 Merrill Road meets all of the necessary criteria and standards contained in the Zoning and Land Use Code, including, but not limited to Article XIII, Development Review and Standards, Section 4, Approval Criteria and Article X, Conditional Use Permits, Section 3, Standards for Conditional Use Permits and that approval be granted (including if any, specific conditions raised by the Planning Board or Staff).



April 20, 2020

Ref: 55304.00

Doug Greene  
Deputy Director / City Planner  
27 Pine St., 3rd Floor  
Lewiston, ME 04240

Re: **Application for Site Plan Review  
Merrill Road Solar Project**

Dear Mr. Greene:

On behalf of NextGrid, Inc. (NextGrid), Vanasse, Hangen, Brustlin, Inc. (VHB) is pleased to submit a revised Development Review and Conditional Use application for the Merrill Road Solar Project (the Project) to be located at 265 Merrill Road in Lewiston, Maine. We appreciate the input provided by City of Lewiston staff on our initial submission and for ease of review have provided our responses to these requests with this letter.

Please find enclosed 12 hard copies of the required application form and the following Attachments:

- Development Review and Standards Narrative (Provided as Attachment A)
- Conditional Use Permit Narrative (Provided as Attachment B)
- Copy of redacted lease agreement (Provided as Attachment C)
- Soil report (Provided as Attachment D)
- Site Plans for existing conditions and the proposed Project

As we discussed, we are providing nine copies of the Site Plans printed 11" x 17" sheets and three "full-size" copies.

**Project Overview:**

NextGrid is proposing to install and operate a 5.297 MWdc solar array at 265 Merrill Road in Lewiston, Maine that will interconnect into the Central Maine Power distribution circuit. The Project is participating in a Maine Public Utilities Commission (PUC) competitive bid process for clean energy. Under this process, an applicant must have all of their non-ministerial permits in hand by June 11, 2020 with an expected award date of August 31, 2020.

Thank you for your timely review of the enclosed materials. Please do not hesitate to contact me at GPaquette@VHB.com or (207) 889-3102, if you have any questions regarding the Project. We look forward to meeting with the Planning Board to discuss the Project.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Gil Paquette', is written over a light blue circular stamp.

Gil Paquette  
Director, Energy/Environmental Services



## RESPONSE TO CITY OF LEWISTON STAFF COMMENTS ON MERRILL ROAD PROJECT

### Planning Staff comments

**1. Add Planning Board approval/signature block to plans (Sheet 1).**

Approval/signature block has been added to Sheet 1 of Site Plan.

**2. Change the title of the plan to Site Plan (Sheet 1 and 2) and remove Erosion and Sediment Control Plan**

Plan titles have been revised per comment.

**3. Need to add notes to Site Plan(s). (Purpose of plan, maintenance of grounds and any stormwater facilities, decommissioning, etc.)**

Additional General Notes have been added to the Site Plan. For decommissioning, the following note has been added:

*"Decommissioning of the Project shall commence after 12 consecutive months of no power generation at the facility except in the case of a natural disaster, act of violence, or other event which results in the absence of electrical generation for 12 months. The Applicant or its successor as owner of the Project at that time will be solely responsible for decommissioning the Project, which will consist of:*

- *Be responsible for all decommissioning costs;*
- *Obtain any additional permits required for the decommissioning, removal, and legal disposal of Project components prior to commencement of decommissioning activities;*
- *Remove and dispose of all above-ground infrastructure, including arrays, inverter structures, concrete foundations and pads, and fences, and grade and revegetate in accordance with permits and in compliance with all applicable rules and regulations then in effect governing the disposal thereof.*
- *Remove all hazardous materials and transport them to be disposed of by licensed contractors at an appropriate facility in accordance with rules and regulations governing the disposal of such materials; and*
- *Removed materials shall be recycled and/or salvaged to the maximum extent practical and all waste streams shall be managed in accordance with the State of Maine's solid waste requirements.*

**4. Add property information to the adjacent properties.**

Property owner information has been added to the Site Plan sheets.

**5. Add driveway width.**

Width of existing driveways has been added to the Site Plan.

**6. Determine the status of DEP approval. (under 20 acres of disturbed area, 12.2 ac proposed)**

Attachment A for the application has been updated to confirm that, based on the area of disturbance, a Site Location of Development permit is not required. The following language has been added: *The area of disturbance is under 20 acres and therefore a Site Location of Development permit is not required.*

**7. Provide all required state and federal permits prior to the issuance of a building permit.**

Comment noted.

**8. What will the hours of operation be during construction?**

Sheet 1 of the Site Plan, Attachment A, Section (b) and Attachment B, Sections 1 (b) and (c) have all been updated for all three applications with the following language: *Construction will occur from 7am until 7pm or from sunrise to sunset, whichever is less.*

**9. Show the location of the inverter on the property.**

The location of the PV inverter is now shown on the Site Plan.

**10. Describe how developer will address road conditions on Merrill Road.**

Based on discussions with City staff, the following language has been added to Sheet 1 of the Site Plan: *Prior to construction activity, the developer will document the condition of Merrill Road from its intersection with Main Street to the development site's access road and issue a bond or letter of credit for any necessary maintenance or repairs to damage caused by development activity associated with the project.*

## **Public Works Comments**

**1. Plans should be stamped and signed by a Maine Licensed Professional Engineer**

The revised plans are signed and sealed by a Maine Licensed Professional Engineer.

**2. Provide calculations for sizing of silt sock as shown on the detail**

The drawings provided in the application are intended to be permit-level design. Once the Project is approved, issued-for-construction drawings will be developed that provide the level of detail requested in this comment. To address this issue, the following language has been added to Sheet 1 of the Site Plan: *Prior to any development activity or permit approvals, the stormwater and erosion control elements of the site plans will be reviewed and approved by the City of Lewiston.*

In addition, the following language has been added to Attachment A of the application: *The Site Plans provided are intended to be permit-level design. Details such as the sizing of silt socks, location of BMPs such as vegetated soil filters and ditch turn-around buffers, and a stormwater BMP operation and maintenance plan will be developed as part of the issued-for-construction plans and associated materials. The Applicant will provide this documentation for City review and comment prior to construction.*

**3. Provide plans/calculations/narrative to address the requirements of Article XIII, Section 4(f)**

Attachment A has been updated to reflect that the Applicants are seeking a waiver from the requirements related to plans / calculations, which is consistent with what the Maine Department of Environmental Protection has required in Permit-by-Rule applications for solar sites.

**4. Plan Details include vegetated soil filter and ditch turnout buffer. Please indicate the locations of these BMPs on the site plans.**

Please see response to Comment #2.

**5. It is assumed that the site will be maintained as a meadow for stormwater treatment purposes and not mowed more than twice a year. Please add appropriate notes for stormwater buffers/mowing.**

Yes, this is correct. The following note has been added to Sheet 1 of the Site Plan: *The site will be maintained as meadow for stormwater treatment purposes and not mowed more than twice a year.*

**6. Provide a stormwater BMP operation and maintenance plan.**

Please see response Comment #2.

**Fire Department Comment:**

- 1. Add note to plan Sheet 1, "Access road through the site shall be kept clear year round".**

This note has been added.

- 2. Please provide a 20' wide access drive**

The Lewiston Fire Department has agreed on a revised design for the Merrill Road project in order to avoid impacts. As presented in cross section detail within the Site Plans, the current design calls for a thicker base and gravel cover (2" surface gravel over 6" base gravel, versus 1" gravel over 5" base as provided in the previous design).



# Development Review Application

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



**PROJECT NAME:** Merrill Road Solar Project

**PROPOSED DEVELOPMENT ADDRESS:** 265 Merrill Road, Lewiston ME 04240

**PARCEL ID#:** RE00020330

**REVIEW TYPE:**      **Site Plan/Special Exception**                                       **Site Plan Amendment**   
                                  **Subdivision**     **Subdivision Amendment**

**PROJECT DESCRIPTION:** Applicant proposed to develop a solar farm array on the property. The project is designed to maximize solar energy output, minimize impacts on the environment and surrounding land uses, and comply with federal, state and local land use regulations.

**CONTACT INFORMATION:**

**Applicant** NextGrid, Inc

**Name:** Daniel Serber

**Address:** PO Box 7775, San Francisco, CA

**Zip Code** 94120

**Work #:** 415-612-2969

**Cell #:** \_\_\_\_\_

**Fax #:** \_\_\_\_\_

**Home #:** \_\_\_\_\_

**Email:** daniel@nextgrid.com

**Project Representative**

VHB

**Name:** Gil Paquette

**Address:** 500 Southborough Dr, Suite 105B, S. Portland, ME

**Zip Code** 04106-6928

**Work #:** 207-889-3102

**Cell #:** 207-310-1996

**Fax #:** 207-253-5596

**Home #:** \_\_\_\_\_

**Email:** gpaquette@vhb.com

**Property Owner**

**Name:** Harold and Ann Skelton

**Address:** 49 Mill Road, Cumberland ME

**Zip Code** 04021

**Work #:** \_\_\_\_\_

**Cell #:** \_\_\_\_\_

**Fax #:** \_\_\_\_\_

**Home #:** \_\_\_\_\_

**Email:** \_\_\_\_\_

**Other professional representatives for the project (surveyors, engineers, etc.),**

**Name:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Zip Code** \_\_\_\_\_

**Work #:** \_\_\_\_\_

**Cell #:** \_\_\_\_\_

**Fax #:** \_\_\_\_\_

**Home #:** \_\_\_\_\_

**Email:** \_\_\_\_\_

# 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	0	sq. ft.
Proposed Total Impervious Area	43,252	sq. ft.
Proposed Impervious Net Change	43,252	sq. ft.
Impervious surface ratio existing	0	% of lot area
Impervious surface ratio proposed	0.46	% of lot area

## BUILDING AREA/LOT COVERAGE

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

## ZONING

Existing	
Proposed, if applicable	

## LAND USE

Existing	Vacant
Proposed	Utility

## RESIDENTIAL, IF APPLICABLE

Existing Number of Residential Units	0
Proposed Number of Residential Units	0
Subdivision, Proposed Number of Lots	0

## PARKING SPACES

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

## ESTIMATED COST OF PROJECT

~\$5,290,000

## DELEGATED REVIEW AUTHORITY CHECKLIST

### SITE LOCATION OF DEVELOPMENT AND STORMWATER MANAGEMENT

Existing Impervious Area	0	sq. ft.
Proposed Disturbed Area	862,883	sq. ft.
Proposed Impervious Area	43,252	sq. ft.

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

### TRAFFIC ESTIMATE

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

Total traffic estimated in the peak hour-proposed (Since July 1, 1997) See Attachment A \_\_\_\_\_ 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 Low Density Residential (LDR) zoning district.
2. Parcel Area: 213.31 acres / 9,291,784 square feet(sf).

<b>Regulations</b>	<u>Required/Allowed</u>	<u>Provided</u>
Min Lot Area	40,000 sf	/ 9,292,784 sf
Street Frontage	100 ft	/ N/A
Min Front Yard	20 ft	/ 20 ft
Min Rear Yard	25 ft	/ 25
Min Side Yard	25 ft	/ 25
Max. Building Height	35 ft	/ 10 ft (array)
Use Designation	Utility	/ Utility
Parking Requirement	1 space/ per _____ square feet of floor area	
Total Parking:	0	/ 0
Overlay zoning districts (if any):	RC - Lot, not Project area / _____ / _____	
Urban impaired stream watershed?	YES/NO If yes, watershed name <u>No</u>	

## DEVELOPMENT REVIEW APPLICATION SUBMISSION

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

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

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

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

**Auburn:** [www.auburnmaine.org](http://www.auburnmaine.org) under City Departments/ Planning and Permitting/Land Use Division/ [Zoning Ordinance](#)

**Lewiston:** <http://www.ci.lewiston.me.us/clerk/ordinances.htm> Refer to Appendix A of the Code of Ordinances

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

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

<b>Signature of Applicant:</b> 	<b>Date:</b> April 14, 2020
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# Development Review Checklist

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



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

**PROJECT NAME:** Merrill Road Solar Project

**PROPOSED DEVELOPMENT ADDRESS and PARCEL #:** 265 Merrill Road, Lewiston (Parcel ID: RE00020330)

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

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

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

## **Attachment A**

### **Narrative and Review of Article XIII Section 4 Criteria**

## **DEVELOPMENT REVIEW AND STANDARDS NARRATIVE**

### **PROJECT DESCRIPTION**

NextGrid Renewable Energy (Applicant) is proposing to install and operate a 5.297 MWdc solar array (Project) at 265 Merrill Road in Lewiston, ME (City). The proposed Project includes solar panels, associated electrical equipment, perimeter fencing and site access. The facility will interconnect into the Central Maine Power distribution circuit. The Project would be built under the Affordability of Clean Energy for Homeowners and Businesses under Efficiency Maine Trust and would provide a long-term, stably priced renewable power resource which would benefit local municipal electric departments and their taxpayers. Pending approvals, the Project is anticipated to start work by September 7, 2020, with an anticipated construction period of 8 months in duration. The current uses of the lot are agriculture and undeveloped (including forestry). A portion of the forested sections of the lot will be cleared to allow for construction of the project. A copy of the lease agreement is provided as Attachment C to this application.

Construction of the Project will begin with establishing base lines and demarcating the Project limit of work. Following installation of temporary erosion and sediment control measures such as silt fence and erosion control mix (ECM), the site will be cleared and grubbed as necessary. The design of erosion and sedimentation control measures will be based on the Maine Erosion & Sediment Control Handbook for Construction: Best Management Practices (BMPs). Gravel access roads or entranceways will then be constructed, along with proposed stormwater management features. The perimeter fence will be installed, followed by installation of solar panels. Posts will first be installed for attachment of the racking system, then installation of solar panels and aboveground and underground conductors will occur. Solar panels will be underlain with herbaceous vegetation. The final number of panels will be based on site conditions as determined during construction and may vary slightly from the permit drawings. Individual foundation excavations will then be made and concrete pads will be installed for the placement of electrical equipment such as transformers and inverters. Any necessary final grading, site stabilization, vegetation management and landscaping will then be conducted.

The Applicant's agent met with City staff on February 6, 2020 to discuss the Project. One of the attendees was the Lewiston Fire Chief, who provided input on the Project's road design.

Anticipated federal and state permits include:

- Maine Natural Resources Protection Act Permit
- Maine Stormwater Permit by Rule (through City of Lewiston as Delegated Authority)
- Maine Stormwater Construction General Permit
- U.S. Army Corps of Engineers Section 404 permit

The area of disturbance is under 20 acres and therefore a Maine Site Location of Development permit is not required.

The following information is presented to demonstrate that the proposed project adheres to the criteria presented in Article XIII, Section 4 of the Lewiston Zoning and Land Use Code.

**(a) *Utilization of the site.***

The siting of Project facilities has considered the natural capabilities of the site to support development while considering natural resources. Wetlands, steep slopes and floodplains have been avoided to the extent practical. No unique natural resources have been identified within the Project area. Natural drainage patterns will be maintained to the extent practicable and the Project area will be maintained as meadow during the operation of the Project.

**(b) *Traffic movement into and out of the development area.***

During construction, the Project will increase traffic on municipal roads, but these effects will be temporary in nature and relatively minor. Standard trucking methods will be used to transport materials and equipment to the Project site. Construction trailers, construction equipment and laydown areas will be sited so as to avoid or minimize environmental impact. Construction will occur from 7am until 7pm or from sunrise to sunset, whichever is less.

The magnitude of traffic produced by a proposed development is typically estimated by applying the size of a project against the applicable trip generation contained in the Institute of Transportation Engineers Trip Generation Manual. However, this manual does not include trip generation rates for solar farms. As such, traffic impacts during construction and operations were estimated using information publicly submitted for other solar projects. Two recent projects (Sanford Airport and Farmington Solar) submitted applications for larger projects (<20 MW). These projects reported that their traffic during peak construction are approximately 100-125 construction personnel and 10-15 office staff onsite equating to maximum staffing levels of 140 personnel per day. Assuming a conservative carpool estimate of 1.5 personnel, they concluded that this would generate approximately 93 auto trips during the morning and evening. However, they also noted that the likely hours of construction meant that the arrival of construction staff would not coincide with peak morning commuting hours. These number are consistent with traffic reports generated for sites in other regions. Based on these estimated data as well as the smaller size of this Project, the construction of the Project is not expected to generate more than 100 trips during peak hours but the Applicant will obtain a Traffic Permit if the contractor selected for the work believes there will be more than 100 one-way trips during construction.

After construction, the site will generally be unmanned, except for mowing and maintenance. In the event of an issue requiring troubleshooting or maintenance, it is anticipated that a two-person team will visit the site. For mowing and general maintenance (e.g., fence inspections), the work will generally take place on a twice annually, or quarterly basis, with a small number of vehicles. The road network as presented on the attached site plans is adequate for this level of traffic.

**(c) *Access into the site.***

Access into the site will be through a gated entrance off Merrill Road, which will adhere to the “City of Lewiston’s Policy for the Design and Construction of Streets and Sidewalk” at the point of intersection with City roads.

According to the 2016 Pavement Management Survey prepared for the City, the section of East Merrill Road from Main Street until the dead end (which is the access roadway for the Project) has a Pavement Condition Index (PCI) of 64 out of a possible score of 100. The average PCI score for City roads surveyed in this report was 72.04.

Prior to construction, the Applicant will document existing pavement conditions for this section of Merrill Road and consult with the City’s Director of Public Works to establish a reasonable and appropriate value to hold in reserve to cover any potential repairs for damage caused by construction traffic. Prior to construction, the Applicant or its Contractor will document and record a bond or letter of credit for this amount.

**(d) *Internal vehicular circulation.***

The Project will include construction of a gated entrance road. Once the Project is in operation, there will be limited vehicular use on the site which will consist largely of pick-up trucks and associated trailers. The City Fire Department will have access to Project gate keys through knock boxes. A 16-foot buffer will be maintained between arrays and the perimeter fencing to accommodate vehicles, primarily pickup trucks or other passenger vehicles, in the event of an emergency.

**(e) *Pedestrian circulation.***

The facility will be fenced to prevent unauthorized access. The installation of the fencing will not impede access to any known resources for which pedestrian access would be desirable.

**(f) *Stormwater management.***

The project will disturb one acre or more of area during construction and therefore will be required to demonstrate compliance with Maine Department of Environmental Protection’s (DEP) Chapter 500 Stormwater Management Rule (“Chapter 500”).

“Impervious area” is defined by DEP as “the total area of a parcel covered with a low-permeability material, such as asphalt, concrete, and gravel roadways.” Consistent with this definition, the total impervious area calculated for the project includes areas covered by concrete equipment pads, gravel access roadways, and the ground-driven post mounts for the solar panels. DEP has previously deemed that the solar panels themselves are not considered impervious. Of the total Project area (~19.81 acres), the total impervious area, which includes roadways, concrete pads, and mounting posts for panels, will be ~0.99 acres (5%) and the impervious area as a ratio to the lot as a whole (213.31 acres) will be 0.46%. In

general, areas disturbed adjacent to the access roads will be permanently stabilized through seeding and the majority of the site will be maintained as meadow.

“Developed area” is defined by DEP as “an impervious area, landscaped area, or unvegetated area; developed area includes all disturbed areas except an area that is returned to a condition that existed prior to the disturbance and is revegetated within one calendar year of being disturbed, provided the area is not mowed more than twice per year.” During a DEP Solar Round Table meeting held on February 5, 2020, DEP confirmed that the area under solar panels is not considered developed as long as it is revegetated after construction and does not get mowed more than twice a year. As such, the developed area would also be ~0.08 acres.

Because the Project will not result in greater than one acre of impervious area, or five or more acres of developed area, the Project is subject to the basic stormwater standards set forth in Chapter 500. To demonstrate compliance with the basic standards outlined in Chapter 500, in most locations a project would be required to submit a stormwater permit-by-rule (PBR) application to DEP. For other solar projects, the information included in stormwater PBR applications is identical that provided to the City, including the Erosion and Sediment Control Site Plan and Details.

Overall, though the Project has a large footprint, the Project will result in little impervious or developed area. In general, areas disturbed adjacent to the access roads will be permanently stabilized through seeding and the majority of the site will be maintained as meadow. Accordingly, the Applicant requests that the City of Lewiston’s Director of Public Works waive the requirements of Article XIII Section 4(f). If this request is not acceptable, the Applicants would request that the City Planning Board condition approval of the Project on the submission of a stormwater design that meets the requirements of Section 4(f) or a lesser standard as agreed upon by the Director of Public Works.

The Site Plans provided are intended to be permit-level design. Details such as the sizing of silt socks, location of BMPs such as vegetated soil filters and ditch turn-around buffers, and a stormwater BMP operation and maintenance plan will be developed as part of the issued-for-construction plans and associated materials. The Applicant will provide this documentation for City review and comment prior to construction.

**(g) *Erosion control.***

An erosion and sedimentation control plan (E&SC) will be implemented before construction. The E&SC Plan will include erosion control measures that will be incorporated into the construction and restoration phases of the Project to minimize potential adverse impacts.

Overall, though the Project has a large footprint, the Project will result in little impervious area. In general, areas disturbed adjacent to the access roads will be permanently stabilized through seeding and the majority of the site will be maintained as meadow.

Erosion and Sediment control measures are presented on the attached site plans.

**(h) *Water supply.***

The facility will not be manned and therefore no water supply facilities are required.

**(i) *Sewage disposal.***

The facility will not be manned and therefore no sewage disposal system is required.

**(j) *Utilities.***

Overhead utility poles have been sited to allow for the most efficient connection with the nearby substation.

**(k) *Natural features.***

Disturbance of soils (grading, removal of soil, and importation of gravel materials) will be minimized to the greatest extent practicable. A vegetative buffer will be maintained around the Project area to the extent possible so as to serve as a natural wind barrier. The Project site is not located in an area that has been identified as having significant habitat or aesthetic value.

**(l) *Groundwater protection.***

The Project is not anticipated to have any impact on the quality and quantity of groundwater available to abutting properties. No water supply wells or sewage disposal facilities will be installed on the site and the Project area will be maintained as meadow.

**(m) *Water and air pollution.***

During the Project's construction phase there will be minor and temporary air emissions from construction equipment and vehicle emissions, and brief discharges of dust generated by general construction activities. Dust will be monitored during the construction period (particularly on access roads and during drilling operations for blasting), and actions will be taken to reduce or avoid increasing the amount of fugitive dust in the air by the use of water sprayers, or other non-intrusive means as needed. If burning is used to dispose of wood wastes (brush/slash) from the site, there may be short-instance smoke emissions (during the day). The Applicant will consult with the City Fire Department prior to any burning operations and obtain any necessary permits and/or approvals.

During operations, the Project is not expected to adversely affect or degrade air quality, as solar panels generate electricity that is distributed to the regional grid without producing air emissions. There will be no appreciable air emissions from operations vehicle exhaust and dust from driving on access roads. No emissions sources associated with operation of the Project require an air permit.

The proposed Project will not have an unreasonable effect on runoff/infiltration relationships, and the proposed Project will not have an unreasonable adverse effect on surface or ground water quality.

**(n) Exterior lighting.**

No exterior lighting is proposed for the solar facility at this time.

**(o) Waste disposal.**

Construction of the Project is expected to generate cardboard waste (e.g. broken-down solar panel boxes) and clean wood waste (e.g. wood pallets). Recycling and reuse will be the preferred method of disposing of these solar panel delivery materials. A licensed disposal facility will be contracted to accept and recycle or dispose of waste generated from the Project. Solid waste during operation of the facility is expected to be limited to materials associated with the replacement of equipment and a similar contracting arrangement will be made with a licensed disposal facility. No hazardous waste will be generated by the Project.

**(p) Lot layout.**

The Project layout is presented in the attached site plans.

**(q) Landscaping.**

No plantings or landscaping are proposed for this Project., as its design and layout has maximized use of existing topography and vegetation to shield proposed facilities from view from adjacent areas to minimize its visual impact on the surrounding area. The Project is sufficiently separated from public roads and the nearby Gulf Island pond that any visible components of the Project (e.g. arrays and transmission poles) will appear small. Poles and wires will be minimally visible and are expected to blend in with adjacent forested areas when viewed from these distances. The Applicant believes, with the concurrence of the City, that no additional landscaping is necessary at this site to meet existing standards.

**(r) Shoreland relationship.**

The Project is not located along or in close proximity to any shoreland area. A vegetative buffer will be maintained between the Project and Gulf Island Pond, which is located approximately 500 feet to the northwest.

**(s) Open space.**

In order to comply with the National Electric Safety Code (NESC) and protect critical infrastructure equipment, no public use of the Project area will be allowed.

**(t) Technical and financial capacity.**

Technical Capacity

NextGrid Inc develops, constructs and operates solar power and battery storage power facilities across the United States. Currently they have over 100 projects totaling over 200MW in MA, ME, NJ, DC, CA, NC, PA, MD CO in development, construction or operation. Of these, 59 projects are operational, 20 projects

in active construction and 81 projects in earlier stages of development. In 2019 the NextGrid team launched Grid Builders LLC, which provides integrated construction functionality to the project development cycle.

#### Financial Capacity

In June of 2019, Madison Energy Investments, LLC and NextGrid Inc. entered into an exclusive long-term relationship whereby Madison Energy Investments, LLC agreed to purchase all of NextGrid Inc's renewable energy projects throughout the country. Madison Energy Investments, LLC currently operates a \$250M fund, backed by Stonepeak Infrastructure Partners, to construct and own solar energy and storage projects in the US.

#### **(u) *Buffering.***

The Project has been designed so as to adhere to applicable set-back requirements. No service or storage areas are proposed.

#### **(v) *Compliance with district regulations.***

The Project is a utility use, which will provide renewable energy to the grid. The Project is consistent with district regulations.

#### **(w) *Design consistent with performance standards.***

The Project as designed is consistent with the applicable performance standards of Article XII of the Lewiston Zoning and Land Use Code, including the earth material removal and erosion and sedimentation control standards.

#### Shoreland area standards

Project facilities will be approximately 500 feet from the shoreline of Gulf Island Pond. The Project will conform with applicable standards including lot dimensions, parking, agriculture, erosion and sedimentation control, buffers, and wetlands.

#### Timber harvesting standards

Timber harvesting shall comply with the state department of conservation standards for forest regeneration, established pursuant to 12 M.R.S.A., ch. 805, subchapter III-A, as amended. Approximately 6.27 acres of trees will be cleared to allow for the construction of the Project. During operation, trees will be periodically trimmed so as not to affect or impede the solar project operations.

#### Walls and fences

Utility-scale PV solar energy facilities must comply with the National Electrical Code and National Fire Protection Code, which include protective fencing that is at least seven feet high or six feet high with at least one foot of barbed wire at the top of the fence around generating stations and substations. The Applicant therefore requests that the height of fencing be determined based on applicable codes and regulations at the time of construction.

### Signs

Signage will be limited to that which is required to promote public safety around the facility, including access warnings.

### Off-street parking and loading

No off-street parking is proposed for this Project.

### Environmental performance standards

The Project is located approximately 500 feet from the nearest residence. The Project will not result in any adverse effects associated with noise, smoke, vibration, odors, air pollution, or electrical disturbance or interference.

As per Article XII, the following performance standards relate to usage activities that are not applicable to the Project:

- Earth material removal standards (as Applicant will have permit)
- Community garden standards
- Swimming pool standards
- Wind energy conversion systems
- Adult business establishment, tattoo establishment, and drinking place standards
- Frontage right-of-way provisions
- In-law apartment standards
- Campground standards
- Installation of mobile homes on individual lots standards
- Installation of mobile homes in mobile home parks standards
- Erosion and sedimentation control standards (as Applicant will have permit)
- Improvement standards
- Child care facility standards
- Residential design standards for the downtown residential and riverfront districts

### Decommissioning

Commercial-scale solar fields are designed for a minimum expected operational life of 20 years but may operate for 25 to 30 years or more. As the solar field approaches the end of its operational life, it is expected that technological advances will make more efficient and cost-effective solar arrays that will economically drive the replacement of the existing solar arrays. Therefore, decommissioning of the Project shall commence after 12 consecutive months of no power generation at the facility except in the case of a natural disaster, act of violence, or other event which results in the absence of electrical generation for 12 months. The Applicant or its successor as owner of the Project at that time will be solely responsible for decommissioning the Project.

For decommissioning, the owner shall:

- Be responsible for all decommissioning costs;

- Obtain any additional permits required for the decommissioning, removal, and legal disposal of Project components prior to commencement of decommissioning activities;
- Remove and dispose of all above-ground infrastructure, including arrays, inverter structures, concrete foundations and pads, and fences, and grade and revegetate in accordance with permits and in compliance with all applicable rules and regulations then in effect governing the disposal thereof;
- Remove all hazardous materials and transport them to be disposed of by licensed contractors at an appropriate facility in accordance with rules and regulations governing the disposal of such materials; and
- Removed materials shall be recycled and/or salvaged to the maximum extent practical and all waste streams shall be managed in accordance with the State of Maine's solid waste requirements.

The decommissioning and restoration processes consist of the removal of above-ground structures; grading, to the extent necessary; restoration of topsoil (if needed) and seeding. The process of removing structures involves evaluating and categorizing all components and materials into categories of recondition and reuse, salvage, recycling and disposal. The Project consists of numerous materials that can be recycled, including steel, aluminum, glass, copper and plastics. In the interest of increased efficiency and minimal transportation impacts, components and material may be stored on-site until the bulk of similar components or materials are ready for transport. The components and material will be transported to the appropriate facilities for reconditioning, salvage, recycling, or disposal. Above-ground structures include the panels, racks, inverters, pads and any interconnection facilities located on the property. At the time of decommissioning, a plan will be submitted for continued beneficial use of any components to be left on site, including roads.

While it is not possible to estimate the future costs of decommissioning with any precision, given the costs and salvage values of components today it is reasonable to assume that the cost of decommissioning the solar arrays will be largely offset by the salvage value of the solar panels and components.

**Attachment B**

**Review of Article X Section 3 Approval Criteria**

## CONDITIONAL USE PERMIT NARRATIVE

The following information is presented to demonstrate that the proposed project adheres to the standards presented in Section 3 of Article X of the Lewiston Zoning and Land Use Code.

- (1) **Neither the proposed use nor the proposed site upon which the use will be located is of such a character that the use will have significant adverse impact upon the value or quiet possession of surrounding properties greater than would normally occur from such a use in the zoning district. The board may not find that this standard is satisfied unless it finds that:**

- a. **The size of the proposed use is comparable to surrounding uses; and**

The Project design and layout has maximized use of existing topography and vegetation to shield proposed facilities from view from adjacent areas to minimize its visual impact on the surrounding area. The Project is sufficiently separated from public roads and the nearby Gulf Island pond that any visible components of the Project (e.g. arrays and transmission poles) will appear small. Poles and wires will be minimally visible and are expected to blend in with adjacent forested areas when viewed from these distances.

- b. **The amount and type of traffic to be generated, hours of operation, expanse of pavement, and the number of parking spaces are comparable to surrounding uses; and**

During construction, the Project will temporarily increase traffic on municipal roads, but these effects will be temporary in nature and relatively minor. Standard trucking methods will be used to transport materials and equipment to the Project site. Construction trailers, construction equipment and laydown areas will be sited so as to avoid or minimize environmental impact. Construction will occur from 7am until 7pm or from sunrise to sunset, whichever is less.

Project operations are anticipated to have *de minimis* effects on traffic. There will be no full-time staff required to be located at the Site for operation of the solar energy center. On-site personnel visits are anticipated to be largely limited to managing the property grounds and associated solar facilities in accordance with any permitting requirements and maintenance of equipment as recommended by manufacturer specifications.

The Project will not require permanent parking spaces for construction or operation. During construction, most construction personnel will park at the temporary laydown area. Some parking will occur within the Project development area where construction activities are occurring, including for equipment delivery, loading, and unloading; these areas will be spread out through the Project. After construction, the site will generally be unmanned, except for mowing and maintenance.

- c. The generation of noise, dust, odor, vibration, glare, smoke, litter and other nuisances is comparable to surrounding uses; and**

Noise

Sound generated by the Project would consist of: (1) short-term duration during construction and (2) sound during normal facility operations. Construction noise levels will exceed ambient conditions at times, mainly when the equipment is in operation in close proximity to the Project site boundary. Construction noise will not be unusual, but rather typical of noise associated with any residential or commercial development. The equipment used is not generally operated continuously, nor is all of the equipment always operated simultaneously. There will therefore be times when no equipment is operating and noise will be at ambient levels. Construction activities are scheduled to occur mostly during daytime hours, when many people are at work and away from home. Specifically, construction will occur from 7am until 7pm or from sunrise to sunset, whichever is less.

During Project operation, concurrent operation of the solar plant site components and the on-site substation should be assumed to be limited to daytime hours only. In terms of estimating noise, the frequency of most inverters is 50-60 Hz, the same as AC electricity in home or commercial buildings. A study conducted by the Massachusetts Clean Energy Center found that the average Leq sound levels at a distance of 10 feet from the inverter face varied over the range of 48 dBA to 61 dBA for two sites and in the range of 59 to 72 dBA for a third site. Sound levels along the fenced boundary of the PV arrays were generally at background levels, though a faint inverter hum could be heard at some locations along the boundary during the day. After sunset, when the plant no longer receives solar radiation, the inverters will not produce noise and the pad-mounted transformers will be energized but likely operating under low noise condition using natural draft cooling (no fans) due to reduced nighttime heat loads. The intervening ground cover and vegetation should provide for sound attenuation.

Glare

Solar panels are designed to absorb light and although the glass in early panels put off light equal to a windshield on a car they are now standard with anti-glare coating in all instances. Modern panels have a standard anti-glare coating which guarantee that the max reflection is 2% whereas residential windows reflect at 3%.

Other

Once the Project is operational, it will not generate any dust, odor, vibration, smoke, litter or other nuisances.

- d. The impact of the use on the quality and quantity of groundwater available to abutting properties is comparable to surrounding uses; and**

The Project is not anticipated to have any impact on the quality and quantity of groundwater available to abutting properties. No wells will be installed on the site and the Project area will be maintained as meadow.

- e. **Unusual physical characteristics of the site, including size of the lot, shape of the lot, topography, and soils, do not aggravate adverse impacts upon surrounding properties.**

There are no unusual physical characteristics associated with the site that would aggravate adverse impacts upon surrounding properties. The size of the parcel allows for the solar facility to be sited sufficiently distant from nearby residential homes and other potential users so as to minimize impacts.

- (2) **Vehicular and pedestrian access to, into and within the site will be safe and will not be overburdened or create hazards because they are inadequate. The board may not find that this standard is satisfied unless it finds that:**

- a. **Vehicular access to the site will be on roads which have adequate capacity to accommodate the additional traffic generated by the development.**

- 1. **Adequate capacity means that:**

- (i) **Intersections on major access routes to the site within one-half mile of any entrance road will function after development at a minimum at Level of Service C; or**
- (ii) **If they are functioning at a Level of Service D or lower prior to the development, the project will not reduce the current level of service.**

After construction, the site will generally be unmanned, except for mowing and maintenance. In the event of an issue requiring troubleshooting or maintenance, it is anticipated that a two-person team will visit the site. For mowing and general maintenance (e.g., fence inspections), the work will generally take place on a twice annually, or quarterly basis, with a small number of vehicles. The road network as presented on the attached site plans is adequate for this level of traffic. The facility will be fenced, therefore there will be no pedestrian access to the Project area.

- 2. **The board of appeals or planning board may approve a conditional use permit for an application not meeting this requirement if the applicant demonstrates that:**

- (i) **A public agency has committed funds to construct the improvements necessary to bring the level of access to said standard, or**
- (ii) **The applicant will assume financial responsibility for the improvements necessary to bring the level of service to said standard and will guarantee the completion of the improvements within one year of approval of the permit.**

Not applicable (see previous response).

- b. The topography of the site shall permit the construction of all driveways, entrances or proposed streets to meet the standards of the City of Lewiston's Policy for the Design and Construction of Streets and Sidewalks.**

The topography of the Project area is generally level and will allow for roads to meet applicable standards for a private roadway system. No sidewalks are proposed.

- c. Facilities are present to assure the safety of pedestrians passing by or through the site.**

The facility will be fenced to prevent unauthorized access. The installation of the fencing will not impede access to any known resources for which pedestrian access would be desirable.

- (3) Municipal or other facilities serving the proposed use will not be overburdened or create hazards because they are inadequate. The board may not find that this standard is satisfied unless it finds that:**

- a. The capacity of sewerage and water supply systems is adequate to accommodate the proposed use;**

No water supply or wastewater disposal systems will be required for this Project. During construction, anticipated water usage will include use of bottled drinking water or water trucked in from municipal sources for construction personnel and dust abatement. Water for dust abatement and HDDs will be from publicly accessible, off-site water sources, excluding streams, brooks, and groundwater sources. Water for dust abatement will be distributed via a tanker truck.

There will be no full-time staff required to be located at the Project site for operation of the solar energy center. On-site personnel visits are anticipated to be largely limited to managing the property grounds and associated solar facilities in accordance with any permitting requirements and maintenance of equipment as recommended by manufacturer specifications. Therefore no water supply or sewage disposal facilities are proposed.

- b. The capacity of the storm drainage system is adequate to accommodate the proposed use; and**

Overall, though the Project has a large footprint, the Project will result in little impervious area. In general, areas disturbed adjacent to the access roads will be permanently stabilized through seeding and the majority of the site will be maintained as meadow.

- c. **The ability of the fire department to provide necessary protection services to the site and development is adequate.**

The Project will include construction of a gated entrance road. The City fire department will have access to Project gate keys through Knox boxes. A 16-foot buffer will be maintained between arrays and the perimeter fencing to accommodate vehicles, primarily pickup trucks or other passenger vehicles, in the event of an emergency.

- (4) **The soils on the proposed site shall have adequate capacity and stability to support all loadings, including fill, developed by the proposed use and the use will not cause unreasonable soil erosion or reduction in the capacity of the land to hold water to the extent that a dangerous or unhealthy condition may result on the site or upon the land of abutters or the environment. In considering whether this standard is satisfied, the board shall take into account the elevation above sea level of the site and surrounding properties, its relation to flood plains, the slope and vegetation of the land and their effects on drainage.**

A soil report generated by the Natural Resource Conservation Service is provided in Attachment D. The dominant soils types on-site are classified as Adams loamy sand, 8 to 15 percent slopes (AaC), Lyman-Tunbridge complex, 8 to 15 percent slopes, rocky (HrC), Sutton very stony loam, 0 to 8 percent slopes (SyB) and Charlton very stony fine sandy loam, 8 to 15 percent slopes (ChC). No water supply or wastewater disposal systems will be required for this Project.

The racking system for the array will be mounted on posts installed into the ground. For the majority of the dominant soils types, the depth to a restrictive feature (e.g. bedrock) is more than 80 inches and so it is anticipated that the mounting poles will be driven into the ground in these areas. For the Lyman-Tunbridge complex the soil report states that it is 11 to 24 inches to lithic bedrock. In these soils it is anticipated that a screw type post will be used to overcome bedrock or large boulders or, if necessary, a hole will be drilled into the bedrock and grout employed to adhere the post to the substrate.

The Applicant has a vested interest in ensuring that soils are suitable for the development and will complete geotechnical borings prior to construction to determine the precise installation approach for each mounting pole. There is nothing in the publicly available data that suggests there would be any insurmountable obstacles to installation of the array system. As such, given the nature of this Project and its construction needs, with concurrence from the Planning Board a formal soil survey will not be conducted at this time.

In terms of grading, the existing topography and vegetation will be retained to the greatest extent practicable. Site layout was developed to target areas that are conducive to solar array installation; however, some localized grading will be necessary to ensure array areas are in accordance with the tolerances of array racking equipment (approximately 15% or less) and to accommodate safe construction and operations. The construction sequencing will be performed such that earth materials are exposed for a minimum amount of time before they are covered, seeded, or otherwise stabilized to prevent erosion. The stabilization of cut/fill slopes will be

provided in accordance with the Maine Erosion and Sediment Control BMPs Manual. Erosion control blankets shall be installed at the drip edge of solar panels to minimize erosion from stormwater runoff and on all slopes steeper than 1-foot rise to 3-foot horizontal. Additional erosion control measures shall be installed where working adjacent to environmentally sensitive areas. The Applicant does not anticipate any grading will be necessary after construction has been completed, based on the experience of other solar facilities.

- (5) **The scale and design of the proposed structures with respect to materials, scale and massing shall be compatible with existing structures within 500 feet of the site in areas where the existing structures are of a similar scale and architectural treatment.**

There are no other existing structures within 500 feet of the proposed location of the solar arrays.

**Attachment C**

**Purchase Option (Redacted)**

**Option to Purchase Agreement****Commercial Terms**

Effective Date	April 17, 2019
Duration of Offer	Valid until April 23, 2019
Seller	Ann Skelton Ludwig, Harold Skelton
Buyer	NextGrid Inc
Broker	Tim Millett, Sam LeGeyt
Property	265 E Merrill St, Lewiston, ME (Up to 30 contiguous acres to be selected by Buyer and Seller)
Purchase Price	██████████
Rent	██████████ – Paid on Signing
Option Payment	██████████ option
Development Term	11:59 PM on the date 12 months from the Effective date, which may be extended pursuant to Section 9(d)
Extension Options	2
Extension Term	6 Months

Seller Notices	Buyer Notices
Harold Skelton 49 Mill Road Cumberland ME 04021	NextGrid, Inc. PO Box 7775 #73069 San Francisco, CA 94120-7775

## OPTION TO PURCHASE

This Option to Purchase Agreement ("**Agreement**"), specifically including and incorporating herein, the "Commercial Terms" section, is dated as of the Effective Date and is entered into by and between the Owner of Record ("**Seller**"), and Buyer (each a "**Party**" and together, the "**Parties**").

1. **Grant of Option to Purchase.** The Seller hereby grants to Buyer an exclusive and irrevocable option ("Option") to purchase the Real Property ("**Property**") described in this Agreement upon the terms and conditions herein.

2. **Property.** The property to be sold consists of (a) the land and all the buildings, other improvements and fixtures on the land; (b) all of the Seller's rights relating to the land; and (c) all personal property specifically included in this contract. The real property to be sold is defined under Property in the Commercial Terms of this agreement and more specifically in Exhibit A.

3. **Rent.** The Development Term ("**Development Term**") begins on the Effective Date of this agreement. During the Development term and for any extension thereof, Buyer will pay the Rent ("**Rent**") to Seller upon signing. The Rent payments are non-refundable and are paid as consideration, along with other good and valuable consideration, for exclusive rights to obtain all necessary permits and approvals for a solar energy facility (the "**Project**") during this period. For the avoidance of doubt, there will be no physical changes to the Property during the Development Term without prior written consent of the Seller.

4. **Exercise of Option:** The Buyer may exercise this Option to purchase at any time before the end of the Development Term through Buyer giving notice in writing to the Seller addressed to the contact address above. All notices will be deemed delivered to Seller upon deposit in the U.S. Mail Certified, Return Receipt Requested, or overnight mail courier, addressed to the above address. After receiving such notice, within a reasonable period of time, the Parties will, in good faith, negotiate deposit, closing, and other relevant terms not already agreed to herein.

5. **Purchase Price.** Upon exercise of the Option to purchase the Property upon the terms herein, the Buyer agrees to buy said Property for the Purchase Price ("**Purchase Price**") listed in the Commercial Terms.

6. **Time and Place of Closing.** Due to the nature of this Option to Purchase Agreement, the closing date cannot be made final at this time. However, should Buyer exercise such Option, shortly thereafter, the Buyer and Seller agree to the Estimated Closing Date ("**Closing Date**") for the closing. Both parties willfully cooperate so the closing can take place on or before the estimated date. All purchase money is due by 5pm ET on the Closing Date.

### 7. **Development Approvals, Contingencies**

(a) The Purchase Price is based on the assumption that Buyer will be able to obtain any and all governmental or quasi-governmental permits, approvals, variances, entitlements and the like, with all appeal periods thereon having expired with no appeal having been filed, including without limitation any and all relief, findings, orders and the like with respect to environmental requirements or restrictions (cumulatively, the "**Development Approvals**") in order to develop, construct, use and operate a solar facility on the Property in accordance with its development plan (the "**Project**"). Outlined below are some of the major development steps and contingencies necessary for Buyer to proceed:

- **Environmental & Entitlements Assessment:** Professional DEP Wetland Delineation and Testing, ALTA Survey
- **System Design and Layout:** Engineer Electrical, Site Layout & Civil Engineering Plans
- **Utility Interconnection:** Utility Review, Impact Study and Approval
- **Permitting:** Town Building Permits
- **Regulatory Contingencies:** PUC and Federal Licenses, Programs, and Tax Incentives

(b) **Development Approvals Condition.** Buyer, at Buyer's sole cost and expense, may seek to obtain any and all Development Approvals. It shall be a condition of Buyer's obligation to consummate the transaction contemplated hereunder (the "**Development Approvals Condition**") that such Development Approvals shall be received on or before the Closing Date and such Development Approvals shall be satisfactory to Buyer in its sole and absolute discretion. Buyer may waive the Development Approvals Condition at any time at Buyer's sole option, by delivery of written notice from Buyer to Seller.

(c) **Seller Cooperation; Non-Opposition.** Seller shall cooperate with Buyer in its process of obtaining Development Approvals, including without limitation executing any applications for Development Approvals if so required as fee owner of the Property, provided that no such cooperation shall subject Seller to any cost, expense or and is legal. Neither Seller, nor any employee, officer, director, representative, or agent of Seller acting in its official capacity on Seller's behalf shall object before any governmental authority, by means of appeals or oral or written opposition or by knowingly funding any person for the purpose of objecting by means of appeals or oral or written opposition, to Buyer's development of the Property.

(d) **Buyer Extension Option.** Buyer shall have two (2) Extension Options ("**Extension Option**") to extend the Development Term by six (6) months after delivery of notice to Seller on or prior to the expiration of the original Development Term. If Buyer elects to exercise the foregoing extension option, then concurrently with Buyer's notice to Seller, Buyer shall pay a nonrefundable Option Payment with the Listed Broker ("**Listed Broker**") as set forth in Commercial Terms on or before the of the Development Term.

(e) **Buyer Termination Right.** If the Development Approvals Condition is not satisfied by the end of the Development Term, or if at any time prior to expiration of the Development Term, as the same may be extended, Buyer determines in its sole discretion that the Development Approvals Condition is unlikely to be satisfied, Buyer may terminate this Agreement in its sole discretion by delivery of written notice of such election to Seller and the Listed Broker given on or before the Development Term, as the same may be extended, neither party shall have any further liability or obligation to the other hereunder.

8. **Transfer of Ownership.** Should Buyer exercise its Option to purchase, at the closing, the Seller will transfer ownership of the property to the Buyer. The Seller will give the Buyer a properly executed deed and an adequate affidavit of title. If the Seller is a corporation, it will also deliver a corporate resolution authorizing the sale.

9. **Access and Indemnity.** Buyer, its mortgage lender (if any) and their agents shall have the right to enter upon the Property after notice to Seller (which may be oral) at reasonable times for purposes of inspection, measurement, and appraisal. Seller shall also permit entry upon the Property by an engineer or land surveyor for the purpose of plotting bounds and taking measurements. All such entries shall, at Seller's option, take place in the presence of Seller or Seller's broker, and the number of such

entries shall not exceed five. Buyer shall indemnify Seller and hold Seller harmless from all actions, suits, claims, liabilities, losses, damages, and costs, including reasonable attorneys' fees, arising from (a) any personal injury suffered by Buyer, its mortgage lender, and their agents, on or about the Property, or (b) property damage to the Property caused by such entries.

10. **Seller's Representations.** Seller warrants and represents to Buyer as follows:

(a) Seller has no knowledge of existence, at any time, of any violations of any building and zoning laws applicable to the Property and Seller warrants and represents that it has not received any notice or inquiry from any local or state governmental authority or representative thereof claiming or inquiring into the existence of any such violation.

(b) Seller is aware of no lawsuits or demands against the Seller that would affect Seller's ability to convey the Property hereunder;

(c) During the time Seller has owned the Property, to the best of the Sellers knowledge, no hazardous or toxic substances have been used or incorporated into the Property by Seller in violation of any applicable laws; and Seller is not aware of the use or incorporation into the Property of any hazardous or toxic substances in the Property, at any time, by anyone else;

(d) During the time Seller has owned the Property, to the best of the Sellers knowledge, no insulation or other materials containing urea-formaldehyde or similar chemicals have been used or incorporated into the Property and no pesticide containing chlordane or related chemicals has been used in the Property. To the best of Seller's knowledge, Seller is not aware of the use or incorporation into the Property of any insulation or other materials containing urea-formaldehyde or similar chemicals or the use of any pesticide containing chlordane or related chemicals in the Property, at any time, by anyone else.

(e) There is no pending Seller bankruptcy, mortgage foreclosure, or other proceeding that might in any material way impact adversely on the Seller's ability to perform on the closing date;

(f) Seller is aware of no underground storage tanks or other subsurface facilities on the Property;

(g) Seller is aware of no pending or threatened assessments or takings affecting the Property; and

(h) The Property are not subject to any outstanding agreements with any party pursuant to which any such party may acquire an interest in the Property.

11. **Financially Able to Close.** Buyer represents that it has sufficient funds to complete a purchase should it exercise its Option to purchase Property.

12. **Accuracy of Representations.** All representations and warranties made by Seller & Buyer in this Agreement shall be true and complete and accurate as at the date thereof and as of the date of the closing, with the same force and effect as though such representations and warranties had been made on and as of the closing. Each such representation and warranty shall survive the delivery of the deed.

13. **Title.** Without limitation of any other provisions in this Agreement, the Property shall not be considered to be in compliance with the provisions of this Agreement with respect to title unless:

(a) All structures and improvements on the Property and all means of access to the Property shall be wholly within the boundary lines of the Property and shall not encroach on, upon or under the property of any other person or entity;

(b) No building, structure or improvement, including any driveway(s), garages, septic systems and wells or property of any kind belonging to any other person or entity shall encroach upon or under the Property;

(c) Title to the Property is insurable, for the benefit of Buyer, by a title insurance company reasonably acceptable to Buyer in a fee owner's policy of title insurance, at normal premium rates, on the American Land Title Association form currently in use, subject only to those printed exceptions to title normally included in the "jacket" to such form or policy, the standard so-called "Schedule B" exceptions

(d) The Property has vehicular and pedestrian access to a public way, duly laid out or accepted as such by the town or city in which the Property is located, over adjacent property of Sellers; and

(e) There are no restrictions, easements, agreements, or other matters affecting the Property which interfere with the current use and enjoyment of the Property.

14. **Affidavits and Indemnities Necessary for Closing.** Seller agrees to execute at closing all affidavits and indemnifications to Buyer's title insurance company and/or Buyer's mortgage lender (if any) as reasonably required, including, but not limited to, affidavits indemnifying against claims or workmen and materialmen and affidavits as to the nonexistence of urea formaldehyde foam insulation on the Property to the best of Seller's knowledge, parties in possession, the purchase price and allocation of the same.

15. **Conveyancing Standards.** Any matter or practice arising under or relating to this Agreement which is the subject of a title standard or a practice standard of the Real Estate Bar Association of Maine at the time for delivery of the deed shall be governed by such title standard or practice standard to the extent applicable, provided, however, that Buyer shall not be required to purchase the Property if, irrespective of such standard, title is not insurable in accordance with paragraph entitled "Title", subparagraph (c).

16. **No Broker.** Seller warrants to Buyer that it has dealt with no broker or other person entitled to a broker's commission in connection with the transaction contemplated by this Agreement except the Listed Broker and it agrees to hold harmless from and indemnify Buyer against all damages, claims, losses and liabilities, including legal fees, incurred by Buyer as a result of the failure of this warranty.

17. **Dispute Resolution.** Buyer and Seller agree to mediate any dispute or claim arising out of this Agreement, or in any resulting transaction, before resorting to arbitration or court action.

(a) **Mediation.** If a dispute arises, between or among the Parties, and it is not resolved prior to or after recording, the Parties shall first proceed in good faith to submit the matter to

mediation. Costs related to mediation shall be mutually shared between or among the Parties. Unless otherwise agreed in mediation, the Parties retain their rights to proceed to arbitration or litigation.

**(b) Arbitration.** The Parties agree that any dispute or claim in law or equity arising between them out of this Agreement or any resulting transaction, which is not settled through mediation, shall be decided by neutral, binding arbitration. The arbitrator is required to be a retired judge or justice, or an attorney with at least five (5) years of residential real estate law experience unless the Parties mutually agree to a different arbitrator. Under arbitration, the Parties shall have the right to discovery in accordance with Maine law. Judgment upon the award of the arbitrator(s) may be entered into any court having jurisdiction. Enforcement of this Agreement to arbitrate shall be governed by the Federal Arbitration Act.

**(c) Exclusions.** The following matters shall be excluded from the mediation and arbitration: (i) a judicial or non-judicial foreclosure or other action or proceeding to enforce a deed, mortgage or installment land sale contract as defined in accordance with Maine law; (ii) an unlawful detainer action, forcible entry detainer, eviction action, or equivalent; (iii) the filing or enforcement of a mechanic's lien; and (iv) any matter that is within the jurisdiction of a probate, small claims or bankruptcy court. The filing of a court action to enable the recording of a notice of pending action, for order of attachment, receivership, injunction, or other provisional remedies, shall not constitute a waiver or violation of the mediation and arbitration provisions of this Section.

**18. Assignability.**

Buyer shall not assign any of its rights, duties or obligations under this Agreement without the prior consent of Seller, which consent shall not be unreasonably withheld, conditioned or delayed. Notwithstanding the foregoing, Buyer may, without consent from Seller, assign any of its rights, duties or obligations under this Agreement: (i) to a Financing Party, (ii) to one or more of its Affiliates of equal or greater creditworthiness as Buyer, (iii) to one or more third parties in connection with a collateral assignment of rights, mortgage, pledge or otherwise, (iv) to any Person or entity succeeding to all or substantially all of the stock or assets of Buyer, provided that such assignee can provide reasonable evidence of its financial and technical wherewithal to perform the obligations of assignor, or (v) to a successor entity in a merger or acquisition transaction. In order to facilitate financing of the System, Seller agrees to enter into a consent and assignment agreement with Buyer's Financing Party reasonably required by Buyer and such Financing Party. An assignment by either Party in accordance with this Section shall relieve the assignor of its obligations hereunder, except with respect to undisputed payments due by the assignor as of the effective date of the assignment, which obligations shall be performed by assignor or assignee as a condition precedent to such assignment.

**19. Governing Law.** This Agreement shall be interpreted in accordance with the laws in the State of Maine.

**20. Risk of Loss.** The Seller is responsible for any damage to the property, except for normal wear and tear until the closing. If there is damage, the Buyer can proceed with the closing and either: (a) require that the Seller repair the damage before the closing; or (b) deduct from the purchase price a fair and reasonable estimate of the cost to repair the Property.

**21. Complete Agreement.** This contract is the entire and only agreement between the Buyer and the Seller, replaces and cancels any previous agreements between the Buyer and the Seller and can

only be changed by an agreement in writing signed by both Buyer and Seller. The Seller states that the Seller has not made any other contract to sell the property to anyone else.

22. **Parties Liable.** This contract is binding upon all parties who sign it and all who succeed to their rights and responsibilities.

23. **Notices.** All notices under this contract must be in writing. The notices must be delivered personally, mailed by certified mail, return receipt requested, or overnight courier, to the other party at the address written in this contract, or to that party's attorney, and be received by that party.

***REMAINDER OF PAGE INTENTIONALLY LEFT BLANK – SIGNATURE PAGE FOLLOWS***

Exhibit A



IN WITNESS WHEREOF, the Parties have executed this Agreement on the day and year set forth above as the Effective Date.

**NextGrid Inc and Assigns**

By: Ann K Ludwig

Date: 4/25/19

**Seller**

Signature: Ann K Ludwig

Name: Ann Skelton Ludwig

Date: April 17, 2019

HAZARD SKELTON

HAZARD SKELTON

APR 17, 2019

**Attachment D**

**Soil Report**



United States  
Department of  
Agriculture

**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for Androscoggin and Sagadahoc Counties, Maine

## Merrill Road- Lewiston Soil Report



February 28, 2020

# Preface

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Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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# How Soil Surveys Are Made

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Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

## Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

# Custom Soil Resource Report Soil Map (Merrill Road- Lewiston Soil Report)



Map Scale: 1:10,200 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

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## 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.

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 20, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 20, 2010—Aug 29, 2010

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 (Merrill Road- Lewiston Soil Report)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AaB	Adams loamy sand, 0 to 8 percent slopes	7.1	3.3%
AaC	Adams loamy sand, 8 to 15 percent slopes	48.6	22.4%
AaD	Adams loamy sand, 15 to 30 percent slopes	6.1	2.8%
CfB	Charlton fine sandy loam, 0 to 8 percent slopes	8.3	3.8%
CfC2	Charlton fine sandy loam, 8 to 15 percent slopes, eroded	3.1	1.4%
ChC	Charlton very stony fine sandy loam, 8 to 15 percent slopes	26.0	12.0%
ChD	Charlton very stony fine sandy loam, 15 to 25 percent slopes	22.7	10.4%
HrC	Lyman-Tunbridge complex, 8 to 15 percent slopes, rocky	28.6	13.2%
HrD	Lyman-Tunbridge complex, 15 to 35 percent slopes, rocky	22.8	10.5%
Lc	Leicester fine sandy loam	2.1	1.0%
Le	Leicester very stony fine sandy loam	4.4	2.0%
NgB	Ninigret fine sandy loam, 0 to 8 percent slopes	1.0	0.5%
SxB	Sutton loam, 0 to 8 percent slopes	8.6	3.9%
SyB	Sutton very stony loam, 0 to 8 percent slopes	27.4	12.6%
W	Water	0.4	0.2%
<b>Totals for Area of Interest</b>		<b>217.2</b>	<b>100.0%</b>

## Map Unit Descriptions (Merrill Road- Lewiston Soil Report)

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

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic

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class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

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An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## Androscoggin and Sagadahoc Counties, Maine

### AaB—Adams loamy sand, 0 to 8 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2wqn9

*Elevation:* 10 to 2,000 feet

*Mean annual precipitation:* 31 to 95 inches

*Mean annual air temperature:* 27 to 52 degrees F

*Frost-free period:* 90 to 160 days

*Farmland classification:* Farmland of statewide importance

#### Map Unit Composition

*Adams and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Adams

##### Setting

*Landform:* Outwash terraces

*Landform position (two-dimensional):* Backslope, summit

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Sandy glaciofluvial deposits

##### Typical profile

*Ap - 0 to 7 inches:* loamy sand

*Bs - 7 to 21 inches:* sand

*BC - 21 to 27 inches:* sand

*C - 27 to 65 inches:* sand

##### Properties and qualities

*Slope:* 0 to 8 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Somewhat excessively drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (1.42 to 14.17 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline (0.0 to 1.9 mmhos/cm)

*Available water storage in profile:* Low (about 3.6 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3s

*Hydrologic Soil Group:* A

*Hydric soil rating:* No

#### Minor Components

##### Croghan

*Percent of map unit:* 5 percent

*Landform:* Outwash terraces

## Custom Soil Resource Report

*Landform position (two-dimensional):* Foothlope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Hydric soil rating:* No

### **Colton**

*Percent of map unit:* 5 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Backslope, summit  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### **Allagash**

*Percent of map unit:* 3 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### **Nicholville**

*Percent of map unit:* 2 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Foothlope, toeslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Hydric soil rating:* No

## **AaC—Adams loamy sand, 8 to 15 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2wqn8  
*Elevation:* 10 to 2,000 feet  
*Mean annual precipitation:* 31 to 95 inches  
*Mean annual air temperature:* 27 to 52 degrees F  
*Frost-free period:* 90 to 160 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Adams and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

## Description of Adams

### Setting

*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Backslope, summit  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Sandy glaciofluvial deposits

### Typical profile

*Ap - 0 to 7 inches:* loamy sand  
*Bs - 7 to 21 inches:* sand  
*BC - 21 to 27 inches:* sand  
*C - 27 to 65 inches:* sand

### Properties and qualities

*Slope:* 8 to 15 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Somewhat excessively drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (1.42 to 14.17 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline (0.0 to 1.9 mmhos/cm)  
*Available water storage in profile:* Low (about 3.6 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4e  
*Hydrologic Soil Group:* A  
*Hydric soil rating:* No

## Minor Components

### Colton

*Percent of map unit:* 8 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Summit, backslope  
*Landform position (three-dimensional):* Base slope, side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### Croghan

*Percent of map unit:* 3 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Hydric soil rating:* No

### Nicholville

*Percent of map unit:* 2 percent  
*Landform:* Outwash terraces

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*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### **Sheepscot**

*Percent of map unit:* 2 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

## **AaD—Adams loamy sand, 15 to 30 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 9kcf  
*Elevation:* 10 to 2,200 feet  
*Mean annual precipitation:* 30 to 50 inches  
*Mean annual air temperature:* 37 to 46 degrees F  
*Frost-free period:* 70 to 160 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Adams and similar soils:* 86 percent  
*Minor components:* 14 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Adams**

#### **Setting**

*Landform:* Outwash terraces  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Sandy glaciofluvial deposits derived from crystallin rock

#### **Typical profile**

*H1 - 0 to 4 inches:* loamy sand  
*H2 - 4 to 24 inches:* loamy sand  
*H3 - 24 to 40 inches:* fine sand

#### **Properties and qualities**

*Slope:* 15 to 30 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Somewhat excessively drained  
*Capacity of the most limiting layer to transmit water (Ksat):* High to very high (6.00 to 20.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None

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*Frequency of ponding:* None

*Available water storage in profile:* Very low (about 2.0 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6e

*Hydrologic Soil Group:* A

*Hydric soil rating:* No

### Minor Components

#### Merrimac

*Percent of map unit:* 5 percent

*Landform:* Outwash terraces

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Riser

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil rating:* No

#### Adams, slopes < 15 percent

*Percent of map unit:* 3 percent

*Landform:* Outwash terraces

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

#### Croghan

*Percent of map unit:* 2 percent

*Landform:* Outwash plains

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Talf

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil rating:* No

#### Adams, slopes > 30 percent

*Percent of map unit:* 2 percent

*Landform:* Outwash terraces

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

#### Rock outcrop

*Percent of map unit:* 1 percent

*Hydric soil rating:* No

#### Hinckley

*Percent of map unit:* 1 percent

*Landform:* Outwash terraces

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil rating:* No

## **CfB—Charlton fine sandy loam, 0 to 8 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 9kct  
*Elevation:* 10 to 3,500 feet  
*Mean annual precipitation:* 34 to 50 inches  
*Mean annual air temperature:* 37 to 46 degrees F  
*Frost-free period:* 60 to 160 days  
*Farmland classification:* All areas are prime farmland

### **Map Unit Composition**

*Charlton and similar soils:* 89 percent  
*Minor components:* 11 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Charlton**

#### **Setting**

*Landform:* Till plains  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Coarse-loamy supraglacial meltout till derived from mica schist

#### **Typical profile**

*H1 - 0 to 7 inches:* fine sandy loam  
*H2 - 7 to 24 inches:* fine sandy loam  
*H3 - 24 to 65 inches:* fine sandy loam

#### **Properties and qualities**

*Slope:* 3 to 8 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 6.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Moderate (about 6.2 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 2e  
*Hydrologic Soil Group:* A  
*Hydric soil rating:* No

### **Minor Components**

#### **Woodbridge**

*Percent of map unit:* 4 percent

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*Landform:* Hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### **Hollis**

*Percent of map unit:* 2 percent  
*Landform:* Hills  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Interfluve, crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### **Rock outcrop**

*Percent of map unit:* 1 percent  
*Hydric soil rating:* No

### **Leicester**

*Percent of map unit:* 1 percent  
*Landform:* Till plains  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

### **Tunbridge**

*Percent of map unit:* 1 percent  
*Landform:* Till plains  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Rise  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### **Paxton**

*Percent of map unit:* 1 percent  
*Landform:* Drumlinoid ridges  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Interfluve, crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### **Charlton, slopes > 8 percent**

*Percent of map unit:* 1 percent  
*Landform:* Till plains  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

## **CfC2—Charlton fine sandy loam, 8 to 15 percent slopes, eroded**

### **Map Unit Setting**

*National map unit symbol:* 9kcv  
*Elevation:* 10 to 3,500 feet  
*Mean annual precipitation:* 34 to 50 inches  
*Mean annual air temperature:* 37 to 46 degrees F  
*Frost-free period:* 60 to 160 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Charlton and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Charlton**

#### **Setting**

*Landform:* Till plains  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Coarse-loamy supraglacial meltout till derived from mica schist

#### **Typical profile**

*H1 - 0 to 5 inches:* fine sandy loam  
*H2 - 5 to 20 inches:* fine sandy loam  
*H3 - 20 to 65 inches:* fine sandy loam

#### **Properties and qualities**

*Slope:* 8 to 15 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 6.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Moderate (about 6.1 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3e  
*Hydrologic Soil Group:* A  
*Hydric soil rating:* No

### **Minor Components**

#### **Woodbridge**

*Percent of map unit:* 5 percent

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*Landform:* Hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### **Paxton**

*Percent of map unit:* 3 percent  
*Landform:* Drumlinoid ridges  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Interfluve, crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### **Tunbridge**

*Percent of map unit:* 2 percent  
*Landform:* Till plains  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Rise  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### **Hollis**

*Percent of map unit:* 2 percent  
*Landform:* Hills  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Interfluve, crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### **Hermon**

*Percent of map unit:* 2 percent  
*Landform:* Till plains  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### **Leicester**

*Percent of map unit:* 1 percent  
*Landform:* Till plains  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

## **ChC—Charlton very stony fine sandy loam, 8 to 15 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 9kcy  
*Elevation:* 10 to 3,500 feet  
*Mean annual precipitation:* 34 to 50 inches  
*Mean annual air temperature:* 37 to 46 degrees F  
*Frost-free period:* 60 to 160 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Charlton and similar soils:* 86 percent  
*Minor components:* 14 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Charlton**

#### **Setting**

*Landform:* Till plains  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Coarse-loamy supraglacial meltout till derived from mica schist

#### **Typical profile**

*H1 - 0 to 7 inches:* fine sandy loam  
*H2 - 7 to 24 inches:* fine sandy loam  
*H3 - 24 to 65 inches:* fine sandy loam

#### **Properties and qualities**

*Slope:* 8 to 15 percent  
*Percent of area covered with surface fragments:* 1.6 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 6.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Moderate (about 6.0 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* A  
*Hydric soil rating:* No

**Minor Components**

**Woodbridge**

*Percent of map unit:* 5 percent  
*Landform:* Hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

**Paxton**

*Percent of map unit:* 3 percent  
*Landform:* Drumlinoid ridges  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Interfluve, crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Tunbridge**

*Percent of map unit:* 2 percent  
*Hydric soil rating:* No

**Hollis**

*Percent of map unit:* 2 percent  
*Landform:* Hills  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Interfluve, crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Charlton, stone cove > 3 percent**

*Percent of map unit:* 1 percent  
*Landform:* Till plains  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Hermon**

*Percent of map unit:* 1 percent  
*Landform:* Till plains  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

## **ChD—Charlton very stony fine sandy loam, 15 to 25 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 9kcz  
*Elevation:* 10 to 3,500 feet  
*Mean annual precipitation:* 34 to 50 inches  
*Mean annual air temperature:* 37 to 46 degrees F  
*Frost-free period:* 60 to 160 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Charlton and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Charlton**

#### **Setting**

*Landform:* Till plains  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Coarse-loamy supraglacial meltout till derived from mica schist

#### **Typical profile**

*H1 - 0 to 7 inches:* fine sandy loam  
*H2 - 7 to 24 inches:* fine sandy loam  
*H3 - 24 to 65 inches:* fine sandy loam

#### **Properties and qualities**

*Slope:* 15 to 25 percent  
*Percent of area covered with surface fragments:* 1.6 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 6.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Moderate (about 6.0 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* A  
*Hydric soil rating:* No

**Minor Components**

**Paxton**

*Percent of map unit:* 5 percent  
*Landform:* Drumlinoid ridges  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Interfluve, crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Woodbridge**

*Percent of map unit:* 3 percent  
*Landform:* Hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

**Tunbridge**

*Percent of map unit:* 2 percent  
*Hydric soil rating:* No

**Hollis**

*Percent of map unit:* 2 percent  
*Landform:* Hills  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Interfluve, crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Charlton, slopes > 25 percent**

*Percent of map unit:* 1 percent  
*Landform:* Till plains  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Hermon**

*Percent of map unit:* 1 percent  
*Landform:* Till plains  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Charlton, slopes < 15 percent**

*Percent of map unit:* 1 percent  
*Landform:* Till plains  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

## **HrC—Lyman-Tunbridge complex, 8 to 15 percent slopes, rocky**

### **Map Unit Setting**

*National map unit symbol:* 2x1cy

*Elevation:* 0 to 520 feet

*Mean annual precipitation:* 36 to 65 inches

*Mean annual air temperature:* 36 to 52 degrees F

*Frost-free period:* 90 to 160 days

*Farmland classification:* Farmland of statewide importance

### **Map Unit Composition**

*Lyman and similar soils:* 45 percent

*Tunbridge and similar soils:* 40 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Lyman**

#### **Setting**

*Landform:* Hills, ridges

*Landform position (two-dimensional):* Backslope, shoulder, summit

*Landform position (three-dimensional):* Crest, nose slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Loamy supraglacial till derived from granite and gneiss and/or loamy supraglacial till derived from phyllite and/or loamy supraglacial till derived from mica schist

#### **Typical profile**

*Oe - 0 to 1 inches:* moderately decomposed plant material

*A - 1 to 3 inches:* loam

*E - 3 to 5 inches:* fine sandy loam

*Bhs - 5 to 7 inches:* loam

*Bs1 - 7 to 11 inches:* loam

*Bs2 - 11 to 18 inches:* channery loam

*R - 18 to 79 inches:* bedrock

#### **Properties and qualities**

*Slope:* 8 to 15 percent

*Percent of area covered with surface fragments:* 1.5 percent

*Depth to restrictive feature:* 11 to 24 inches to lithic bedrock

*Natural drainage class:* Somewhat excessively drained

*Capacity of the most limiting layer to transmit water (Ksat):* Very low to high (0.00 to 14.03 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* Low (about 3.2 inches)

## Custom Soil Resource Report

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* D  
*Hydric soil rating:* No

### Description of Tunbridge

#### Setting

*Landform:* Hills, ridges  
*Landform position (two-dimensional):* Backslope, summit, shoulder  
*Landform position (three-dimensional):* Side slope, crest  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Parent material:* Loamy supraglacial till derived from granite and gneiss and/or loamy supraglacial till derived from phyllite and/or loamy supraglacial till derived from mica schist

#### Typical profile

*Oe - 0 to 3 inches:* moderately decomposed plant material  
*Oa - 3 to 5 inches:* highly decomposed plant material  
*E - 5 to 8 inches:* fine sandy loam  
*Bhs - 8 to 11 inches:* fine sandy loam  
*Bs - 11 to 26 inches:* fine sandy loam  
*BC - 26 to 28 inches:* fine sandy loam  
*R - 28 to 79 inches:* bedrock

#### Properties and qualities

*Slope:* 8 to 15 percent  
*Percent of area covered with surface fragments:* 1.5 percent  
*Depth to restrictive feature:* 21 to 41 inches to lithic bedrock  
*Natural drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to high (0.00 to 14.03 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Low (about 5.6 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* C  
*Hydric soil rating:* No

### Minor Components

#### Ragmuff

*Percent of map unit:* 5 percent  
*Landform:* Ridges, hills  
*Landform position (two-dimensional):* Backslope, footslope  
*Landform position (three-dimensional):* Base slope, side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

## Custom Soil Resource Report

### **Abram**

*Percent of map unit:* 5 percent  
*Landform:* Ridges, hills  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Nose slope, crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### **Peru**

*Percent of map unit:* 4 percent  
*Landform:* Ridges, hills  
*Landform position (two-dimensional):* Backslope, footslope  
*Landform position (three-dimensional):* Base slope, side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### **Rock outcrop**

*Percent of map unit:* 1 percent  
*Landform:* Ridges, hills  
*Landform position (two-dimensional):* Shoulder, summit  
*Landform position (three-dimensional):* Nose slope, crest, free face  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

## **HrD—Lyman-Tunbridge complex, 15 to 35 percent slopes, rocky**

### **Map Unit Setting**

*National map unit symbol:* 2x1cz  
*Elevation:* 0 to 520 feet  
*Mean annual precipitation:* 36 to 65 inches  
*Mean annual air temperature:* 36 to 52 degrees F  
*Frost-free period:* 90 to 160 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Lyman and similar soils:* 45 percent  
*Tunbridge and similar soils:* 40 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Lyman**

#### **Setting**

*Landform:* Hills, ridges  
*Landform position (two-dimensional):* Shoulder, summit, backslope  
*Landform position (three-dimensional):* Crest, nose slope

## Custom Soil Resource Report

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Loamy supraglacial till derived from granite and gneiss and/or loamy supraglacial till derived from phyllite and/or loamy supraglacial till derived from mica schist

### Typical profile

*Oe - 0 to 1 inches:* moderately decomposed plant material

*A - 1 to 3 inches:* loam

*E - 3 to 5 inches:* fine sandy loam

*Bhs - 5 to 7 inches:* loam

*Bs1 - 7 to 11 inches:* loam

*Bs2 - 11 to 18 inches:* channery loam

*R - 18 to 79 inches:* bedrock

### Properties and qualities

*Slope:* 15 to 35 percent

*Percent of area covered with surface fragments:* 1.5 percent

*Depth to restrictive feature:* 11 to 24 inches to lithic bedrock

*Natural drainage class:* Somewhat excessively drained

*Capacity of the most limiting layer to transmit water (Ksat):* Very low to high (0.00 to 14.03 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* Low (about 3.2 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7s

*Hydrologic Soil Group:* D

*Hydric soil rating:* No

### Description of Tunbridge

#### Setting

*Landform:* Hills, ridges

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Loamy supraglacial till derived from granite and gneiss and/or loamy supraglacial till derived from phyllite and/or loamy supraglacial till derived from mica schist

#### Typical profile

*Oe - 0 to 3 inches:* moderately decomposed plant material

*Oa - 3 to 5 inches:* highly decomposed plant material

*E - 5 to 8 inches:* fine sandy loam

*Bhs - 8 to 11 inches:* fine sandy loam

*Bs - 11 to 26 inches:* fine sandy loam

*BC - 26 to 28 inches:* fine sandy loam

*R - 28 to 79 inches:* bedrock

#### Properties and qualities

*Slope:* 15 to 35 percent

*Percent of area covered with surface fragments:* 1.5 percent

## Custom Soil Resource Report

*Depth to restrictive feature:* 21 to 41 inches to lithic bedrock  
*Natural drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to high (0.00 to 14.03 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Low (about 5.6 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* C  
*Hydric soil rating:* No

### Minor Components

#### Peru

*Percent of map unit:* 6 percent  
*Landform:* Ridges, hills  
*Landform position (two-dimensional):* Backslope, footslope  
*Landform position (three-dimensional):* Base slope, side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Hydric soil rating:* No

#### Abram

*Percent of map unit:* 5 percent  
*Landform:* Ridges, hills  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Nose slope, crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

#### Ragmuff

*Percent of map unit:* 3 percent  
*Landform:* Ridges, hills  
*Landform position (two-dimensional):* Backslope, footslope  
*Landform position (three-dimensional):* Base slope, side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Hydric soil rating:* No

#### Rock outcrop

*Percent of map unit:* 1 percent  
*Landform:* Ridges, hills  
*Landform position (two-dimensional):* Shoulder, summit  
*Landform position (three-dimensional):* Nose slope, crest, free face  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

## **Lc—Leicester fine sandy loam**

### **Map Unit Setting**

*National map unit symbol:* 9kdl  
*Elevation:* 0 to 2,500 feet  
*Mean annual precipitation:* 28 to 55 inches  
*Mean annual air temperature:* 37 to 52 degrees F  
*Frost-free period:* 90 to 195 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Leicester and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Leicester**

#### **Setting**

*Landform:* Till plains  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Parent material:* Coarse-loamy supraglacial meltout till derived from mica schist

#### **Typical profile**

*H1 - 0 to 7 inches:* fine sandy loam  
*H2 - 7 to 24 inches:* gravelly sandy loam  
*H3 - 24 to 65 inches:* gravelly sandy loam

#### **Properties and qualities**

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.60 in/hr)  
*Depth to water table:* About 0 to 12 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Moderate (about 6.4 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4w  
*Hydrologic Soil Group:* C/D  
*Hydric soil rating:* Yes

**Minor Components**

**Woodbridge**

*Percent of map unit:* 7 percent  
*Landform:* Hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

**Whitman**

*Percent of map unit:* 5 percent  
*Landform:* Till plains  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* Yes

**Leicester, slopes > 3 percent**

*Percent of map unit:* 2 percent  
*Landform:* Till plains  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

**Wonsqueak**

*Percent of map unit:* 1 percent  
*Landform:* Swamps  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

**Le—Leicester very stony fine sandy loam**

**Map Unit Setting**

*National map unit symbol:* 9kdm  
*Elevation:* 0 to 2,500 feet  
*Mean annual precipitation:* 28 to 55 inches  
*Mean annual air temperature:* 37 to 52 degrees F  
*Frost-free period:* 90 to 195 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Leicester and similar soils:* 85 percent  
*Minor components:* 15 percent

## Custom Soil Resource Report

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Leicester

#### Setting

*Landform:* Till plains

*Landform position (three-dimensional):* Talf

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Parent material:* Coarse-loamy supraglacial meltout till derived from mica schist

#### Typical profile

*H1 - 0 to 7 inches:* fine sandy loam

*H2 - 7 to 24 inches:* fine sandy loam

*H3 - 24 to 65 inches:* gravelly sandy loam

#### Properties and qualities

*Slope:* 0 to 2 percent

*Percent of area covered with surface fragments:* 1.6 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Poorly drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.60 in/hr)

*Depth to water table:* About 0 to 12 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* Moderate (about 6.4 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7s

*Hydrologic Soil Group:* C/D

*Hydric soil rating:* Yes

### Minor Components

#### Whitman

*Percent of map unit:* 7 percent

*Landform:* Till plains

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Talf

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil rating:* Yes

#### Woodbridge

*Percent of map unit:* 4 percent

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil rating:* No

#### Wonsqueak

*Percent of map unit:* 2 percent

*Landform:* Swamps

*Landform position (two-dimensional):* Toeslope

## Custom Soil Resource Report

*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

### **Leicester, slopes > 8 percent**

*Percent of map unit:* 2 percent  
*Landform:* Till plains  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

## **NgB—Ninigret fine sandy loam, 0 to 8 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 9kdx  
*Elevation:* 10 to 2,800 feet  
*Mean annual precipitation:* 30 to 55 inches  
*Mean annual air temperature:* 37 to 46 degrees F  
*Frost-free period:* 70 to 195 days  
*Farmland classification:* All areas are prime farmland

### **Map Unit Composition**

*Ninigret and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Ninigret**

#### **Setting**

*Landform:* Outwash terraces  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Parent material:* Coarse-loamy glaciofluvial deposits derived from slate

#### **Typical profile**

*H1 - 0 to 8 inches:* fine sandy loam  
*H2 - 8 to 28 inches:* fine sandy loam  
*H3 - 28 to 65 inches:* loamy fine sand

#### **Properties and qualities**

*Slope:* 0 to 8 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Moderately well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 2.00 in/hr)  
*Depth to water table:* About 18 to 36 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None

## Custom Soil Resource Report

*Available water storage in profile:* Moderate (about 8.7 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2w

*Hydrologic Soil Group:* C

*Hydric soil rating:* No

### Minor Components

#### Agawam

*Percent of map unit:* 5 percent

*Landform:* Outwash plains

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

#### Adams

*Percent of map unit:* 3 percent

*Landform:* Outwash terraces

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

#### Elmwood

*Percent of map unit:* 2 percent

*Landform:* Stream terraces

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil rating:* No

#### Naumburg

*Percent of map unit:* 2 percent

*Landform:* Outwash plains

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Dip

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil rating:* Yes

#### Scarboro

*Percent of map unit:* 2 percent

*Landform:* Outwash plains

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Dip

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil rating:* Yes

#### Ninigret, slopes > 8 percent

*Percent of map unit:* 1 percent

*Landform:* Outwash terraces

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil rating:* No

## **SxB—Sutton loam, 0 to 8 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 9kfj  
*Elevation:* 10 to 3,500 feet  
*Mean annual precipitation:* 34 to 50 inches  
*Mean annual air temperature:* 37 to 46 degrees F  
*Frost-free period:* 60 to 160 days  
*Farmland classification:* All areas are prime farmland

### **Map Unit Composition**

*Sutton and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Sutton**

#### **Setting**

*Landform:* Till plains  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Parent material:* Coarse-loamy supraglacial meltout till derived from mica schist

#### **Typical profile**

*H1 - 0 to 7 inches:* loam  
*H2 - 7 to 30 inches:* fine sandy loam  
*H3 - 30 to 65 inches:* gravelly sandy loam

#### **Properties and qualities**

*Slope:* 0 to 8 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Moderately well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.60 in/hr)  
*Depth to water table:* About 18 to 30 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Moderate (about 7.0 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 2e  
*Hydrologic Soil Group:* C  
*Hydric soil rating:* No

### **Minor Components**

#### **Charlton**

*Percent of map unit:* 7 percent

## Custom Soil Resource Report

*Landform:* Till plains  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### **Leicester**

*Percent of map unit:* 3 percent  
*Landform:* Till plains  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

### **Sutton, slopes > 8 percent**

*Percent of map unit:* 2 percent  
*Landform:* Till plains  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### **Paxton**

*Percent of map unit:* 1 percent  
*Landform:* Drumlinoid ridges  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Interfluve, crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### **Sutton, stone cover > .1 percent**

*Percent of map unit:* 1 percent  
*Landform:* Till plains  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### **Tunbridge**

*Percent of map unit:* 1 percent  
*Landform:* Till plains  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Rise  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

## **SyB—Sutton very stony loam, 0 to 8 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 9kfl  
*Elevation:* 10 to 3,500 feet  
*Mean annual precipitation:* 34 to 50 inches  
*Mean annual air temperature:* 37 to 46 degrees F  
*Frost-free period:* 60 to 160 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Sutton and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Sutton**

#### **Setting**

*Landform:* Till plains  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Parent material:* Coarse-loamy supraglacial meltout till derived from mica schist

#### **Typical profile**

*H1 - 0 to 7 inches:* loam  
*H2 - 7 to 30 inches:* fine sandy loam  
*H3 - 30 to 65 inches:* gravelly sandy loam

#### **Properties and qualities**

*Slope:* 0 to 8 percent  
*Percent of area covered with surface fragments:* 1.6 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Moderately well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.60 in/hr)  
*Depth to water table:* About 18 to 30 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Moderate (about 7.1 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* C  
*Hydric soil rating:* No

**Minor Components**

**Charlton**

*Percent of map unit:* 7 percent  
*Landform:* Till plains  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Leicester**

*Percent of map unit:* 3 percent  
*Landform:* Till plains  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

**Sutton, slopes > 8 percent**

*Percent of map unit:* 2 percent  
*Landform:* Till plains  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

**Paxton**

*Percent of map unit:* 1 percent  
*Landform:* Drumlinoid ridges  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Interfluve, crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Tunbridge**

*Percent of map unit:* 1 percent  
*Hydric soil rating:* No

**Sutton, stone cover > 3 percent**

*Percent of map unit:* 1 percent  
*Landform:* Till plains  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

**W—Water**

**Map Unit Composition**

*Water:* 100 percent

## Custom Soil Resource Report

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Water**

#### **Setting**

*Landform:* Lakes

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## Custom Soil Resource Report

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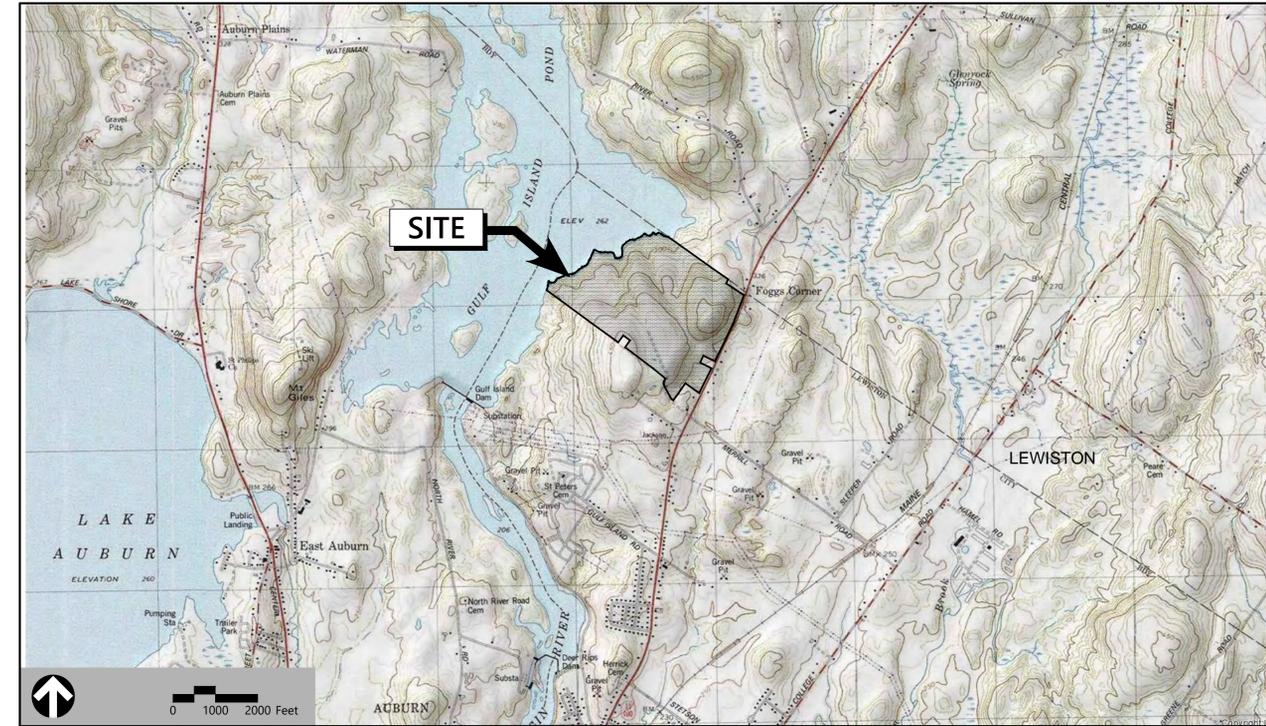
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# Site Plans

Issued for     Permitting  
 Date Issued    February 28, 2020  
 Latest Issue    April 14, 2020

## NextGrid Solar Farm

265 Merrill Road  
 Lewiston, Maine 04240



500 Southborough Drive  
 Suite 105B  
 South Portland, ME 04106  
 207.889.3150

### Owners

Ann & Harold Skelton  
 49 Mill Rd  
 Cumberland, ME 04021

### Applicant

NextGrid Inc.  
 P.O. Box 7775 #73069  
 San Francisco, CA 94120

### Assessor's Information:

Map 137, Lot 22

### Sheet Index

No.	Drawing Title	Latest Issue
C1.0	Legend and General Notes	April 14, 2020
C2.0	Master Plan	April 14, 2020
C3.1	Site Plan 1	April 14, 2020
C3.2	Site Plan 2	April 14, 2020
C3.3	Site Plan 3	April 14, 2020
C4.1	Site Details	April 14, 2020
C4.2	Erosion & Sediment Control Notes & Details	April 14, 2020





500 Southborough Drive  
Suite 105B  
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Legend

Legend table with columns for 'Exist.' and 'Prop.' symbols and their corresponding descriptions. Includes categories like Property Line, Pavement, Elevation, and various site features.

Abbreviations

Abbreviations table with columns for 'General' and 'Utility' symbols and their corresponding descriptions. Includes terms like ABAN (Abandon), ACR (Accessible Curb Ramp), and CB (Catch Basin).

Purpose of Plans

- 1. THE PURPOSE OF THIS PLAN IS TO SHOW THE DEVELOPMENT OF A SOLAR FARM IN LEWISTON, MAINE.

General

- 1. CONTRACTOR SHALL NOTIFY "DIG-SAFE" (811 OR 1-888-344-7233) AT LEAST 72 HOURS BEFORE EXCAVATING.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS.
3. ACCESSIBLE ROUTES, PARKING SPACES, RAMPS, SIDEWALKS AND WALKWAYS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE FEDERAL AMERICANS WITH DISABILITIES ACT AND WITH STATE AND LOCAL LAWS AND REGULATIONS (WHICHEVER ARE MORE STRINGENT).
4. AREAS DISTURBED DURING CONSTRUCTION AND NOT RESTORED WITH IMPERVIOUS SURFACES (BUILDINGS, PAVEMENTS, WALKS, ETC.) SHALL RECEIVE 6 INCHES LOAM AND SEED.
5. WORK WITHIN THE LOCAL RIGHTS-OF-WAY SHALL CONFORM TO LOCAL MUNICIPAL STANDARDS. WORK WITHIN STATE RIGHTS-OF-WAY SHALL CONFORM TO THE LATEST EDITION OF THE STATE HIGHWAY DEPARTMENTS STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
6. UPON AWARD OF CONTRACT, CONTRACTOR SHALL MAKE NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK INDICATED ON THE DRAWINGS, IN THE SPECIFICATIONS, AND IN THE CONTRACT DOCUMENTS. DO NOT CLOSE OR OBSTRUCT ROADWAYS, SIDEWALKS, AND FIRE HYDRANTS, WITHOUT APPROPRIATE PERMITS.
7. TRAFFIC SIGNAGE AND PAVEMENT MARKINGS SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
8. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
9. IN THE EVENT THAT SUSPECTED CONTAMINATED SOIL, GROUNDWATER, AND OTHER MEDIA ARE ENCOUNTERED DURING EXCAVATION AND CONSTRUCTION ACTIVITIES BASED ON VISUAL, OLFACTORY, OR OTHER EVIDENCE, THE CONTRACTOR SHALL STOP WORK IN THE VICINITY OF THE SUSPECT MATERIAL TO AVOID FURTHER CONTAMINATION OF THE MATERIAL. IMMEDIATELY NOTIFY THE OWNER IMMEDIATELY SO THAT THE APPROPRIATE TESTING AND SUBSEQUENT ACTION CAN BE TAKEN.
10. CONTRACTOR SHALL PREVENT DUST, SEDIMENT, AND DEBRIS FROM EXITING THE SITE AND SHALL BE RESPONSIBLE FOR CLEANUP, REPAIRS AND CORRECTIVE ACTION IF SUCH OCCURS.
11. DAMAGE RESULTING FROM CONSTRUCTION LOADS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
12. CONTRACTOR SHALL CONTROL STORMWATER RUNOFF DURING CONSTRUCTION TO PREVENT ADVERSE IMPACTS TO OFF SITE AREAS, AND SHALL BE RESPONSIBLE TO REPAIR RESULTING DAMAGES, IF ANY, AT NO COST TO OWNER.
13. THIS PROJECT DISTURBS MORE THAN ONE ACRE OF LAND AND FALLS WITHIN THE MPDES MAINE CONSTRUCTION GENERAL PERMIT (MCGP) PROGRAM. PRIOR TO THE START OF CONSTRUCTION CONTRACTOR IS TO FILE A NOTICE OF INTENT WITH THE MDEP AND PREPARE AN EROSION AND SEDIMENT CONTROL PLAN IN ACCORDANCE WITH THE MPDES REGULATIONS.

Utilities

- 1. THE LOCATIONS, SIZES, AND TYPES OF EXISTING UTILITIES ARE SHOWN AS AN APPROXIMATE REPRESENTATION ONLY. THE OWNER OR ITS REPRESENTATIVE(S) HAVE NOT INDEPENDENTLY VERIFIED THIS INFORMATION AS SHOWN ON THE PLANS. THE UTILITY INFORMATION SHOWN DOES NOT GUARANTEE THE ACTUAL EXISTENCE, SERVICEABLE NATURE, OR OTHER DATA CONCERNING THE UTILITIES. NOR DOES IT GUARANTEE AGAINST THE POSSIBILITY THAT ADDITIONAL UTILITIES MAY BE PRESENT THAT ARE NOT SHOWN ON THE PLANS. PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY AND DETERMINE THE EXACT LOCATIONS, SIZES, AND ELEVATIONS OF THE POINTS OF CONNECTIONS TO EXISTING UTILITIES AND SHALL CONFIRM THAT THERE ARE NO INTERFERENCES WITH EXISTING UTILITIES AND THE PROPOSED UTILITY ROUTES, INCLUDING ROUTES WITHIN THE PUBLIC RIGHTS OF WAY.
2. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, OR EXISTING CONDITIONS DIFFER FROM THOSE SHOWN SUCH THAT THE WORK CANNOT BE COMPLETED AS INTENDED, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED IN WRITING TO THE OWNER'S REPRESENTATIVE FOR THE RESOLUTION OF THE CONFLICT AND CONTRACTOR'S FAILURE TO NOTIFY PRIOR TO PERFORMING ADDITIONAL WORK RELEASES OWNER FROM OBLIGATIONS FOR ADDITIONAL PAYMENTS WHICH OTHERWISE MAY BE WARRANTED TO RESOLVE THE CONFLICT.
3. SET CATCH BASIN RIMS, AND INVERTS OF SEWERS, DRAINS, AND DITCHES IN ACCORDANCE WITH ELEVATIONS ON THE GRADING AND UTILITY PLANS.
4. RIM ELEVATIONS FOR DRAIN AND SEWER MANHOLES, WATER VALVE COVERS, GAS GATES, ELECTRIC AND TELEPHONE PULL BOXES, AND MANHOLES, AND OTHER SUCH ITEMS, ARE APPROXIMATE AND SHALL BE SET/RESET AS FOLLOWS:
A. PAVEMENTS AND CONCRETE SURFACES: FLUSH
B. ALL SURFACES ALONG ACCESSIBLE ROUTES: FLUSH
C. LANDSCAPE, LOAM AND SEED, AND OTHER EARTH SURFACE AREAS: ONE INCH ABOVE SURROUNDING AREA AND TAPER EARTH TO THE RIM ELEVATION.
5. THE LOCATION, SIZE, DEPTH, AND SPECIFICATIONS FOR CONSTRUCTION OF PROPOSED PRIVATE UTILITY SERVICES SHALL BE INSTALLED ACCORDING TO THE REQUIREMENTS PROVIDED BY, AND APPROVED BY, THE RESPECTIVE UTILITY COMPANY (GAS, TELEPHONE, ELECTRIC, FIRE ALARM, ETC.). FINAL DESIGN LOADS AND LOCATIONS TO BE COORDINATED WITH OWNER AND DESIGN REPRESENTATIVE.
6. CONTRACTOR SHALL MAKE ARRANGEMENTS FOR AND SHALL BE RESPONSIBLE FOR PAYING FEES FOR POLE RELOCATION AND FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, FIRE ALARM, AND ANY OTHER PRIVATE UTILITIES, WHETHER WORK IS PERFORMED BY CONTRACTOR OR BY THE UTILITIES COMPANY.
7. UTILITY PIPE MATERIALS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED ON THE PLAN:
A. STORM DRAINAGE PIPES SHALL BE SMOOTH INTERIOR CORRUGATED HIGH DENSITY POLYETHYLENE (HDPE) UNLESS OTHERWISE NOTED.
8. CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR AND SHALL FURNISH EXCAVATION, INSTALLATION, AND BACKFILL OF ELECTRICAL FURNISHED SITEWORK RELATED ITEMS SUCH AS PULL BOXES, CONDUITS, DUCT BANKS, LIGHT POLE BASES, AND CONCRETE PADS. SITE CONTRACTOR SHALL FURNISH CONCRETE ENCASUREMENT OF DUCT BANKS IF REQUIRED BY THE UTILITY COMPANY AND AS INDICATED ON THE DRAWINGS.
9. ALL DRAINAGE AND SANITARY STRUCTURE INTERIOR DIAMETERS (4" MIN.) SHALL BE DETERMINED BY THE MANUFACTURER BASED ON THE PIPE CONFIGURATIONS SHOWN ON THESE PLANS AND LOCAL MUNICIPAL STANDARDS. FOR MANHOLES THAT ARE 20 FEET IN DEPTH AND GREATER, THE MINIMUM DIAMETER SHALL BE 5 FEET.

Layout and Materials

- 1. DIMENSIONS ARE FROM THE EDGE OF GRAVEL, EDGE OF CONCRETE, UNLESS OTHERWISE NOTED.
2. SEE ELECTRICAL DRAWINGS FOR EXACT PANEL DIMENSIONS.
3. PROPOSED BOUNDS AND ANY EXISTING PROPERTY LINE MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE SET OR RESET BY A PROFESSIONAL LAND SURVEYOR (PLS).
4. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL VERIFY EXISTING PAVEMENT AND/OR GRAVEL DRIVE ELEVATIONS AT INTERFACE WITH PROPOSED DRIVES, AND EXISTING GROUND ELEVATIONS ADJACENT TO DRAINAGE OUTLETS TO ASSURE PROPER TRANSITIONS BETWEEN EXISTING AND PROPOSED FACILITIES.

Demolition

- 1. CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING MANMADE SURFACE FEATURES WITHIN THE LIMIT OF WORK INCLUDING BUILDINGS, STRUCTURES, PAVEMENTS, SLABS, CURBING, FENCES, UTILITY POLES, SIGNS, ETC. UNLESS INDICATED OTHERWISE ON THE DRAWINGS. REMOVE AND DISPOSE OF EXISTING UTILITIES, FOUNDATIONS AND UNSUITABLE MATERIAL BENEATH AND FOR A DISTANCE OF 10 FEET BEYOND THE PROPOSED BUILDING FOOTPRINT INCLUDING EXTERIOR COLUMNS.
2. EXISTING UTILITIES SHALL BE TERMINATED, UNLESS OTHERWISE NOTED, IN CONFORMANCE WITH LOCAL, STATE AND INDIVIDUAL UTILITY COMPANY STANDARD SPECIFICATIONS AND DETAILS. THE CONTRACTOR SHALL COORDINATE UTILITY SERVICE DISCONNECTS WITH THE UTILITY REPRESENTATIVES.
3. CONTRACTOR SHALL DISPOSE OF DEMOLITION DEBRIS IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES AND STATUTES.
4. THE DEMOLITION LIMITS DEPICTED IN THE PLANS IS INTENDED TO AID THE CONTRACTOR DURING THE BIDDING AND CONSTRUCTION PROCESS AND IS NOT INTENDED TO DEPICT EACH AND EVERY ELEMENT OF DEMOLITION. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING THE DETAILED SCOPE OF DEMOLITION BEFORE SUBMITTING ITS BID/PROPOSAL. TO PERFORM THE WORK AND SHALL MAKE NO CLAIMS AND SEEK NO ADDITIONAL COMPENSATION FOR CHANGED CONDITIONS OR UNFORESEEN OR LATENT SITE CONDITIONS RELATED TO ANY CONDITIONS DISCOVERED DURING EXECUTION OF THE WORK.
5. UNLESS OTHERWISE SPECIFICALLY PROVIDED ON THE PLANS OR IN THE SPECIFICATIONS, THE ENGINEER HAS NOT PREPARED DESIGNS FOR AND SHALL HAVE NO RESPONSIBILITY FOR THE PRESENCE, DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF HAZARDOUS MATERIALS, TOXIC WASTES OR POLLUTANTS AT THE PROJECT SITE. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY CLAIMS OF LOSS, DAMAGE, EXPENSE, DELAY, INJURY OR DEATH ARISING FROM THE PRESENCE OF HAZARDOUS MATERIAL AND CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE ENGINEER FROM ANY CLAIMS MADE IN CONNECTION THEREWITH. MOREOVER, THE ENGINEER SHALL HAVE NO ADMINISTRATIVE OBLIGATIONS OF ANY TYPE WITH REGARD TO ANY CONTRACTOR AMENDMENT INVOLVING THE ISSUES OF PRESENCE, DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF ASBESTOS OR OTHER HAZARDOUS MATERIALS.

Existing Conditions Information

- 1. BASE PLAN: THE PROPERTY LINES AND TOPOGRAPHY HAVE BEEN PROVIDED BY MAINE GIS. TOPOGRAPHY IS BASED ON 2M DEM LIDAR FLIGHTS BETWEEN THE YEARS OF 2006 - 2013.
A. DELINEATION OF THE WETLANDS AND PLACEMENT OF THE FLAGS WAS PERFORMED BY: VHB DURING NOVEMBER 2019.
B. FLAGS MARKING THE WETLANDS WERE LOCATED BY: VHB USING GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) RECEIVERS WITH SUB-METER ACCURACY.
C. APPROXIMATE WETLANDS WERE MAPPED USING TOPOGRAPHY, VEGETATION AND SOILS INFORMATION AS GUIDELINES.
2. TOPOGRAPHY: ELEVATIONS ARE BASED ON NGVD 88.

Document Use

- 1. THESE PLANS AND CORRESPONDING CADD DOCUMENTS ARE INSTRUMENTS OF PROFESSIONAL SERVICE, AND SHALL NOT BE USED, IN WHOLE OR IN PART, FOR ANY PURPOSE OTHER THAN FOR WHICH IT WAS CREATED WITHOUT THE EXPRESSED, WRITTEN CONSENT OF VHB. ANY UNAUTHORIZED USE, REUSE, MODIFICATION OR ALTERATION, INCLUDING AUTOMATED CONVERSION OF THIS DOCUMENT SHALL BE AT THE USER'S SOLE RISK WITHOUT LIABILITY OR LEGAL EXPOSURE TO VHB.
2. CONTRACTOR SHALL NOT RELY SOLELY ON ELECTRONIC VERSIONS OF PLANS, SPECIFICATIONS, AND DATA FILES THAT ARE OBTAINED FROM THE DESIGNER, BUT SHALL VERIFY LOCATION OF PROJECT FEATURES IN ACCORDANCE WITH THE PAPER COPIES OF THE PLANS AND SPECIFICATIONS THAT ARE SUPPLIED AS PART OF THE CONTRACT DOCUMENTS.
3. SYMBOLS AND LEGENDS OF PROJECT FEATURES ARE GRAPHIC REPRESENTATIONS AND ARE NOT NECESSARILY SCALED TO THEIR ACTUAL DIMENSIONS OR LOCATIONS ON THE DRAWINGS. THE CONTRACTOR SHALL REFER TO THE DETAIL SHEET DIMENSIONS, MANUFACTURERS' LITERATURE, SHOP DRAWINGS AND FIELD MEASUREMENTS OF SUPPLIED PRODUCTS FOR LAYOUT OF THE PROJECT FEATURES.

NextGrid Solar Farm  
265 Merrill Road  
Lewiston, Maine 04240

Table with columns: No., Revision, Date, Apprd.

Table with columns: Designed by (PG), Checked by (CG), Issued for, Date.

Permitting February 28, 2020

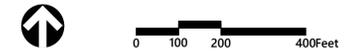
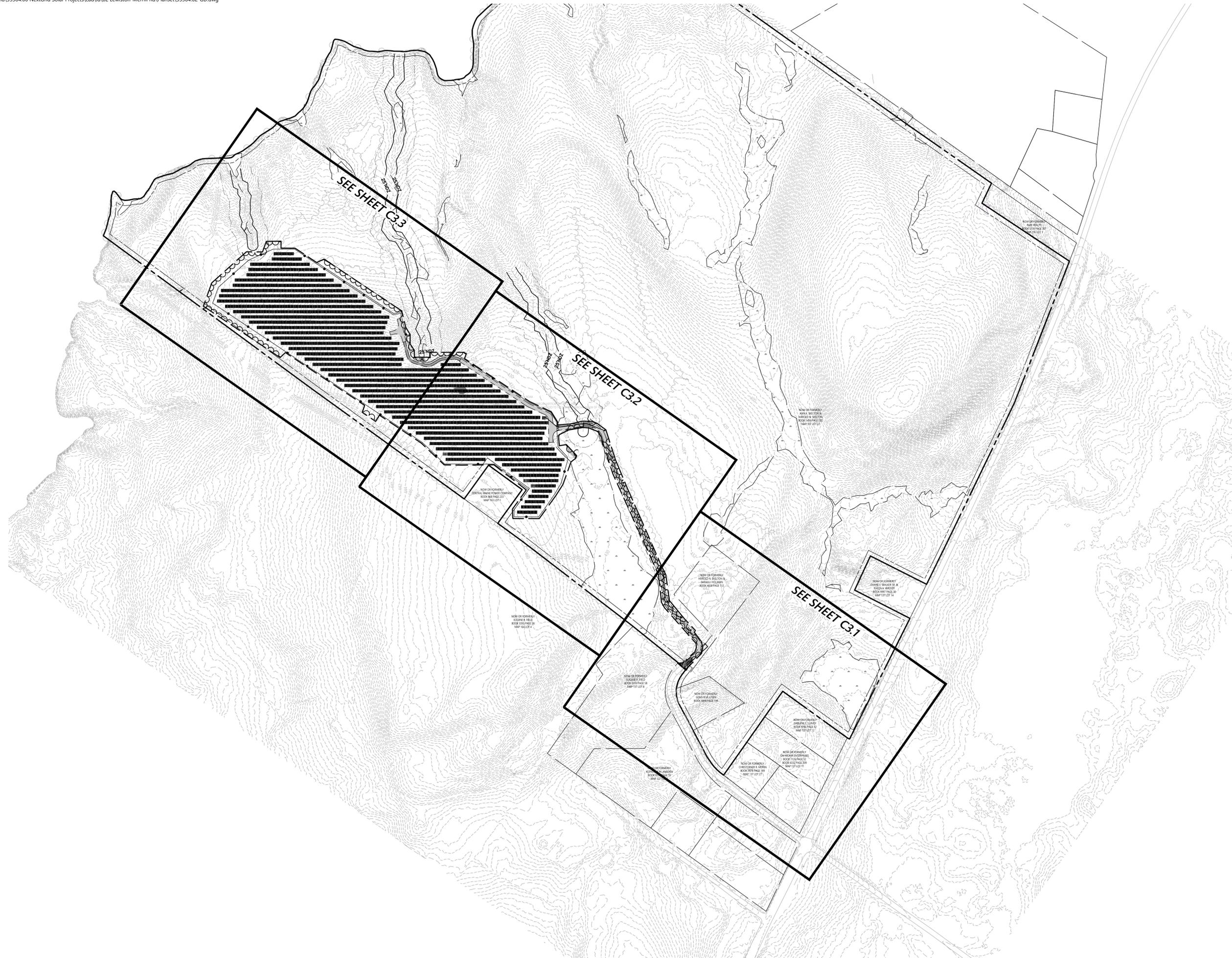
Not Approved for Construction

Legend and General Notes section with a dark background and white text.

Professional Engineer seal for David P. Poirier, No. 11813, License No. 11813, State of Maine. Includes sheet number 1 of 7 and project number 55304.02.



500 Southborough Drive  
Suite 105B  
South Portland, ME 04106  
207.889.3150



### NextGrid Solar Farm

265 Merrill Road  
Lewiston, Maine 04240

No.	Revision	Date	Aspd.
1	REVISED FOR CITY OF LEWISTON REVIEW	4/14/20	DHF
Designed by		Checked by	
PG		CG	
Issued for		Date	
Permitting		February 28, 2020	

Not Approved for Construction  
Overall Grading  
and Drainage Plan

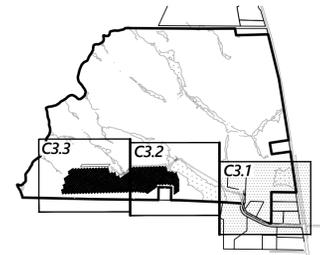


C2.0  
Sheet 2 of 7

Project Number  
55304.02



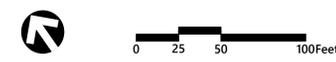
500 Southborough Drive  
Suite 105B  
South Portland, ME 04106  
207.889.3150



**Key**  
Not To Scale

**CITY OF LEWISTON APPROVAL**

Planning Board Chair \_\_\_\_\_ Date \_\_\_\_\_



**NextGrid Solar Farm**  
265 Merrill Road  
Lewiston, Maine 04240

No.	Revision	Date	Aspd.
1	REVISED FOR CITY OF LEWISTON REVIEW	4/14/20	DHF
Designed by	CG	Checked by	GP
Issued for	Permitting	Date	February 28, 2020

**Not Approved for Construction**  
Drawing Title  
**Site Plan 1**

Drawing Number  
**C3.1**  
Sheet 3 of 7  
Project Number  
55304.02

**Decommissioning Notes:**

1. DECOMMISSIONING OF THE PROJECT SHALL COMMENCE AFTER 12 CONSECUTIVE MONTHS OF NO POWER GENERATION AT THE FACILITY EXCEPT IN THE CASE OF A NATURAL DISASTER, ACT OF VIOLENCE, OR OTHER EVENT WHICH RESULTS IN THE ABSENCE OF ELECTRICAL GENERATION FOR 12 MONTHS. THE APPLICANT OR ITS SUCCESSOR AS OWNER OF THE PROJECT AT THAT TIME WILL BE SOLELY RESPONSIBLE FOR DECOMMISSIONING THE PROJECT, WHICH WILL CONSIST OF:
  - 1.1. BE RESPONSIBLE FOR ALL DECOMMISSIONING COSTS;
  - 1.2. OBTAIN ANY ADDITIONAL PERMITS REQUIRED FOR THE DECOMMISSIONING, REMOVAL, AND LEGAL DISPOSAL OF PROJECT COMPONENTS PRIOR TO COMMENCEMENT OF DECOMMISSIONING ACTIVITIES;
  - 1.3. REMOVE AND DISPOSE OF ALL ABOVE-GROUND INFRASTRUCTURE, INCLUDING ARRAYS, INVERTER STRUCTURES, CONCRETE FOUNDATIONS AND PADS, AND FENCES, AND REVEGETATE IN ACCORDANCE WITH PERMITS AND IN COMPLIANCE WITH ALL APPLICABLE RULES AND REGULATIONS THEN IN EFFECT GOVERNING THE DISPOSAL THEREOF;
  - 1.4. REMOVE ALL HAZARDOUS MATERIALS AND TRANSPORT THEM TO BE DISPOSED OF BY LICENSED CONTRACTORS AT AN APPROPRIATE FACILITY IN ACCORDANCE WITH RULES AND REGULATIONS GOVERNING THE DISPOSAL OF SUCH MATERIALS; AND
  - 1.5. REMOVED MATERIALS SHALL BE RECYCLED AND/OR SALVAGED TO THE MAXIMUM EXTENT PRACTICAL AND ALL WASTE STREAMS SHALL BE MANAGED IN ACCORDANCE WITH THE STATE OF MAINE'S SOLID WASTE REQUIREMENTS.

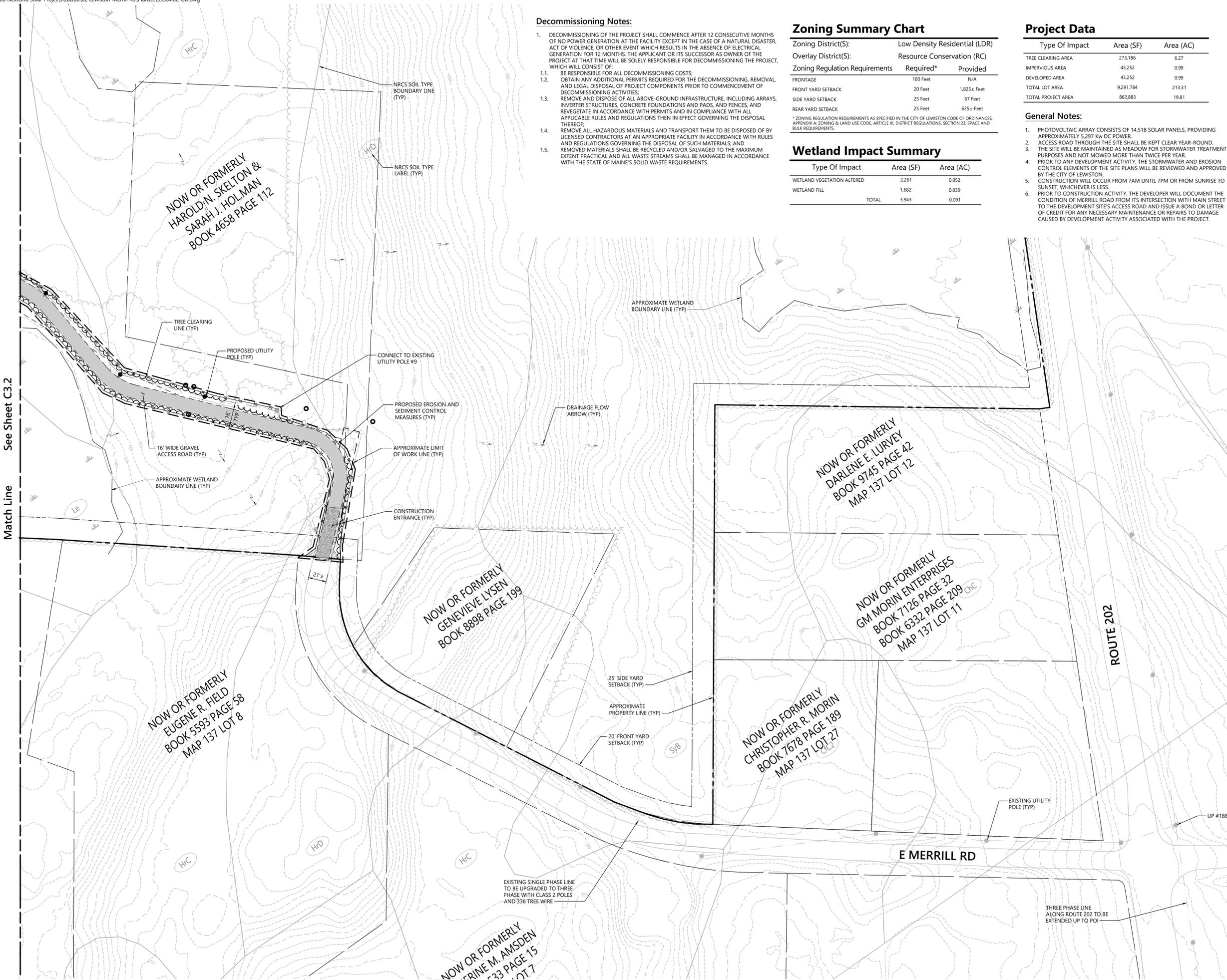
**Zoning Summary Chart**

Zoning District(S):	Low Density Residential (LDR)	
Overlay District(S):	Resource Conservation (RC)	
Zoning Regulation Requirements	Required*	Provided
FRONTAGE	100 Feet	N/A
FRONT YARD SETBACK	20 Feet	1,825± Feet
SIDE YARD SETBACK	25 Feet	67 Feet
REAR YARD SETBACK	25 Feet	635± Feet

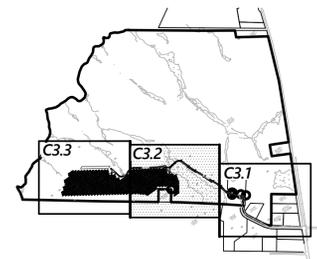
\* ZONING REGULATION REQUIREMENTS AS SPECIFIED IN THE CITY OF LEWISTON CODE OF ORDINANCES, APPENDIX A: ZONING & LAND USE CODE, ARTICLE XI, DISTRICT REGULATIONS, SECTION 23, SPACE AND BULK REQUIREMENTS.

**Wetland Impact Summary**

Type Of Impact	Area (SF)	Area (AC)
WETLAND VEGETATION ALTERED	2,261	0.052
WETLAND FILL	1,682	0.039
<b>TOTAL</b>	<b>3,943</b>	<b>0.091</b>



Match Line See Sheet C3.2



**Key**  
Not To Scale

CITY OF LEWISTON APPROVAL	
Planning Board Chair	Date



**NextGrid Solar Farm**  
265 Merrill Road  
Lewiston, Maine 04240

No.	Revision	Date	Aspd.	
1	REVISED FOR CITY OF LEWISTON REVIEW	4/14/20	DHF	
	Designed by	CG	Checked by	GP
	Issued for		Date	February 28, 2020

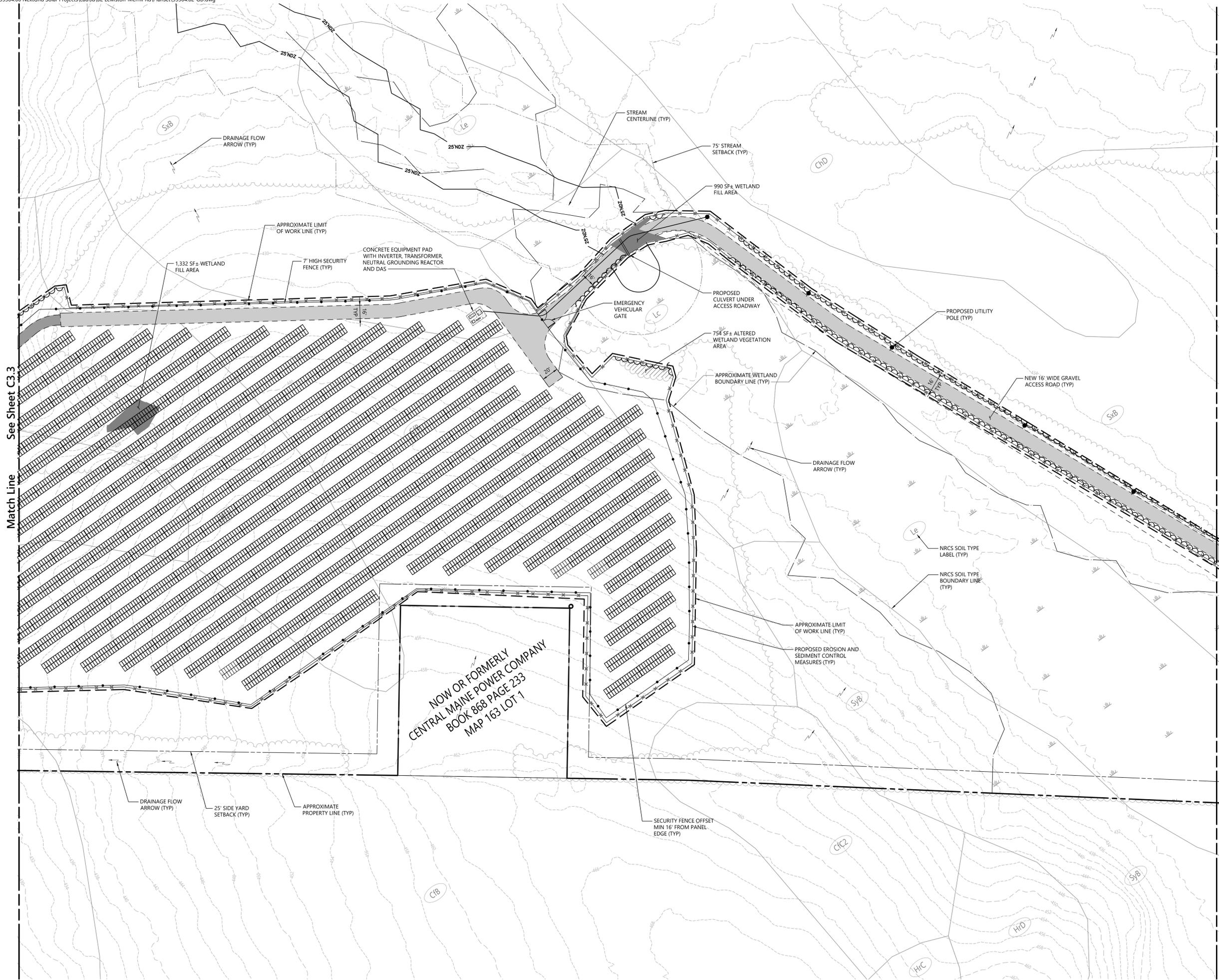
Permitting  
Not Approved for Construction  
Drawing Title  
**Site Plan 2**  
Drawing Number

**C3.2**

Sheet 4 of 7

Project Number  
55304.02

4/14/2020

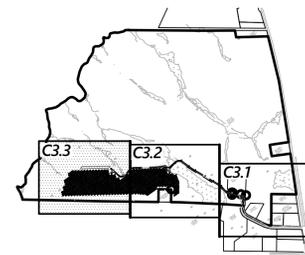


Match Line  
See Sheet C3.3

Match Line  
See Sheet C3.1



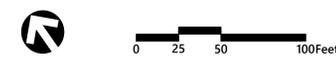
500 Southborough Drive  
Suite 105B  
South Portland, ME 04106  
207.889.3150



**Key**

Not To Scale

CITY OF LEWISTON APPROVAL	
Planning Board Chair	Date



**NextGrid Solar Farm**

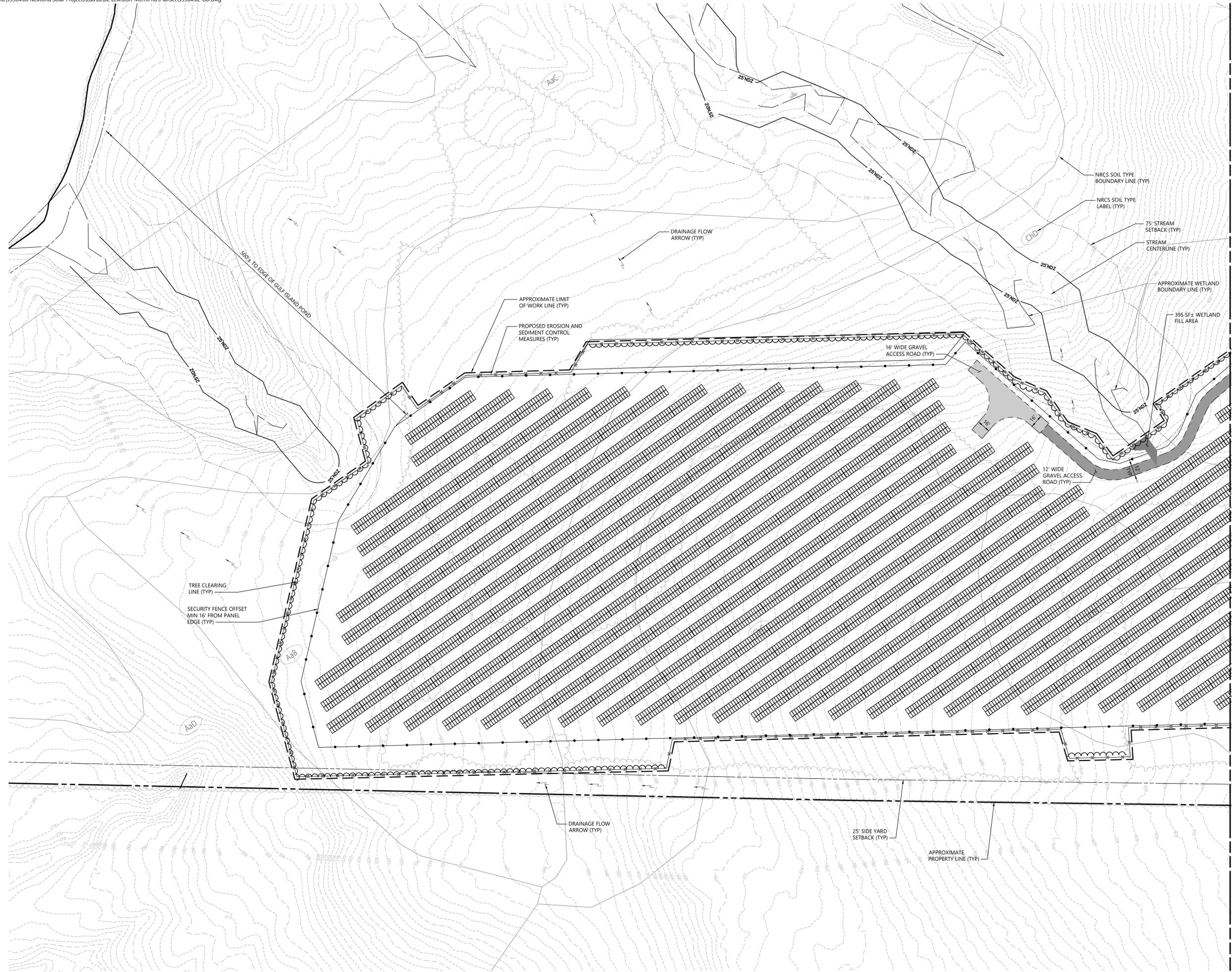
265 Merrill Road  
Lewiston, Maine 04240

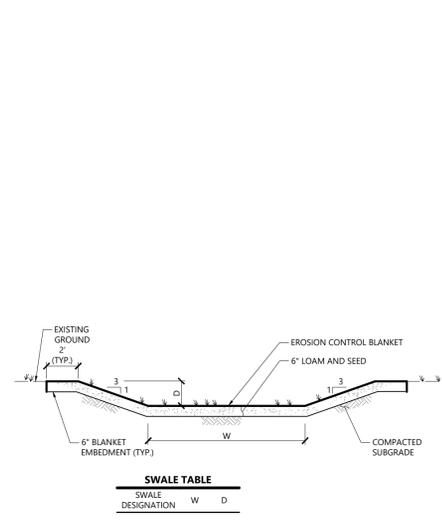
No.	Revision	Date	Aspd.
1	REVISED FOR CITY OF LEWISTON REVIEW	4/14/20	DHF
	Designed by	CG	Checked by
			GP
	Issued for		Date
	Permitting	February 28, 2020	

Not Approved for Construction  
Drawing Title  
**Site Plan 3**

STATE OF MAINE  
DAVID PENSER  
PENSER & ASSOCIATES  
No. 11813  
PROFESSIONAL ENGINEER  
4/14/2020

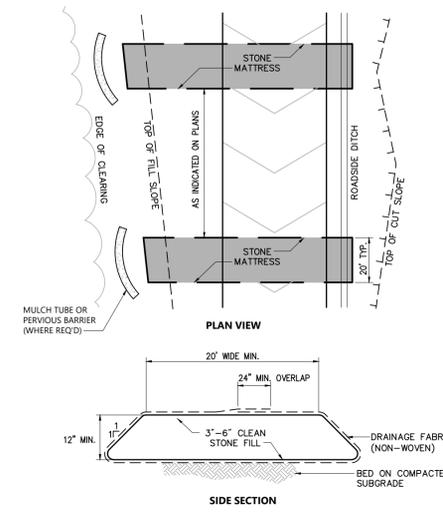
**C3.3**  
Sheet 5 of 7  
Project Number 55304.02



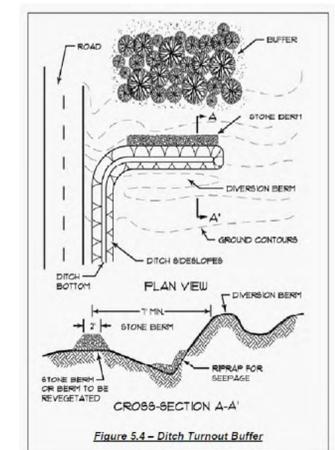


SWALE TABLE		
SWALE DESIGNATION	W	D

**Grassed Swale**  
N.T.S. Source: VHB 1/16 LD\_171

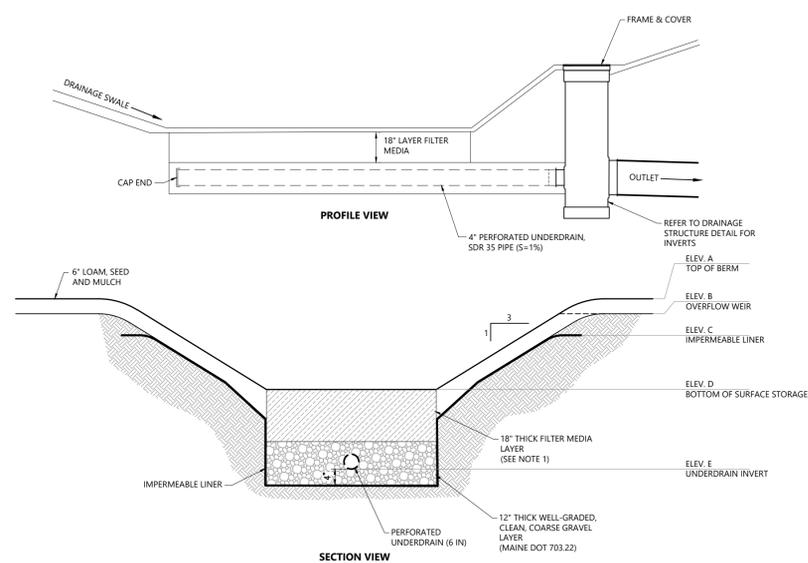


**Stone Mattress Detail**  
N.T.S. Source: VHB



**Figure 5.4 - Ditch Turnout Buffer**  
Stone Berm Specifications: The stone berm to which the ditch turn-out delivers the runoff must be at least 20 feet in length and must be constructed along the contour. It must be at least one-foot high and two feet across the top with 2:1 side slopes.  
Stone Size: The stone must be coarse enough that it will not clog with sediment. Stone for stone bermed level lip spreaders must consist of sound durable rock that will not disintegrate by exposure to water or weather. Fieldstone, rough quarried stone, blasted ledge rock or tailings may be used. The rock must be well graded with a median size of approximately 3 inches and a maximum size of 6 inches. See Table 5.4 above.

**Ditch Turnout Buffer**  
N.T.S. Source: MDEP

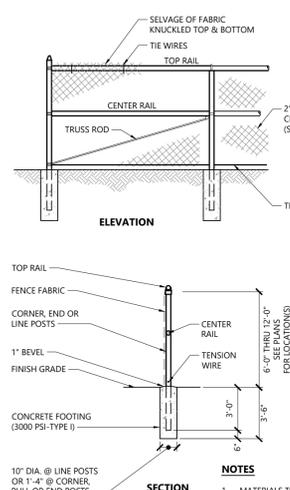


ELEVATION TABLE					
VSF #	A	B	C	D	E

- NOTES**
- VEGETATED SOIL FILTER REQUIREMENTS PER MAINE DEP CHAPTER 500, LATEST EDITION. MINIMUM REQUIREMENTS PER THE DEVELOPMENT.
    - DRAIN TIME = 24-48 HOURS, ASSUMES AN RATE OF 3 INCHES/HOUR.
  - FILTER MEDIA SHALL CONSIST (BY VOLUME) OF:
    - 50% SAND (ASTM C-33 CONCRETE SAND).
    - 20% SANDY LOAM TO FINE SANDY LOAM CONFORMING TO THE FOLLOWING GRADATION:
 

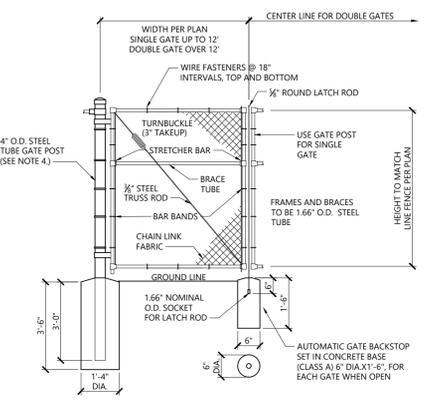
SIEVE (ASTM D422)	PERCENT PASSING BY WEIGHT
NO. 4	75-95
NO. 10	60-90
NO. 40	35-85
NO. 200	20-70
200 (CLAY SIZE)	< 2.0
    - 30% MATURE COMPOSTED WOODY FIBERS AND FINE SHREDDED BARK MULCH, SUPERHUMUS OR EQUIVALENT.
    - RESULTING MIXTURE SHALL HAVE 8% TO 12% PASSING THE NO. 200 SIEVE AND A CLAY CONTENT OF LESS THAN 2%.
  - FILTER MEDIA SHALL BE FIELD TESTED TO INSURE DRAINAGE WITHIN 24 TO 48 HOURS AND HAVE SUFFICIENT FINES TO ENSURE FILTRATION OF FINE PARTICLES. GRADATIONS SHALL BE ADJUSTED, IF REQUIRED, TO MEET THE REQUIRED DRAINAGE TIME. ADJUSTED GRADATIONS AND DRAINAGE TIME SHALL BE SUBMITTED TO DESIGN ENGINEER FOR REVIEW AND APPROVAL.
  - IMPERMEABLE LINER SHALL CONSIST OF HIGH-STRENGTH 30 MIL POLYETHYLENE MEMBRANE WITH BONDED SEAMS AND TEXTURED SURFACE.
  - BOTTOM OF BASIN SHALL BE SEEDED WITH A CONSERVATION TYPE SEED MIX AND MULCHED.
  - PERFORATED UNDERDRAIN PIPE SHALL BE LAID AS SHOWN IN PLAN VIEW. NO GREATER THAN 15' ON CENTER, TO DRAIN THE ENTIRE FILTER AREA.

**Vegetated Soil Filter (VSF) Detail**  
N.T.S. Source: VHB 2/17



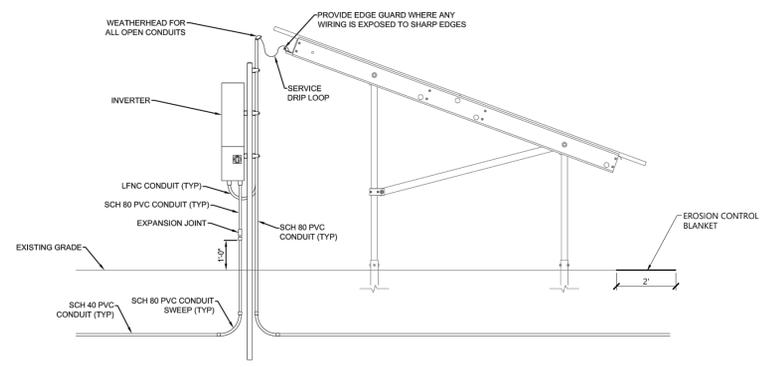
- NOTES**
- MATERIALS TO BE SUPPLIED AND INSTALLED IN CONFORMANCE WITH 'CHAIN LINK MANUFACTURERS' INSTITUTE' PRODUCT MANUAL.
  - FENCE VISIBLE FROM THE MAIN ENTRANCE SHALL BE GREEN VINYL COATED.

**7' Chain Link Fence**  
N.T.S. Source: VHB 1/16 LD\_480

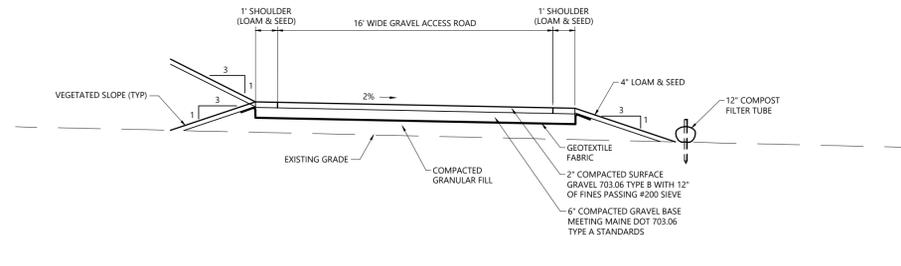


- NOTES**
- CHAIN LINK FABRIC FOR GATES TO BE THE SAME AS REQUIRED FOR FENCE.
  - GATE POST BASE-PORTLAND CEMENT CONCRETE (3000 PSI).
  - FENCE FABRIC, POSTS, FRAMEWORKS, AND HARDWARE SHALL BE GALVANIZED STEEL PER SPECIFICATIONS.
  - GATE POSTS TO BE USED ON EACH SIDE OF SINGLE AND DOUBLE GATE OPENINGS.

**Chain Link Fence Gate**  
N.T.S. Source: VHB 1/16 LD\_482

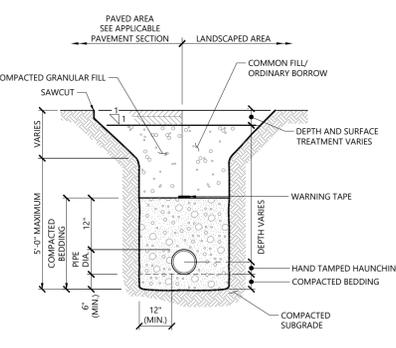


**Inverter and Array Detail (Side)**  
N.T.S. Source:



- NOTES**
- GRAVEL ACCESS ROAD SHALL HAVE A SURFACE BEARING CAPACITY OF 20,000 LBS (MM).
  - STONE MATTRESS TO BE INSTALLED AS NEEDED TO PROVIDE FOR ADEQUATE DRAINAGE OF SURFACE RUNOFF AND PREVENT EROSION.

**Gravel Access Road - Typical Section**  
N.T.S. Source:



- NOTES**
- WHERE UTILITY TRENCHES ARE CONSTRUCTED THROUGH DETENTION BASIN BERMS OR OTHER SUCH SPECIAL SECTIONS, PLACE TRENCH BACKFILL WITH MATERIALS SIMILAR TO THE SPECIAL SECTION REQUIREMENTS.
  - USE METALLIC TRACING/WARNING TAPE OVER ALL PIPES.

**Utility Trench**  
N.T.S. Source: VHB REV LD\_300

**NextGrid Solar Farm**  
265 Merrill Road  
Lewiston, Maine 04240

No.	Revision	Date	Appr.

1 REVISED FOR CITY OF LEWISTON REVIEW 4/14/20 DHF  
Designed by PG Checked by CG  
Issued for Permitting February 28, 2020

**Not Approved for Construction**  
Drawing Title  
**Site Details**  
Drawing Number



**C4.1**  
Sheet 6 of 7  
Project Number 55304.02

**Construction Sequence**

1. SURVEY AND STAKE LIMITS OF CLEARING AND GRUBBING.
2. SURVEY AND STAKE (50 FT OC) LIMITS OF CLEARING AND DISTURBANCE.
3. INSTALL TEMPORARY EROSION CONTROL MEASURES (SILT FENCING, SILT SOCKS, CONSTRUCTION EXITS, ETC).
4. CLEAR AND GRUB WITHIN LIMIT OF ACCESS ROAD. LIMITS OF CLEARING INDICATE AREAS WHERE TREES WILL BE CUT AND STUMPS WILL REMAIN IN THE GROUND.
5. STRIP LOAM AND PAVEMENT OR RECLAIM EXISTING PAVEMENT WITHIN LIMITS OF WORK AND STOCKPILE EXCESS MATERIAL.
6. CONSTRUCT TEMPORARY SEDIMENTATION BERMS AS REQUIRED.
7. INSTALL DRAINAGE SYSTEM, AND OTHER UTILITIES IN ACCORDANCE WITH THE PLANS AND DETAILS.
8. PERFORM FINAL / FINE GRADING INCLUDING SLOPE STABILIZATION BLANKETS.
9. PERFORM ALL REMAINING SITE CONSTRUCTION (I.E. CONCRETE AND GRAVEL AREAS).
10. LOAM AND SEED ALL DISTURBED AREAS.
11. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER FINAL SURFACING IS INSTALLED, AND LANDSCAPING AREAS ARE ESTABLISHED AND STABILIZED.
12. CLEAN ALL DRAINAGE BASINS, STRUCTURES, PIPES, AND SUMPS WITHIN THE PROJECT LIMITS OF ALL SILT AND DEBRIS

**General**

1. CONTRACTOR SHALL READ, BE FAMILIAR WITH, AND SHALL FOLLOW THE MAINE EROSION AND SEDIMENT CONTROL BMPs MANUAL (LATEST EDITION) AND MAINE EROSION AND SEDIMENT CONTROL FIELD GUIDE FOR CONTRACTORS (LATEST EDITION), AND SHALL BE ACCOUNTABLE TO THE THIRD PARTY INSPECTOR FOR THE PROJECT AND THE MAINE DEP IN ACCORDANCE WITH MAINE DEP REGULATIONS.
2. PRIOR TO STARTING ANY OTHER WORK ON THE SITE, THE CONTRACTOR SHALL NOTIFY APPROPRIATE AGENCIES AND SHALL INSTALL TEMPORARY EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS IDENTIFIED IN FEDERAL, STATE, AND LOCAL APPROVAL DOCUMENTS PERTAINING TO THIS PROJECT.
3. CONTRACTOR SHALL BE FULLY RESPONSIBLE TO CONTROL CONSTRUCTION SUCH THAT SEDIMENTATION SHALL NOT AFFECT REGULATORY PROTECTED AREAS, WHETHER SUCH SEDIMENTATION IS CAUSED BY WATER, WIND, OR DIRECT DEPOSIT.
4. MINIMUM TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL MEASURES ARE SHOWN ON THE EROSION AND SEDIMENTATION CONTROL PLAN. THE CONTRACTOR SHALL ADHERE TO THE MINIMUM PROVISIONS SHOWN. ADDITIONALLY, TEMPORARY MEASURES SHALL BE SELECTED AND CONSTRUCTED BY THE CONTRACTOR IN CONSULTATION WITH THE ENGINEER TO ACCOMMODATE CHANGING FIELD CONDITIONS THAT DEVELOP DURING CONSTRUCTION.
5. PUMPED WATER FROM DEWATERING ACTIVITIES SHALL BE DISCHARGED INTO SETTLING BASINS, FILTER BAGS OR OTHER APPROVED METHODS PRIOR TO DISCHARGE INTO THE ON-SITE STORMWATER MANAGEMENT SYSTEM. ALL WATER FROM DEWATERING ACTIVITIES SHALL BE RECHARGED ON-SITE OR DIRECTED TO THE DETENTION BASIN FOR DISCHARGE.
6. NO MORE THAN 1 ACRE SHOULD BE UNSTABILIZED AT ONE TIME WITHOUT REGULAR INSPECTION OR LIMITED TO AN AREA THAT CAN BE MULCHED IN ONE DAY.

**Seeding/Mulching**

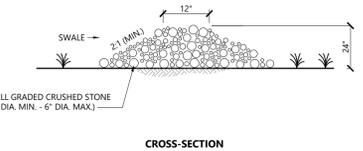
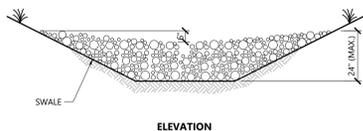
1. FERTILIZER, SUPERPHOSPHATE, AND LIME SHALL BE APPLIED AT RATES RECOMMENDED BY THE TESTING AGENCY AND APPROVED BY THE ENGINEER.
2. PERMANENT SEED SHALL BE SUPPLIED IN THE FOLLOWING PROPORTIONS AND APPLIED AT A RATE OF FIVE POUNDS PER 1,000 SF:  
SEED TYPE (% PROPORTION/% GERMINATION MIN./% PURITY MIN.)  
CREEPING FESCUE (50/85/90)  
KENTUCKY BLUEGRASS (40/85/90)  
MANHATTAN PERENNIAL RYE (10/90/95)
3. TEMPORARY SEED SHALL BE SUPPLIED IN THE FOLLOWING PROPORTIONS AND APPLIED AT A RATE OF 100 POUNDS PER ACRE:  
SEED TYPE (% WEIGHT MIN./% GERMINATION MIN.)  
WINTER RYE (80/85)  
RED FESCUE - CREEPING (4/80)  
PERENNIAL RYE GRASS (3/90)  
RED CLOVER (3/90)
4. MULCH SHALL BE APPLIED TO AREAS IMMEDIATELY AFTER THEY HAVE BEEN SEEDED. MULCH SHALL CONSIST OF HAY, STRAW, HYDRO-MULCH, EROSION CONTROL BLANKETS, EROSION CONTROL MIX OR APPROVED EQUAL.
5. HAY OR STRAW MULCH SHALL BE AIR-DRIED, AND FREE OF UNDESIRABLE SEEDS AND COARSE MATERIALS. MULCH SHALL BE APPLIED AT A MINIMUM RATE OF 75 LB PER 1,000 SF. MULCH SHALL BE ANCHORED WITH NETTING WHEN APPLIED TO SLOPES LESS THAN 15 PERCENT.
6. EROSION CONTROL BLANKETS SHALL BE PROVIDED ON ALL SLOPES STEEPER THAN OF 1-FOOT RISE TO 3-FEET HORIZONTAL. BLANKETS SHALL BE SCISSOR BY (NORTH AMERICAN GREEN; CURLEX BLANKETS (AMERICAN EXCELSIOR COMPANY); POLYUTE STYLE 465 GT (SYNTHETIC INDUSTRIES); OR APPROVED EQUIVALENT. BLANKETS SHALL BE SECURED AS RECOMMENDED BY THE MANUFACTURER.
7. EROSION CONTROL MIX SHALL MEET THE FOLLOWING STANDARDS:  
A. ORGANIC MATTER CONTENT SHALL BE BETWEEN 80%-100%, DRY WEIGHT BASIS.  
B. PARTICLE SIZE BY WEIGHT: 100% PASSING THE 6" SCREEN  
C. ORGANIC PORTION SHALL BE FIBROUS AND ELONGATED  
D. SOLUBLE SALTS CONTENT SHALL BE < 4.0 MMHOS/CM, AND  
E. pH SHALL BE BETWEEN 5.0 AND 8.0.

**Temporary Erosion Control Measures**

1. CONTRACTOR SHALL PERFORM CONSTRUCTION SEQUENCING SUCH THAT EARTH MATERIALS ARE EXPOSED FOR A MINIMUM AMOUNT OF TIME BEFORE THEY ARE COVERED, SEEDED, OR OTHERWISE STABILIZED TO PREVENT EROSION. AREAS REMAINING UNSTABILIZED FOR A PERIOD OF MORE THAN 15 DAYS SHALL BE TEMPORARILY MULCHED. TOTAL EXPOSED AREAS SHALL BE LIMITED TO NO MORE THAN CAN BE MULCHED IN ONE DAY.
2. TEMPORARY MULCH SHALL BE APPLIED TO UNSTABILIZED AREAS WITHIN 100-FT OF STREAMS, WETLANDS, AND OTHER WATER RESOURCES WITHIN 3 DAYS OF EXPOSING SOIL AND PRIOR TO ANY STORM EVENT.
3. DUST SHALL BE CONTROLLED THROUGH THE USE OF WATER.
4. CONTRACTOR SHALL PROVIDE TEMPORARY SILTATION/DEWATERING BASINS, IF NECESSARY AND/OR AS DIRECTED BY THE ENGINEER, TO CONTROL SEDIMENTATION AND STORMWATER RUNOFF DURING THE CONSTRUCTION PERIOD. CONTRACTOR SHALL SUBMIT PROPOSED BASIN LOCATIONS, DESIGNS, ETC. TO THE ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION.
5. EARTH MATERIAL STOCKPILES SHALL BE LOCATED IN AREAS THAT HAVE A MINIMUM POTENTIAL FOR EROSION AND KEPT AS FAR AWAY AS POSSIBLE FROM EXISTING DRAINAGE COURSES, PROTECTED NATURAL RESOURCES, TREE DRIP LINES AND OUTSIDE OF THE 100 YEAR FLOOD PLAIN. SEDIMENT BARRIERS SHALL BE INSTALLED DOWNGRADIENT OF STOCKPILES. STORMWATER SHOULD BE DIRECTED AWAY FROM STOCKPILE LOCATIONS.
6. REPAIR, CLEAN, AND REPLACE ANY SEDIMENT CONTROLS DAMAGED DURING AND/OR AFTER RAINFALL EVENTS.
7. EROSION CONTROL BLANKETS SHALL BE PLACED IN THE FLOW LINE OF ALL VEGETATED SWALES NOT OTHERWISE PROTECTED BY STONE.
8. EROSION CONTROL BLANKETS OR NETTING OVER LOOSE MULCH SHALL BE APPLIED TO ALL VEGETATED SLOPES GREATER THAN 3:1.
9. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:  
A. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;  
B. A MINIMUM OF 90% VEGETATED GROWTH HAS BEEN ESTABLISHED;  
C. A MINIMUM OF 3-INCHES OF NON-EROSIVE MATERIAL, SUCH AS STONE OR RIPRAP, HAS BEEN INSTALLED;  
D. EROSION CONTROL BLANKETS OR EROSION CONTROL MIX HAVE BEEN PROPERLY INSTALLED.

**Permanent Erosion Control Measures**

1. THE CONTRACTOR SHALL SUBMIT A WRITTEN MANUAL PREPARED FOR THE OWNER, THAT OUTLINES A SCHEDULE FOR PROPER MAINTENANCE OF THE LAWNS. THIS SCHEDULE SHOULD INCLUDE TIMING AND METHODS FOR MOWING, WATERING, AERATION, FERTILIZATION, LIMING, AND OTHER LAWN MAINTENANCE OPERATIONS.
2. SEEDING SHALL BE DONE BETWEEN APRIL 1 TO JUNE 1, OR BETWEEN AUGUST 15 TO OCTOBER 15.
3. ALL DISTURBED AREAS NOT COVERED BY BUILDINGS, PAVING, OR OTHERWISE DEVELOPED, SHALL BE COVERED WITH 6 INCHES LOAM AND SEED.

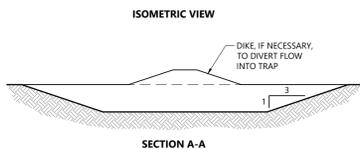
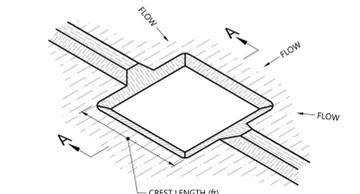


**NOTES**

1. TOP OF DOWNGRADIENT CHECKDAM AND BOTTOM OF UPGRADE CHECKDAM TO BE SET AT THE SAME ELEVATION.
2. STONE CHECKDAMS MAY BE REMOVED WHEN 90% OF THE VEGETATIVE COVER IS ESTABLISHED.

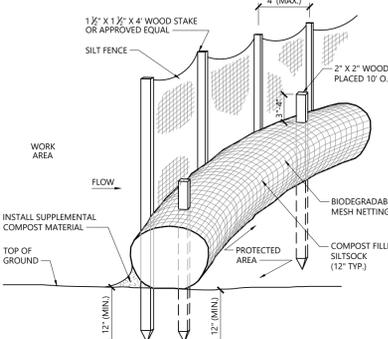
**Temporary Stone Checkdam**

N.T.S. Source: VHB REV



**NOTES**

1. THE TRAP SHALL BE INSTALLED AS CLOSE TO THE DISTURBED AREA OR SOURCE OF SEDIMENT AS POSSIBLE.
2. THE MAXIMUM CONTRIBUTING DRAINAGE AREA TO THE TRAP SHALL BE LESS THAN 5 ACRES.
3. THE MINIMUM VOLUME OF THE TRAP SHALL BE 3,600 CUBIC FEET OF STORAGE FOR EACH ACRE OF DRAINAGE AREA.
4. THE SIDE SLOPES OF THE TRAP SHALL BE 3:1 OR FLATTER, AND SHALL BE STABILIZED IMMEDIATELY AFTER THEIR CONSTRUCTION.
5. THE OUTFLET OF THE TRAP SHALL BE A MINIMUM OF ONE FOOT BELOW THE CREST OF THE TRAP AND SHALL DISCHARGE TO A STABILIZED AREA.
6. THE TRAP SHALL BE CLEANED WHEN 50 PERCENT OF THE ORIGINAL VOLUME IS FILLED.
7. THE MATERIALS REMOVED FROM THE TRAP SHALL BE PROPERLY DISPOSED OF AND STABILIZED.

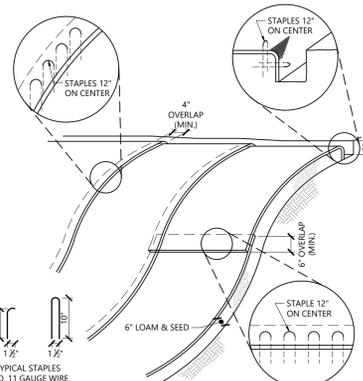


**NOTES**

1. SILT SOCK SHALL BE FILTREXX SILT SOCK, OR APPROVED EQUAL.
2. SILT SOCKS SHALL OVERLAP A MINIMUM OF 12 INCHES.
3. SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.
4. COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.
5. IF NON BIODEGRADABLE NETTING IS USED THE NETTING SHALL BE COLLECTED AND DISPOSED OF OFFSITE.

**Siltsock / Silt Fence Barrier**

N.T.S. Source: VHB REV LD\_658-A

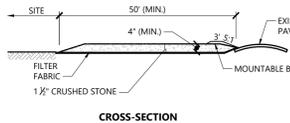
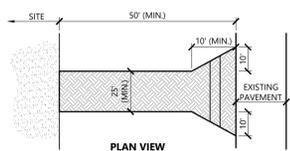


**NOTES**

1. BEGIN AT THE TOP OF BLANKET INSTALLATION AREA BY ANCHORING BLANKET IN A 6" DEEP TRENCH BACKFILL AND COMPACT TRENCH AFTER STAPLING.
2. ROLL THE BLANKET DOWN THE SWALE IN THE DIRECTION OF THE WATER FLOW.
3. THE EDGES OF BLANKETS MUST BE STAPLED WITH APPROX. 4 INCH OVERLAP WHERE 2 OR MORE STRIP WIDTHS ARE REQUIRED.
4. WHEN BLANKETS MUST BE SPICED DOWN THE SWALE, PLACE UPPER BLANKET END OVER LOWER END WITH 6 INCH (MIN.) OVERLAP AND STAPLE BOTH TOGETHER.
5. METHOD OF INSTALLATION SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS.
6. EROSION CONTROL BLANKETS SHALL BE USED IN ALL AREAS WHERE SLOPES EXCEED 3:1.

**Erosion Control Blanket Slope Installation**

N.T.S. Source: VHB REV LD\_680

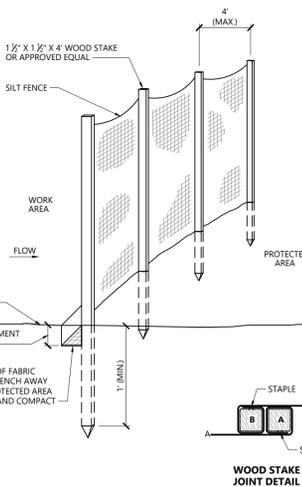


**NOTES**

1. EXIT WIDTH SHALL BE A TWENTY-FIVE (25) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
2. THE EXIT SHALL BE MAINTAINED IN A CONDITION WHICH SHALL 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 OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY. BERM SHALL BE PERMITTED, PERIODIC INSPECTION AND MAINTENANCE SHALL BE PROVIDED AS NEEDED.
3. STABILIZED CONSTRUCTION EXIT SHALL BE REMOVED PRIOR TO FINAL FINISH MATERIALS BEING INSTALLED.

**Stabilized Construction Exit**

N.T.S. Source: VHB REV LD\_682

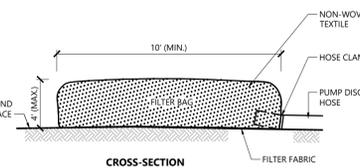
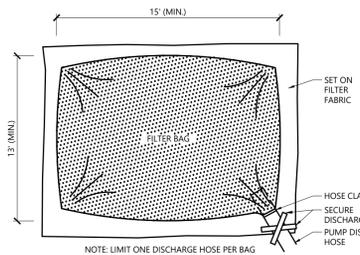


**Silt Fence Barrier**

N.T.S. Source: VHB REV LD\_650

**Temporary Sediment Trap**

N.T.S. Source: NH Stormwater Manual



**NOTES**

1. BAG TO BE USED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

**Dewatering Filter Bag**

N.T.S. Source: VHB REV LD\_691

**NextGrid Solar Farm**  
265 Merrill Road  
Lewiston, Maine 04240

No.	Revision	Date	Appr.

1	REVISED FOR CITY OF LEWISTON REVIEW	4/14/20	DHF
Designed by	PG	Checked by	CG
Issued for		Date	

Permitting February 28, 2020

**Not Approved for Construction**  
Drawing Title  
**Erosion and Sediment Control Notes and Details**



**C4.2**

Sheet 7 of 7

Project Number 55304.02



## CITY OF LEWISTON

### Department of Planning & Code Enforcement

TO: Lewiston Planning Board

FROM: Douglas Greene, AICP, RLA, City Planner

DATE: April 27, 2020

RE: Agenda Item 4f, Development Review Application for an Office and Warehouse Building at 1222 Sabattus Street

---

Site Lines, PA, an agent for 410 Industries, LLC, has submitted a Development Review Application to construct a 7,500 sf. office and warehouse building at 1222 Sabattus Street.

#### PROJECT DESCRIPTION

The property at 1222 Sabattus Street is a 12 acre parcel on the north side of Sabattus Street. The zoning is Highway Business (HB) District along Sabattus Street and Resource Conservation (RC) District on the rear portion. The rear area of the property contains a large wetland and associated Shoreland Zone and Floodplain area. 1222 Sabattus Street is currently developed with a 5,438 sf. building and 20,728 sf. total of existing impervious area.

The current use of the property is office and warehouse and the proposed 7,500 sf. building addition will continue with the same uses. The property was used for auto repair and sales in the past as well. The total of the new and existing office and warehouse space, is 12,502 sf., which requires 1 parking space per 500 sf. of gross floor area, which requires 25 parking spaces. The site plan shows 26 parking spaces, including 2 ADA accessible parking spaces.

The development will create 2,272 sf. of new impervious area with 1,738 sf. of existing pavement along Sabattus Street removed and replaced with landscaping. The final, total impervious area for the site will be 29,947 sf.

None of the proposed improvements are located within the shoreland zone or floodplain area.

#### LIST TYPES OF APPROVALS

The proposed 7,500 sf. building requires approval of a major development review application. The Planning Board needs to review and approve the development review application using Article XIII, Development Review and Standards, Section 4, Approval Criteria. The applicant has included a narrative in their application that addresses each of the approval criteria.

#### STAFF REVIEW and COMMENTS

The Staff discussed the following items during the Staff Review process:

1. The Staff asked if there would be pole lighting in the new parking lot. The applicant responded that there are two existing street lights along Sabattus Street that provide

adequate lighting at the entrances and wall mounted lights on the buildings will provide sufficient lighting in the parking lot.

2. Public Works asked for additional information regarding stormwater calculations and Post Construction Stormwater Management requirements as per Article XIII, Section 15. The applicant responded to the satisfaction of Public Works.

All other review comments from city staff have been addressed to staff's satisfaction with revisions provided by the applicant

#### **STAFF RECOMMENDATION**

Staff recommends APPROVAL of the proposed project.

#### **ACTION NECESSARY**

Make a motion that the application submitted by Site Lines, PA, an agent for 410 Industries, LLC, to construct a 7,500 sf addition at property located at 1222 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 (including, if any, specific conditions raised by the Planning Board or staff).

# MAJOR DEVELOPMENT REVIEW APPLICATION

## OFFICE/WAREHOUSE BUILDING

1222 SABATTUS STREET  
LEWISTON, MAINE 04240

March 27, 2020

Prepared For

### **410 INDUSTRIES, LLC**

1222 Sabattus Street  
Lewiston, Maine 04240

Prepared By



119 Purinton Road, Suite A, Brunswick Landing, Brunswick, ME 04011  
207-725-1200 ▪ [www.sitelinespa.com](http://www.sitelinespa.com)

Major Development Review Application  
Office/Warehouse Building, 1222 Sabattus Street, Lewiston  
March 27, 2020

### Table of Contents

Cover Letter	
Attachment A	Application Form & Checklist
Attachment B	Right, Title, & Interest
Attachment C	Financial & Technical Capability
Attachment D	Photographs
Attachment E	Supporting Documents
Attachment F	Supporting Graphics
Attachment G	Architecture
Attachment H	Site Plans



Revised April 21, 2020

4060-7

Mr. David Hediger  
Director of Planning & Code Enforcement  
City of Lewiston  
27 Pine Street  
Lewiston, Maine 04240

**RE: Major Development Review Application  
Office/Warehouse Building  
1222 Sabattus Street  
Map 37, Lot 24**

Dear David:

On behalf of 410 Industries, LLC, please find enclosed Major Development Review Application for a proposed warehouse building located at 1222 Sabattus Street. This application includes this letter, the application form, the application checklist, and associated drawings and attachments. This letter is intended to summarize the project to facilitate the review process.

**PROPERTY**

410 Industries, LLC owns the parcel located at 1222 Sabattus Street (Tax Map 37, Lot 24). The parcel contains approximately 12± acres and has frontage on Sabattus Street (Rt. 126). Portions of the parcel are located within the Highway Business (HB) Zoning District and the Resource Conservation District (RC). A portion of the parcel is in the Shoreland Zone. The existing parcel is currently developed with a ~~single~~-story 5,438 s.f. footprint commercial building utilized as a warehouse. The existing development includes approximately 20,728 s.f. (0.48 acres) of impervious area.

**SITE DESIGN**

The applicant is proposing a 7,500 s.f. footprint office/warehouse building with an associated 3,991 s.f. expansion of the pavement apron, utility extensions, and stormwater management. An area of 2,272 s.f. of existing pavement on the site along the Sabattus Street frontage, in addition to 1,738 s.f. within the right-of-way, will be removed to improve the site streetscape, allow for landscaping in the front yard, and help balance the impervious area. The proposed development will result in approximately 29,947 s.f. (0.69 acres) of impervious area, or an increase of 9,219 s.f. (0.21 acres) of impervious area.

The new utility services for the office/warehouse building will be provided from the existing utilities available within the Sabattus Street alignment. The proposed improvements include the

**SITELINES • CIVIL ENGINEERS • LAND SURVEYORS**  
**119 Purinton Road, Suite A, Brunswick Landing, Brunswick, ME 04011**  
**207-725-1200 • [www.sitelinespa.com](http://www.sitelinespa.com)**

striping of 23 parking spaces for the building, including two (2) ADA accessible parking spaces. Per the Lewiston Zoning Ordinance, based on the size of the buildings, 25 parking spaces are required for both buildings. Parking for three (3) additional vehicles is provided in the new warehouse space, meeting the requirements of the Ordinance.

### **APPROVAL CRITERIA**

To facilitate review of this application, the following issues are summarized in accordance with Article XIII-Approval Criteria of the Zoning and Land Use Code:

- (a) *Utilization of the site:* The proposed building is located in the area of the site best suited for further development. As part of the proposed improvements, environmentally sensitive areas have been preserved to the maximum extent practicable and natural drainage areas have been preserved.
- (b) *Traffic movement into and out of the development area:* The proposed building will be comprised of 4,835 s.f. of warehouse use and 2,412 s.f. of office use. The existing building is comprised of 5,252 s.f. of warehouse use. The proposed office/warehouse building is not anticipated to result in any increase in employees and is not anticipated to result in any significant increase in traffic into the site. A Traffic Memorandum has been generated based on ITE trip generation rates indicating that the proposed expansion does not result in 100 or more passenger car equivalents during any peak hour.
- (c) *Access into the site:* The existing development has two existing entrances onto Sabattus Street (Route 126), a public major arterial, that provide adequate sight distance. No changes are proposed to the existing access entrance.
- (d) *Internal vehicular circulation:* There is a large maneuvering and parking area that provides adequate space for customers, employees, delivery and emergency vehicles. An area of pavement along the Sabattus Street frontage will be removed to improve site circulation and eliminate parking within the right-of-way and front yard. The changes reduce the maneuvering area in front of the existing building, but the 30' to 40' aisles allow for maneuvering and provide a clear route for vehicles. The maneuvering and parking area will be expanded in the area between the existing and proposed buildings to provide access to the overhead doors of the new office/warehouse building.
- (e) *Pedestrian circulation:* There are no changes proposed to the pedestrian circulation of the existing site. Parking is provided between the existing building and Sabattus Street, which is adjacent to the proposed building. There are no sidewalks along Sabattus Street and the parking area extends pedestrian access to Sabattus Street.
- (f) *Stormwater management:* Proposed improvements increase the impervious area on the site. The proposed changes to the pavement area result in a small decrease in the pavement area that drains toward the site within the combined site and Sabattus Street right-of-way. The

pavement decrease has a positive impact on stormwater quality and quantity leaving the site. As part of the project, a crushed stone dripedge will be provided for the collection and conveyance of stormwater from the rear-shedding metal roof of the new building. The dripedge will be underdrained and will outlet to the rear of the parcel where it will drain via overland flow toward the wetland. The dripedge will help mitigate any peak flows from the contributing 7,500 s.f. of new roof area. The eleven (11±) undeveloped acres down-gradient of the developed area and existing wetland will attenuate the peak runoff such that there is no discernable change to the peak flows leaving the parcel as a result of the proposed development. A Stormwater Facilities Inspection and Maintenance Plan has been provided for the Post Construction maintenance of the site.

A stormwater analysis was completed to determine the peak flows in the Existing and Proposed conditions. Topographical data was obtained from on the ground survey and online resources for the portion of the site that was not surveyed. Hydrologic boundaries were generated using the topographic mapping and aerial photography. The drainage patterns were verified by a site reconnaissance visit.

Surficial soils located in the vicinity of the site were obtained from the United States Department of Agriculture Natural Resources Conservation Service Soil Survey Geographic (SSURGO) Database (see Attachments). The Applicant's parcel includes the soil classifications listed below.

#### SOILS TYPES IN LOCAL STUDY AREA

Soils Series	Symbol(s)	Hydrologic Group (HSG)
Adams loamy sand, 0 to 8 percent slopes	AaB	A
Adams loamy sand, 8 to 15 percent slopes	AaC	A
Biddeford mucky peat, 0 to 3 percent slopes	Bo	D
Sand and gravel pits	GP	-
Hartland very fine sandy loam, 2 to 8 percent slopes	HfB	B
Peat and Muck	Pa	A/D
Swanton fine sandy loam, 0 to 3 percent slopes	SzA	D

#### EXISTING CONDITIONS

The existing site conditions include a 5,438 s.f. (0.125 acres) footprint existing building and 15,290 s.f. (0.351 acres) of pavement, in addition to 2,819 s.f. (0.065 acres) of pavement within the Sabattus Street right-of-way that drains toward the site. The remainder of the site is undeveloped and wooded with a 10+ acre wetland. An Existing Conditions Watershed Map and associated HydroCAD report is enclosed.

#### PROPOSED CONDITIONS

The proposed improvements include a 7,500 s.f. (0.172 acres) footprint building and a net decrease of 19 s.f. of pavement. Pavement removal include 2,272 s.f. (0.052 acres) of pavement within limits of property and 1,738 s.f. (0.040 acres) within the Sabattus Street



right-of-way. Additional pavement is proposed around the location of the new building and includes 3,991 s.f. (0.092 acres) of new pavement. A Proposed Conditions Watershed Map and associated HydroCAD report is enclosed.

## RESULTS

The following table indicates the peak runoff rates at the Analysis Point (AP) under existing and proposed conditions for the 2-, 10-, and 25-year, 24-hour storm events.

Design Storm	Existing	Proposed	Change (cfs / %)
2-Year	2.33	2.39	0.06 / 2.6%
10-Year	5.06	5.14	0.08 / 1.6%
25-Year	7.84	7.93	0.09 / 1.1%

The peak runoff rate in the Proposed Condition is approximately equal to that in the Existing Condition and any difference is within the margin of error of the modeling method. No adverse impacts are anticipated as a result of the proposed new building. The analyses show that the project will not create an unreasonable increase in runoff leaving the site.

## CONCLUSION

Runoff from the site is directed to the existing 11+ acres of wetland on lower portion of the parcel and the project will not create an unreasonable increase in runoff leaving the lot. The overall area of pavement draining off the site is being reduced and runoff from the metal roof of the new building is being captured and conveyed within an underdrained stone dripedge.

- (g) *Erosion control:* The disturbed areas of the site will be isolated through the use of silt sock and other measures to minimize the transport of sediment from the site. The project has been designed to incorporate Best Management Practices as outlined in the Maine Erosion and Sediment Control BMPs as published by the Maine Department of Environmental Control, current edition. Specific provisions for permanent and temporary erosion control features have been provided in the construction drawings. The contractor will be bound to meet the performance standards of the BMPs including erosion control, stabilization, maintenance, and inspection requirements.
- (h) *Water supply:* The existing building utilizes water a service from the water main within Sabattus Street. A new water service will be extended from the Sabattus Street main to serve the new building.
- (i) *Sewage disposal:* The existing building utilizes a sewer service from a sewer manhole near the property line, that extends from the sewer main within Sabattus Street. A new sewer service will be connected to the existing service with the parcel.

- (j) *Utilities:* Electrical and telephone services will be extended from utilities along Sabattus Street to serve the new building.
- (k) *Natural features:* The proposed building is located primarily within area that is undeveloped and covered in brush. In order to install the new building, the area will need to be cleared and graded. The natural areas to the north of the existing building will not be adversely affected by the development. No wetlands will be disturbed as part of the project.
- (l) *Groundwater protection:* The existing building and proposed building will be served by an existing sewer service from the main within Sabattus Street. The proposed stormwater management system will be underdrained and discharge stormwater runoff to the existing wetland on the parcel. The proposed use will not extract from or infiltrate into the groundwater table. There are no adverse impacts anticipated to the groundwater as a result of the proposed improvements.
- (m) *Water and air pollution:* As the project consists of a new building for warehouse and office use, there is no air pollution anticipated as a result of the development. The stormwater runoff from the new impervious area created as a result of the proposed building will be collected and dispersed. As a result, there is no undue water pollution anticipated due to the proposed improvements.
- (n) *Exterior lighting:* There are existing lights located on the site. Three wall-mounted lights are proposed along the front, west-facing side of the new building to provide lighting on the site. The proposed building will shield the abutting commercial use from the added lighting.
- (o) *Waste disposal:* A dumpster is proposed for the rear of the site, between the proposed and existing buildings. The dumpster is partially screened by the buildings and is not visible from any adjacent parcels, and a fence is proposed for additional screening.
- (p) *Lot layout:* This criterion is not applicable as the project is not residential.
- (q) *Landscaping:* The proposed improvements include the revegetation of an area of pavement along Sabattus Street, that includes 1,738 s.f in the right-of-way and 2,272 s.f. in the parcel front yard streetscape area. Landscaping is proposed in accordance with the Lewiston Site Plan Review and Design Guidelines. The landscaping plan includes foundation plantings in front of the new building, and six (6) planting groups with street trees along the streetscape area. A landscaping plan for the site is enclosed with the plan set.
- (r) *Shoreland relationship:* The parcel is encumbered by a significant area of wetlands and associated 250-ft setback of the Shoreland Zone. The new building and improvements are proposed for areas outside of the wetland and Shoreland Zone. The development will not adversely affect the water quality or shoreline.

- (s) *Open space:* This criterion is not applicable as the project is not residential.
- (t) *Technical and financial capacity:* A bank statement indicating that the Applicant has adequate funds available to complete the project in accordance with the enclosed application and plans will be submitted under separate cover.

The design team, led by Sitalines, PA, has extensive experience planning, designing, and gaining approvals for commercial development projects throughout the state, including the Federal Distributors Building Expansion in Lewiston, and Sam's Restaurant and Coastal Orthopedics facility at Cooks Corner in Brunswick.

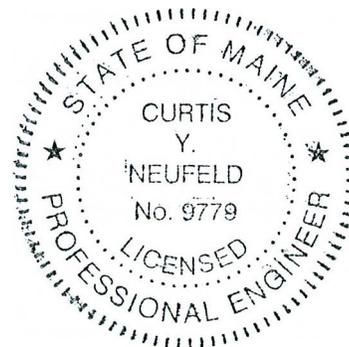
- (u) *Buffering:* The parcel is located within a commercial/industrial area that has similar uses on the adjacent parcels. The outside storage and dumpster areas are located at the rear of the building and are screened from Sabattus Street and the existing buildings on adjacent parcels.
- (v) *Compliance with district regulations:* The project has been designed to meet the district regulations as outlined within the Ordinance.
- (w) *Design consistent with performance standards:* The project has been designed to meet the performance standards as outlined within the Ordinance.

We trust that this information satisfactorily addresses the requirements for Site Plan approval. We look forward to meeting with the Planning Board at their earliest convenience to discuss and approve the project. If you have any questions or require additional information, please do not hesitate to call. Thank you for your assistance with this project.

Very truly yours,



Curtis Y. Neufeld, P.E.  
Vice President



Enclosures

cc: Tony Fortin, 410 Industries, LLC



Major Development Review Application  
Office/Warehouse Building, 1222 Sabattus Street, Lewiston  
March 27, 2020

**Attachment A**  
**Application Form & Checklists**

A completed copy of the Development Review Application Form and the Checklist are enclosed.

A

Application Form & Checklist



# Development Review Application

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



PROJECT NAME: \_\_\_\_\_

PROPOSED DEVELOPMENT ADDRESS: \_\_\_\_\_

PARCEL ID#: \_\_\_\_\_

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

PROJECT DESCRIPTION: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**CONTACT INFORMATION:**

Applicant  
 \_\_\_\_\_  
 Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Zip Code \_\_\_\_\_  
 Work #: \_\_\_\_\_  
 Cell #: \_\_\_\_\_  
 Fax #: \_\_\_\_\_  
 Home #: \_\_\_\_\_  
 Email: \_\_\_\_\_

Property Owner  
 \_\_\_\_\_  
 Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Zip Code \_\_\_\_\_  
 Work #: \_\_\_\_\_  
 Cell #: \_\_\_\_\_  
 Fax #: \_\_\_\_\_  
 Home #: \_\_\_\_\_  
 Email: \_\_\_\_\_

Project Representative  
 \_\_\_\_\_  
 Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Zip Code \_\_\_\_\_  
 Work #: \_\_\_\_\_  
 Cell #: \_\_\_\_\_  
 Fax #: \_\_\_\_\_  
 Home #: \_\_\_\_\_  
 Email: \_\_\_\_\_

Other professional representatives for the project (surveyors, engineers, etc.),  
 \_\_\_\_\_  
 Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Zip Code \_\_\_\_\_  
 Work #: \_\_\_\_\_  
 Cell #: \_\_\_\_\_  
 Fax #: \_\_\_\_\_  
 Home #: \_\_\_\_\_  
 Email: \_\_\_\_\_

# PROJECT DATA

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

## IMPERVIOUS SURFACE AREA/RATIO

Existing Total Impervious Area \_\_\_\_\_ sq. ft.  
Proposed Total Paved Area \_\_\_\_\_ sq. ft.  
Proposed Total Impervious Area \_\_\_\_\_ sq. ft.  
Proposed Impervious Net Change \_\_\_\_\_ sq. ft.  
Impervious surface ratio existing \_\_\_\_\_ % of lot area  
Impervious surface ratio proposed \_\_\_\_\_ % of lot area

## BUILDING AREA/LOT COVERAGE

Existing Building Footprint \_\_\_\_\_ sq. ft.  
Proposed Building Footprint \_\_\_\_\_ sq. ft.  
Proposed Building Footprint Net change \_\_\_\_\_ sq. ft.  
Existing Total Building Floor Area \_\_\_\_\_ sq. ft.  
Proposed Total Building Floor Area \_\_\_\_\_ sq. ft.  
Proposed Building Floor Area Net Change \_\_\_\_\_ sq. ft.  
New Building \_\_\_\_\_ (yes or no)  
Building Area/Lot coverage existing \_\_\_\_\_ % of lot area  
Building Area/Lot coverage proposed \_\_\_\_\_ % of lot area

## ZONING

Existing \_\_\_\_\_  
Proposed, if applicable \_\_\_\_\_

## LAND USE

Existing \_\_\_\_\_  
Proposed \_\_\_\_\_

## RESIDENTIAL, IF APPLICABLE

Existing Number of Residential Units \_\_\_\_\_  
Proposed Number of Residential Units \_\_\_\_\_  
Subdivision, Proposed Number of Lots \_\_\_\_\_

## PARKING SPACES

Existing Number of Parking Spaces \_\_\_\_\_  
Proposed Number of Parking Spaces \_\_\_\_\_  
Required Number of Parking Spaces \_\_\_\_\_  
Number of Handicapped Parking Spaces \_\_\_\_\_

## ESTIMATED COST OF PROJECT

\_\_\_\_\_

## DELEGATED REVIEW AUTHORITY CHECKLIST

### SITE LOCATION OF DEVELOPMENT AND STORMWATER MANAGEMENT

Existing Impervious Area \_\_\_\_\_ sq. ft.  
Proposed Disturbed Area \_\_\_\_\_ sq. ft.  
Proposed Impervious Area \_\_\_\_\_ sq. ft.

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

### TRAFFIC ESTIMATE

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

Total traffic estimated in the peak hour-proposed (Since July 1, 1997) \_\_\_\_\_ 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 \_\_\_\_\_ zoning district.  
2. Parcel Area: \_\_\_\_\_ acres / \_\_\_\_\_ square feet(sf).

<b>Regulations</b>	<u>Required/Allowed</u>	<u>Provided</u>
Min Lot Area	_____	/
Street Frontage	_____	/
Min Front Yard	_____	/
Min Rear Yard	_____	/
Min Side Yard	_____	/
Max. Building Height	_____	/
Use Designation	_____	/
Parking Requirement	1 space/ per _____	square feet of floor area
Total Parking:	_____	/
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 City's ordinances are available online at their prospective websites:

**Auburn:** [www.auburnmaine.org](http://www.auburnmaine.org) under City Departments/ Planning and Permitting/Land Use Division/ [Zoning Ordinance](#)

**Lewiston:** <http://www.ci.lewiston.me.us/clerk/ordinances.htm> Refer to Appendix A of the Code of Ordinances

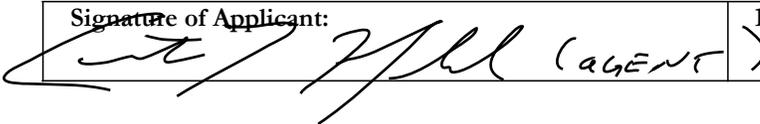
I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition,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

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

Signature of Applicant:

Date:

April 21, 2020

 (AGENT)

# 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: \_\_\_\_\_

PROPOSED DEVELOPMENT ADDRESS and PARCEL #: \_\_\_\_\_

Required Information		Check Submitted		Applicable Ordinance	
		Applicant	Staff	Lewiston	Auburn
<b>Site Plan</b>					
	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				
<b>Landscape Plan</b>					
	Greenspace Requirements				
	Setbacks to Parking				
	Buffer Requirements				
	Street Tree Requirements				
	Screened Dumpsters				
	Additional Design Guidelines				

	Planting Schedule				
<b>Stormwater &amp; Erosion Control Plan</b>					
	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)				
<b>Lighting Plan</b>					
	Full cut-off fixtures				
	Meets Parking Lot Requirements				
<b>Traffic Information</b>					
	Access Management				
	Signage				
	PCE - Trips in Peak Hour				
	Vehicular Movements				
	Safety Concerns				
	Pedestrian Circulation				
	Police Traffic				
	Engineering Traffic				
<b>Utility Plan</b>					
	Water				
	Adequacy of Water Supply				
	Water main extension agreement				
	Sewer				
	Available city capacity				
	Electric				
	Natural Gas				
	Cable/Phone				
<b>Natural Resources</b>					
	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)				
<b>Right Title or Interest</b>					
	Verify				
	Document Existing Easements, Covenants, etc.				
<b>Technical &amp; Financial Capacity</b>					
	Cost Est./Financial Capacity				
	Performance Guarantee				
<b>State Subdivision Law</b>					
	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				
<b>Additional Subdivision Standards</b>					
	Single-Family Cluster (Lewiston only)				
	Multi-Unit Residential Development (Lewiston only)				
	Mobile Home Parks				
	Private Commercial or Industrial Subdivisions (Lewiston only)				
	PUD (Auburn only)				
<b>A jpeg or pdf of the proposed site plan</b>					
<b>Final sets of the approved plans shall be submitted digitally to the City, on a CD or DVD, in AutoCAD format R 14 or greater, along with PDF images of the plans for archiving</b>					

Major Development Review Application  
Office/Warehouse Building, 1222 Sabattus Street, Lewiston  
March 27, 2020

**Attachment B**  
**Right, Title, & Interest**

A copy of the current deed is included with this attachment.

**B**

Right, Title, & Interest

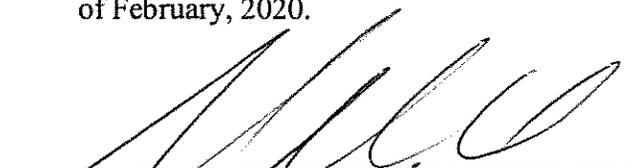
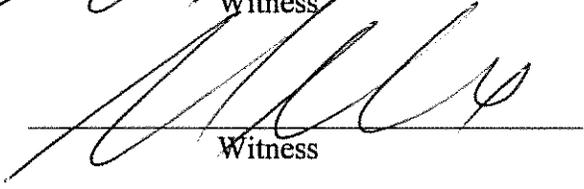
1222  
Sabattus

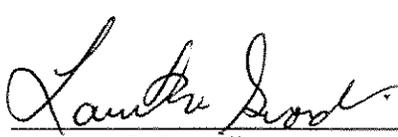
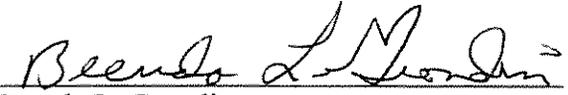
**QUITCLAIM DEED WITH COVENANT**

**LAURENT H. GRONDIN** and **BRENDA L. GRONDIN**, husband and wife, both with a mailing address of 385 Lisbon Road, Sabattus, Maine, 04280 (hereinafter collectively referred to as the "Grantors") for consideration paid, grant to **410 INDUSTRIES, LLC**, a Maine limited liability company with a mailing address c/o 2085 South Lisbon Road, Suite 8, Lewiston, Maine 04240, with **QUITCLAIM COVENANT**, a certain lot or parcel of land situated in Lewiston, County of Androscoggin, and State of Maine, bounded and described as follows:

**See Exhibit A annexed hereto and incorporated herein.**

IN WITNESS WHEREOF, the Grantors have executed this instrument as of the 6 day of February, 2020.

  
\_\_\_\_\_  
Witness  
  
\_\_\_\_\_  
Witness

  
\_\_\_\_\_  
Laurent H. Grondin  
  
\_\_\_\_\_  
Brenda L. Grondin

STATE OF MAINE  
COUNTY OF ANDROSCOGGIN

February 6, 2020

Then personally appeared the above-named Laurent H. Grondin and Brenda L. Grondin and acknowledged the foregoing instrument to be their free act and deed.

Before me,  
  
\_\_\_\_\_  
Ronald L. Bissonnette  
Maine Attorney at Law

## EXHIBIT A

A certain lot or parcel of land, together with the buildings thereon, situated in Lewiston, County of Androscoggin and State of Maine, bounded and described as follows:

### 1. Parcel

Northerly by land now or formerly owned by Frank Starbird's land and known as the C.R. Pollister farm; Southwesterly by the road leading from Sabattus Village to Lewiston; Northwesterly by land of Samuel B. Chadbourn and containing fifteen (15) acres, more or less.

### 2. Exceptions

**2.1:** EXCEPTING AND RESERVING from the above described premises a parcel described as follows: Beginning at a point on the Northerly side of Sabattus Road, said point being an iron pin four hundred sixty-five (465) feet Northwesterly from the southerly point of the above described premises; thence Northeasterly from said pin a distance of three hundred thirty-eight (338) feet, more or less, to an iron pin set in an existing stone wall; thence in a Southwesterly direction along the Northwesterly boundary of the above described premises to a point on the Northerly line of Sabattus Road; thence in a Southeasterly direction along said Sabattus Road to an iron pin and the point of beginning. Meaning and intending to describe a triangular piece of land approximately two and two tenths (2.2) acres being in the Westerly corner of the parcel described above.

**2.2:** EXCEPTING AND RESERVING from the above described premises a parcel described as follows:

Beginning at an existing  $\frac{3}{4}$  inch rebar set in the northerly line of Sabattus Street, so-called, at the southwest corner of land conveyed to C.A.R. Techs, Inc. by Douglas M. Ward and Michael D. Ward by deed dated September 19, 2003 and recorded in the Registry of Deeds for Androscoggin County in Book 5638, Page 25, said rebar marking the point of beginning of the common boundary line (the "Common Boundary Line") as established in the Boundary Line Agreement (the "Boundary Agreement") between Laurent H. Grondin and Brenda L. Grondin and C.A.R. Techs, Inc. dated August 24, 2004 and recorded in Book 6054, Page 177; thence

1. South  $84^{\circ} 36' 45''$  West along the northerly line of said Sabattus Street a distance of 150.00 feet to a capped  $\frac{3}{4}$  inch rebar, numbered 492, set; thence

2. North  $05^{\circ} 23' 15''$  West a distance of 150.00 feet to a capped  $\frac{3}{4}$  inch rebar, numbered 492, set; thence

3. North 84° 36' 45" East a distance of 258.16 feet to a point in the westerly line of land conveyed to Jeffrey C. Higgins by Normand A. St. Laurent by deed dated May 13, 2003 and recorded in said Registry in Book 5420, Page 53; thence

4. South 30° 24' 24" West along the westerly line of said Higgin's land and along the westerly line of said C.A.R. Techs, Inc.'s land and the Common Boundary Line a distance of 184.93 feet to the point of beginning.

Containing 30,612.01 square feet.

Bearings are magnetic January 1989. This description is based on a Property Plan prepared by Arthur W. Montana of A.A.R.C. Land Surveyors, Inc.

The above described parcel is subject to the Temporary Easement in favor of C.A.R. Techs, Inc. as more particularly described in Section 4 of the Boundary Agreement recorded in Book 6054, Page 177.

Being the same premises described in the deed from Laurent H. Grondin, Brenda L. Grondin, Gerard H. Grondin and Rolande Grondin to Larry's Car Wash, Inc. dated October 19, 2004 and recorded October 22, 2004 in Book 6113, Page 319.

**2.3:** EXCEPTING AND RESERVING from the above described premises a Notice of Layout and Taking dated November 3, 1988 and recorded November 14, 1988 in Book 2338, Page 231 relating to improvements to Route 126.

### **3. Source of Title**

Being part of the same premises described in the deed from Gerard H. Grondin and Rolande Grondin to Laurent H. Grondin and Brenda L. Grondin dated August 1, 2002 and recorded August 14, 2002 in Book 5083, Page 310.



March 4, 2020

4060-2

Mr. Tony R. Fortin  
410 Industries, LLC  
1222 Sabattus Street  
Lewiston, Maine 04240

**Re: Designation of Agent Authorization  
Warehouse Building  
1222 Sabattus Street, Lewiston, Maine  
Tax Map 37, Lot 24**

Dear Tony:

As required by various approval agencies, please indicate by signing below that Sitelines, PA is authorized to act as agent for 410 Industries, LLC for the specific purpose of preparation and submission of local and state permitting applications on your behalf for the proposed warehouse building located on Tax Map 37, Lot 24 on Sabattus Street in Lewiston, Maine.

Sincerely,

Curtis Y. Neufeld, P.E.  
Vice President

The undersigned hereby gives Sitelines, PA the authority to act as agent for 410 Industries, LLC for the specific purpose of preparation and submission of local and state permitting applications for the project specifically identified above.

Tony Fortin

3/11/20

Date

Major Development Review Application  
Office/Warehouse Building, 1222 Sabbattus Street, Lewiston  
March 27, 2020

**Attachment C**  
**Financial & Technical Capability**

This attachment includes a Certificate of Good Standing from the Department of the Secretary of the State and a letter from a financial institution indicating their willingness to provide funding for the project.

Abutting Property Owners

# State of Maine



## Department of the Secretary of State

I, the Secretary of State of Maine, certify that according to the provisions of the Constitution and Laws of the State of Maine, the Department of the Secretary of State is the legal custodian of the Great Seal of the State of Maine which is hereunto affixed and that the paper to which this is attached is a true copy from the records of this Department.

*In testimony whereof*, I have caused the Great Seal of the State of Maine to be hereunto affixed. Given under my hand at Augusta, Maine, this fourth day of March 2020.



A handwritten signature in black ink, appearing to read 'Matthew Dunlap', written over a horizontal line.

Matthew Dunlap  
Secretary of State

### Additional Addresses

Legal Name	Title	Name	Charter #	Status
410 INDUSTRIES, LLC	Registered Agent		20204438DC	GOOD STANDING
Home Office Address (of foreign entity )		Other Mailing Address		



PO Box 347  
 Norway, ME 04268-0347  
 888.725.2207  
 norwaysavings.bank  
 TeleBanker: 888.743.4880

TWIN CITY CONSTRUCTION INC  
 2085 LISBON RD STE 6  
 LEWISTON ME 04240

## Account Summary

**Account Number:** 8010319205  
**Statement Period:** 02/01/2020 - 02/28/2020

**Beginning Balance:** \$692,513.95  
 8 Credits (+) Totaling:  
 65 Debits (-) Totaling:

**Ending Balance:**  
**Minimum Balance:**  
**Average Available Balance:**  
**Average Balance:**

**Interest Paid This Period:** 0.00%  
**Interest Paid Year to Date:**  
**Interest Earned:**  
**Days in Period:**  
**Annual Percentage Yield Earned:**

Running a business is about more than money. It's about relationships, laughter, learning from mistakes and celebrating successes. While you Master the Art of Life, we're here to help you Master the Art of Money. Visit the Life Moments pages at [norwaysavings.bank](http://norwaysavings.bank) to learn more about how we can help.

### DEPOSITS

8010319205 - InBUSINESS CHOICE CHECKING

REF #	DATE	AMOUNT	REF #	DATE	AMOUNT	REF #	DATE	AMOUNT

### OTHER CREDITS

8010319205 - InBUSINESS CHOICE CHECKING

DESCRIPTION	DATE	AMOUNT
ROLANDS DRYWALL PAYROLL 85749100001671X	02/06/2020	
ROLANDS DRYWALL PAYROLL 85863200004716X	02/13/2020	
XX7811 DDA POS RETURN 02/12 THE HOME DEPOT # AUBURN ME	02/14/2020	
ROLANDS DRYWALL PAYROLL 85979200003547X	02/20/2020	
ROLANDS DRYWALL PAYROLL 86080800025670X	02/27/2020	

### CHECK SUMMARY

8010319205 - InBUSINESS CHOICE CHECKING

CHECK #	AMOUNT	DATE	CHECK #	AMOUNT	DATE	CHECK #	AMOUNT	DATE
2585		02/14/2020	2624		02/18/2020	2633*		02/24/2020
2617*		02/03/2020	2625		02/20/2020	2635*		02/26/2020
2618		02/03/2020	2626		02/24/2020	2636		02/25/2020
2619		02/10/2020	2627		02/19/2020	2637		02/25/2020
2620		02/03/2020	2628		02/25/2020	2638		02/25/2020
2621		02/03/2020	2629		02/21/2020	2639		02/21/2020
2622		02/10/2020	2630		02/21/2020	2640		02/26/2020
2623		02/07/2020	2631		02/25/2020	2641		02/28/2020

(\*) INDICATES A GAP IN CHECK NUMBER SEQUENCE

Major Development Review Application  
Office/Warehouse Building, 1222 Sabattus Street, Lewiston  
March 27, 2020

**Attachment D**  
**Photographs**

Photographs of the existing conditions of the project site are enclosed.

D

Photographs



**Photograph 1: Looking northwest at existing building from parking area**



**Photograph 2: Sabattus Street frontage, looking east.**



**Photograph 3: Looking at the site from across Sabattus Street.**



**Photograph 4: Looking south from the west side of the parcel at the location of the proposed building.**



**Photograph 5: Looking southeast from the west side of the parcel at the location of the proposed building and west side of existing building.**



**Photograph 6: Looking at the west side of existing building from the west side of the parcel.**



**Photograph 7: Aerial view of the site**

Major Development Review Application  
Office/Warehouse Building, 1222 Sabattus Street, Lewiston  
March 27, 2020

**Attachment E**  
**Supporting Documents**

Copies of relevant correspondence and documents pertaining to the project are enclosed.

E

Supporting Documents



April 17, 2020

4060-7

Mr. Douglas M. Greene  
City Planner and Deputy Director of Planning and Code Enforcement  
3rd floor, City of Lewiston  
27 Pine Street  
Lewiston, ME 04240

**RE: Response to Comments #1**  
**OFFICE/WAREHOUSE BUILDING**  
**1222 SABATTUS STREET, LEWISTON, MAINE**  
**Tax Map 40, Lot 24**

Dear Doug:

We have reviewed the comments provided by the City of Lewiston staff via email on Tuesday, April 14, 2020 and have prepared the following responses to address the concerns. The comments are reiterated in italics for reference with our response, in bold, immediately following:

**Planning Comments**

1. *On page 4 of the application under "Access into Site", the paragraph ends on a sentence fragment ("as well as adequate...").*

**The sentence fragment regarding Access into Site on page 2 has been deleted.**

2. *Is there going to be pole lighting in the parking lot? We see wall-mounted lighting proposed but no lighting in the parking lot.*

**No pole lighting is proposed for the site. Existing lights are located on the utility poles adjacent to the site which provide lighting at the site entrances, and on the existing building. The existing lighting and proposed wall-packs on the new building will provide sufficient lighting for the parking lot.**

3. *How is surface drainage controlled along the western property line? Is there a swale to prevent surface run-off from going into the adjacent property?*

**Near the western property line, the site is sloped to the east and northeast. The new building will be in a 'cut' condition. The surface runoff at that location all drains toward the site. Runoff from the area behind the proposed building is captured in the proposed underdrained crushed stone dripedge. Runoff from other areas of the western property line is directed northeast to the existing wetland by existing topography.**

**Public Works Comments**

1. *Article XII, Section 4(f) requires no increase in stormwater runoff for the 2, 10 and 25 year storms. Please provide 3 calculations demonstrating compliance or request a waiver per the Section 4(f).*

**The proposed Office/Warehouse will not include the establishment or creation of any community garden in the City of Lewiston; Article XII, Section 4 does not apply.**

**Per Article XIII, Section 4(f), the HydroCAD analyses have been developed and included in the attached revised application package. The analyses show that the project will not create an unreasonable increase in runoff leaving the site in the 2-, 10-, and 25- year storms. The peak runoff rate in the Post-Development Condition is approximately equal to that in the Pre-Development Condition and any difference is within the margin of error of the modeling method.**

2. *Provide a trench repair detail for Lisbon Street consisting of 27-inches of gravel and 6-inches of pavement per Street Design and Construction Policy 79.*

**No improvements are proposed within the Lisbon Street right-of-way. A detail for pavement repair for Sabattus Street has been added to Sheet C4 Site Development Details.**

3. *Provide calculations for the roof drip strip filter*

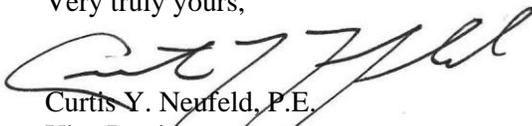
**The crushed stone dripedge does not include a filter layer. The intent of the dripedge is to protect against erosion and collect roof runoff in a controlled manner to convey it to the rear of the parcel. The width of three feet was determined by the roof overhang and the placement is provided for the capture of the roof runoff. References to the crushed stone dripedge in the cover letter were revised to emphasize that the dripedge is utilized for the collection and conveyance of stormwater and does not provide a media filter.**

4. *Provide Post Construction Stormwater Management Plan per Article XIII Section 15*

**We have developed a Stormwater Facilities Inspection and Maintenance Plan in accordance with the Post Construction Stormwater Management Plan requirements of Article XIII Section 15 and included it in the revised application package.**

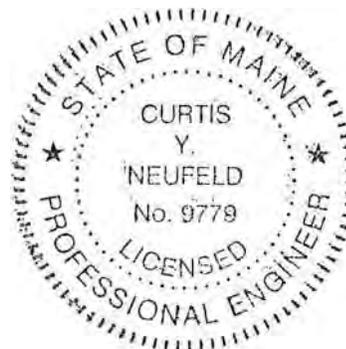
We trust that this information satisfactorily addresses the concerns outlined by the Department. Should you have any questions or require any additional information, please call or contact me via [cneufeld@sitelinespa.com](mailto:cneufeld@sitelinespa.com). We appreciate your assistance with this project.

Very truly yours,

  
Curtis Y. Neufeld, P.E.  
Vice President

Enclosure

cc: Tony Fortin, 410 Industries, LLC



**Proposed Office/Warehouse Building  
1222 Sabattus Street, Lewiston, Maine  
Traffic Analysis**

This memorandum is written to summarize the trip generation analysis for the existing warehouse and the proposed warehouse/office building in Lewiston, Maine. Trip generation calculations were completed for the development according to Maine DOT guidelines.

The existing building consists of 5,252 s.f. of warehouse space. The trip rates for the existing building were calculated based on the Institute of Traffic Engineers (ITE) "Trip Generation, 7th Edition" data for Land Use Code 150, Warehousing. The greatest number of trips was estimated during the AM and PM peak hours on weekdays.

***Existing Traffic Generation – Warehousing (LUC 150)***

Time Period	LUC	Avg. Rate	Area	Trip-Ends
Weekday AM Peak Hour - Generator	150	0.57	5.3	<b>3.02</b>
Weekday PM Peak Hour - Generator	150	0.61	5.3	<b>3.23</b>

The proposed office/warehouse building expansion will consist of 4,835 s.f. of additional warehouse space and 2,415 s.f. of office space. Trip generation calculations were completed for according to Maine DOT guidelines. The trip rates for the proposed building expansion were calculated based on the Institute of Traffic Engineers (ITE) "Trip Generation, 7th Edition" data for Land Use Code 150, Warehousing and Land Use Code 710, General Office Building. The greatest number of trips were estimated during the AM and PM peak hours on weekdays.

***Proposed Traffic Generation – Warehousing (LUC 150) & General Office Building (LUC 710)***

Time Period	LUC	Avg. Rate	Area	Trip-Ends
Weekday AM Peak Hour - Generator	150	0.57	10.1	5.76
Weekday AM Peak Hour - Generator	710	1.55	2.4	<u>3.72</u>
				<b>9.48</b>
Weekday PM Peak Hour - Generator	150	0.61	10.1	6.16
Weekday PM Peak Hour - Generator	710	1.49	2.4	<u>3.58</u>
				<b>9.74</b>

As can be seen, using ITE values, neither the existing building, nor the addition of the new office/warehouse building will result in 100 or more passenger car equivalents trips during any peak hour of traffic generation. Thus, no Traffic Movement Permit or other permits are required from the Maine DOT.



# SLING SERIES SG

Cat.#

Job

Type



**HUBBELL**  
Outdoor Lighting

Approvals

**SPECIFICATIONS**

**Intended Use:**

Slender wallpack/floodlight available in two sizes for a variety of applications including building perimeter/security lighting, entrances, stairways, loading docks or facades for schools, apartments or commercial buildings.

**Construction:**

Rugged die-cast aluminum housing with corrosion resistant powder coat finish both protects and provides architectural appearance. Heat dissipating fins provide superior thermal performance extending the life of the electronic components.

**Electrical:**

- 120-277V, 50/60Hz electronic drivers
- 347V and 480V available in larger SG2 housing
- 10KA surge protection included

**LED(s) Optics, CCT:**

- 3000K, 4000K and 5000K CCT nominal with 70 CRI
- Smaller SG1 housing has 2 LEDs, larger SG2 housing has 3 LEDs, see page 2 for electrical and photometric data

**Lenses:**

- Impact resistant tempered glass offers zero uplight
- Comfort lens available as an option or accessory to reduce glare (7-10% lumen reduction) and provide better uniformity

**Installation:**

- Side hinge allows for easy installation and wiring.
- Side movement avoids damage to the lens and helps prevent injury common in drop down hinge designs.
- Mounts to 4" junction box and includes a gasket to help seal electrical connections.
- Four 1/2" threaded conduit hubs for surface conduit provided

**Options/Controls**

- Button photocontrol for dusk to dawn energy savings. Stock versions include 120V-277V PC with a cover which provides a choice to engage photocontrol or not. PC is installed in top hub.
- Occupancy sensor available for on/off and dimming control in larger SG2 housing.
- SiteSync™ wireless lighting control delivers flexible control strategies for reducing power consumption and minimizing maintenance costs while delivering the right light levels with a simple and affordable wireless solution. See ordering information or visit [www.hubbellighting.com/sitesync](http://www.hubbellighting.com/sitesync) for more details.
- Battery backup options available in larger SG2 housing rated for either 0° C or -30° C. Performance exceeds NEC requirement providing 1 fc minimum over 10'x10' at 11' mounting height
- Diffused comfort lens provides glare control and improved uniformity. Available as an option or accessory

**Listings**

- DesignLights Consortium® (DLC) qualified. Please refer to the DLC website for specific product qualifications at [www.designlights.org](http://www.designlights.org)
- Listed to UL1598 for use in wet location, listed for -40C to 40C applications
- IDA approved with zero uplight for 3000K and warmer CCTs
- IP65

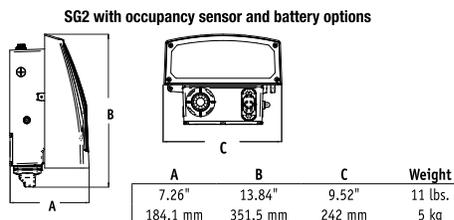
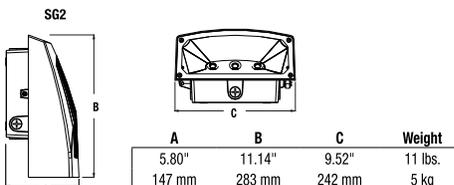
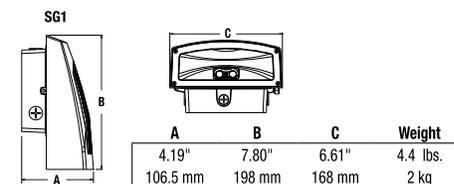
**Warranty:**

Five year limited warranty (for more information visit: <http://www.hubbellighting.com/resources/warranty/>)

**PRODUCT IMAGE(S)**



**DIMENSIONS**



Dark Sky Assoc.

**CERTIFICATIONS/LISTINGS**



\*3000K and warmer CCTs only

**SHIPPING INFORMATION**

Catalog Number	G.W(kg)/CTN	Carton Dimensions			Carton Qty. per Master Pack
		Length Inch (cm)	Width Inch (cm)	Height Inch (cm)	
SG1	4.35lbs (2 kg)	9.5 (24)	8.25 (21)	5.25 (13.32)	6
SG2	11lbs (5 kg)	14 (35.5)	11.5 (29.2)	8 (20.3)	2

**ORDERING INFORMATION – ORDERING EXAMPLE: SG1-20-4K7-FT-UNV-DB**



FAMILY	CCT/CRI	DISTRIBUTION	VOLTAGE	COLOR/FINISH	CONTROL OPTIONS	OPTIONS
SG1-20 Size 1, 20w	3K7 3000K, 70 CRI	FT Fwd Throw	UNV 120V-277V	DB Textured Dark Bronze	PCU Button Photocontrol 120-277V	CS Comfort lens
<b>SG1-30 Size 1, 30w</b>	<b>4K7 4000K, 70 CRI</b>		120' 120V	BL Textured Black	SCO <sup>1,2</sup> Sensor Control, on/off	E <sup>1,2</sup> Battery 0°C
SG2-50 Size 2, 50w	5K7 5000K, 70 CRI		277' 277V	WH Textured White	SCP <sup>1,2,3</sup> Sensor Control, Programmable	EH <sup>1,2</sup> Battery w/ heater -20°C
SG2-80 Size 2, 80w			UHV <sup>1</sup> 347V-480V	GYS Smooth Gray	SWP <sup>1,2</sup> SiteSync, Precommission	
				PS Smooth Plat. Silver	SWPM <sup>1,2</sup> SiteSync, Precommission, Motion	
				CC Custom Color	Specify MTG HT for SCO/SCP & SWPM	

<sup>1</sup> Available in SG2 only, UHV available in SG2-50 only  
<sup>2</sup> Sensor controls & battery backup can not be used with flood accessory or kit or for inverted/up mounting.  
<sup>3</sup> Must order minimum of one remote control to program dimming settings, 0-10V fully adjustable dimming with automatic daylight calibration and different time delay settings, 120-277V only



Hubbell Outdoor Lighting • 701 Millennium Boulevard • Greenville, SC 29607 • Phone: 864-678-1000

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

© 2017 HUBBELL OUTDOOR LIGHTING, All Rights Reserved • For more information visit our website: [www.hubbelloutdoor.com](http://www.hubbelloutdoor.com) • Printed in USA SG-SPEC AUGUST 14, 2017 10:16 AM



**OPTIONS AND ACCESSORIES**



Acrylic comfort lens provides glare control, improved visual comfort and better uniformity

Flood mounting accessories - 3/4" threaded knuckle or yoke (includes grommet and 3' SO cord)

Visor accessory included with mounting accessory kits

Photocontrol option available for energy-saving dusk-to-dawn operation

Side hinged for easy installation and wiring access, single screw secures housing closure

Catalog Number	Description	Weight lbs. (kg)
SG1-CS	Acrylic comfort lens for SG1	1 (.45)
SG2-CS	Acrylic comfort lens for SG2	1 (.45)
SG1-YOKE	SG1 Series Yoke/Floodlight mount kit, includes visor	2.0 (1.0)
SG1-KNUCKLE	SG1 Series Knuckle/Floodlight mount kit, includes visor	2.0 (1.0)
SG2-YOKE	SG2 Series Yoke/Floodlight mount kit, includes visor	2.0 (1.0)
SG2-KNUCKLE	SG2 Series Knuckle/Floodlight mount kit, includes visor	2.0 (1.0)
SCP-REMOTE*	Remote control for SCP option. Order at least one per project to program and control fixtures	1 (.45)

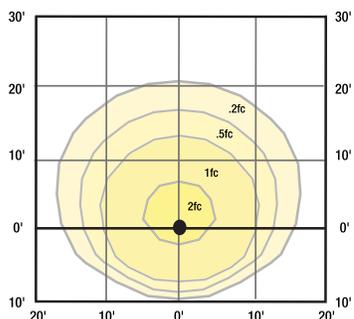
\*Must order minimum of one remote control to program dimming settings, 0-10V fully adjustable dimming with automatic daylight calibration and different time delay settings, 120V or 277V only



**Wireless and Occupancy Controls**

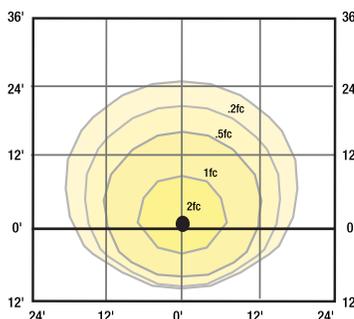
SiteSync™ Lighting Control delivers flexible control strategies for reducing power consumption and minimizing maintenance costs while delivering the right light levels with a simple and affordable wireless solution.

**PHOTOMETRICS**



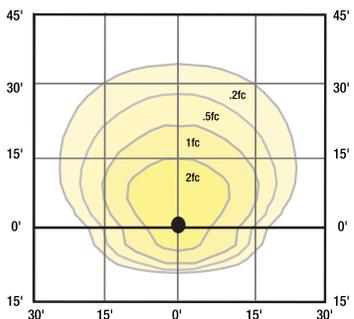
**SG1-20**

Mounting Height 10ft



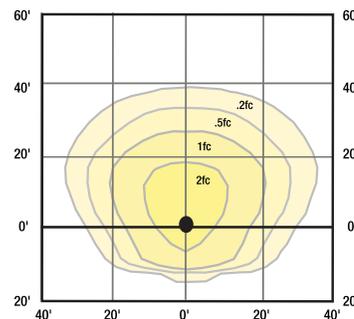
**SG1-30**

Mounting Height 12ft



**SG2-50**

Mounting Height 15ft



**SG2-80**

Mounting Height 20ft

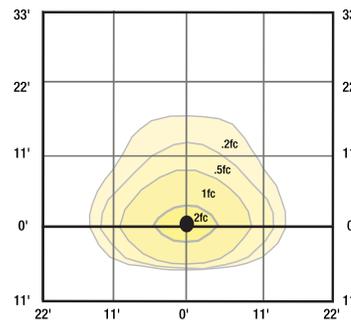


**Emergency Mode (EH)**

Battery back up feature with side indicator.

Exceeds Life Safety Code average illuminance of 1.0 fc. at 12ft mounting height. Assumes open space with no obstructions.

Diagrams for illustration purposes only, please consult factory for application layout.

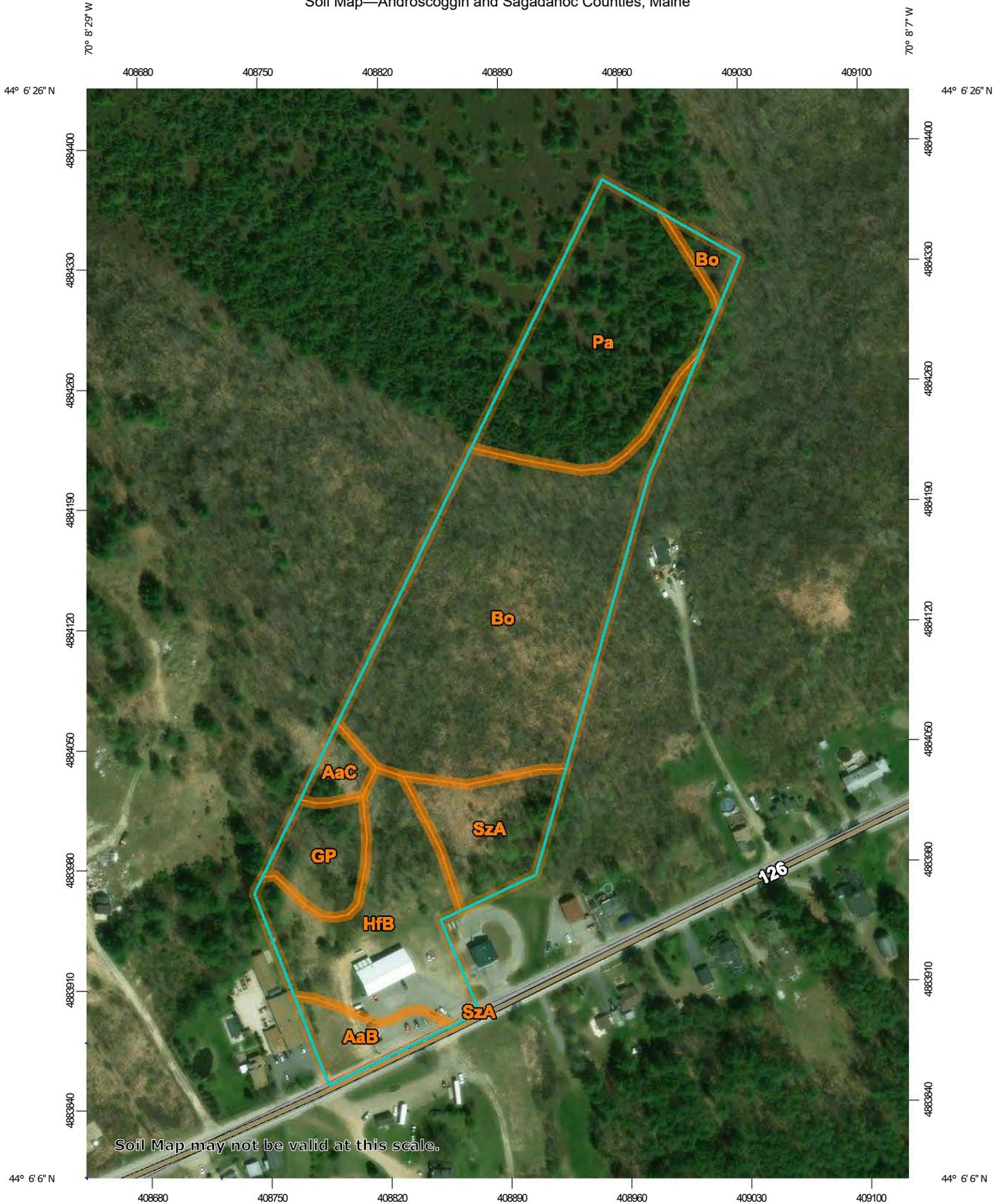


**SG2 in E or EH Emergency mode**

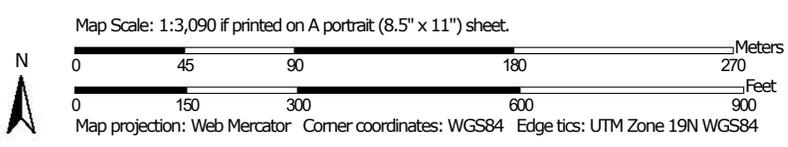
Mounting Height 11ft



Soil Map—Androscoggin and Sagadahoc Counties, Maine



Soil Map may not be valid at this scale.



## 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

- 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 20, Sep 16, 2019

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	0.5	3.7%
AaC	Adams loamy sand, 8 to 15 percent slopes	0.3	1.9%
Bo	Biddeford mucky peat, 0 to 3 percent slopes	6.0	41.4%
GP	Sand and gravel pits	0.7	5.1%
HfB	Hartland very fine sandy loam, 2 to 8 percent slopes	2.4	16.8%
Pa	Peat and Muck	3.4	23.2%
SzA	Swanton fine sandy loam, 0 to 3 percent slopes	1.1	7.8%
<b>Totals for Area of Interest</b>		<b>14.6</b>	<b>100.0%</b>

## Androscoggin and Sagadahoc Counties, Maine

### AaB—Adams loamy sand, 0 to 8 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2wqn9

*Elevation:* 10 to 2,000 feet

*Mean annual precipitation:* 31 to 95 inches

*Mean annual air temperature:* 27 to 52 degrees F

*Frost-free period:* 90 to 160 days

*Farmland classification:* Farmland of statewide importance

#### Map Unit Composition

*Adams and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Adams

##### Setting

*Landform:* Outwash terraces

*Landform position (two-dimensional):* Backslope, summit

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Sandy glaciofluvial deposits

##### Typical profile

*Ap - 0 to 7 inches:* loamy sand

*Bs - 7 to 21 inches:* sand

*BC - 21 to 27 inches:* sand

*C - 27 to 65 inches:* sand

##### Properties and qualities

*Slope:* 0 to 8 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Somewhat excessively drained

*Capacity of the most limiting layer to transmit water (Ksat):*

Moderately high to high (1.42 to 14.17 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline (0.0 to 1.9 mmhos/cm)

*Available water storage in profile:* Low (about 3.6 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3s

*Hydrologic Soil Group:* A

*Hydric soil rating:* No

## Minor Components

### Croghan

*Percent of map unit:* 5 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Hydric soil rating:* No

### Colton

*Percent of map unit:* 5 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Backslope, summit  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### Allagash

*Percent of map unit:* 3 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### Nicholville

*Percent of map unit:* 2 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Footslope, toeslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Androscoggin and Sagadahoc Counties, Maine  
Survey Area Data: Version 20, Sep 16, 2019

## Androscoggin and Sagadahoc Counties, Maine

### AaC—Adams loamy sand, 8 to 15 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2wqn8

*Elevation:* 10 to 2,000 feet

*Mean annual precipitation:* 31 to 95 inches

*Mean annual air temperature:* 27 to 52 degrees F

*Frost-free period:* 90 to 160 days

*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Adams and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Adams

##### Setting

*Landform:* Outwash terraces

*Landform position (two-dimensional):* Backslope, summit

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Sandy glaciofluvial deposits

##### Typical profile

*Ap - 0 to 7 inches:* loamy sand

*Bs - 7 to 21 inches:* sand

*BC - 21 to 27 inches:* sand

*C - 27 to 65 inches:* sand

##### Properties and qualities

*Slope:* 8 to 15 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Somewhat excessively drained

*Capacity of the most limiting layer to transmit water (Ksat):*

Moderately high to high (1.42 to 14.17 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline (0.0 to 1.9 mmhos/cm)

*Available water storage in profile:* Low (about 3.6 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 4e

*Hydrologic Soil Group:* A

*Hydric soil rating:* No

## Minor Components

### Colton

*Percent of map unit:* 8 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Summit, backslope  
*Landform position (three-dimensional):* Base slope, side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### Croghan

*Percent of map unit:* 3 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Hydric soil rating:* No

### Nicholville

*Percent of map unit:* 2 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### Sheepscot

*Percent of map unit:* 2 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Androscoggin and Sagadahoc Counties, Maine  
Survey Area Data: Version 20, Sep 16, 2019

## Androscoggin and Sagadahoc Counties, Maine

### Bo—Biddeford mucky peat, 0 to 3 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2t0jn

*Elevation:* 10 to 1,200 feet

*Mean annual precipitation:* 33 to 60 inches

*Mean annual air temperature:* 39 to 45 degrees F

*Frost-free period:* 90 to 160 days

*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Biddeford and similar soils:* 82 percent

*Minor components:* 18 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Biddeford

##### Setting

*Landform:* Marine terraces, river valleys

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Dip

*Down-slope shape:* Concave

*Across-slope shape:* Concave, linear

*Parent material:* Organic material over glaciomarine deposits

##### Typical profile

*Oe - 0 to 12 inches:* mucky peat

*Eg - 12 to 16 inches:* silt loam

*Bg - 16 to 45 inches:* silty clay

*Cg - 45 to 65 inches:* clay

##### Properties and qualities

*Slope:* 0 to 3 percent

*Percent of area covered with surface fragments:* 0.0 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Very poorly drained

*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.14 in/hr)

*Depth to water table:* About 0 inches

*Frequency of flooding:* None

*Frequency of ponding:* Frequent

*Available water storage in profile:* High (about 11.8 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 5w

*Hydrologic Soil Group:* D

*Ecological site:* Marine Terrace Depression (F144BY002ME)

*Hydric soil rating:* Yes

## Minor Components

### Scantic

*Percent of map unit:* 9 percent  
*Landform:* Marine terraces, river valleys  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Ecological site:* Marine Terrace Flat (F144BY001ME)  
*Hydric soil rating:* Yes

### Wonsqueak

*Percent of map unit:* 6 percent  
*Landform:* Marine terraces, river valleys  
*Landform position (two-dimensional):* Toeslope, footslope  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

### Swanville

*Percent of map unit:* 2 percent  
*Landform:* Lake plains, marine terraces  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* Yes

### Lamoine

*Percent of map unit:* 1 percent  
*Landform:* Marine terraces, river valleys  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Rise  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Androscoggin and Sagadahoc Counties, Maine  
Survey Area Data: Version 20, Sep 16, 2019

## Androscoggin and Sagadahoc Counties, Maine

### GP—Sand and gravel pits

#### Map Unit Setting

*National map unit symbol:* 9kd4

*Elevation:* 10 to 2,200 feet

*Mean annual precipitation:* 30 to 48 inches

*Mean annual air temperature:* 37 to 46 degrees F

*Frost-free period:* 70 to 160 days

*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Sand and gravel pits:* 90 percent

*Minor components:* 10 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Sand And Gravel Pits

##### Typical profile

*H1 - 0 to 6 inches:* extremely gravelly sand

*H2 - 6 to 60 inches:* extremely gravelly sand

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 8s

*Hydric soil rating:* No

#### Minor Components

##### Adams

*Percent of map unit:* 5 percent

*Landform:* Outwash terraces

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

##### Hinckley

*Percent of map unit:* 5 percent

*Landform:* Outwash terraces

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Androscoggin and Sagadahoc Counties, Maine

Survey Area Data: Version 20, Sep 16, 2019

## Androscoggin and Sagadahoc Counties, Maine

### HfB—Hartland very fine sandy loam, 2 to 8 percent slopes

#### Map Unit Setting

*National map unit symbol:* 9kd6

*Elevation:* 10 to 1,750 feet

*Mean annual precipitation:* 34 to 48 inches

*Mean annual air temperature:* 37 to 46 degrees F

*Frost-free period:* 80 to 160 days

*Farmland classification:* Farmland of statewide importance

#### Map Unit Composition

*Hartland and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Hartland

##### Setting

*Landform:* Lakebeds

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Coarse-silty glaciolacustrine deposits

##### Typical profile

*H1 - 0 to 10 inches:* very fine sandy loam

*H2 - 10 to 19 inches:* very fine sandy loam

*H3 - 19 to 28 inches:* very fine sandy loam

*H4 - 28 to 65 inches:* very fine sandy loam

##### Properties and qualities

*Slope:* 2 to 8 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Capacity of the most limiting layer to transmit water (Ksat):*

Moderately high to high (0.60 to 2.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* High (about 11.8 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2e

*Hydrologic Soil Group:* B

*Hydric soil rating:* No

## Minor Components

### Belgrade

*Percent of map unit:* 7 percent  
*Landform:* Lakebeds  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### Melrose

*Percent of map unit:* 3 percent  
*Landform:* Stream terraces  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### Roundabout

*Percent of map unit:* 3 percent  
*Landform:* Lakebeds  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

### Hartland, slopes > 8 percent

*Percent of map unit:* 1 percent  
*Landform:* Lakebeds  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### Hartland, slopes < 2 percent

*Percent of map unit:* 1 percent  
*Landform:* Lakebeds  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Androscoggin and Sagadahoc Counties, Maine  
Survey Area Data: Version 20, Sep 16, 2019

## Androscoggin and Sagadahoc Counties, Maine

### Pa—Peat and Muck

#### Map Unit Setting

*National map unit symbol:* 9kdz  
*Elevation:* 0 to 2,800 feet  
*Mean annual precipitation:* 28 to 48 inches  
*Mean annual air temperature:* 37 to 52 degrees F  
*Frost-free period:* 80 to 195 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Peat and similar soils:* 45 percent  
*Muck and similar soils:* 40 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Peat

##### Setting

*Landform:* Swamps  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Parent material:* Organic material

##### Typical profile

*Oe - 0 to 24 inches:* peat  
*Oi - 24 to 65 inches:* peat

##### Properties and qualities

*Slope:* 0 to 1 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Very poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):*  
Moderately high to high (1.42 to 6.00 in/hr)  
*Depth to water table:* About 0 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*Available water storage in profile:* Very high (about 18.0 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 8w  
*Hydrologic Soil Group:* A/D  
*Hydric soil rating:* Yes

#### Description of Muck

##### Setting

*Landform:* Swamps  
*Down-slope shape:* Concave

*Across-slope shape:* Concave  
*Parent material:* Organic material

**Typical profile**

*Oa1 - 0 to 6 inches:* mucky peat  
*Oa2 - 6 to 65 inches:* mucky peat

**Properties and qualities**

*Slope:* 0 to 1 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Very poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):*  
Moderately high to high (0.20 to 6.00 in/hr)  
*Depth to water table:* About 0 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*Available water storage in profile:* Very high (about 19.7 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 8w  
*Hydrologic Soil Group:* A/D  
*Hydric soil rating:* Yes

**Minor Components**

**Whitman**

*Percent of map unit:* 7 percent  
*Landform:* Till plains  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* Yes

**Scarboro**

*Percent of map unit:* 3 percent  
*Landform:* Outwash plains  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* Yes

**Biddeford**

*Percent of map unit:* 3 percent  
*Landform:* Marine terraces, coastal plains  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* Yes

**Saco**

*Percent of map unit:* 1 percent

*Landform:* Flood plains  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

**Whately**

*Percent of map unit:* 1 percent  
*Landform:* Outwash plains  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

## Data Source Information

Soil Survey Area: Androscoggin and Sagadahoc Counties, Maine  
Survey Area Data: Version 20, Sep 16, 2019

## Androscoggin and Sagadahoc Counties, Maine

### SzA—Swanton fine sandy loam, 0 to 3 percent slopes

#### Map Unit Setting

*National map unit symbol:* 9kfn  
*Elevation:* 10 to 2,100 feet  
*Mean annual precipitation:* 33 to 60 inches  
*Mean annual air temperature:* 37 to 46 degrees F  
*Frost-free period:* 90 to 195 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Swanton and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Swanton

##### Setting

*Landform:* Outwash plains  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Parent material:* Loamy glaciolacustrine deposits and/or marine deposits

##### Typical profile

*H1 - 0 to 7 inches:* fine sandy loam  
*H2 - 7 to 22 inches:* fine sandy loam  
*H3 - 22 to 65 inches:* silty clay loam

##### Properties and qualities

*Slope:* 0 to 3 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately high (0.00 to 0.20 in/hr)  
*Depth to water table:* About 0 to 18 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* High (about 9.0 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4w  
*Hydrologic Soil Group:* D  
*Hydric soil rating:* Yes

## Minor Components

### Scantic

*Percent of map unit:* 5 percent  
*Landform:* Marine terraces, river valleys  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* Yes

### Whately

*Percent of map unit:* 3 percent  
*Landform:* Outwash plains  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

### Elmwood

*Percent of map unit:* 3 percent  
*Landform:* Stream terraces  
*Landform position (two-dimensional):* Foothlope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### Naumburg

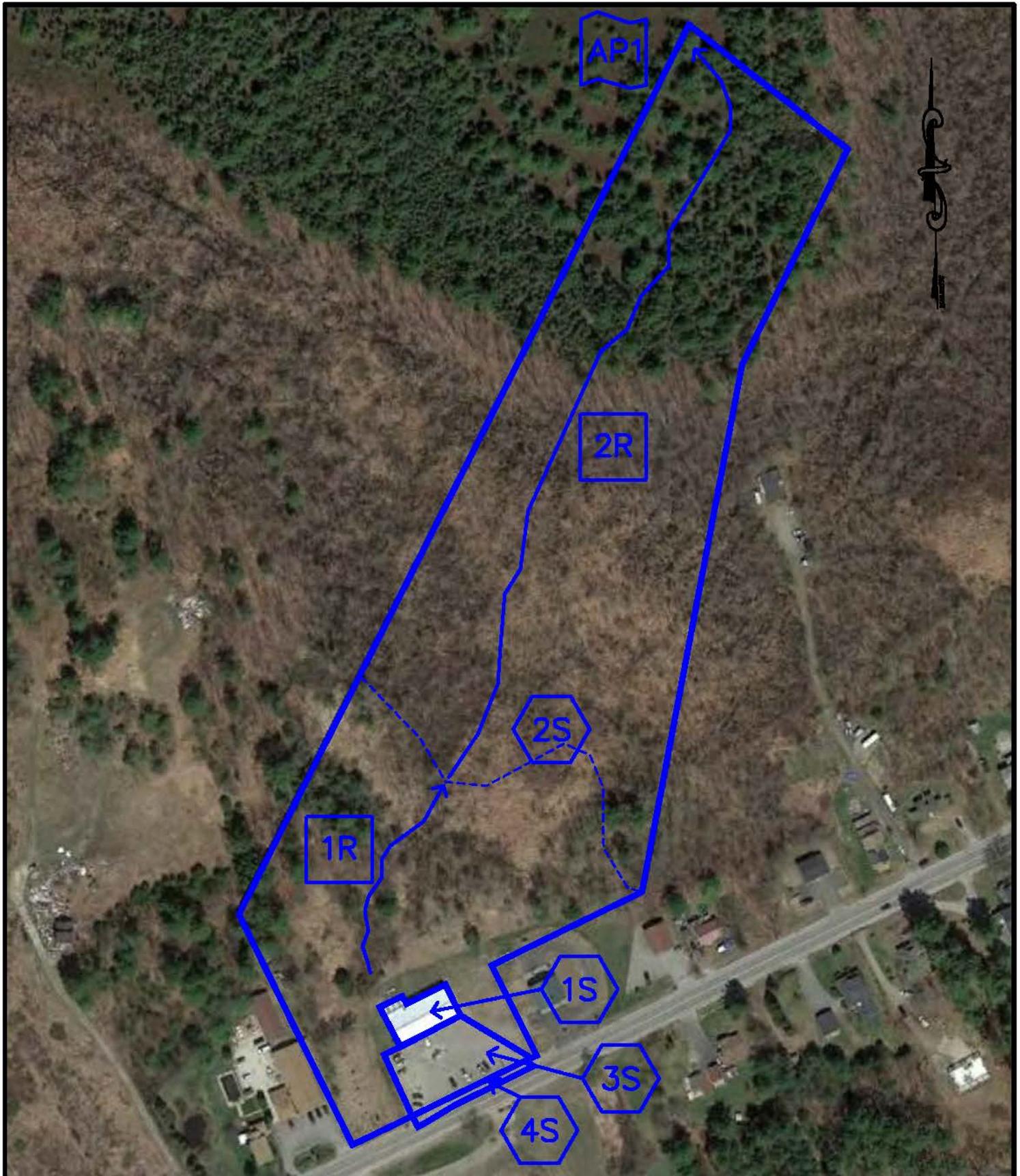
*Percent of map unit:* 2 percent  
*Landform:* Outwash plains  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

### Wonsqueak

*Percent of map unit:* 2 percent  
*Landform:* Swamps  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

## Data Source Information

Soil Survey Area: Androscoggin and Sagadahoc Counties, Maine  
Survey Area Data: Version 20, Sep 16, 2019



SHEET: 1 OF 1

**SITELINES**



119 PURINTON ROAD, SUITE A  
BRUNSWICK, ME 04011  
207.725.1200

CIVIL ENGINEERS • LAND SURVEYORS

**EXISTING CONDITIONS WATERSHED MAP**

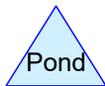
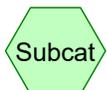
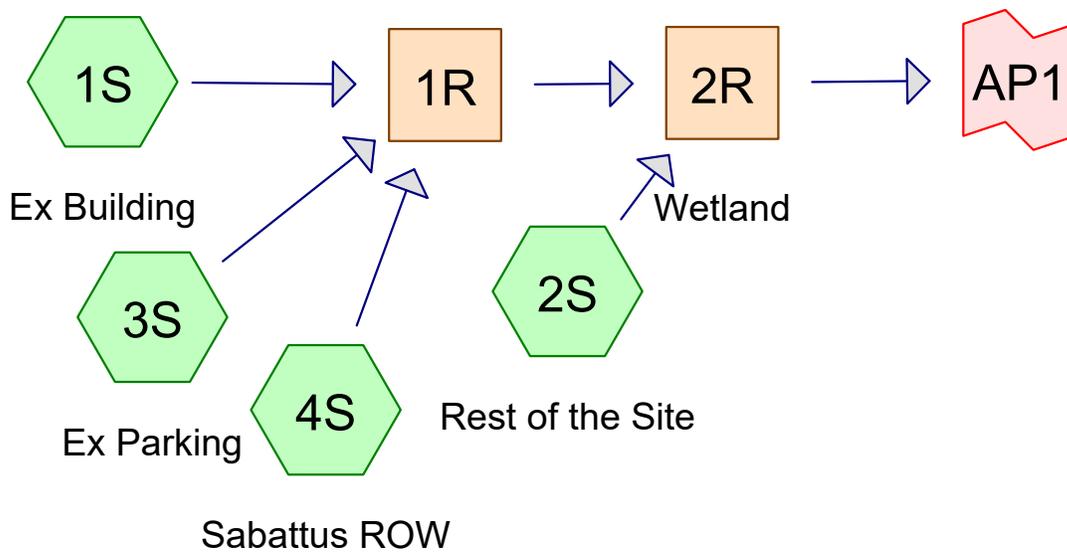
410 INDUSTRIES, LLC  
1222 SABATTUS STREET  
LEWISTON, MAINE 04240

DATE: 02-28-20

SCALE: 1"=200'

JOB: 4060

FILE: 4060-DRAINAGE



**Routing Diagram for 4060-PRE**

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**4060-PRE**

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**Area Listing (all nodes)**

Area (acres)	CN	Description (subcatchment-numbers)
0.416	98	Paved parking, HSG A (3S, 4S)
0.125	98	Roofs, HSG B (1S)
10.250	86	Wetlands, HSG D (2S)
1.274	58	Woods/grass comb., Good, HSG B (2S)
<b>12.065</b>	<b>84</b>	<b>TOTAL AREA</b>

**4060-PRE**

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

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Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Ex Building** Runoff Area=0.125 ac 100.00% Impervious Runoff Depth=2.77"  
Tc=5.0 min CN=98 Runoff=0.37 cfs 0.029 af

**Subcatchment 2S: Rest of the Site** Runoff Area=11.524 ac 0.00% Impervious Runoff Depth=1.51"  
Flow Length=400' Tc=20.3 min CN=WQ Runoff=13.41 cfs 1.449 af

**Subcatchment 3S: Ex Parking** Runoff Area=0.351 ac 100.00% Impervious Runoff Depth=2.77"  
Tc=5.0 min CN=98 Runoff=1.03 cfs 0.081 af

**Subcatchment 4S: Sabattus ROW** Runoff Area=0.065 ac 100.00% Impervious Runoff Depth=2.77"  
Tc=5.0 min CN=98 Runoff=0.19 cfs 0.015 af

**Reach 1R:** Avg. Flow Depth=0.06' Max Vel=0.94 fps Inflow=1.58 cfs 0.125 af  
n=0.030 L=315.0' S=0.0227 '/' Capacity=114.87 cfs Outflow=1.33 cfs 0.125 af

**Reach 2R: Wetland** Avg. Flow Depth=0.17' Max Vel=0.08 fps Inflow=14.62 cfs 1.574 af  
n=0.100 L=1,247.0' S=0.0004 '/' Capacity=59.44 cfs Outflow=2.33 cfs 1.440 af

**Link AP1:** Inflow=2.33 cfs 1.440 af  
Primary=2.33 cfs 1.440 af

**Total Runoff Area = 12.065 ac Runoff Volume = 1.574 af Average Runoff Depth = 1.57"**  
**95.52% Pervious = 11.524 ac 4.48% Impervious = 0.541 ac**

### Summary for Subcatchment 1S: Ex Building

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

Runoff = 0.37 cfs @ 12.07 hrs, Volume= 0.029 af, Depth= 2.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type III 24-hr 2-YR Rainfall=3.00"

Area (ac)	CN	Description
0.125	98	Roofs, HSG B
0.125	98	100.00% Impervious Area

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

### Summary for Subcatchment 2S: Rest of the Site

Runoff = 13.41 cfs @ 12.28 hrs, Volume= 1.449 af, Depth= 1.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type III 24-hr 2-YR Rainfall=3.00"

Area (ac)	CN	Description
* 10.250	86	Wetlands, HSG D
1.274	58	Woods/grass comb., Good, HSG B
11.524		Weighted Average
11.524	83	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.2	100	0.0700	0.13		<b>Sheet Flow, A-B</b> Woods: Light underbrush n= 0.400 P2= 3.10"
7.1	300	0.0200	0.71		<b>Shallow Concentrated Flow, B-C</b> Woodland Kv= 5.0 fps
20.3	400	Total			

### Summary for Subcatchment 3S: Ex Parking

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

Runoff = 1.03 cfs @ 12.07 hrs, Volume= 0.081 af, Depth= 2.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type III 24-hr 2-YR Rainfall=3.00"

**4060-PRE**

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

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Area (ac)	CN	Description
0.351	98	Paved parking, HSG A
0.351	98	100.00% Impervious Area

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

**Summary for Subcatchment 4S: Sabattus ROW**

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

Runoff = 0.19 cfs @ 12.07 hrs, Volume= 0.015 af, Depth= 2.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type III 24-hr 2-YR Rainfall=3.00"

Area (ac)	CN	Description
0.065	98	Paved parking, HSG A
0.065	98	100.00% Impervious Area

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

**Summary for Reach 1R:**

Inflow Area = 0.541 ac, 100.00% Impervious, Inflow Depth = 2.77" for 2-YR event  
Inflow = 1.58 cfs @ 12.07 hrs, Volume= 0.125 af  
Outflow = 1.33 cfs @ 12.22 hrs, Volume= 0.125 af, Atten= 16%, Lag= 8.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Max. Velocity= 0.94 fps, Min. Travel Time= 5.6 min  
Avg. Velocity = 0.28 fps, Avg. Travel Time= 18.8 min

Peak Storage= 445 cf @ 12.12 hrs  
Average Depth at Peak Storage= 0.06'  
Bank-Full Depth= 0.50' Flow Area= 35.0 sf, Capacity= 114.87 cfs

20.00' x 0.50' deep channel, n= 0.030  
Side Slope Z-value= 100.0 ' ' Top Width= 120.00'  
Length= 315.0' Slope= 0.0227 ' '  
Inlet Invert= 246.15', Outlet Invert= 239.00'



Summary for Reach 2R: Wetland

[62] Hint: Exceeded Reach 1R OUTLET depth by 0.65' @ 13.30 hrs

Inflow Area = 12.065 ac, 4.48% Impervious, Inflow Depth = 1.57" for 2-YR event
Inflow = 14.62 cfs @ 12.27 hrs, Volume= 1.574 af
Outflow = 2.33 cfs @ 17.29 hrs, Volume= 1.440 af, Atten= 84%, Lag= 301.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.08 fps, Min. Travel Time= 246.3 min
Avg. Velocity = 0.04 fps, Avg. Travel Time= 528.7 min

Peak Storage= 34,485 cf @ 13.19 hrs
Average Depth at Peak Storage= 0.17'
Bank-Full Depth= 1.00' Flow Area= 250.0 sf, Capacity= 59.44 cfs

150.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools
Side Slope Z-value= 100.0 ' ' Top Width= 350.00'
Length= 1,247.0' Slope= 0.0004 ' '
Inlet Invert= 239.50', Outlet Invert= 239.00'



Summary for Link AP1:

Inflow Area = 12.065 ac, 4.48% Impervious, Inflow Depth > 1.43" for 2-YR event
Inflow = 2.33 cfs @ 17.29 hrs, Volume= 1.440 af
Primary = 2.33 cfs @ 17.29 hrs, Volume= 1.440 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

**4060-PRE**

Type III 24-hr 10-YR Rainfall=4.30"

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Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-Q  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Ex Building** Runoff Area=0.125 ac 100.00% Impervious Runoff Depth=4.06"  
 Tc=5.0 min CN=98 Runoff=0.53 cfs 0.042 af

**Subcatchment 2S: Rest of the Site** Runoff Area=11.524 ac 0.00% Impervious Runoff Depth=2.60"  
 Flow Length=400' Tc=20.3 min CN=WQ Runoff=23.10 cfs 2.494 af

**Subcatchment 3S: Ex Parking** Runoff Area=0.351 ac 100.00% Impervious Runoff Depth=4.06"  
 Tc=5.0 min CN=98 Runoff=1.48 cfs 0.119 af

**Subcatchment 4S: Sabattus ROW** Runoff Area=0.065 ac 100.00% Impervious Runoff Depth=4.06"  
 Tc=5.0 min CN=98 Runoff=0.27 cfs 0.022 af

**Reach 1R:** Avg. Flow Depth=0.07' Max Vel=1.07 fps Inflow=2.29 cfs 0.183 af  
 n=0.030 L=315.0' S=0.0227 '/' Capacity=114.87 cfs Outflow=1.94 cfs 0.183 af

**Reach 2R: Wetland** Avg. Flow Depth=0.26' Max Vel=0.11 fps Inflow=24.81 cfs 2.677 af  
 n=0.100 L=1,247.0' S=0.0004 '/' Capacity=59.44 cfs Outflow=5.06 cfs 2.537 af

**Link AP1:** Inflow=5.06 cfs 2.537 af  
 Primary=5.06 cfs 2.537 af

**Total Runoff Area = 12.065 ac Runoff Volume = 2.677 af Average Runoff Depth = 2.66"**  
**95.52% Pervious = 11.524 ac 4.48% Impervious = 0.541 ac**

**Summary for Subcatchment 1S: Ex Building**

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

Runoff = 0.53 cfs @ 12.07 hrs, Volume= 0.042 af, Depth= 4.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10-YR Rainfall=4.30"

Area (ac)	CN	Description
0.125	98	Roofs, HSG B
0.125	98	100.00% Impervious Area

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

**Summary for Subcatchment 2S: Rest of the Site**

Runoff = 23.10 cfs @ 12.28 hrs, Volume= 2.494 af, Depth= 2.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10-YR Rainfall=4.30"

Area (ac)	CN	Description
* 10.250	86	Wetlands, HSG D
1.274	58	Woods/grass comb., Good, HSG B
11.524		Weighted Average
11.524	83	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.2	100	0.0700	0.13		<b>Sheet Flow, A-B</b> Woods: Light underbrush n= 0.400 P2= 3.10"
7.1	300	0.0200	0.71		<b>Shallow Concentrated Flow, B-C</b> Woodland Kv= 5.0 fps
20.3	400	Total			

**Summary for Subcatchment 3S: Ex Parking**

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

Runoff = 1.48 cfs @ 12.07 hrs, Volume= 0.119 af, Depth= 4.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10-YR Rainfall=4.30"



Summary for Reach 2R: Wetland

[62] Hint: Exceeded Reach 1R OUTLET depth by 0.74' @ 13.10 hrs

Inflow Area = 12.065 ac, 4.48% Impervious, Inflow Depth = 2.66" for 10-YR event
Inflow = 24.81 cfs @ 12.27 hrs, Volume= 2.677 af
Outflow = 5.06 cfs @ 16.10 hrs, Volume= 2.537 af, Atten= 80%, Lag= 230.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.11 fps, Min. Travel Time= 188.0 min
Avg. Velocity = 0.05 fps, Avg. Travel Time= 450.9 min

Peak Storage= 57,070 cf @ 12.97 hrs
Average Depth at Peak Storage= 0.26'
Bank-Full Depth= 1.00' Flow Area= 250.0 sf, Capacity= 59.44 cfs

150.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools
Side Slope Z-value= 100.0 '/' Top Width= 350.00'
Length= 1,247.0' Slope= 0.0004 '/'
Inlet Invert= 239.50', Outlet Invert= 239.00'



Summary for Link AP1:

Inflow Area = 12.065 ac, 4.48% Impervious, Inflow Depth > 2.52" for 10-YR event
Inflow = 5.06 cfs @ 16.10 hrs, Volume= 2.537 af
Primary = 5.06 cfs @ 16.10 hrs, Volume= 2.537 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

**4060-PRE**

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

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Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-Q  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Ex Building** Runoff Area=0.125 ac 100.00% Impervious Runoff Depth=5.16"  
 Tc=5.0 min CN=98 Runoff=0.67 cfs 0.054 af

**Subcatchment 2S: Rest of the Site** Runoff Area=11.524 ac 0.00% Impervious Runoff Depth=3.57"  
 Flow Length=400' Tc=20.3 min CN=WQ Runoff=31.69 cfs 3.430 af

**Subcatchment 3S: Ex Parking** Runoff Area=0.351 ac 100.00% Impervious Runoff Depth=5.16"  
 Tc=5.0 min CN=98 Runoff=1.87 cfs 0.151 af

**Subcatchment 4S: Sabattus ROW** Runoff Area=0.065 ac 100.00% Impervious Runoff Depth=5.16"  
 Tc=5.0 min CN=98 Runoff=0.35 cfs 0.028 af

**Reach 1R:** Avg. Flow Depth=0.08' Max Vel=1.15 fps Inflow=2.88 cfs 0.233 af  
 n=0.030 L=315.0' S=0.0227 '/' Capacity=114.87 cfs Outflow=2.45 cfs 0.233 af

**Reach 2R: Wetland** Avg. Flow Depth=0.33' Max Vel=0.13 fps Inflow=33.74 cfs 3.662 af  
 n=0.100 L=1,247.0' S=0.0004 '/' Capacity=59.44 cfs Outflow=7.84 cfs 3.517 af

**Link AP1:** Inflow=7.84 cfs 3.517 af  
 Primary=7.84 cfs 3.517 af

**Total Runoff Area = 12.065 ac Runoff Volume = 3.662 af Average Runoff Depth = 3.64"**  
**95.52% Pervious = 11.524 ac 4.48% Impervious = 0.541 ac**

**Summary for Subcatchment 1S: Ex Building**

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

Runoff = 0.67 cfs @ 12.07 hrs, Volume= 0.054 af, Depth= 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25-YR Rainfall=5.40"

Area (ac)	CN	Description
0.125	98	Roofs, HSG B
0.125	98	100.00% Impervious Area

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

**Summary for Subcatchment 2S: Rest of the Site**

Runoff = 31.69 cfs @ 12.27 hrs, Volume= 3.430 af, Depth= 3.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25-YR Rainfall=5.40"

Area (ac)	CN	Description
* 10.250	86	Wetlands, HSG D
1.274	58	Woods/grass comb., Good, HSG B
11.524		Weighted Average
11.524	83	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.2	100	0.0700	0.13		<b>Sheet Flow, A-B</b> Woods: Light underbrush n= 0.400 P2= 3.10"
7.1	300	0.0200	0.71		<b>Shallow Concentrated Flow, B-C</b> Woodland Kv= 5.0 fps
20.3	400	Total			

**Summary for Subcatchment 3S: Ex Parking**

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

Runoff = 1.87 cfs @ 12.07 hrs, Volume= 0.151 af, Depth= 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25-YR Rainfall=5.40"

**4060-PRE**

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

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Area (ac)	CN	Description
0.351	98	Paved parking, HSG A
0.351	98	100.00% Impervious Area

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

**Summary for Subcatchment 4S: Sabattus ROW**

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

Runoff = 0.35 cfs @ 12.07 hrs, Volume= 0.028 af, Depth= 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25-YR Rainfall=5.40"

Area (ac)	CN	Description
0.065	98	Paved parking, HSG A
0.065	98	100.00% Impervious Area

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

**Summary for Reach 1R:**

Inflow Area = 0.541 ac, 100.00% Impervious, Inflow Depth = 5.16" for 25-YR event

Inflow = 2.88 cfs @ 12.07 hrs, Volume= 0.233 af

Outflow = 2.45 cfs @ 12.20 hrs, Volume= 0.233 af, Atten= 15%, Lag= 7.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Max. Velocity= 1.15 fps, Min. Travel Time= 4.5 min

Avg. Velocity = 0.33 fps, Avg. Travel Time= 15.8 min

Peak Storage= 687 cf @ 12.12 hrs

Average Depth at Peak Storage= 0.08'

Bank-Full Depth= 0.50' Flow Area= 35.0 sf, Capacity= 114.87 cfs

20.00' x 0.50' deep channel, n= 0.030

Side Slope Z-value= 100.0 ' ' Top Width= 120.00'

Length= 315.0' Slope= 0.0227 ' '

Inlet Invert= 246.15', Outlet Invert= 239.00'



Summary for Reach 2R: Wetland

[62] Hint: Exceeded Reach 1R OUTLET depth by 0.81' @ 12.95 hrs

Inflow Area = 12.065 ac, 4.48% Impervious, Inflow Depth = 3.64" for 25-YR event
Inflow = 33.74 cfs @ 12.27 hrs, Volume= 3.662 af
Outflow = 7.84 cfs @ 15.59 hrs, Volume= 3.517 af, Atten= 77%, Lag= 199.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.13 fps, Min. Travel Time= 162.3 min
Avg. Velocity = 0.05 fps, Avg. Travel Time= 409.7 min

Peak Storage= 76,321 cf @ 12.88 hrs
Average Depth at Peak Storage= 0.33'
Bank-Full Depth= 1.00' Flow Area= 250.0 sf, Capacity= 59.44 cfs

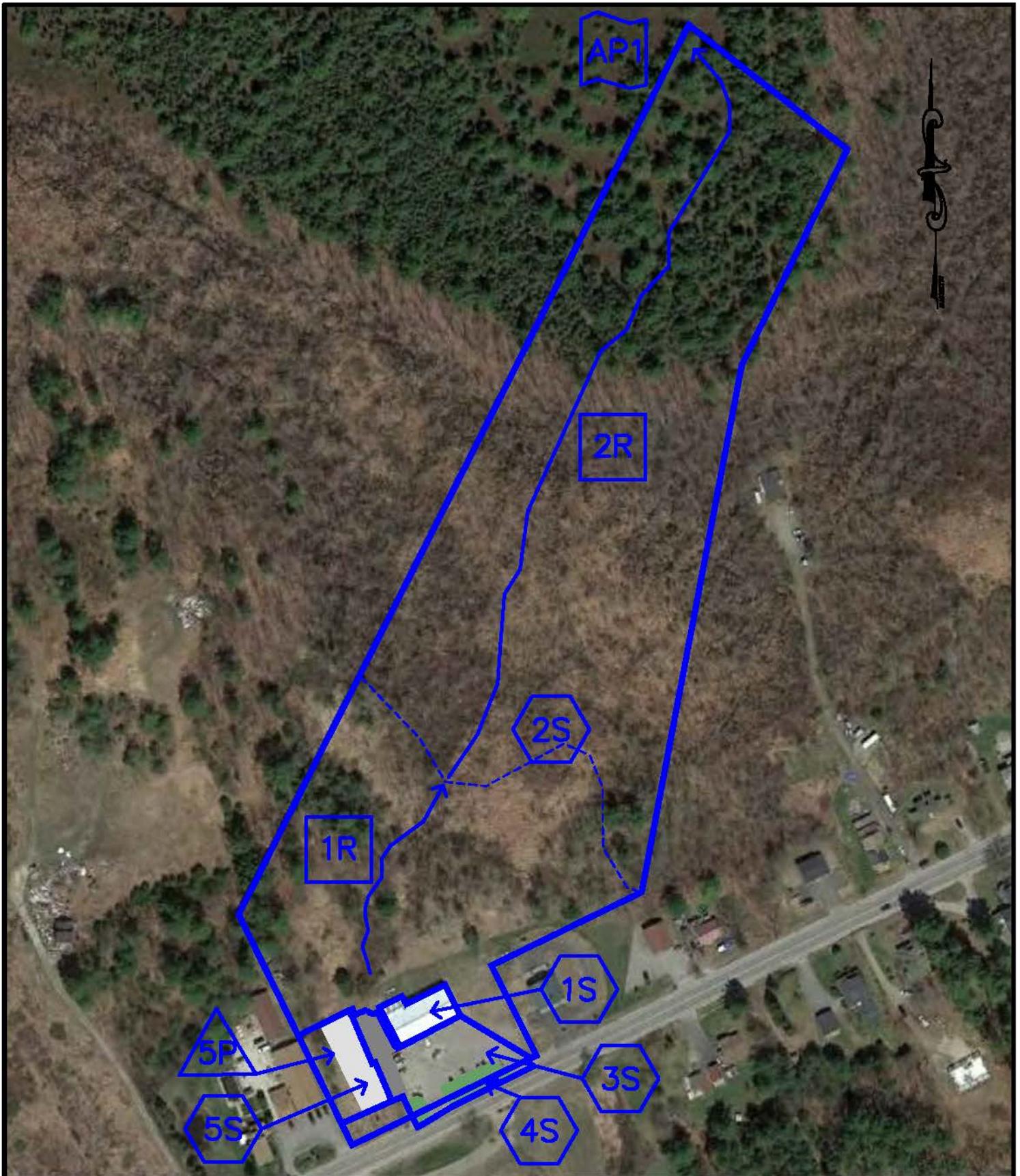
150.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools
Side Slope Z-value= 100.0 '/' Top Width= 350.00'
Length= 1,247.0' Slope= 0.0004 '/'
Inlet Invert= 239.50', Outlet Invert= 239.00'



Summary for Link AP1:

Inflow Area = 12.065 ac, 4.48% Impervious, Inflow Depth > 3.50" for 25-YR event
Inflow = 7.84 cfs @ 15.59 hrs, Volume= 3.517 af
Primary = 7.84 cfs @ 15.59 hrs, Volume= 3.517 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs



SHEET: 1 OF 1

**SITELINES**

119 PURINTON ROAD, SUITE A  
 BRUNSWICK, ME 04011  
 207.725.1200



CIVIL ENGINEERS ■ LAND SURVEYORS

**PROPOSED CONDITIONS WATERSHED MAP**

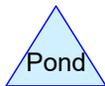
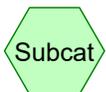
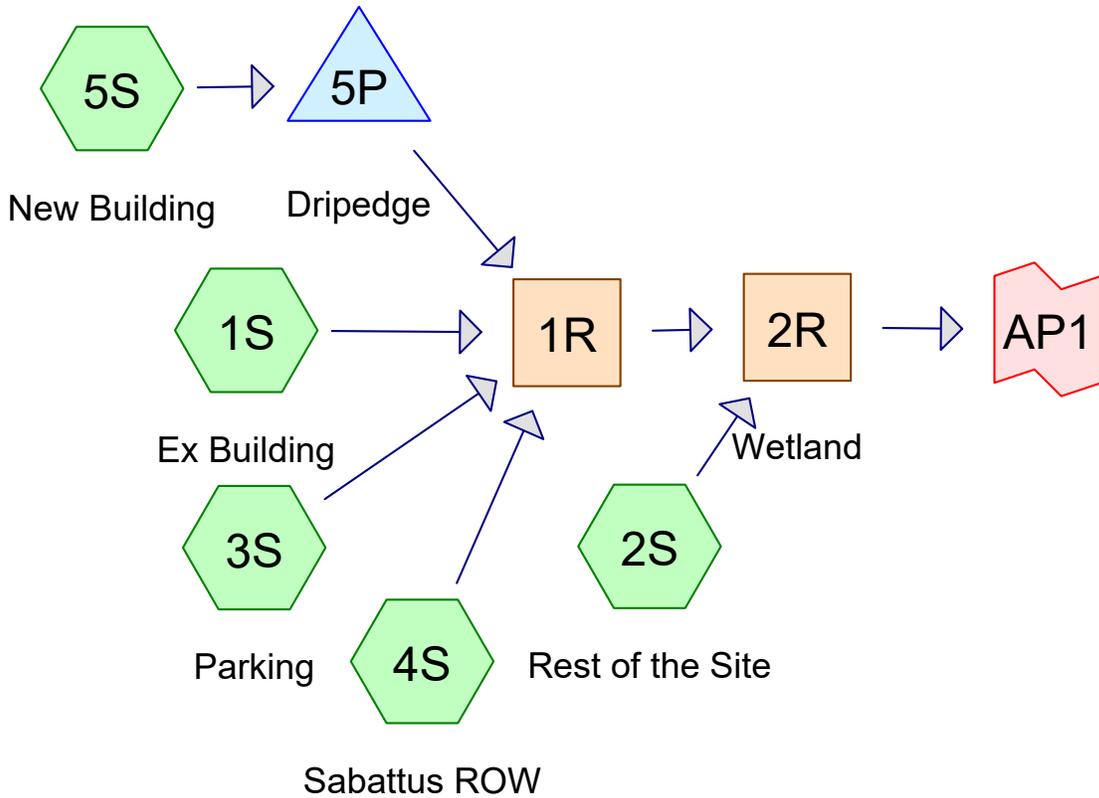
410 INDUSTRIES, LLC  
 1222 SABATTUS STREET  
 LEWISTON, MAINE 04240

DATE: 02-28-20

SCALE: 1"=200'

JOB: 4060

FILE: 4060-DRAINAGE



## 4060-POST

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### Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.214	39	>75% Grass cover, Good, HSG A (2S, 4S, 5S)
0.415	98	Paved parking, HSG A (3S, 4S)
0.172	98	Roofs, HSG A (5S)
0.125	98	Roofs, HSG B (1S)
10.250	86	Wetlands, HSG D (2S)
0.889	58	Woods/grass comb., Good, HSG B (2S)
<b>12.065</b>	<b>84</b>	<b>TOTAL AREA</b>

**4060-POST**

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

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Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-Q  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Ex Building** Runoff Area=0.125 ac 100.00% Impervious Runoff Depth=2.77"  
 Tc=5.0 min CN=98 Runoff=0.37 cfs 0.029 af

**Subcatchment 2S: Rest of the Site** Runoff Area=11.231 ac 0.00% Impervious Runoff Depth=1.54"  
 Flow Length=400' Tc=20.3 min CN=WQ Runoff=13.39 cfs 1.440 af

**Subcatchment 3S: Parking** Runoff Area=0.390 ac 100.00% Impervious Runoff Depth=2.77"  
 Tc=5.0 min CN=98 Runoff=1.14 cfs 0.090 af

**Subcatchment 4S: Sabattus ROW** Runoff Area=0.065 ac 38.46% Impervious Runoff Depth=1.06"  
 Tc=0.0 min CN=WQ Runoff=0.08 cfs 0.006 af

**Subcatchment 5S: New Building** Runoff Area=0.254 ac 67.72% Impervious Runoff Depth=1.87"  
 Tc=5.0 min CN=WQ Runoff=0.50 cfs 0.040 af

**Reach 1R:** Avg. Flow Depth=0.06' Max Vel=1.02 fps Inflow=1.93 cfs 0.148 af  
 n=0.030 L=315.0' S=0.0227 '/' Capacity=114.87 cfs Outflow=1.66 cfs 0.148 af

**Reach 2R: Wetland** Avg. Flow Depth=0.17' Max Vel=0.09 fps Inflow=14.92 cfs 1.589 af  
 n=0.100 L=1,247.0' S=0.0004 '/' Capacity=59.44 cfs Outflow=2.39 cfs 1.456 af

**Pond 5P: Dripedge** Peak Elev=247.37' Storage=96 cf Inflow=0.50 cfs 0.040 af  
 Discarded=0.01 cfs 0.016 af Primary=0.39 cfs 0.024 af Outflow=0.41 cfs 0.040 af

**Link AP1:** Inflow=2.39 cfs 1.456 af  
 Primary=2.39 cfs 1.456 af

**Total Runoff Area = 12.065 ac Runoff Volume = 1.605 af Average Runoff Depth = 1.60"**  
**94.10% Pervious = 11.353 ac 5.90% Impervious = 0.712 ac**

**4060-POST**

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

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**Summary for Subcatchment 1S: Ex Building**

[49] Hint: Tc&lt;2dt may require smaller dt

Runoff = 0.37 cfs @ 12.07 hrs, Volume= 0.029 af, Depth= 2.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type III 24-hr 2-YR Rainfall=3.00"

Area (ac)	CN	Description
0.125	98	Roofs, HSG B
0.125	98	100.00% Impervious Area

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

**Summary for Subcatchment 2S: Rest of the Site**

Runoff = 13.39 cfs @ 12.28 hrs, Volume= 1.440 af, Depth= 1.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type III 24-hr 2-YR Rainfall=3.00"

Area (ac)	CN	Description
* 10.250	86	Wetlands, HSG D
0.889	58	Woods/grass comb., Good, HSG B
0.092	39	>75% Grass cover, Good, HSG A
11.231		Weighted Average
11.231	83	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.2	100	0.0700	0.13		<b>Sheet Flow, A-B</b> Woods: Light underbrush n= 0.400 P2= 3.10"
7.1	300	0.0200	0.71		<b>Shallow Concentrated Flow, B-C</b> Woodland Kv= 5.0 fps
20.3	400	Total			

**Summary for Subcatchment 3S: Parking**

[49] Hint: Tc&lt;2dt may require smaller dt

Runoff = 1.14 cfs @ 12.07 hrs, Volume= 0.090 af, Depth= 2.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type III 24-hr 2-YR Rainfall=3.00"

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

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Area (ac)	CN	Description
0.390	98	Paved parking, HSG A
0.390	98	100.00% Impervious Area

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

**Summary for Subcatchment 4S: Sabattus ROW**

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.08 cfs @ 12.00 hrs, Volume= 0.006 af, Depth= 1.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type III 24-hr 2-YR Rainfall=3.00"

Area (ac)	CN	Description
0.025	98	Paved parking, HSG A
0.040	39	>75% Grass cover, Good, HSG A
0.065		Weighted Average
0.040	39	61.54% Pervious Area
0.025	98	38.46% Impervious Area

**Summary for Subcatchment 5S: New Building**

[49] Hint: Tc&lt;2dt may require smaller dt

Runoff = 0.50 cfs @ 12.07 hrs, Volume= 0.040 af, Depth= 1.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type III 24-hr 2-YR Rainfall=3.00"

Area (ac)	CN	Description
0.172	98	Roofs, HSG A
0.082	39	>75% Grass cover, Good, HSG A
0.254		Weighted Average
0.082	39	32.28% Pervious Area
0.172	98	67.72% Impervious Area

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

**Summary for Reach 1R:**

Inflow Area = 0.834 ac, 85.37% Impervious, Inflow Depth = 2.14" for 2-YR event  
 Inflow = 1.93 cfs @ 12.07 hrs, Volume= 0.148 af  
 Outflow = 1.66 cfs @ 12.21 hrs, Volume= 0.148 af, Atten= 14%, Lag= 8.6 min

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

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Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Max. Velocity= 1.02 fps, Min. Travel Time= 5.2 min  
Avg. Velocity = 0.29 fps, Avg. Travel Time= 18.3 min

Peak Storage= 518 cf @ 12.13 hrs  
Average Depth at Peak Storage= 0.06'  
Bank-Full Depth= 0.50' Flow Area= 35.0 sf, Capacity= 114.87 cfs

20.00' x 0.50' deep channel, n= 0.030 Short grass  
Side Slope Z-value= 100.0 '/' Top Width= 120.00'  
Length= 315.0' Slope= 0.0227 '/'  
Inlet Invert= 246.15', Outlet Invert= 239.00'



**Summary for Reach 2R: Wetland**

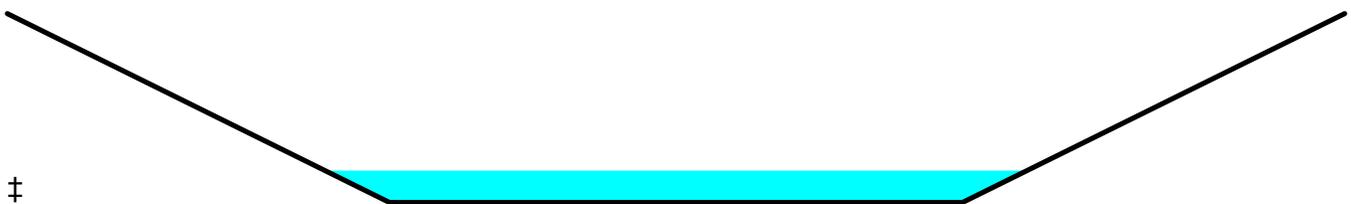
[62] Hint: Exceeded Reach 1R OUTLET depth by 0.65' @ 13.30 hrs

Inflow Area =	12.065 ac,	5.90% Impervious,	Inflow Depth = 1.58"	for 2-YR event
Inflow =	14.92 cfs @	12.27 hrs,	Volume=	1.589 af
Outflow =	2.39 cfs @	17.24 hrs,	Volume=	1.456 af, Atten= 84%, Lag= 298.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Max. Velocity= 0.09 fps, Min. Travel Time= 244.1 min  
Avg. Velocity = 0.04 fps, Avg. Travel Time= 528.1 min

Peak Storage= 35,046 cf @ 13.17 hrs  
Average Depth at Peak Storage= 0.17'  
Bank-Full Depth= 1.00' Flow Area= 250.0 sf, Capacity= 59.44 cfs

150.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools  
Side Slope Z-value= 100.0 '/' Top Width= 350.00'  
Length= 1,247.0' Slope= 0.0004 '/'  
Inlet Invert= 239.50', Outlet Invert= 239.00'



**Summary for Pond 5P: Dripedge**

Inflow Area = 0.254 ac, 67.72% Impervious, Inflow Depth = 1.87" for 2-YR event  
 Inflow = 0.50 cfs @ 12.07 hrs, Volume= 0.040 af  
 Outflow = 0.41 cfs @ 12.13 hrs, Volume= 0.040 af, Atten= 19%, Lag= 3.8 min  
 Discarded = 0.01 cfs @ 8.35 hrs, Volume= 0.016 af  
 Primary = 0.39 cfs @ 12.13 hrs, Volume= 0.024 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
 Peak Elev= 247.37' @ 12.13 hrs Surf.Area= 225 sf Storage= 96 cf

Plug-Flow detention time= 5.1 min calculated for 0.040 af (100% of inflow)  
 Center-of-Mass det. time= 5.1 min ( 761.9 - 756.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	246.50'	259 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc) 676 cf Overall - 29 cf Embedded = 647 cf x 40.0% Voids
#2	246.75'	29 cf	<b>6.0" Round Pipe Storage</b> Inside #1 L= 150.0'
		288 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
246.50	225	0	0	225
247.49	225	223	223	278
247.50	450	3	226	503
248.50	450	450	676	578

Device	Routing	Invert	Outlet Devices
#1	Primary	246.55'	<b>6.0" Round Culvert</b> L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 246.55' / 246.25' S= 0.0030 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Discarded	246.50'	<b>2.410 in/hr Exfiltration over Surface area</b>

**Discarded OutFlow** Max=0.01 cfs @ 8.35 hrs HW=246.52' (Free Discharge)  
 ↳2=Exfiltration (Exfiltration Controls 0.01 cfs)

**Primary OutFlow** Max=0.39 cfs @ 12.13 hrs HW=247.35' (Free Discharge)  
 ↳1=Culvert (Barrel Controls 0.39 cfs @ 1.98 fps)

**Summary for Link AP1:**

Inflow Area = 12.065 ac, 5.90% Impervious, Inflow Depth > 1.45" for 2-YR event  
 Inflow = 2.39 cfs @ 17.24 hrs, Volume= 1.456 af  
 Primary = 2.39 cfs @ 17.24 hrs, Volume= 1.456 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

**4060-POST**

Type III 24-hr 10-YR Rainfall=4.30"

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Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-Q  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Ex Building** Runoff Area=0.125 ac 100.00% Impervious Runoff Depth=4.06"  
 Tc=5.0 min CN=98 Runoff=0.53 cfs 0.042 af

**Subcatchment 2S: Rest of the Site** Runoff Area=11.231 ac 0.00% Impervious Runoff Depth=2.64"  
 Flow Length=400' Tc=20.3 min CN=WQ Runoff=22.92 cfs 2.469 af

**Subcatchment 3S: Parking** Runoff Area=0.390 ac 100.00% Impervious Runoff Depth=4.06"  
 Tc=5.0 min CN=98 Runoff=1.65 cfs 0.132 af

**Subcatchment 4S: Sabattus ROW** Runoff Area=0.065 ac 38.46% Impervious Runoff Depth=1.61"  
 Tc=0.0 min CN=WQ Runoff=0.12 cfs 0.009 af

**Subcatchment 5S: New Building** Runoff Area=0.254 ac 67.72% Impervious Runoff Depth=2.78"  
 Tc=5.0 min CN=WQ Runoff=0.73 cfs 0.059 af

**Reach 1R:** Avg. Flow Depth=0.08' Max Vel=1.14 fps Inflow=2.72 cfs 0.222 af  
 n=0.030 L=315.0' S=0.0227 '/' Capacity=114.87 cfs Outflow=2.38 cfs 0.222 af

**Reach 2R: Wetland** Avg. Flow Depth=0.26' Max Vel=0.11 fps Inflow=25.06 cfs 2.691 af  
 n=0.100 L=1,247.0' S=0.0004 '/' Capacity=59.44 cfs Outflow=5.14 cfs 2.551 af

**Pond 5P: Dripedge** Peak Elev=247.79' Storage=160 cf Inflow=0.73 cfs 0.059 af  
 Discarded=0.03 cfs 0.020 af Primary=0.51 cfs 0.039 af Outflow=0.54 cfs 0.059 af

**Link AP1:** Inflow=5.14 cfs 2.551 af  
 Primary=5.14 cfs 2.551 af

**Total Runoff Area = 12.065 ac Runoff Volume = 2.711 af Average Runoff Depth = 2.70"**  
**94.10% Pervious = 11.353 ac 5.90% Impervious = 0.712 ac**

**4060-POST**

Type III 24-hr 10-YR Rainfall=4.30"

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**Summary for Subcatchment 1S: Ex Building**

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

Runoff = 0.53 cfs @ 12.07 hrs, Volume= 0.042 af, Depth= 4.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10-YR Rainfall=4.30"

Area (ac)	CN	Description
0.125	98	Roofs, HSG B
0.125	98	100.00% Impervious Area

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

**Summary for Subcatchment 2S: Rest of the Site**

Runoff = 22.92 cfs @ 12.28 hrs, Volume= 2.469 af, Depth= 2.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10-YR Rainfall=4.30"

Area (ac)	CN	Description
* 10.250	86	Wetlands, HSG D
0.889	58	Woods/grass comb., Good, HSG B
0.092	39	>75% Grass cover, Good, HSG A
11.231		Weighted Average
11.231	83	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.2	100	0.0700	0.13		<b>Sheet Flow, A-B</b> Woods: Light underbrush n= 0.400 P2= 3.10"
7.1	300	0.0200	0.71		<b>Shallow Concentrated Flow, B-C</b> Woodland Kv= 5.0 fps
20.3	400	Total			

**Summary for Subcatchment 3S: Parking**

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

Runoff = 1.65 cfs @ 12.07 hrs, Volume= 0.132 af, Depth= 4.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10-YR Rainfall=4.30"

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Type III 24-hr 10-YR Rainfall=4.30"

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Area (ac)	CN	Description
0.390	98	Paved parking, HSG A
0.390	98	100.00% Impervious Area

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

**Summary for Subcatchment 4S: Sabattus ROW**

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.12 cfs @ 12.00 hrs, Volume= 0.009 af, Depth= 1.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10-YR Rainfall=4.30"

Area (ac)	CN	Description
0.025	98	Paved parking, HSG A
0.040	39	>75% Grass cover, Good, HSG A
0.065		Weighted Average
0.040	39	61.54% Pervious Area
0.025	98	38.46% Impervious Area

**Summary for Subcatchment 5S: New Building**

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

Runoff = 0.73 cfs @ 12.07 hrs, Volume= 0.059 af, Depth= 2.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10-YR Rainfall=4.30"

Area (ac)	CN	Description
0.172	98	Roofs, HSG A
0.082	39	>75% Grass cover, Good, HSG A
0.254		Weighted Average
0.082	39	32.28% Pervious Area
0.172	98	67.72% Impervious Area

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

**Summary for Reach 1R:**

Inflow Area = 0.834 ac, 85.37% Impervious, Inflow Depth = 3.20" for 10-YR event

Inflow = 2.72 cfs @ 12.07 hrs, Volume= 0.222 af

Outflow = 2.38 cfs @ 12.20 hrs, Volume= 0.222 af, Atten= 13%, Lag= 7.8 min

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Type III 24-hr 10-YR Rainfall=4.30"

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Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Max. Velocity= 1.14 fps, Min. Travel Time= 4.6 min  
Avg. Velocity = 0.32 fps, Avg. Travel Time= 16.4 min

Peak Storage= 669 cf @ 12.12 hrs  
Average Depth at Peak Storage= 0.08'  
Bank-Full Depth= 0.50' Flow Area= 35.0 sf, Capacity= 114.87 cfs

20.00' x 0.50' deep channel, n= 0.030 Short grass  
Side Slope Z-value= 100.0 '/' Top Width= 120.00'  
Length= 315.0' Slope= 0.0227 '/'  
Inlet Invert= 246.15', Outlet Invert= 239.00'



**Summary for Reach 2R: Wetland**

[62] Hint: Exceeded Reach 1R OUTLET depth by 0.74' @ 13.10 hrs

Inflow Area =	12.065 ac,	5.90% Impervious,	Inflow Depth = 2.68"	for 10-YR event
Inflow =	25.06 cfs @	12.27 hrs,	Volume=	2.691 af
Outflow =	5.14 cfs @	16.07 hrs,	Volume=	2.551 af, Atten= 79%, Lag= 228.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Max. Velocity= 0.11 fps, Min. Travel Time= 186.9 min  
Avg. Velocity = 0.05 fps, Avg. Travel Time= 450.6 min

Peak Storage= 57,684 cf @ 12.96 hrs  
Average Depth at Peak Storage= 0.26'  
Bank-Full Depth= 1.00' Flow Area= 250.0 sf, Capacity= 59.44 cfs

150.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools  
Side Slope Z-value= 100.0 '/' Top Width= 350.00'  
Length= 1,247.0' Slope= 0.0004 '/'  
Inlet Invert= 239.50', Outlet Invert= 239.00'



**Summary for Pond 5P: Dripedge**

Inflow Area = 0.254 ac, 67.72% Impervious, Inflow Depth = 2.78" for 10-YR event  
 Inflow = 0.73 cfs @ 12.07 hrs, Volume= 0.059 af  
 Outflow = 0.54 cfs @ 12.15 hrs, Volume= 0.059 af, Atten= 26%, Lag= 4.5 min  
 Discarded = 0.03 cfs @ 12.05 hrs, Volume= 0.020 af  
 Primary = 0.51 cfs @ 12.15 hrs, Volume= 0.039 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
 Peak Elev= 247.79' @ 12.15 hrs Surf.Area= 450 sf Storage= 160 cf

Plug-Flow detention time= 5.3 min calculated for 0.059 af (100% of inflow)  
 Center-of-Mass det. time= 5.2 min ( 758.0 - 752.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	246.50'	259 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc) 676 cf Overall - 29 cf Embedded = 647 cf x 40.0% Voids
#2	246.75'	29 cf	<b>6.0" Round Pipe Storage</b> Inside #1 L= 150.0'
		288 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
246.50	225	0	0	225
247.49	225	223	223	278
247.50	450	3	226	503
248.50	450	450	676	578

Device	Routing	Invert	Outlet Devices
#1	Primary	246.55'	<b>6.0" Round Culvert</b> L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 246.55' / 246.25' S= 0.0030 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Discarded	246.50'	<b>2.410 in/hr Exfiltration over Surface area</b>

**Discarded OutFlow** Max=0.03 cfs @ 12.05 hrs HW=247.52' (Free Discharge)  
 ↳2=Exfiltration (Exfiltration Controls 0.03 cfs)

**Primary OutFlow** Max=0.51 cfs @ 12.15 hrs HW=247.78' (Free Discharge)  
 ↳1=Culvert (Barrel Controls 0.51 cfs @ 2.60 fps)

**Summary for Link AP1:**

Inflow Area = 12.065 ac, 5.90% Impervious, Inflow Depth > 2.54" for 10-YR event  
 Inflow = 5.14 cfs @ 16.07 hrs, Volume= 2.551 af  
 Primary = 5.14 cfs @ 16.07 hrs, Volume= 2.551 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

**4060-POST**

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

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Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Ex Building** Runoff Area=0.125 ac 100.00% Impervious Runoff Depth=5.16"  
Tc=5.0 min CN=98 Runoff=0.67 cfs 0.054 af

**Subcatchment 2S: Rest of the Site** Runoff Area=11.231 ac 0.00% Impervious Runoff Depth=3.62"  
Flow Length=400' Tc=20.3 min CN=WQ Runoff=31.32 cfs 3.387 af

**Subcatchment 3S: Parking** Runoff Area=0.390 ac 100.00% Impervious Runoff Depth=5.16"  
Tc=5.0 min CN=98 Runoff=2.08 cfs 0.168 af

**Subcatchment 4S: Sabattus ROW** Runoff Area=0.065 ac 38.46% Impervious Runoff Depth=2.16"  
Tc=0.0 min CN=WQ Runoff=0.15 cfs 0.012 af

**Subcatchment 5S: New Building** Runoff Area=0.254 ac 67.72% Impervious Runoff Depth=3.59"  
Tc=5.0 min CN=WQ Runoff=0.92 cfs 0.076 af

**Reach 1R:** Avg. Flow Depth=0.09' Max Vel=1.22 fps Inflow=3.37 cfs 0.287 af  
n=0.030 L=315.0' S=0.0227 '/' Capacity=114.87 cfs Outflow=2.97 cfs 0.287 af

**Reach 2R: Wetland** Avg. Flow Depth=0.34' Max Vel=0.13 fps Inflow=33.87 cfs 3.675 af  
n=0.100 L=1,247.0' S=0.0004 '/' Capacity=59.44 cfs Outflow=7.93 cfs 3.530 af

**Pond 5P: Dripedge** Peak Elev=248.20' Storage=234 cf Inflow=0.92 cfs 0.076 af  
Discarded=0.03 cfs 0.022 af Primary=0.61 cfs 0.054 af Outflow=0.63 cfs 0.076 af

**Link AP1:** Inflow=7.93 cfs 3.530 af  
Primary=7.93 cfs 3.530 af

**Total Runoff Area = 12.065 ac Runoff Volume = 3.696 af Average Runoff Depth = 3.68"**  
**94.10% Pervious = 11.353 ac 5.90% Impervious = 0.712 ac**

**4060-POST**

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

Prepared by {enter your company name here}

Printed 4/16/2020

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**Summary for Subcatchment 1S: Ex Building**

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

Runoff = 0.67 cfs @ 12.07 hrs, Volume= 0.054 af, Depth= 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25-YR Rainfall=5.40"

Area (ac)	CN	Description
0.125	98	Roofs, HSG B
0.125	98	100.00% Impervious Area

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

**Summary for Subcatchment 2S: Rest of the Site**

Runoff = 31.32 cfs @ 12.27 hrs, Volume= 3.387 af, Depth= 3.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25-YR Rainfall=5.40"

Area (ac)	CN	Description
* 10.250	86	Wetlands, HSG D
0.889	58	Woods/grass comb., Good, HSG B
0.092	39	>75% Grass cover, Good, HSG A
11.231		Weighted Average
11.231	83	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.2	100	0.0700	0.13		<b>Sheet Flow, A-B</b> Woods: Light underbrush n= 0.400 P2= 3.10"
7.1	300	0.0200	0.71		<b>Shallow Concentrated Flow, B-C</b> Woodland Kv= 5.0 fps
20.3	400	Total			

**Summary for Subcatchment 3S: Parking**

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

Runoff = 2.08 cfs @ 12.07 hrs, Volume= 0.168 af, Depth= 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25-YR Rainfall=5.40"

**4060-POST**

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

Prepared by {enter your company name here}

Printed 4/16/2020

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Area (ac)	CN	Description
0.390	98	Paved parking, HSG A
0.390	98	100.00% Impervious Area

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

**Summary for Subcatchment 4S: Sabattus ROW**

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.15 cfs @ 12.00 hrs, Volume= 0.012 af, Depth= 2.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25-YR Rainfall=5.40"

Area (ac)	CN	Description
0.025	98	Paved parking, HSG A
0.040	39	>75% Grass cover, Good, HSG A
0.065		Weighted Average
0.040	39	61.54% Pervious Area
0.025	98	38.46% Impervious Area

**Summary for Subcatchment 5S: New Building**

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

Runoff = 0.92 cfs @ 12.07 hrs, Volume= 0.076 af, Depth= 3.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25-YR Rainfall=5.40"

Area (ac)	CN	Description
0.172	98	Roofs, HSG A
0.082	39	>75% Grass cover, Good, HSG A
0.254		Weighted Average
0.082	39	32.28% Pervious Area
0.172	98	67.72% Impervious Area

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

**Summary for Reach 1R:**

Inflow Area = 0.834 ac, 85.37% Impervious, Inflow Depth = 4.14" for 25-YR event

Inflow = 3.37 cfs @ 12.07 hrs, Volume= 0.287 af

Outflow = 2.97 cfs @ 12.19 hrs, Volume= 0.287 af, Atten= 12%, Lag= 7.3 min

**4060-POST**

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

Prepared by {enter your company name here}

Printed 4/16/2020

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Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Max. Velocity= 1.22 fps, Min. Travel Time= 4.3 min  
Avg. Velocity = 0.35 fps, Avg. Travel Time= 15.1 min

Peak Storage= 783 cf @ 12.12 hrs  
Average Depth at Peak Storage= 0.09'  
Bank-Full Depth= 0.50' Flow Area= 35.0 sf, Capacity= 114.87 cfs

20.00' x 0.50' deep channel, n= 0.030 Short grass  
Side Slope Z-value= 100.0 '/' Top Width= 120.00'  
Length= 315.0' Slope= 0.0227 '/'  
Inlet Invert= 246.15', Outlet Invert= 239.00'



**Summary for Reach 2R: Wetland**

[62] Hint: Exceeded Reach 1R OUTLET depth by 0.81' @ 12.95 hrs

Inflow Area =	12.065 ac,	5.90% Impervious,	Inflow Depth = 3.65"	for 25-YR event
Inflow =	33.87 cfs @	12.27 hrs,	Volume=	3.675 af
Outflow =	7.93 cfs @	15.57 hrs,	Volume=	3.530 af, Atten= 77%, Lag= 198.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Max. Velocity= 0.13 fps, Min. Travel Time= 161.7 min  
Avg. Velocity = 0.05 fps, Avg. Travel Time= 409.6 min

Peak Storage= 76,906 cf @ 12.88 hrs  
Average Depth at Peak Storage= 0.34'  
Bank-Full Depth= 1.00' Flow Area= 250.0 sf, Capacity= 59.44 cfs

150.00' x 1.00' deep channel, n= 0.100 Very weedy reaches w/pools  
Side Slope Z-value= 100.0 '/' Top Width= 350.00'  
Length= 1,247.0' Slope= 0.0004 '/'  
Inlet Invert= 239.50', Outlet Invert= 239.00'



**Summary for Pond 5P: Dripedge**

Inflow Area = 0.254 ac, 67.72% Impervious, Inflow Depth = 3.59" for 25-YR event  
 Inflow = 0.92 cfs @ 12.07 hrs, Volume= 0.076 af  
 Outflow = 0.63 cfs @ 12.16 hrs, Volume= 0.076 af, Atten= 31%, Lag= 5.2 min  
 Discarded = 0.03 cfs @ 12.05 hrs, Volume= 0.022 af  
 Primary = 0.61 cfs @ 12.16 hrs, Volume= 0.054 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
 Peak Elev= 248.20' @ 12.16 hrs Surf.Area= 450 sf Storage= 234 cf

Plug-Flow detention time= 5.5 min calculated for 0.076 af (100% of inflow)  
 Center-of-Mass det. time= 5.5 min ( 757.6 - 752.0 )

Volume	Invert	Avail.Storage	Storage Description
#1	246.50'	259 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc) 676 cf Overall - 29 cf Embedded = 647 cf x 40.0% Voids
#2	246.75'	29 cf	<b>6.0" Round Pipe Storage</b> Inside #1 L= 150.0'
		288 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
246.50	225	0	0	225
247.49	225	223	223	278
247.50	450	3	226	503
248.50	450	450	676	578

Device	Routing	Invert	Outlet Devices
#1	Primary	246.55'	<b>6.0" Round Culvert</b> L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 246.55' / 246.25' S= 0.0030 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Discarded	246.50'	<b>2.410 in/hr Exfiltration over Surface area</b>

**Discarded OutFlow** Max=0.03 cfs @ 12.05 hrs HW=247.75' (Free Discharge)  
 ↳2=Exfiltration (Exfiltration Controls 0.03 cfs)

**Primary OutFlow** Max=0.60 cfs @ 12.16 hrs HW=248.19' (Free Discharge)  
 ↳1=Culvert (Barrel Controls 0.60 cfs @ 3.07 fps)

**Summary for Link AP1:**

Inflow Area = 12.065 ac, 5.90% Impervious, Inflow Depth > 3.51" for 25-YR event  
 Inflow = 7.93 cfs @ 15.57 hrs, Volume= 3.530 af  
 Primary = 7.93 cfs @ 15.57 hrs, Volume= 3.530 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

**Stormwater Facilities Inspection and Maintenance Plan**  
*Office/Warehouse Building*  
*1222 Sabattus Street, Lewiston, Maine*

**1.0 GENERAL**

This stormwater management maintenance plan has been prepared in support of the City of Lewiston Development Review Application for the proposed Office/Warehouse building in Lewiston, Maine, and was prepared in accordance with Article XIII, Section 15 Post-construction stormwater management standards.

**2.0 BEST MANAGEMENT PRACTICES**

**2.1 Best Management Practices**

During Construction, a stabilized construction entrance, sediment barrier, erosion control blanket and/or erosion control mix, seeding, and mulching practices will be used in accordance with the Maine Department of Environmental Best Management Practices (BMP) manual during construction and until a stabilized condition exists.

After Construction, stormwater BMPs will includes housekeeping and physical measures described herein, including the sweeping of paved surfaces and maintenance of storm drain pipes.

The stormwater maintenance management for this project will be performed consistent with the two references listed below and as amended in this manual. Where standards are not consistent, the more stringent requirement shall apply.

**2.2 References**

The primary references for the stormwater management design were as follows:

- 1 “Chapter 500. Stormwater Management Rules”, Maine Department of Environmental Protection, Revised August 2015.
- 2 “Maine Erosion and Sedimentation Best Management Practices”, Maine Department of Environmental Protection, current edition on-line.

**3.0 MAINTENANCE OF STORMWATER FEATURES**

**3.1 General Responsibilities**

The Contractor will be responsible for maintaining the stormwater features until the construction phase of the project is complete. These efforts shall include maintenance of temporary and permanent stormwater features and addressing interim site conditions as necessary. After completion of construction, the Applicant will be responsible for maintaining the permanent stormwater features as shown on the plan.

The Point of Contact for the Applicant is as follows:

Tony Fortin  
410 Industries, LLC  
1222 Sabattus Street  
Lewiston, ME 04241

### **3.1 General Requirements**

The general requirements for this stormwater maintenance management manual will meet the standards of Reference No.1, specific to the water quality feature concerned. Additional maintenance requirements are identified in the following narratives.

### **3.2 Specific Maintenance Requirements**

The following specific maintenance requirements apply to stormwater features as follows:

#### **3.2.1 Catch Basins & Outlet Pipes**

- Piped drainage systems shall be inspected in spring and late fall, and after heavy rains to remove any obstructions to flow; remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit; and to repair any erosion damage at the culvert's inlet and outlet. Sediment should be removed when its level exceeds 20% of the pipe diameter. Hydraulic flushing or any mechanical means may accomplish sediment removal. Care shall be taken to contain the sediment at the pipe outlet.

#### **3.2.2 Crushed Stone Dripedge**

- The dripedge shall be inspected at least once per year, preferably in the spring. Debris and sediment build-up should be removed from the buffer when noticeable accumulation has occurred.

#### **3.2.3 Paved Surfaces**

- Accumulations of winter sand along impervious areas shall be cleared at least once a year, preferably in the spring. Accumulations on pavement may be removed by pavement sweeping. Accumulations of sand along the edge of paved areas may be removed by grading excess sand to the pavement edge and removing it manually, sweeping, or by a front-end loader.

#### **3.2.4 Vegetative Surfaces**

- For most vegetative surfaces, grass should be mowed on a regular basis so that grass height does not exceed 6 inches. Any erosion rills, gullies, or bare spots should be seeded or sodded to re-establish the turf cover.
- Buffer, screening, and decorative landscaping should be inspected for health on a regular basis. Pruning, weeding, feeding, and mulching.

## **4.0 INSPECTION AND MAINTENANCE CHECKLIST**

### **4.1 Maintenance Frequency**

Notwithstanding any other schedule noted, general inspections should be conducted monthly during wet weather conditions from March to November.

#### **4.2 Inspection and Maintenance Checklist**

Inspection of the stormwater facilities shall be completed by individual qualified by experience or training to assess their condition and performance. Maintenance actions required will be documented, completed and inspected by individuals trained or experienced in such maintenance. An inspection and maintenance checklist specific to the facilities for this development is included.

**STORMWATER INSPECTION AND MAINTENANCE LOG**

Office/Warehouse Building  
1222 Sabattus Street, Lewiston, Maine

Performed by: \_\_\_\_\_ Date: \_\_\_\_\_

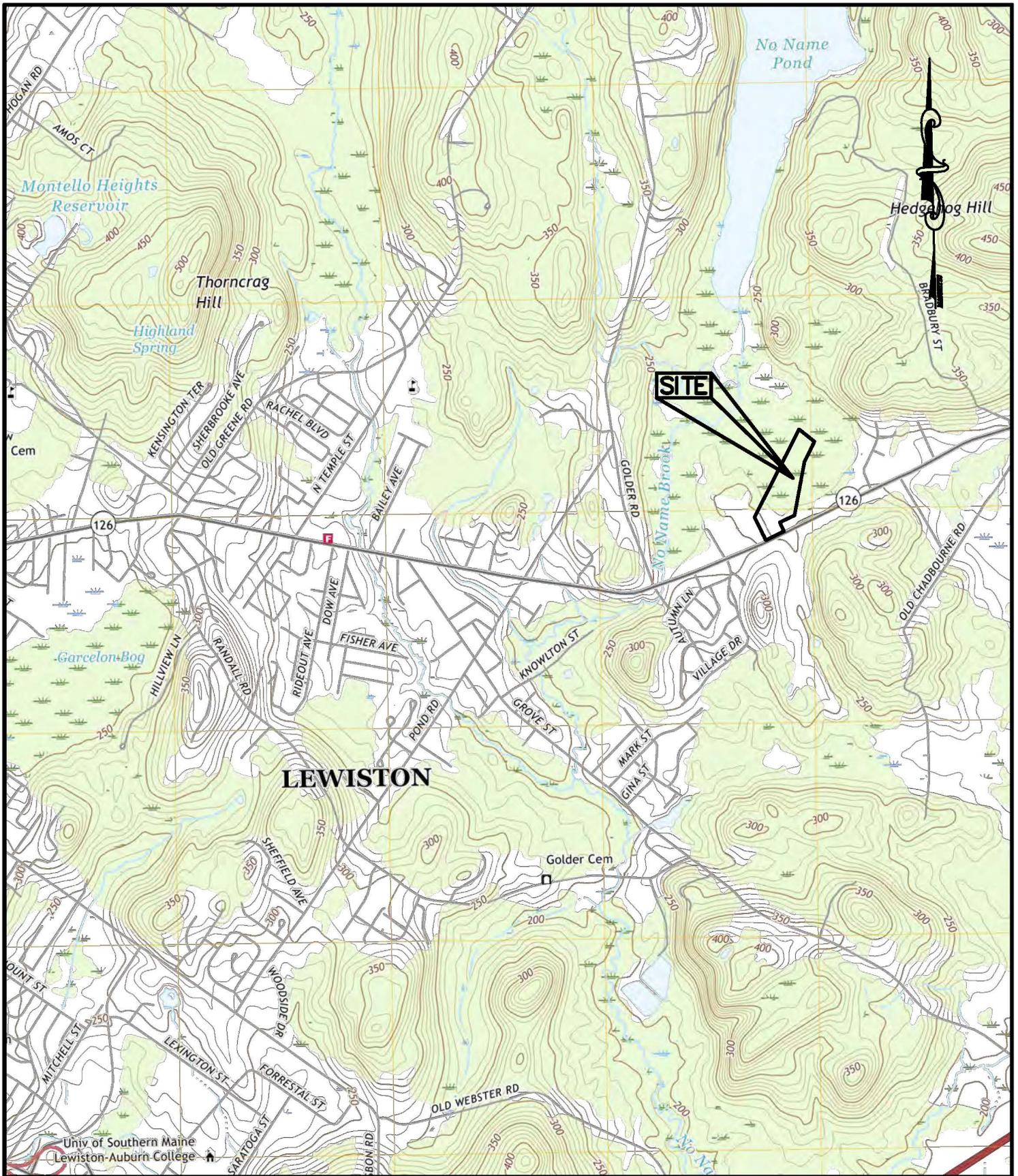
Feature	Description of maintenance	Recorded Observation/Corrective Action Taken or Required
Catch Basins & Outlet Pipes	Inspect for presence of trash and debris.	
	Inspect for evidence of excessive sediment deposits.	
	Inspect for clogging debris and material	
Crushed Stone Dripedge	Inspect for presence of trash and debris	
Paved Surfaces	Inspect for excessive sediment deposits, trash and debris.	
	Inspect for evidence of cracking	
Vegetative Surfaces	Inspect for vegetative cover of at least 90%	
	Inspect for any signs of erosion or bare spots.	

## **Attachment F** **Supporting Graphics**

This attachment includes supporting materials and graphics for the application. This includes an excerpt of the FEMA flood rate insurance map (FIRM) and reduced size copies of the zoning map and tax maps. An excerpt of the applicable USGS 7.5 minute quadrangle map is provided for reference.

F

Supporting Graphics



SHEET: 1 OF 1

# SITELINES



119 PURINTON ROAD, SUITE A  
BRUNSWICK, ME 04011  
207.725.1200

CIVIL ENGINEERS ■ LAND SURVEYORS

## USGS LOCATION MAP

TWIN CITY CONSTRUCTION  
1222 SABATTUS STREET  
LEWISTON, MAINE 04240

DATE: 02-28-20

SCALE: 1"=2000'

JOB: 4060

FILE: 4060-MAPS

# Lewiston Quadrangle, Maine

Compiled by  
**Craig D. Nell**  
Preliminary aquifer boundaries mapped by  
**Daniel B. Locke**

Digital cartography by:  
**Michael E. Foley**

**Robert G. Martinney**  
State Geologist

Cartographic design and editing by:  
**Robert D. Tucker**  
**Bennett J. Wilson, Jr.**

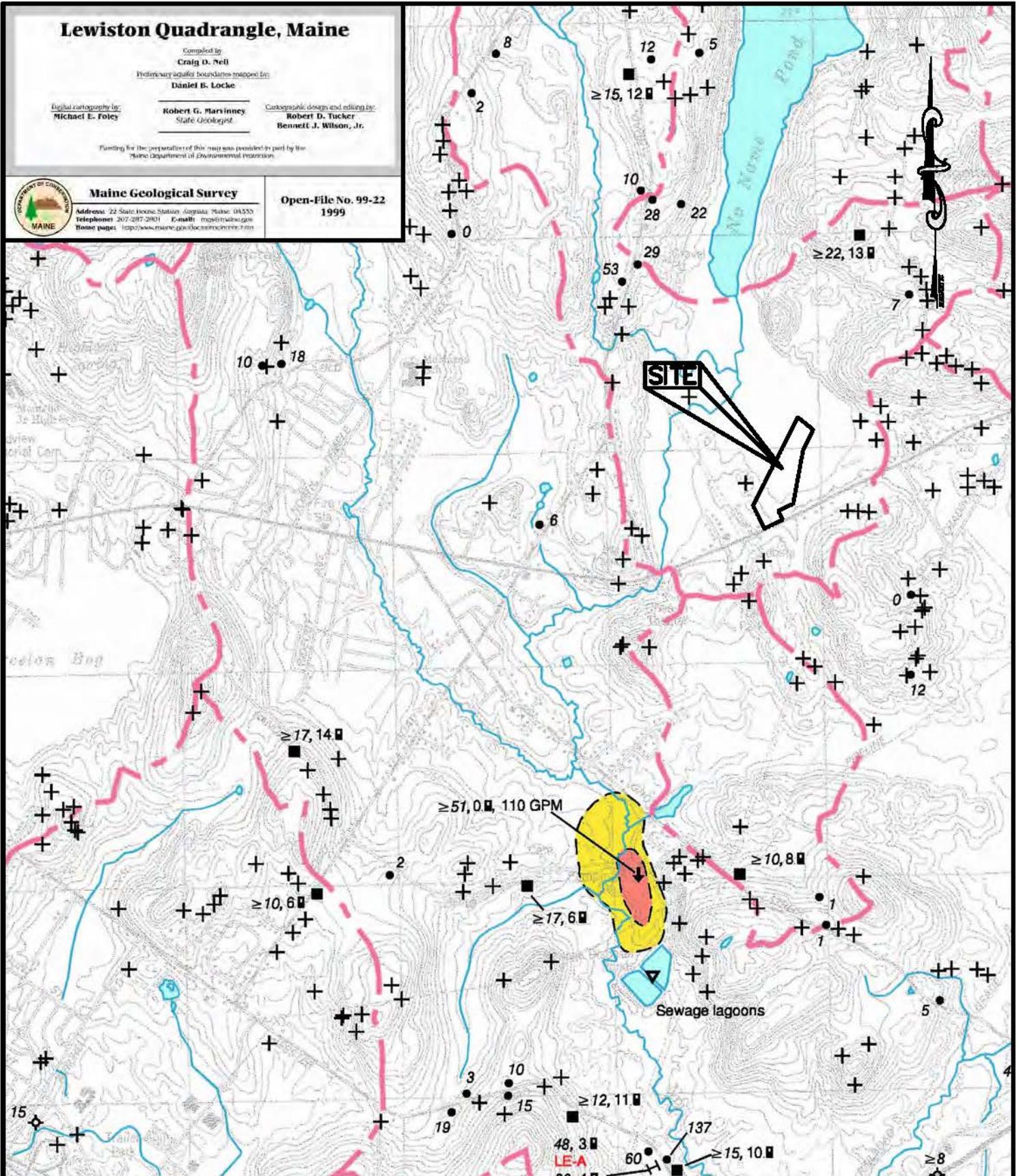
Funding for the preparation of this map was provided in part by the  
Maine Department of Environmental Protection.



## Maine Geological Survey

Address: 22 State House Station Augusta, Maine 04330  
Telephone: 207-287-2801 E-mail: mgso@maine.gov  
Home page: <http://www.maine.gov/doc/mgs/index.cfm>

Open-File No. 99-22  
1999



SHEET: 1 OF 1

# SITELINES

119 PURINTON ROAD, SUITE A  
BRUNSWICK, ME 04011  
207.725.1200



CIVIL ENGINEERS • LAND SURVEYORS

## SIGNIFICANT SAND & GRAVEL AQUIFER MAP

TWIN CITY CONSTRUCTION  
1222 SABATTUS STREET  
LEWISTON, MAINE 04240

DATE: 02-28-20

SCALE: 1"=2000'

JOB: 4060

FILE: 4060-MAPS

# Lewiston Quadrangle, Maine

Surficial geologic mapping by  
Carol T. Hildreth

Digital cartography by:  
Robert A. Johnston

Robert G. Narviny  
State Geologist

Cartographic design and editing by:  
Robert D. Tucker

Funding for the preparation of this map was provided in part by the U. S. Geological Survey  
STATEMAP Program, Cooperative Agreement #01HQAD00001

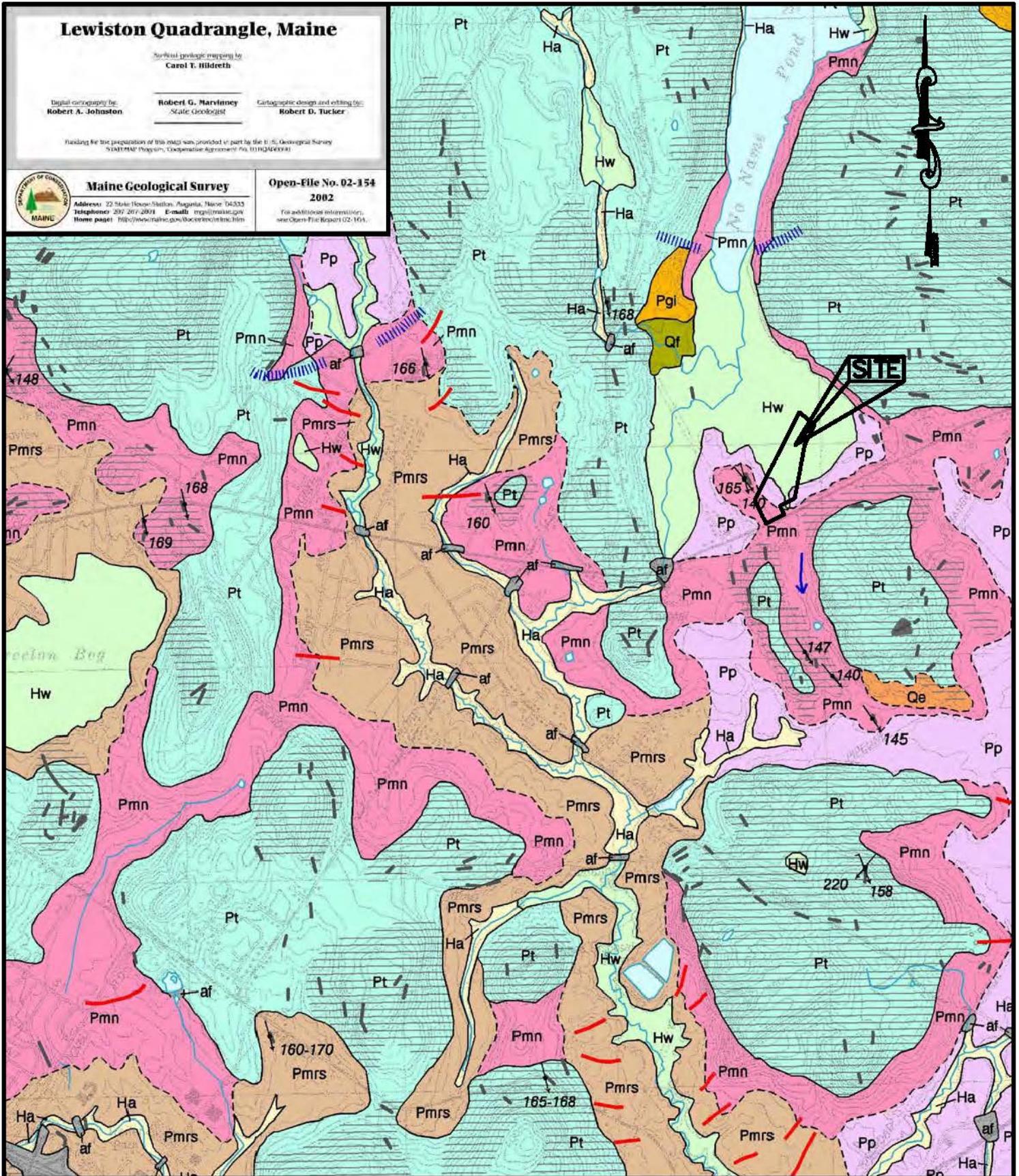


Maine Geological Survey

Open-File No. 02-154  
2002

Address: 22 State House Station, Augusta, Maine 04333  
Telephone: 207.207.2000 E-mail: mgp@maine.gov  
Home page: <http://www.maine.gov/ocert/center/online.htm>

For additional information,  
see Open-File Report 02-164.



SHEET  
OF 1

## SITELINES

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BRUNSWICK, ME 04011  
207.725.1200



CIVIL ENGINEERS • LAND SURVEYORS

## SURFICIAL GEOLOGY

PROPOSED BUILDING EXPANSION

1222 SABATTUS STREET

LEWISTON, MAINE 04240

DATE: 02-28-20

SCALE: 1"=2000'

JOB: 4060

FILE: 4060-MAPS

# National Flood Hazard Layer FIRMette



44°6'21.41"N

70°8'39.52"W



USGS The National Map: Orthoimagery. Data refreshed April, 2019.



44°5'55.57"N

70°8'2.07"W

## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

**SPECIAL FLOOD HAZARD AREAS**

- Without Base Flood Elevation (BFE)  
*Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

**OTHER AREAS OF FLOOD HAZARD**

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

**OTHER AREAS**

- Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

**GENERAL STRUCTURES**

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

**OTHER FEATURES**

- Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

**MAP PANELS**

- Digital Data Available
- No Digital Data Available
- Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/27/2020 at 11:53:34 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



This Map is provided by the City of Lewiston, ME Mapping shown on is for general reference. The City of Lewiston shall not be held liable for any errors or omissions on this map and makes no warranty of accuracy of map. Field verification is required. This map is not printed to scale.



Approximate Map Scale:  
1 in = 279 ft

**Legend**

- Parcel Line
- ROW
- Essement
- Mobile Home Lot
- Street Address
- Subject Map and Lot
- Lot Dimension
- Utility ROW

**Planimetric Legend:**

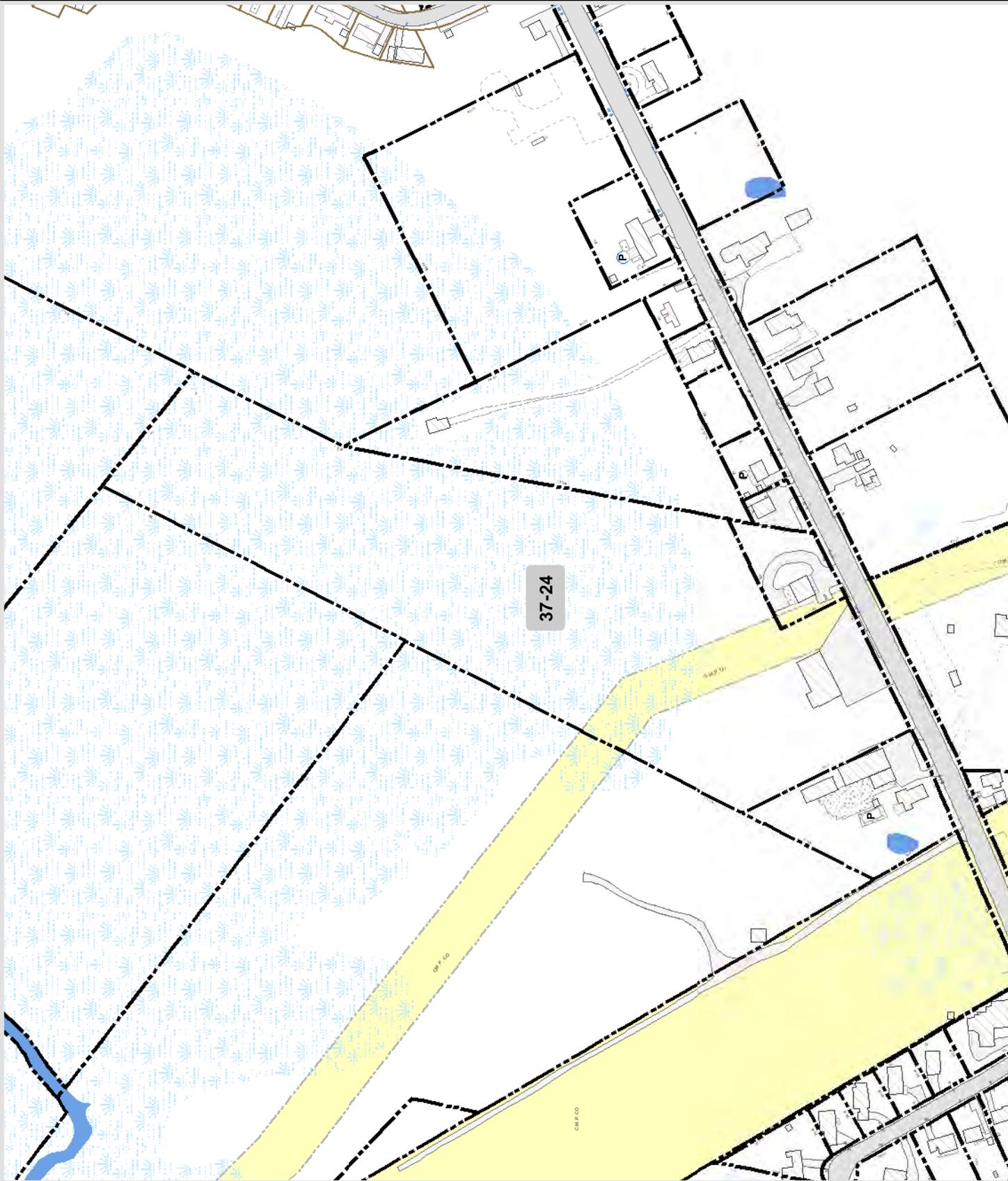
- Building, General
- Mobile Home
- Foundation
- Deck
- Patio
- Railroad
- Fence
- Roads, Parking Walks
- Artistic Courts, Fields
- Swimming Pool
- Lake or Pond, River, Canal
- Swamp or Open Wetland
- Stormwater Detention Pond
- Shrubs, Streams

Cadastral mapping displayed is intended for assessment purposes only, and shall not be used in place of a boundary survey. Do not use for description delineation, or transfer of property.

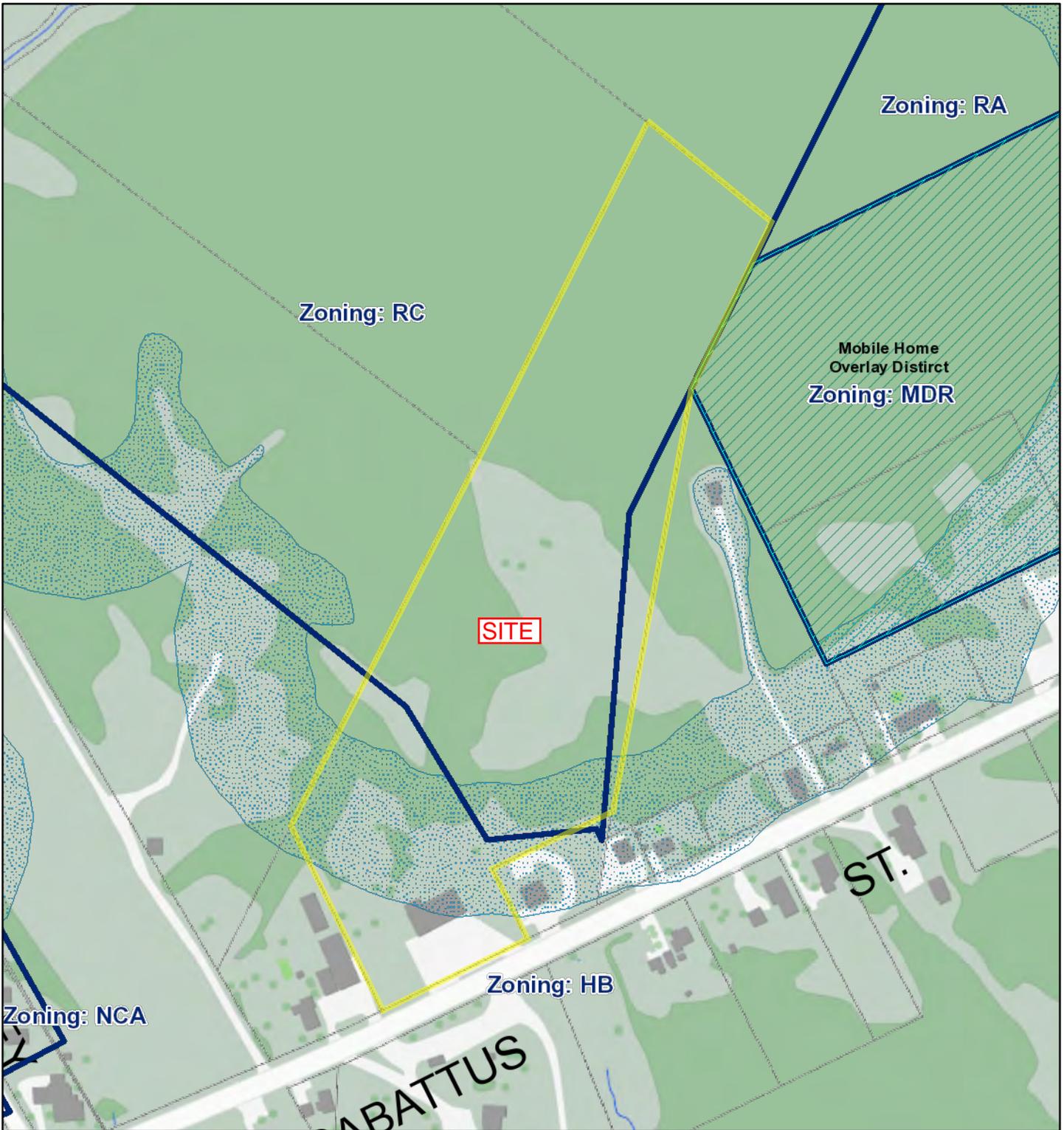
**Parcel ID**  
**RE00013873**  
1222 SABATTUS ST

Tax Map Ref: 37-24

Tax Mapping  
Effective April 1, 2019  
to March 31, 2020  
City of Lewiston  
Assessing Dept.  
27 Pine Street  
Lewiston Maine 04240

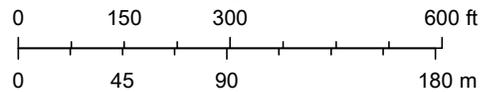


# 1222 Sabattus



February 27, 2020

1:4,514



- parcels
- Zoning Districts
- Shoreland Zoning
- No Name Pond Lake Conservation Overlay District
- Groundwater conservation overlay district
- Preservation Overlay Districts

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community, Lewiston, Maine, Lewiston Maine, Lewiston Maine

Major Development Review Application  
Office/Warehouse Building, 1222 Sabattus Street, Lewiston  
March 27, 2020

**Attachment G**  
**Architecture**

The floor plan and architectural elevations are included here for reference.



Architecture

# TWIN CITY CONSTRUCTION STEELSMITH, INC

FO# 23617

Building 1 of 1



## INDEX OF DRAWINGS

Page	Drawing Title	REV NO.
	Cover Page	0
1	Specifications	0
2	Anchor Bolt Plan	0
3	Rigid Frame Reactions	0
4	Endwall Reactions, Design Criteria	0
5	Anchor Bolt Details	0
6	Roof Framing	0
7	Roof Panel Layout	0
8	Rigid Frame #1	0
9	Front Sidewall Framing	0
10	Back Sidewall Framing	0

Page	Drawing Title	REV NO.
11	Left Endwall Framing	0
12	Right Endwall Framing	0
13	Detail Page #1	0
14	Detail Page #2	0
15	Detail Page #3	0
16		0
17		0
18		0
19		0
20		0
21		0

Page	Drawing Title	REV NO.
22		0
23		0
24		0
25		0
26		0
27		0
28		0
29		0
30		0
31		0
32		0

**GENERAL**  
All materials included in the Metal Building System are in accordance with the manufacturer's standard materials and details unless otherwise specified on the order documents. (MBMA 2012 Metal Building Systems Manual, Part IV, Section 2.1)

**DESIGN RESPONSIBILITY**  
The manufacturer is responsible only for the structural design of the Metal Building System it sells to the purchaser / customer. Neither the manufacturer nor the manufacturer's engineer is the design professional or engineer of record for the construction project. The manufacturer is not responsible for the design of any component or materials not sold by it, or their interface and connection with Metal Building System unless such design responsibility is specifically required by the order documents. (MBMA 2012 Metal Building Systems Manual, Part IV, Section 3.1)

**FOUNDATION DESIGN AND ANCHOR BOLTS**  
The manufacturer is not responsible for the design, materials, and workmanship of the foundation. The anchor bolt plans prepared by the manufacturer are intended to show only the anchor bolt location, diameter (based on ASTM A36 bolts), and quantity required to connect the Metal Building System to the foundation. (MBMA 2012 Metal Building Systems Manual, Part IV, Section 3.2.2)  
It is the responsibility of the end customer to ensure that adequate provisions are made for specifying bolt embedment, bearing angles, tie rods, and / or associated items embedded in the concrete foundation, as well as foundation design based on the loads imposed by the Metal Building System, or other imposed loads, and the bearing capacity of the soil and other conditions of the building site. (MBMA 2012 Metal Building Systems Manual, Part IV, Section 3.2.3)  
U.S. - Anchor bolts shall be accurately set to a tolerance of +/- 1/8" in both elevation and location (AISC Code of Standard Practice for Steel Buildings and Bridges).  
Canada - Anchor bolts shall be accurately set in accordance with CISC Code of Standard Practice, June 2008, Clause 7.7.1

**ADJACENT EXISTING BUILDINGS**  
The manufacturer does not investigate the influence of the Metal Building System on adjacent existing buildings or structures. The end customer assures that such buildings and structures are adequate to resist snow loads or other conditions as a result of the presence of the Metal Building System. (MBMA 2012 Metal Building Systems Manual, Part IV, Section 3.2.5)

**SHOP-PRIMED STEEL**  
All structural members of the Metal Building System not fabricated of corrosion resistant material or protected by corrosion resistant coating are painted with one coat of shop primer. All surfaces to receive shop primer are cleaned of loose rust, loose mill scale and other foreign matter by using, as a minimum the hand tool cleaning method SSPC-SF2 (Steel Manual, Structures Painting Council) prior to painting. The coat of shop primer is intended to protect the steel framing for only a short period of exposure to ordinary atmospheric conditions. Shop-primed steel should be placed on blocking to prevent contact with the ground, and so positioned as to minimize water holding pockets, dust, mud or other contamination of the primer film. Repairs of damage to primed surfaces and or removal of foreign material due to improper field storage or site conditions are not the responsibility of the manufacturer. (CISC Code of Standard Practice, June 2008, Clause 8.6; (MBMA 2012 Metal Building Systems Manual, Part IV, Section 4.2.4)

**ERECTION-GENERAL**  
The erector, by entering into contract to erect the building, holds itself out as skilled in the erection of Metal Building Systems and is responsible for complying with all applicable local, federal, and state construction and safety regulations including OSHA regulations as well as any applicable requirements of local, national, or international union rules or practices. (CISC Code of Standard Practice, June 2008, Clause 7.2; (MBMA 2012 Metal Building System Manual, Part IV, Section 6.9)

The erector shall erect the Metal Building System in accordance with the erection drawings, the Erection and Detail Manual (February 2012), and / or the Seam-Lok Technical - Erection manual (May 2012) as furnished by the manufacturer. The aforementioned erection information is intended to illustrate the layout of the framing members, provide the associated connection details, and suggests sequence of erection. It is not intended to specify any particular method of erection to be followed by the erector. The erector remains solely responsible for the safety and appropriateness of all techniques and methods utilized by its crews in the erection of the Metal Building System. The erector is responsible for supplying any safety devices such as scaffolds, runways, nets, et, which may be required to safely erect the Metal Building System. (MBMA 2012 Metal Building Systems Manual, Part IV, Section 6.9) The manufacturer expressly disclaims any responsibility for injury to persons in the course of erection or for damage to the product itself. Field erection of a Pre-Engineered Metal Building, as in all construction projects, involves hazards to persons within the area of the construction and risk of damage to the property itself. Only experienced persons who are skilled and qualified in the erection of Metal Building Systems should be permitted to field-erect a building due to the hazards of this construction activity. The manufacturer is not responsible for the erection of the Metal Building System, the supply of any tools or equipment, or any other field work. The manufacturer provides no field supervision for the erection of the structure nor does the manufacturer perform any intermediate or final inspections of the Metal Building System during or after erection.

The erector shall furnish temporary guys and bracing where needed for squaring, plumbing, and securing the structural framing against loads, such as wind loads acting on the exposed framing as well as loads due to erection equipment and erection operation, but not including loads resulting from the performance of work by others. Bracing furnished by the manufacturer for the Metal Building System cannot be assumed to be adequate during erection. Temporary supports such as temporary guys, bracing, false work, cribbing, or other elements required for the erection operation will be determined, erected, and installed by the erector. (AISC Code of Standard Practice for Steel Buildings and Bridges, April 14, 2010, Section 7.10.3; CISC Code of Standard Practices, June, 2008, Clause 1.6; MBMA 2012 Metal Building System Manual, Part IV, Section 6.2.1.6)

**ERECTION TOLERANCES**  
U.S. : Erection tolerances are those set forth in AISC code of standard practice except individual members are considered, plumb, level and aligned if the deviation does not exceed 1/500. (AISC Code of Standard Practice for Steel Buildings and Bridges April 14, 2010 Section 7.13.1; MBMA 2012 Metal Building Systems Manual, Part IV, Section 6.5)  
Canada: Erection tolerances are those set forth in CISC Code of Standard Practice except individual members are considered plumb, level and aligned if the deviation does not exceed 1/500. (CISC Handbook of Steel Construction, Tenth Edition, Second Revised Printing, Part 1, Clause 29.3; MBMA 2012 Metal Building Systems Manual, Part IV, Section 6.8)

**BOLT TIGHTENING**  
The proper tightening and inspection of all fasteners is the responsibility of the erector (Reference RCSC for structural joints using high strength bolts; August 1, 2014). All high strength (ASTM F3125, A325, A490) bolts and nuts must be tightened by the "turn-of-the-nut" method unless otherwise specified by the end customer in the contract documents. Inspection of high strength bolt and nut installation by other than the erector must also be specified in the contract documents and the erector is responsible for ensuring that the installation procedures are compatible prior to the start of erection (CISC Handbook of Steel Construction, Tenth Edition, Second Revised Printing, Part 1, Clause 23.8.2), (MBMA 2012 Metal Building Systems Manual, Part IV, Section 6.9).

MATERIALS	ASTM DESIGNATION	MINIMUM YIELD	MATERIALS	ASTM DESIGNATION	MINIMUM YIELD
Hot-Rolled Mill Sections	A 36, A 572, A 992	Fy = 36 ksi and/or 50 ksi	Roof and Wall Sheeting	A 792, Gr. 50 Class 1 A 792, Gr. 80	Fy = 50 ksi Fy = 80 ksi
Structural Steel Plates	A 572, A 1011	Fy = 55 ksi	Mild Steel Bolts	A 307	Fy = 36 ksi
Structural Steel Bars	A 572 or A 629	Fy = 55 ksi	High Strength Bolts	F3125: A 325-N A 490-N	Fy = 92 or 81 ksi N/A
Cold Formed Light Gauge Shapes	A 653 Gr. 55	Fy = 55 ksi	Anchor Rods (if supplied)	A 36	Fy = 36 ksi
Cable Bracing	A 475, ZHS	N/A	Pipe and Hollow Structural Sections	A 500 Gr. B	Fy = 42 ksi, 46 ksi
Rod Bracing	A 36	Fy = 36 ksi			

**CORRECTION OF ERRORS AND REPAIRS**  
The correction of minor misfits by the use of drift pins to draw the components into line, shimming, moderate amounts of reaming, chipping, and cutting, and the replacement of minor shortages of material are a normal part of erection and are not subject to claim. (AISC Code of Standard Practice for Steel Buildings and Bridges, April 14, 2010, Section 7.14; CISC Code of Standard Practice, June 2008, Clause 7.15; MBMA 2012 Metal Building Systems Manual, Part IV, Section 6.10)

**DRAWING DISCREPANCIES**  
In case of discrepancies between the manufacturers steel plans and plans for other trades, the manufacturers steel plans govern. (AISC Code of Standard Practice for Steel Buildings and Bridges, April 14, 2010, Section 3.3; CISC Code of Standard Practice, June 2008, Clause 3.4; MBMA 2012 Metal Building Systems Manual, Part IV, Section 3.1)

**DELIVERIES**  
Delivery of any material by the manufacturers carrier, a common carrier, or to purchasers/ customers own leased, chartered, or authorized conveyance shall constitute delivery to builder, and thereafter, such material shall be at builders risk. If builder chooses to use its own, or private carrier, it shall be solely responsible for compliance with all applicable government regulations. All charges shall be borne by the builder. The manufacturers responsibility for damage or loss ceases upon delivery of shipment to carrier. The manufacturer will endeavor to deliver on the required date. The manufacturers truck is not considered as being late if deliveries are between 8am - 12pm (morning) and 12pm - 5pm (afternoon). However, the manufacturer cannot be held responsible for circumstances beyond our control. For deliveries via the manufacturers truck, the manufacturer will only honor claims that were approved by the customer service department at the time of delivery. For deliveries via contract carriers, it is the responsibility of the customer to file claims with the carrier. The manufacturer cannot assume any liability for the claim.

**SHORTAGES**  
The purchaser /customer should make an inspection upon arrival of all building components. The purchaser/customer must note on the freight bill any missing item(s) and notify the manufacturers customer service department immediately; otherwise, the manufacturer cannot be held responsible for any shortages. If any item is damaged, note on the bill of lading and file a claim with the freight agent. Concealed shortages must be reported to the manufacturers customer service department within the following time frames (date from receipt of first delivery), based on the project shipment size, i.e., number of truck loads used in delivery.  
1 to 3 loads\_2 weeks 4 loads and over\_3 weeks The manufacturers responsibility for shortages expires at the end of these time periods.

**FABRICATION ERRORS**  
The purchaser/customer is responsible for contacting the customer service department to advise the manufacturer of fabrication problems and corresponding cost estimates. The manufacturer will be responsible for providing the builder with verbal approval to proceed with appropriate field corrections. This will be done in a timely manner. IF THE BUILDER PROCEEDS WITH CORRECTIVE WORK WITHOUT THE MANUFACTURERS APPROVAL, HE DOES SO AT HIS OWN RISK. The manufacturer shall not be responsible for any claims where the purchaser/customer has not documented the problem, its correction, and reasonable costs for repair, and submitted this documentation for payment within 30 days of the occurrence.

**INVOICE PAYMENT**  
By acceptance of the materials of services set forth in the invoice, the purchaser/customer agrees to pay the invoice amount within the time period specified on the invoice. AT NO TIME IS IT ACCEPTABLE TO DEDUCT A BACK CHARGE OR SHORTAGE FROM AN INVOICE.

**SAFETY PROCEDURES**  
The manufacturer is committed to manufacturing a quality product that can be erected safely. Although good job site practices and a commitment to safety by the erector are beyond the control of the manufacturer, the manufacturer highly recommends the erector provide good, safe working conditions on the job site. The erector should follow all local, state, and federal health and safety regulations at all times. Accident prevention practices should be implemented and each employee should know emergency procedures. The manufacturer also recommends daily meetings to discuss erection safety procedures. For additional information concerning federal health and safety regulations, contact the occupational safety and health administration (osha).

U.S. Department of Labor  
Occupational Safety and Health Administration  
200 Constitution Avenue, N.W.  
Washington, DC 20210  
www.osha.gov

The manufacturer shall not be responsible for personal injury or property damage as a result of failure to follow all applicable safety regulations and material handling and installation recommendations.

**STEELSMITH**  
TWIN CITY CONSTRUCTION  
50'-0" x 150'-0" x 19'-0" x 21'-1"  
DATE: 1/29/20 REVISION: 0  
ENG: JUN DWN: BJC APPD: JUN

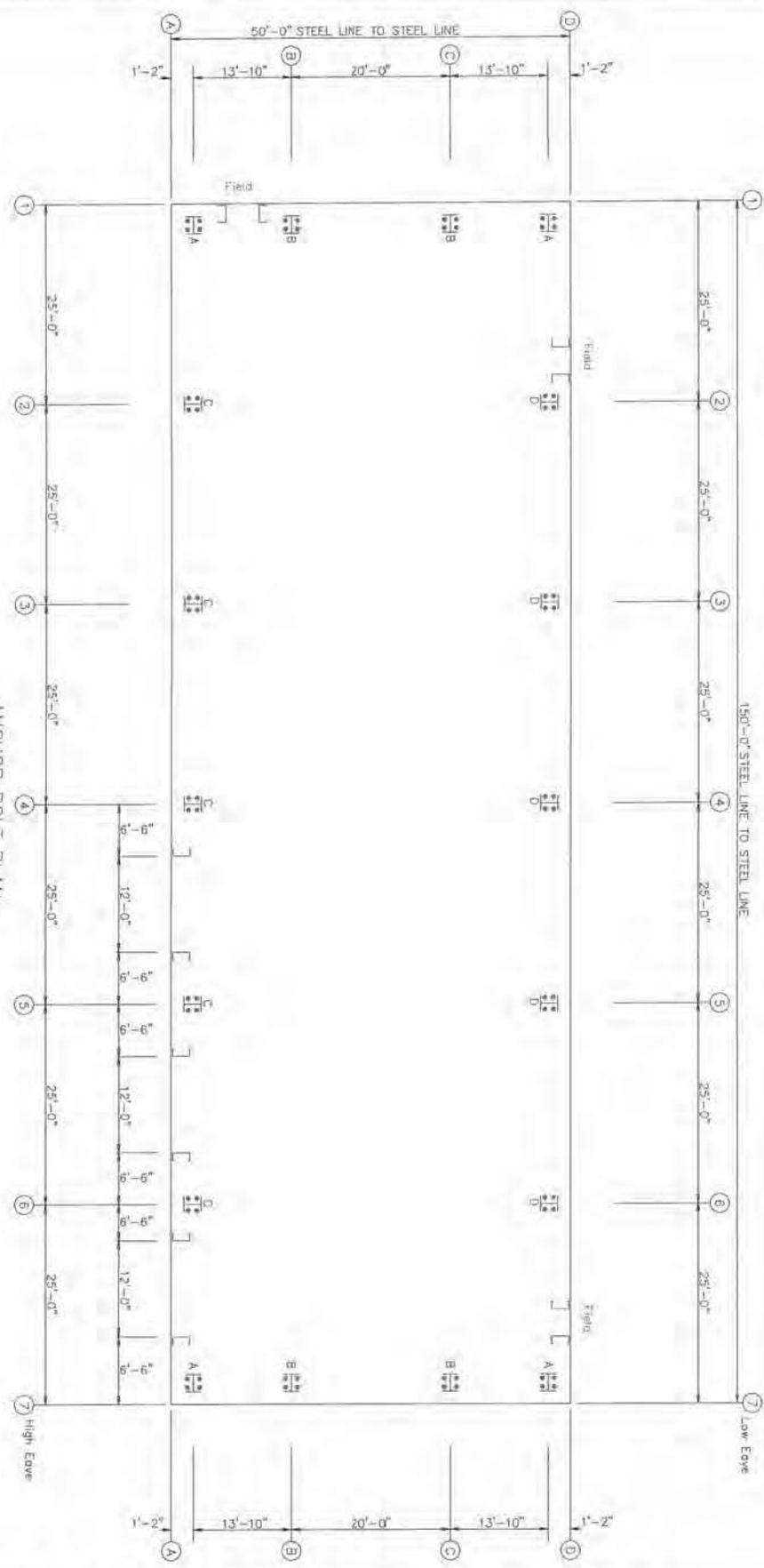
F.O.23617

DATE	REVISION HISTORY

TWIN CITY CONSTRUCTION  
DRAWING STATUS  
REV

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FOR CONSTRUCTION: THESE DRAWINGS BEING FOR CONSTRUCTION CAN BE CONSIDERED AS COMPLETE. FINAL DRAWINGS.

STATE OF MAINE  
T. JAMES EISENMAN, JR.  
No. 9637  
PROFESSIONAL ENGINEER



ANCHOR BOLT PLAN  
 NOTE: All Base Pitches @ 100'-0" (UM.)  
 Finished Floor @ 100'-0"

DRAWING IS NOT TO SCALE

PAGE 2 OF 15  
 2/10/20



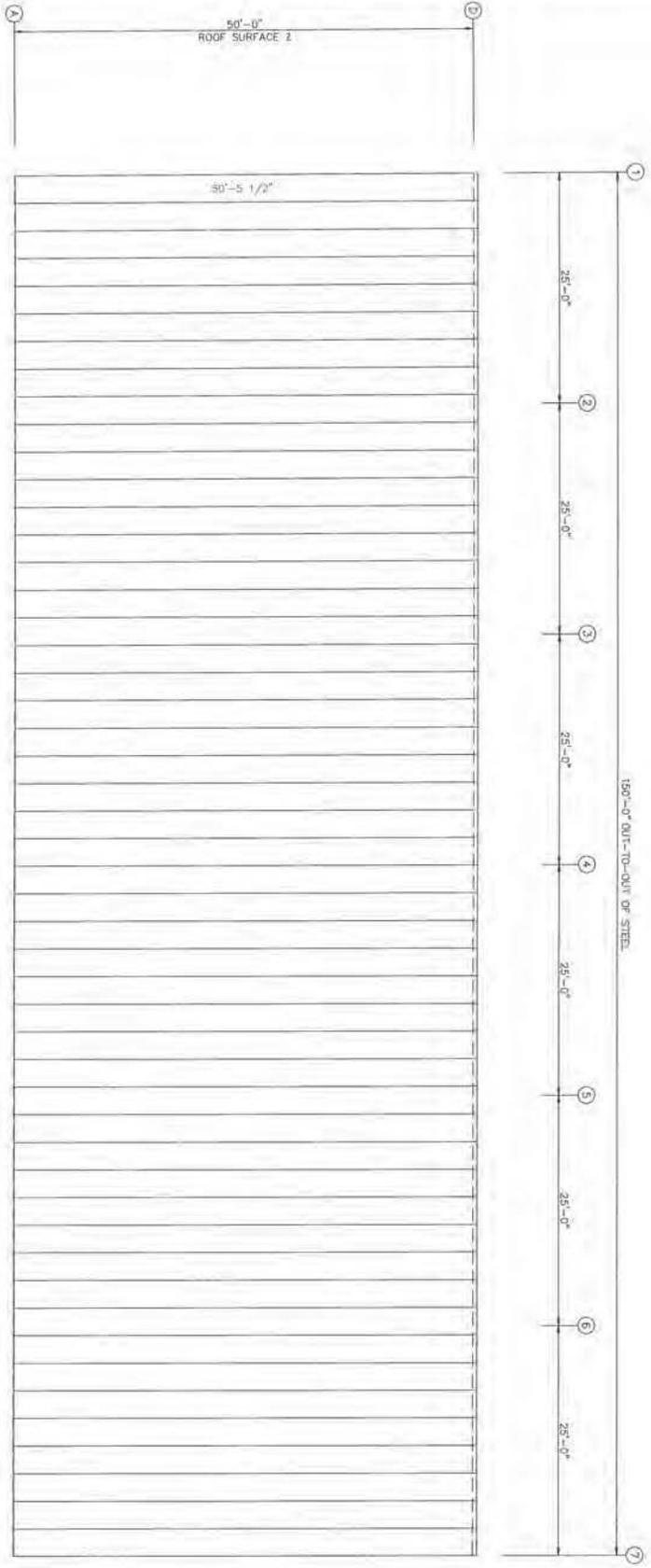
## TWIN CITY CONSTRUCTION

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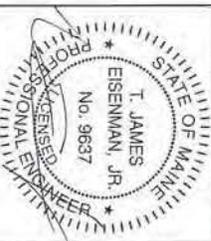
TWIN CITY CONSTRUCTION  
 50'-0" x 150'-0" x 19'-0" x 21'-1"  
 DATE: 1/29/20 REVISION: 0  
 ENG: JJN DWN: BJC APPD: JJN

**GENERAL NOTES:**  
 Panel "Start" and "End" dimensions must be followed for the proper installation of the gable (Panel 5) provided.



**ROOF SHEETING PLAN**  
 PANELS: 26 Ga. R - Burnished Stone

DRAWING IS NOT TO SCALE



TWIN CITY CONSTRUCTION		
DRAWING STATUS		REVISION HISTORY
REV.	DESCRIPTION	DATE
<input type="checkbox"/>	FOR APPROVAL: THESE DRAWINGS, BEING FOR APPROVAL, ARE BY DEFINITION NOT FINAL, AND ARE FOR CONCEPTUAL REPRESENTATION ONLY. THEIR PURPOSE IS TO CONFIRM PROPER INTERPRETATION OF THE PROJECT DOCUMENTS. ONLY DRAWINGS ISSUED "FOR CONSTRUCTION" CAN BE CONSIDERED AS COMPLETE.	
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**F.O. 23617**

**STEELSMITH.**

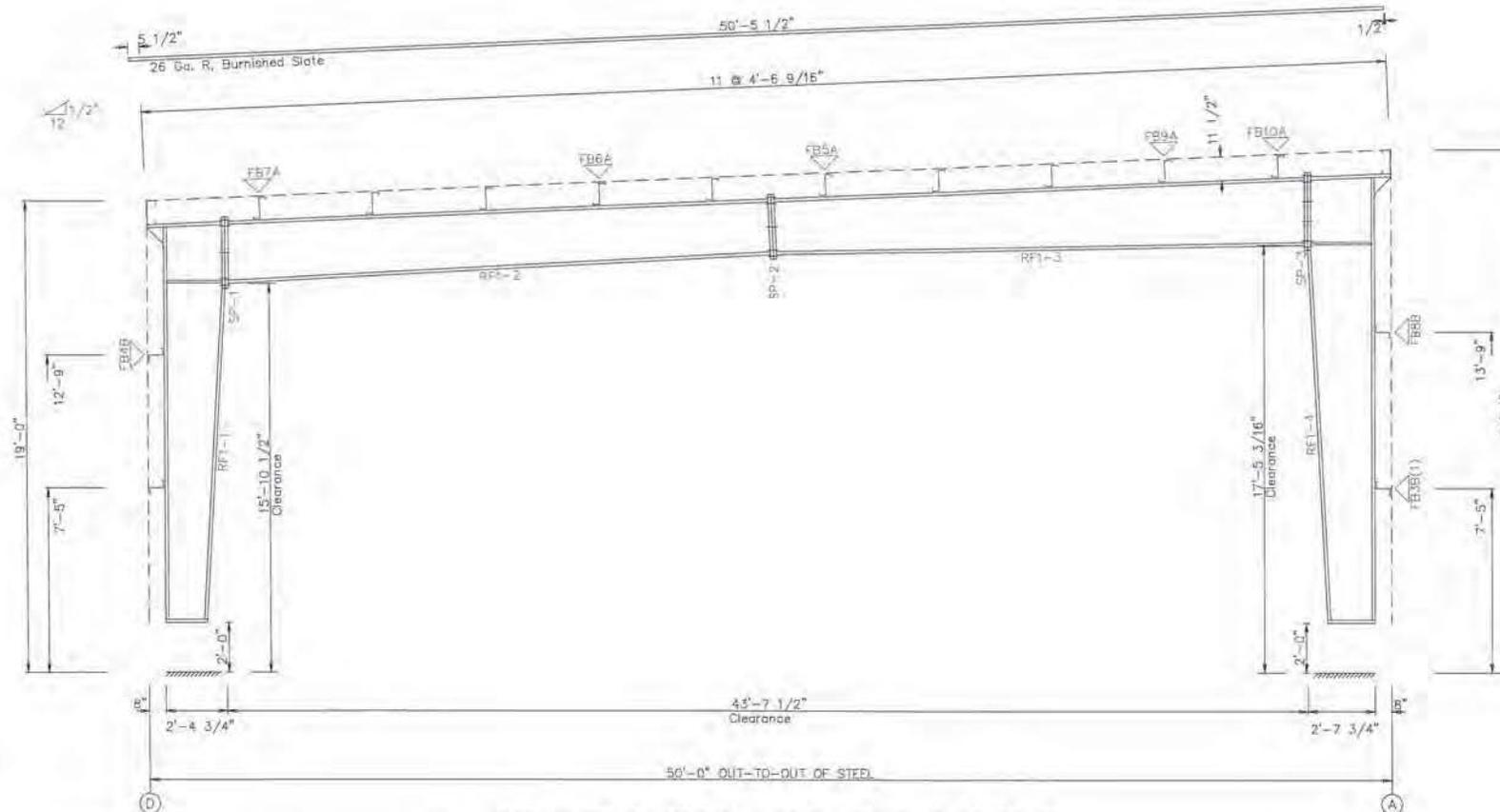
TWIN CITY CONSTRUCTION  
 50'-0" x 150'-0" x 19'-0" x 21'-1"

DATE: 1/29/20	REVISION: 0
ENG: JJN	DWN: BJC APPD: JJN

SPLICE BOLT TABLE						
Mark	Qty		Int	Type	Dia	Length
	Top	Bot				
SP-1	4	4	2	A325	1.000	2.75
SP-2	4	4	2	A325	0.750	2.25
SP-3	4	4	4	A325	1.000	2.75

MEMBER TABLE										
Mark	Web Depth		Web Thick	Plate Length	Outside Flange			Inside Flange		
	Start	End			W	Thk	Length	W	Thk	Length
RF1-1	17.0	28.0	0.188	193.3	6 x 1/4"	x 192.1	6 x 5/16"	x 60.1		
RF1-2	27.0/26.1	0.250	83.7	6 x 1/4"	x 36.3	6 x 1/2"	x 102.5			
	26.1/25.4	0.219	60.0	6 x 1/4"	x 142.6	6 x 5/16"	x 83.7			
	25.4/24.0	0.188	120.0	6 x 3/8"	x 120.0	6 x 1/4"	x 180.0			
RF1-3	24.0/26.8	0.188	120.0	6 x 3/8"	x 120.0	6 x 1/4"	x 180.0			
	26.8/28.2	0.219	60.0	6 x 1/4"	x 138.1	6 x 5/16"	x 76.9			
	28.2/30.0	0.250	78.1	6 x 1/4"	x 39.3	6 x 1/2"	x 61.2			
RF1-4	31.0/20.0	0.188	216.4	6 x 1/4"	x 216.4	6 x 3/8"	x 120.2			

FLANGE BRACES: Both Sides(U.N.)  
 FBxxB(1)  
 B - L20X3/16  
 A - L15X1/8



RIGID FRAME ELEVATION: FRAME LINE 2 3 4 5 6

GENERAL NOTES:

- See Detail Sheets for Connection Information.
- See Shipping List for Flange Brace Lengths.

DRAWING IS NOT TO SCALE



TWIN CITY CONSTRUCTION

50'-0" x 150'-0" x 19'-0" x 21'-1"

DATE: 1/29/20 REVISION: 0

ENG: JJN DWN: BJC APPD: JJN

F.O. 23617

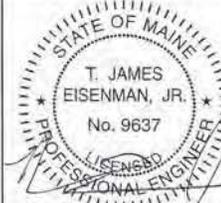
TWIN CITY CONSTRUCTION

REVISION HISTORY

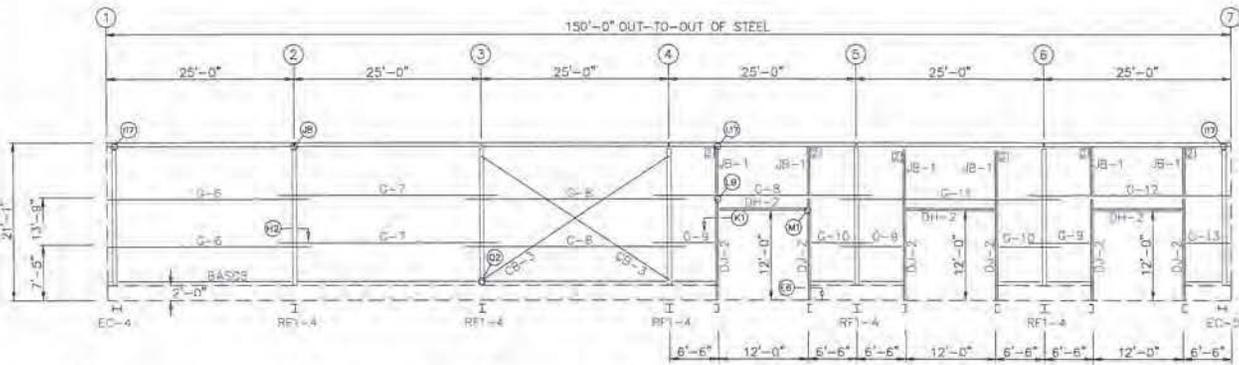
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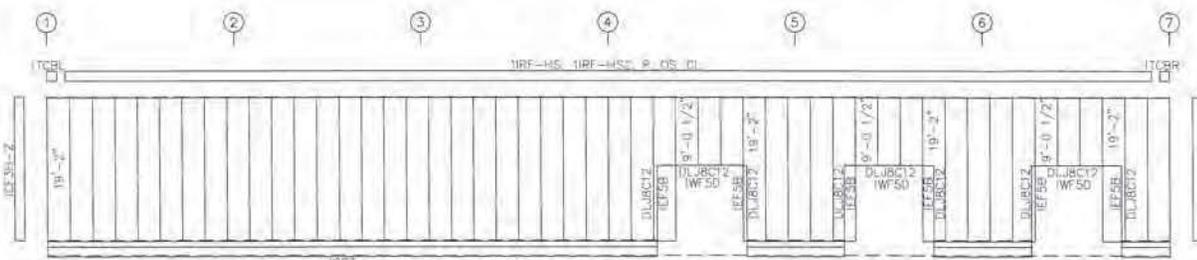
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- FOR CONSTRUCTION: FINAL DRAWINGS.



2/10/20



SIDEWALL FRAMING: FRAME LINE A



SIDEWALL SHEETING & TRIM: FRAME LINE A  
PANELS: 26 Ga. R - Burnished Slate

MEMBER TABLE		
FRAME LINE A		
QUAN	MARK	PART
6	DJ-2	8X35C16
6	DH-2	8X35C16
6	C-6	8X25Z14
6	C-7	8X25Z14
6	C-8	8X25Z16
6	C-9	8X25Z16
6	C-10	8X25Z16
6	C-11	8X25Z14
6	C-12	8X25Z10
6	C-13	8X25Z16
6	CB-3	CABLE500
6	JB-1	8X35C16

CONNECTION PLATES		
FRAME LINE A		
ID	QUAN	MARK / PART
2	6	JC

**GENERAL NOTES:**

1. Use TEK5WW screws in place of SD150 panel screws at all 10 gage members.
2. All connections to door or window jambs where the clip is not designated in the clip table / drawing are made with JC# clips (#= Girt Depth).

**DRAWING IS NOT TO SCALE**

TRIM COLORS	
EAVE TRIM = Burnished Slate	CORNER TRIM = Burnished Slate
BASE TRIM = Burnished Slate	GUTTER =
DOOR TRIM = Burnished Slate	DOWNSPOUTS =
RAKE TRIM = Burnished Slate	
LINER TRIM = Liner panel color	
SOFFIT TRIM = Soffit panel color	

\* ONLY APPLICABLE IF LINER TRIM OR SOFFIT PANEL IS INDICATED ON BUILDING ORDER.



TWIN CITY CONSTRUCTION  
50'-0" x 150'-0" x 19'-0" x 21'-1"  
DATE: 1/29/20 REVISION: 0  
ENG: JJN DWN: BJC APPD: JJN

F.O. 23617

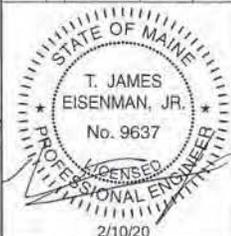
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REV	DESCRIPTION

**DRAWING STATUS**

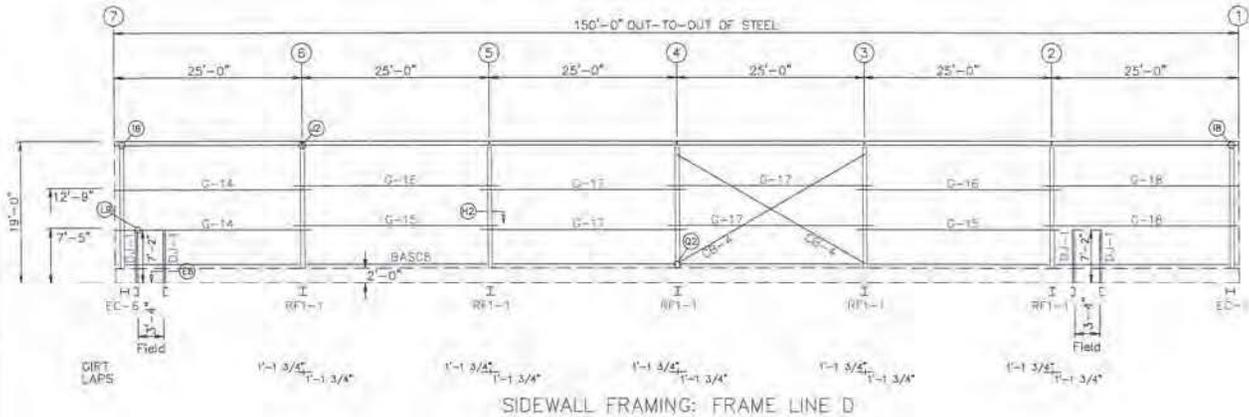
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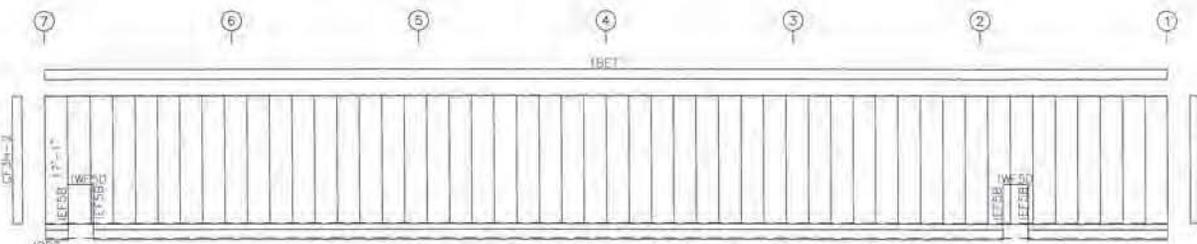
FOR CONTRACTOR: THESE DRAWINGS, BEING FOR CONTRACTOR, ARE BY DEFINITION NOT FINAL. ONLY DRAWINGS ISSUED FOR CONSTRUCTION CAN BE CONSIDERED AS COMPLETE.



MEMBER TABLE FRAME LINE D			
QUAN	MARK	PART	LENGTH
4	DJ-1	8X35C16	7'-4 3/4"
2	G-14	8X25Z14	26'-1 1/2"
2	G-15	8X25Z13	27'-3 1/2"
2	G-16	8X25Z14	27'-3 1/2"
4	G-17	8X25Z16	27'-3 1/2"
2	G-18	8X25Z14	26'-1 1/2"
2	CB-4	CABLE500	26'-5 5/8"



SIDEWALL FRAMING: FRAME LINE D



SIDEWALL SHEETING & TRIM: FRAME LINE D  
PANELS: 26 Ga. R - Burnished Slate

DRAWING IS NOT TO SCALE

TRIM COLORS			
EAVE TRIM	= Burnished Slate	CORNER TRIM	= Burnished Slate
BASE TRIM	= Burnished Slate	GUTTER	=
DOOR TRIM	= Burnished Slate	DOWNSPOUTS	=
RAKE TRIM	= Burnished Slate		
LINER TRIM	= Liner panel color		
SOFFIT TRIM	= Soffit panel color		

**GENERAL NOTES:**

1. Use TEK5WW screws in place of SD150 panel screws at all 10 gage members.
2. All connections to door or window jambs where the clip is not designated in the clip table / drawing are made with JC# clips. (# = Girt Depth).

**STEELSMITH**

TWIN CITY CONSTRUCTION

50'-0" x 150'-0" x 19'-0" x 21'-1"

DATE: 1/29/20 REVISION: 0

ENG: JJN DWN: BJC APPD: JJN

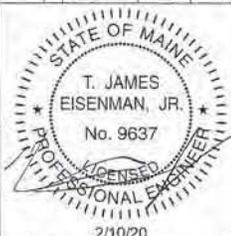
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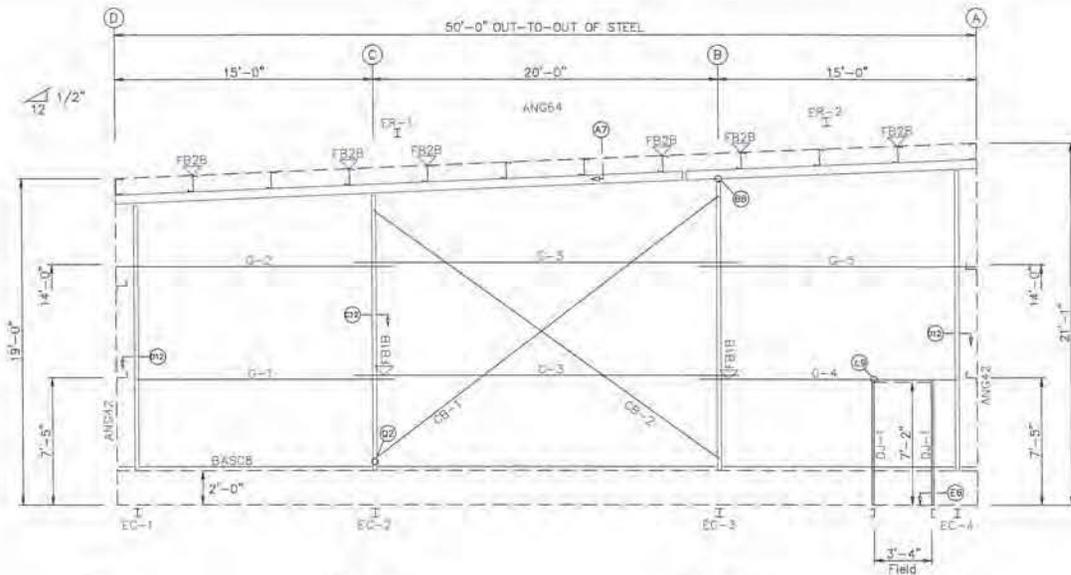
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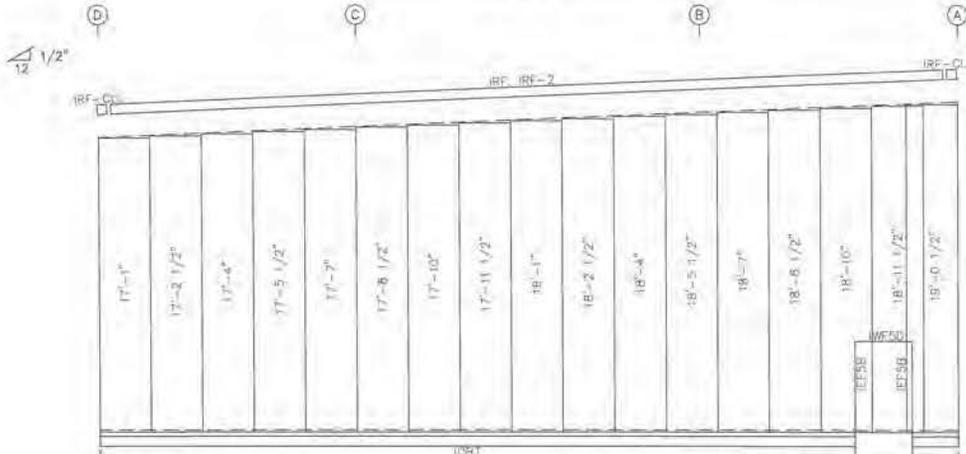
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FOR PERMIT: THESE DRAWINGS BEING FOR PERMIT ARE BY DEFINITION NOT FINAL AND ARE FOR CONCEPTUAL REPRESENTATION ONLY. THE PROJECT DOCUMENTS WILL BE THE FINAL AUTHORITY FOR CONSTRUCTION. ONLY DRAWINGS ISSUED FOR CONSTRUCTION CAN BE CONSIDERED AS COMPLETE.





ENDWALL FRAMING: FRAME LINE 1



ENDWALL SHEETING & TRIM: FRAME LINE 1

PANELS: 26 Ga. R - Burnished Slate

**GENERAL NOTES:**

1. Use TEK5WW screws in place of SD150 panel screws at all 10 gage members.
2. See detail C7A for field coping of coldform endwall column flange braces.
3. All connections to door or window jambs where the clip is not designated in the clip table / drawing are made with JC# clips (# = Girt Depth).

**BOLT TABLE**  
FRAME LINE 1

LOCATION	QUAN	TYPE	DIA	LENGTH
ER-1/ER-2	8	A325	1/2"	1 1/2"
Columns/Ref	2	A325	1"	2"

**MEMBER TABLE**  
FRAME LINE 1

QUAN	MARK	PART	LENGTH
1	EC-1	W8X10	15'-2 7/16"
1	EC-2	W8X10	15'-9 3/8"
1	EC-3	W8X10	16'-7 3/8"
1	EC-4	W8X10	17'-2 1/4"
1	ER-1	W10X12	33'-0 7/8"
1	ER-2	W10X12	16'-11 11/16"
2	DJ-1	8X35C16	7'-4 3/4"
1	G-1	8X25Z16	15'-5 1/2"
1	G-2	8X25Z16	16'-1 1/2"
2	G-3	8X25Z16	22'-3 1/2"
1	G-4	8X25Z16	15'-5 1/2"
1	G-5	8X25Z16	16'-1 1/2"
1	CB-1	CABLE250	23'-4 5/16"
1	CB-2	CABLE250	22'-10 3/8"

**FLANGE BRACE TABLE**  
FRAME LINE 1

VID	MARK	LENGTH
1	FB2B	1'-4 7/8"
2	FB1B	1'-2 3/8"

DRAWING IS NOT TO SCALE

**TRIM COLORS**

EAVE TRIM = Burnished Slate	CORNER TRIM = Burnished Slate
BASE TRIM = Burnished Slate	GUTTER =
DOOR TRIM = Burnished Slate	DOWNSPOUTS =
RAKE TRIM = Burnished Slate	
* LINER TRIM = Liner panel color	
* SOFFIT TRIM = Soffit panel color	

\* ONLY APPLICABLE IF LINER TRIM OR SOFFIT PANEL IS INDICATED ON BUILDING ORDER.

**STEELSMITH.**

TWIN CITY CONSTRUCTION

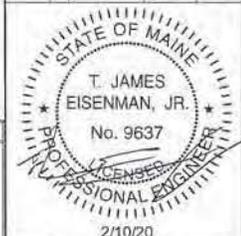
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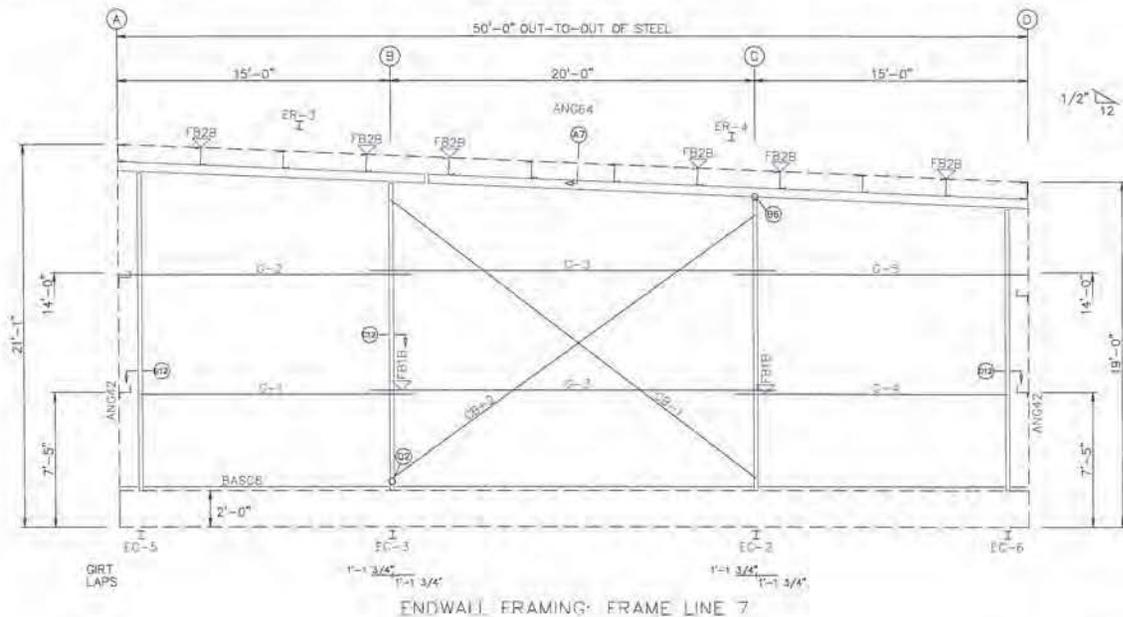
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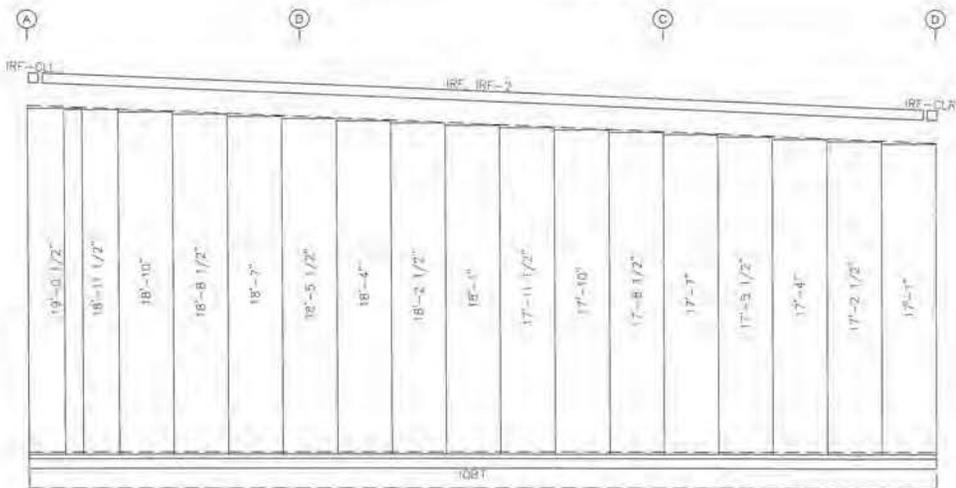
F.O. 23617

TWIN CITY CONSTRUCTION  
REVISION HISTORY





ENDWALL FRAMING: FRAME LINE 7



ENDWALL SHEETING & TRIM: FRAME LINE 7  
PANELS: 26 Ga. R - Burnished Slate

**GENERAL NOTES:**

1. Use TEK5WW screws in place of SD150 panel screws at all 10 gage members.
2. See detail C7A for field coping of coldform endwall column flange braces.
3. All connections to door or window jambs where the clip is not designated in the clip table / drawing are made with JC# clips (# = Girt Depth).

**BOLT TABLE**  
FRAME LINE 7

LOCATION	QUAN	TYPE	DIA	LENGTH
ER-3/ER-4	8	A325	1 1/2"	1 1/2"
Columns/Raf	2	A325	1"	2"

**MEMBER TABLE**  
FRAME LINE 7

QUAN	MARK	PART	LENGTH
1	W	WBX10	15'-0 3/8"
1	W	WBX10	16'-1 3/8"
1	W	WBX10	17'-2 1/4"
1	W	WBX10	15'-2 7/16"
1	W	W10X12	16'-2 11/16"
1	W	W10X12	35'-10 7/8"
1	C	8X25Z16	15'-5 1/2"
1	C	8X25Z16	16'-1 1/2"
2	C	8X25Z16	22'-3 1/2"
1	C	8X25Z16	15'-5 1/2"
1	C	8X25Z16	16'-1 1/2"
1	CB	CABLE250	23'-4 5/16"
1	CB	CABLE250	22'-10 3/8"

**FLANGE BRACE TABLE**  
FRAME LINE 7

QTY	MARK	LENGTH
1	FB2B	1'-4 7/8"
2	FB1B	1'-2 3/8"

DRAWING IS NOT TO SCALE

**TRIM COLORS**

EAVE TRIM = Burnished Slate	CORNER TRIM = Burnished Slate
BASE TRIM = Burnished Slate	GUTTER =
DOOR TRIM = Burnished Slate	DOWNSPOUTS =
RAKE TRIM = Burnished Slate	
LINER TRIM = Liner panel color	
SOFFIT TRIM = Soffit panel color	

\* ONLY APPLICABLE IF LINER TRIM OR SOFFIT PANEL IS INDICATED ON BUILDING ORDER.



TWIN CITY CONSTRUCTION  
50'-0" x 150'-0" x 19'-0" x 21'-1"

DATE: 1/29/20 REVISION: 0  
ENG: JJN DWN: BJC APPD: JJN

F.O. 23617

**TWIN CITY CONSTRUCTION**

**REVISION HISTORY**

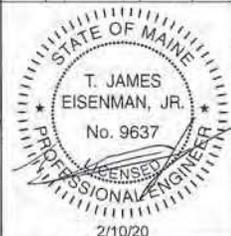
REV	DESCRIPTION	DATE

**DRAWING STATUS**

FOR APPROVAL  
THESE DRAWINGS, BEING FOR APPROVAL, ARE BY DEFINITION NOT FINAL, AND ARE FOR CONCEPTUAL REPRESENTATION ONLY. THE PRODUCT SPECIFICATIONS, ONLY DRAWINGS ISSUED FOR CONSTRUCTION, CAN BE CONSIDERED AS COMPLETE.

FOR PERMIT  
THESE DRAWINGS, BEING FOR PERMIT, ARE BY DEFINITION NOT FINAL. ONLY DRAWINGS ISSUED FOR CONSTRUCTION, DATE BEING CORRECTED AS COMPLETE.

FINAL DRAWING



Major Development Review Application  
Office/Warehouse Building, 1222 Sabbattus Street, Lewiston  
March 27, 2020

**Attachment H**  
**Site Plans**

The project site plans are included for review as a separate plan set of full-size documents.



Site Plans

**GENERAL NOTES:**

1. DRAWINGS ARE BASED ON BOUNDARY AND TOPOGRAPHIC SURVEY INFORMATION FROM MULTIPLE SOURCES BY LITTLE RIVER SURVEY.
2. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR THE ELEVATION OF THE EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION HAS NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVES AND IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANY AND DIG SAFE (1-800-DIG-SAFE) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IN AREAS OF POTENTIAL CONFLICTS TEST PITS SHALL BE REQUIRED TO VERIFY EXISTING UTILITY LOCATION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
3. RIM ELEVATIONS OF PROPOSED SANITARY SEWER MANHOLES, DRAINAGE STRUCTURES AND ASSOCIATED STRUCTURES ARE APPROXIMATE. FINAL ELEVATIONS ARE TO BE SET FLUSH AND CONSISTENT WITH THE GRADING PLANS. ADJUST ALL OTHER RIM ELEVATIONS OF MANHOLES, WATER GATES, GAS GATES AND OTHER UTILITIES TO FINISH GRADE WITHIN LIMITS OF WORK.
4. THE LOCATION, SIZE, DEPTH, AND SPECIFICATIONS FOR CONSTRUCTION OF PROPOSED PRIVATE UTILITY SERVICES SHALL BE INSTALLED ACCORDING TO THE REQUIREMENTS PROVIDED BY, AND APPROVED BY THE RESPECTIVE UTILITY COMPANY (GAS, TELEPHONE, ELECTRIC, CABLE AND FIRE ALARM). FINAL DESIGN LOADS AND LOCATIONS TO BE COORDINATED WITH CONSTRUCTION MANAGER AND ARCHITECT.
5. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION, SIZE, INVERTS AND TYPES OF EXISTING PIPES AT ALL PROPOSED POINTS OF CONNECTION PRIOR TO ORDERING MATERIALS. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATIONS, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED IN WRITING TO THE CONSTRUCTION MANAGER REPRESENTATIVE FOR THE RESOLUTION OF THE CONFLICT.
6. THE CONTRACTOR SHALL VERIFY ALL CRITICAL DIMENSIONS AND GRADES BEFORE WORK BEGINS. CONTRACTOR SHALL CONFIRM LOCATION AND DEPTH ALL UTILITY LINE CROSSINGS WITH TEST PITS PRIOR TO BEGINNING WORK. CONFLICTS SHALL BE REPORTED IN WRITING TO CONSTRUCTION MANAGER FOR RESOLUTION OF THE CONFLICT.
7. ALL AREAS OUTSIDE THE LIMIT OF WORK THAT ARE DISTURBED SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE. ALL AREAS DISTURBED DURING CONSTRUCTION NOT COVERED WITH BUILDINGS, STRUCTURES, OR PAVEMENT SHALL RECEIVE 4 INCHES OF LOAM AND SEED.
8. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS AND SHALL BE RESPONSIBLE FOR PAYING ANY FEES FOR ANY POLE RELOCATION AND FOR THE ALTERATION OR ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, CABLE, FIRE ALARM AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.
9. UPON AWARD OF CONTRACT, CONTRACTOR SHALL MAKE ALL NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN ALL NECESSARY PERMITS, PAY ALL FEES AND POST ALL BONDS ASSOCIATED WITH THE WORK INDICATED ON THE DRAWINGS AND AS SPECIFIED.
10. ALL PROPERTY MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE RESET TO THEIR ORIGINAL LOCATION BY A MAINE REGISTERED LICENSED PROFESSIONAL LAND SURVEYOR (PLS) AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL PREPARE AN AS-BUILT PLAN SURVEY SHOWING LOCATIONS OF ALL SURFACE FEATURES AND SUBSURFACE UTILITY SYSTEMS INCLUDING THE LOCATION TYPE, SIZE AND INVERTS.
11. THE CONTRACTOR SHALL INSTALL ALL EROSION CONTROL MEASURES PRIOR TO EARTHWORK OPERATION AND MAINTAIN ALL EROSION CONTROL MEASURES AND SEEDED EMBANKMENTS DURING CONSTRUCTION. EROSION CONTROL SHALL BE REMOVED ONLY UPON THE ESTABLISHMENT OF ALL LANDSCAPED AREAS. ALL WORK SHALL BE IN COMPLIANCE WITH THE ENVIRONMENTAL QUALITY HANDBOOK FOR EROSION AND SEDIMENT CONTROL, LATEST EDITION, AS ADOPTED BY THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION.
12. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. ALL CONSTRUCTION ACTIVITY SHALL BE IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS.
13. ALL MATERIALS AND CONSTRUCTION METHODS USED WITHIN THE PUBLIC RIGHT-OF-WAY SHALL CONFORM TO ALL LOCAL MUNICIPAL STANDARDS AND MAINE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.
14. THE CONTRACTOR IS REQUIRED TO CONTROL DUST DURING CONSTRUCTION. EXPOSED SOIL AREAS SHALL BE SPRAYED WITH WATER AS NEEDED TO CONTROL DUST EMISSIONS. COVER EXPOSED SOIL AREAS AS QUICKLY AS PRACTICAL TO PREVENT WINDS FROM GENERATING DUST.
15. ALL HANDICAP ACCESSIBLE PARKING SPACES, RAMPS AND SIDEWALKS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA).
16. ALL SITE SIGNAGE AND PAVEMENT MARKINGS SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
17. THE CONTRACTOR SHALL ANTICIPATE THAT GROUNDWATER MAY BE ENCOUNTERED DURING CONSTRUCTION AND SHALL INCLUDE SUFFICIENT COSTS WITHIN THEIR BID TO PROVIDE DEWATERING AS NECESSARY. NO SEPARATE PAYMENT SHALL BE MADE TO THE CONTRACTOR FOR DEWATERING.

# OFFICE/WAREHOUSE BUILDING

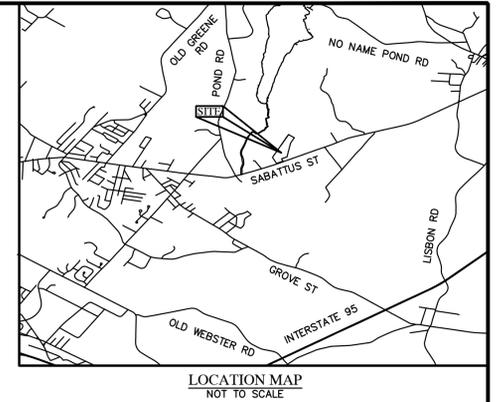
## TWIN CITY CONSTRUCTION

### 1222 SABATTUS STREET, LEWISTON, MAINE

## PREPARED FOR:

# 410 INDUSTRIES, LLC

### 1222 SABATTUS STREET, LEWISTON, ME 04240



EXISTING	LEGEND	PROPOSED
●	IRON MARKER FOUND	○
	5/8" REBAR TOPPED WITH AN ALUMINUM CAP READING "BRUCE W. MARTINSON - PLS 2137" TO BE SET	
	GRANITE MONUMENT SET	■
	CATCH BASIN	⊕
	SEWER MANHOLE	⊙
	FIRE HYDRANT	⊕
	WATER GATE VALVE	⊕
	WATER SHUT-OFF	⊕
	UTILITY POLE	●
	UTILITY LINE	—●—
	PROPERTY LINE	— — — —
	EASEMENTS	— · — · —
	SETBACK/BUFFER	— · — · —
	SOILS BOUNDARY	— · — · —
	WETLAND BOUNDARY	— · — · —
	STREAM	=====
	CURB	=====
	EDGE OF PAVEMENT	=====
	ROAD CENTERLINE	— · — · —
	BUILDING	=====
—12"SD—	STORM DRAIN(SEE PLAN FOR SIZE)	—12"SD—
—6"S—	SEWER LINE(SEE PLAN FOR SIZE)	—6"S—
—8"W—	WATER LINE(SEE PLAN FOR SIZE)	—8"W—
	SLOPE ARROW	—1.5%
	CONTOURS	—100—
	TEMPORARY INLET PROTECTION	○
	TREE LINE	· · · · ·
	SEDIMENT BARRIER	—SB—
	RIPRAP	⊕
	PROPOSED PAVEMENT	■
	SPOT GRADE	⊕ T100.50 B100.00

**CIVIL SHEET INDEX:**

DWG NO.:	SHEET TITLE:	SCALE:
C1	COVER SHEET	NTS
C2	SITE LAYOUT & UTILITY PLAN	1"=20'
C3	GRADING, DRAINAGE, & EROSION CONTROL PLAN	1"=20'
C4	SITE DEVELOPMENT DETAILS	NTS
C5	EROSION CONTROL DETAILS & NOTES	NTS
L1	LANDSCAPE PLAN	1"=20'

**PROJECT CONTACTS:**

**LEWISTON PLANNING & CODE ENFORCEMENT**

DAVID HEDIGER, CITY PLANNER  
27 PINE STREET  
LEWISTON, MAINE 04240  
PHONE: 207-513-3125

**WATER & SEWER DIVISION**

KEVIN GAGNE, P.E., DEPUTY DIRECTOR  
103 ADAMS AVE  
LEWISTON, MAINE 04240  
PHONE: 207-513-3003

**PUBLIC WORKS DEPARTMENT:**

DAVID A. JONES, DIRECTOR  
103 ADAMS AVE  
LEWISTON, MAINE 04240  
PHONE: 207-513-3003

**LEWISTON FIRE DEPARTMENT:**

BRIAN STOCKDALE, FIRE CHIEF  
2 COLLEGE STREET  
LEWISTON, MAINE 04240  
PHONE: 207-513-3002

**LEWISTON POLICE DEPARTMENT:**

BRIAN O'MALLEY, CHIEF  
171 PARK STREET  
LEWISTON, MAINE 04240  
PHONE: 207-513-3001

**NATURAL GAS:**

UNITIL MAINE GAS OPERATIONS  
376 RIVERSIDE INDUSTRIAL PARKWAY  
PORTLAND, MAINE 04103  
PHONE: 1-866-933-3821

**ELECTRIC SERVICE:**

CENTRAL MAINE POWER  
740 MAIN STREET  
LEWISTON, MAINE 04240  
PHONE: 207-897-3454

**CABLE SERVICE:**

SPECTRUM  
37 ALFRED A PLOURDE PARKWAY  
LEWISTON, MAINE 04240  
PHONE: 1-800-892-4357

**DESIGN TEAM:**

**ENGINEERING, PLANNING, SURVEYING & LANDSCAPE ARCHITECTS:**

SITELINES, P.A.  
CURTIS NEUFELD, P.E.  
8 CUMBERLAND STREET  
BRUNSWICK, MAINE 04011  
PHONE: 207-725-1200

**GEOTECHNICAL ENGINEERING:**

SUMMIT GEOENGINEERING SERVICES  
CRAIG COOLIDGE, P.E.  
173 PLEASANT STREET  
ROCKLAND, MAINE 04841  
PHONE: 207-318-7761

**BUILDING DESIGN:**

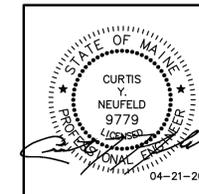
THE SHERIDAN CORPORATION  
DAVID WHITNEY, LEED AP  
33 SHERIDAN DRIVE  
FAIRFIELD, MAINE 04937  
PHONE: 207-774-6138

**PRELIMINARY PERMITTING REQUIREMENTS:**

AGENCY:	PERMIT:	STATUS:
CITY OF LEWISTON	SITE PLAN APPROVAL BUILDING	PENDING (BY CONTRACTOR)

2. 04-21-20	REVISED BER CITY STAFF COMMENTS	MCA
1. 03-27-20	SUBMITTED TO CITY OF LEWISTON	CYN

TITLE:	<b>COVER SHEET</b>
PROJECT:	OFFICE/WAREHOUSE BUILDING 1222 SABATTUS STREET, LEWISTON, MAINE 04240
PREPARED FOR:	410 INDUSTRIES, LLC 1222 SABATTUS STREET, LEWISTON, MAINE 04240



**SITELINES**  
119 PURINTON ROAD, SUITE A  
BRUNSWICK, MAINE 04011  
207.725.1200  
CIVIL ENGINEERS • PLANNERS • LAND SURVEYORS

FIELD WK: MC/CR	SCALE: NTS	SHEET:
DRN BY: RPL	JOB #: 4060	<b>C1</b>
CHD BY: CYN	MAP/LOT: 037/024	
DATE: 03-05-2020	FILE: 4060-COV-DET	

CALL DIG SAFE UTILITY LOCATION  
**1-888-344-7233**  
STATE LAW REQUIRES ADVANCE NOTICE OF  
AT LEAST 3 BUSINESS DAYS BEFORE YOU DIG,  
GRADE OR EXCAVATE FOR THE MARKING  
OF UNDERGROUND UTILITIES

©2020, THIS DRAWING IS THE PROPERTY AND INSTRUMENT OF SITELINES P.A. ANY REPRODUCTION, CHANGE OR USE OF THIS DRAWING WITHOUT THE EXPRESS WRITTEN PERMISSION OF SITELINES P.A. IS UNLAWFUL AND IS AT THE USER'S RISK.  
 X:\LAND PROJECTS\TWINCITY\1222 SABATTUS ST LEWISTON\4000-SITE DWG. C2 SITE LAYOUT AND UTILITY\_3/26/2020 10:04 AM MELISSA ARCHIBELL

**SIGN LEGEND:**

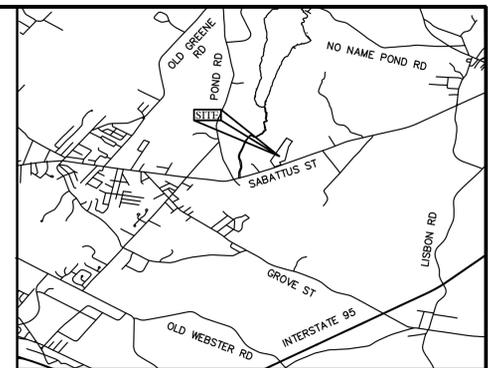
R1-1 (24"x24")  
 R7-8 (12"x18")  
 R7-9A (12"x18")

**CURBING LEGEND:**

VERTICAL BITUMINOUS CURB:

TD TIP DOWN  
TS TRANSITION STONE

- LAYOUT NOTES:**
- ALL DIMENSIONING, UNLESS NOTED OTHERWISE, IS TO THE FACE OF CURB OR FOUNDATION.
  - BOUNDARY INFORMATION ON LAYOUT PLAN IS FOR REFERENCE ONLY; REFER TO CERTIFIED BOUNDARY PLANS FOR BOUNDARY INFORMATION.
  - ALL HANDICAP ACCESSIBLE PARKING SPACES, RAMPS AND SIDEWALKS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA).
  - ALL SITE SIGNAGE AND PAVEMENT MARKINGS SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
  - BUILDING FOUNDATION SHOWN IS NOT FOR FOUNDATION LAYOUT. COORDINATE SITE WORK WITH ARCHITECTURAL DRAWINGS INCLUDING BUILDING FEATURES AND FOUNDATION PLAN.
  - REFER TO SHEET C4 FOR GRADING AND DRAINAGE INFORMATION.
  - REFER TO SHEET L1 FOR LANDSCAPE INFORMATION.
  - REFER TO SHEET L2 FOR LIGHTING INFORMATION.



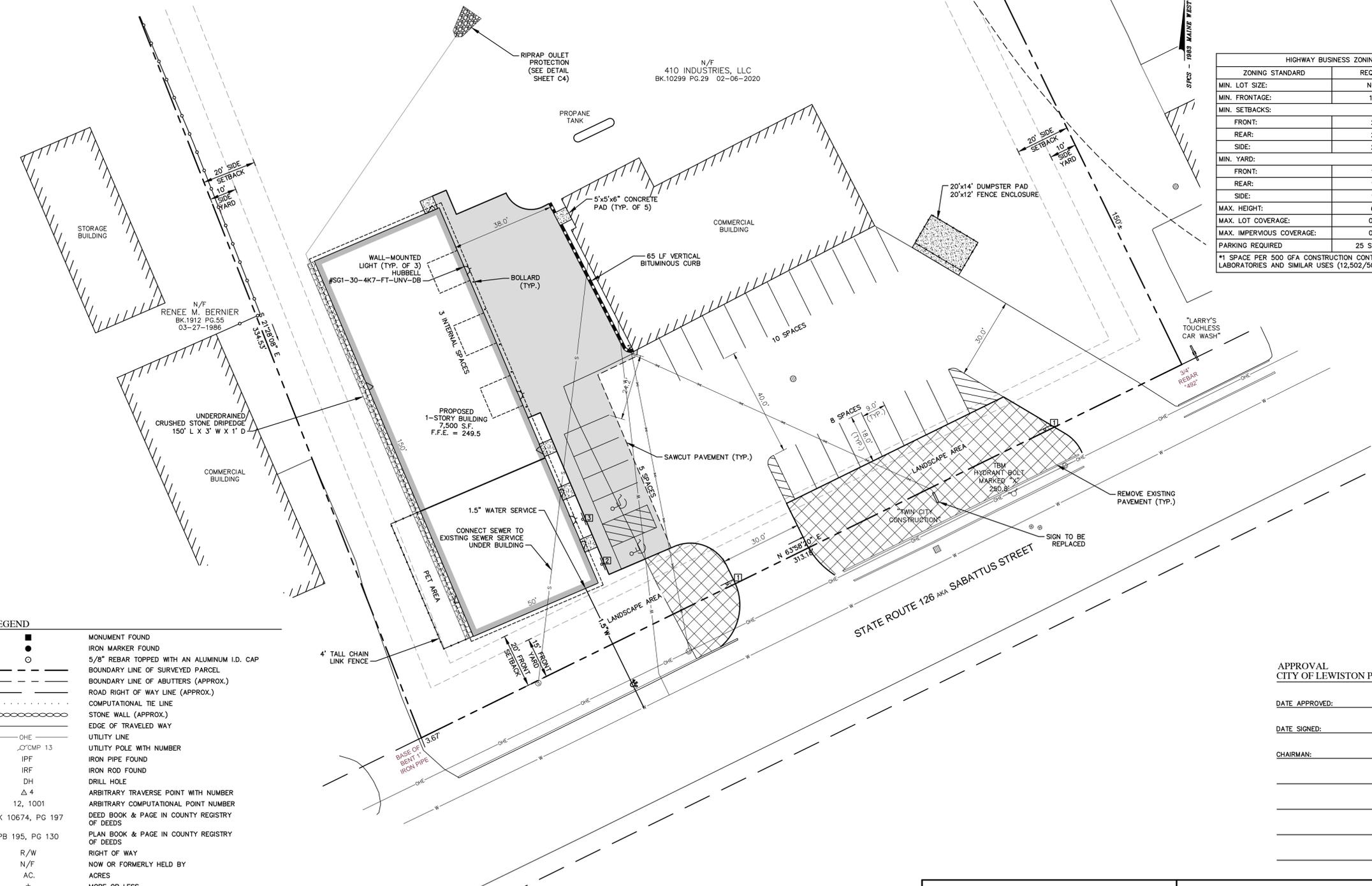
HIGHWAY BUSINESS ZONING DISTRICT (HB)

ZONING STANDARD	REQUIRED	PROPOSED
MIN. LOT SIZE:	NONE	12 ACRES
MIN. FRONTAGE:	150'	313.18'
MIN. SETBACKS:		
FRONT:	20'	22.5'
REAR:	20'	100'+
SIDE:	20'	27.5'
MIN. YARD:		
FRONT:	15'	18.2'
REAR:	10'	100'+
SIDE:	10'	19.7'
MAX. HEIGHT:	65'	<65'
MAX. LOT COVERAGE:	0.50	0.02
MAX. IMPERVIOUS COVERAGE:	0.75	0.06
PARKING REQUIRED:	25 SPACES*	26 SPACES

\*1 SPACE PER 500 GFA CONSTRUCTION CONTRACTORS, TRADESMAN, OFFICES, LABORATORIES AND SIMILAR USES (12,502/500)=25 SPACES

- GENERAL NOTES:**
- TITLE REFERENCE FOR SURVEYED PARCEL:**  
410 INDUSTRIES, LLC REFERENCE DEED BOOK 10229, PAGE 29
  - PLAN REFERENCE(S):**  
(1) TOPOGRAPHIC SURVEY FOR 410 INDUSTRIES, LLC 1222 SABATTUS STREET, LEWISTON, DATED MARCH 3, 2020 BY LITTLE RIVER SURVEYING, ME PLS #2376 NH LLS #957 PO BOX 332, LISBON FALLS MAINE 04252 (207) 841-0056
  - AREA INFORMATION:**  
LOT AREA: 12± ACRES
  - TAX MAP REFERENCE:**  
TAX MAP 37, LOT 24.
  - BASIS OF BEARINGS:**  
BEARINGS ARE REFERENCED TO THE STATE PLANE COORDINATE SYSTEM OF 1983, MAINE WEST ZONE, AS DETERMINED BY REAL TIME KINEMATIC GNSS TECHNIQUES WITH CORRECTIONS APPLIED BY THE MAINE DOT VRS NETWORK.
  - ELEVATION DATUM:**  
ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AS DETERMINED BY REAL TIME KINEMATIC GNSS TECHNIQUES WITH CORRECTIONS APPLIED BY THE MAINE DOT VRS NETWORK.
  - FLOOD ZONE INFORMATION:**  
PORTIONS OF THE PARCEL ARE LOCATED WITHIN ZONE AE (BASE FLOOD ELEVATION 242), ZONE X (AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD), AND ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) OF THE FLOOD INSURANCE RATE MAPS FOR ANDROSCOGGIN COUNTY, MAINE. THE LIMITS OF THE PROPOSED IMPROVEMENTS ARE WITHIN ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN). THE SITE IS LOCATED ON PANEL 332 OF 470 (COMMUNITY PANEL 230004 0332 E, EFF. DATE JULY 8, 2013).
  - IMPERVIOUS AREA:**  
EXISTING IMPERVIOUS AREA: 20,728 S.F. (0.476 AC)  
PROPOSED IMPERVIOUS AREA: 29,347 S.F. (0.687 AC)  
NET CHANGE IN IMPERVIOUS AREA: +9,219 S.F. (0.212 AC)

- UTILITY NOTES:**
- INFORMATION REGARDING THE LOCATION OF EXISTING UNDERGROUND UTILITIES IS A COMPILATION OF THAT FOUND IN THE FIELD AND THAT SHOWN ON A PREVIOUS PLAN, AND SHALL NOT BE CONSIDERED AN AS-BUILT PLAN. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING UTILITY LOCATIONS PRIOR TO COMMENCING WORK. NOTIFY ENGINEER OF ANY DISCREPANCY BETWEEN UTILITIES AS SHOWN AND AS FOUND. CONTRACTOR SHALL NOTIFY DIG-SAFE PRIOR TO EXCAVATION. 1-888-344-7233



**LEGEND**

- MONUMENT FOUND
- IRON MARKER FOUND
- 5/8" REBAR TOPPED WITH AN ALUMINUM I.D. CAP
- BOUNDARY LINE OF SURVEYED PARCEL
- BOUNDARY LINE OF ABUTTERS (APPROX.)
- ROAD RIGHT OF WAY LINE (APPROX.)
- COMPUTATIONAL TIE LINE
- STONE WALL (APPROX.)
- EDGE OF TRAVELED WAY
- UTILITY LINE
- UTILITY POLE WITH NUMBER
- IRON PIPE FOUND
- IRON ROD FOUND
- DRILL HOLE
- ARBITRARY TRAVERSE POINT WITH NUMBER
- ARBITRARY COMPUTATIONAL POINT NUMBER
- DEED BOOK & PAGE IN COUNTY REGISTRY OF DEEDS
- PLAN BOOK & PAGE IN COUNTY REGISTRY OF DEEDS
- RIGHT OF WAY
- NOW OR FORMERLY HELD BY
- ACRES
- MORE OR LESS
- SEWER MANHOLE
- LIGHT POLE
- CATCH BASIN
- WATER SHUT OFF
- HYDRANT
- SIGN
- WATER VALVE
- ELEVATION TEMPORARY BENCH MARK
- TEST PIT

**APPROVAL**  
CITY OF LEWISTON PLANNING BOARD

DATE APPROVED: \_\_\_\_\_

DATE SIGNED: \_\_\_\_\_

CHAIRMAN: \_\_\_\_\_

2. 04-21-20 REVISED BER CITY STAFF COMMENTS MCA  
1. 03-27-20 SUBMITTED TO CITY OF LEWISTON CYN

**TITLE:**  
SITE LAYOUT & UTILITY PLAN

**PROJECT:**  
OFFICE/WAREHOUSE BUILDING  
1222 SABATTUS STREET, LEWISTON, MAINE 04240

**PREPARED FOR:**  
410 INDUSTRIES, LLC  
1222 SABATTUS STREET, LEWISTON, MAINE 04240

**PROGRESS PRINT**  
THIS PLAN IS ISSUED FOR REVIEW AND INFORMATION PURPOSES ONLY. THIS PLAN IS SUBJECT TO CHANGE AND IS NOT FOR PRICING OR CONSTRUCTION. PRICING BASED ON THIS PLAN IS NOT BINDING UNLESS SIGNED BY BOTH CONTRACTOR AND OWNER.

CALL DIG SAFE UTILITY LOCATION  
**1-888-344-7233**  
STATE LAW REQUIRES ADVANCE NOTICE OF AT LEAST 3 BUSINESS DAYS BEFORE YOU DIG, GRADE OR EXCAVATE FOR THE MARKING OF UNDERGROUND UTILITIES

**GRAPHIC SCALE**  
0 10 20 40  
( IN FEET )  
1 inch = 20 ft.

ISSUED FOR:  
PERMITTING REVIEW

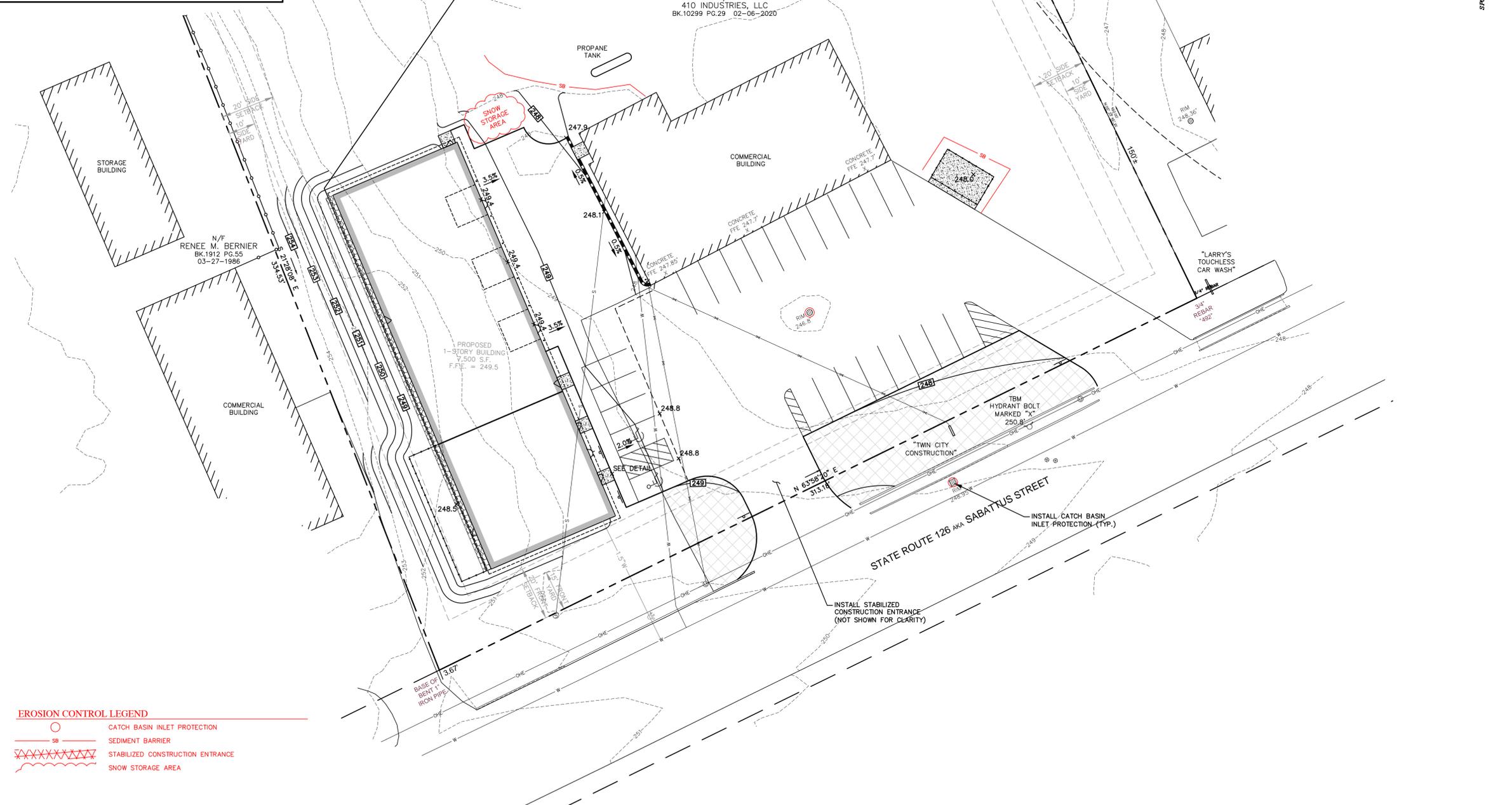
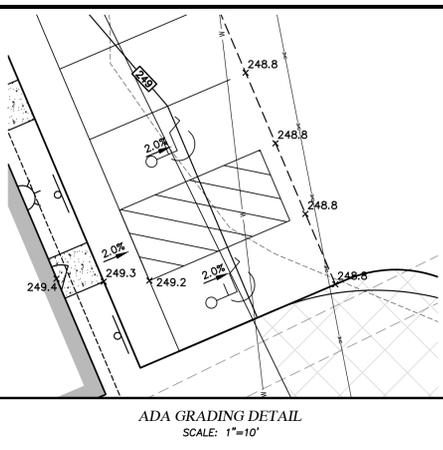
04-21-20

**SITELINES**  
119 PURINTON ROAD, SUITE A  
BRUNSWICK, MAINE 04011  
207.725.1200

**CIVIL ENGINEERS • PLANNERS • LAND SURVEYORS**

FIELD WK: MC/CR	SCALE: 1"=20'	SHEET:
DRN BY: RPL	JOB #: 4060	<b>C2</b>
CH'D BY: CYN	MAP/LOT: 037/024	
DATE: 03-05-2020	FILE: 4060-SITE	

2020. THIS DRAWING IS THE PROPERTY AND INSTRUMENT OF SITES LINES PA. NO MODIFICATIONS OR CHANGES MAY BE MADE TO THIS DRAWING WITHOUT THE EXPRESS WRITTEN PERMISSION OF SITES LINES PA. ANY MODIFICATION, CHANGE OR USE OF THIS DRAWING WITHOUT THE EXPRESS WRITTEN PERMISSION OF SITES LINES PA IS UNLAWFUL AND IS AT THE USER'S RISK.  
 X:\LAND PROJECTS\1222 SABATTUS ST LEWISTON\400-SITE.DWG, C3 GRADING AND EROSION CONTROL, 3/29/2020 10:04 AM, MELISSA ARCHIBELL



- GRADING AND DRAINAGE NOTES:**
1. THE CONTRACTOR SHALL PHASE GRADING EFFORTS SUCH THAT TOTAL SITE DISTURBANCE IS MINIMIZED. TEMPORARY EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO GRADING EFFORTS OR WITHOUT DELAY UPON THEIR COMPLETION, DEPENDENT UPON THE SITUATION.
  2. ALL FILL SLOPES SHALL BE A MINIMUM OF 3:1 HORIZONTAL TO VERTICAL UNLESS OTHERWISE NOTED OR DIRECTED.
  3. THE LIMITS OF DISTURBANCE SHALL GENERALLY BE THE MINIMAL EXTENT NECESSARY ONLY TO PERFORM THE GRADING EFFORTS SHOWN ON THE DRAWINGS. SPECIAL CARE SHALL BE TAKEN TO AVOID DISTURBANCE OF OBJECTS AND AREAS NOT SPECIFICALLY IDENTIFIED FOR MODIFICATION OR REMOVAL.
  4. ALL DISTURBED AREAS SHALL BE LOAMED AND SEEDING IN ACCORDANCE WITH THE DRAWINGS, UNLESS INTENDED FOR OTHER SURFACE COVER.
  5. STORM DRAINS SHALL BE CONSTRUCTED CONCURRENTLY WITH GRADING EFFORTS TO PROVIDE ADEQUATE CONVEYANCE FOR ANY SITE RUNOFF CONDITIONS.
  6. WHERE FINAL GRADING HAS BEEN COMPLETED, SURFACE RESTORATION FOR DISTURBED AREAS WILL BE COMPLETED AS SOON AS PRACTICABLE. FOR VEGETATIVE AREAS, VEGETATION WILL BE PROGRESSIVELY ESTABLISHED.
  7. UNLESS OTHERWISE NOTED, ALL STORM DRAIN PIPE SHALL BE IN ACCORDANCE WITH MDT SPECIFICATIONS SECTION 603. PIPE CULVERTS AND STORM DRAINS, LATEST REVISION WITH ACCEPTABLE TYPES OF PIPE ARE AS FOLLOWS:  
SMOOTH BORE POLYETHYLENE PIPE - HDPE N-12 ADS
  8. BENCHMARK INFORMATION: SEE PLAN
  9. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL DRAINAGE STRUCTURES AND PIPING PRIOR TO ORDERING.
  10. RIM ELEVATIONS OF PROPOSED DRAINAGE STRUCTURES ARE APPROXIMATE. FINAL ELEVATIONS ARE TO BE SET FLUSH AND CONSISTENT WITH THE GRADING PLANS.
  11. TRANSITIONS BETWEEN SLOPES ARE TO BE GENERALLY GRADUAL AND RESULT IN A SMOOTH, ROUNDED APPEARANCE.

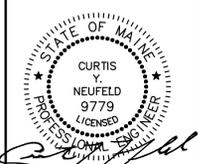
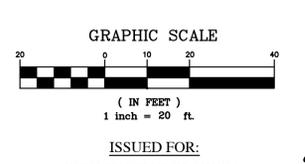
SACS - 1908 MAINE WEST



- EROSION & SEDIMENT CONTROL (ESC) NOTES:**
1. THE CONTRACTOR SHALL UTILIZE THE CONSTRUCTION ENTRANCE FOR ENTERING AND EXITING THE PROPERTY
  2. ESC BMPS SHALL BE INSTALLED PRIOR TO START OF WORK.
  3. CONTRACTOR SHALL TAKE APPROPRIATE MEASURES TO PROTECT DISTURBED AREAS AND REVIEW BMPS PRIOR TO FORECAST PRECIPITATION OF MORE THAN 0.5 INCHES.
  4. CONTRACTOR TO SWEEP EXISTING PAVED ACCESS AS NEEDED TO REMOVE TRACKED SOILS.
  5. CONTRACTOR SHALL KEEP THE WRITTEN STORMWATER MANAGEMENT INSPECTION AND MAINTENANCE PLAN ON SITE.
  6. SEE ADDITIONAL NOTES ON SHEET C10, EROSION CONTROL NOTES.

**PROGRESS PRINT**  
 THIS PLAN IS ISSUED FOR REVIEW AND INFORMATION PURPOSES ONLY. THIS PLAN IS SUBJECT TO CHANGE AND IS NOT FOR PRICING OR CONSTRUCTION. PRICING BASED ON THIS PLAN IS NOT BINDING UNLESS SIGNED BY BOTH CONTRACTOR AND OWNER.

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2. 04-21-20 REVISED BER CITY STAFF COMMENTS MCA
1. 03-27-20 SUBMITTED TO CITY OF LEWISTON CYN

**TITLE: GRADING, DRAINAGE, & EROSION CONTROL PLAN**

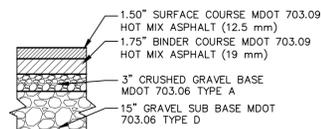
**PROJECT:** OFFICE/WAREHOUSE BUILDING  
 1222 SABATTUS STREET, LEWISTON, MAINE 04240

**PREPARED FOR:** 410 INDUSTRIES, LLC  
 1222 SABATTUS STREET, LEWISTON, MAINE 04240

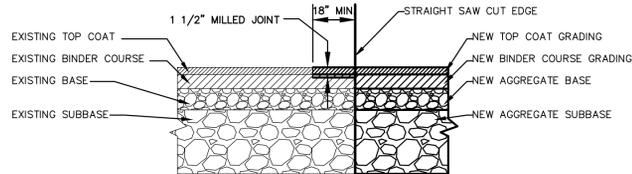
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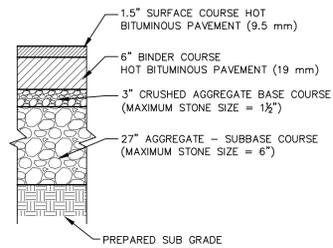
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DRN BY: RPL	JOB #: 4060	<b>C3</b>
CH'D BY: CYN	MAP/LOT: 037/024	
DATE: 03-05-2020	FILE: 4060-SITE	



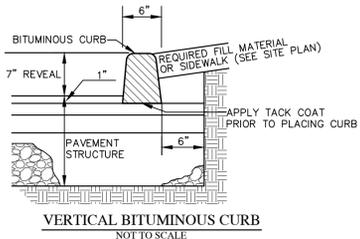
**STANDARD PAVEMENT SECTION**  
N.T.S.



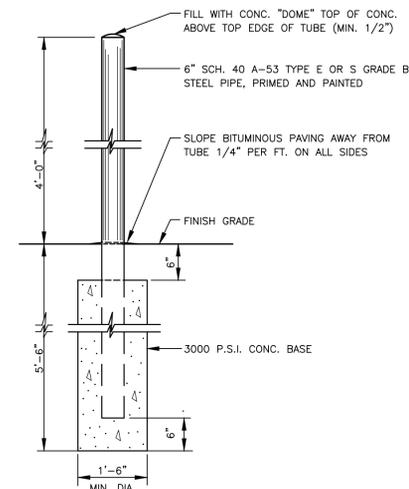
**PAVEMENT SAW CUT SECTION "FULL DEPTH RECONSTRUCTION"**  
N.T.S.



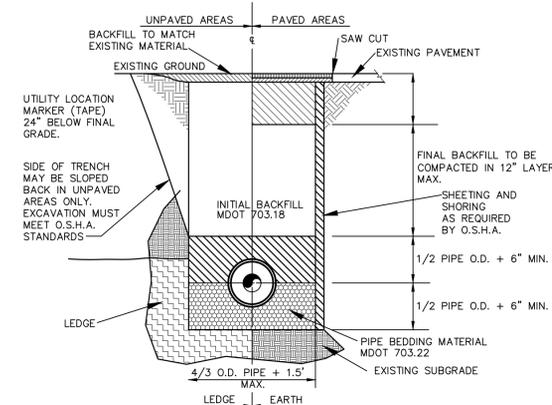
**NOTES:**  
1. ALL THICKNESSES ARE MINIMUMS AFTER COMPACTION  
2. REPAIRS TO SABATTUS STREET, AN ARTERIAL, SHALL BE IN ACCORDANCE WITH THE CITY OF LEWISTON, MAINE POLICY FOR THE DESIGN AND CONSTRUCTION OF STREETS AND SIDEWALKS.



**VERTICAL BITUMINOUS CURB**  
NOT TO SCALE



**TYPICAL BOLLARD DETAIL**  
N.T.S.



**NOTES:**  
1. INSTALL 3 FOOT LONG IMPERVIOUS DAMS IN BEDDING/INITIAL BACKFILL MATERIAL EVERY 100 FEET TO PREVENT TRENCH GROUNDWATER FROM BEING CHANNLED ALONG BEDDING/INITIAL BACKFILL  
2. REFER TO LATEST MDOT SPECIFICATIONS FOR BEDDING AND BACKFILL REQUIREMENTS.  
3. INITIAL BACKFILL TO BE 12 INCHES OVER TOP OF PVC PIPE ONLY.

**TYPICAL PIPE TRENCH DETAIL**  
N.T.S.

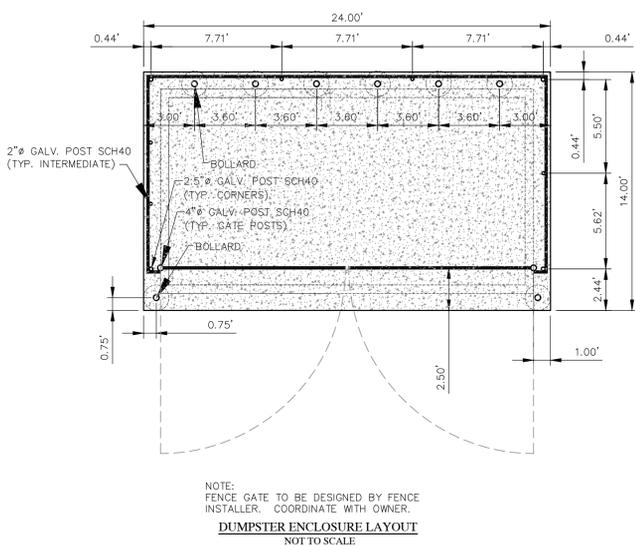
**A TYPICAL PAVEMENT DETAILS**  
N.T.S.

**B SABATTUS STREET PAVEMENT DETAIL**  
N.T.S.

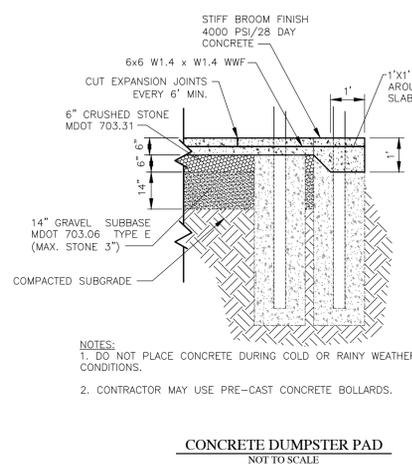
**C CURBING DETAILS**  
N.T.S.

**D TYPICAL BOLLARD DETAIL**  
N.T.S.

**E TYPICAL PIPE TRENCH DETAIL**  
N.T.S.

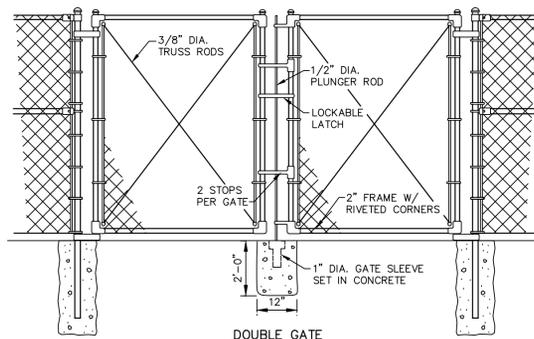


**NOTE:**  
FENCE GATE TO BE DESIGNED BY FENCE INSTALLER. COORDINATE WITH OWNER.  
**DUMPSTER ENCLOSURE LAYOUT**  
NOT TO SCALE

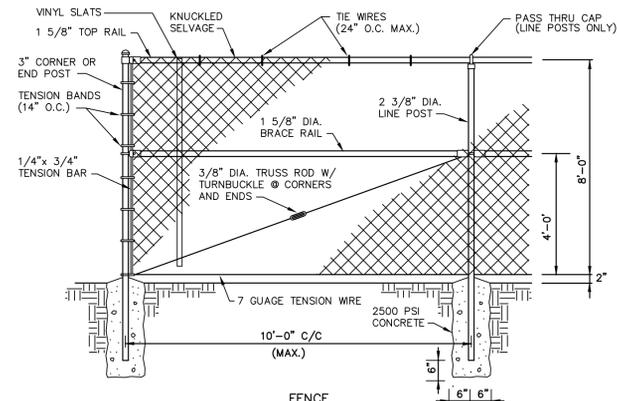


**NOTES:**  
1. DO NOT PLACE CONCRETE DURING COLD OR RAINY WEATHER CONDITIONS.  
2. CONTRACTOR MAY USE PRE-CAST CONCRETE BOLLARDS.

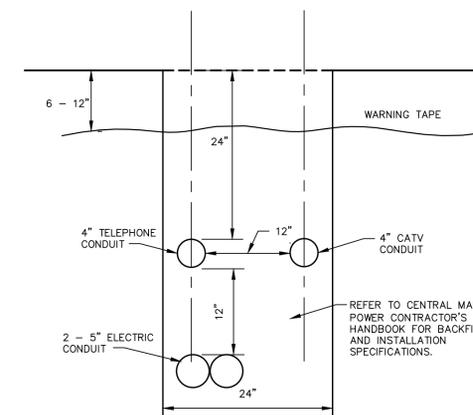
**CONCRETE DUMPSTER PAD**  
NOT TO SCALE



**DOUBLE GATE**

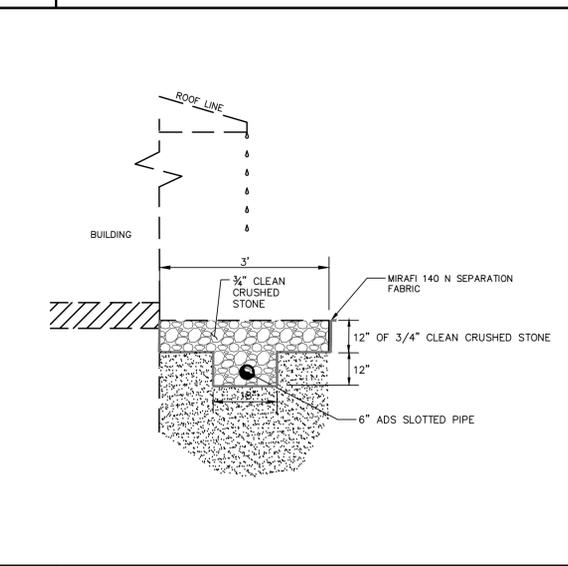


**FENCE**

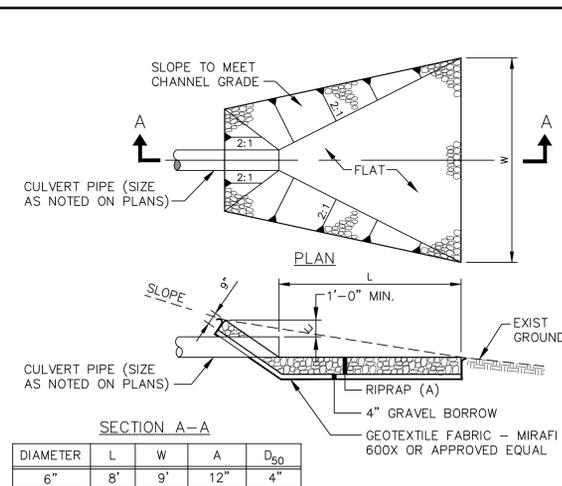


**G UTILITY TRENCH**  
N.T.S.

**F DUMPSTER DETAILS**  
N.T.S.

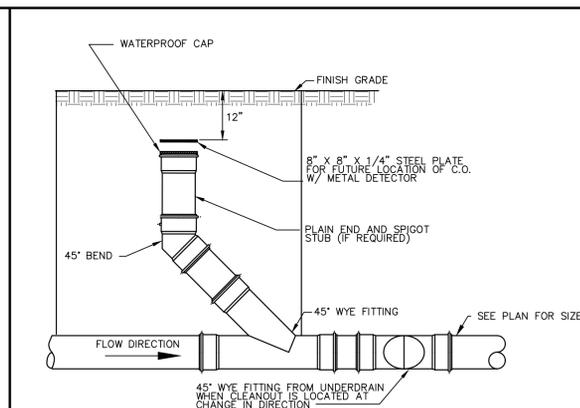


**H CRUSHED STONE DRIPEDGE**  
N.T.S.



DIAMETER	L	W	A	D <sub>50</sub>
6"	8'	9'	12"	4"

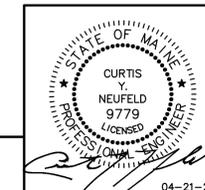
**I RIPRAP INLET/OUTLET PROTECTION**  
N.T.S.



**J SEWER CLEAN OUT DETAIL**  
N.T.S.

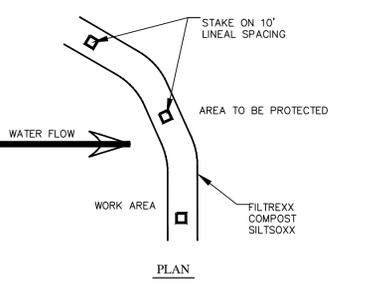
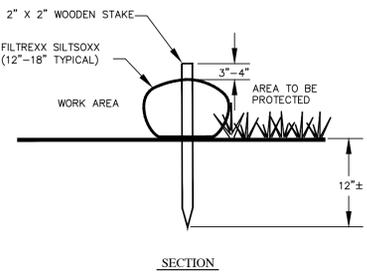
2. 04-21-20 REVISED BER CITY STAFF COMMENTS MCA  
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**TITLE:** SITE DEVELOPMENT DETAILS  
**PROJECT:** OFFICE/WAREHOUSE BUILDING  
1222 SABATTUS STREET, LEWISTON, MAINE 04240  
**PREPARED FOR:** 410 INDUSTRIES, LLC  
1222 SABATTUS STREET, LEWISTON, MAINE 04240

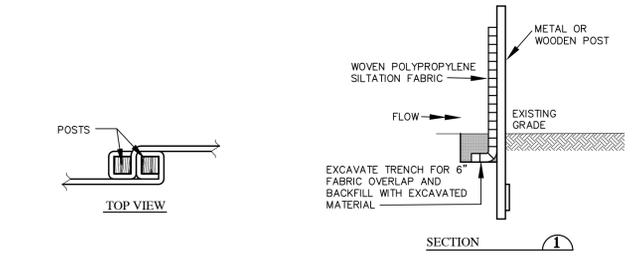
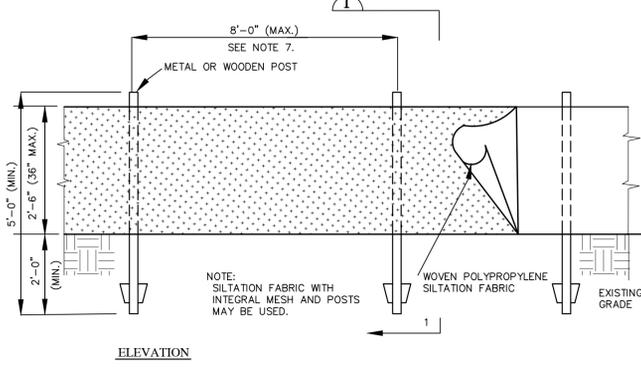


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DRN BY: RPL	JOB #: 4060	<b>C4</b>
CHD BY: CYN	MAP/LOT: 037/024	
DATE: 03-05-2020	FILE: 4060-COV-DET	



- NOTES:**
1. ALL MATERIALS TO MEET FILTREXX SPECIFICATIONS
  2. SILT/ROCK COMPOST/SOIL/ROCK/SEED FILL TO MEET APPLICATION REQUIREMENTS
  3. SILT/ROCK COMPOST IS FOR MINIMUM SLOPES. GREATER SLOPES MAY REQUIRE LARGER SOCKS PER THE ENGINEER.
  4. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.



- INSTALLATION:**
1. EXCAVATE A 6" X 6" TRENCH ALONG THE LINE OF PLACEMENT FOR THE FILTER BARRIER.
  2. UNROLL A SECTION AT A TIME AND POSITION THE POSTS AGAINST THE BACK (DOWNSTREAM) WALL OF THE TRENCH.
  3. DRIVE POSTS INTO THE GROUND UNTIL APPROXIMATELY 2" OF FABRIC IS LYING ON THE TRENCH BOTTOM.
  4. LAY THE TOE-IN FLAP OF FABRIC ONTO THE UNDISTURBED BOTTOM OF THE TRENCH. BACK FILL THE TRENCH AND TAMP THE SOIL.
  5. JOIN SECTION AS SHOWN IN TOP VIEW.
  6. BARRIER SHALL BE MIRAFI SILT FENCE (100X) OR APPROVED EQUIVALENT.
  7. A STONE "FILLET" MAY BE USED FOR ANCHORING FABRIC IF IT CANNOT BE KEYED IN.

**EROSION AND SEDIMENTATION NOTES:**

1. CONTRACTOR SHALL REFER TO THE FOLLOWING REFERENCES FOR THE DESIGN AND INSTALLATION OF TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL PRACTICES:
  - 2016 REVISION TO THE 2003 MAINE EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES MANUAL FOR DESIGNERS AND ENGINEERS
  - 2014 REVISION TO THE 2003 MAINE EROSION AND SEDIMENT CONTROL FIELD GUIDE FOR CONTRACTORS

**GENERAL EROSION AND SEDIMENTATION CONTROL PRACTICES:**

**EROSION/SEDIMENTATION CONTROL DEVICES:**

THE FOLLOWING EROSION/SEDIMENTATION CONTROL DEVICES ARE PROPOSED FOR CONSTRUCTION ON THIS PROJECT. INSTALL THESE DEVICES AS INDICATED ON THE PLANS.

1. SEDIMENT BARRIER: PRIOR TO THE START OF CONSTRUCTION, SILT SOXX OR APPROVED EQUAL WILL BE INSTALLED ALONG THE DOWN GRADING EDGES OF DISTURBED AREAS TO TRAP RUNOFF SOILNE SEDIMENTS UNTIL THE SITE IS STABILIZED. THE STANDARD FOR STABILIZED IS 90% COVERAGE OF SEEDED AREAS. IN AREAS WHERE STORMWATER DISCHARGES THE SEDIMENT BARRIER WILL BE REINFORCED WITH HAY BALES TO HELP MAINTAIN THE INTEGRITY OF THE SEDIMENT BARRIER AND TO PROVIDE ADDITIONAL TREATMENT.
2. HAY BALES: HAY BALES TO BE PLACED IN LOW FLOW DRAINAGE SWALES AND PATHS TO TRAP SEDIMENTS AND REDUCE RUNOFF VELOCITIES. DO NOT PLACE HAY BALES IN FLOWING WATER OR STREAMS.
3. RIPRAP: PROVIDE RIPRAP IN AREAS WHERE CULVERTS DISCHARGE OR AS SHOWN ON THE PLANS.
4. LOAM, SEED, & MULCH: ALL DISTURBED AREAS, WHICH ARE NOT OTHERWISE TREATED, SHALL RECEIVE PERMANENT SEEDING AND MULCH TO STABILIZE THE DISTURBED AREAS. THE DISTURBED AREAS WILL BE REVEGETATED WITHIN 30 DAYS OF FINAL GRADING. SEEDING REQUIREMENTS ARE PROVIDED AT THE END OF THIS SPECIFICATION.
5. STRAW AND HAY MULCH: USED TO COVER DENUDDED AREAS UNTIL PERMANENT SEED OR EROSION CONTROL MEASURES ARE IN PLACE. MULCH BY ITSELF CAN BE USED ON SLOPES LESS THAN 15% IN SUMMER AND 8% IN WINTER. JUTE MESH IS TO BE USED OVER MULCH ONLY.
6. IN LIEU OF MULCH, USE EROSION CONTROL BLANKET (EQUAL TO NORTH AMERICAN GREEN SC150) TO STABILIZE AREAS OF CONCENTRATED FLOW AND DRAINAGE WAYS.
7. STABILIZED CONSTRUCTION ENTRANCE: PRIOR TO THE START OF CONSTRUCTION, A STABILIZED CONSTRUCTION ENTRANCE SHALL BE INSTALLED AND UTILIZED FOR CONTRACTOR ACCESS. TRACKED MUD OR SEDIMENT SHALL BE REMOVED PRIOR TO THE NEXT STORM EVENT.

**TEMPORARY EROSION/SEDIMENTATION CONTROL MEASURES:**

PROVIDE THE FOLLOWING TEMPORARY EROSION/SEDIMENTATION CONTROL MEASURES PRIOR TO THE START OF CONSTRUCTION OF THE DEVELOPMENT:

1. SEDIMENT BARRIER ALONG THE DOWNGRADING SIDE OF THE PARKING AREAS AND OF ALL FILL SECTIONS. THE SEDIMENT BARRIER SHALL BE INSTALLED PRIOR TO THE START OF THE CONSTRUCTION AND WILL REMAIN IN PLACE UNTIL THE SITE IS 90% REVEGETATED.
2. HAY BALES PLACED AT KEY LOCATIONS TO SUPPLEMENT THE SEDIMENT BARRIER.
3. PROTECT TEMPORARY STOCKPILES OF STUMPS, GRUBBING, OR COMMON EXCAVATION AS FOLLOWS:
  - A. SOIL STOCKPILE SIDE SLOPES SHALL NOT EXCEED 2:1.
  - B. AVOID PLACING TEMPORARY STOCKPILES IN AREAS WITH SLOPES OVER 10 PERCENT, OR NEAR DRAINAGE SWALES.
  - C. STABILIZE STOCKPILES WITHIN 7 DAYS BY TEMPORARILY SEEDING WITH A HYDROSEED METHOD CONTAINING AN EMULSIFIED MULCH TACKIFIER OR BY COVERING THE STOCKPILE WITH MULCH.
  - D. SURROUND STOCKPILE WITH SEDIMENT BARRIER AT BASE OF PILE.
  - E. STORMWATER SHOULD BE PREVENTED FROM RUNNING ONTO STOCKPILES.
4. ALL DENUDDED AREAS WHICH HAVE BEEN ROUGH GRADED AND ARE NOT LOCATED WITHIN THE BUREAU OF PUBLIC WORKS (BPW) AREA SHALL RECEIVE MULCH WITHIN 30 DAYS OF INITIAL DISTURBANCE OF SOIL OR WITHIN 7 DAYS AFTER COMPLETING THE ROUGH GRADING OPERATIONS. IN THE EVENT THE CONTRACTOR COMPLETES FINAL GRADING AND INSTALLATION OF LOAM AND SOO WITHIN THE TIME PERIODS PRESENTED ABOVE, INSTALLATION OF MULCH AND NETTING, WHERE APPLICABLE, IS NOT REQUIRED. AT ANY TIME, THE DENUDDED AREA WILL NOT EXCEED THAT WHICH CAN BE MULCHED IN ONE DAY.
5. IF WORK IS CONDUCTED BETWEEN OCTOBER 15 AND APRIL 15, ALL DENUDDED AREAS ARE TO BE COVERED WITH HAY MULCH, APPLIED AT TWICE THE NORMAL APPLICATION RATE, AND ANCHORED WITH FABRIC NETTING. THE PERIOD BETWEEN FINAL GRADING AND MULCHING SHALL BE REDUCED TO A 15 DAY MAXIMUM.
6. TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE THE SITE HAS BEEN STABILIZED OR IN AREAS WHERE PERMANENT EROSION CONTROL MEASURES HAVE BEEN INSTALLED.
7. WHENEVER PRACTICABLE, NO DISTURBANCE ACTIVITIES SHOULD TAKE PLACE WITHIN 50 FEET OF ANY WETLAND OR PARKING OR DRIVEWAY SUBAREA. A STABILIZED CONSTRUCTION ENTRANCE SHALL BE INSTALLED AT THE END OF THE EXIST PAVED ACCESS TO THE SITE TO MINIMIZE TRACKING OF MUD AND SEDIMENT. IF OFF-SITE TRACKING OCCURS, PUBLIC ROADS SHOULD BE SWEEP IMMEDIATELY AND NO LESS THAN ONCE A WEEK AND PRIOR TO SIGNIFICANT STORM EVENTS. OPERATIONS DURING DRY MONTHS THAT EXPERIENCE FUGITIVE DUST PROBLEMS, SHOULD NOT DOWN UNPAVED ACCESS ROADS ONCE A WEEK OR MORE FREQUENTLY AS NEEDED WITH A WATER ADDITIVE TO SUPPRESS FUGITIVE SEDIMENT AND DUST.
8. AREAS WITHIN 75 FT OF A WETLAND WILL BE STABILIZED WITHIN 48 HOURS OF INITIAL DISTURBANCE OF THE SOIL OR PRIOR TO ANY STORM EVENT, WHICHEVER COMES FIRST.
9. ALL AREAS WITHIN 75 FEET OF A WETLAND MUST BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIERS DURING WINTER CONSTRUCTION (NOVEMBER 1 THROUGH APRIL 15).
10. TEMPORARY SEDIMENT BASINS MAY BE INSTALLED DOWNGRADING OF THE DISTURBED AREAS. THESE BASINS MUST BE DESIGNED TO PROVIDE STORAGE FOR EITHER THE CALCULATED RUNOFF FROM A 2-YEAR, 24-HOUR STORM OR PROVIDE FOR 3,600 CUBIC FEET OF CAPACITY PER ACRE DRAINING TO THE BASIN. OUTLET STRUCTURES MUST DISCHARGE WATER FROM THE SURFACE OF THE BASIN WHENEVER POSSIBLE. EROSION CONTROLS AND VELOCITY DISSIPATION DEVICES MUST BE USED IF THE DISCHARGING WATERS ARE LIKELY TO CREATE EROSION. ACCUMULATED SEDIMENT MUST BE REMOVED AS NEEDED FROM THE BASIN TO MAINTAIN AT LEAST 1/3 OF THE DESIGN CAPACITY OF THE BASIN.
11. EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME. AT ANY TIME, THE DENUDDED AREA WILL NOT EXCEED THAT WHICH CAN BE MULCHED IN ONE DAY.

**PERMANENT EROSION CONTROL MEASURES:**

THE FOLLOWING PERMANENT CONTROL MEASURES ARE REQUIRED BY THIS EROSION/SEDIMENTATION CONTROL PLAN.

1. ALL AREAS DISTURBED DURING CONSTRUCTION, BUT NOT SUBJECT TO OTHER RESTORATION (PAVING, RIPRAP, ETC.), WILL BE LOAMED, LIMED, FERTILIZED AND SEEDED. NATIVE TOPSOIL SHALL BE STOCKPILED AND REUSED FOR FINAL RESTORATION WHEN IT IS OF SUFFICIENT QUALITY.
2. SLOPES GREATER THAN 2:1 WILL RECEIVE RIPRAP. (NONE ANTICIPATED)

**POST-CONSTRUCTION REVEGETATION:**

THE FOLLOWING GENERAL PRACTICES WILL BE USED TO PREVENT EROSION AS SOON AS AN AREA IS READY TO UNDERGO FINAL GRADING.

1. A MINIMUM OF 6" OF LOAM WILL BE SPREAD OVER DISTURBED AREAS AND GRADED TO A UNIFORM DEPTH AND NATURAL APPEARANCE, OR STONE WILL BE PLACED ON SLOPES TO STABILIZE SURFACES.
2. IF FINAL GRADING IS REACHED DURING THE NORMAL GROWING SEASON (4/15 TO 9/15), PERMANENT SEEDING WILL BE DONE AS SPECIFIED BELOW. PRIOR TO SEEDING, LIMESTONE SHALL BE APPLIED AT A RATE OF 138 LBS/1000 SQ. FT. AND 10:20:20 FERTILIZER AT A RATE OF 18.4 LBS/1000 SQ.FT WILL BE APPLIED. BROADCAST SEEDING AT THE FOLLOWING RATES:
  - LAWNS SHALL BE: ALLEN, STERLING & LATHROP 'TUFTTURF', 70% DIAMOND TALL FESCUE, 20% PLEASURE OULS PERENNIAL RYEGRASS, 10% BARON KENTUCKY BLUEGRASS. SEEDING RATE SHALL BE 7-LBS./1,000 SQ. FT.
  - SWALES SHALL BE: WILDFLOWER MEADOW: (SEED) FESTUCA OVINA SHEEP FESCUE; SOW AT A RATE OF 12 OZ. PER 1,000 SQ.FT. TRIFOLIUM REPENS WHITE CLOVER; SOW AT A RATE OF 1/2 OZ.PER 1,000 SQ.FT. (FLOWERS) ACHILLEA MILLEFOLIUM YARROW, AQUILEGIA CANADENSIS COLUMBINE, ASOLEPIAS TUBEROSE BUTTERFLY MILKWEED, ASTER NOVAE-ANGLIAE NEW-ENGLAND ASTER, BAPTISIA AUSTRALIS WILD INDIGO, BOLTONIA ASTERIFOLIA FALSE ASTER, CHRYSANTHEMUM LEUCANTHEMUM OXEYE DAISY, DIGITALIS PURPUREA FOXGLOVE, ECHINACEA PURPUREA PURPLE CONEFLOWER, LUPINUS PERENNIS LUPINE, MONARDA FISTULOSA BERGAMOT, PAPAVER ORIENTALE ORIENTAL POPY, RUDBECKIA HIRTA BLACK-EYED SUSAN, SALVIA OFFICINALIS SAGE; SOW AT A RATE OF 1/3 OZ. EACH PER 1,000 SQ.FT. OR 4 OZ. PER 1,000 SQ.FT. IN COMBINATION
3. AN AREA SHALL BE MULCHED IMMEDIATELY AFTER IS HAS BEEN SEEDDED. MULCHING SHALL CONSIST OF HAY MULCH, HYDRO-MULCH, JUTE NET OVER MULCH, PRE-MANUFACTURED EROSION MATS OR ANY SUITABLE SUBSTITUTE DEEMED ACCEPTABLE BY THE DESIGNER.
  - A. HAY MULCH SHALL BE APPLIED AT THE RATE OF 2 TONS PER ACRE. HAY MULCH SHALL BE SECURED BY EITHER: (NOTE: SOIL SHALL NOT BE VISIBLE)
    - I. BEING DRIVEN OVER BY TRACKED CONSTRUCTION EQUIPMENT ON GRADES OF 5% AND LESS.
    - II. BLANKETED BY TACKED PHOTODEGRADABLE/BIODEGRADABLE NETTING, OR WITH SPRAY, ON GRADES GREATER THAN 5%.
  - B. SEE NOTE 6, GENERAL NOTES, AND NOTE 8, WINTER CONSTRUCTION.
  - C. HYDRO-MULCH SHALL CONSIST OF A MIXTURE OF EITHER ASPHALT, WOOD FIBER OR PAPER FIBER AND WATER SPRAYED OVER A SEEDDED AREA. HYDRO-MULCH SHALL NOT BE USED BETWEEN 9/15 AND 4/15.
4. CONSTRUCTION SHALL BE PLANNED TO ELIMINATE THE NEED FOR SEEDING BETWEEN SEPTEMBER 15 AND APRIL 15. SHOULD SEEDING BE NECESSARY BETWEEN SEPTEMBER 15 AND

- APRIL 15 THE FOLLOWING PROCEDURE SHALL BE FOLLOWED. ALSO REFER TO NOTE 9 OF WINTER CONSTRUCTION
- A. ONLY UNFROZEN LOAM SHALL BE USED.
  - B. LOAMING, SEEDING AND MULCHING WILL NOT BE DONE OVER SNOW OR ICE COVER. IF SNOW EXISTS, IT MUST BE REMOVED PRIOR TO PLACEMENT OF SEED.
  - C. WHERE PERMANENT SEEDING IS NECESSARY, ANNUAL WINTER RYE (1.2 LBS/1000 SQ.FT) SHALL BE ADDED TO THE PREVIOUSLY NOTED AREAS.
  - D. WHERE TEMPORARY SEEDING IS REQUIRED, ANNUAL WINTER RYE (2.6 LBS/1000 SQ. FT.) SHALL BE SOWN INSTEAD OF THE PREVIOUSLY NOTED SEEDING RATE.
  - E. FERTILIZING, SEEDING AND MULCHING SHALL BE APPLIED TO LOAM THE DAY THE LOAM IS SPREAD BY MACHINERY.
  - F. ALTERNATIVE HAY MULCH SHALL BE SECURED WITH PHOTODEGRADABLE/BIODEGRADABLE NETTING. TRACKING BY MACHINERY ALONE WILL NOT SUFFICE.

**MONITORING SCHEDULE:**

THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING, MONITORING, MAINTAINING, REPAIRING, REPLACING AND REMOVING ALL OF THE EROSION AND SEDIMENTATION CONTROLS OR APPOINTING A QUALIFIED SUBCONTRACTOR TO DO SO. MAINTENANCE MEASURES WILL BE APPLIED AS NEEDED DURING THE ENTIRE CONSTRUCTION CYCLE. AFTER EACH RAINFALL, A VISUAL INSPECTION WILL BE MADE OF ALL EROSION AND SEDIMENTATION CONTROLS AS FOLLOWS:

1. HAY BALE BARRIERS, SEDIMENT BARRIER, AND STONE CHECK DAMS SHALL BE INSPECTED AND REPAIRED ONCE A WEEK OR IMMEDIATELY FOLLOWING ANY SIGNIFICANT RAINFALL. SEDIMENT TRAPPED BEHIND THESE BARRIERS SHALL BE EXCAVATED WHEN IT REACHES A DEPTH OF 6" AND REDISTRIBUTED TO AREAS UNDERGOING FINAL GRADING. SHOULD THE HAY BALE BARRIERS PROVE TO BE INEFFECTIVE, THE CONTRACTOR SHALL INSTALL SEDIMENT BARRIER BEHIND THE HAY BALES.
2. VISUALLY INSPECT RIPRAP ONCE A WEEK OR AFTER EACH SIGNIFICANT RAINFALL AND REPAIR AS NEEDED. REMOVE SEDIMENT TRAPPED BEHIND THESE DEVICES ONCE IT ATTAINS A DEPTH EQUAL TO 1/2 THE HEIGHT OF THE DAM OR RISER. DISTRIBUTE REMOVED SEDIMENT OFF-SITE OR TO AN AREA UNDERGOING FINAL GRADING.
3. REVEGETATION OF DISTURBED AREAS WITHIN 25' OF DRAINAGE-COURSE/STREAM WILL BE SEEDDED WITH THE "MEADOW AREA MIX" AND INSPECTED ON A WEEKLY BASIS OR AFTER EACH SIGNIFICANT RAINFALL AND RESEDED AS NEEDED. EXPOSED AREAS WILL BE RESEDED AS NEEDED UNTIL THE AREA HAS OBTAINED 100% GROWTH RATE. PROVIDE PERMANENT RIPRAP FOR SLOPES IN EXCESS OF 3:1 AND WITHIN 25' OF DRAINAGE COURSE.

**HOUSEKEEPING:**

FROM THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, CHAPTER 500, APPENDIX C.

1. SPILL PREVENTION. CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM CONSTRUCTION AND WASTE MATERIALS STORED ON SITE TO ENTER STORMWATER, WHICH INCLUDES STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER. THE SITE CONTRACTOR MUST DEVELOP, AND IMPLEMENT AS NECESSARY, APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESPONSE PLANNING MEASURES.

**NOTE:** ANY SPILL OR RELEASE OF TOXIC OR HAZARDOUS SUBSTANCES MUST BE REPORTED TO THE DEPARTMENT. FOR OIL SPILLS, CALL 1-800-482-0777 WHICH IS AVAILABLE 24 HOURS A DAY. FOR SPILLS OF TOXIC OR HAZARDOUS MATERIAL, CALL 1-800-452-4664 WHICH IS AVAILABLE 24 HOURS A DAY. FOR MORE INFORMATION, VISIT THE DEPARTMENT'S WEBSITE AT : HTTP://WWW.MAINE.GOV/DEP/SPILLS/EMERGENCIES/

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. ANY PROJECT PROPOSING INFILTRATION OF STORMWATER MUST PROVIDE ADEQUATE PRE-TREATMENT OF STORMWATER PRIOR TO DISCHARGE OF STORMWATER TO THE INFILTRATION AREA, OR PROVIDE FOR TREATMENT WITHIN THE INFILTRATION AREA, IN ORDER TO PREVENT THE ACCUMULATION OF FINES, REDUCTION IN INFILTRATION RATE, AND CONSEQUENT FLOODING AND DESTABILIZATION.

**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, BUT OTHER WATER ADDITIVES MAY BE CONSIDERED AS NEEDED. A STABILIZED CONSTRUCTION ENTRANCE (SCE) SHALL BE INSTALLED AT THE END OF THE EXIST PAVED ACCESS TO THE SITE TO MINIMIZE TRACKING OF MUD AND SEDIMENT. IF OFF-SITE TRACKING OCCURS, PUBLIC ROADS SHOULD BE SWEEP IMMEDIATELY AND NO LESS THAN ONCE A WEEK AND PRIOR TO SIGNIFICANT STORM EVENTS. OPERATIONS DURING DRY MONTHS THAT EXPERIENCE FUGITIVE DUST PROBLEMS, SHOULD NOT DOWN UNPAVED ACCESS ROADS ONCE A WEEK OR MORE FREQUENTLY AS NEEDED WITH A WATER ADDITIVE TO SUPPRESS FUGITIVE SEDIMENT AND DUST.

4. DEBRIS AND OTHER MATERIALS. MINIMIZE THE EXPOSURE OF CONSTRUCTION DEBRIS, BUILDING AND LANDSCAPING MATERIALS, TRASH, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE AND OTHER MATERIALS TO PRECIPITATION AND STORMWATER RUNOFF. THESE MATERIALS MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.

5. EXCAVATION DE-WATERING. EXCAVATION DE-WATERING IS THE REMOVAL OF WATER FROM TRENCHES, FOUNDATIONS, COTTER DAMS, PONDS, AND OTHER AREAS WITHIN A 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 REMOVED FROM THE PONDED AREA, EITHER THROUGH GRAVITY OR PUMPING, 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. AVOID ALLOWING THE WATER TO FLOW OVER DISTURBED AREAS OF THE SITE. EQUIVALENT MEASURES MAY BE TAKEN IF APPROVED BY THE DEPARTMENT.

EXCAVATION DEWATERING IS ANTICIPATED FOR THIS PROJECT. SHOULD IT BE NECESSARY, THE COLLECTED WATER REMOVED FROM THE PONDED AREA, EITHER THROUGH GRAVITY OR PUMPING, MUST BE REMOVED TO AREAS THAT ARE SPECIFICALLY DESIGNED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE, LIKE A SEDIMENT TRAP (SEE DETAIL THIS SHEET), DIRT BAG, OR SEDIMENTATION BASIN. A DEWATERING DISCHARGE PLAN SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE FOR APPROVAL.

6. AUTHORIZED NON-STORMWATER DISCHARGES. IDENTIFY AND PREVENT CONTAMINATION BY NON-STORMWATER DISCHARGES. WHERE ALLOWED NON-STORMWATER DISCHARGES EXIST, THEY MUST BE IDENTIFIED AND STEPS SHOULD BE TAKEN TO ENSURE THE IMPLEMENTATION OF APPROPRIATE POLLUTION PREVENTION MEASURES FOR THE NON-STORMWATER COMPONENT(S) OF THE DISCHARGE. AUTHORIZED NON-STORMWATER DISCHARGES ARE:
  - (a) DISCHARGES FROM FIRE FIGHTING ACTIVITY;
  - (b) FIRE HYDRANT FLUSHINGS
  - (c) VEHICLE WASHWATER IF DETERGENTS ARE NOT USED AND WASHING IS LIMITED TO THE EXTERIOR OF VEHICLES (ENGINE, UNDERCARRIAGE AND TRANSMISSION WASHING IS PROHIBITED);
  - (d) DUST CONTROL RUNOFF IN ACCORDANCE WITH PERMIT CONDITIONS AND CHAPTER 500 APPENDIX (C)(3);
  - (e) ROUTINE EXTERNAL BUILDING WASHDOWN, NOT INCLUDING SURFACE PAINT REMOVAL, THAT DOES NOT INVOLVE DETERGENTS;
  - (f) PAVEMENT WASHWATER (WHERE SPILLS/LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE NOT OCCURRED, UNLESS ALL SPILLED MATERIAL HAD BEEN REMOVED) IF DETERGENTS ARE NOT USED;
  - (g) UNCONTAMINATED AIR CONDITIONING OR COMPRESSOR CONDENSATE;
  - (h) UNCONTAMINATED GROUNDWATER OR SPRING WATER;
  - (i) FOUNDATION OR FOOTER DRAIN-WATER WHERE FLOWS ARE NOT CONTAMINATED;
  - (j) UNCONTAMINATED EXCAVATION DEWATERING (SEE REQUIREMENTS IN APPENDIX C(5));
  - (k) POTABLE WATER SOURCES INCLUDING WATERLINE FLUSHINGS; AND
  - (l) LANDSCAPE IRRIGATION.

7. UNAUTHORIZED NON-STORMWATER DISCHARGES. THE DEPARTMENT'S APPROVAL UNDER CHAPTER 500 DOES NOT AUTHORIZE A DISCHARGE THAT IS MIXED WITH A SOURCE OF NON STORMWATER, OTHER THAN THOSE DISCHARGES IN COMPLIANCE WITH APPENDIX C (6). SPECIFICALLY, THE DEPARTMENT'S APPROVAL DOES NOT AUTHORIZE DISCHARGES OF THE FOLLOWING:

- (a) WASTEWATER FROM THE WASHOUT OR CLEANOUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS OR OTHER CONSTRUCTION MATERIALS;
- (b) FUELS, OILS OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE;
- (c) SOAPS, SOLVENTS, OR DETERGENTS USED IN VEHICLE AND EQUIPMENT WASHING; AND
- (d) TOXIC OR HAZARDOUS SUBSTANCES FROM A SPILL OR OTHER RELEASE.

**CONSTRUCTION PHASE:**

THE FOLLOWING GENERAL PRACTICES WILL BE USED TO PREVENT EROSION DURING CONSTRUCTION OF THIS PROJECT.

1. INSTALL STABILIZED CONSTRUCTION ENTRANCE AND MAINTAIN UNTIL SITE IS PAVED.
2. ONLY THOSE AREAS NECESSARY FOR CONSTRUCTION WILL BE DISTURBED.
3. PRIOR TO THE START OF CONSTRUCTION, SEDIMENT BARRIER WILL BE INSTALLED ACROSS THE SLOPE(S), ON THE CONTOUR, AT OR JUST BELOW THE LIMITS OF CLEARING OR GRUBBING, AND/OR JUST ABOVE ANY ADJACENT TRAVELLED WAY TO PROTECT IT FROM CONSTRUCTION-RELATED EROSION.
4. CLEAR AND GRUB WORK SITE AS NEEDED TO EXECUTE PLANS USING CAUTION NOT TO OVER EXPOSE THE SITE.
5. STORMWATER MANAGEMENT SYSTEM WILL BE INSTALLED PRIOR TO CONSTRUCTION OF SITE ELEMENTS THAT DISCHARGE TO THESE SYSTEMS. NO STORMWATER SHALL BE DIRECTED TO THE BIORETENTION FILTERS UNTIL THE SITE IS COMPLETELY STABILIZED. TEMPORARY INFILTRATION BASINS SHALL BE INSTALLED TO COLLECT ANY INFILTRATE ANY STORMWATER RUNOFF FROM THE SITE DURING CONSTRUCTION AND PRIOR TO STABILIZATION.
6. DISTURBED AREAS WILL BE PERMANENTLY STABILIZED WITHIN 15 DAYS OF FINAL GRADING, OR TEMPORARILY STABILIZED WITHIN 30 DAYS OF THE INITIAL DISTURBANCES OF SOILS. DISTURBED AREAS WILL BE STABILIZED BEFORE STORMS. LOAM WILL BE SAVED FOR LATER USE WHERE POSSIBLE. EXCESS SOIL MATERIALS WILL BE USED AS FILL OR REMOVED FROM SITE TO AN APPROVED LOCATION.
7. AT A MINIMUM, THE EROSION CONTROL MEASURES SHALL BE REVIEWED AND REPAIRED ONCE A WEEK OR IMMEDIATELY FOLLOWING ANY SIGNIFICANT RAINFALL OR SNOWMELT. SEDIMENT TRAPPED BEHIND THESE BARRIERS SHALL BE EXCAVATED WHEN IT REACHES A DEPTH OF 6 INCHES AND BE DISCARDED ON THE SITE. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED AS INDICATED ON THE DRAWINGS.
8. LOAM, LIME, FERTILIZE, SEED, AND MULCH LANDSCAPED AND OTHER DISTURBED AREAS.
9. ONCE THE SITE IS STABILIZED AND A 90% CATCH OF VEGETATION HAS BEEN OBTAINED, REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.
10. TOUCH UP LOAM AND SEED.

**NOTE:** ALL DENUDDED AREAS NOT SUBJECT TO FINAL PAVING, RIPRAP OR GRAVEL SHALL BE REVEGETATED.

**EROSION CONTROL DURING WINTER CONSTRUCTION:**

1. WINTER CONSTRUCTION PERIOD: NOVEMBER 1 THROUGH APRIL 15.

2. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT NO MORE THAN ONE (1) ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.
3. EXPOSED AREA SHALL BE LIMITED TO THOSE AREAS TO BE MULCHED IN ONE DAY. AT THE END OF EACH WORK WEEK NO AREAS MAY BE LEFT UNSTABILIZED OVER THE WEEKEND.
4. CONTINUATION OF EARTHWORK OPERATIONS ON ADDITIONAL AREAS SHALL NOT BEGIN UNTIL THE EXPOSED SOIL SURFACE ON THE AREA BEING WORKED HAS BEEN STABILIZED, SUCH THAT NO LARGER AREA OF THE SITE IS WITHOUT EROSION CONTROL PROTECTION AS LISTED IN ITEM 2 ABOVE.
5. AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED WITH STRAW OR HAY AT A RATE OF 150 LB. PER 1000 S.F. (WITH OR WITHOUT SEED) OR DORMANT SEEDED, MULCHED AND ANCHORED SUCH THAT SOIL SURFACE IS NOT VISIBLE THROUGH THE MULCH. NOTE: AN AREA IS ALSO CONSIDERED STABLE IF SODDED, COVERED WITH GRAVEL (PARKING LOTS) OR STRUCTURAL SAND.
6. BETWEEN THE DATES OF OCTOBER 15 AND APRIL 1, LOAM OR SEED WILL NOT BE REQUIRED. DURING PERIODS OF ABOVE FREEZING TEMPERATURES THE SLOPES SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER AND IF THE EXPOSED AREA HAS BEEN LOAMED, FINAL GRADED WITH A UNIFORM SURFACE, THEN THE AREA MAY BE DORMANT SEEDDED AT A RATE OF 3 TIMES HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED. IF CONSTRUCTION CONTINUES DURING FREEZING WEATHER, ALL EXPOSED AREAS SHALL BE CONTINUED BEFORE FREEZING AND THE SURFACE TEMPORARILY PROTECTED FROM EROSION BY THE APPLICATION OF MULCH. SLOPES SHALL NOT BE LEFT UNEXPOSED OVER THE WINTER OR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS TREATED IN THE ABOVE MANNER. UNTIL SUCH TIME AS WEATHER PERMITS, CONDITIONS ALLOW, TO BE FINISHED WITH PERMANENT SURFACE TREATMENT, EROSION SHALL BE CONTROLLED BY THE INSTALLATION OF BALES OF HAY, SEDIMENT BARRIER OR STONE CHECK DAMS IN ACCORDANCE WITH THE STANDARD DETAILS SHOWN ON THE DESIGN DRAWINGS. NOTE: DORMANT SEEDING SHALL NOT BE ATTEMPTED UNLESS SOIL TEMPERATURE REMAINS BELOW 50 DEGREES AND DAY TIME TEMPERATURES REMAIN IN THE 30'S.
7. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS. SLOPES GREATER THAN 3% FOR SLOPES EXPOSED TO DIRECT WINDS AND FOR ALL OTHER SLOPES GREATER THAN 8% VEGETATED DRAINAGE SWALES SHALL BE LINED WITH STRAW-COCONUT EROSION CONTROL BLANKET (NORTH AMERICAN GREEN SC150 OR APPROVED EQUAL).
8. BETWEEN THE DATES OF OCTOBER 15 TO NOVEMBER 1, WINTER RYE IS RECOMMENDED FOR STABILIZATION. AFTER NOVEMBER 1, WINTER RYE IS NOT EFFECTIVE. AROUND NOVEMBER 15 OR LATER, ONCE TEMPERATURES OF THE AIR AND SOIL PERMIT, DORMANT SEEDING IS EFFECTIVE.
9. IN THE EVENT OF SNOWFALL (FRESH OR CUMULATIVE) GREATER THAN 1 INCH DURING WINTER CONSTRUCTION PERIOD ALL SNOW SHALL BE REMOVED FROM THE AREAS OF SEEDING AND MULCHING PRIOR TO PLACEMENT.
10. ALL AREAS WITHIN 75 FEET OF A PROTECTED NATURAL RESOURCE MUST BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIERS.

**SITE INSPECTION AND MAINTENANCE:**

1. WEEKLY INSPECTIONS, AS WELL AS ROUTINE INSPECTIONS FOLLOWING EACH RAINFALL, SNOWSTORM, OR THAWING, SHALL BE CONDUCTED BY THE GENERAL CONTRACTOR OF ALL TEMPORARY AND PERMANENT EROSION CONTROL DEVICES UNTIL FINAL ACCEPTANCE OF THE PROJECT (80% 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 AND CONTROL DEVICES SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

IT IS RECOMMENDED THAT THE OWNER HIRE THE SERVICES OF THE DESIGN ENGINEER 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, TOWN AND DEP.

DURING WINTER CONSTRUCTION, THE EROSION CONTROL MEASURES SHALL BE INSPECTED AFTER EACH RAINFALL, SNOWSTORM, OR THAWING, AND A MINIMUM OF ONCE PER WEEK.

2. SHORT-TERM SEDIMENTATION MAINTENANCE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CLEAN OUT ALL SWALES AND STRUCTURES PRIOR TO TURNING PROJECT OVER.
3. LONG-TERM PROVISIONS FOR PERMANENT MAINTENANCE OF ALL EROSION AND SEDIMENTATION CONTROL DEVICES AFTER ACCEPTANCE OF THE PROJECT SHALL BE THE RESPONSIBILITY OF THE OWNER.

2. 04-21-20 REVISED BER CITY STAFF COMMENTS MCA
1. 03-27-20 SUBMITTED TO CITY OF LEWISTON CYN

<b>EROSION CONTROL DETAILS &amp; NOTES</b>		
PROJECT: OFFICE/WAREHOUSE BUILDING 1222 SABATTUS STREET, LEWISTON, MAINE 04240		
PREPARED FOR: 410 INDUSTRIES, LLC 1222 SABATTUS STREET, LEWISTON, MAINE 04240		
FIELD WK: MC/CR	SCALE: N/A	SHEET: C5
DRN BY: RPL	JOB #: 4060	
CHD BY: CYN	MAP/LOT: 037/024	
DATE: 03-05-2020	FILE: 4060-COV-DET	

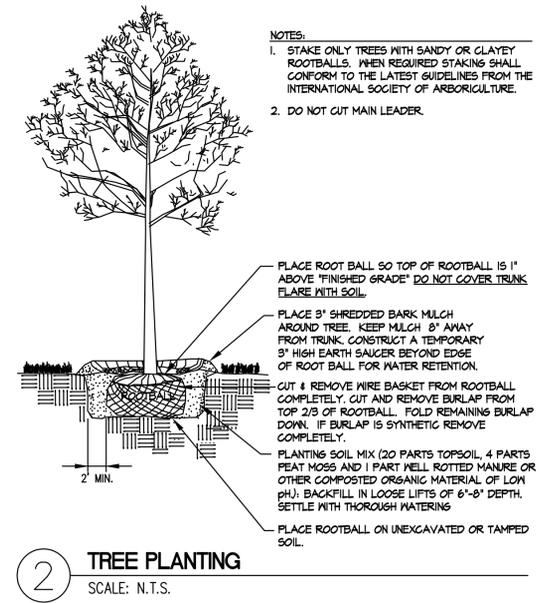
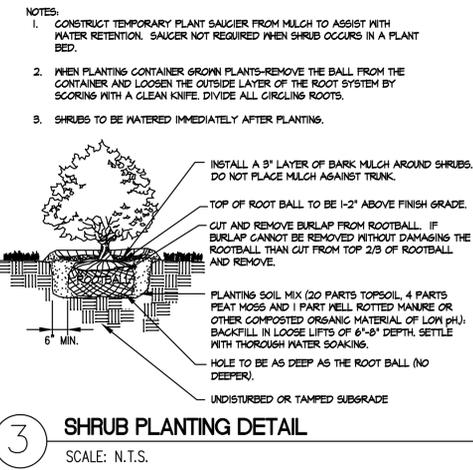
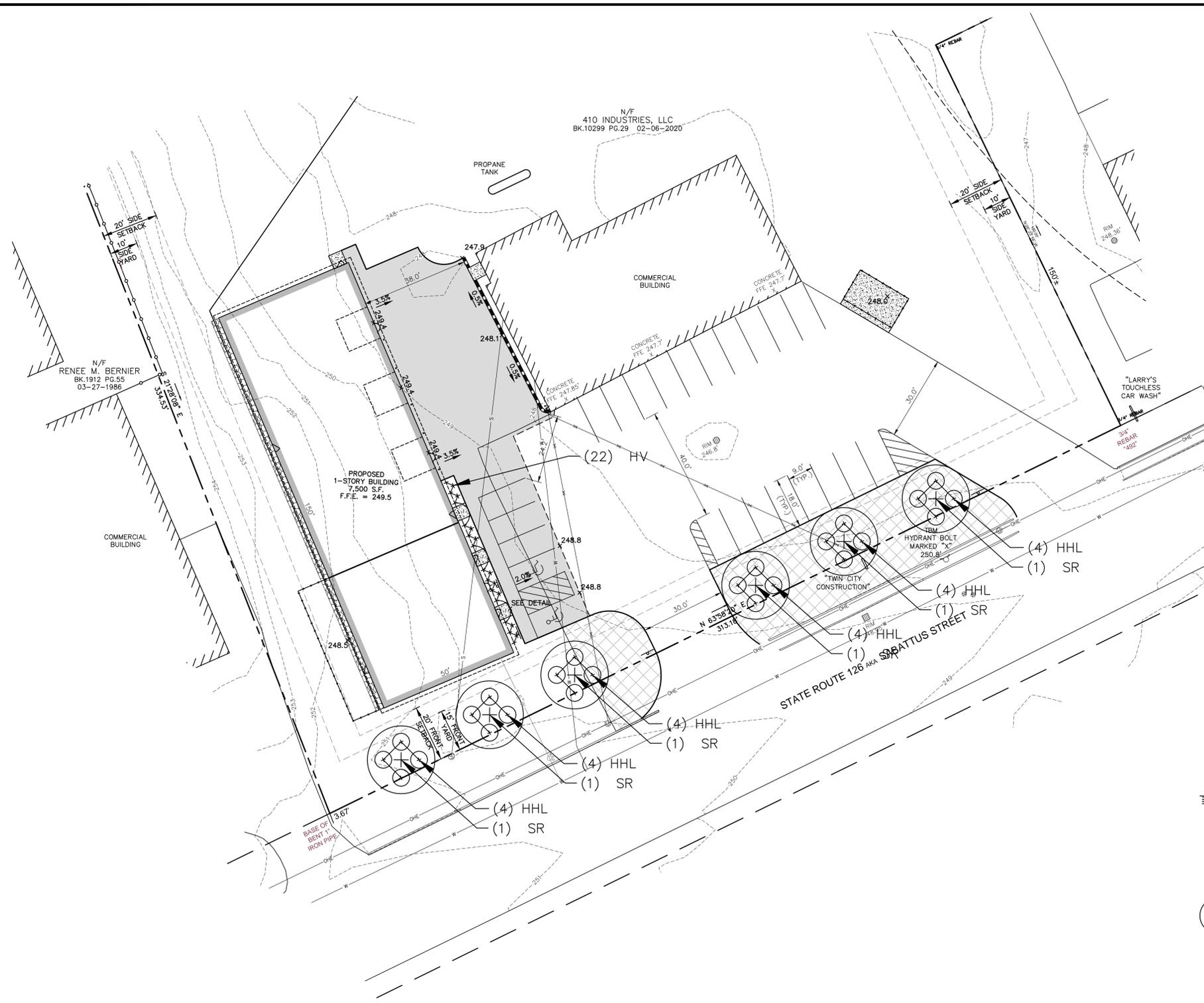
**A** FILTREXX SILT/ROCK DETAIL "SEDIMENT BARRIER OPTION" N.T.S.

**B** SILT FENCE DETAIL "SEDIMENT BARRIER OPTION" N.T.S.

**C** TEMPORARY INLET PROTECTION DETAIL N.T.S.

**D** STABILIZED CONSTRUCTION ENTRANCE N.T.S.

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- LANDSCAPE NOTES:**
- PRIOR TO THE START OF ANY EXCAVATION FOR THE PROJECT BOTH ON AND OFF THE SITE, THE CONTRACTOR SHALL NOTIFY DIGSAFE AND BE PROVIDED WITH A DIGSAFE NUMBER INDICATING THAT ALL EXISTING UTILITIES HAVE BEEN LOCATED AND MARKED.
  - THE LANDSCAPE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTINGS SHOWN GRAPHICALLY ON THIS DRAWING. CLARIFY ANY DISCREPANCIES WITH THE LANDSCAPE ARCHITECT PRIOR TO PRICING ANY PLANT MATERIAL.
  - ALL PLANT MATERIALS SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY THE LATEST EDITION OF THE AMERICAN ASSOCIATION OF NURSERYMEN'S "AMERICAN STANDARD OF NURSERY STOCK."
  - ALL PLANT MATERIALS ARE SUBJECT TO THE APPROVAL OF THE OWNER'S REPRESENTATIVE AT THE SITE. PLANTS WHICH ARE REJECTED SHALL BE REMOVED FROM THE SITE IMMEDIATELY AND REPLACED AT NO ADDITIONAL COST TO THE OWNER.
  - MULCH FOR PLANTED AREAS TO BE AGED SPRUCE AND FIRM BARK, PARTIALLY DECOMPOSED, DARK BROWN IN COLOR AND FREE OF WOOD CHIPS THICKER THAN 1/4 INCH.
  - NO PLANTS SHALL BE PLANTED BEFORE ACCEPTANCE OF ROUGH GRADING AND BEFORE CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
  - ALL SHRUB GROUPINGS SHALL BE INCORPORATED INTO BEDS WHERE MULCHED PLANT BED ADJUTS LAWN, CONTRACTOR SHALL PROVIDE A TURF CUT EDGE.
  - ALL PLANT MATERIAL OR REPRESENTATIVE SAMPLES SHALL BE LEGIBLY TAGGED WITH PROPER COMMON AND BOTANICAL NAMES. TAGS SHALL REMAIN ON THE PLANTS UNTIL FINAL ACCEPTANCE.
  - CONTRACTOR SHALL LOAMED DISTURBED AREAS AS FOLLOWS:  
-LAWN AREAS 6" DEPTH OF TOPSOIL
  - LAWN AREAS SHALL BE SEEDED WITH "PARK MIX" AS DISTRIBUTED BY ALLEN, STERLING AND LOTHROP OF FALMOUTH MAINE. SEED AT A RATE OF 5 LBS PER 1,000 S.F.
  - CONTRACTOR SHALL BEGIN MAINTENANCE IMMEDIATELY AFTER PLANTING AND WILL CONTINUE UNTIL FINAL ACCEPTANCE. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MEANS AND METHODS OF WATERING AND MAINTENANCE.
  - THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIALS FOR ONE (1) FULL YEAR FROM DATE OF FINAL ACCEPTANCE.
  - SCREENED IMAGED SHOW EXISTING CONDITIONS. WHERE EXISTING CONDITIONS LIE UNDER OR ARE IMPINGED UPON BY PROPOSED BUILDINGS AND OR SITE ELEMENTS, THE EXISTING CONDITION WILL BE REMOVED, ABANDONED AND OR CAPPED OR DEMOLISHED AS REQUIRED.
  - THE CONTRACTOR SHALL INSTALL WATERING BAGS SUCH AS THE TREGATOR ON ALL TREES AT THE TIME OF INSTALLATION. THESE BAGS SHALL BECOME THE PROPERTY OF THE OWNER.

Date: March 20, 2020

Client Name: Twin City Construction  
 Address: 1222 Sabattus Road, Lewiston, ME  
 Telephone: 207-576-4957

Description: Office / Warehouse Building

KEY	BOTANICAL NAME	COMMON NAME	QTY.	SIZE
SR	SYRINGA RETICULATA	JAPANESE LILAC TREE	6	2"-2.5" CAL.
HV	HYDRANGEA PANICULATA 'VANILLA STRAWBERRY'	HYDRANGEA	22	2.5'-3.5' #5
HHL	HOSTA 'SUM AND SUBSTANCE'	LT. GREEN HOSTA	24	1 GAL.

**PROGRESS PRINT**  
 THIS PLAN IS ISSUED FOR REVIEW AND INFORMATION PURPOSES ONLY. THIS PLAN IS SUBJECT TO CHANGE AND IS NOT FOR PRICING OR CONSTRUCTION. PRICING BASED ON THIS PLAN IS NOT BINDING UNLESS SIGNED BY BOTH CONTRACTOR AND OWNER.

CALL DIG SAFE UTILITY LOCATION  
**1-888-344-7233**  
 STATE LAW REQUIRES ADVANCE NOTICE OF AT LEAST 3 BUSINESS DAYS BEFORE YOU DIG, GRADE OR EXCAVATE FOR THE MARKING OF UNDERGROUND UTILITIES

GRAPHIC SCALE  
 (IN FEET)  
 1 inch = 20 ft.

ISSUED FOR:  
 PERMITTING REVIEW

CURTIS Y. NEUFELD  
 9779  
 LICENSED

2. 04-21-20 REVISED BER CITY STAFF COMMENTS MCA  
 1. 03-27-20 SUBMITTED TO CITY OF LEWISTON CYN

TITLE: **LANDSCAPE PLAN**

PROJECT: **OFFICE/WAREHOUSE BUILDING**  
 1222 SABATTUS STREET, LEWISTON, MAINE 04240

PREPARED FOR: **410 INDUSTRIES, LLC**  
 1222 SABATTUS STREET, LEWISTON, MAINE 04240

**SITELINES**  
 119 PURINTON ROAD, SUITE A  
 BRUNSWICK, MAINE 04011  
 207.725.1200

CIVIL ENGINEERS • PLANNERS • LAND SURVEYORS

FIELD WK: MC/CR SCALE: 1"=20' SHEET:  
 DRN BY: RPL JOB #: 4060  
 CH'D BY: CYN MAP/LOT: 037/024  
 DATE: 03-05-2020 FILE: 4060-SITE

**L1**



## CITY OF LEWISTON

### Department of Planning & Code Enforcement

TO: Lewiston Planning Board

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

DATE: April 27, 2020

RE: Minor Amendment to Maple Ridge Subdivision

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The owners of 4 Bayberry Lane have submitted a De Minimis change application to amend the Maple Ridge Subdivision for lots 24-26. The property at 4 Bayberry Lane was originally comprised of three lots with a residence being built in the center of the three lots. For many years the three lots were considered one lot. The owners now would like to re-establish the three original lots but need to adjust the side lot line between lots 25 and 26 in order to meet the 10 foot building setback required in the Neighborhood Conservation "A" District.

The staff has reviewed the amended subdivision plan and finds it meets all the space and bulk standards of Article XI, District Regulations. Article XIII, Development Review and Standards, Section 3, Procedure, k, De Minimis Changes to Development Plans, states:

"The planning director or designee may determine amendments to a development plan are "de minimis," that is of a minor nature, and do not require a formal review process. Accordingly, the amended plan can be signed directly by the planning director or designee. However, amendments to developments which involve the creation of a subdivision as defined by 30-A M.R.S.A. Section 4401, as amended, will require signature of the amended plan by the planning board chair, who may request that the de minimis change be brought before the board for their review and approval prior to the signing of the permanent copy of the plan (mylar.) A report of all approved de minimis changes will be submitted to the planning board or staff review committee as appropriate at their next available meeting."

The Staff is presenting the amended subdivision plan to the Planning Board as the Maple Ridge Subdivision was previously approved by the Planning Board on August 9, 1979. . This de minimis change is simply an amendment to a previously approved plan with a lot line being adjusted and no additional lots created. The Planning Board does not need to make a motion on this De Minimis plan.



# Land Design Solutions

Land Planning, Site Planning and Landscape Architecture

April 10, 2020

Mr. Douglas Greene, City Planner  
City of Lewiston  
22 Pine Street  
Lewiston, Maine 04240

**RE: Maple Ridge Subdivision Amendment  
Minor Amendment Lots 24, 25 & 26  
Planning Board Review Submission**

Dear Mr. Greene,

On behalf of Tom and Dan Bednarczyk the owners and applicants, Land Design Solutions respectfully submits the enclosed Subdivision Amendment submission for Planning Board Review.

The project located at 4 Bayberry Lane, consists of three lots; 24, 25 and 26 of the Maple Ridge Subdivision. These three lots were originally purchased by Tom and Dan's father and mother Frank & Stephana Bednarczk in 1974. A house was constructed in the middle of the three parcels, primarily on lot 25, with a slight incursion into lot 26. In 2005 Stephana's ownership in the parcel was deeded over to Frank, and then when Frank's passed away in 2019 the house and land was left to the sons Tom and Dan.

Tom and Dan would like to sell the existing house on lot 25 and sell lots 24 and 26 on either side of it. In order to do this a survey has been prepared by Survey, Inc. showing minor lot line adjustments in order to accommodate the required 10 ft. side setback for the existing house's incursion into the original lot 26.

We believe that all three of the lots as proposed; 24, 25 & 26 are close to their original configuration and meet the City of Lewiston lot requirements.

The following documents are included as part of this submission:

- Amended Minor Subdivision Plan
- Deed showing ownership by Dan and Tom Bednarczyk
- Application fee of \$100

We look forward to discussing the project with the Planning Board and request that this item be placed on the next available Planning Board agenda. Please do not hesitate to contact me with any questions or comments concerning the submitted plans or documentation.

Sincerely,



Peter B. Biegel, ASLA  
Maine Licensed Landscape Architect

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DANIEL F. BEDNARCZYK of the City of Charlestown, County of Suffolk and State of Massachusetts, duly appointed and acting Personal Representative of the ESTATE OF FRANK J. BEDNARCZYK, who died testate as shown by the probate records of Androscoggin County, Maine, at Docket No. 2018-513, by the power conferred by the Maine Probate Code, and every other power, for consideration paid, grants to THOMAS J. BEDNARCZYK of the Town of Durham, County of Androscoggin and State of Maine, whose mailing address is 45 Brianna Drive, Durham, Maine and DANIEL F. BEDNARCZYK of the City of Charlestown, County of Suffolk and State of Massachusetts, in his individual capacity, whose mailing address is 58 Chappie Street, Unit 2, Charlestown, Massachusetts, being the persons entitled to distribution, as joint tenants with right of survivorship, a certain lot or parcel of land, with all buildings thereon, situated in the City of Lewiston, County of Androscoggin and State of Maine, more particularly described as follows:

Being lots numbered twenty-four (24) through twenty-six (26) on a certain plan of Maple Ridge recorded in the Androscoggin County Registry of Deeds in Book of Plans, Volume 3, Page 693, to which plan and the record thereof reference may be had for a more particular description.

This conveyance is made subject to the following restrictions: that no building shall be erected on the granted premises except a single family residence and appurtenant garage, which buildings shall be constructed on the exterior of masonry, (brick, stone or stucco), clapboards, flush boarding or wooden shakes or wooden shingles, to be painted or stained or otherwise covered with its usual and permanent outside finish, and to have permanent foundations and shall have dimensions of at least twenty-four (24) feet by thirty-two (32) feet, or contain equivalent square foot area of finished dwelling space, exclusive of garages, breezeways, porticos and porches and construction of buildings and landscaping shall be completed within one (1) year of the commencement of the building of the foundations, and no building shall be erected thereon any part of which is nearer than fifteen (15) feet to any street line or ten (10) feet to any abutting land owner's line. Any owner of a lot or a part of a lot on said Plan will have the right to specifically enforce performance of the said restrictions.

The premises are conveyed subject to any recorded easements for power poles and lines previously conveyed to Central Maine Power Company and New England Telephone & Telegraph Company.

NO MAINE R.E.  
TRANSFER TAX PAID

Poor Copy At Time Of Recording  
Will Not Reproduce Clearly

Being the same premises described in a Release Deed of Stephana K. Bednarczyk to Frank J. Bednarczyk dated February 16, 2005, and recorded in the Androscoggin County Registry of Deeds in Book 6289, Page 176.

OFFICIAL COPY

AN OFFICIAL COPY

Witness by on this 23<sup>rd</sup> day of July, 2019.

NOT

[Signature]  
AN OFFICIAL COPY  
Witness

[Signature]  
AN OFFICIAL COPY  
DANIEL F. BEDNARCZYK, Personal Representative of the Estate of Frank J. Bednarczyk

COMMONWEALTH OF MASSACHUSETTS  
MIDDLESEX COUNTY, SS.

July 23, 2019

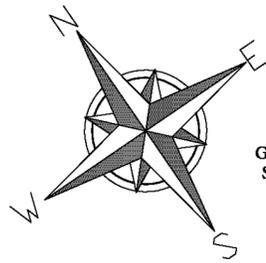
On this 23<sup>rd</sup> day of July, 2019, before me, the undersigned notary public, personally appeared, Daniel F. Bednarczyk, in his said capacity, either personally known to me or proved to me through satisfactory evidence of identification, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.

Before me,

[Signature]  
Notary Public/Attorney at Law



ANDROSCOGGIN COUNTY  
TINA M CHOUINARD  
REGISTER OF DEEDS



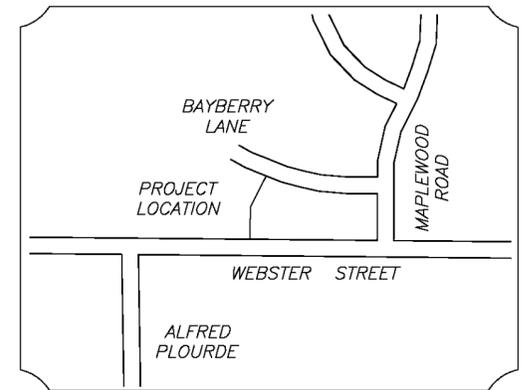
GRID NORTH  
SEE NOTE 3

**CURRENT ZONING:**

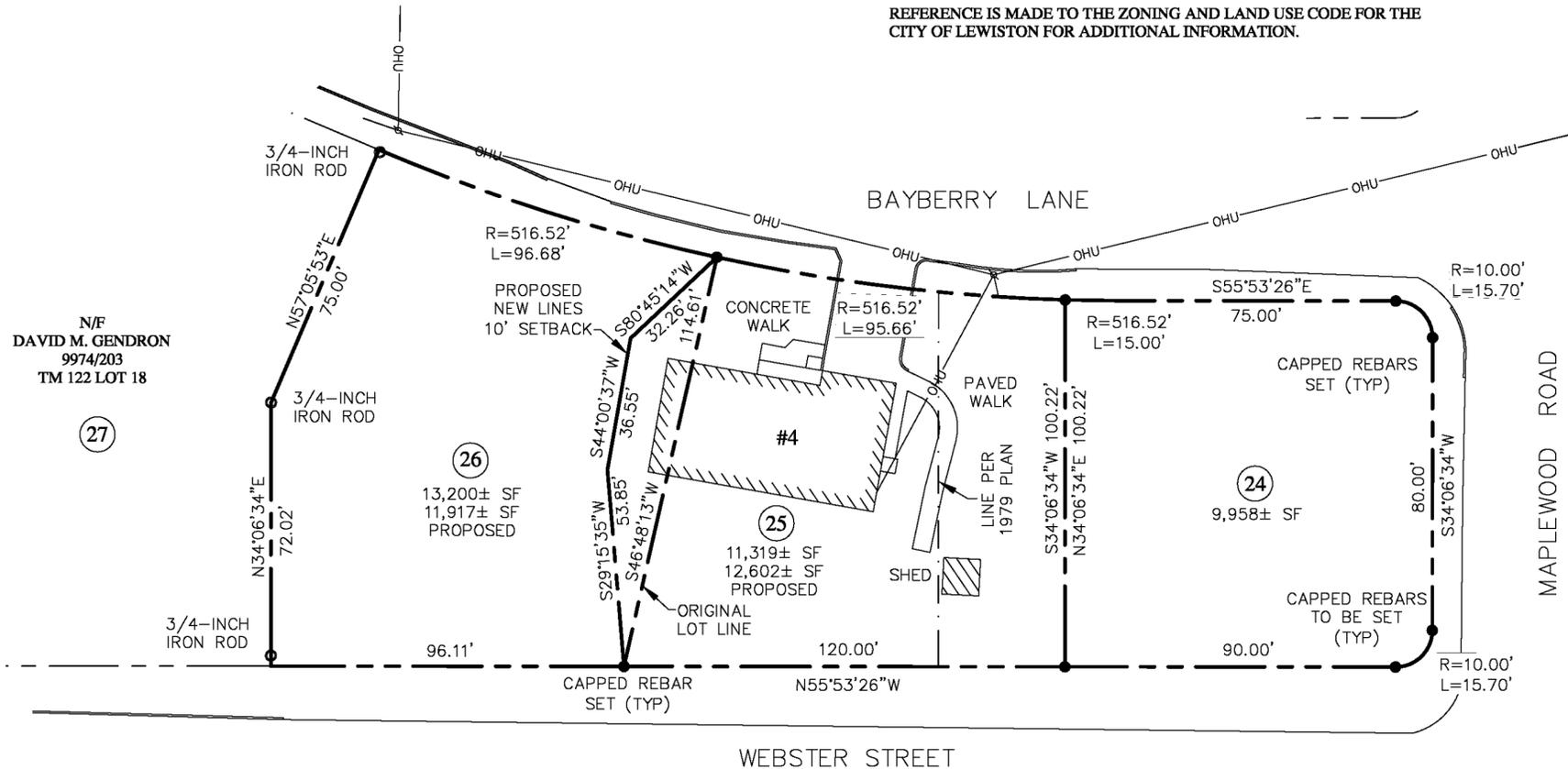
THE PARCEL IS LOCATED WITHIN THE NEIGHBORHOOD CONSERVATION A DISTRICT WITH THE FOLLOWING CURRENT DIMENSIONAL REQUIREMENTS FOR A SINGLE-FAMILY DWELLING:

MINIMUM LOT SIZE WITH PUBLIC SEWER	7,500 SF
MINIMUM FRONTAGE	75 FEET
MINIMUM FRONT SETBACK	20 FEET
MINIMUM FRONT YARD	15 FEET
MINIMUM SIDE AND REAR SETBACK	10 FEET
MAXIMUM HEIGHT	35 FEET
MAXIMUM LOT COVERAGE	0.40

REFERENCE IS MADE TO THE ZONING AND LAND USE CODE FOR THE CITY OF LEWISTON FOR ADDITIONAL INFORMATION.



LOCATION MAP  
(NOT TO SCALE)



THIS PLAN AMENDS LOTS 24-26 AS SHOWN ON A PLAN ENTITLED "MAPLE RIDGE D.R.S. DEVELOPMENT CORP. LEWISTON, MAINE" DATED 5-25-59 BY ALIBERTI, LAROCHELLE AND HODSON RECORDED IN PLAN BOOK 13 PAGE 693 IN THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS

**CERTIFICATION:**

I CERTIFY THAT THIS SURVEY CONFORMS TO THE STANDARDS OF THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS AND IS CORRECT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF.

WILLIAM C. SHIPPEN P.L.S. 2118 4-8-20



RECORDING DATA  
ANDROSCOGGIN COUNTY REGISTRY OF DEEDS  
RECEIVED \_\_\_\_\_, 20\_\_\_\_  
AT \_\_\_\_ H \_\_\_\_ M \_\_\_\_ M AND RECORDED IN  
PLAN BOOK \_\_\_\_\_ PAGE \_\_\_\_\_  
ATTEST \_\_\_\_\_ REGISTRAR

**PLAN REFERENCES:**

- (1) MAPLE RIDGE D.R.S. DEVELOPMENT CORP. LEWISTON, MAINE DATED 5-25-59 BY ALIBERTI, LAROCHELLE AND HODSON RECORDED IN PLAN BOOK 13 PAGE 693 IN THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS.
- (2) REVISION NO. 1 MAPLE RIDGE DATED JULY 24, 1979 BY ALIBERTI, LAROCHELLE AND HODSON RECORDED IN PLAN BOOK 28 PAGE 160 IN THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS.

**APPROVAL:**

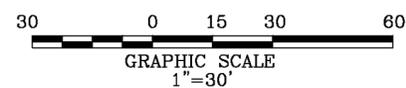
APPROVED BY THE CITY OF LEWISTON PLANNING BOARD

CHAIRPERSON: \_\_\_\_\_

DATE: \_\_\_\_\_

**SURVEY NOTES:**

- (1) THE OWNERS OF RECORD ARE THE HEIRS OF FRANK J. BEDNARCZYK AS DESCRIBED IN A DEED RECORDED IN BOOK 6239 PAGE 176 IN THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS.
- (2) THE PARCEL IS SHOWN AS LOT 19 ON THE CITY OF LEWISTON ASSESSORS MAP 122.
- (3) BEARINGS ARE GRID NORTH, MAINE STATE PLANE 1802 WEST ZONE.
- (4) REFERENCE IS MADE TO RESTRICTIONS AND ENFORCEMENT AS DESCRIBED IN THE DEED TO FRANK J. BEDNARCZYK.



**AMENDED MINOR  
SUBDIVISION PLAN**

BAYBERRY LANE  
LEWISTON, MAINE

FOR: **MAPLE RIDGE SUBDIVISION  
LOTS 24-26**

SURVEY BY:

**SURVEY, INC.**

P.O. BOX 210  
WINDHAM, ME 04062  
(207) 892-2556

INFO@SURVEYINCORPORATED.COM

DWN: WCS  
DATE: APRIL 2020

CHK: DRR  
JOB NO. 19183