CITY OF LEWISTON
PLANNING BOARD MEETING
Monday, March 13, 2017 – 5:30 P.M.
City Council Chambers – First Floor
Lewiston City Building
27 Pine Street, Lewiston, ME

AGENDA

I. ROLL CALL

II. ADJUSTMENTS TO THE AGENDA

III. CORRESPONDENCE

IV. PUBLIC HEARINGS:

a) To consider a request by Stoneybrook Consultants, Inc. on behalf of Richard Belanger for an amendment to the Riverbend Commons Subdivision involving the property located a 1 Commons Drive (postponed from the February 15, 2017 meeting).

b) To consider an application submitted by Stoneybrook Consultants on behalf of Clariant to construct an 11,908 sf expansion to an existing manufacturing facility at 17 Foss Road.

c) To consider an application submitted by Stoneybrook Consultants on behalf of One Mollison Way, LLC to amend the Spare-Time Recreation Subdivision, and construct a Subway sandwich shop and a second 3,000 sf commercial building at 1 Mollison Way (Lot 29 Spare-Time Recreation Subdivision).

d) To consider an application submitted by Tighe & Bond on behalf of Compounding Solutions, LLC for the construction of a 40,000 sf addition to an existing manufacturing facility at 258 Goddard Road.

V. OTHER BUSINESS:

a) Discussion on comprehensive plan implementation: parking and form based codes.
b) Any other business Planning Board Members may have relating to the duties of the Lewiston Planning Board.

VI. READING OF THE MINUTES: Motion to adopt the February 6, 2017 and February 15, 2017 draft minutes

VII. ADJOURNMENT

The City of Lewiston is an EOE. For more information please visit our website @ www.lewistonmaine.gov and click on the Non-Discrimination Policy.

CITY OF LEWISTON

Department of Planning & Code Enforcement

TO: **Planning Board**
FROM: **David Hediger, City Planner**
DATE: **February 9, 2017**
RE: **February 13, 2017 Planning Board Agenda Item V(a)**

Request by Stoneybrook Consultants, Inc. on behalf of Richard Belanger for an amendment to the Riverbend Commons Subdivision involving the property located a 1 Commons Drive.

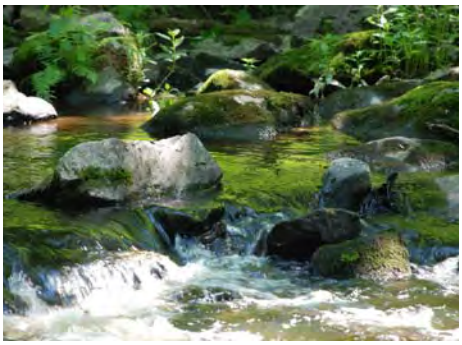
Stoneybrook Consultants, Inc. on behalf of Richard Belanger has submitted a request for an amendment to the Riverbend Commons Subdivision involving the property located a 1 Commons Drive. This 19-lot subdivision was approved by the Planning Board in 2007 under the cluster provisions. The subdivision is located in the Rural Agricultural (RA) district. At this time, the road within the subdivision, Commons Drive, has been accepted by the City and one lot has been developed.

The applicant is requesting an amendment to the subdivision plan, removing 1 Commons Drive (Lot 2) from the subdivision and merging it with the abutting land at 263 Cotton Road, owned by Richard Belanger, with the intent of expand his agricultural operations. Staff has reviewed the notes and calculations on the plan to ensure space and bulk provisions are being met, as well as open space requirements. Note 17 has been added to the plan specifically referencing the reason for the proposed amendment.

Staff has no concerns with the proposed amendment, views the change as being de minimis pursuant to Article XIII, Section 3(k) of the Zoning and Land Use Code, and recommends approval.

ACTIONS NECESSARY:

Make a motion pursuant to Article XIII, Section 3(k), Section 4, and Section 5 of the Zoning and Land Use Code to approve a request by Stoneybrook Consultants, Inc. on behalf of Richard Belanger for an amendment to the Riverbend Commons Subdivision involving the property located a 1 Commons Drive (Lot 2).



Stoneybrook Consultants, Inc.

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

February 2, 2017

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

Re: Riverbend Commons - Revision #2
1 Commons Drive

Dear David:

On behalf of Richard Belanger (Belanger), I have prepared the attached information for Revision # 2 of the Riverbend Commons (Riverbend) subdivision located at 1 Commons Drive. Riverbend was first approved in 2007. The property to be changed is shown on Tax Map 106 as Lot 001. The project is located in the Rural-Agricultural District with a small portion along the Androscoggin River being located in the Resource Conservation District.

The project was reviewed as 19 lot single-family cluster subdivision. Commons Drive was constructed to provide frontage for these lots and a common area was set aside along the river frontage. A reduced copy of both the approved plan and the Revision 1 plan for the development are attached for your information. The Revision 1 plan, approved in 2009, made minor changes to several lots to correct mislabeled bearings and distances shown on the approved plan.

Belanger now has a purchase agreement to purchase Lot 2 shown on the approved plans. He plans to purchase this lot to expand his existing farm field that abuts this lot. As you know, Belanger has been farming in this area for many years and this subdivision was originally approved with conditions to protect those farming rights.

Since the Declaration of Restrictions did not envision agricultural use of the lots in the development, we are seeking approvals from the Planning Board of a minor modification to remove Lot 2 from the approved Subdivision. Lot 2 contains 5.38 acres and has about 412' of frontage on Commons Drive. Otherwise, the project will not be changed. The attached Revision 2 plan has been drawn to secure City approvals for this change.

The Revision 2 plan clearly shows the area to be removed from the subdivision. We have also repeated several notes that were included on the approved plans and have revised several notes to account for the removal of Lot 2 from this plan. Three notes were deleted as they are not related to this proposed change. I would encourage you to look at notes 4, 5, 6, 11, 12, 14, 16 & 17 which have been changed to account for the changes proposed under this revision.

I trust you will find this application complete for processing this minor modification. Please let me know if you have any questions.

Respectfully Yours

STONEYBROOK CONSULTANTS, INC.

Michael F. Gotto

cc: Richard Belanger
Kurt Youland

Sakonnet Holdings, LLC
200 Auburn Road
Turner, ME 04282

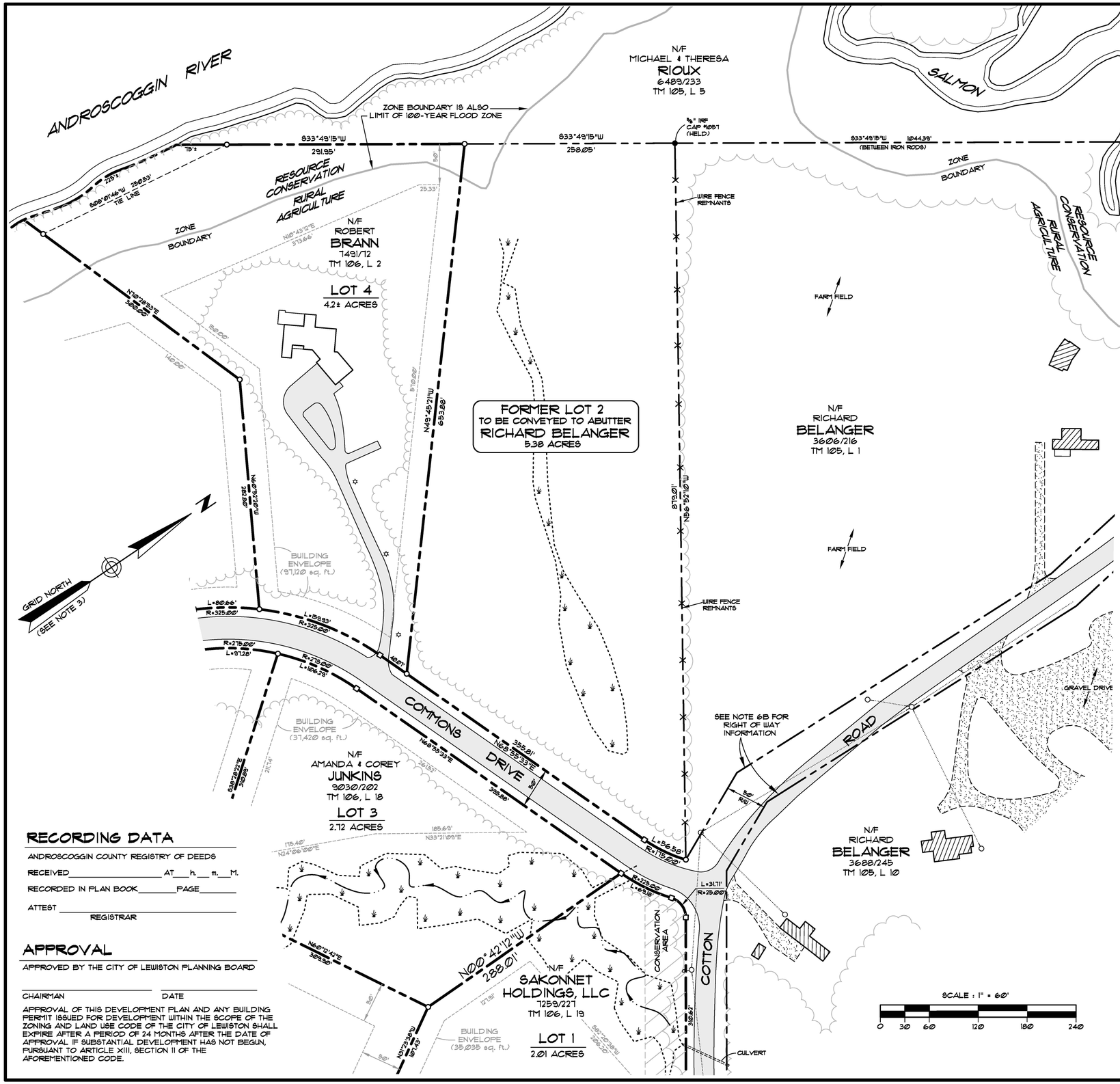
January 31, 2017

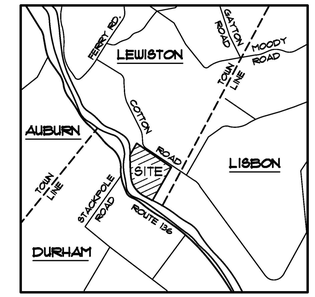
To Whom It May Concern:

On behalf of Sakonnet Holdings, LLC, with a mailing address of 200 Auburn Road Turner, Maine 04282, being the current owner of property located at 1 Commons Drive in Lewiston, Maine, said property being listed on the City of Lewiston Tax Map 106 as Lot 1, I authorize Richard Belanger to file and pursue subdivision review for Revision 2 of the Riverbend Commons subdivision and to secure approvals from the City of Lewiston to remove Lot 2 shown on the approved subdivision plans so it can be purchased by Mr. Belanger for farming purposes.

Kurt Youland Member
for Sakonnet Holdings, LLC

Kurt Youland Member
(print name, title)





LOCATION MAP

LEGEND

- BOUNDARY LINE (SUBDIVISION LOT LINES)
- BOUNDARY LINE (OTHER)
- STREAM
- 5/8" IRON ROD, CAP #2250 (SEE NOTE 6A)
- CONCRETE MONUMENT, CAP #2250 (SEE NOTE 6A)
- IRON PIPE OR ROD FOUND
- N/F — NOW OR FORMERLY
- 2178/189 — BOOK AND PAGE NUMBER
- R/W — RIGHT OF WAY
- TM 106 L 1 — TAX MAP AND LOT NUMBER
- UTILITY POLE WITH OVERHEAD WIRES
- TREE LINE
- WETLAND AREA
- EXISTING BUILDING
- EXISTING PAVEMENT
- EXISTING GRAVEL

NOTES

1) ALL BEARINGS REFER TO GRID NORTH (NAD83 STATE PLANE MAINE WEST) AS TAKEN FROM THE CITY OF LEWISTON GEOGRAPHIC INFORMATION SYSTEM (G.I.S.) MAPPING AND OBSERVED WITH A G.P.S. RECEIVER BY TECHNICAL SERVICES, INC.

2) SOME PHYSICAL FEATURES (RIVER) AND IMPROVEMENTS (BUILDINGS, DRIVEWAYS, ETC.) ARE SHOWN BASED UPON THE CITY OF LEWISTON GEOGRAPHIC INFORMATION SYSTEM (G.I.S.) MAPPING.

3) ALL BOOK AND PAGE NUMBERS REFER TO THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS.

4) SOURCE DEED - SEE DEED DATED SEPTEMBER 18, 2007 FROM WILLIAM K. SKELTON TO SAKONNET HOLDINGS, LLC RECORDED AT SAID REGISTRY IN BOOK 7259, PAGE 227.

5) AREAS - LOTS 1 & 3-19 = 46.9± ACRES, ROADS = 2.38 ACRES,
COMMON AREA = 3.1± ACRES, TOTAL AREA = 53.0± ACRES

6) REFERENCE IS MADE TO THE FOLLOWING PLANS
A) "CLUSTER SUBDIVISION PLAN - REVISION 1, RIVERBEND COMMONS", REVISED THROUGH MARCH 6, 2009, RECORDED AT SAID REGISTRY IN PLAN BOOK 47, PAGE 84.
B) "CLUSTER SUBDIVISION PLAN - RIVERBEND COMMONS", REVISED THROUGH MARCH 9, 2006, RECORDED AT SAID REGISTRY IN BOOK 46, PAGE 56.

7) A PORTION OF THE PREMISES ARE LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS DELINEATED ON FLOOD INSURANCE RATE MAP COMMUNITY PANEL #230004 0015 B, DATED SEPTEMBER 28, 1979.

8) THE PARCEL IS LOCATED IN THE RURAL AGRICULTURAL ZONING DISTRICT AND RESOURCE CONSERVATION ZONING DISTRICT.

9) WETLANDS WERE DELINEATED AND LOCATED WITH A G.P.S. RECEIVER BY JONES ASSOCIATES, INC. IN MAY 2005.

10) THE UNDIMENSIONED LINES OF THE BUILDING ENVELOPES ARE 25' FROM AND PARALLEL TO THE LOT BOUNDARY LINES.

11) NO WELLS SHALL BE DRILLED WITHIN 150 FEET FROM COTTON ROAD AND 200 FEET FROM THE EXISTING AGRICULTURAL FIELDS ON LAND OF RICHARD M. BELANGER. ANY NEW AGRICULTURAL FIELDS ON ANY PORTION OF THE FORMER LOT 2 AREA SHOWN ON THIS PLAN AS TO BE CONVEYED TO RICHARD BELANGER SHALL BE SETBACK 50' FROM COMMONS DRIVE AND 100' FROM LOT 4.

12) COMMON AREAS SHOWN ON THE APPROVED PLAN OF RIVERBEND COMMONS RECORDED IN PLAN BOOK 47, PAGE 84 ARE SUBJECT TO USES, MAINTENANCE REQUIREMENTS AND RESTRICTIONS OUTLINED IN THE "DECLARATION OF RESTRICTIONS" FOR RIVERBEND COMMONS SUBDIVISION RECORDED AT THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS IN BOOK 7259, PAGE 229.

13) "NET LOT AREA" IS A TERM USED IN THE CITY OF LEWISTON ZONING ORDINANCE. THE NET LOT AREA SHOWN REPRESENTS THE LARGEST UPLAND AREA ON A LOT THAT IS ABOVE THE 100-YEAR FLOOD HAZARD BOUNDARY AND UNDIVIDED BY A WETLAND OR STREAM. THE MINIMUM NET LOT AREA FOR THIS ZONE IS 60,000 SQUARE FEET. THE NET LOT AREA FOR LOTS 7, 9, 12, 14, 15, 18 & 19 IS ALLOWED TO BE LESS THAN 60,000 SQUARE FEET THROUGH THE CLUSTER SUBDIVISION PROVISIONS OF THE CITY'S ZONING ORDINANCE.

14) THE SURVEYOR'S CERTIFICATION ON THIS PLAN IS FOR APPROVAL AND RECORDING PURPOSES. SITE IMPROVEMENTS AND BOUNDARY INFORMATION SHOWN WAS TAKEN FROM PLANS OF RECORD. NO FIELD WORK WAS PERFORMED TO VERIFY THE LOCATION AND EXISTENCE OF BOUNDARY MARKERS SHOWN AND NO SURVEY FIELD WORK OR RESEARCH HAS BEEN PERFORMED BY THIS SURVEYOR, THE SIGNING PROFESSIONAL, THEREFORE, THIS SURVEYOR MAKES NO CERTIFICATION OTHER THAN THE REMOVAL OF LOT 2 FROM THE "RIVERBEND COMMONS" SUBDIVISION.

15) TOTAL RIVERBEND COMMONS WETLAND AREA = 244,156 sq. ft. (5.60 ACRES)
IMPACTED RIVERBEND COMMONS WETLAND AREA = 12,534 sq. ft. (0.29 ACRES)

16) THE REQUIRED MINIMUM SIZE FOR THE COMMON AREA IS 1000 sq. ft. PER LOT (18,000 sq. ft.) PLUS THE DIFFERENCE BETWEEN THE REQUIRED NET LOT AREA (60,000 sq. ft.) AND THE ACTUAL NET LOT AREA FOR LOTS WITH A NET LOT AREA OF UNDER 60,000 sq. ft. THE TOTAL SUM OF THE DIFFERENCES OF LOTS 7, 9, 12, 14, 15, 18 & 19 IS 183,545 sq. ft. THE MINIMUM REQUIRED SIZE OF THE COMMON AREA FOR THIS DEVELOPMENT IS 96,545 sq. ft. (2.21 ACRES).

17) THE PURPOSE OF THIS PLAN IS TO ELIMINATE LOT 2 FROM THE RIVERBEND COMMONS SUBDIVISION. THE LAND AREA OF LOT 2, SO ELIMINATED, IS TO BE CONVEYED TO RICHARD BELANGER WITHOUT REQUIREMENTS FOR MEMBERSHIP IN THE HOMEOWNERS' ASSOCIATION, MAINTENANCE RESPONSIBILITIES UNDER THE HOMEOWNERS' ASSOCIATION, OR DEED RESTRICTIONS OUTLINED IN THE "DECLARATION OF RESTRICTIONS - RIVERBEND COMMONS", AS RECORDED IN BOOK 7259, PAGE 229. THE LAND AREA OF LOT 2 TO BE CONVEYED TO RICHARD BELANGER WILL BE CONVEYED SUBJECT TO THE REQUIREMENTS OF NOTE 11 WITH REGARD TO SETBACK REQUIREMENTS FOR NEW AGRICULTURAL FIELDS ONLY.

RECORDING DATA

ANDROSCOGGIN COUNTY REGISTRY OF DEEDS

RECEIVED _____ AT ___h. ___m. ___M.

RECORDED IN PLAN BOOK _____ PAGE _____

ATTEST _____
REGISTRAR

APPROVAL

APPROVED BY THE CITY OF LEWISTON PLANNING BOARD

_____ _____
CHAIRMAN DATE

APPROVAL OF THIS DEVELOPMENT PLAN AND ANY BUILDING PERMIT ISSUED FOR DEVELOPMENT WITHIN THE SCOPE OF THE ZONING AND LAND USE CODE OF THE CITY OF LEWISTON SHALL EXPIRE AFTER A PERIOD OF 24 MONTHS AFTER THE DATE OF APPROVAL IF SUBSTANTIAL DEVELOPMENT HAS NOT BEGUN, PURSUANT TO ARTICLE XIII, SECTION 11 OF THE AFOREMENTIONED CODE.

NO.	REVISION	DATE
1	REVISE NOTE 12	2-1-2017

CONSULTANT:
Stonybrook Consultants, Inc.
456 Duckfield Road - Turner, Maine 04282
(207) 514-7491 Voice / (207) 514-7492 Fax

SCALE: 1" = 60' | DRAWN BY: PLAN-IT | PROJECT: 16-39
DATE: 10-20-2016 | APPR. BY: MFG | CAD: 16-39 SUB

TITLE:
REVISION 2
RIVERBEND COMMONS
COTTON RD. & COMMONS DR. - LEWISTON, ME

OWNER:
RICHARD BELANGER
262 COTTON ROAD - LEWISTON, MAINE 04240

PLANIT MAPPING
488 MAIN STREET
LEWISTON, MAINE
planitmapping@yahoo.com

STATE OF MAINE — KEVIN R. FARRAR 2250 — LICENSED PROFESSIONAL SURVEYOR

SHEET NUMBER
1

RECORDING DATA

ANDROSCOGGIN COUNTY REGISTRY OF DEEDS

RECEIVED March 12, 2009 AT 10 h. 19 m. A.M.

RECORDED IN PLAN BOOK 47 PAGE 84

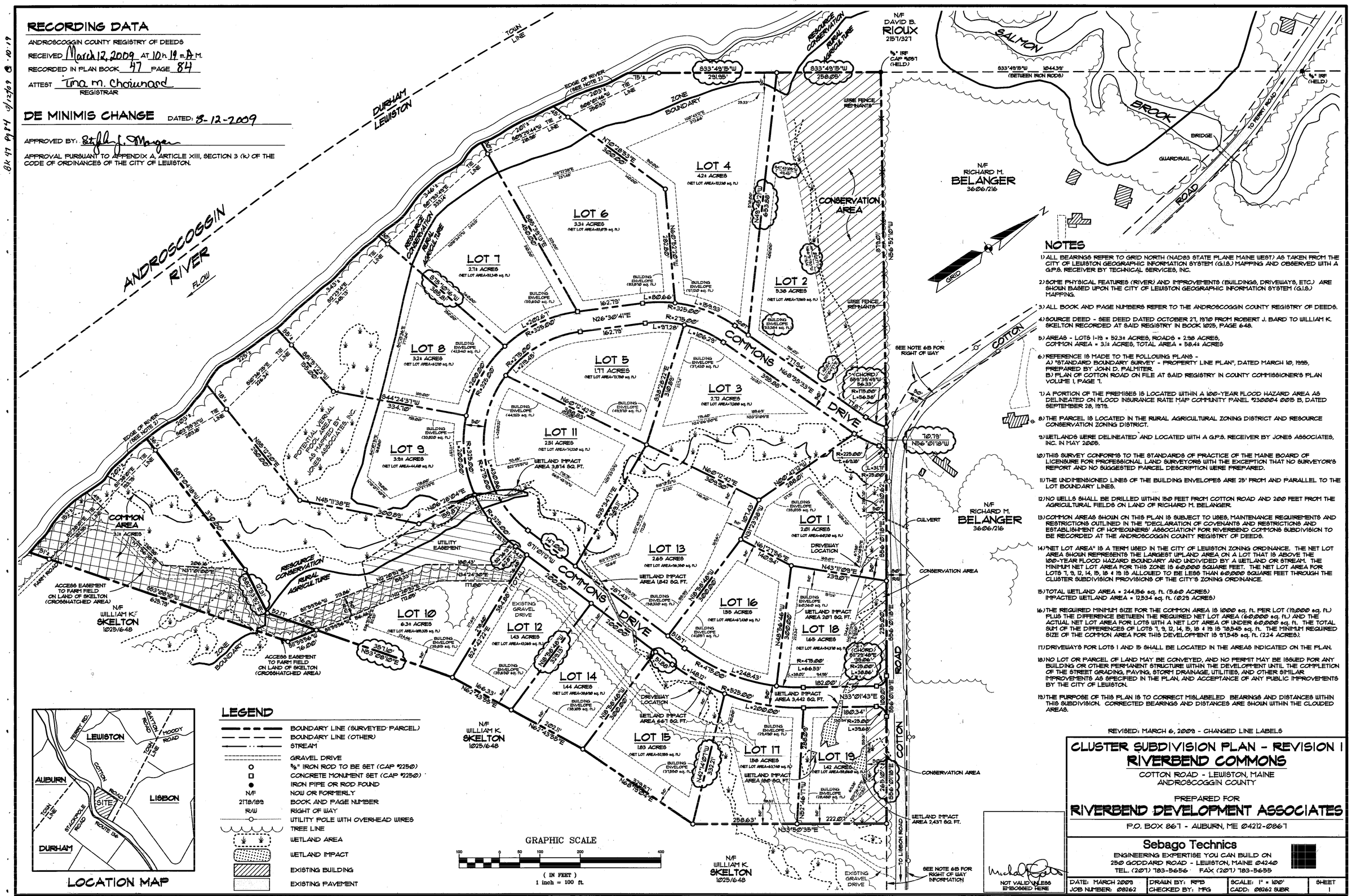
ATTEST Tina M. Chouinard
REGISTRAR

DE MINIMIS CHANGE DATED: 3-12-2009

APPROVED BY: Stephen J. Morgan

APPROVAL PURSUANT TO APPENDIX A, ARTICLE XIII, SECTION 3 (K) OF THE CODE OF ORDINANCES OF THE CITY OF LEWISTON.

BK 47 PG 84 03/12/09 @ 10:19



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5) AREAS - LOTS 1-19 = 52.3± ACRES, ROADS = 2.98 ACRES, COMMON AREA = 3.1± ACRES, TOTAL AREA = 58.4± ACRES

6) REFERENCE IS MADE TO THE FOLLOWING PLANS -
A) "STANDARD BOUNDARY SURVEY - PROPERTY LINE PLAN", DATED MARCH 10, 1995, PREPARED BY JOHN D. PALMITER.
B) PLAN OF COTTON ROAD ON FILE AT SAID REGISTRY IN COUNTY COMMISSIONER'S PLAN VOLUME 1, PAGE 7.

7) A PORTION OF THE PREMISES IS LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS DELINEATED ON FLOOD INSURANCE RATE MAP COMMUNITY PANEL #230004 0013 B, DATED SEPTEMBER 28, 1979.

8) THE PARCEL IS LOCATED IN THE RURAL AGRICULTURAL ZONING DISTRICT AND RESOURCE CONSERVATION ZONING DISTRICT.

9) WETLANDS WERE DELINEATED AND LOCATED WITH A G.P.S. RECEIVER BY JONES ASSOCIATES, INC. IN MAY 2005.

10) THIS SURVEY CONFORMS TO THE STANDARDS OF PRACTICE OF THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS WITH THE EXCEPTION THAT NO SURVEYOR'S REPORT AND NO SUGGESTED PARCEL DESCRIPTION WERE PREPARED.

11) THE UNDIMENSIONED LINES OF THE BUILDING ENVELOPES ARE 25' FROM AND PARALLEL TO THE LOT BOUNDARY LINES.

12) NO WELLS SHALL BE DRILLED WITHIN 150 FEET FROM COTTON ROAD AND 200 FEET FROM THE AGRICULTURAL FIELDS ON LAND OF RICHARD M. BELANGER.

13) COMMON AREAS SHOWN ON THIS PLAN IS SUBJECT TO USES, MAINTENANCE REQUIREMENTS AND RESTRICTIONS OUTLINED IN THE "DECLARATION OF COVENANTS AND RESTRICTIONS AND ESTABLISHMENT OF HOMEOWNERS' ASSOCIATION" FOR RIVERBEND COMMONS SUBDIVISION TO BE RECORDED AT THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS.

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IMPACTED WETLAND AREA = 12,534 sq. ft. (0.29 ACRES)

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17) DRIVEWAYS FOR LOTS 1 AND 15 SHALL BE LOCATED IN THE AREAS INDICATED ON THE PLAN.

18) NO LOT OR PARCEL OF LAND MAY BE CONVEYED, AND NO PERMIT MAY BE ISSUED FOR ANY BUILDING OR OTHER PERMANENT STRUCTURE WITHIN THE DEVELOPMENT UNTIL THE COMPLETION OF THE STREET GRADING, PAVING, STORM DRAINAGE, UTILITIES, AND OTHER SIMILAR IMPROVEMENTS AS SPECIFIED IN THE PLAN, AND ACCEPTANCE OF ANY PUBLIC IMPROVEMENTS BY THE CITY OF LEWISTON.

19) THE PURPOSE OF THIS PLAN IS TO CORRECT MISLABELED BEARINGS AND DISTANCES WITHIN THIS SUBDIVISION. CORRECTED BEARINGS AND DISTANCES ARE SHOWN WITHIN THE CLOUDED AREAS.

REVISED: MARCH 6, 2009 - CHANGED LINE LABELS

LOCATION MAP

LEGEND

- BOUNDARY LINE (SURVEYED PARCEL)
- BOUNDARY LINE (OTHER)
- STREAM
- GRAVEL DRIVE
- 5/8" IRON ROD TO BE SET (CAP #2250)
- CONCRETE MONUMENT SET (CAP #2250)
- IRON PIPE OR ROD FOUND
- N/F NOW OR FORMERLY
- 2178/189 BOOK AND PAGE NUMBER
- R/W RIGHT OF WAY
- UTILITY POLE WITH OVERHEAD WIRES
- TREE LINE
- WETLAND AREA
- WETLAND IMPACT
- EXISTING BUILDING
- EXISTING PAVEMENT

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

NOT VALID UNLESS EMBOSSED HERE

CLUSTER SUBDIVISION PLAN - REVISION 1
RIVERBEND COMMONS

COTTON ROAD - LEWISTON, MAINE
ANDROSCOGGIN COUNTY

PREPARED FOR

RIVERBEND DEVELOPMENT ASSOCIATES

P.O. BOX 867 - AUBURN, ME 04212-0867

Sebago Technics
ENGINEERING EXPERTISE YOU CAN BUILD ON
250 GODDARD ROAD - LEWISTON, MAINE 04240
TEL. (207) 783-5656 FAX (207) 783-5655

DATE: MARCH 2009	DRAWN BY: RPB	SCALE: 1" = 100'	SHEET
JOB NUMBER: 08262	CHECKED BY: MFG	CADD: 08262 SUBR	1

Book 47 Page 84

RECORDING DATA

ANDROSCOGGIN COUNTY REGISTRY OF DEEDS

RECEIVED March 5, 2007 AT 3 h. 14 m. P.M.

RECORDED IN PLAN BOOK 46 PAGE 56

ATTEST Tina M. Chevinard
REGISTRAR

APPROVAL December 12, 2005

APPROVED BY THE CITY OF LEWISTON PLANNING BOARD

James P. Pelletier II January 8, 2007
CHAIRMAN DATE

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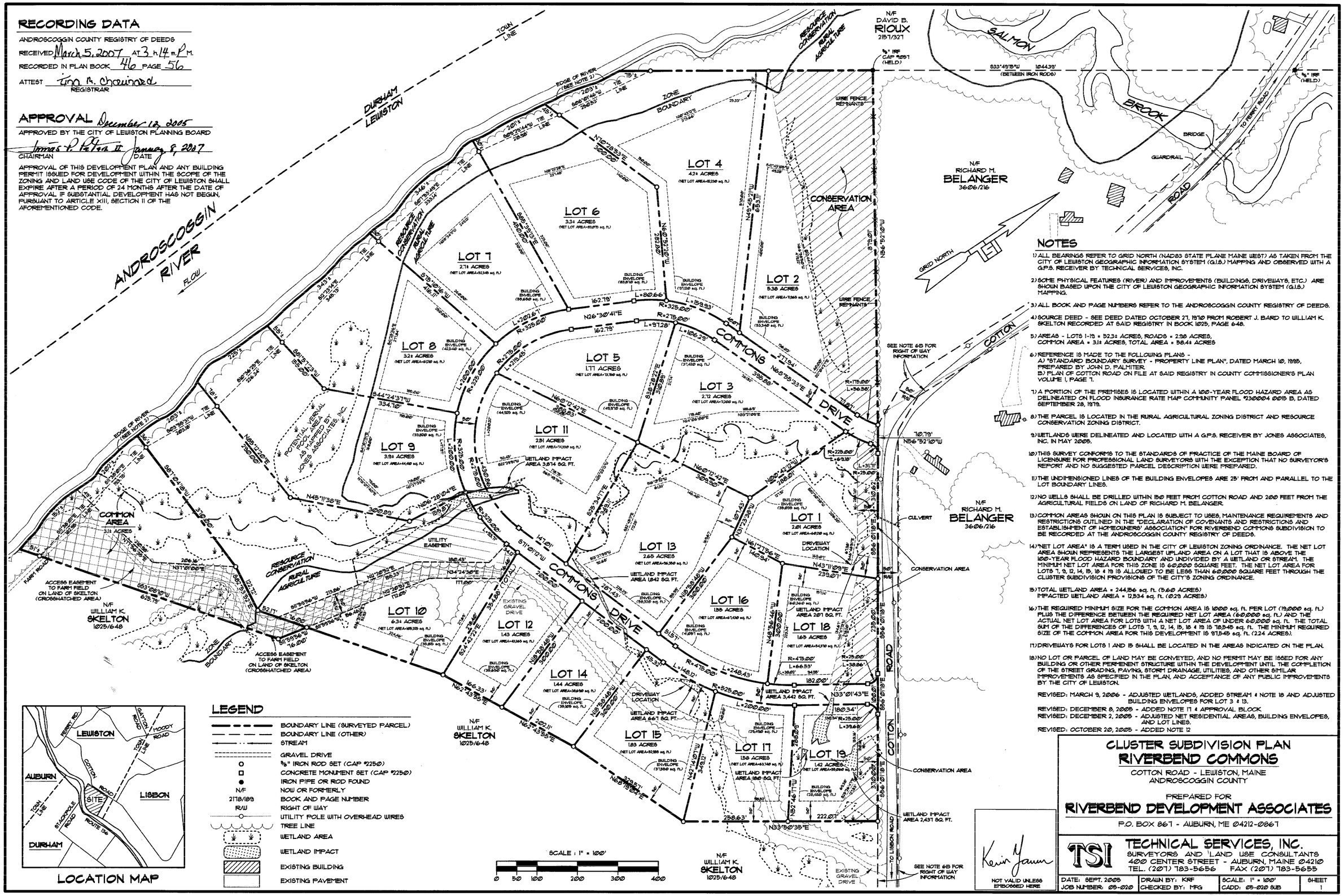

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17) DRIVEWAYS FOR LOTS 1 AND 15 SHALL BE LOCATED IN THE AREAS INDICATED ON THE PLAN.

18) NO LOT OR PARCEL OF LAND MAY BE CONVEYED, AND NO PERMIT MAY BE ISSUED FOR ANY BUILDING OR OTHER PERMANENT STRUCTURE WITHIN THE DEVELOPMENT UNTIL THE COMPLETION OF THE STREET GRADING, PAVING, STORM DRAINAGE, UTILITIES, AND OTHER SIMILAR IMPROVEMENTS AS SPECIFIED IN THE PLAN, AND ACCEPTANCE OF ANY PUBLIC IMPROVEMENTS BY THE CITY OF LEWISTON.

REVISED: MARCH 9, 2006 - ADJUSTED WETLANDS, ADDED STREAM & NOTE 15 AND ADJUSTED BUILDING ENVELOPES FOR LOT 3 & 13.
REVISED: DECEMBER 8, 2005 - ADDED NOTE 17 & APPROVAL BLOCK.
REVISED: DECEMBER 2, 2005 - ADJUSTED NET RESIDENTIAL AREAS, BUILDING ENVELOPES, AND LOT LINES.
REVISED: OCTOBER 20, 2005 - ADDED NOTE 12

LOCATION MAP

LEGEND

- BOUNDARY LINE (SURVEYED PARCEL)
- BOUNDARY LINE (OTHER)
- STREAM
- GRAVEL DRIVE
- ⅝" IRON ROD SET (CAP #2250)
- CONCRETE MONUMENT SET (CAP #2250)
- IRON PIPE OR ROD FOUND
- N/F NOW OR FORMERLY
- 2178/183 BOOK AND PAGE NUMBER
- R/W RIGHT OF WAY
- UTILITY POLE WITH OVERHEAD WIRES
- TREE LINE
- WETLAND AREA
- WETLAND IMPACT
- EXISTING BUILDING
- EXISTING PAVEMENT

SCALE : 1" = 100'

0 50 100 200 300 400

Kevin Gaum
NOT VALID UNLESS EMBOSSED HERE

CLUSTER SUBDIVISION PLAN
RIVERBEND COMMONS

COTTON ROAD - LEWISTON, MAINE
ANDROSCOGGIN COUNTY

PREPARED FOR

RIVERBEND DEVELOPMENT ASSOCIATES

P.O. BOX 861 - AUBURN, ME 04212-0861

TSI TECHNICAL SERVICES, INC.
SURVEYORS AND LAND USE CONSULTANTS
400 CENTER STREET - AUBURN, MAINE 04210
TEL. (207) 783-5656 FAX (207) 783-5655

DATE: SEPT. 2005	DRAWN BY: KRF	SCALE: 1" = 100'	SHEET
JOB NUMBER: 05-020	CHECKED BY: MFG	CADD: 05-020 SUB	1

CITY OF LEWISTON

Department of Planning & Code Enforcement

TO: **Planning Board**
FROM: **David Hediger, City Planner**
DATE: **March 10, 2017**
RE: **March 13, 2017, Planning Board Agenda Item IV(b)**

Consider an application submitted by Stoneybrook Consultants on behalf of Clariant to construct an 11,908 sf expansion to an existing manufacturing facility at 17 Foss Road.

This project consists a proposed 11,908 square foot addition to an existing plastics manufacturing facility at 17 Foss Road, Clariant. This 3.2 acre lot located in the Foss Road Business Park is zoned Highway Business (HB) and consists of a 24,626 square light industrial structure in which said use is allowed. The site does contain some wetlands and is located over a significant groundwater aquifer. The proposed addition includes additional parking and space for tractor trailer deliveries, stormwater improvements, and grading to accommodate a future building expansion.

The applicant has provided revisions and responses to staff's initial review comments. The following should be noted:

- Revisions have been made to the initial plans in effort to minimize site improvements while providing the ability for a future expansion. At this time, the applicant is proposing to construct an 11,908 square foot addition. However, the stormwater improvements and grading are being completed to accommodate another future addition of 7,087 square feet. This proactive approach will likely avoid the applicant from needing full development review approval in the future, with the addition handled as a de minimis change pursuant to Article XIII, Section 3(k).
- Revisions with respect to Public Works comments are being reviewed by staff. An update will be provided at the meeting, with the recommended condition if necessary, that prior the issuance of any building permits or construction activity, any remaining issues be resolved to the satisfaction of Public Works.
- Site lighting with full cut-off fixtures have been shown on the plan. However, it is not clear whether lighting is adequate in all appropriate areas, specifically public areas providing egress from the building providing less than 1 foot-candle. Staff recommends the applicant work with staff to ensure exterior lighting is meeting the requirements of the 2009 International Building Code prior the issuance of any building permits or construction activity.
- The site is located over a significant groundwater aquifer and therefore, is subject to Lewiston's Groundwater Conservation Overlay District provisions, Article XI, Section 24. These provisions prohibit certain uses and place limits on development activity

unless developments adequately address the overlay district performance standards. The applicant has provided a report from CES, Inc. with a revision date of March 7, 2017 referencing the applicable provisions of the ordinance. In addition, note #10 has been added to Sheet 1 to provide clarification with respect to allowed increases of impervious area within the overlay district.

- Approximately 2,413 square feet of wetlands will be altered with the proposed development. However, this does not require a permit from Maine DEP, falling under the 4,300 square foot threshold for wetland alteration permitting. A detailed erosion control plan has been provided.

At this time, staff is recommending approval of the proposed project with the following conditions:

1. The applicant work with staff to ensure exterior lighting is meeting the requirements of the 2009 International Building Code prior the issuance of any building permits or construction activity.
2. Prior to any certificate of occupancy being issued:
    a. Evidence of the post-construction stormwater management guarantee having been recorded at the Registry of Deeds must be provided.
    b. Evidence of a final inspection of the storm water system shall be provided to the city by the designing engineer along with a written statement indicating that the storm water system and all site improvements have been completed in accordance with the approved plans.
3. Prior the issuance of any building permits or construction activity, any remaining issues must be resolved to the satisfaction of Public Works.

ACTIONS NECESSARY

1. Make a motion that the application submitted by Stoneybrook Consultant, Inc. of behalf of Clariant Corporation to construct an 11,908 square foot expansion to an existing manufacturing facility at 17 Foss Road One Mollison Way. LLC, including the potential expansion of an additional 7,087 square foot addition, meets all of the necessary criteria contained in the Zoning and Land Use Code, including but not limited to, Article XIII, Sections 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).

Stoneybrook Consultants, Inc.

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

February 14, 2017
Revised March 8, 2017

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

Re: Clariant Facility Expansion
17 Foss Road

Dear David:

On behalf of Clariant and the property owner Richard Hale (Hale), I am pleased to submit this information as their request for approvals to construct an expansion to the existing building located at 17 Foss Road. Hale purchased the property in 1994. The property is known as Lot 4 in the Foss Road Business Park (Park) and includes 3.2 acres. The Park was approved in 1988 and we have attached a copy of the approved subdivision plan for your information. We have also attached a copy of an Existing Condition Plan prepared by Jones Associates Inc. (Jones) showing all of the existing improvements, contours and wetland areas on the property.

The property is shown on your GIS mapping system as Tax Map 45, Lot 43. The property is located in the Highway Business (HB) Zoning District where light industrial uses are considered a permitted use as long as the use is fully enclosed with no exterior storage. This proposal meets this requirement. The property is also located in the Groundwater Conservation Overlay District. We have attached our Response to Ordinance Requirements and a report from CES, Inc. indicating how this project meets these groundwater requirements.

The existing building was approved for construction on Lot 4 by the Planning Board in 1989. City tax records indicate that the building includes a total of 26,204 square feet including basement area. By survey, we found the existing building footprint to cover 24,626 square feet. There are currently 44 parking spaces striped onsite and the building has two loading doors. The total impervious area on the property has been calculated at 49,986 square feet.

Clariant is recognized as a global leader in color and additive concentrates and performance solutions for plastics. They have approximately 3,100 employees who staff more than 50 manufacturing plants on five continents. If this project is approved, they plan to add new production line(s) in the existing building and use the two proposed expansion areas for warehouse area.

All proposed improvements are shown on a set of plans prepared by Summit Geoengineering Services, Inc. (Summit). All utility services will be extended to the addition from the existing building services. The existing gas service may need to be extended through the proposed addition as it currently goes around the rear of the existing building.

The first phase building expansion will add 11,908 square feet of new building space bringing the total building square footage to 36,534. To take advantage of the full detention pond sizing, we have also shown a future building expansion of 7,087 square feet. This will increase the total building square footage to 43,621 square feet and will provide additional warehouse space. With a new total of 43,621 square feet of building area, the Lot Coverage will be 0.31 where the ordinance allows a Lot Coverage of 0.50.

Total impervious area will increase by 29,541 square feet to 79,527 square feet with the new building, new parking spaces and two new loading docks and truck maneuvering areas. The Impervious Coverage will be 0.57. Your ordinance allows 0.75.

The project requires review under the Site Plan Review standards. The proposed construction will impact 2,413 square feet of wetland area. At this level of impact, approvals from the Maine Department of Environmental Protection (MDEP) under the Natural Resource Protection Act are not required because they are below the 4,300 square foot threshold. We have attached a copy of the wetland report prepared by Jones.

The project will disturb 1.4 acres, but will create less than one acre of new impervious area. Therefore, basic stormwater standards must be met under the MDEP Stormwater Rules. Under City requirements, stormwater control for quantity must also be met. We have attached a report from Summit addressing all stormwater standards for this project.

Clariant currently has 31 employees on site and the expansion will add 10 new employees. Currently, manufacturing is done 24 hours per day, 5 days per week. There are currently two shifts working 12 hours in the manufacturing area and the office support staff works one shift, 5 days per week.

The Site Plan shows a total of 60 parking spaces. City parking requirements for light industrial use are 1 space/500 square feet of gross floor area up to 3,000 square feet and 1 space/1,000 square feet in excess of 3,000 square feet. This results in a requirement for a total of 47 spaces. The additional spaces shown will support any future business expansion and, during winter months, some of these parking spaces may not be available due to snow storage requirements.

Architectural plans are currently being prepared for this building expansion. The only exterior lighting will be from building lights attached to the building, to match the existing lighting for the site. We will provide the locations of these lights as soon as those plans have been completed or before the Planning Board meeting. All lights will be full cut off fixtures.

Currently, Clariant gets about 7 truck deliveries per day at the site. In the future, these deliveries may increase to 10 trucks per day. With this increase in truck service and the expected new employment of 10 additional employees, the increase in traffic in and out of the site is not expected to be a concern for this approved Park. A Traffic Movement Permit from MDOT is not required for this project.

To support the application, we have included the application form, response to ordinance requirements and several project graphics. Clariant plans to start construction as soon as the project is approved and construction will be completed by this Fall. Their project is expected to cost about $800,000. Construction will be funded by Skowhegan Savings Bank. We hope you find the attached information sufficient for approval of this use for this site. Should you have any questions, please call.

Respectfully yours,

STONEYBROOK CONSULTANTS, INC.

Michael F. Gotto

cc: Russ Neal
Richard Hale

Stoneybrook Consultants, Inc.

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

March 8, 2017

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

Re: Clariant Facility Expansion
17 Foss Road

Dear David:

On behalf of Clariant and the property owner Richard Hale (Hale), please accept this letter in response to staff review comments. I have copied each comment below and have provided a response to each of them to help in your review of my responses. First, I would like to explain some changes that have been made to the project to reduce the project costs related to site construction.

When we submitted our plans for the City review, we also asked a couple of contractors to provide cost estimates to better define our project budget. Those comments and review by in-house Clariant staff have identified several changes to the project site design. On our revised plans, we have eliminated the parking area proposed along the north end of the proposed warehouse addition. In its place, we have shown a future building expansion. We have also changed the grading in the paved areas to eliminate the retaining wall and reduce the fill that would be required. The revised grading allows us to provide better access to the detention area for future maintenance. With these changes, some of the staff comments are no longer applicable.

Hediger January 3, 2017 review comments:

1. Prior to any certificate of occupancy being issued:
    a. Evidence of the post-construction stormwater management guarantee having been recorded at the Registry of Deeds must be provided.
    b. Evidence of a final inspection of the storm water system shall be provided to the city by the designing engineer along with a written statement indicating that the storm water system and all site improvements have been completed in accordance with the approved plans.

The applicant will comply with these requirements.

2. Application must reference the applicable criteria of Article XI, Section 24(1), Groundwater Conservation Overlay District; specifically sections 1(f), 1(g)(5), and 1(g)(9).

We have attached a revised report from CES, Inc. to address these specific review requirements.

3. Sheet 1: site plan should reference the site being located over a significant groundwater aquifer existing and proposed impervious and allowed increase referenced the specific report provided by CES, Inc. The intent is to make it clear for future reference how develop was permitted over an aquifer.

We have added Note #10 on Sheet 1 to address this comment.

4. Sheet 4: Erosion and sedimentation control note #32; add that inspection reports must be provided to the city within 48-hours of inspection.

This note has been revised as requested.

5. Detail on exterior lighting needed. Ensure exterior lighting is meeting the requirements of the 2009 International Building Code prior the issuance of any building permits or construction activity(i.e. that 1 foot-candle is provided from any means egress from the building to Foss Road).

These lighting details are still being prepared for this project. We appreciate the additional time for our contractors and lighting supply companies to be able to work with these plans to provide the details necessary to show compliance with these Building Code requirements before issuance of building

permits. We hope to have some information to share with the Planning Board when they review this project.

Barnes March 1, 2017 review comments:

Application

1. Project Data Sheet: The traffic data portion of the application should be filled out.

A peak hour traffic count was not performed for this expansion and is not necessary, given the level of traffic in and out of this site.

Stormwater

2. The predevelopment calculations include 0.036 AC of woods, the post development includes 0.254 AC of woods, the calcs should be revised to reflect the actual wooded area, it is possible that in the predevelopment calculations some of the wooded area was counted as brush

A revised stormwater report and calculations have been submitted to address this comment and changes made to the project to reduce cost.

Plans

3. The proposed retaining wall is approximately 13 feet tall this will require a permit and designed by a professional engineer licensed in the State of Maine.

The retaining wall has been eliminated in the revised site design and replaced with a rip rap slope. A detail of the slope is shown on Sheet 4.

4. The applicant may want to consider a guardrail or fence at the top of the proposed retaining wall.

A guardrail has been shown at the top of the rip rap slope shown on the new site design.

5. Where will snow be stored for the site? It cannot be placed in the proposed pond.

Snow will not be placed in the proposed pond.

6. The applicant should consider the addition of an access to the detention basin to facilitate future maintenance.

The new pond will be accessible for maintenance under the revised design.

7. The applicant should consider the addition of anti-seep collars on the outlet pipe from the detention basin.

Two anti-seep collars have been added to the pond outlet pipe as shown on Sheet 3.

8. The grade of the emergency spillway should not exceed 20% unless a non-flexible lining is used.

The emergency spillway will be lined with rip rap. A typical cross section is presented on Sheet 3.

9. Maintenance of the pond should follow the MaineDEP BMP and should include:

Maintenance: Basins should be inspected annually for erosion, destabilization of side slopes, embankment settling and other signs of structural failure, and loss of storage volume due to sediment accumulation. Corrective action should be taken immediately upon identification of problems.

- *Maintenance Agreement:* A legal entity should be established or inspecting and maintaining any detention basin. The legal agreement should list specific maintenance responsibilities (including timetables) and provide for the funding to cover long-term inspection and maintenance.
- *Inlet & Outlet Inspections:* The inlet and outlet of the basin should be checked periodically to ensure that flow structures are not blocked by debris. Inspections should be conducted monthly during wet weather conditions (March to November). Flow structures should be easily accessible for inspection and the removal of debris blockage during storm conditions.
- *Embankment Maintenance:* Embankments should be maintained to preserve their integrity as impoundment structures, including: mowing, control of woody vegetation, rodent, and outlet maintenance and repair. Basins should be mowed no more than twice a year during the growing season to maintain maximum grass heights less than 12 inches. All accumulated trash and debris should be removed.
- *Sediment Removal:* Sediment should be removed from the pretreatment structure at least annually and from the basin when necessary.

These notes have been added to the Erosion and Sedimentation Control Inspection sheets included in the Basic Standards section of the Stormwater Report.

I trust that this information will be an acceptable response to staff comments and we look forward to your continued review of this project. Should you have any questions, please call.

Respectfully yours,

STONEYBROOK CONSULTANTS, INC.

Michael F. Gotto

cc: Russ Neal
Richard Hale

Development Review Application

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

PROJECT NAME: Facility Expansion

PROPOSED DEVELOPMENT ADDRESS: 17 Foss Road

PARCEL ID#: 45-43

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

PROJECT DESCRIPTION: See Cover Letter

CONTACT INFORMATION:

Applicant	
Name:	Clariant Corporation/Russ Neal
Address:	17 Foss Road
Zip Code	Lewiston, ME 04240
Work #:	(207) 784-0733
Cell #:	
Fax #:	
Home #:	
Email:	

Property Owner	
Name:	Richard Hale
Address:	6 Trailside
Zip Code	Saco, ME 04072
Work #:	
Cell #:	(207) 233-7568
Fax #:	
Home #:	
Email:	

Project Representative	
Name:	Mike Gotto - Stoneybrook Consultants
Address:	456 Buckfield Road
Zip Code	Turner, ME 04282
Work #:	(207) 514-7491
Cell #:	(207) 513-6123
Fax #:	(207) 514-7492
Home #:	
Email:	mike@stoneybrookllc.com

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	49,986 sq. ft.
Proposed Total Paved Area	35,906 sq. ft.
Proposed Total Impervious Area	79,527 sq. ft.
Proposed Impervious Net Change	29,541 sq. ft.
Impervious surface ratio existing	35.9 % of lot area
Impervious surface ratio proposed	57.2 % of lot area

BUILDING AREA/LOT COVERAGE

Existing Building Footprint	24,626 sq. ft.
Proposed Building Footprint	43,621 sq. ft.
Proposed Building Footprint Net change	18,995 sq. ft.
Existing Total Building Floor Area	26,204 sq. ft.
Proposed Total Building Floor Area	sq. ft.
Proposed Building Floor Area Net Change	sq. ft
New Building	No (yes or no)
Building Area/Lot coverage existing	17.7 % of lot area
Building Area/Lot coverage proposed	31.4 % of lot area

ZONING

Existing	Highway Business
Proposed, if applicable	N/A

LAND USE

Existing	Manufacturing
Proposed	same

RESIDENTIAL, IF APPLICABLE

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

PARKING SPACES

Existing Number of Parking Spaces	44
Proposed Number of Parking Spaces	48
Required Number of Parking Spaces	N/A
Number of Handicapped Parking Spaces	1

ESTIMATED COST OF PROJECT

DELEGATED REVIEW AUTHORITY CHECKLIST

SITE LOCATION OF DEVELOPMENT AND STORMWATER MANAGEMENT

Existing Impervious Area	49,986 sq. ft.
Proposed Disturbed Area	60,984 sq. ft.
Proposed Impervious Area	29,541 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) <100 passenger car equivalents (PCE)

Total traffic estimated in the peak hour-proposed (Since July 1, 1997) <100 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: 3.2 acres / _____ square feet(sf).

Regulations	Required/Allowed	Provided
Min Lot Area	None	3.2 acres
Street Frontage	150'	360.9'
Min Front Yard	15'	23'
Min Rear Yard	10'	81'
Min Side Yard	10'	10'
Max. Building Height	65'	less than 65'
Use Designation	Manufacturing Facility	Manufacturing Facility
Parking Requirement	1 space/ per _____ square feet of floor area	
Total Parking:		60
Overlay zoning districts (if any):	Groundwater Conserv	Groundwater Conservati
Urban impaired stream watershed?	YES/NO If yes, watershed name_____	

DEVELOPMENT REVIEW APPLICATION SUBMISSION

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

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

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

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

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

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

Signature of Applicant:	Date:
	3/8/17

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: Manufacturing Facility

PROPOSED DEVELOPMENT ADDRESS and PARCEL #: 17 Foss Road 45-43

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

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

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

February 15, 2017
Clariant - 17 Foss Road

Response to Ordinance Requirements

Article XIII, Section 4

(a) *Utilization of the site* - This project was previously approved by the Planning Board. The applicant is now proposing a building expansion which can only fit as shown on the project plans. The proposed changes will protect the existing natural resources to the extent possible and still support site development levels allowed under the zoning ordinance.

(b) *Traffic Movements* - This project will create about 32 new vehicle trips per day. The entrance location was previously approved by the Planning Board.

(c) *Access to the site* - Access to the project was previously approved by the Planning Board and has proven to be a safe and convenient location on Foss Road.

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

(e) *Pedestrian circulation* - Not Applicable

(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 set submitted. All erosion control measures proposed meet or exceed all City and MDEP requirements.

(h) *Water supply* - Water service is already available in the existing building and is not expected to significantly increase with this proposed expansion.

(i) *Sewer disposal* - Sewer service is already available in the existing building and is not expected to significantly increase with this proposed expansion.

(j) *Utilities* - This project will connect to the existing utility services within the existing building.

(k) *Natural features* - Given the existing site grades and a need to flow stormwater from the new site improvements towards the proposed detention area, some of the natural vegetation must be removed. This project will impact a total of 2,413 square feet of wetland area that cannot be avoided, given the adjustments in the site grades to control stormwater runoff for this project.

(l) *Groundwater protection* - This project will meet the requirements of the Groundwater Conservation Overlay District as outlined in the report provided by CES, Inc. Groundwater resources will therefore be protected to the extent possible 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 in this project to maintain safe lighting limits for vehicle and pedestrian movements in the paved areas of the property.

(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* - Not applicable.

(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 is a global company with in-house expertise to complete this minor building expansion in accordance with the project plans and local or State environmental standards.

(u) *Buffering* - There is no buffering required for this project.

(v) *Compliance with district regulations* - Development of this lot as proposed meets all of the requirements of Article XI, Section 12, 19 & 24.

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

Clariant Corporation
17 Foss Road
Lewiston, ME 04240

To Whom It May Concern:

The signature below authorizes Stoneybrook Consultants, Inc. to act as the applicant's agent in the processing of the enclosed application for expansion of the building at the 17 Foss Road, Lewiston, Maine location.

for Clariant Corporation, applicant

Russ Neal, Director of Technology Engineering.
(print name, title)

Richard Hale
6 Trailside
Saco, ME 04072

February 12, 2017

To Whom It May Concern:

I, Richard Hale, with a mailing address of 6 Trailside, in Saco, ME 04072, being the current owner of property located at 17 Foss Road in Lewiston, Maine, said property being listed on the City of Lewiston Tax Map 45 as Lot 43, I authorize Clariant Corporation to file and pursue site plan review approvals from the City of Lewiston to expand said property at 17 Foss Road.

Richard W. Hale
Richard Hale

RICHARD W. HALE - OWNER
(print name, title)

BK3333 PG006

21380

SHORT FORM QUITCLAIM DEED
WITH COVENANT

Property Asset Management, Inc., a Delaware corporation with a principal place of business in New York, New York, for consideration paid, grants to Richard W. Hale whose mailing address is c/o Hale Industries, Inc., 17 Foss Road, Lewiston, Maine, with Quitclaim Covenant, the premises located in the City of Lewiston, County of Androscoggin, and State of Maine, as described on **Schedule A** attached hereto and made a part hereof.

MAINE REAL ESTATE
TRANSFER TAX PAID

WITNESS our hands and seals this 30th day of September, 1994.

PROPERTY ASSET MANAGEMENT, INC.

Susan M. Spelios, VP

Susan M. Spelios
Vice-President of Fleet
Management and Recovery Corp.
Its attorney-in-fact

STATE OF MAINE
CUMBERLAND, SS.

September 30, 1994

Then personally appeared the above-named Susan M. Spelios and acknowledged the foregoing instrument to be her free act and deed and the free act and deed of Fleet Management Recovery Corporation, the attorney in fact for Property Asset Management, Inc.

Before me,

Annette R. Stafford SEAL

Notary Public/~~Attorney at Law~~

Printed Name

ANNETTE R. STAFFORD
NOTARY PUBLIC, MAINE
MY COMMISSION EXPIRES
SEPTEMBER 19, 1998

- OVER -

SCHEDULE A

LEGAL DESCRIPTION OF PREMISES

A certain lot or parcel of land with any building thereon, situated in Lewiston, Androscoggin County, Maine, bounded and described as follows:

Being lot numbered four on a plan entitled "Foss Road Business Park", dated March 18, 1988, as approved by the Lewiston Planning Board on May 24, 1988, and recorded in the Androscoggin County Registry of Deeds, Book of Plans, Book 34, Page 127.

Being a portion of the same premises conveyed to Denron, Inc. by Lisbon Drive-In Liquidation Trust by deed dated April 22, 1988, and recorded in the Androscoggin County Registry of Deeds in Book 2235, Page 93; and

A portion of the premises conveyed to Denron, Inc., by Lisbon Drive-In Theater, Inc., on September 26, 1986, and recorded in the Androscoggin County Registry of Deeds in Book 1991, Page 28.

Being the same premises as conveyed to Structured Assets Securities Corporation by Foss Road Development Associates by Warranty Deed, on January 6, 1994, and recorded in the Androscoggin County Registry of Deeds in Book 3196, Page 4 and conveyed to Property Asset Management, Inc. by Structured Assets Securities Corporation by Quitclaim Deed dated January 12, 1994 and recorded in said Registry in Book 3202, Page 276.

RECEIVED
ANDROSCOGGIN S.S.
94 OCT -3 AM 11: 24
ATTEST:
REGISTER OF DEEDS

Skowhegan Savings

February 14, 2017

Mr. David Hediger, City Planner
City of Lewiston
27 Pine St.
Lewiston, ME. 04240-7201

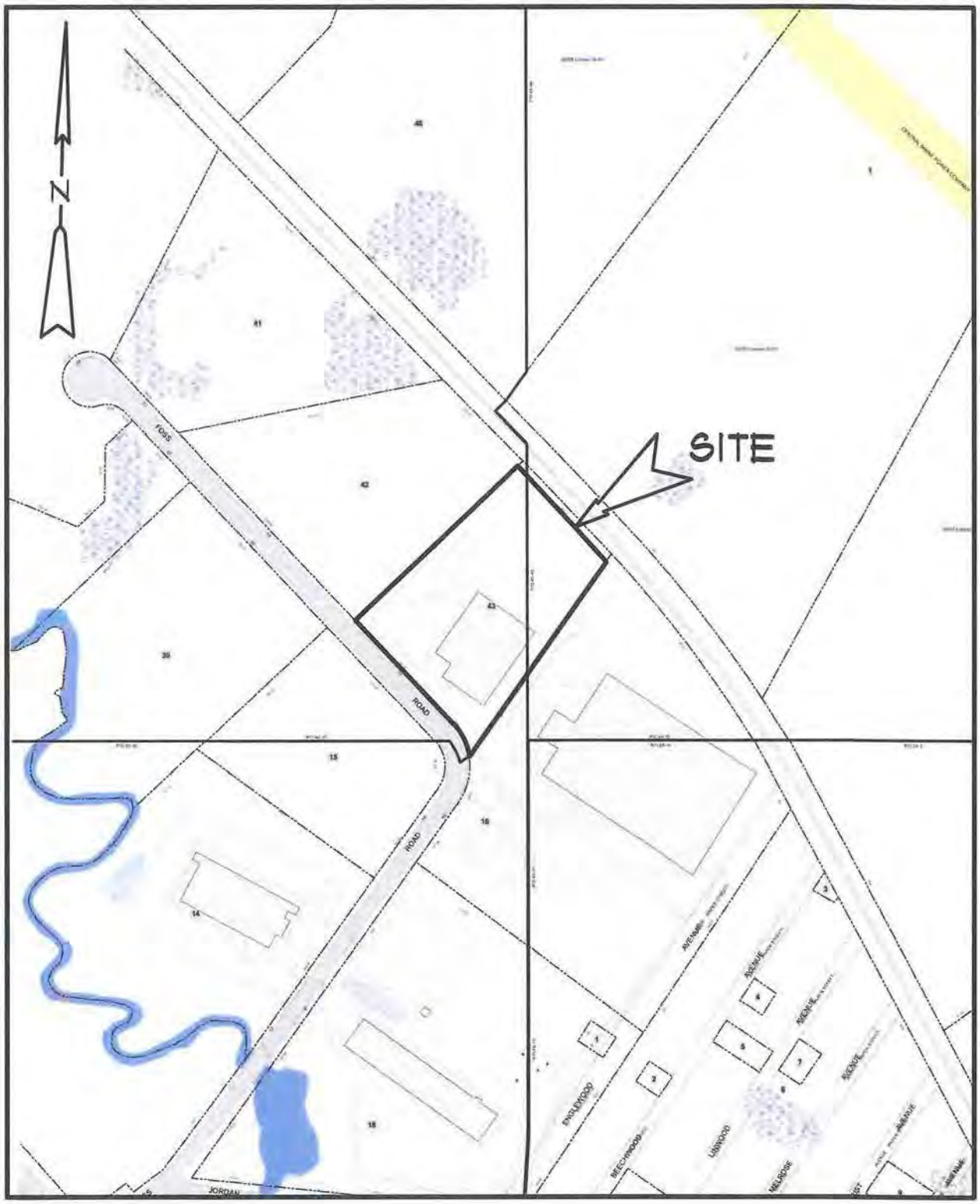
Re: Application of Richard Hale

Hello David,

Our good customer Richard (Dick) Hale is applying to construct an addition to his light industrial building at 17 Foss Rd. in Lewiston ME. The Bank is familiar with the proposed project and it is our opinion that Mr. Hale has the financial resources to complete the project in a timely manner.

Regards,

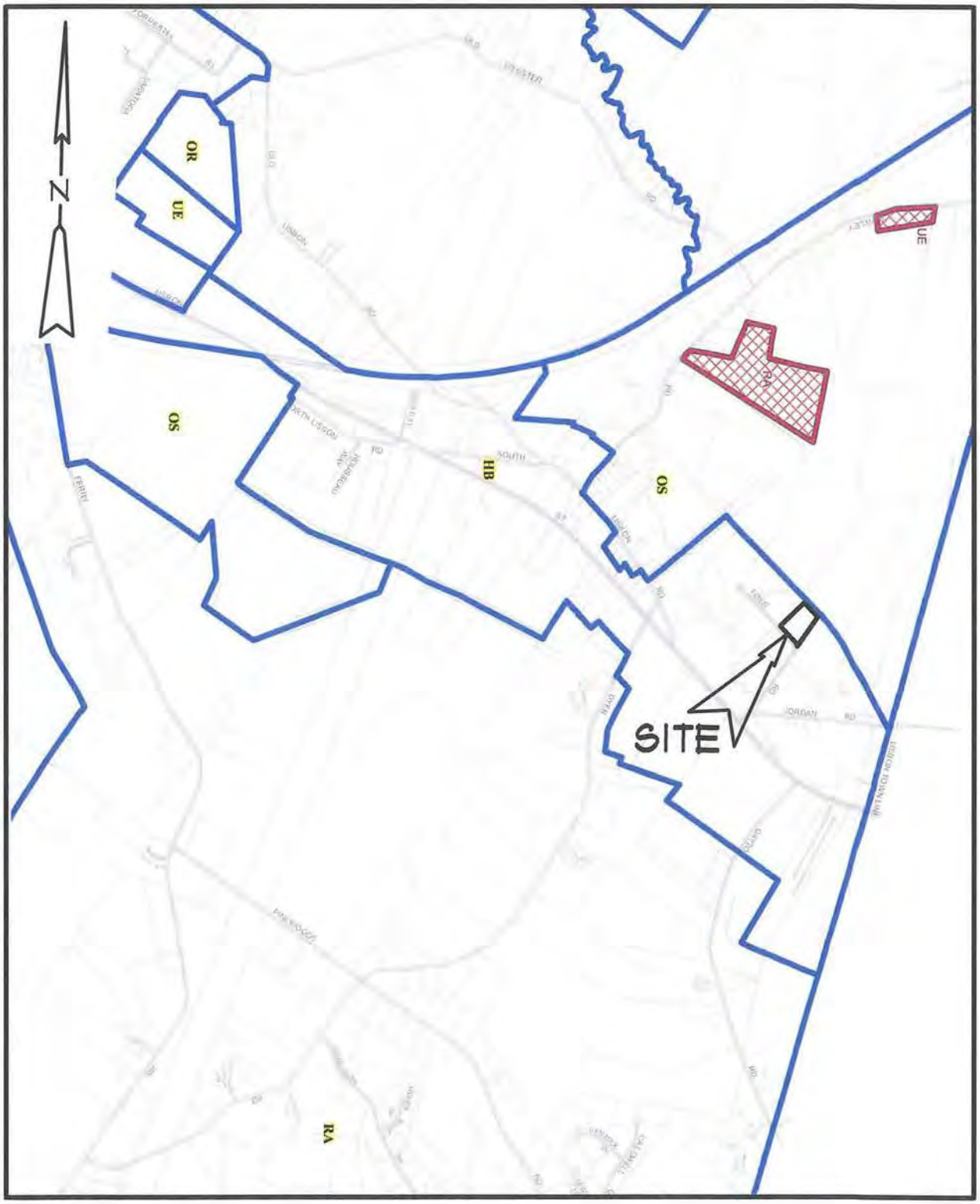
Kurt Maynard
Vice President
Commercial Account Officer



TAX MAP

FACILITY EXPANSION - 17 FOSS ROAD, LEWISTON
APPLICANT: CLARIANT CORPORATION
SCALE: 1" = 300'±
DATE OF GRAPHIC: FEBRUARY 13, 2017
SOURCE: CITY OF LEWISTON TAX MAPS
PUBLICATION DATE: APRIL 1, 2016

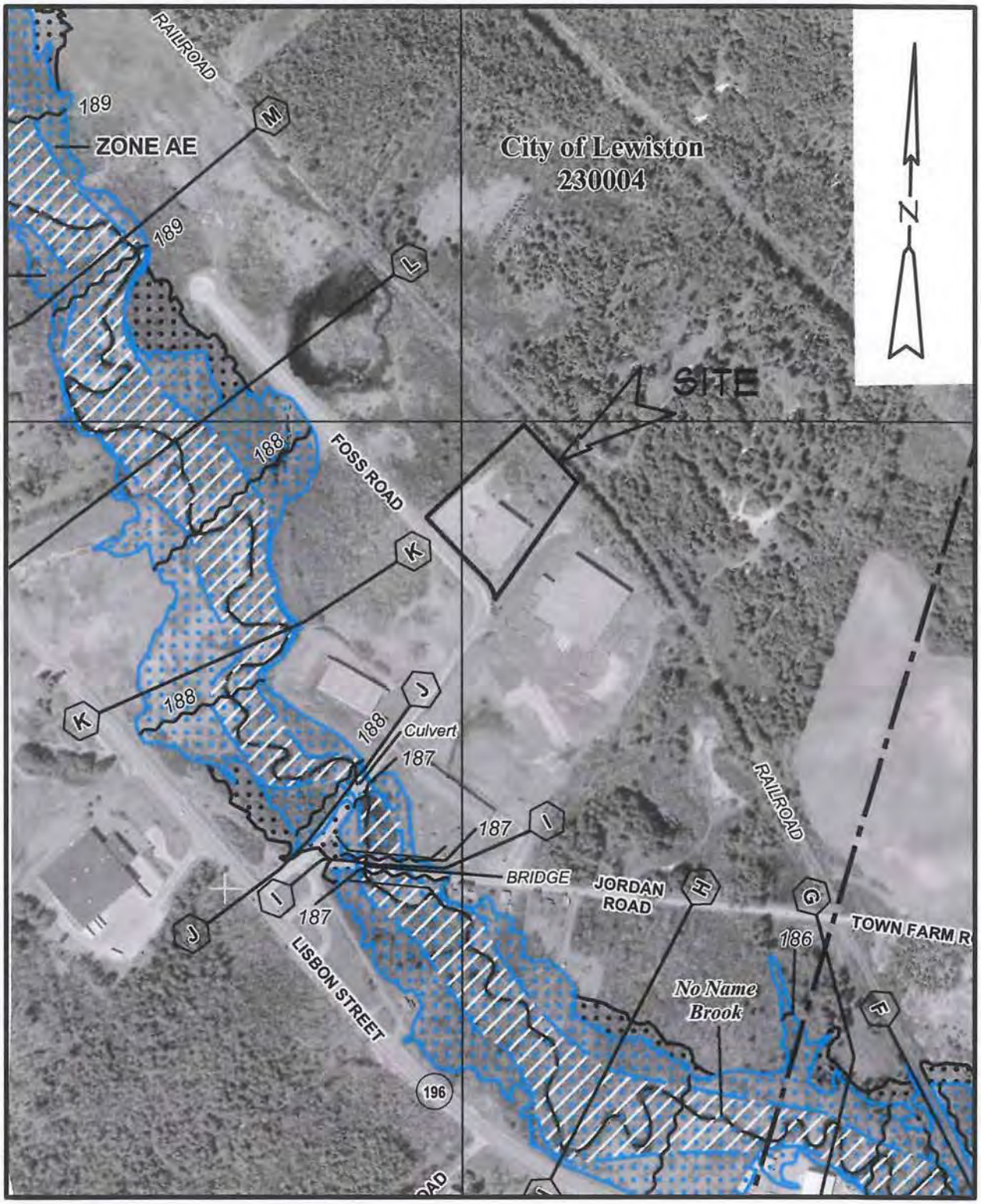
Stoneybrook Consultants, Inc.



ZONING MAP

FACILITY EXPANSION - 17 FOSS ROAD, LEWISTON
APPLICANT: CLARIANT CORPORATION
SCALE: 1" = 2,000'±
DATE OF GRAPHIC: FEBRUARY 13, 2017
SOURCE: CITY OF LEWISTON ZONING MAP
PUBLICATION DATE: NOVEMBER 2015

Stoneybrook Consultants, Inc.



FLOOD MAP

FACILITY EXPANSION - 17 FOSS ROAD, LEWISTON
APPLICANT: CLARIANT CORPORATION
SCALE: 1" = 500'±
DATE OF GRAPHIC: FEBRUARY 13, 2017
SOURCE: FEMA FIRM
PUBLICATION DATE: JULY 8, 2013

Stoneybrook Consultants, Inc.

February 14, 2017
Revised March 7, 2017

Mr. Mike Gotto
Stoneybrook Consultants, Inc.
456 Buckfield Road
Turner, ME 04282

RE: Clariant Corporation Proposed Building Expansion – 17 Foss Road - Lewiston, Maine

Mr. Gotto:

The Clariant Corporation is proposing an approximately 11,900 square foot building addition to its existing facility at 17 Foss Road in Lewiston, Maine. The 17 Foss Road property is located within the City of Lewiston's Groundwater Conservation Overlay District (GC) [*Appendix A – Zoning and Land Use Code Article XI, Section 24*]. The purpose of the GC District is to protect, preserve and maintain the quality and quantity of existing and potential future groundwater supply within the City of Lewiston by controlling the use, storage, and disposal of contaminants in the GC district as well as protecting the recharge areas of Significant Sand and Gravel Aquifers. To that end, the City has established Standards for the GC District that are designed to minimize impact to the underlying Sand and Gravel Aquifer.

The standards in Article XI, Section 24 that are applicable to this project include:

1(f) Space and bulk standards – The maximum impervious surface ratio is 0.25 or as otherwise provided by demonstrating no adverse impact to the underlying aquifer. The HB district allows an impervious ratio of 0.75. As discussed in Section 1(g)(9) below, site geologic conditions supports increase in impervious area above 0.25 given the low recharge rate of the existing site soils.

1(g)(5)Industrial and commercial uses -

> *(a)* All hazardous materials are stored inside Site buildings. Hazardous materials are managed such that a spill or release will be contained to the interior of the building and not released to the environment where impact to the underlying aquifer would occur.
>
> *(b)* As noted in (a) above, all hazardous materials are stored inside and, therefore, are not exposed to conditions that would result in infiltration into

the ground.

(c) There will be no on-site disposal of any waste containing hazardous materials. Hazardous material disposal is contracted to licensed contractors for off-site disposal at properly licensed disposal facilties.

(d) All floor drains are connected to the City sewer system.

(e) There are no above ground storage tanks proposed for this project.

(f) All drums are stored within the building in secure product-tight containers within containment areas designed to protect them from accidental damage and/or leakage to the environment.

(g) There is no outside, uncovered storage areas proposed.

(h) Dumpster containers are covered.

(i) No new storage design is proposed.

1(g)(9)Development approval

CES, Inc. (CES) has confirmed that the property is located within a mapped Significant Sand and Gravel Aquifer as shown on the Maine Geological Survey Open File Report 99-22 (1999) – Significant Sand and Gravel Aquifers, Lewiston Quadrangle, Maine (**Attachment 1**).

The proposed building expansion will utilize municipal water and sewer service, thereby eliminating potential water quality impacts to the underlying aquifer due to subsurface wastewater disposal (septic systems) and eliminating potential quantity impacts due to large scale extraction of groundwater. In addition, all equipment and products used in the manufacturing process are stored under cover inside of buildings and are not exposed to precipitation and/or stormwater runoff, further reducing the potential for inadvertent releases of contaminants to stormwater that could adversely affect water quality. The facility maintains protocols and provides employee training to ensure that operations are conducted in a manner that minimizes the potential for release of contaminants to surface water or groundwater.

Groundwater aquifers receive recharge via precipitation and snowmelt that infiltrates through surficial soil. In areas where sand and gravel aquifers are exposed at the ground surface, up to 60% of precipitation can infiltrate to underlying groundwater, but where surface soils are clay rich, recharge may be on the order of 2-5% of precipitation (Gerber and Hebson – **Attachment 2**). Although the proposed expansion will result in an increase in impervious area and corresponding reduction in potential recharge area, a review of Natural Resource Conservation Service soil maps indicates that surficial soil is mapped as the Melrose series (**Attachment 3**) which typically is a loamy clay at depths greater than 24 inches. Test pits excavated by Summit

Geoengineering of Lewiston at the location of the proposed expansion classified soil as a sandy silt underlain by a very stiff blocky gray clay extending to the depth of the test pits at 8-10 feet below ground surface. Test Pit logs are included in **Attachment 3**. The on-site test pits verified the larger scale NRCS soil mapping. As a result, recharge to underlying groundwater at the Site is minimal compared to areas north of the Site where sand and gravel soil (Adams series) is exposed at ground surface.

It should also be noted that stormwater runoff from the new impervious surface will be routed to an on-site stormwater detention pond and subsequently conveyed to an adjoining wetland area that is within the limits of the mapped aquifer (i.e, within the natural aquifer recharge area). The detention pond will allow for stormwater generated from the new impervious surface to be stored and gradually recharged to the aquifer.

Due to the low recharge rate of existing site soils, the detention of runoff in the stormwater pond and subsequent discharge to an adjoining wetland area, the net impact to the aquifer due to the additional proposed impervious surface is insignificant.

Aquifer Protection Plan

Planned facility operations already minimize the potential for adverse impacts to the underlying aquifer by storing materials inside buildings in secure storage areas. By preventing exposure of materials to the elements (rain, snow, freezing temperatures), the potential for release of hazardous materials and potential adverse impacts is minimized.

The facility shall periodically review operations to ensure that material handling and storage are not posing a threat to the environment. Facility infrastructure (stormwater structures, floor drains, sewer lines) is likewise inspected regularly to verify proper function. In the event that inspections identify issues that affect the integrity of infrastructure components, corrective actions will be implemented in a timely manner.

Sincerely,
CES, INC.

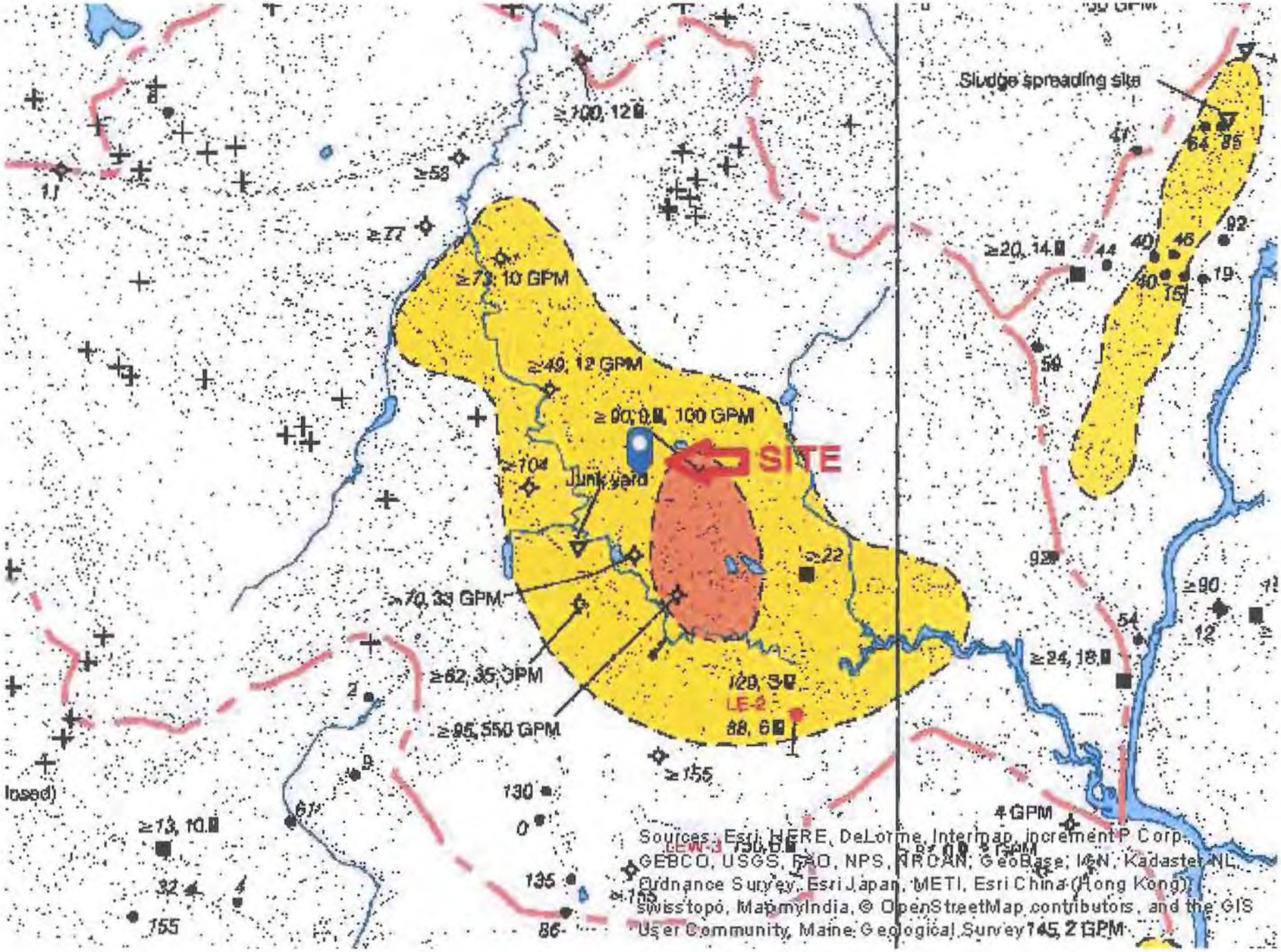
Michael Deyling, CG
Senior Geologist

MAD/jna

CES INC

ATTACHMENT 1

SIGNIFICANT SAND AND GRAVEL AQUIFER MAP


Sludge spreading site
≥100, 12
≥58
≥77
≥73, 10 GPM
≥49, 12 GPM
≥90, 0.8, 100 GPM
SITE
≥104
Junk yard
≥22
≥70, 33 GPM
≥62, 35 GPM
≥95, 550 GPM
≥155
LE-2
88, 6
≥20, 14
≥24, 18
≥90
4 GPM
145, 2 GPM
≥13, 10
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community, Maine Geological Survey

ATTACHMENT 2

TYPICAL RECHARGE RATES IN SOIL

GROUND WATER RECHARGE RATES FOR MAINE SOILS AND BEDROCK

Robert G. Gerber and Charles S. Hebson, Ph.D.
Robert G. Gerber, Inc.
174 South Freeport Road
Freeport, Maine 04032

ABSTRACT

This paper reviews methods and results of estimating recharge rates for Maine soils and bedrock. The percentage of precipitation that ultimately recharges soil and bedrock is an important variable in water supply safe yield evaluations and ground water contamination studies in Maine. The recharge rate is, for practical purposes, impossible to measure directly. Recharge rate varies seasonally and is related to features such as soil permeability and anisotropy, land slope, land cover, and location relative to ground water divide. Temperature variation as it affects snowmelt and evapotranspiration is also a governing factor. Recharge rates are examined for five basic geologic terrains: 1) ice contact and outwash sand and gravel; 2) glaciomarine and glaciolacustrine clay-silt; 3) thick fine-grained lodgment till; 4) thick sandy (granitic derived) till and diamicton; and 5) thin sandy widely-graded soil over bedrock. Recharge rates for bedrock overlain by these surficial materials are also examined. Historical safe yield data, baseflow as determined from stream gaging, and recharge calibrated for models of these types of aquifer systems are summarized. The results can be applied to a wide variety of ground water problems in Maine and hydrogeologically similar locales.

INTRODUCTION

The percentage of precipitation that ultimately recharges soil and bedrock is an important variable to many hydrogeological evaluations in Maine. For example, water supply safe yield evaluations and ground water contamination studies require a knowledge of net flux through the geologic formation of interest. Predictions of the highest and lowest positions of water tables also require a knowledge of response to precipitation. Recharge rate is almost impossible to measure directly, although the response of water wells as a function of precipitation is easy to measure. Unfortunately, mass balance models that compute water table rise from specific yield are overly simplistic. Even if one knows how much net recharge reaches a shallow soil water table, it is much more difficult to determine how much of that recharge will pass through to a fractured bedrock aquifer.

This paper considers several topics related to recharge rates for Maine soils and bedrock and similar hydrogeologic settings:

- a systems framework for considering recharge to ground water;
- methods for estimating net recharge to a geologic formation of interest;

conductivity of the soils are very important. Finally, the difference between the potentiometric surface in the bedrock versus the overlying soil aquifer controls the recharge/discharge rate. Local recharge rates can vary greatly depending upon all of these parameters. Nevertheless, some basic areally-averaged estimates that may be of use to hydrogeologists have been derived from detailed computer modeling studies performed by RGGI. These studies have involved three types of models:

- vertical cross section models along known or assumed flow paths in the bedrock aquifers;
- two-dimensional bedrock aquifer models that include the overlying soil as an "adjacent aquifer" with defined thicknesses, vertical hydraulic conductivities, and known water table positions;
- fully three-dimensional models.

In all of these studies model verification in the form of at least some bedrock water potentiometric surface data was available. In other cases pumping test data and/or insitu hydraulic conductivity tests were used to calibrate models by adjusting recharge. In all cases, field mapping of the density and orientation of bedrock fractures was performed.

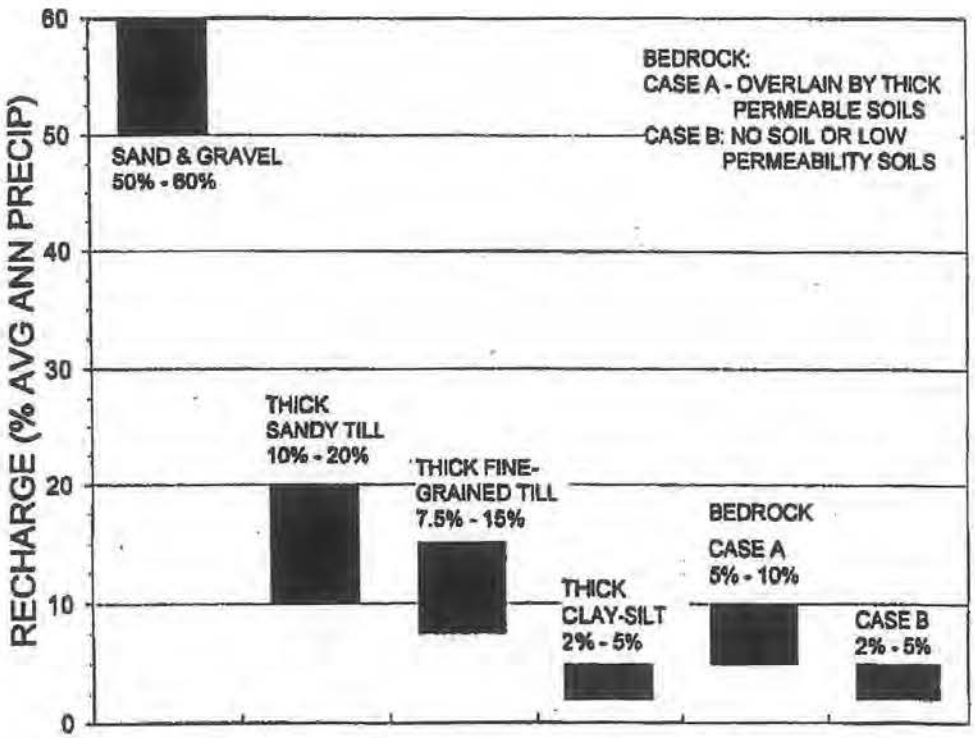


Figure 3. Suggested average ground water recharge rates according to geologic terrain.

CES INC

ATTACHMENT 3

ON-SITE TEST PIT LOGS
AND
NRCS SOIL MAPPING

SUMMIT GEOENGINEERING SERVICES	TEST PIT LOG	Test Pit # TP-1
	Project: Clariant Expansion 17 Foss Road Lewiston Maine	Project #: 17007 Groundwater: None Observed
Contractor: Gendron and Gendron	Ground Surface Elevation: 216.1 ft	
Equipment: CAT 200D Tracked Excavator	Reference: Topographic Survey by Jones Associates	
Summit Staff: B. Peterlein, P.E.	Date: 1/5/2017	Weather: Sunny

Depth (ft)	DESCRIPTION	
	ENGINEERING	GEOLOGIC/GENERAL
	8" Dark brown fine Sandy SILT, trace rootlets, moist, ML	TOPSOIL
1 2 3 4 5 6	Olive-brown fine Sandy SILT, compact, moist, ML	GLACIAL MARINE
7 8	Olive-brown Clayey SILT, little fine Sand, blocky, stiff mottled, ML	
9 10 11 12 13 14 15 16 17	End of Test Pit at 8 ft	

SUMMIT GEOENGINEERING SERVICES	TEST PIT LOG	Test Pit # TP-2
	Project: Clariant Expansion 17 Foss Road Lewiston Maine	Project #: 17007 Groundwater: None Observed
Contractor: Gendron and Gendron	Ground Surface Elevation: 215.3 ft	
Equipment: CAT 200D Tracked Excavator	Reference: Topographic Survey by Jones Associates	
Summit Staff: B. Peterlein, P.E.	Date: 1/5/2017	Weather: Sunny

Depth (ft)	DESCRIPTION	
	ENGINEERING	GEOLOGIC/GENERAL
	8" Dark brown Sandy SILT, trace rootlets, frozen, ML	TOPSOIL
1 2 3 4 5 6	Olive-brown fine Sandy SILT, moist, compact, ML	GLACIAL MARINE
7 8	Olive-gray Clayey SILT, little Sand, blocky, stiff, damp ML	
9 10 11 12 13 14 15 16 17	End of Test Pit at 8 ft	

SUMMIT GEOENGINEERING SERVICES	TEST PIT LOG	Test Pit # TP-3
	Project: Clariant Expansion 17 Foss Road Lewiston Maine	Project #: 17007 Groundwater: None Observed
Contractor: Gendron and Gendron	Ground Surface Elevation: 212.8 ft	
Equipment: CAT 200D Tracked Excavator	Reference: Topographic Survey by Jones Associates	
Summit Staff: B. Peterlein, P.E.	Date: 1/5/2017	Weather: Sunny

Depth (ft)	DESCRIPTION	
	ENGINEERING	GEOLOGIC/GENERAL
1	12" Dark brown fine Sandy SILT, trace rootlets, moist, ML	TOPSOIL
2	Olive-brown fine Sandy SILT, moist, stiff, ML	GLACIAL MARINE
3		
4		
5		
6	Becomes olive-gray and very stiff at 6 ft	
7		
8		
9		
10	End of Test Pit at 9 ft	
11		
12		
13		
14		
15		
16		
17		

SUMMIT GEOENGINEERING SERVICES	TEST PIT LOG	Test Pit # TP-4
	Project: Clariant Expansion 17 Foss Road Lewiston Maine	Project #: 17007 Groundwater: None Observed
Contractor: Gendron and Gendron	Ground Surface Elevation: 218.1 ft	
Equipment: CAT 200D Tracked Excavator	Reference: Topographic Survey by Jones Associates	
Summit Staff: B. Peterlein, P.E.	Date: 1/5/2017	Weather: Sunny

Depth (ft)	DESCRIPTION: ENGINEERING	DESCRIPTION: GEOLOGIC/GENERAL
1	8" to 12" Dark brown fine Sandy SILT, trace rootlets, moist, ML	FOREST DUFF
2	Olive-brown fine Sandy SILT, moist, stiff, ML	GLACIAL MARINE
3		
4		
5		
6	Olive-gray SILT, trace fine Sand, little Clay, stiff, blocky, ML	
7		
8		
9		
10		
11	End of Test Pit at 10 ft	
12		
13		
14		
15		
16		
17		

SUMMIT GEOENGINEERING SERVICES	TEST PIT LOG	Test Pit # TP-5
	Project: Clariant Expansion 17 Foss Road Lewiston Maine	Project #: 17007 Groundwater: None Observed
Contractor: Gendron and Gendron	Ground Surface Elevation: 214.9 ft	
Equipment: CAT 200D Tracked Excavator	Reference: Topographic Survey by Jones Associates	
Summit Staff: B. Peterlein, P.E.	Date: 1/5/2017	Weather: Sunny

Depth (ft)	DESCRIPTION	
	ENGINEERING	GEOLOGIC/GENERAL
1	12" Dark brown fine Sandy SILT, trace rootlets, moist, ML	FOREST DUFF
2	Olive-brown fine Sandy SILT, firm, moist, ML	GLACIAL MARINE
3		
4		
5		
6		
7		
8		
	End of Test Pit at 8 ft	
9		
10		
11		
12		
13		
14		
15		
16		
17		

SUMMIT GEOENGINEERING SERVICES	TEST PIT LOG	Test Pit # TP-6
	Project: Clariant Expansion 17 Foss Road Lewiston Maine	Project #: 17007 Groundwater: Slow Seepage at 4 ft
Contractor: Gendron and Gendron	Ground Surface Elevation: 205.4 ft	
Equipment: CAT 200D Tracked Excavator	Reference: Topographic Survey by Jones Associates	
Summit Staff: B. Peterlein, P.E.	Date: 1/5/2017	Weather: Sunny

Depth (ft)	DESCRIPTION	
	ENGINEERING	GEOLOGIC/GENERAL
1	12" Dark brown fine Sandy SILT, trace rootlets, moist, ML	FOREST DUFF
2	Olive-brown Silty CLAY, friable in upper 3 feet then stiff and moist, trace fine Sand seams, CL	GLACIAL MARINE
3		
4	Groundwater seepage and strong mottling at 4 ft	
5		
6		
7		
8		
9		
10	End of Test Pit at 9 ft	
11		
12		
13		
14		
15		
16		
17		

SITE
SxB
SyB
HrD
BuC2
Pa
HrB
HrC
ChD
NgB
Wa
AaB
SzA
EmB
AaC
MkB
Wg
ScA
So
HfB
HfD2
MeC
EmB
HfC2
ChC
HsC
PbC
BuB2
MeB
HsD
HrD
BgB
Md
ScA
BuB2
BuC2
CfB
CfC2
MkB
MkC2
EmC2
GP
PfC
PfD
HkD
HkC
BgC
SuD2
SuC2
CfD2
Bo
Wa
W

Androscoggin and Sagadahoc Counties, Maine

MeB—Melrose fine sandy loam, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9kdq
Elevation: 10 to 900 feet
Mean annual precipitation: 40 to 48 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 90 to 160 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Melrose and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Melrose

Setting

Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy glaciolacustrine deposits

Typical profile

H1 - 0 to 9 inches: fine sandy loam
H2 - 9 to 24 inches: fine sandy loam
H3 - 24 to 65 inches: silty clay loam

Properties and qualities

Slope: 0 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): Very low to moderately high (0.00 to 0.20 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 8.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C

Androscoggin and Sagadahoc Counties, Maine

MeC—Melrose fine sandy loam, 8 to 20 percent slopes

Map Unit Setting

National map unit symbol: 9kdr
Elevation: 10 to 900 feet
Mean annual precipitation: 40 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

Melrose and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Melrose

Setting

Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy glaciolacustrine deposits

Typical profile

H1 - 0 to 9 inches: fine sandy loam
H2 - 9 to 24 inches: fine sandy loam
H3 - 24 to 65 inches: silty clay loam

Properties and qualities

Slope: 8 to 20 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well 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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C

Androscoggin and Sagadahoc Counties, Maine

AaD—Adams loamy sand, 15 to 30 percent slopes

Map Unit Setting

National map unit symbol: 9kcf
Elevation: 300 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

Adams and similar soils: 86 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
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

Androscoggin and Sagadahoc Counties, Maine

AaC—Adams loamy sand, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 9kcd
Elevation: 300 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

Adams and similar soils: 85 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: 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): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
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): 4e
Hydrologic Soil Group: A

Androscoggin and Sagadahoc Counties, Maine

AaB—Adams loamy sand, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9kcc
Elevation: 300 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: Farmland of statewide importance

Map Unit Composition

Adams and similar soils: 85 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: 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): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
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): 3s
Hydrologic Soil Group: A

SUMMIT
GEOENGINEERING SERVICES

Stormwater Report

CLARIENT CORPORATION 2017 EXPANSION
17 FOSS ROAD
LEWISTON, MAINE

REVISION #1

Prepared for:

Stoneybrook Consultants
456 Buckfield Road
Turner, Maine

Prepared by:

Summit Geoengineering Services, Inc.
P.O. Box 7216
Lewiston, Maine 04243

SGS #16286
March 2017

STATE OF MAINE
WILLIAM
M.
PETERLEIN
5787
LICENSED
PROFESSIONAL ENGINEER

STORMWATER REPORT

CLARIENT CORPORATION 2017 EXPANSION
17 FOSS ROAD
LEWISTON, MAINE

Clariant Corporation is planning on expanding the facility at 17 Foss Road. Construction will include construction of a building addition with a footprint of 11,908 square feet. Additional construction will include expanding the paved parking lot and constructing a new turning area for trucks. The site tabulations for the existing conditions and proposed conditions are included on Sheet 1, Site Approval and Demolition Plan.

The property is known as Lot #4 in the Foss Road Business Park (Park) and includes 3.2 acres. The Park was approved in 1988. Stormwater treatment was provided for the park roadways and infrastructure only. Stormwater control for future development was to be implemented locally on each lot as the lot was developed.

A stormwater analysis was completed for the original building and associated development at Lot #4 in 1989. This analysis subdivided the development into three watersheds, one draining to the NORTH, one draining to the SOUTHERN BOUNDARY, and one draining to the STORM SYSTEM via the existing catch basin in the parking lot. The analysis was completed using the TR55 methodology. The only computations that could be found were the runoff curve numbers and travel time. Based on the lack of information, this stormwater analysis was not used to determine the peak existing conditions runoff for this study. Rather the peak existing runoff was computed by creating a new model for the existing site

The total new impervious area is estimated to be 29,541 square feet (18,995 square feet of building, including 7,087 square feet of future building addition, and 10,546 square feet of pavement). All stormwater runoff from the new impervious area and a portion of the existing parking lot and truck turn-around is directed to a stormwater pond located at the north corner of the site. The total impervious area directed to the pond is approximately 38,740 square feet. This includes approximately 9,325 square feet of the existing pavement which was not considered in the 1988 "existing"

stormwater analysis. Runoff from the existing pavement area is currently uncontrolled. The stormwater flowing to the SOUTHERN BOUNDARY and to the STORM SYSTEM are untouched by the expansion.

All stormwater from the site eventually drains into No Name Brook. Since the total impervious area directed to the pond is less than one acre and the total disturbed area for the expansion is less than 5 acres, Basic Standards and Flooding control will be required as part of the expansion.

Erosion control information is included on the project plans and in this stormwater report. All stormwater improvements and erosion control measures have been designed to meet City and State requirements.

Reference is made to the following site development drawings.

Sheet 1 Site Approval and Demolition Plan
Sheet 2 Site Grading and Utility Plan
Sheet 3 Construction Details
Sheet 4 Construction Notes

Basic Standards

For this project, Basic Standards include the following elements.

- Erosion and Sedimentation Control Plan
  - General practices.
  - Temporary erosion and sedimentation control measures.
  - Temporary mulch/vegetation.
  - Permanent seeding.
  - Dust control.
  - Winter Construction

- Inspection and maintenance.
  - Inspection of Temporary E&S Control Measures.
  - Inspection of Permanent E&S Control Measures.
  - Emergency measures.
  - Annual maintenance.
  - General maintenance.

- Housekeeping.

Information on each of these elements is presented in Appendix A. Included are inspection and maintenance forms for during construction and post construction, a City of Lewiston Annual Stormwater Management Facilities Certification Form, and a post-construction stormwater management guarantee.

General Standards

General Standards are not required to be met for this project.

Flooding Standards

The flooding standards are met by the construction of a dry-type detention pond. The detention pond functions to reduce the peak flow generated from the existing site conditions. Reference should be made to the stormwater models on Sheets SW-1 and SW-2 included in Appendix D.

Two control points for the site have been established. Control Point #1 is at the outlet of the new stormwater pond. This is the location of an existing wetland finger flowing onto the adjacent parcel to the north (Lot #5). Control Point #2 is a small watershed also draining to Lot #5. This is the only other existing watershed that will be altered by the proposed construction.

The soil at this site is mapped as Elmwood fine sandy loam (8% to 15% slopes) and Melrose fine sandy loam (8% to 20% slopes). Both of these soil types are classified as Hydrologic Soil Group C.

Existing Condition Flow Rates

For this project the existing stormwater runoff is modelled considering 2 control points. As shown on Sheet SW-1, Watershed #1 is directed to CP#1. This watershed encompasses the vast majority of the proposed development. Watershed #5 is directed to CP#2. This watershed is slightly altered after completion of the expansion construction. Watersheds #2, #3, and #4 are undisturbed with respect to the new construction. The

areas and flowlines in these watersheds are included only as a reference. The Hydrocad data is included in Appendix C.1.

The following table lists peak runoff for the existing conditions.

EXISTING CONDITION PEAK FLOWS (cfs)		
Event	Peak Flow (cfs)	
	CP#1	CP#2
2 yr	0.79	0.19
10 yr	1.85	0.41
25 yr	2.43	0.54

Post Development Flow Rates

The hydrologic model of the site after construction of the addition and parking is shown on the attached Sheet SW-2 in Appendix D. The model boundaries match the boundaries for the existing conditions with the exception that the existing condition Watershed #1 is broken down into 4 watersheds, #1A, #1B, #1C, and #6. All runoff from these watersheds outlet at the wetland finger in the north portion of the site (CP-1). Post-developed Watershed #5 matches the existing condition #5 and in the post-developed condition. Watershed #2, #3, and #4 remain undisturbed from the existing condition.

The flow from Watersheds #1A, #1B, and #1C enter a dry detention pond. This pond is intended to control the peak flow rate to less than the existing condition flowrate. This is accomplished by an outlet control structure from which water exits to CP#1. Watershed #6 flows directly to CP#1. The following table summarizes the peak runoff and total volumes from the post-construction conditions.

POST DEVELOPMENT CONDITION PEAK FLOWS (cfs)				
Event	CP#1			CP#2
	WS#1A, 1B, 1C	WS#6	Total	WS#5
2 YR	0.32	0.11	0.43	0.19
10 YR	0.70	0.26	0.92	0.41
25 YR	1.31	0.35	1.66	0.53

Peak Flow Rate Summary

The results of the stormwater modeling are summarized in the following table.

PEAK FLOW RATE SUMMARY				
Event	CP#1		CP#2	
	Existing	Post Development	Existing	Post Development
2 YR	0.79	0.43	0.19	0.19
10 YR	1.85	0.96	0.41	0.41
25 YR	2.43	1.66	0.53	0.54

In all cases the post development peak runoff is less than the existing condition runoff at each control point.

Dry Detention Pond

The detention pond has been designed in accordance with Chapter 3 of the Volume III BMPs of the Stormwater Management for Maine technical design manual. A plan view of the pond is shown on Sheet 2, Site Grading and Utility Plan. Details of the pond construction along with a summary of the pond hydraulics are presented on Sheet 3, Construction Details.

The soil in the proposed pond area varies from a sandy silt to a silty clay, as shown on the attached TP-5 and TP-6 logs. Groundwater was not observed at the TP-5 location, excavated to elevation 206.9 feet. Groundwater seepage and strong mottling were observed at the TP-6 location at elevation 201.4 feet. The native soil is suitable to support the construction of the proposed pond. The bottom of the pond is at elevation 203 feet, which is 1.6 feet above the observed groundwater level.

Surface water flows into the pond via a grass-lined ditch and via a pipe from a catch basin in the new paved area. Flow from the ditch and pipe are into a sediment fore bay. The sediment fore bay has been designed for the required sediment loading. The rip rap in the fore bay is designed to accommodate the outflow of the pipe. Flow out of the pond is controlled with an outlet structure, detailed on Sheet 3 of the plan set. The detention

pond is intended to drain completely after the end of each storm event. Flow out of the pond is directed to a level lip spreader which functions to convert the concentrated flow to sheet flow prior to exiting the site. The peak water level in the pond for the 2, 10, and 25 year events are elevation 205.0, 206.2, and 206.6 feet, respectively. The top of the pond berm is elevation 208.5 feet.

MS4 Area

Stormwater discharge from the detention pond will be into the City's MS4 Area. A qualified Third Party Inspector will be engaged by the Applicant's representative:

Russ Neal
Clariant Corporation
17 Foss Road
Lewiston, ME 04240
Office: 784-0733

at least annually to inspect the pond in accordance with the approved Post-Construction Stormwater Management Plan (PCSMP). If the pond and other stormwater features associated with the 2017 expansion project 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.

APPENDIX A

BASIC STANDARDS

1.0 EROSION AND SEDIMENT CONTROL

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

Sheet 1 Site Approval and Demolition Plan
Sheet 2 Site Grading and Utility Plan
Sheet 3 Construction Details
Sheet 4 Construction Notes

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.

<u>General Practices</u>

- Sediment barriers (e.g., bark mulch berm) 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.
- Stabilization of soil during the winter shall be in accordance with this document and the notes on the construction drawings.

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 3 CONSTRUCTION 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 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 during the spring/summer of 2017. For this construction period, dormant seeding will be performed. The seed mixture described Sheet 4 CONSTRUCTION NOTES. 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.
- 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 2017.

Winter Construction

Winter construction" is construction activity performed during the period from November 1 through 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.

- *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.

- *Sediment Barriers.* All areas within 75 feet of a protected natural resource must be protected with a double row of sediment barriers.

- *Ditches.* All vegetated 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.

- *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.

2.0 INSPECTION AND MAINTENANCE PLAN

2.1 Construction Inspections

Inspections and maintenance of erosion and sedimentation control measures and stormwater control facilities will be performed during construction. Inspections will include:

- Vehicle entry and exit locations.
- Disturbed and impervious areas.
- Paved and impervious areas
- Pond Construction
- Erosion control measures.
- Materials storage areas exposed to precipitation.

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.

2.2 Post-Construction Inspections

The site Applicant will be responsible for long term inspection and maintenance of the detention pond and ensuring that the pond was construction in accordance with the design intents after construction is completed. An inspection checklist is included at the end of this section.

The Applicant shall pay for the services of a qualified Third Party to conduct inspections of the site, as needed, for compliance with the provisions of the Erosion and Sedimentation Control Plan. The person responsible for coordinating the Third Party and for performing any required maintenance is:

Russ Neal
Clariant Corporation
17 Foss Road
Lewiston, ME 04240
Office: 784-0733

The Third Party inspector will provide to the City of Lewiston documentation on management of the stormwater facilities as required (refer to attached MS4 requirements.

2.3 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 similar, 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
CLARIANT CORPORATION 2017 FACILITY EXPANSION, 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		
Pond Construction	Yes No		
Erosion and Sedimentation Control	Yes No		
DATE:	**BY:**	**COMPANY:**	**QUALS/POSITION:**

REMARKS:

Disturbed Areas: Inspect mulched and temporary seed areas for rill erosion. Add additional mulch if less than 90% coverage is observed. Inspect nets after rain events for dislocation or failure.

Impervious Areas: Sweep or wash pavement as necessary to keep dust levels to a minimum. Wash water should be directed to an approved sediment trap, such as a "Filter Sock". Accumulated sediment shall be removed and stored or disposed of appropriately. Information on "filter socks" can be found at www.filtrexx.com.

Erosion and Sedimentation Control: Inspect silt fence for erosion or sedimentation below them. 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 $\frac{1}{2}$ the height of the fence.

Vehicle Entrances and Exits: Check for mudding and clogging of stone and replace as necessary. Sweep or wash pavement at exits where mud has been tracked onto the travelled way.

Pond Construction: Confirm that pond is constructed in accordance with plans. Observe for seepage in sidewalls during construction. Consider additional construction requirements for construction during the winter, including the effects of snow and freezing temperatures

EROSION AND SEDIMENTATION CONTROL MAINTENANCE LOG

CLARIANT CORPORATION 2017 FACILITY EXPANSION, LEWISTON, MAINE

Inspections for the detention pond to be performed once per year in accordance with the Post-construction Stormwater Management Plan.

ITEM	DEFECTS	DESCRIPTION OF DEFECTS AND REPAIRS/MAINTENANCE	
Pond Inlets and Outlets	Yes / No		
Pond Slopes	Yes / No		
Paved Areas	Yes/No		
Catch Basins	Yes/No		
Maintenance Dredging	Yes/No		
DATE:	BY:	COMPANY:	QUALS/POSITION:

Pond Inlets and Outlets: Inspect for proper function and remove any accumulated debris blocking inlets and outlets.

Pond Slopes: Inspect for erosion, destabilization of site slopes, embankment settling, or signs of structural failure. Repair slopes as necessary immediately upon the identification of problems. Mow slopes to control woody vegetation (maximum grass height is 12 inches). Remove trash and debris.

Paved Areas: Remove accumulated winter sand and debris from all pavement areas annually. Wash water should be directed to an approved sediment trap, such as a "Filter Sock". Accumulated sediment shall be removed and stored or disposed of appropriately. Information on "filter socks" can be found at www.filtrexx.com.

Catch Basins: Remove and legally dispose of accumulated debris and sediment from the bottom of the structure, inlet grates, inflow channels to the basin, and pipes between basins.

Maintenance Dredging: Dredge accumulated sediments from the pond every 15 to 20 years.

Sediment Forebay: Remove sediment and debris from the forebay as least annually. Repair/replace rip rap as necessary.

MS4 AREA REQUIREMENTS

Stormwater discharge from the wet pond will be into the City's MS4 Area. A qualified Third Party Inspector will be engaged by the Applicant's representative:

Russ Neal
Clariant Corporation
17 Foss Road
Lewiston, ME 04240
Office: 784-0733

at least annually to inspect the wet pond in accordance with the approved Post-Construction Stormwater Management Plan (PCSMP) for the stormwater facilities associated with the 2017 expansion project, including the pond. If the pond requires 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.

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:

17 Foss Road, Lewiston, Maine

2. The owners of the Property are:

Clariant Corporation, 17 Foss Road, Lewiston, Maine
Richard Hale, 6 Trailside, Saco, Maine

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 the catch basins, drainage ditches, paved areas, and pond located around the 2016 addition.

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.

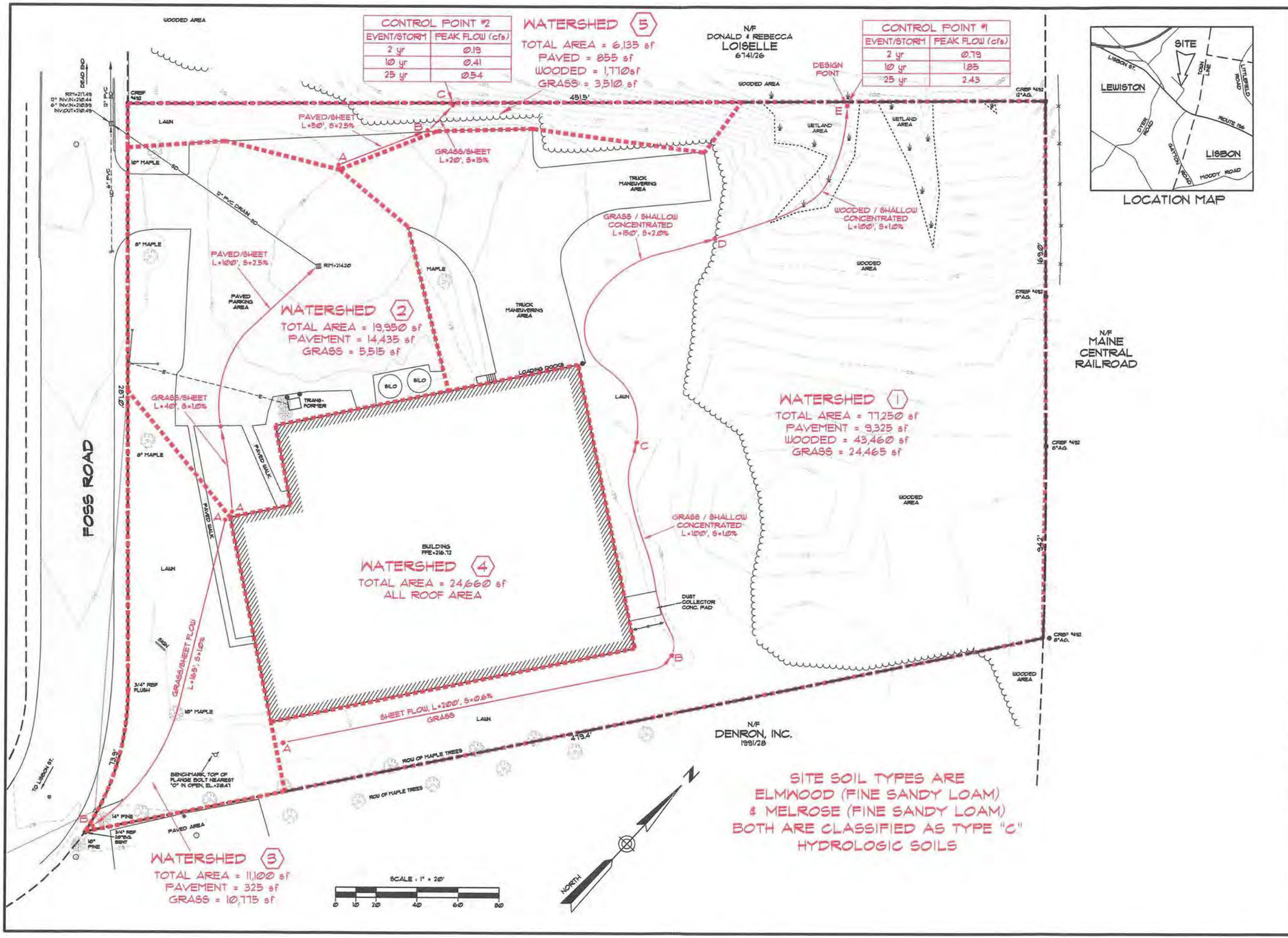
Before me, Notary Public, on this date: _____

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



SHEET TITLE: EXISTING CONDITIONS WATERSHED PLAN

SCALE: 1" = 20'
DATE: MARCH 2017
DRAWN BY: KRF
CHECKED BY: WMP

PROJECT: CLARIANT FACILITY EXPANSION
11 FOSS ROAD - LEWISTON, MAINE

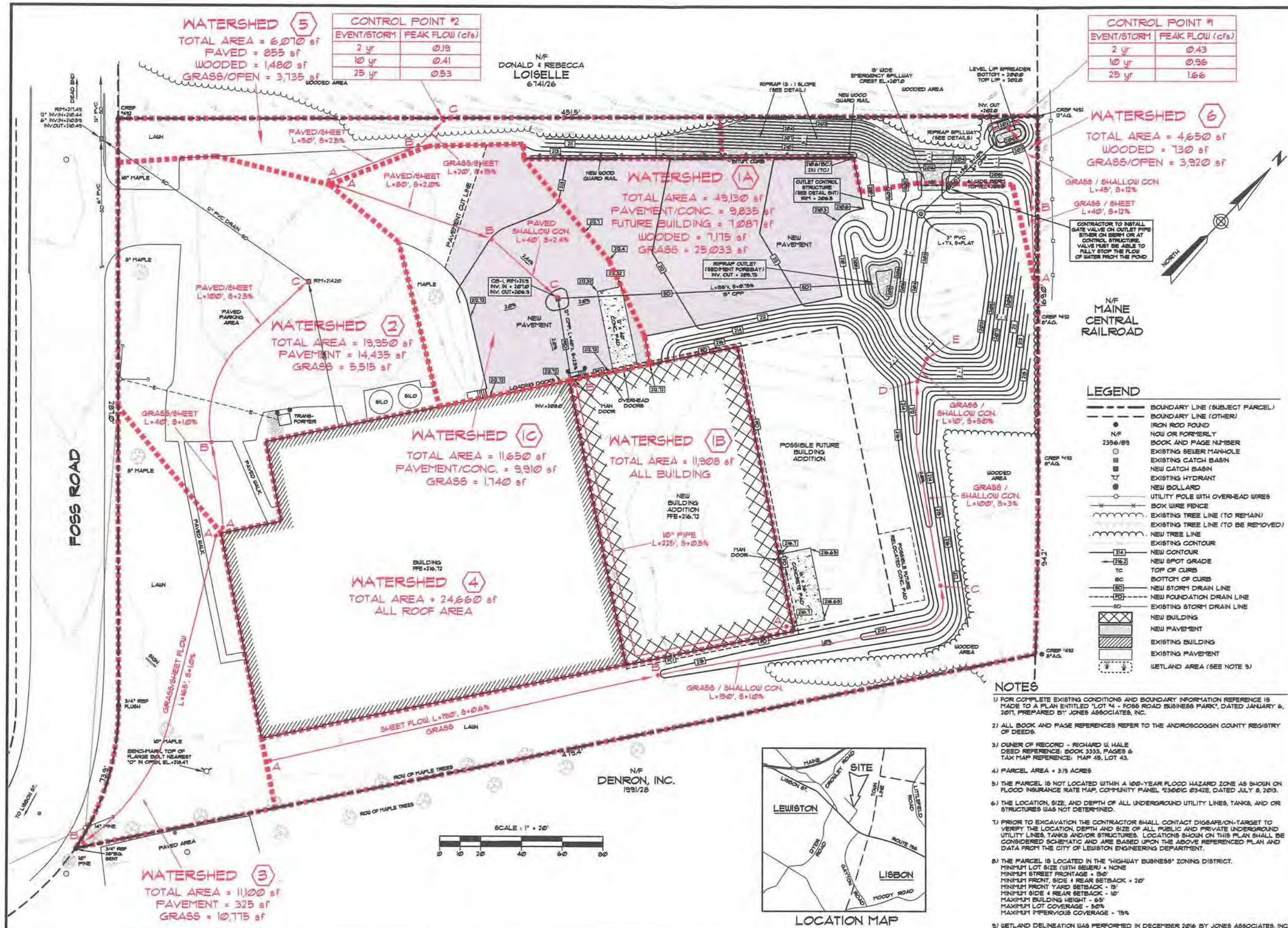
CLIENT: CLARIANT CORPORATION

Stonybrook Consultants, Inc.
456 Buckfield Road - Turner, Maine 04282
(207) 514-7491 Voice
(207) 514-7492 Fax

SUMMIT GEOENGINEERING SERVICES
113 PLEASANT STREET
ROCKLAND, ME 04841
TEL: (207) 338-1761
145 LISBON ST. - SUITE 601
LEWISTON, ME 04240
TEL: (207) 516-3313

JOB NO. - 16286

SHEET NUMBER
SW-1



NOTES

1) FOR COMPLETE EXISTING CONDITIONS AND BOUNDARY INFORMATION REFERENCE IS MADE TO A PLAN ENTITLED "LOT #4 - FOSS ROAD BUSINESS PARK", DATED JANUARY 6, 2011, PREPARED BY: JONES ASSOCIATES, INC.

2) ALL BOOK AND PAGE REFERENCES REFER TO THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS.

3) OWNER OF RECORD - RICHARD W. HALE
DEED REFERENCE: BOOK 3333, PAGES 6
TAX MAP REFERENCE: MAP 49, LOT 43.

4) PARCEL AREA = 3.19 ACRES

5) THE PARCEL IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD ZONE AS SHOWN ON FLOOD INSURANCE RATE MAP, COMMUNITY PANEL #230010 0342E, DATED JULY 8, 2013.

6) THE LOCATION, SIZE, AND DEPTH OF ALL UNDERGROUND UTILITY LINES, TANKS, AND OR STRUCTURES WAS NOT DETERMINED.

7) PRIOR TO EXCAVATION THE CONTRACTOR SHALL CONTACT DIGSAFE/ON-TARGET TO VERIFY THE LOCATION, DEPTH AND SIZE OF ALL PUBLIC AND PRIVATE UNDERGROUND UTILITY LINES, TANKS AND/OR STRUCTURES. LOCATIONS SHOWN ON THIS PLAN SHALL BE CONSIDERED SCHEMATIC AND ARE BASED UPON THE ABOVE REFERENCED PLAN AND DATA FROM THE CITY OF LEWISTON ENGINEERING DEPARTMENT.

8) THE PARCEL IS LOCATED IN THE "HIGHWAY BUSINESS" ZONING DISTRICT.
MINIMUM LOT SIZE (WITH SEWER) = NONE
MINIMUM STREET FRONTAGE = 150'
MINIMUM FRONT, SIDE & REAR SETBACK = 20'
MINIMUM FRONT YARD SETBACK - 15'
MINIMUM SIDE & REAR SETBACK - 10'
MAXIMUM BUILDING HEIGHT - 65'
MAXIMUM LOT COVERAGE - 50%
MAXIMUM IMPERVIOUS COVERAGE - 75%

9) WETLAND DELINEATION WAS PERFORMED IN DECEMBER 2016 BY JONES ASSOCIATES, INC.

SHEET TITLE: PROPOSED CONDITIONS WATERSHED PLAN

SCALE: 1" = 20'
DATE: MAR 8, 2017
DRAWN BY: KRF
CHECKED BY: WMP

PROJECT: CLARIANT FACILITY EXPANSION
171 FOSS ROAD - LEWISTON, MAINE

CLIENT: CLARIANT CORPORATION

Stonybrook Consultants, Inc.
456 Buckfield Road - Turner, Maine 04282
(207) 514-7491 Voice
(207) 514-7492 Fax

SUMMIT GEOENGINEERING SERVICES
173 PLEASANT STREET
ROCKLAND, ME 04841
Tel: (207) 318-7761
145 LISBON ST - SUITE 401
LEWISTON, ME 04240
Tel: (207) 576-3313

JOB NO. - 16286

SHEET NUMBER
WS-2

JONES ASSOCIATES
Foresters And Environmental Consultants

January 18, 2017

Mike Gotto
Stoneybrook Consultants, Inc.
456 Buckfield Road
Turner, Maine 04282

Dear Mr. Gotto:

Jones Associates, Inc. was contracted to review the following lot for the existence of wetlands: Lot 4 of the Foss Road Business Park in Lewiston, Maine. This site was visited on December 11, 2014 and in January of 2017

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

This is a small industrial lot that is mostly developed with one large structure and associated paved parking area. The property extends from the north side of Foss Road northeast to the railroad ROW. The easterly lot abutting the focal area is developed while the westerly lot remains undeveloped. Hydrology on the property appears to originate from ground seeps and from a riprap drain extending off the northeastern edge of the parking area. Primarily drainage within the focal area is northwesterly toward a larger off-site wetland.

The surrounding upland is forested with primary species being birch (*Betula spp.*), aspen (*Populus spp.)*, and red maple (*Acer rubrum*). The understory is comprised ofbirch (*Betula spp.*), balsam fir (*Abies balsamea)*, and red maple (*Acer rubrum*).

Wetlands found on the property primarily occur as linear depressions creating hydrological soil conditions of saturation, flooding, or ponding. When these conditions are present, aerobic processes are reduced. Fluctuation across the threshold of aerobic and anaerobic processes creates a habitat suitable for the growth and regeneration of hydrophytic vegetation. Predominantly, vegetation within the delineated wetlands are of tree species, classifying the wetlands as PFO (Palustrine forested).

280 Poland Spring Road
Auburn, Maine 04210
(207) 241-0235

Ground water appears to be present and may play a significant role in the source of hydrology for the wetlands. Herbaceous vegetation within the wetlands is sparse due to the time of year the site was visited. However, evidence was found of sensitive fern (*Onoclea sensibilis*), dewberry *(Rubus pubescens*), evergreen wood fern *(Dryopteris intermedia),* red maple *(Acer Rubrum*), and quaking aspen (*Populus tremuloides*). The wetland soils were primarily sandy to sandy loamy with occasional to sparse evidence of redoximorphic features. The site does show evidence of reforestation after being without for an extended period of time. This is evidenced by the high presence of pioneer tree species. Soils did not show a significant amount of disturbance but areas did show layer mixing.

Sincerely,

Garin M. Peck

WETLAND DELINEATION CHECKLIST

Job #:	14-0075LE		
Client:	Stoneybrook Consultants, Inc		
Site Address:	17 Foss Road		

Wetland Scientist:	Garin Peck
Date of Office Review:	12/11/14
Date(s) of Field Delineation:	12/11/14

Wetlands of Special Significance

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

Stormwater Qualifications

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

Additional Comments:
FEMA Flood Zone ID: 23001C0342E
Watershed:

HUC_8: 01040002	Lower Androscoggin River
HUC_10: 0104000210	Cathance River-Androscoggin River
HUC_12: 010400021002	Sabattus River

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Foss Road Busniess Park Lot 4 City/County: Lewiston/Androscoggin Sampling Date: 12/11/2014

Applicant/Owner: Stoneybrook Consultants, Inc State: ME Sampling Point: GMP1

Investigator(s): GMP Section, Township, Range: _____

Landform (hillside, terrace, etc.): Flat/sloping Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR or MLRA): LRR R, MLRA 144B Lat: 44-3-29 N Long: 70-8-8 W Datum: _____

Soil Map Unit Name: Androscoggin Country NWI classification: N

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

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

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

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

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

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches): 1
Water Table Present?	Yes ___	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): _____

Wetland Hydrology Present? **Yes** X **No** ___

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: GMP1

Tree Stratum (Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	55	Yes	FAC
2. *Populus tremuloides*	5	No	FACU
3. *Betula populifolia*	15	No	FAC
4. *Betula papyrifera*	2	No	FACU
5.			
6.			
7.			
	77	=Total Cover	

Sapling/Shrub Stratum (Plot size: 15 Feet)			
1. *Acer rubrum*	20	Yes	FAC
2. *Betula populifolia*	15	Yes	FAC
3. *Abies balsamea*	5	No	FAC
4.			
5.			
6.			
7.			
	40	=Total Cover	

Herb Stratum (Plot size: 5')			
1. *Rubus pubescens*	5	Yes	FACW
2. *Onoclea sensibilis*	5	Yes	FACW
3.	5	Yes	
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	=Total Cover	

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	110	x 3 =	330
FACU species	7	x 4 =	28
UPL species	0	x 5 =	0
Column Totals:	127 (A)		378 (B)

Prevalence Index = B/A = 2.98

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

X 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)
Eastern hemlock trees were obsered growing on hummocks and boulders.

SOIL

Sampling Point: GMP1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	5Y 5/3						Sandy	
2-6	2.5Y 4/1						Sandy	
6-10	2.5Y 5/1						Mucky Sand	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- X Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Foss Road Busniess Park Lot 4 City/County: Lewiston/Androscoggin Sampling Date: 12/11/2014

Applicant/Owner: Stoneybrook Consultants, Inc State: ME Sampling Point: GMP1

Investigator(s): GMP Section, Township, Range: _____

Landform (hillside, terrace, etc.): Flat/sloping Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR or MLRA): LRR R, MLRA 144B Lat: 44-3-29 N Long: 70-8-7 W Datum: _____

Soil Map Unit Name: Androscoggin Country NWI classification: N

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

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

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

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

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

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): _____
Water Table Present?	Yes ___	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): _____

Wetland Hydrology Present? Yes ___ No X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: GMP1

Tree Stratum (Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	55	Yes	FAC
2. *Betula papyrifera*	15	No	FACU
3. *Betula populifolia*	15	No	FAC
4.			
5.			
6.			
7.			
	85	=Total Cover	

Sapling/Shrub Stratum (Plot size: 15 Feet)			
1. *Betula papyrifera*	20	Yes	FACU
2. *Betula populifolia*	15	Yes	FAC
3. *Abies balsamea*	5	No	FAC
4.			
5.			
6.			
7.			
	40	=Total Cover	

Herb Stratum (Plot size: 5')			
1. *Rubus pubescens*	5	Yes	FACW
2. *Dryopteris intermedia*	5	Yes	FAC
3. *Pteridium aquilinum*	5	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	=Total Cover	

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	95	x 3 =	285
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals:	140 (A)		455 (B)

Prevalence Index = B/A = 3.25

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

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

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

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

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

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)
Eastern hemlock trees were obsered growing on hummocks and boulders.

SOIL

Sampling Point: GMP1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	2.5Y 3/2						Sandy	
2-6	5Y 5/3						Sandy	
6-10	2.5Y 4/4						Mucky Sand	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

3-24-89 @ 9:00 AM.
B. 34 P. 127

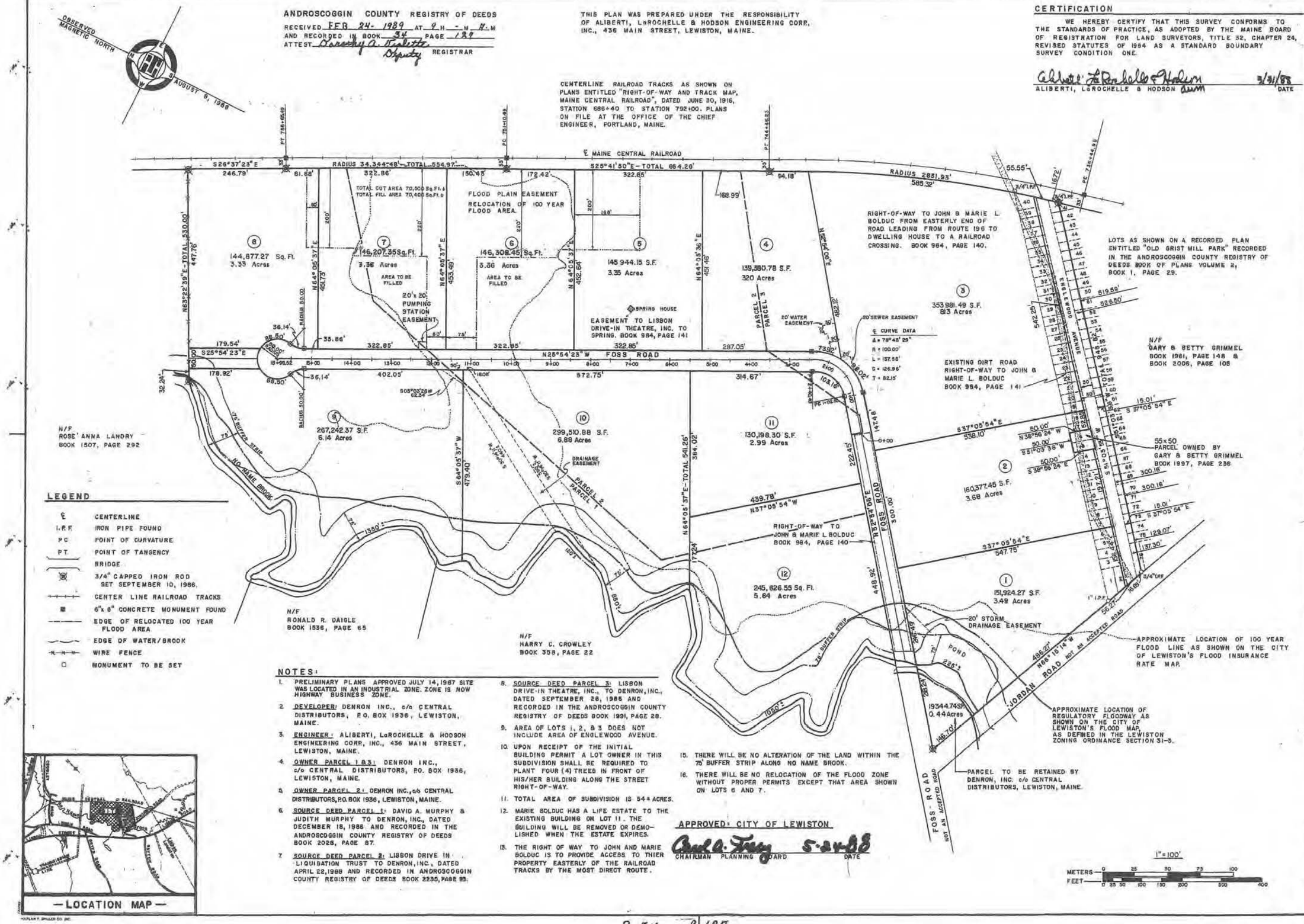
ANDROSCOGGIN COUNTY REGISTRY OF DEEDS
RECEIVED FEB 24 1989 AT 9 H - M N.M
AND RECORDED IN BOOK 34 PAGE 127
ATTEST Dorothy A. Triplette
Deputy REGISTRAR

THIS PLAN WAS PREPARED UNDER THE RESPONSIBILITY OF ALIBERTI, LaROCHELLE & HODSON ENGINEERING CORP. INC., 436 MAIN STREET, LEWISTON, MAINE.

CERTIFICATION

WE HEREBY CERTIFY THAT THIS SURVEY CONFORMS TO THE STANDARDS OF PRACTICE, AS ADOPTED BY THE MAINE BOARD OF REGISTRATION FOR LAND SURVEYORS, TITLE 32, CHAPTER 24, REVISED STATUTES OF 1964 AS A STANDARD BOUNDARY SURVEY CONDITION ONE.

Alberti, LaRochelle & Hodson 2/21/89
ALIBERTI, LaROCHELLE & HODSON DATE



LEGEND

- ℄ CENTERLINE
- I.P.F. IRON PIPE FOUND
- P.C. POINT OF CURVATURE
- P.T. POINT OF TANGENCY
- BRIDGE
- 3/4" CAPPED IRON ROD SET SEPTEMBER 10, 1986.
- CENTER LINE RAILROAD TRACKS
- 6"x 6" CONCRETE MONUMENT FOUND
- EDGE OF RELOCATED 100 YEAR FLOOD AREA
- EDGE OF WATER/BROOK
- WIRE FENCE
- MONUMENT TO BE SET

NOTES:

1. PRELIMINARY PLANS APPROVED JULY 14, 1987 SITE WAS LOCATED IN AN INDUSTRIAL ZONE. ZONE IS NOW HIGHWAY BUSINESS ZONE.
2. DEVELOPER: DENRON INC., c/o CENTRAL DISTRIBUTORS, P.O. BOX 1936, LEWISTON, MAINE.
3. ENGINEER: ALIBERTI, LaROCHELLE & HODSON ENGINEERING CORP, INC., 436 MAIN STREET, LEWISTON, MAINE.
4. OWNER PARCEL 1 & 3: DENRON INC., c/o CENTRAL DISTRIBUTORS, P.O. BOX 1936, LEWISTON, MAINE.
5. OWNER PARCEL 2: DENRON INC., c/o CENTRAL DISTRIBUTORS, P.O. BOX 1936, LEWISTON, MAINE.
6. SOURCE DEED PARCEL 1: DAVID A. MURPHY & JUDITH MURPHY TO DENRON, INC., DATED DECEMBER 18, 1986 AND RECORDED IN THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS BOOK 2028, PAGE 87.
7. SOURCE DEED PARCEL 2: LISBON DRIVE IN LIQUIDATION TRUST TO DENRON, INC., DATED APRIL 22, 1988 AND RECORDED IN ANDROSCOGGIN COUNTY REGISTRY OF DEEDS BOOK 2235, PAGE 93.
8. SOURCE DEED PARCEL 3: LISBON DRIVE-IN THEATRE, INC., TO DENRON, INC., DATED SEPTEMBER 28, 1986 AND RECORDED IN THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS BOOK 1991, PAGE 28.
9. AREA OF LOTS 1, 2, & 3 DOES NOT INCLUDE AREA OF ENGLEWOOD AVENUE.
10. UPON RECEIPT OF THE INITIAL BUILDING PERMIT A LOT OWNER IN THIS SUBDIVISION SHALL BE REQUIRED TO PLANT FOUR (4) TREES IN FRONT OF HIS/HER BUILDING ALONG THE STREET RIGHT-OF-WAY.
11. TOTAL AREA OF SUBDIVISION IS 54± ACRES.
12. MARIE BOLDUC HAS A LIFE ESTATE TO THE EXISTING BUILDING ON LOT 11. THE BUILDING WILL BE REMOVED OR DEMOLISHED WHEN THE ESTATE EXPIRES.
13. THE RIGHT OF WAY TO JOHN AND MARIE BOLDUC IS TO PROVIDE ACCESS TO THIER PROPERTY EASTERLY OF THE RAILROAD TRACKS BY THE MOST DIRECT ROUTE.
15. THERE WILL BE NO ALTERATION OF THE LAND WITHIN THE 75' BUFFER STRIP ALONG NO NAME BROOK.
16. THERE WILL BE NO RELOCATION OF THE FLOOD ZONE WITHOUT PROPER PERMITS EXCEPT THAT AREA SHOWN ON LOTS 6 AND 7.

APPROVED: CITY OF LEWISTON

Carl A. Troy 5-24-88
CHAIRMAN PLANNING BOARD DATE

—LOCATION MAP—

STATE OF MAINE ANTHONY W. MONTANA 4321 REGISTERED LAND SURVEYOR

NO.	REVISIONS	DATE

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ALIBERTI, LaROCHELLE & HODSON ENGINEERING CORPORATION INC.
436 Main St., P.O. Box 140, Lewiston, Me. 04240
(207) 783-2958

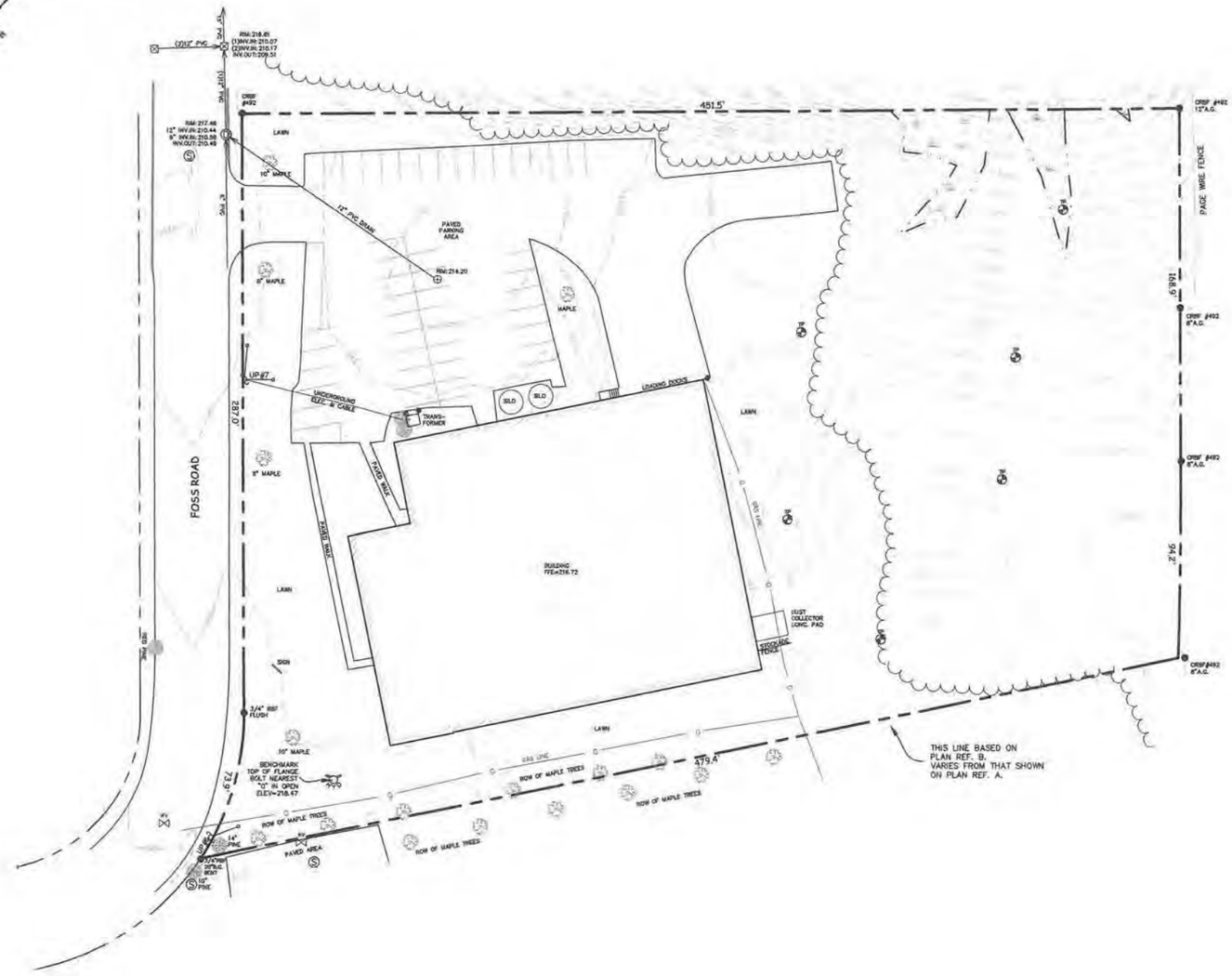
JOB TITLE: FOSS ROAD BUSINESS PARK
FOSS ROAD
ANDROSCOGGIN COUNTY LEWISTON, MAINE

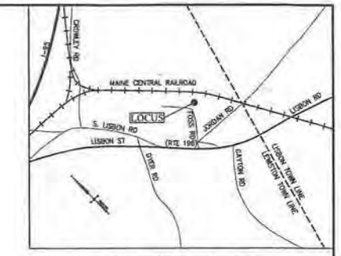
DWN. BY: DLB | CHD. BY: RWG | SCALE: 1" = 100' | DATE: 05-16-88

DRAWING TITLE: SUBDIVISION PLAN

DRAWING NO. ONE

JOB NO. 88-058-00





LOCATION PLAN

NOTES:

THIS SURVEY DONE UNDER FROZEN GROUND, ICE, AND SNOW CONDITIONS. NOT ALL FEATURES WERE VISIBLE OR COULD BE LOCATED DUE TO WINTER CONDITIONS. THIS SITE SHOULD BE VISITED WHEN THE GROUND IS OPEN TO VERIFY EXISTING CONDITIONS.

1. THIS IS NOT A SURVEY. BOUNDARY LINES DEPICTED ARE BASED ON PLAN REFERENCE A & B BELOW.
2. PARCEL TAX MAP REFERENCE: CITY OF LEWISTON, MAP 45, LOT 43
3. ELEVATIONS SHOWN ARE TIED TO NAVD 1988 BY NETWORK RTK GPS
4. THE LOCATION, SIZE, AND DEPTH OF UNDERGROUND UTILITY LINES, TANKS, AND OR STRUCTURES NOT DETERMINED BY THIS SURVEY.
5. WETLAND BOUNDARIES WERE IDENTIFIED AND DELINEATED BY JONES ASSOCIATES INC IN DECEMBER 2016 ACCORDING TO U.S. ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL (1987) AND REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION.
6. PLAN REFERENCES:
   A.) FOSS ROAD BUSINESS PARK, SUBDIVISION PLAN REVISION 1, PREPARED BY ARCC LAND SURVEYORS INC. DATED DECEMBER 1, 1997 RECORDED IN ANDROSCOGGIN COUNTY REGISTRY OF DEEDS IN PLAN BOOK 39, PAGE 192.
   B.) SUBDIVISION PLAN FOSS ROAD BUSINESS PARK, SECOND REVISION PREPARED FOR LEWISTON DEVELOPMENT CORPORATION BY DOWNEAST SURVEYING AND DEVELOPMENT LAST REVISED MARCH 18, 2004 RECORDED AT SAID REGISTRY IN PLAN BOO 43, PAGE 162.

LEGEND

	SUBJECT BOUNDARY LINE
	ABUTTER OR RIGHT OF WAY LINE
	WETLAND
	TREELINE
N/F	NOW OR FORMERLY
000/000	DEED BOOK PAGE REFERENCE
000-000	TAX MAP AND LOT NUMBER
	DECIDUOUS / CONIFEROUS TREE
IPF/IRF/RBF	IRON PIPE/ROD/REBAR FOUND
	BOLLARD
CRBS	5/8" REBAR W/ CAP TO BE SET
	UTILITY POLE
	SEWER MANHOLE
	CATCH BASINS

GRAPHIC SCALE

0 15 30 60

1 inch = 30 ft.

REVISIONS			
NO.	DATE	DESCRIPTION	BY

EXISTING CONDITIONS

LOT #4
FOSS ROAD BUSINESS PARK

17 FOSS ROAD

LEWISTON

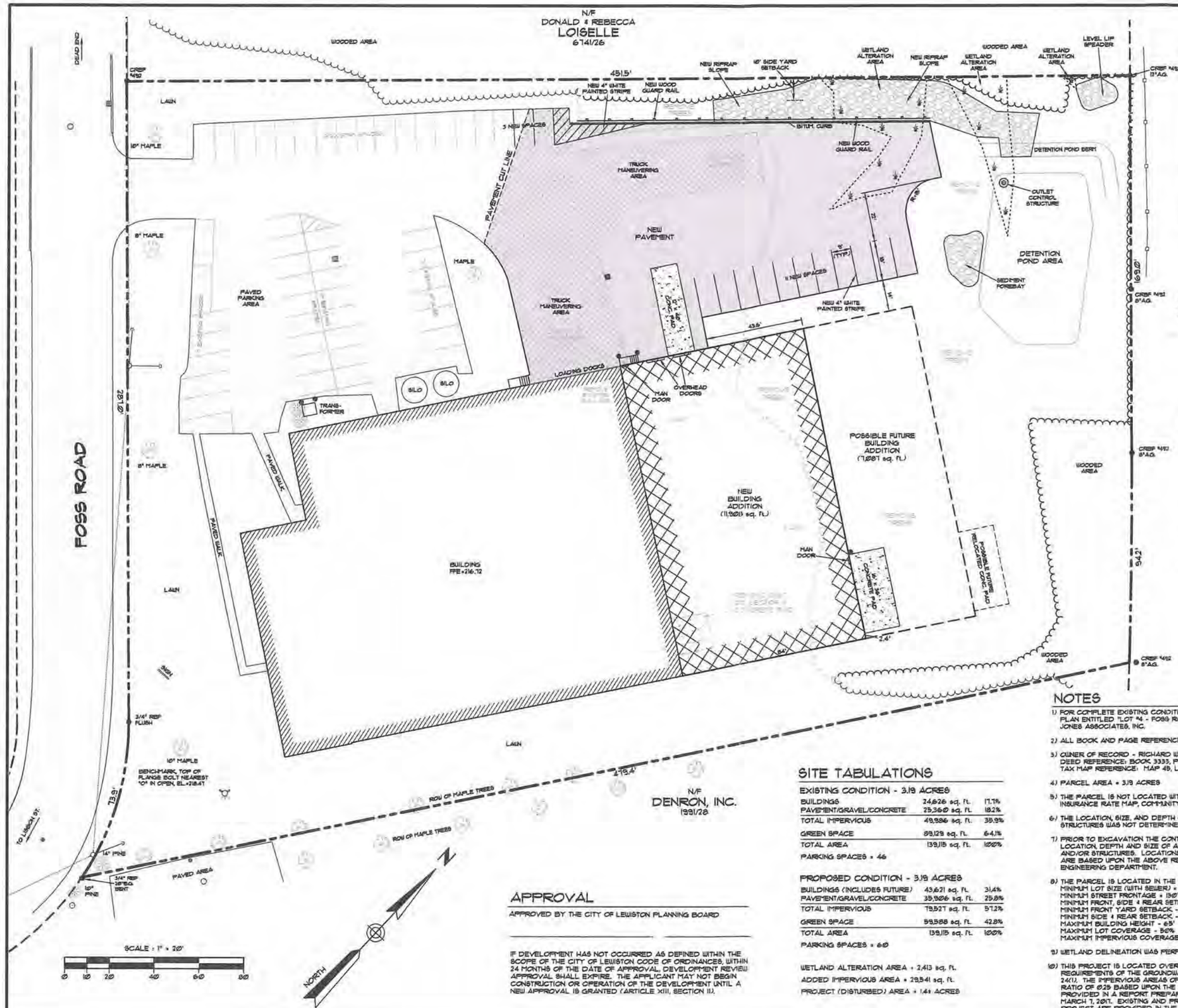
PREPARED BY:

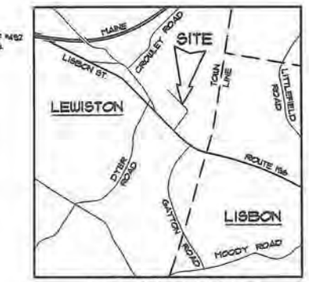
JONES ASSOCIATES INC.
Foresters, Surveyors And Environmental Consultants
280 POLAND SPRING ROAD, AUBURN, MAINE 04210
(207) 241-0235

PLAN DATE: JANUARY 6, 2017

SCALE: 1"=30'

PROJ. #: 16-102LE





LOCATION MAP

LEGEND

- BOUNDARY LINE (SUBJECT PARCEL)
- BOUNDARY LINE (OTHER)
- IRON ROD FOUND
- N/F — NOW OR FORMERLY
- 2356/89 — BOOK AND PAGE NUMBER
- EXISTING SEWER MANHOLE
- EXISTING CATCH BASIN
- NEW CATCH BASIN
- EXISTING HYDRANT
- NEW BOLLARD
- UTILITY POLE WITH OVERHEAD WIRES
- BOX WIRE FENCE
- EXISTING TREE LINE (TO REMAIN)
- EXISTING TREE LINE (TO BE REMOVED)
- NEW TREE LINE
- NEW BUILDING
- NEW PAVEMENT
- EXISTING BUILDING
- EXISTING PAVEMENT
- WETLAND AREA (SEE NOTE 9)

NOTES

1) FOR COMPLETE EXISTING CONDITIONS AND BOUNDARY INFORMATION REFERENCE IS MADE TO A PLAN ENTITLED "LOT #4 - FOSS ROAD BUSINESS PARK", DATED JANUARY 6, 2011, PREPARED BY JONES ASSOCIATES, INC.

2) ALL BOOK AND PAGE REFERENCES REFER TO THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS.

3) OWNER OF RECORD - RICHARD W. HALE
DEED REFERENCE: BOOK 3333, PAGES 6
TAX MAP REFERENCE: MAP 49, LOT 43.

4) PARCEL AREA = 3.19 ACRES

5) THE PARCEL IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD ZONE AS SHOWN ON FLOOD INSURANCE RATE MAP, COMMUNITY PANEL #230010 0342E, DATED JULY 8, 2013.

6) THE LOCATION, SIZE, AND DEPTH OF ALL UNDERGROUND UTILITY LINES, TANKS, AND OR STRUCTURES WAS NOT DETERMINED.

7) PRIOR TO EXCAVATION THE CONTRACTOR SHALL CONTACT DIGSAFE/ON-TARGET TO VERIFY THE LOCATION, DEPTH AND SIZE OF ALL PUBLIC AND PRIVATE UNDERGROUND UTILITY LINES, TANKS AND/OR STRUCTURES. LOCATIONS SHOWN ON THIS PLAN SHALL BE CONSIDERED SCHEMATIC AND ARE BASED UPON THE ABOVE REFERENCED PLAN AND DATA FROM THE CITY OF LEWISTON ENGINEERING DEPARTMENT.

8) THE PARCEL IS LOCATED IN THE "HIGHWAY BUSINESS" ZONING DISTRICT.
MINIMUM LOT SIZE (WITH SEWER) = NONE
MINIMUM STREET FRONTAGE = 150'
MINIMUM FRONT, SIDE & REAR SETBACK = 20'
MINIMUM FRONT YARD SETBACK - 15'
MINIMUM SIDE & REAR SETBACK - 10'
MAXIMUM BUILDING HEIGHT - 65'
MAXIMUM LOT COVERAGE - 50%
MAXIMUM IMPERVIOUS COVERAGE - 75%

9) WETLAND DELINEATION WAS PERFORMED IN DECEMBER 2016 BY JONES ASSOCIATES, INC.

10) THIS PROJECT IS LOCATED OVER A SIGNIFICANT GROUNDWATER AQUIFER AND IS SUBJECT TO THE REQUIREMENTS OF THE GROUNDWATER CONSERVATION OVERLAY DISTRICT ARTICLE XI, SECTION 24(1). THE IMPERVIOUS AREAS OF THIS PROPERTY EXCEED THE MAXIMUM IMPERVIOUS SURFACE RATIO OF 0.25 BASED UPON THE SPECIFIC RESPONSES TO SECTIONS K(1), K(g)(5) AND K(g)(9) PROVIDED IN A REPORT PREPARED BY CES, INC., DATED FEBRUARY 14, 2011 AND REVISED ON MARCH 7, 2011. EXISTING AND PROPOSED IMPERVIOUS AREA CALCULATIONS APPROVED FOR THIS PROJECT ARE PROVIDED IN THE SITE TABULATIONS SHOWN ON THIS PLAN SHEET.

SITE TABULATIONS

EXISTING CONDITION - 3.19 ACRES

BUILDINGS	24,626 sq. ft.	17.7%
PAVEMENT/GRAVEL/CONCRETE	25,360 sq. ft.	18.2%
TOTAL IMPERVIOUS	49,986 sq. ft.	35.9%
GREEN SPACE	89,129 sq. ft.	64.1%
TOTAL AREA	139,115 sq. ft.	100%

PARKING SPACES = 46

PROPOSED CONDITION - 3.19 ACRES

BUILDINGS (INCLUDES FUTURE)	43,621 sq. ft.	31.4%
PAVEMENT/GRAVEL/CONCRETE	35,906 sq. ft.	25.8%
TOTAL IMPERVIOUS	79,527 sq. ft.	57.2%
GREEN SPACE	59,588 sq. ft.	42.8%
TOTAL AREA	139,115 sq. ft.	100%

PARKING SPACES = 60

WETLAND ALTERATION AREA = 2,413 sq. ft.

ADDED IMPERVIOUS AREA = 29,541 sq. ft.

PROJECT (DISTURBED) AREA = 1.41 ACRES

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).

REVISED: MARCH 8, 2017 - NEW CONFIGURATION & SITE TABS
REVISED: FEBRUARY 14, 2017 - ADD CONCRETE PAD

SHEET TITLE: SITE APPROVAL & DEMOLITION PLAN

SCALE: 1" = 20'
DATE: FEB. 10, 2017

DRAWN BY: KRF
CHECKED BY: WMP

PROJECT: CLARIANT FACILITY EXPANSION
17 FOSS ROAD - LEWISTON, MAINE

CLIENT: CLARIANT CORPORATION

Stoneybrook Consultants, Inc.
456 Duckfield Road - Turner, Maine 04282
(207) 514-7491 Voice
(207) 514-7492 Fax

175 PLEASANT STREET
ROCKLAND, ME 04841
Tel.: (207) 318-7161

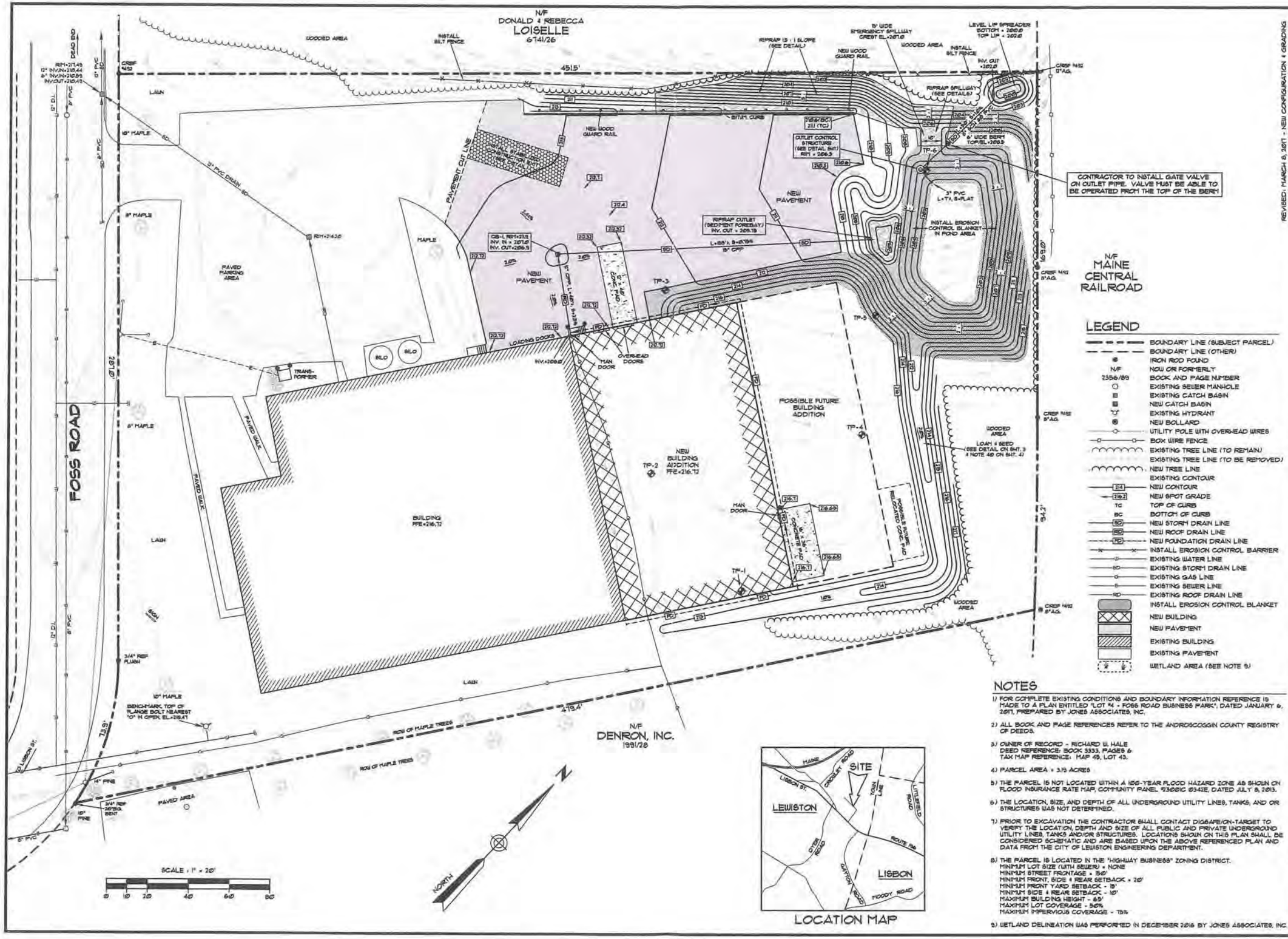
145 LISBON ST. - SUITE 601
LEWISTON, ME 04240
Tel.: (207) 516-3313

SUMMIT GEOENGINEERING SERVICES

STATE OF MAINE
WILLIAM M. PETERLEIN
5787
LICENSED PROFESSIONAL ENGINEER

JOB NO. - 16286

SHEET NUMBER
1



NOTES

1) FOR COMPLETE EXISTING CONDITIONS AND BOUNDARY INFORMATION REFERENCE IS MADE TO A PLAN ENTITLED "LOT 14 - FOSS ROAD BUSINESS PARK", DATED JANUARY 6, 2011, PREPARED BY JONES ASSOCIATES, INC.

2) ALL BOOK AND PAGE REFERENCES REFER TO THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS.

3) OWNER OF RECORD - RICHARD W. HALE
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MINIMUM FRONT, SIDE & REAR SETBACK = 20'
MINIMUM FRONT YARD SETBACK - 15'
MINIMUM SIDE & REAR SETBACK - 10'
MAXIMUM BUILDING HEIGHT - 65'
MAXIMUM LOT COVERAGE - 50%
MAXIMUM IMPERVIOUS COVERAGE - 75%

9) WETLAND DELINEATION WAS PERFORMED IN DECEMBER 2016 BY JONES ASSOCIATES, INC.

REVISED: MARCH 8, 2017 - NEW CONFIGURATION & GRADING
REVISED: FEBRUARY 14, 2017 - ADD CONCRETE PAD

SHEET TITLE: SITE GRADING & UTILITY PLAN

SCALE: 1" = 20'
DATE: FEB. 10, 2017
DRAWN BY: KRF
CHECKED BY: WMP

PROJECT: CLARIANT FACILITY EXPANSION
17 FOSS ROAD - LEWISTON, MAINE

CLIENT: CLARIANT CORPORATION

Stonybrook Consultants, Inc.
466 Buckfield Road - Turner, Maine 04282
(207) 914-7491 Voice
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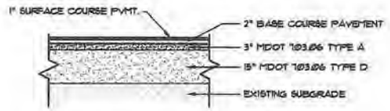
SUMMIT GEOENGINEERING SERVICES
175 PLEASANT STREET
PORTLAND, ME 04101
Tel. (207) 318-7161
145 LISBON ST. - SUITE 6B
LEWISTON, ME 04240
Tel. (207) 576-3313

STATE OF MAINE
WILLIAM M. PETERLEIN
5787
LICENSED PROFESSIONAL ENGINEER

JOB NO. - 16286

SHEET NUMBER
2

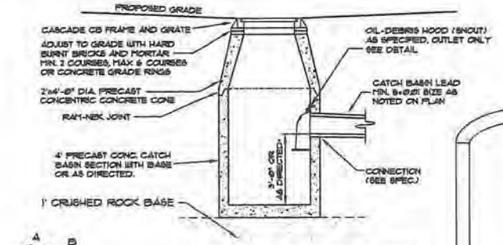


PAVEMENT CROSS SECTION

CAR PARKING AREAS - NOT TO SCALE

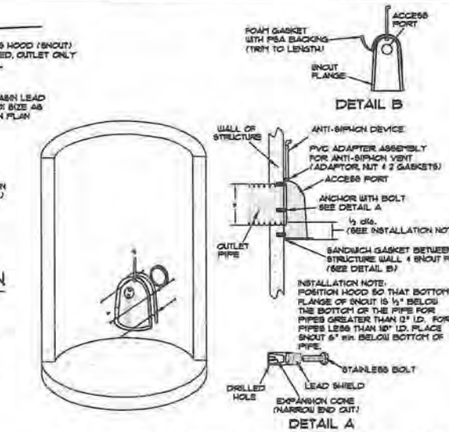
CULVERT OUTLET/SEDIMENT FOREBAY DETAIL

NOT TO SCALE



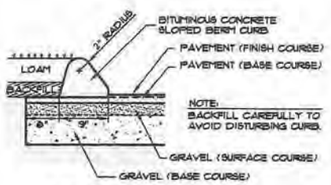
4'-Ø" DIA. CATCH BASIN

NOT TO SCALE



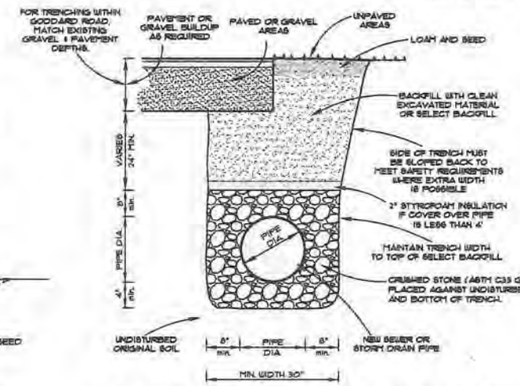
CATCH BASIN SNOUT INSTALLATION DETAIL

NOT TO SCALE



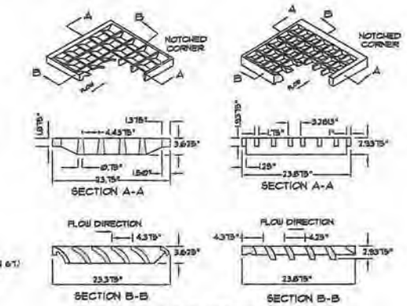
BITUMINOUS CURBING

NOT TO SCALE



STORM DRAIN / SEWER TRENCH DETAIL

NOT TO SCALE



CASCADE TYPE GRATES

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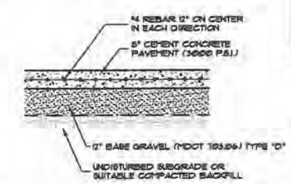

CROSS SECTION CONCRETE PAD

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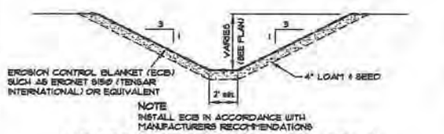
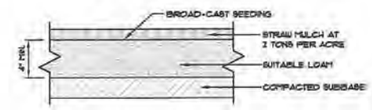


VEGETATIVE MAT LINED DITCH

NOT TO SCALE



LOAM & SEED DETAIL

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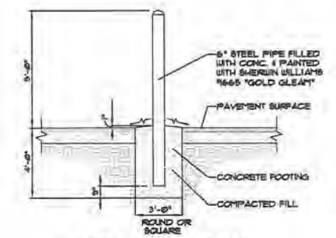

BOLLARD DETAIL

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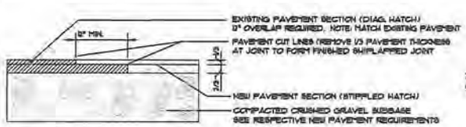
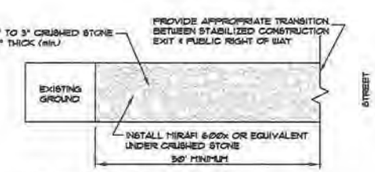


PAVEMENT SAWCUT JOINT DETAIL

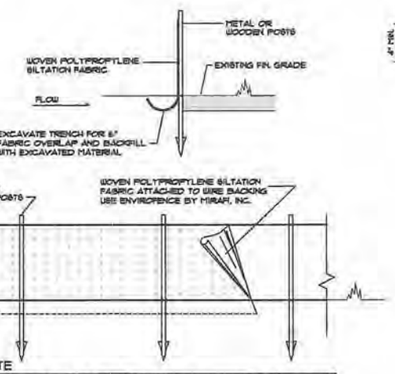
NOT TO SCALE



1. LENGTH - AS EFFECTIVE BUT NOT LESS THAN 50'
2. THICKNESS - NOT LESS THAN 6"
3. WIDTH - 12' MINIMUM
4. WASHING - WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE THROUGH USE OF SAND BAGS, GRAVEL, BOARDS, OR OTHER APPROVED METHODS.
5. MAINTENANCE - THE STABILIZED CONSTRUCTION EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURED USES TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY.

STABILIZED CONSTRUCTION EXIT DETAIL

NOT TO SCALE



NOTE

REFERENCE IS MADE TO THE BEST MANAGEMENT PRACTICE FOR EROSION AND SEDIMENT CONTROL: B-1 SEDIMENT BARRIERS.

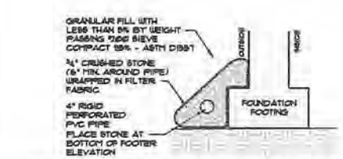
SILTATION FABRIC WITH INTEGRAL MESH AND POSTS MAY BE USED.

SILT FENCE DETAIL

NOT TO SCALE

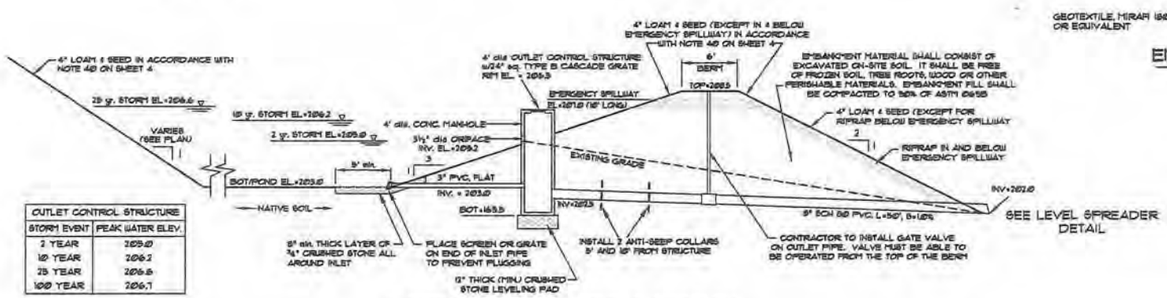
RIPRAP SLOPE AT EMERGENCY SPILLWAY

NOT TO SCALE



FOUNDATION UNDERDRAIN DETAIL

NOT TO SCALE



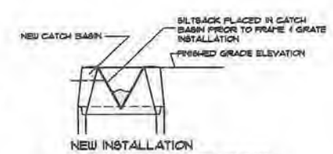
OUTLET CONTROL STRUCTURE	
STORM EVENT	PEAK WATER ELEV.
2 YEAR	203.0
10 YEAR	206.2
25 YEAR	206.6
100 YEAR	206.7

DETENTION POND CROSS SECTION

NOT TO SCALE

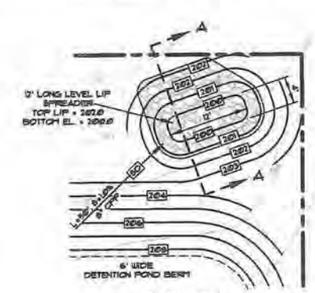
EMERGENCY SPILLWAY DETAIL

NOT TO SCALE



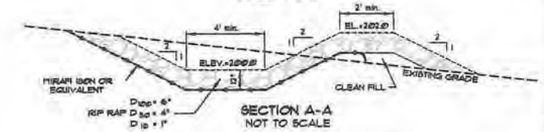
SILT SACK DETAIL

NOT TO SCALE



PLAN VIEW

SCALE: 1" = 10'



SECTION A-A

NOT TO SCALE

LEVEL SPREADER DETAIL

REVISED: MARCH 1, 2011 - MODIFY EMERGENCY SPILLWAY DETAIL

SHEET TITLE: CONSTRUCTION DETAILS

SCALE: AS NOTED

DATE: FEB. 10, 2011

DRAWN BY: KRF

CHECKED BY: WMP

PROJECT: CLARIANT FACILITY EXPANSION
17 FOSS ROAD - LEWISTON, MAINE

CLIENT: CLARIANT CORPORATION

Stonybrook Consultants, Inc.
456 Buckfield Road - Turner, Maine 04282
(207) 514-7491 Voice
(207) 514-7492 Fax

SUMMIT GEOENGINEERING SERVICES
173 PLEASANT STREET
ROCKLAND, ME 04841
Tel: (207) 318-7166
145 LISBON ST. - SUITE 601
LEWISTON, ME 04240
Tel: (207) 816-3333

STATE OF MAINE
WILLIAM M. PETERLEIN
#5767
LICENSED PROFESSIONAL ENGINEER

JOB NO. - 16286

SHEET NUMBER 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 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/OR INFORMATION PROVIDED BY INDIVIDUAL UTILITY COMPANIES. LOCATIONS AND ELEVATIONS OF PUBLIC UTILITIES SHOWN ARE ONLY APPROXIMATE AND MAY NOT BE COMPLETE. ALL PRIVATE UNDERGROUND UTILITY LINES, TANKS AND/OR STRUCTURES MAY NOT BE SHOWN. THE CONTRACTOR SHALL ASCERTAIN THE LOCATION AND SIZE OF EXISTING UTILITIES IN THE FIELD WITH THE RESPECTIVE UTILITY REPRESENTATIVE PRIOR TO COMMENCING WORK. REFER TO SPECIFICATION SECTION 3014. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES, INCLUDING SERVICES. SHOULD ANY UNCHARTED OR INCORRECTLY CHARTED UTILITIES BE FOUND, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY FOR DIRECTION BEFORE PROCEEDING FURTHER WITH THE WORK IN THIS AREA. ADDITIONAL TEST PITS, BEYOND THOSE SHOWN, MAY BE REQUIRED. UTILITY CONTACTS ARE AS FOLLOWS:

DIG SAFE:
1-888-344-7233

ELECTRICAL:
CENTRAL MAINE POWER
83 EDISON DRIVE
AUGUSTA, ME 04336
TEL. (207) 779-3118

GAS
UNITIL
6175 FOREST AVENUE
PORTLAND, ME 04104
TEL. (207) 797-8001

TELECOMMUNICATIONS:
OXFORD NETWORKS
491 LISBON STREET
LEWISTON, ME 04240
TEL. (207) 536-3911

TIME WARNER CABLE:
37 ALFRED PLOURDE PARKWAY
LEWISTON, ME 04240
TEL. 1-800-833-2253

FAIRPOINT COMMUNICATIONS:
501 E. MORRILL ED ST.
PORTLAND, ME 04101
TEL. 1-800-585-4466

WATER AND SEWER:
KEVIN GAGNE
LEWISTON PUBLIC WORKS DEPT.
WATER AND SEWER DIVISION
103 ADAMS AVENUE
LEWISTON, ME 04240
TEL. (207) 513-3003

3) THE CONTRACTOR IS HEREBY CAUTIONED THAT ALL SITE FEATURES SHOWN HEREON ARE BASED ON FIELD OBSERVATIONS BY THE SURVEYOR AND BY INFORMATION PROVIDED BY UTILITY COMPANIES. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT DIG SAFE (1-888-DIGSAFE) AT LEAST THREE (3) BUT NOT MORE THAN THIRTY (30) DAYS PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION TO VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES.

4) CONTRACTOR SHALL BE AWARE THAT DIG SAFE ONLY NOTIFIES ITS "MEMBER" UTILITIES ABOUT THE DIG. WHEN NOTIFIED, DIG SAFE WILL ADVISE CONTRACTOR OF MEMBER UTILITIES IN THE AREA. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND CONTACTING NON-MEMBER UTILITIES DIRECTLY. NON-MEMBER UTILITIES MAY INCLUDE CITY WATER AND SEWER DISTRICTS AND SMALL LOCAL UTILITIES, AS WELL AS USG PUBLIC WORKS SYSTEMS.

5) CONTRACTORS SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE REQUIREMENTS OF 23 MRSA 3360-A. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE APPROPRIATE UTILITIES TO OBTAIN AUTHORIZATION PRIOR TO RELOCATION OF ANY EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS. IF A UTILITY CONFLICT ARISES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CITY, THE MUNICIPALITY AND APPROPRIATE UTILITY COMPANY PRIOR TO PROCEEDING WITH ANY RELOCATION.

6) THE CONTRACTOR MAY ENCOUNTER ASBESTOS CEMENT PIPE DURING PROSECUTION OF THE WORK. CONTRACTOR SHALL CONFORM TO ALL APPLICABLE PROVISIONS OF OSHA, USEPA, MDEP AND ALL OTHER FEDERAL, STATE AND LOCAL REGULATIONS WHEN HANDLING AND/OR DISPOSING OF ASBESTOS CEMENT PRODUCTS.

7) 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.

8) IN THOSE INSTANCES WHERE GAS SERVICES OR MAINS NEED TO BE RELOCATED THE CONTRACTOR SHALL COORDINATE WITH UNITIL AFTER THE COMPLETION OF THE TEST PIT TO SCHEDULE THE COMPLETION OF THE WORK.

9) 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.

10) THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT OF ALL PROPOSED LINES AND GRADES AS SHOWN ON THE DRAWINGS. THE LAYOUT PLAN SHALL BE REVIEWED BY THE ENGINEER PRIOR TO CONSTRUCTION. THE HORIZONTAL ALIGNMENT OF THE NEW STORM DRAINS AND SANITARY SEWER MAY BE ADJUSTED IN THE FIELD SUBJECT TO PRIOR APPROVAL BY THE ENGINEER.

11) THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESETTING ALL EXISTING PROPERTY MONUMENTATION THAT IS DISTURBED BY HIS OPERATIONS AT NO EXPENSE TO THE OWNER. THIS WORK IS TO BE DONE BY A LAND SURVEYOR REGISTERED IN THE STATE OF MAINE.

12) COMPACTION TESTS, WHERE REQUIRED, ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS.

13) 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.

14) 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.

15) THE INVERTS INDICATED ON THE PLAN AND PROFILE SHEETS ARE TO THE INSIDE FACE OF THE MANHOLE.

16) 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.

17) 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 PREGEDENCE.

18) CONTRACTOR SHALL CLEAN AND REMOVE DEBRIS AND SEDIMENT DEPOSITED ON PUBLIC STREETS, SIDEWALKS, ADJACENT AREAS, OR OTHER PUBLIC WAYS DUE TO CONSTRUCTION DAILY.

19) THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ANY CHANGES AND DEVIATION OF APPROVED PLANS NOT AUTHORIZED BY THE ENGINEER AND/OR OWNER.

20) 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.

21) 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.

22) 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.

23) THE CONTRACTOR SHALL GUARANTEE THE FAITHFUL REMEDY OF ANY DEFECTS DUE TO FAULTY MATERIALS OR WORKMANSHIP AND GUARANTEES PAYMENT FOR ANY RESULTING DAMAGE WHICH SHALL APPEAR WITHIN A PERIOD OF ONE (1) YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION OF THE PROJECT.

GENERAL NOTES CONTINUED

24) IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE ALL PLANS, APPROVALS, AND DETAILS FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL VERIFY ALL THE SITE CONDITIONS IN THE FIELD AND CONTACT THE DESIGN ENGINEER IF THERE ARE ANY DISCREPANCIES REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS SO THAT AN APPROPRIATE REVISION CAN BE MADE PRIOR TO BIDDING.

25) ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED IN WRITING BY THE OWNER, DESIGN ENGINEER, AND APPROPRIATE GOVERNMENTAL AGENCY PRIOR TO INSTALLATION.

26) ALL EXCAVATION SHALL BE BACKFILLED TO EXISTING GRADE BEFORE THE END OF THE DAY OR ADEQUATELY PROTECTED FROM DANGER TO HUMANS AND ANIMALS.

27) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL FIELD LAYOUT. THE OWNER WILL PROVIDE A BENCH MARK AT THE CONSTRUCTION SITE FROM WHICH TO BEGIN LAYOUT.

28) THE CONTRACTOR SHALL FURNISH ELECTRICAL POWER, WATER, AND SANITARY FACILITIES FOR HIS EXCLUSIVE USE AT THE CONSTRUCTION SITE SHOULD THE CONTRACTOR DEEM THIS ESSENTIAL FOR THE PROPER PERFORMANCE OF THE CONTRACT.

29) WORK MAY PROGRESS MONDAY THROUGH FRIDAY 7:00 AM TO 7:00 PM. WORK AT OTHER TIMES MAY PROCEED UPON WRITTEN APPROVAL BY THE OWNER AND THE CITY OF LEWISTON.

30) THE CONTRACTOR SHALL PROVIDE AS-BUILT RECORDS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES) TO THE OWNER AT THE END OF CONSTRUCTION.

31) 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.

EROSION & SEDIMENTATION CONTROL NOTES

32) THE CONTRACTOR SHALL INSPECT EROSION & SEDIMENT CONTROL MEASURES WEEKLY AND AFTER HEAVY RAINFALLS THROUGHOUT THE DURATION OF THE PROJECT INCLUDING WEEKENDS AND HOLIDAYS. ALL EROSION AND SEDIMENT CONTROLS SHALL BE MAINTAINED AS STIPULATED IN THE BASIC AND GENERAL STANDARDS SUBMISSION IN THE STORMWATER PERMIT. INSPECTION REPORTS MUST BE PROVIDED TO THE CITY WITHIN 48 HOURS OF INSPECTION.

33) 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 2003 (DEP/LW 3591) AND IN ACCORDANCE WITH THE STORMWATER REPORT INCLUDED WITH THE PERMIT APPLICATION APPROVED BY THE CITY OF LEWISTON. ADDITIONAL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY DURING ON-SITE INSPECTIONS BY THE OWNER, THEIR REPRESENTATIVES OR STATE/LOCAL/FEDERAL INSPECTORS AT NO ADDITIONAL COST TO THE OWNER.

34) PRIOR TO CONSTRUCTION, PROPERLY INSTALL SEDIMENT BARRIERS AT THE DOWN GRADIENT EDGE OF THE DISTURBED AREA AND ADJACENT TO DRAINAGE CHANNELS WITHIN THIS AREA.

35) SILT FENCE AND BARK MULCH BERM LOCATIONS SHOWN ARE APPROXIMATE. INSTALL WHERE APPROPRIATE TO CONTROL SEDIMENTATION ON AND OFF SITE. SILT FENCE SHALL BE REMOVED AFTER THE SITE IS STABILIZED WITH AT LEAST 90% VEGETATED GROWTH.

36) NO SLOPES, EITHER PERMANENT OR TEMPORARY, SHALL BE STEEPER THAN TWO TO ONE (2 TO 1).

37) AREAS DISTURBED DURING CONSTRUCTION SHALL BE MINIMIZED. AREAS SHALL BE TEMPORARILY STABILIZED WITH MULCH OR NON-ERODABLE COVER IF EXPOSED SOILS WILL NOT BE WORKED FOR MORE THAN 7 DAYS. PERMANENT SEEDING SHALL TAKE PLACE WITHIN 7 DAYS OF FINAL GRADING. REFER TO THE STORMWATER REPORT INCLUDED IN THE APPLICATION APPROVED BY THE CITY OF LEWISTON FOR TEMPORARY E & S CONTROL MEASURES.

38) 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. RECOMMENDATIONS FOR DORMANT SEEDING ARE INCLUDED IN THE STORMWATER REPORT REFERENCED ABOVE.

39) 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.

40) REVEGETATION MEASURES WILL COMMENCE UPON COMPLETION OF CONSTRUCTION EXCEPT AS NOTED ABOVE. ALL DISTURBED AREAS NOT OTHERWISE STABILIZED WILL BE GRADED, SMOOTHED AND PREPARED FOR FINAL SEEDING AS FOLLOWS

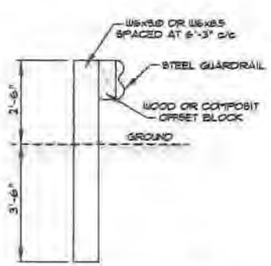
A) 4" OF LOAM WILL BE SPREAD OVER DISTURBED AREAS AND SMOOTHED TO A UNIFORM SURFACE.

B) APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 1000 POUNDS PER ACRE OR 15 POUNDS PER SQUARE FOOT USING 10-20-20 (N-P2O5-K2O) OR EQUIVALENT. APPLY GROUND LIMESTONE (EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF 3.3 TONS PER ACRE (150 lbs. PER 1000 s.f.)

C) FOLLOWING SEED BED PREPARATION, DITCHES AND BARK SLOPES WILL BE SEEDED TO A MIXTURE OF 47% CREEPING RED FESCUE, 5% REDTOP AND 48% TALL FESCUE. THE LAWN AREAS WILL BE SEEDED TO A PREMIUM TURF MIXTURE OF 44% KENTUCKY BLUEGRASS, 44% CREEPING RED FESCUE AND 12% PERENNIAL RYEGRASS. SEEDING RATE IS ONE POUND PER 1000 s.f. LAWN QUALITY SOD MAY BE SUBSTITUTED FOR SEED. SEED MIX SHALL CONTAIN 10% ANNUAL RYEGRASS.

D) HAY MULCH AT THE RATE OF 70-90 lbs PER 1000 s.f. OR A HYDRO-APPLICATION OF ASPHALT, WOOD OR PAPER FIBER SHALL BE APPLIED FOLLOWING SEEDING. A SUITABLE BINDER SUCH AS CURASOL OR RYTE PLUS WILL BE USED ON HAY MULCH FOR WIND CONTROL.

41) THE APPLICANT WILL RETAIN THE SERVICES OF A PROFESSIONAL ENGINEER TO INSPECT THE CONSTRUCTION AND STABILIZATION OF ALL STORMWATER MANAGEMENT STRUCTURES TO BE BUILT AS PART OF THE PROJECT. IF NECESSARY, THE INSPECTING ENGINEER WILL INTERPRET THE CONSTRUCTION PLANS FOR THE CONTRACTOR.



STEEL GUARD RAIL
POST DETAIL
NOT TO SCALE

WINTER CONSTRUCTION NOTES

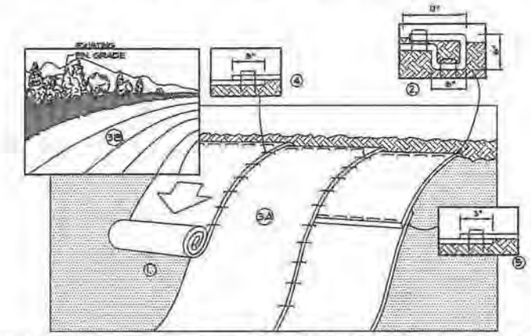
42) WINTER CONSTRUCTION IS CONSTRUCTION ACTIVITY PERFORMED DURING THE PERIOD FROM NOVEMBER 1 - APRIL 15. IF DISTURBED AREAS ARE NOT STABILIZED WITH PERMANENT MEASURES BY NOVEMBER 1 OR NEW SOIL DISTURBANCE OCCURS AFTER NOVEMBER 1, BUT BEFORE APRIL 15, THEN THESE AREAS MUST BE PROTECTED AND RUNOFF FROM THEM MUST BE CONTROLLED BY ADDITIONAL MEASURES AND RESTRICTIONS.

43) 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.

44) SEDIMENT BARRIERS - ALL AREAS WITHIN 75' OF A PROTECTED NATURAL RESOURCE MUST BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIERS.

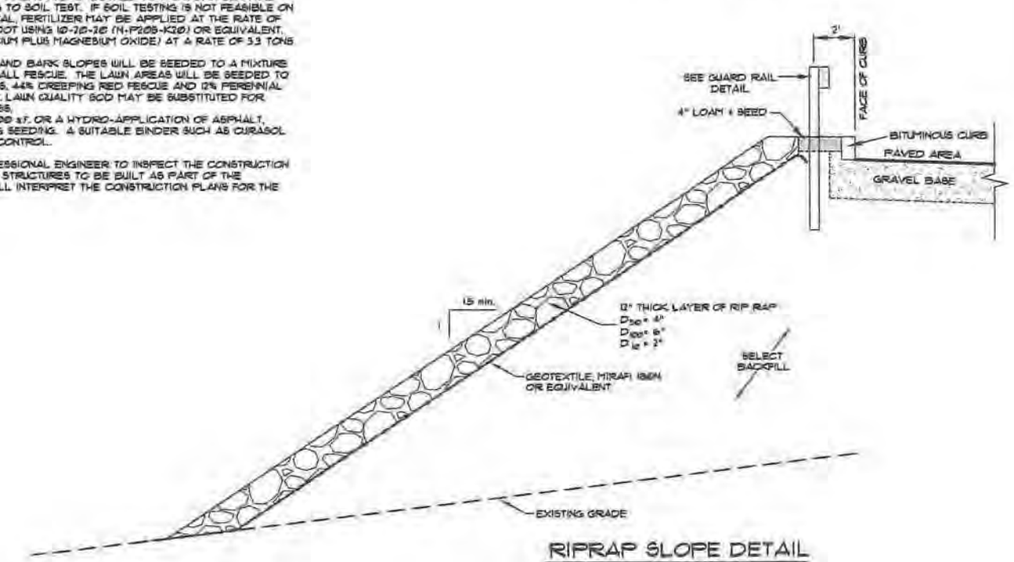
45) DITCH - ALL VEGETATIVE DITCH LINES THAT HAVE NOT BEEN STABILIZED BY NOVEMBER 1, OR WILL BE WORKED DURING THE WINTER CONSTRUCTION PERIOD, MUST BE STABILIZED WITH AN APPROPRIATE STONE LINING BACKED BY AN APPROPRIATE GRAVEL BED OR GEOTEXTILE UNLESS SPECIFICALLY RELEASED FROM THIS STANDARD BY THE DEPARTMENT.

46) 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.



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-3" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.
NOTE: IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

EROSION CONTROL MAT DETAIL
NOT TO SCALE



RIPRAP SLOPE DETAIL
NOT TO SCALE

REVISED: MARCH 7, 2017 - ADD GUARD RAIL & RIPRAP SLOPE DETAILS

SHEET TITLE: CONSTRUCTION NOTES

SCALE: AS NOTED
DATE: FEB. 10, 2017
DRAWN BY: KRF
CHECKED BY: WMP

PROJECT: CLARIANT FACILITY EXPANSION
17 FOSS ROAD - LEWISTON, MAINE

CLIENT: CLARIANT CORPORATION

Stonybrook Consultants, Inc.
456 Duckfield Road - Turner, Maine 04282
(207) 514-7494 Voice
(207) 514-7492 Fax

SUMMIT GEOENGINEERING SERVICES
113 PLEASANT STREET
ROCKLAND, ME 04841
TEL: (207) 338-7161
145 LISBON ST. - SUITE 401
LEWISTON, ME 04240
TEL: (207) 516-3315

STATE OF MAINE
WILLIAM M. PETERLEIN
5787
LICENSED PROFESSIONAL ENGINEER

JOB NO. - 16286

SHEET NUMBER
4

CITY OF LEWISTON

Department of Planning & Code Enforcement

TO: **Planning Board**
FROM: **David Hediger, City Planner**
DATE: **March 10, 2017**
RE: **March 13, 2017, Planning Board Agenda Item IV(c)**

Consider an application submitted by Stoneybrook Consultants on behalf of One Mollison Way, LLC to amend the Spare-Time Recreation Subdivision and construct a Subway sandwich shop and a second 3,000 sf commercial building at 1 Mollison Way (Lot 29 Spare-Time Recreation Subdivision).

This project consists of an amendment to Lot 29 located in the Spare-Time Recreation Subdivision to accommodate the construction of a 1,860 square foot Subway sandwich shop and a second 3,000 square foot commercial building at 1 Mollison Way. This 1.9 acre lot is located on the corner of Main Street and Mollison Way and is zoned Community Business (CB) in which said proposed uses are allowed. The lot is currently vacant with the exception of a 45 space parking lot that is sometimes used as overflow parking by the off-track betting facility across the street (the parking lot is not required per code for the off-track facility). Approval of this project will require two motions by the Board. The first motion will be to approve an amendment to the subdivision pursuant to Article XIII, Sections 4 and 5 of the Zoning and Land Use Code. Upon approval of the subdivision amendment, a second motion will be needed pursuant to Article XIII, Section 4 for development of the site.

The subdivision amendment includes the following:

- Retainment of an easement for an existing ground sign for the Spare-time Business Park, listing many of the tenants in the subdivision.
- An amendment to the existing 50’ buffer from the abutting residentially zoned properties on King Avenue. The buffer currently exists and will remain unchanged with the exception of the straight line buffer at the corner of abutting lots. The current straight line buffer exceeds the required 50’, limiting the development potential of Lot 29 in the subdivision. The amendment provides a 50’ radius around the corner of abutting lot lines, retaining the required 50’ buffer while providing the applicant additional area for development.
- Note 9 on the subdivision plan specifically references the above reasons as the purpose for the proposed amendment.

Development of the site includes the following:

- The construction of a 1,860 square foot Subway sandwich shop and a second 3,000 square foot commercial building at 1 Mollison Way. Development will occur in phases, with construction of the Subway building being phase one. Construction of the second building and a possible putting green will be subsequent phases.
- Approval of the Spare-time Subdivision in 1993 allowed for each lot in the subdivision to be developed with 75% impervious area and total subdivision traffic count not to exceed 770 trips in the PM peak hour.
    - The proposed development will result in approximately 33% impervious area upon all phases of construction completed. This includes a drive-thru lane for the Subway sandwich shop and shared parking between the two structures. The parking provided meets the requirements of Article XII, Section 16 for a drive-thru restaurant, restaurant, and professional office space.
    - A traffic analysis has been provided indicating the proposed development will generate 72 vehicle trips during the PM peak hour. A traffic count of 384 trips was recorded during the PM peak hour for the existing subdivision. With this proposed development, it is estimated 456 trips may be generated during the PM peak hour, well within the initially permitted 770 trips.

The applicant has provided revisions and responses to staff's initial review comments. The following should be noted:

1. Site lighting with full cut-off fixtures has been shown on the plan. However, it is not clear whether lighting is adequate in all appropriate areas, specifically public areas providing egress from the building providing less than 1 foot-candle. There is also a concern that two of the free-standing parking lot lights are not proposed to be installed until phase 2 of construction involving the office building. Staff recommends the applicant work with staff to ensure exterior lighting is meeting the requirements of the 2009 International Building Code prior the issuance of any building permits or construction activity.
2. The applicant has agreed that prior to any certificate of occupancy being issued:

    a. Evidence of the post-construction stormwater management guarantee having been recorded at the Registry of Deeds must be provided.
    b. Evidence of a final inspection of the storm water system shall be provided to the city by the designing engineer along with a written statement indicating that the storm water system and all site improvements have been completed in accordance with the approved plans.
3. Revisions with respect to Public Works comments are being reviewed by staff. An update will be provided at the meeting, with the recommended condition if necessary, that prior the issuance of any building permits or construction activity, any remaining issues be resolved to the satisfaction of Public Works.

At this time, staff is recommending approval of the proposed project with the following conditions:

1. The applicant work with staff to ensure exterior lighting is meeting the requirements of the 2009 International Building Code prior the issuance of any building permits or construction activity.
2. Prior to any certificate of occupancy being issued:
    a. Evidence of the post-construction stormwater management guarantee having been recorded at the Registry of Deeds must be provided.
    b. Evidence of a final inspection of the storm water system shall be provided to the city by the designing engineer along with a written statement indicating that the storm water system and all site improvements have been completed in accordance with the approved plans.
3. Prior the issuance of any building permits or construction activity, any remaining issues must be resolved to the satisfaction of Public Works.

ACTIONS NECESSARY

1. Make a motion that the application submitted by Stoneybrook Consultant, Inc. on behalf of One Mollison Way. LLC for an amendment to the Spare-Time Recreation Subdivision, Amended Subdivision Plan – Lot 29, meets all of the necessary criteria contained in the Zoning and Land Use Code, including but not limited to, Article XIII, Sections 4 and 5 of the Zoning and Land Use Code, and that approval be granted (including, if any, specific conditions raised by the Planning Board or staff).

2. Make a motion that the application submitted by Stoneybrook Consultant, Inc. on behalf of One Mollison Way. LLC for the construction a Subway sandwich shop and a second 3,000 sf commercial building at 1 Mollison Way (Lot 29 Spare-Time Recreation Subdivision) meets all of the necessary criteria contained in the Zoning and Land Use Code, including but not limited to, Article XIII, Sections 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).

Stoneybrook Consultants, Inc.

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

February 14, 2017
Revised March 8, 2017

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

Re: One Mollison Way, LLC
Spare-Time Recreation Subdivision
1 Mollison Way

Dear David:

On behalf of One Mollison Way, LLC (The Developer), I am pleased to submit this information as their request for approvals to construct two buildings at 1 Mollison Way. The property was purchased in December of 2016 and is known as Lot 29 in the Spare-Time Recreation Subdivision (Subdivision). This lot includes about 1.9 acres and has about 377' of frontage on Mollison Way and Main Street. The Subdivision was first approved in 1993 and has been revised several times since that approval.

The property is shown on your GIS mapping system as Tax Map 169, Lot 38. The property is located in the Community Business (CB) Zoning District where restaurants, business offices, personal services and retail uses are considered a permitted use. Current improvements on this lot include the Spare-Time Recreation Park sign (Park sign) and a paved parking lot for 45 vehicles. These existing conditions are shown on an "Existing Condition Plan" prepared by Four Points Associates, Inc. (Four Points).

When the property was purchased, a sign easement was retained by the prior owner for the Park sign with the condition that this easement area would require approvals by the City of Lewiston. We have attached a plan entitled "Amended Subdivision Plan – Lot 29 of Spare-Time Recreation Subdivision" (Amended Subdivision Plan), also prepared by Four Points, to secure City Planning Board approvals for the sign easement area shown on this plan. The Amended Subdivision Plan also includes changes to the 50' buffer area and adjustments to the boundary lines, based upon the field survey completed by Four Points.

The 50' buffer, shown on the subdivision plans previously approved, shows straight line offsets at the perimeter boundary corners to define the buffer limits. These straight line extensions actually extend this 50' buffer requirement to more than 75' from the property corners. We have adjusted the buffer at one property corner on Lot 29 to be a 50' radius, thereby maintaining the 50' distance required in the prior approvals. Recently, the City changed the zoning for many of the abutting lots to be Neighborhood Conservation A (NCA). That zoning boundary changes direction at one of the Lot 29 abutting lot owner's corner. We have, therefore, shown a second 50' radius at this abutter's corner and terminated the 50' buffer at a distance of 50' from this abutter's lot corner.

During the field survey work for this project, Four Points discovered several discrepancies along the Lot 29 boundary. Some differences of up to 20' were identified. After review of the recorded plans, prior notes from the record surveyor and, more importantly, deeds for the abutting lots along King Street and the King Street field evidence found, Four Points has created a new boundary plan for Lot 29. Each boundary line shown on the Amended Subdivision Plan shows the prior plan distances and the actual distance where these discrepancies were found. Since the new boundary information shown matches the abutting deed calls and the field evidence found, boundary line agreements are not required. Noting these differences and resolving these boundary issues were important because these boundary locations are the basis for, and is necessary, to define the 50' buffer area.

We believe these changes to Lot 29 in the Spare-Time Recreation Subdivision are minor and should be reviewed and approved by the Planning Board as they review the development proposed on this Lot. We ask that you review Note 9 which outlines the purpose for this amended plan to document why we are seeking amended subdivision approval for this lot.

In addition to the Amended Subdivision Plan approvals discussed above, this project will require Site Plan Review for construction of two proposed buildings on this Lot. All proposed improvements are shown on the attached set of plans prepared by SJR Engineering, Inc. (SJR).

The Developer plans to construct a free-standing building for a Subway Sandwich Shop with a drive-thru window. This building will include about 1,860 square feet and will have a patio area in the front of the building for outside customer seating. They also have plans to build a second building with 3,000 square feet that could be used by two separate tenants, each with 1,500 square feet of floor space. There are no tenants currently known for these two units, but any proposed use will need to be a permitted use under the zoning requirements in the CB District or additional review from the City may be necessary.

Subway is open seven days per week from 7:00 AM to 10:00 PM. This store will have 5 employees on duty with a total of 10 employees at this store. Hours of operation for the second building are unknown at this time.

This project will be constructed in three separate development phases. Phase One will include extension of the utility services into the property, construction of the Subway building, drive-thru lane, patio and changes to the existing parking lot shown on the project plans. It should be noted that the Subway building with the storage area addition shown facing Main Street may or may not be constructed in Phase 1. Given the increase in development costs, the Developer is finding as he moves through the design and permitting with this project, that storage room area may get delayed to Phase Two or Phase Three.

Phase Two will consist of the extension of utility services through this lot to the second building, installation of the two free-standing parking lot lights, construction of the second building and related sidewalk improvements for that building. Phase Three will include construction of the putting green shown on the project plans. This putting green will be associated with the Subway use and may or may not be constructed.

Phase One construction will begin with approvals for this project. Phase Two and Three construction will depend on market demands and the availability of funding and tenants for those improvements. These last two phases may also be completed out of order, as the putting green could be undertaken as the Phase Two construction project, leaving the second building and associated improvements as a Phase Three project.

The Subdivision was originally approved in 1993 with master planning for stormwater and traffic. Under the stormwater plan, all lots can be developed with 75% of the lot covered with impervious surfaces. Under existing conditions, 19% of this lot is covered with impervious areas. In the proposed condition, 33% of the lot will be covered with impervious area. The CB District allows a maximum impervious ratio of 0.75 or 75%.

Traffic levels in the Subdivision were approved in 1993 with a PM peak hour traffic count of 770 vehicle trips. As projects are approved in this Subdivision, City staff has been monitoring estimated trips with each project and has occasionally required updated traffic counts. We asked Bill Bray of Traffic Solutions to complete a traffic count at the intersection of Mollison Way and Main Street. We have attached his report which outlines his findings and estimated trip generation for this proposed development. As you can see from that information, traffic generation from this project is not expected to exceed the permit limits approved for this development.

With a new total of 4,860 square feet of building area, the Lot Coverage will be 0.06 where the ordinance allows a Lot Coverage of 0.50 in the CB District. The two proposed buildings meet the front and side setback requirements of 20'. The parking lot meets the front yard requirement of 15' and the side yard requirement of 10' outlined for the CB District. The Site Plan shows a revised parking lot layout that now meets City dimensional standards for parking. A total of 39 parking spaces will be provided.

Off-street parking requirements are difficult to apply to this project since the tenants for the second building are currently unknown. Also, parking standards for restaurants are not clear. Standards for a restaurant with 28 inside seating and a similar count for outside seating would require 18 parking spaces for the Subway use. Standards for a drive-in restaurant would require 28.6 spaces for the Subway use. I would suggest that both of these standards are excessive for a typical Subway store. Parking for the second building with a retail use would require 12 spaces or, with a professional office, would require 10 spaces. Using the higher requirements for each use would yield a total site requirement of 41 spaces. The lower standards would yield a requirement of 29 spaces. We would ask the Planning Board to allow this project to occur with the 39 spaces shown on the project plans.

The Grading and Utility Plan shows how utility services will be extended to this site. A new sewer manhole will be installed at the northerly corner of the property. Each building will have a separate sewer service extended from this manhole. A grease trap will be installed at the proposed Subway building. There will be three separate water services extended into the site from an existing 8" water stub. Gas will be extended along the Mollison Way right-of-way limits to the center of the property and will turn into the site between the buildings. Power, communications and cable are planned to be overhead from Main Street along an existing service line. At the first pole, the service will extend underground to each building.

We have provided two free-standing light poles and fixtures along the easterly side of the parking lot. All other lighting will be on the buildings.

Those building light locations are shown on the site plans, based upon the current architectural plans for those buildings. All lights will be full cut-off fixtures. The site plans also show the location for the Project sign, directional signs and standard traffic control sign proposed for this project.

To support the application, we have included the application form, response to ordinance requirements and several project graphics. The Developer plans to start construction on Phase One improvements as soon as the project is approved and construction will be completed by this Fall. The Phase One project is expected to cost about $700,000. Construction will be funded by TD Bank and may or may not include the parent company of The Developer, Mainsusa Corporation as a co-borrower. We hope you find the attached information sufficient for approval of this use for this site. Should you have any questions, please call.

Respectfully yours,

STONEYBROOK CONSULTANTS, INC.

Michael F. Gotto

cc: Robert Ray
David Grendell
Eric Smith

Stoneybrook Consultants, Inc.

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

March 8, 2017

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

Re: One Mollison Way, LLC
Spare-Time Recreation Subdivision
1 Mollison Way

Dear David:

On behalf of One Mollison Way, LLC (The Developer), please accept this letter in response to staff review comments. I have copied each comment below and have provided a response to each of them to help in your review of my responses.

Hediger January 3, 2017 review comments:

1. Project is located in an urbanized area, creating greater than once acre of disturbance and therefore, is subject to the MS4 stormwater requirements of Article XIII, Section 15. Please reference this section and the applicable criteria.

I have attached information prepared by SJR Engineering, Inc. (SJR) which will address the MS4 requirements for this project.

2. Prior to any certificate of occupancy being issued:
    a. Evidence of the post-construction stormwater management guarantee having been recorded at the Registry of Deeds must be provided.
    b. Evidence of a final inspection of the storm water system shall be provided to the city by the designing engineer along with a written statement indicating that the storm water system and all site improvements have been completed in accordance with the approved plans.

The Developer will comply with these requirements.

3. Sheet 5: Erosion and sedimentation control note #1; add that inspection reports must be provided to the city within 48-hours of inspection.

This note has been revised as requested.

4. Detail on exterior lighting needed. Ensure exterior lighting is meeting the requirements of the 2009 International Building Code prior the issuance of any building permits or construction activity(i.e. that 1 foot-candle is provided from any means egress from the building to Foss Road).

These lighting details are still being prepared for this project. We appreciate the additional time for our contractors and lighting supply companies to be able to work with these plans to provide the details necessary to show compliance with these Building Code requirements before issuance of building permits. We hope to have some information to share with the Planning Board when they review this project.

5. Applicant should consider raised vegetated islands in the parking lot in areas that are proposed to be striped for no parking.

We have a very experienced team of professionals working with the selected contractor and the applicant to ensure these plans meet the environmental, design and safety requirements of the City of Lewiston and State of Maine in a cost effective manner that will allow the Developer to achieve the project goals for this property. As you know, City standards require deliveries of supplies to the buildings on this site to be made with all truck movements being completed onsite.

Subway, the first tenant for this project, has made arrangements to have all deliveries made overnight when they are not operating and the parking lot is vacant. These arrangements will allow delivery trucks to maneuver through the vacant parking lot to deliver supplies to these buildings. As you can imagine, turning movements in the parking lot from large tractor trailer trucks cannot be accommodated if we install raised vegetated islands on this site.

6. The applicant has provided a connection to existing sidewalks on Mollsion Way, as required by Article XIII, Section 4. The applicant should consider extending sidewalks with bituminous curbing within the development in those areas shown as "painted crosswalk",

especially in front of both proposed structures to improve separation from traffic and parked vehicles. In addition, the van accessible loading zone and pedestrian access point in front of the Subway structure could be narrowed and/or changed to deter vehicles from this area.

Pedestrian movements have been very carefully considered by the Development Team. Where possible, raised sidewalks with curbs have been provided. Where site grading limited raised sidewalk options or where existing usable paved area is available, those areas have been striped. This is a very small project and the painted walkway will only see limited pedestrian movements between buildings. It should also be understood that these striped walkway areas also provide more room for truck movements while making the overnight deliveries and will be easier to maintain during winter months.

The van accessible space in front of Subway requires an 8' wide space with an 8' wide aisle. We show a 9' wide space with an 11' wide aisle. This aisle will be shared with all pedestrian movements to the proposed patio and front door of the Subway shop. I have received approvals for many projects that show a 9' or 10' wide walkway leading to the front of a building. An 11' wide walkway is not excessive and should not be reduced, given the various directions that pedestrian movements enter this location.

7. Clarify who the developer is. Application and correspondence vary between One Mollison Way, LLC and Mainsusa.

As noted on the application form and the first paragraph of the cover letter, the Applicant/Developer is One Mollison Way, LLC. The only reference to Mainusa was at the end of the cover letter where it was noted that the financing by TD Bank may include Mainusa Corporation. Both companies are listed on the TD Bank Commitment provided with this application.

Barnes March 1, 2017 review comments:

Application

1. The Zoning Summary states that a rear yard of 210 will be provided should this read 21'?

Under City Codes, the rear yard provided is 210' and is correctly noted on the application form. The 21' setback noted on the project plans is a side setback under City Code requirements.

2. Pedestrian Circulation - A 100' long painted crosswalk is shown between the two buildings, the applicant should considers constructing a traditional sidewalk with vertical curb to better protect pedestrians within the development.

Traditional sidewalks with vertical curbs were carefully considered by the team of professionals working on these plans. Given the limited use of these walks, truck movements in the parking lot and usable pavement in these locations, it was determined that City requirements and environmental standards could be met with the cost effect design proposed. See also answer to Hediger Comments #5 & #6 above.

3. Erosion Control - Silt Fence, Silt Sacs, and temporary construction entrances should be shown on the plans in the minimum areas they will be required.

The plans have been revised to show these items where required. All construction will enter from the existing paved entrance and work from the paved parking lot. This large paved area will work better than a temporary construction entrance, so one is not proposed for this project.

4. Water Supply - The plans indicate that the water services will be tapped off the existing 8" water service installed in 1993. The condition of the existing 8" water service is unknown and the Lewiston Water Division cannot verify that the main is sound and meets water quality standards. The applicant is responsible for determining the condition and quality of the service in the field, this may require digging the service at the main and installing a chlorine tap to disinfect the service. It should also be noted that the proposed uses will likely not create a scour velocity in the 8" main and water quality may be difficult to maintain.

This appears to be a construction or service issue that the Planning Board cannot help us resolve. This Developer will work with the City Water and Sewer Division to resolve construction issues and will perform the work required and pay the fees required to make the connection to the City water system.

5. Sewer Supply - The application indicates that the tenants for the proposed 3,000 square foot building have not been determined, if one or both spaces are occupied by restaurants grease traps will be required.

It is not likely that Subway will want another restaurant in this development to compete with, but this requirement is understood.

6. Exterior Lighting - Has a lighting plan been developed for the site? The center of the parking lot may be difficult to achieve appropriate light levels without additional poles.

   See response to Hediger Comment #4 above.

Plans

7. Sheet 1 - Can the proposed services be relocated to avoid removing a mature street tree? If not a new tree should be planted to match the adjacent portion of the subdivision.

The services shown were designed to connect with the existing service stub and avoid excavation in the existing paved street or parking areas. We also need to keep separation from other utility lines shown. It is extremely difficult to show these excavation details to connect the utilities when you have multiple services this close together. It may be possible to save the tree in these excavation activities, but we felt it was better to show that it may need to be removed. We can plant a new tree if that happens. Given comment #4 above, these services locations may be changed during construction.

8. Sheet 1 - Curb should be installed along the west side of the driveway to better delineate the location of the sidewalk ramp across the driveway and to better protect pedestrians waiting to cross the driveway.

   This area has been revised on the plan set.

9. Sheet 2 - A note should be added to the plan indicating that the proposed sewer service will be cored into the existing sewer manhole and the connection shall be booted.

   A note has been added to the plan.

10. Sheet 2 - Additional information should be added to the plan detailing how the water services will be installed, i.e. size of tap and how the tap will be split between the three services.

During a preliminary meeting with City staff, it was determined that there would need to be three separate water services for these buildings to be able to serve three tenants. We have changed the plans to show three separate service taps on the existing service stub at this lot. Given Comment #4 above, these locations may change, but three separate 1" services will be required and installed for this project.

In addition to the staff comments noted above, I have revised the cover letter to change the project phasing. Given the rising costs associated with this project, it is very likely that the storage room shown on the Subway building will not get constructed in Phase 1. That construction may be delayed to Phase 2 or Phase 3, depending upon the Subway operating costs or profitability of the second building shown on the project plans. We will bring a couple of architectural building renderings with us to the Planning Board meeting to show how the Subway building will look with or without this storage room.

I trust you will find that these responses address your review comments. Should you have any questions, please call.

Respectfully yours,

STONEYBROOK CONSULTANTS, INC.

Michael F. Gotto

cc: Robert Ray
David Grendell
Eric Smith

Development Review Application

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

PROJECT NAME: 1 Mollison Way

PROPOSED DEVELOPMENT ADDRESS: 1 Mollison Way

PARCEL ID#: 169-38

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

PROJECT DESCRIPTION: See Cover Letter

CONTACT INFORMATION:

Applicant

Name: One Mollison Way, LLC
Address: 195 Center Street
Zip Code Auburn, ME 04210
Work #:
Cell #:
Fax #:
Home #:
Email:

Property Owner

Name: same
Address:
Zip Code
Work #:
Cell #:
Fax #:
Home #:
Email:

Project Representative

Name: Mike Gotto - Stoneybrook Consultants
Address: 456 Buckfield Road
Zip Code Turner, ME 04282
Work #: (207) 514-7491
Cell #: (207) 513-6123
Fax #: (207) 514-7492
Home #:
Email: mike@stoneybrookllc.com

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	15,940 sq. ft.
Proposed Total Paved Area	22,770 sq. ft.
Proposed Total Impervious Area	27,630 sq. ft.
Proposed Impervious Net Change	11,690 sq. ft.
Impervious surface ratio existing	19.1 % of lot area
Impervious surface ratio proposed	33.0 % of lot area

BUILDING AREA/LOT COVERAGE

Existing Building Footprint	0 sq. ft.
Proposed Building Footprint	4,860 sq. ft.
Proposed Building Footprint Net change	4,860 sq. ft.
Existing Total Building Floor Area	0 sq. ft.
Proposed Total Building Floor Area	4,860 sq. ft.
Proposed Building Floor Area Net Change	4,860 sq. ft
New Building	Yes (yes or no)
Building Area/Lot coverage existing	0 % of lot area
Building Area/Lot coverage proposed	5.8 % of lot area

ZONING

Existing	Community Business
Proposed, if applicable	N/A

LAND USE

Existing	Parking Lot
Proposed	Commercial

RESIDENTIAL, IF APPLICABLE

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

PARKING SPACES

Existing Number of Parking Spaces	45
Proposed Number of Parking Spaces	39
Required Number of Parking Spaces	
Number of Handicapped Parking Spaces	2

ESTIMATED COST OF PROJECT

DELEGATED REVIEW AUTHORITY CHECKLIST

SITE LOCATION OF DEVELOPMENT AND STORMWATER MANAGEMENT

Existing Impervious Area	15,940 sq. ft.
Proposed Disturbed Area	44,000 sq. ft.
Proposed Impervious Area	27,630 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) _____ passenger car equivalents (PCE)

Total traffic estimated in the peak hour-proposed (Since July 1, 1997) 72 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 **Community Business** zoning district.
2. Parcel Area: **1.9** acres / _____ square feet(sf).

Regulations	Required/Allowed	Provided
Min Lot Area	None	1.9 acres
Street Frontage	100'	376.93'
Min Front Yard	15'	15'
Min Rear Yard	10'	210
Min Side Yard	10'	11'
Max. Building Height	50'	less than 50'
Use Designation	Commercial	Commercial
Parking Requirement	1 space/ per _____ square feet of floor area	
Total Parking:		39
Overlay zoning districts (if any):		

Urban impaired stream watershed? YES/NO If yes, watershed name_____

DEVELOPMENT REVIEW APPLICATION SUBMISSION

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

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

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

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

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

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

Signature of Applicant:	Date:
[signature]	2/15/17

KS Account

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: 1 Mollison Way

PROPOSED DEVELOPMENT ADDRESS and PARCEL #: 1 Mollison Way 169-38

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

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

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

February 15, 2017
One Mollison Way, LLC

Response to Ordinance Requirements

Article XIII, Section 4

(a) *Utilization of the site* - This Lot was previously approved as part of the Spare-Time Recreation Subdivision by the City of Lewiston in 1993. Master planning for stormwater assumed that 75% of all lots will be covered with impervious areas. This proposal will only establish impervious areas on 33% of the lot. The required 50' buffer area boundaries will be redefined and all areas within this buffer will remain undisturbed.

(b) *Traffic Movements* - This project will create about 72 new vehicle trips during the PM peak hour. The existing entrance on Mollison Way will be reconfigured to provide better turning movements for service trucks to the site, thereby improving traffic safety at this location.

(c) *Access to the site* - Access to the project will be from Mollison Way at the same location of the existing driveway.

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

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

(f) *Stormwater management* - Stormwater management was previously approved by the City and all lots are allowed to have 75% of the lot covered with impervious areas. This lot will only have 33% of the lot covered by impervious surfaces when completed.

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

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

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

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

(k) *Natural features* – A large portion of this lot is restricted by a 50' Buffer requirement. The natural vegetation in this area will be retained. Grading and filling in the other portions of the site have been minimized to the extent possible.

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

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

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

(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* – Not Applicable

(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 is also working with a local contractor who has completed a number of similar developments in this area. The applicant, with the assistance from this team of professionals, will be able to construct these improvements in accordance with all local and State environmental standards.

(u) *Buffering* – There is a 50' wide natural buffer area between the existing King Avenue homes and the proposed improvements shown on the project plans. No other buffering is required for this project.

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

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

One Mollison Way, LLC
195 Center Street
Auburn ME 04210

To Whom It May Concern:

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

Robert Ray
for One Mollison Way, LLC, applicant

Robert Ray, Vice President
(print name, title)

TD Bank

December 22, 2016

Mr. David B. Grendell
Mainsusa Corporation
741 Main St.
Lewiston, ME 04240

RE: Loan Commitments for SBA 7(a) term loan i/a/o $727,000 and SBA Express Line of Credit i/a/o $100,000

Dear Mr. Grendell:

We are pleased to inform you that TD Bank, N.A. ("Lender") has approved your Loan Application. The terms of our approval are set forth in the following sections, all of which constitute the terms of this commitment, as follows:

1. Summary of Loan Terms
2. Conditions of the Loan Commitment

We ask you to review each section to make sure you understand and are comfortable with the terms and conditions outlined in this letter. If you have any questions or comments on information provided in the letter, please give us a call so we can discuss the areas in question. If the terms and conditions of this letter are acceptable, we ask that you execute a copy of the letter and return it to us so we can begin the Loan Documentation process. By signing this letter the Lender agrees to make and you, the Borrower, agree to the following described loan:

Summary of Loan Terms

Borrowers for $727,000 SBA 7(a) Term Loan:
One Mollison Way LLC
Mainsusa Corporation

Borrower for $100,000 SBA EXP LOC:
Mainsusa Corporation

Guarantors for $727,000 SBA 7(a) Term Loan:
The payment of all sums advanced under the Loan and the performance of all terms, covenants, and conditions of the Note evidencing the Loan, the Mortgage securing the Loan and all other Loan Documents securing the Loan shall be unconditionally guaranteed, jointly and severally, by each Guarantor identified below, on a form specified by Lender.

David B. Grendell, Full Unsecured Personal Guarantee
William K. Wettlaufer, Full Secured Personal Guarantee
Carolyn M. McNamara, Limited Secured Personal Guarantee
Brava Enterprises, LLC, Limited Secured Corporate Guarantee

SC1-094-102, PO Box 1029
Greenville, South Carolina 29602

Bk 9528 Pg207 #325
01-06-2017 @ 03:41p

Quitclaim Deed
With Covenants

Day Construction Company, LLC, a Maine Limited Liability Company with a place of business in Lewiston, Androscoggin County, Maine, for consideration paid, grants to **One Mollison Way LLC** a Maine Limited Liability Company with a mailing address of 195 Center Street, Auburn, Androscoggin County, Maine, with **Quitclaim Covenants**, a certain lot or parcel of land, together with all buildings and improvements thereon, being 1 Mollison Way, in the City of Lewiston, Androscoggin County, Maine being more particularly described as Lot 29, of the Spare Time Recreation Subdivision, the original plan of which is recorded in the Androscoggin County Registry of Deeds in Plan Book 37, Page 155 and which is more particularly depicted on a Plan entitled "Spare-Time Recreation Subdivision, Third Revision", recorded in said Registry in Plan Book 40, Page 7.

MAINE REAL ESTATE
TRANSFER TAX PAID

The above named Grantor hereby excepts and reserves for itself and its successors and assigns a perpetual easement, running with the land, to allow for the retention in place of, and future inspection, repair, maintenance and replacement of, that certain sign and overhead electric power lines leading to said sign, which sign identifies the Spare-Time Recreation development and certain businesses occupying lots within said development. Said easement also includes Grantor's right to reasonable access to the easement area, provided no interruption of the above named Grantee's business operations occurs in the exercise of the rights herein granted, and further provided any damage to the premises herein conveyed resulting from the exercise of Grantor's easement rights shall be repaired by Grantor at its sole expense and to the reasonable satisfaction of the Grantee. The above named Grantor and Grantee hereby mutually agree that the precise area of said easement, and any terms, restrictions and/or conditions that may be imposed on either or both parties or the easement area itself, are to be determined in conjunction with Grantee's efforts to have a retail business approved by the City of Lewiston (hereafter the "City") on the premises herein conveyed. Grantee is currently working with City officials to obtain said approval. Upon completion of Grantee's stated efforts with the City, whether or not such approval is obtained by the Grantee, Grantor and Grantee mutually agree that they shall execute and record in said Registry a confirmatory easement deed from Grantee to Grantor, which shall identify the easement area by a metes and bounds description, include any applicable terms, restrictions and conditions which may be imposed by the City in the event Grantee's retail business proposal is approved by the City, and clarify any unforseen issues regarding said easement. Grantor and Grantee further hereby mutually agree to use all best efforts and act cooperatively with regard to any confirmatory easement prepared in accordance with the foregoing provisions.

In Witness Whereof, the Grantor has set its hand and seal on this 29th day of December, 2016.

Day Construction Company, LLC

Witness

By: _____
James P. Day
Duly Authorized Member

State of Maine
Androscoggin, SS.

December 29, 2016

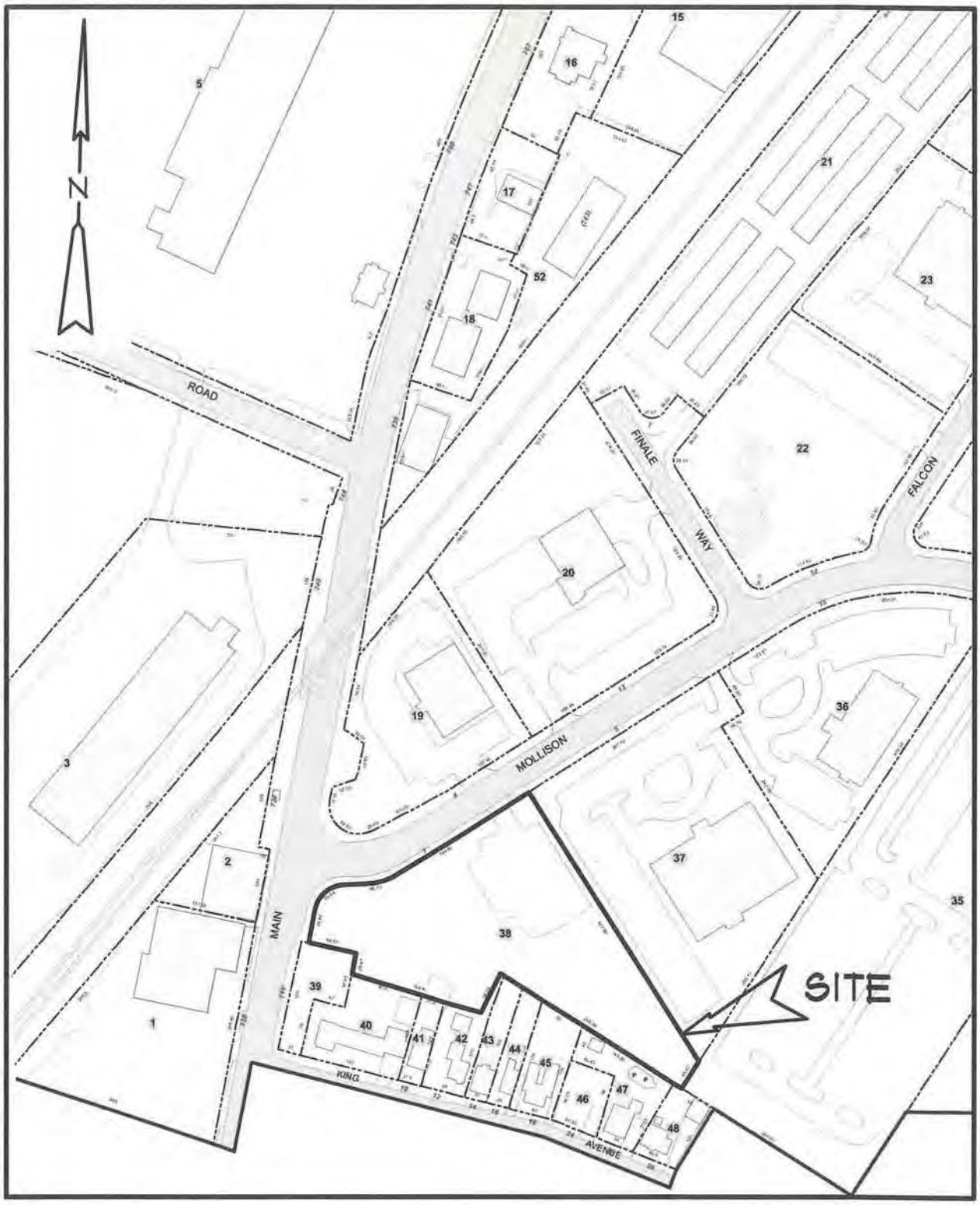
Then personally appeared the above-named **James P. Day**, duly authorized Member of **Day Construction Company, LLC** and acknowledged the foregoing instrument to be his free act and deed, in his said capacity, and the free act and deed of said **Day Construction Company, LLC.**

Before me,

K. Alexander Visbaras, Attorney-At-Law

H:\Clients\Grendell\One Mollison Way\Deed - 1 Mollison Way

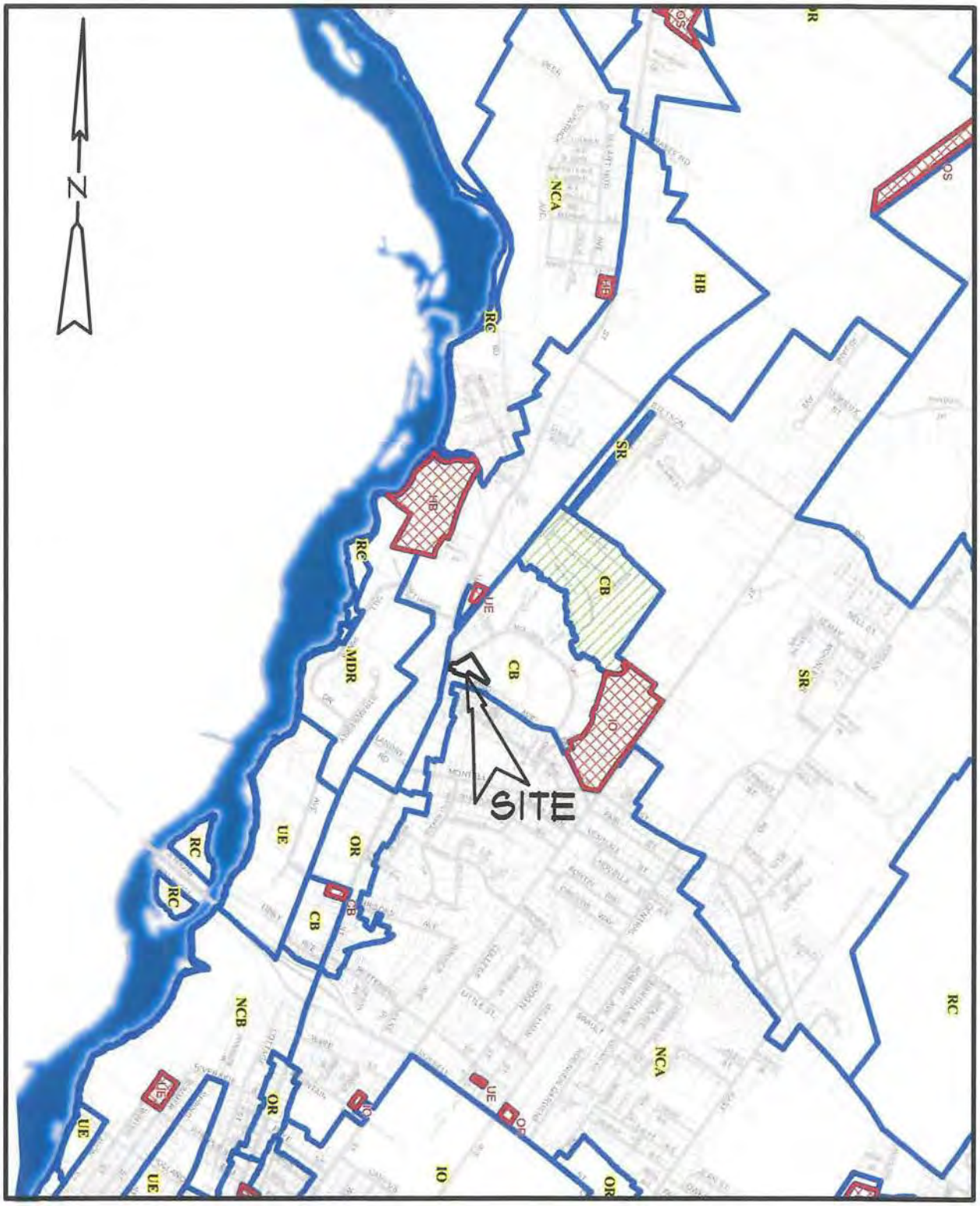
ANDROSCOGGIN COUNTY
TINA M CHOUINARD
REGISTER OF DEEDS



TAX MAP

1 MOLLISON WAY - LEWISTON
OWNER: ONE MOLLISON WAY, LLC
SCALE: 1" = 200'
DATE OF GRAPHIC: FEBRUARY 13, 2017
SOURCE: CITY OF LEWISTON TAX MAP 169
PUBLICATION DATE: APRIL 1, 2016

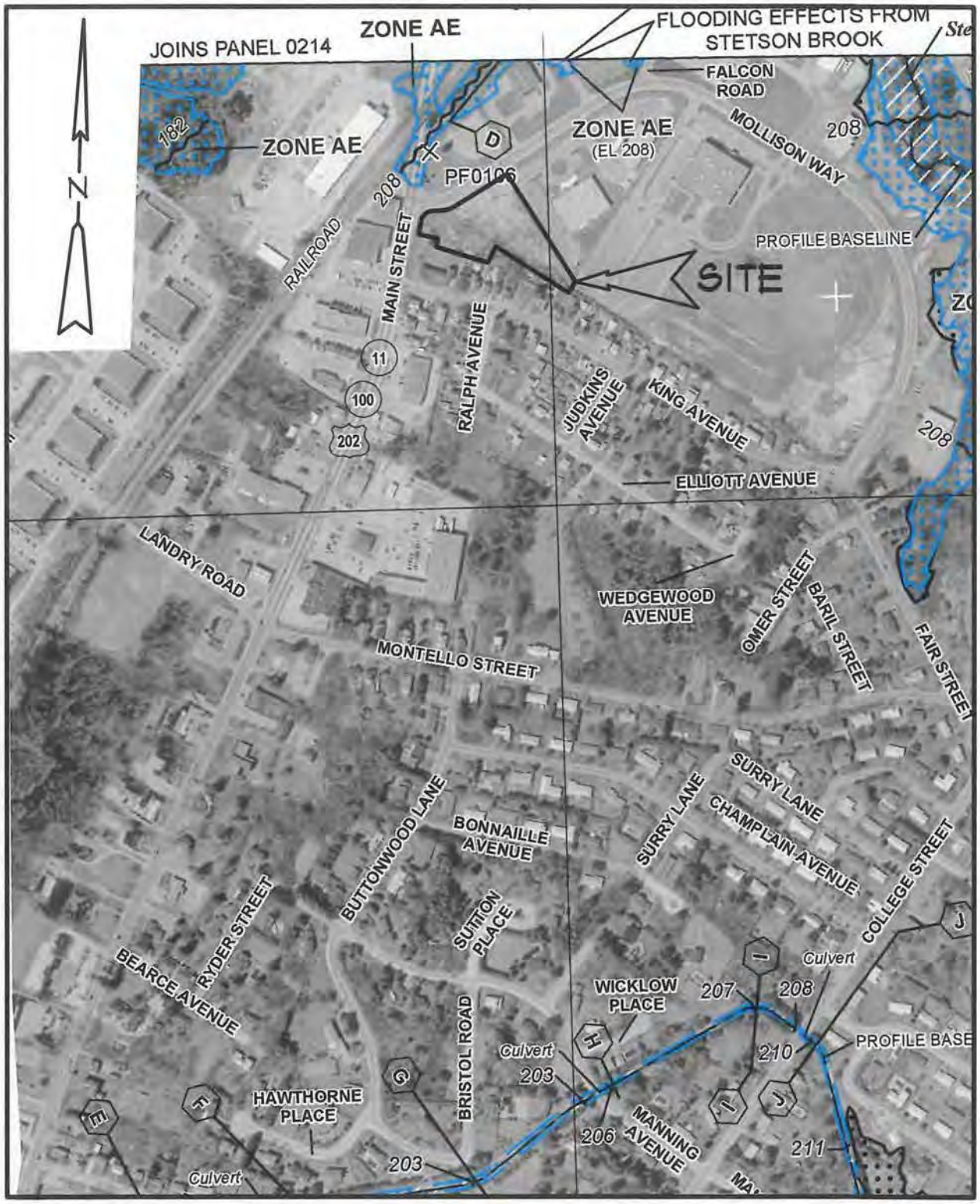
Stoneybrook Consultants, Inc.



ZONING MAP

1 MOLLISON WAY - LEWISTON
OWNER: ONE MOLLISON WAY, LLC
SCALE: 1" = 2,000'±
DATE OF GRAPHIC: FEBRUARY 13, 2017
SOURCE: CITY OF LEWISTON ZONING MAP
PUBLICATION DATE: NOVEMBER 2015

Stoneybrook Consultants, Inc.



FLOOD MAP

1 MOLLISON WAY - LEWISTON
OWNER: ONE MOLLISON WAY, LLC
SCALE: 1" = 500'±
DATE OF GRAPHIC: FEBRUARY 13, 2017
SOURCE: FEMA FIRM
PUBLICATION DATE: JULY 8, 2013

Stoneybrook Consultants, Inc.

Traffic Solutions
William J. Bray, P.E.
235 Bancroft Street
Portland, ME 04102
(207) 774-3603
(207) 400-6890 mobile
trafficsolutions@maine.rr.com

February 13, 2017

Mike Gotto
Stoneybrook Consultants, Inc.
456 Buckfield Road
Turner, Maine 04282

RE: Peak Hour Trip Generation - Lot # 29 Spare-Time Subdivision, Lewiston

Dear Mike:

Your most recent correspondence to my office states One Mollison Way, LLC is proposing to construct a Subway Sandwich Shop and a second professional office building on Lot #29 in the Spare-Time Subdivision. The proposed Subway restaurant building will be 1,860 square feet with a drive-thru window. The second building is a 3,000sf structure that will likely serve either medical or professional office tenants.

The City Planning Staff have requested that peak hour trip generation estimates be prepared for the proposed project and those trips be combined with existing peak hour trips generated by the Spare-Time Subdivision to determine if the total volume of site trips generated in the PM peak hour exceeds a threshold value of 770 trips.

PM peak hour trip estimates were prepared for the proposed development project applying trip rate information presented in the ninth edition of the Institute of Transportation Engineers "**TRIP GENERATION**" handbook. The following trip rates were used in that effort:

Land-Use Code 720 – Medical-Dental Office Building (3,000sf building)
Street Peak Hour – PM Peak = 3.57 trips/1,000sf building area

Land-Use Code 934 – Fast-Food Restaurant with Drive-Thru Window (1,860sf building)
Street Peak Hour – PM Peak = 32.65 trips/1,000sf building area

Accordingly, the proposed 3,000sf professional office structure can be expected to generate a total of **11** trips in the evening peak hour and the proposed Subway Restaurant will generate a total of **61** vehicle trips. Combined, the proposed development will generate a total of **72** vehicle trips during the PM peak hour.

The volume of trips presently generated by the Spare-Time Subdivision was determined with the collection of traffic data during the PM peak hour of a typical weekday condition. All traffic entering the Main Street/Mollison Way intersection was recorded in 15-minute intervals between 3:00 and 6:00 PM on Thursday, January 19, 2017. From a summary of the data, a peak hour of traffic was determined for the intersection. The evening peak hour was found to occur between 4:30 and 5:30 PM when a total of **384** vehicle trips were recorded entering/exiting the Spare-Time Subdivision on Mollison Way. A copy of the peak hour summary presentation is attached for record and file.

Based upon the steps outlined above, the combined volume of peak hour trips entering/exiting the Spare-Time Subdivision during a typical weekday is estimated at **456** trips (384 existing trips + 72 trips generated by Lot # 29 development). The forecast value is considerably less than the threshold value of 770 vehicle trips established by the City of Lewiston Planning Staff.

Very truly yours,

William J. Bray, P.E.

Lewiston: Main & Mollison
Thursday January 19, 2017
Clear
Counjt By: Dawn-Marie Fahey

File Name : Lewiston Main & Mollison PM 011917
Site Code : 00011917
Start Date : 1/19/2017
Page No : 5

	Main St From North				Mollison Way From East				Main St From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	159	8	0	167	36	48	0	84	13	194	0	207	458
04:45 PM	144	9	0	153	29	36	0	65	18	214	0	232	450
05:00 PM	161	11	0	172	30	53	0	83	15	195	0	210	465
05:15 PM	130	10	0	140	22	39	0	61	7	211	0	218	419
Total Volume	594	38	0	632	117	176	0	293	53	814	0	867	1792
% App. Total	94	6	0		39.9	60.1	0		6.1	93.9	0		
PHF	.922	.864	.000	.919	.813	.830	.000	.872	.736	.951	.000	.934	.963

STORMWATER REPORT

1 MOLLISON WAY
LEWISTON, MAINE

MS4 Area

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

Robert Ray
One Mollison Way, LLC
195 Center Street
Auburn, Maine 04210
(207) 520-9763

at least annually to inspect the three catch basins and other stormwater related features in accordance with the approved Post-Construction Stormwater Management Plan (PCSMP). If the catch basins or other stormwater related features require maintenance to function as intended, the Qualified Third Party shall note the deficiencies and the remedies. The Applicant's representative shall take the required actions to address any deficiencies. The Qualified Third Party Inspector shall provide, on or by May 31 of each year, a completed and signed City of Lewiston Annual Stormwater Management Facilities Certification (SMF) Form, certifying that the SMF have been inspected, and that they are adequately maintained and functioning as intended by the PCSMP, or that they require maintenance or repair, in order to function as intended by the PCSMP. The Qualified Third Party shall provide a record of the required maintenance or deficiency and corrective actions taken.

A Post Construction Stormwater Management Performance guarantee will be executed and filed with the Registry of Deeds.

CONSTRUCTION

EROSION AND SEDIMENTATION CONTROL MAINTENANCE LOG

1 MOLLISON WAY, 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		
DATE:	**BY:**	**COMPANY:**	**QUALS/POSITION:**

REMARKS:

Disturbed Areas: Inspect mulched and temporary seed areas for rill erosion. Add additional mulch if less than 90% coverage is observed. Inspect nets after rain events for dislocation or failure.

Impervious Areas: Sweep pavement as necessary to keep dust levels to a minimum. Accumulated sediment shall be removed and stored or disposed of appropriately.

Erosion and Sedimentation Control: Inspect silt fence for erosion and/or accumulated sedimentation. Replace silt fence where evidence of undercutting or impounding of water behind the fence occur. Replace fabric that has decomposed. Remove sediment deposits behind silt fence when deposits reach ½ the height of the fence.

Vehicle Entrances and Exits: Check for mudding and clogging of stone and replace as necessary. Sweep pavement at exits where mud has been tracked onto the travelled way.

Stormwater System: Check flow paths for runoff flows to insure paths remain unimpeded and are not eroding. Remove impediments and repair eroding areas with appropriate materials (riprap, geotech fabric, etc.)

EROSION AND SEDIMENTATION CONTROL MAINTENANCE LOG

1 MOLLISON WAY, 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		
Catch Basins	Yes / No		
DATE:	**BY:**	**COMPANY:**	**QUALS/POSITION:**

Ditches and Culverts: Inspect for debris that may impede flow. Control woody vegetation with mowing. Repair any erosion of ditch linings and culvert inlets and outlets.

Paved Areas: Remove accumulated winter sand and debris from all pavement areas annually. Accumulated sediment shall be removed and stored or disposed of appropriately.

Catch Basins: Remove and legally dispose of accumulated debris and sediment from the bottom of the structure, inlet grates, inflow channels to the basin, and pipes between basins.

CITY OF LEWISTON

Annual Stormwater Management Facilities Certification

I, _____, certify the following:

1. I am making this Annual Stormwater Management Facilities Certification for the following property:

1 Mollison Way, Lewiston, Maine

2. The owner of the Property is:

One Mollison Way, LLC

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

POST CONSTRUCTION STORMWATER MANAGEMENT PERFORMANCE GUARANTEE

One Mollison Way, LLC, Auburn, Maine

This performance guarantee is provided by One Mollison Way, LLC, a corporation located at 195 Center Street, in Auburn, Maine 04210. One Mollison LLC, its successors, heirs, and assigns hereby acknowledge their legal obligation to repair, maintain, and replace the Stormwater Management Facilities at the 1 Mollison Way project on the Mollison Way property in accordance with the plan set and notes dated March 6, 2017. This performance guarantee shall be valid until One Mollison Way, LLC has legally relinquished ownership of the subject properties.

The City of Lewiston shall have the ability to establish a special assessment, district, or other means upon the parties responsible for the post construction stormwater management plan to ensure resources are available to perform the repairs, maintenance, and replacement of the Stormwater Management Facilities.

Stormwater management items at the subject property include new stormwater drainage piping and catch basins. The estimated costs of repair and replacement vary widely depending on the extent of repair or replacement necessary. Annual repairs could range between $1,000 and $10,000.

This document shall be recorded in the Androscoggin Registry of Deeds and be included in the deeds for each subdivision property.

_____

One Mollison Way, LLC

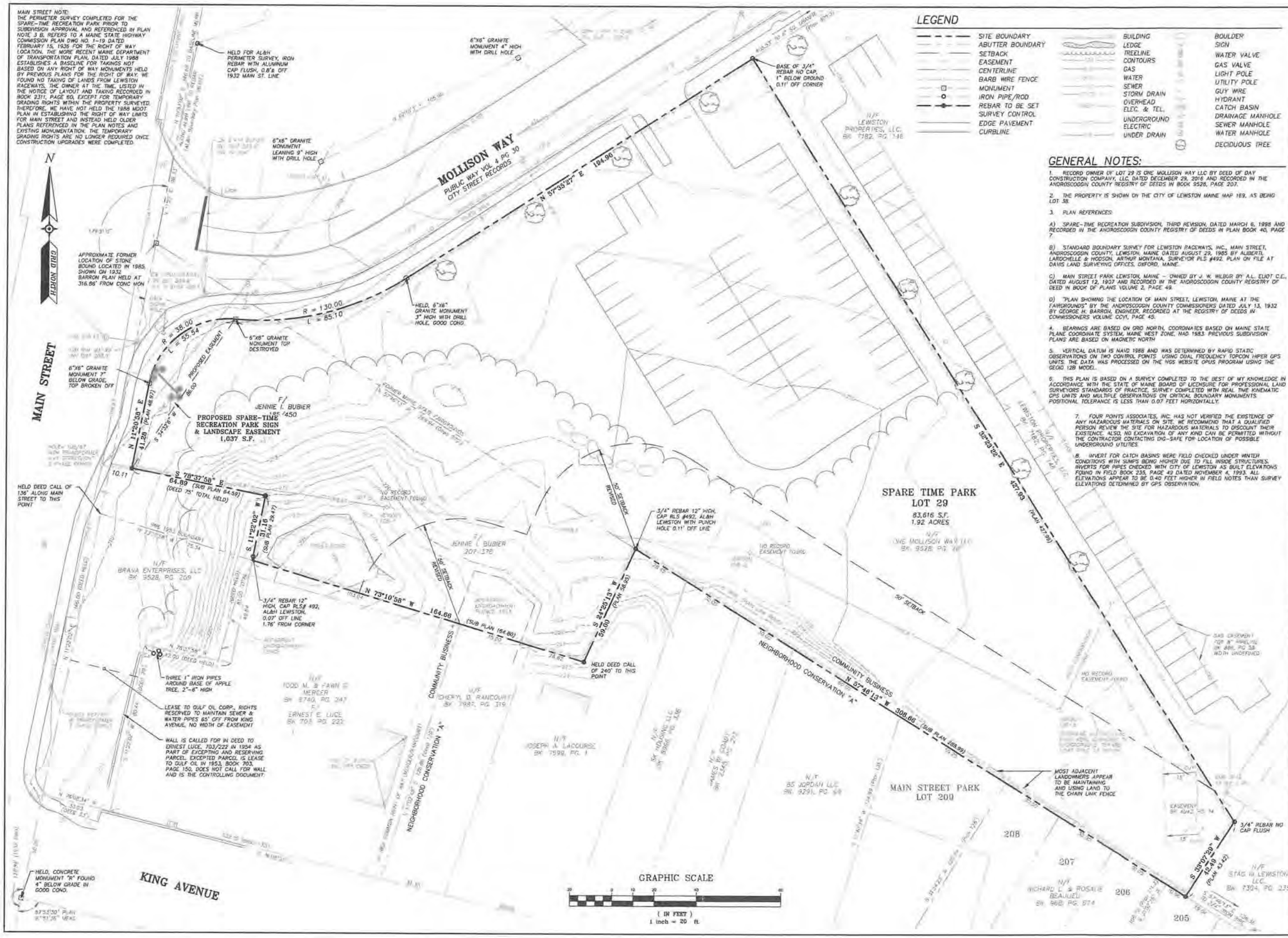
_____

Date

_____

Witness

MAIN STREET NOTE:
THE PERIMETER SURVEY COMPLETED FOR THE SPARE-TIME RECREATION PARK PRIOR TO SUBDIVISION APPROVAL AND REFERENCED IN PLAN NOTE 3 B, REFERS TO A MAINE STATE HIGHWAY COMMISSION PLAN DWG NO. 1-19 DATED FEBRUARY 15, 1935 FOR THE RIGHT OF WAY LOCATION. THE MORE RECENT MAINE DEPARTMENT OF TRANSPORTATION PLAN, DATED JULY 1988 ESTABLISHES A BASELINE FOR TAKINGS NOT BASED ON ANY RIGHT OF WAY MONUMENTS HELD BY PREVIOUS PLANS FOR THE RIGHT OF WAY. WE FOUND NO TAKING OF LANDS FROM LEWISTON RACEWAYS, THE OWNER AT THE TIME, LISTED IN THE NOTICE OF LAYOUT AND TAKING RECORDED IN BOOK 2311, PAGE 80, EXCEPT FOR TEMPORARY GRADING RIGHTS WITHIN THE PROPERTY SURVEYED. THEREFORE, WE HAVE NOT HELD THE 1988 MDOT PLAN IN ESTABLISHING THE RIGHT OF WAY LIMITS FOR MAIN STREET AND INSTEAD HELD OLDER PLANS REFERENCED IN THE PLAN NOTES AND EXISTING MONUMENTATION. THE TEMPORARY GRADING RIGHTS ARE NO LONGER REQUIRED ONCE CONSTRUCTION UPGRADES WERE COMPLETED.



LEGEND

SITE BOUNDARY
ABUTTER BOUNDARY
SETBACK
EASEMENT
CENTERLINE
BARB WIRE FENCE
MONUMENT
IRON PIPE/ROD
REBAR TO BE SET
SURVEY CONTROL
EDGE PAVEMENT
CURBLINE

BUILDING
LEDGE
TREELINE
CONTOURS
GAS
WATER
SEWER
STORM DRAIN
OVERHEAD
ELEC. & TEL.
UNDERGROUND ELECTRIC
UNDER DRAIN

BOULDER
SIGN
WATER VALVE
GAS VALVE
LIGHT POLE
UTILITY POLE
GUY WIRE
HYDRANT
CATCH BASIN
DRAINAGE MANHOLE
SEWER MANHOLE
WATER MANHOLE
DECIDUOUS TREE

GENERAL NOTES:

1. RECORD OWNER OF LOT 29 IS ONE MOLLISON WAY LLC BY DEED OF DAY CONSTRUCTION COMPANY, LLC, DATED DECEMBER 29, 2016 AND RECORDED IN THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS IN BOOK 9528, PAGE 207.

2. THE PROPERTY IS SHOWN ON THE CITY OF LEWISTON MAINE MAP 189, AS BEING LOT 38.

3. PLAN REFERENCES:

A) SPARE-TIME RECREATION SUBDIVISION, THIRD REVISION, DATED MARCH 6, 1998 AND RECORDED IN THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS IN PLAN BOOK 40, PAGE 7.

B) STANDARD BOUNDARY SURVEY FOR LEWISTON RACEWAYS, INC., MAIN STREET, ANDROSCOGGIN COUNTY, LEWISTON, MAINE DATED AUGUST 29, 1985 BY ALIBERTI, LAROCHELLE & HODSON, ARTHUR MONTANA, SURVEYOR PLS #492. PLAN ON FILE AT DAVIS LAND SURVEYING OFFICES, OXFORD, MAINE.

C) MAIN STREET PARK LEWISTON, MAINE - OWNED BY J. W. WILBUR BY A.L. ELIOT C.E., DATED AUGUST 12, 1907 AND RECORDED IN THE ANDROSCOGGIN COUNTY REGISTRY OF DEED IN BOOK OF PLANS VOLUME 2, PAGE 49.

D) "PLAN SHOWING THE LOCATION OF MAIN STREET, LEWISTON, MAINE AT THE FAIRGROUNDS" BY THE ANDROSCOGGIN COUNTY COMMISSIONERS DATED JULY 13, 1932 BY GEORGE H. BARRON, ENGINEER, RECORDED AT THE REGISTRY OF DEEDS IN COMMISSIONERS VOLUME CCV1, PAGE 45.

4. BEARINGS ARE BASED ON GRID NORTH, COORDINATES BASED ON MAINE STATE PLANE COORDINATE SYSTEM, MAINE WEST ZONE, NAD 1983. PREVIOUS SUBDIVISION PLANS ARE BASED ON MAGNETIC NORTH

5. VERTICAL DATUM IS NAVD 1988 AND WAS DETERMINED BY RAPID STATIC OBSERVATIONS ON TWO CONTROL POINTS USING DUAL FREQUENCY TOPCON HIPER GPS UNITS. THE DATA WAS PROCESSED ON THE NGS WEBSITE OPUS PROGRAM USING THE GEOID 12B MODEL.

6. THIS PLAN IS BASED ON A SURVEY COMPLETED TO THE BEST OF MY KNOWLEDGE IN ACCORDANCE WITH THE STATE OF MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS STANDARDS OF PRACTICE. SURVEY COMPLETED WITH REAL TIME KINEMATIC GPS UNITS AND MULTIPLE OBSERVATIONS ON CRITICAL BOUNDARY MONUMENTS. POSITIONAL TOLERANCE IS LESS THAN 0.07 FEET HORIZONTALLY.

7. FOUR POINTS ASSOCIATES, INC. HAS NOT VERIFIED THE EXISTENCE OF ANY HAZARDOUS MATERIALS ON SITE. WE RECOMMEND THAT A QUALIFIED PERSON REVIEW THE SITE FOR HAZARDOUS MATERIALS TO DISCOUNT THEIR EXISTENCE. ALSO, NO EXCAVATION OF ANY KIND CAN BE PERMITTED WITHOUT THE CONTRACTOR CONTACTING DIG-SAFE FOR LOCATION OF POSSIBLE UNDERGROUND UTILITIES.

8. INVERT FOR CATCH BASINS WERE FIELD CHECKED UNDER WINTER CONDITIONS WITH SUMPS BEING HIGHER DUE TO FILL INSIDE STRUCTURES. INVERTS FOR PIPES CHECKED WITH CITY OF LEWISTON AS BUILT ELEVATIONS FOUND IN FIELD BOOK 235, PAGE 49 DATED NOVEMBER 4, 1993. ALL ELEVATIONS APPEAR TO BE 0.40 FEET HIGHER IN FIELD NOTES THAN SURVEY ELEVATIONS DETERMINED BY GPS OBSERVATION.

REV:	DATE:	STATUS:
B	01/30/2017	ADD UTILITY INFORMATION AND INVERTS FROM CITY RECORDS
A	01/20/2017	SUBMITTED TO DESIGN TEAM FOR REVIEW

PROJ. NO: 16042 | DWG NAME: 16042EC | SCALE: 1" = 20' | PLAN BY: SMM/DED

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM FOUR POINTS ASSOCIATES, INC. ANY ALTERATIONS AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO FOUR POINTS ASSOCIATES, INC.

NAME:
LIC. #

DONALD E. DOSTIE
PLS #2147

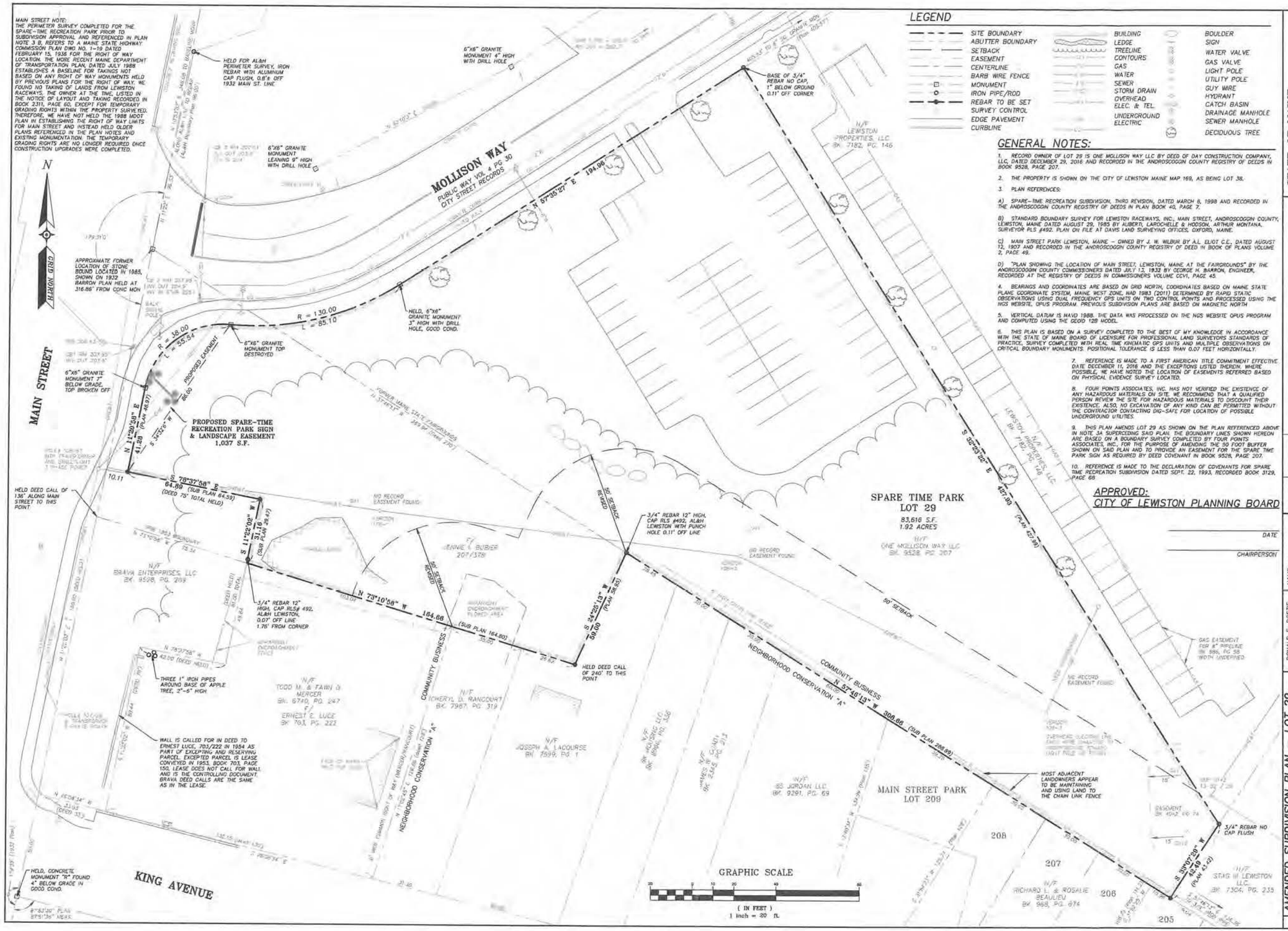
STATE OF MAINE
DONALD E. DOSTIE
2147
REGISTERED PROFESSIONAL LAND SURVEYOR

EXISTING CONDITIONS PLAN
OF
LOT 29, SPARE-TIME RECREATION PARK
T-4 MOLLISON WAY
LEWISTON, MAINE
FOR
ERIC SMITH
SAVING FOOD
GREENE, MAINE 04236

Four Points Associates, Inc.
Donald E. Dostie PLS, Principal
8 Ridge Avenue, Lewiston, ME 04240 Tel: 207-577-5840

PLAN DATE: JAN 20, 2017

MAIN STREET NOTE:
THE PERIMETER SURVEY COMPLETED FOR THE SPARE-TIME RECREATION PARK PRIOR TO SUBDIVISION APPROVAL AND REFERENCED IN PLAN NOTE 3 B, REFERS TO A MAINE STATE HIGHWAY COMMISSION PLAN DWG NO. 1-19 DATED FEBRUARY 15, 1936 FOR THE RIGHT OF WAY LOCATION. THE MORE RECENT MAINE DEPARTMENT OF TRANSPORTATION PLAN, DATED JULY 1988 ESTABLISHES A BASELINE FOR TAKINGS NOT BASED ON ANY RIGHT OF WAY MONUMENTS HELD BY PREVIOUS PLANS FOR THE RIGHT OF WAY. WE FOUND NO TAKING OF LANDS FROM LEWISTON RACEWAYS, THE OWNER AT THE TIME, LISTED IN THE NOTICE OF LAYOUT AND TAKING RECORDED IN BOOK 2311, PAGE 60, EXCEPT FOR TEMPORARY GRADING RIGHTS WITHIN THE PROPERTY SURVEYED. THEREFORE, WE HAVE NOT HELD THE 1988 MDOT PLAN IN ESTABLISHING THE RIGHT OF WAY LIMITS FOR MAIN STREET AND INSTEAD HELD OLDER PLANS REFERENCED IN THE PLAN NOTES AND EXISTING MONUMENTATION. THE TEMPORARY GRADING RIGHTS ARE NO LONGER REQUIRED ONCE CONSTRUCTION UPGRADES WERE COMPLETED.



LEGEND

SITE BOUNDARY
ABUTTER BOUNDARY
SETBACK
EASEMENT
CENTERLINE
BARB WIRE FENCE
MONUMENT
IRON PIPE/ROD
REBAR TO BE SET
SURVEY CONTROL
EDGE PAVEMENT
CURBLINE
BUILDING
LEDGE
TREELINE
CONTOURS
GAS
WATER
SEWER
STORM DRAIN
OVERHEAD ELEC. & TEL.
UNDERGROUND ELECTRIC
BOULDER
SIGN
WATER VALVE
GAS VALVE
LIGHT POLE
UTILITY POLE
GUY WIRE
HYDRANT
CATCH BASIN
DRAINAGE MANHOLE
SEWER MANHOLE
DECIDUOUS TREE

GENERAL NOTES:

1. RECORD OWNER OF LOT 29 IS ONE MOLLISON WAY LLC BY DEED OF DAY CONSTRUCTION COMPANY, LLC, DATED DECEMBER 29, 2016 AND RECORDED IN THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS IN BOOK 9528, PAGE 207.

2. THE PROPERTY IS SHOWN ON THE CITY OF LEWISTON MAINE MAP 169, AS BEING LOT 38.

3. PLAN REFERENCES:

A) SPARE-TIME RECREATION SUBDIVISION, THIRD REVISION, DATED MARCH 8, 1998 AND RECORDED IN THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS IN PLAN BOOK 40, PAGE 7.

B) STANDARD BOUNDARY SURVEY FOR LEWISTON RACEWAYS, INC., MAIN STREET, ANDROSCOGGIN COUNTY, LEWISTON, MAINE DATED AUGUST 29, 1985 BY ALBERTI, LAROCHELLE & HODSON, ARTHUR MONTANA, SURVEYOR PLS #492. PLAN ON FILE AT DAVIS LAND SURVEYING OFFICES, OXFORD, MAINE.

C) MAIN STREET PARK LEWISTON, MAINE – OWNED BY J. W. WILBUR BY A.L. ELIOT C.E., DATED AUGUST 12, 1907 AND RECORDED IN THE ANDROSCOGGIN COUNTY REGISTRY OF DEED IN BOOK OF PLANS VOLUME 2, PAGE 49.

D) "PLAN SHOWING THE LOCATION OF MAIN STREET, LEWISTON, MAINE AT THE FAIRGROUNDS" BY THE ANDROSCOGGIN COUNTY COMMISSIONERS DATED JULY 13, 1932 BY GEORGE H. BARRON, ENGINEER, RECORDED AT THE REGISTRY OF DEEDS IN COMMISSIONER'S VOLUME CCVI, PAGE 45.

4. BEARINGS AND COORDINATES ARE BASED ON GRID NORTH, COORDINATES BASED ON MAINE STATE PLANE COORDINATE SYSTEM, MAINE WEST ZONE, NAD 1983 (2011) DETERMINED BY RAPID STATIC OBSERVATIONS USING DUAL FREQUENCY GPS UNITS ON TWO CONTROL POINTS AND PROCESSED USING THE NGS WEBSITE, OPUS PROGRAM. PREVIOUS SUBDIVISION PLANS ARE BASED ON MAGNETIC NORTH

5. VERTICAL DATUM IS NAVD 1988. THE DATA WAS PROCESSED ON THE NGS WEBSITE OPUS PROGRAM AND COMPUTED USING THE GEOID 12B MODEL.

6. THIS PLAN IS BASED ON A SURVEY COMPLETED TO THE BEST OF MY KNOWLEDGE IN ACCORDANCE WITH THE STATE OF MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS STANDARDS OF PRACTICE. SURVEY COMPLETED WITH REAL TIME KINEMATIC GPS UNITS AND MULTIPLE OBSERVATIONS ON CRITICAL BOUNDARY MONUMENTS. POSITIONAL TOLERANCE IS LESS THAN 0.07 FEET HORIZONTALLY.

7. REFERENCE IS MADE TO A FIRST AMERICAN TITLE COMMITMENT EFFECTIVE DATE DECEMBER 11, 2016 AND THE EXCEPTIONS LISTED THEREIN. WHERE POSSIBLE, WE HAVE NOTED THE LOCATION OF EASEMENTS REFERRED BASED ON PHYSICAL EVIDENCE SURVEY LOCATED.

8. FOUR POINTS ASSOCIATES, INC. HAS NOT VERIFIED THE EXISTENCE OF ANY HAZARDOUS MATERIALS ON SITE. WE RECOMMEND THAT A QUALIFIED PERSON REVIEW THE SITE FOR HAZARDOUS MATERIALS TO DISCOUNT THEIR EXISTENCE. ALSO, NO EXCAVATION OF ANY KIND CAN BE PERMITTED WITHOUT THE CONTRACTOR CONTACTING DIG-SAFE FOR LOCATION OF POSSIBLE UNDERGROUND UTILITIES.

9. THIS PLAN AMENDS LOT 29 AS SHOWN ON THE PLAN REFERENCED ABOVE IN NOTE 3A SUPERCEDING SAID PLAN. THE BOUNDARY LINES SHOWN HEREON ARE BASED ON A BOUNDARY SURVEY COMPLETED BY FOUR POINTS ASSOCIATES, INC., FOR THE PURPOSE OF AMENDING THE 50 FOOT BUFFER SHOWN ON SAID PLAN AND TO PROVIDE AN EASEMENT FOR THE SPARE TIME PARK SIGN AS REQUIRED BY DEED COVENANT IN BOOK 9528, PAGE 207.

10. REFERENCE IS MADE TO THE DECLARATION OF COVENANTS FOR SPARE TIME RECREATION SUBDIVISION DATED SEPT. 22, 1993, RECORDED BOOK 3129, PAGE 68

APPROVED:
CITY OF LEWISTON PLANNING BOARD

DATE

CHAIRPERSON

STATE OF MAINE
ANDROSCOGGIN COUNTY SS REGISTRY OF DEEDS
RECEIVED _____, 20___
AT ___h ___m ___M. AND RECORDED IN
PLAN BOOK _____ PAGE _____
ATTEST _____ REGISTER

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM FOUR POINTS ASSOCIATES, INC. ANY ALTERATIONS AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO FOUR POINTS ASSOCIATES, INC.

REV.	DATE:	STATUS:
D	01/30/2017	REVIEW TITLE COMMITMENT, REVISE NOTE 7, ADD EASEMENT NOTATION
C	01/27/2017	ADD SPARE TIME PARK SIGN EASEMENT, APPROVAL BLK, REV NOTE 9
B	01/14/2017	FINALIZE BOUNDARY SURVEY AND RESUBMIT TO DESIGN TEAM
A	01/10/2017	SUBMIT PROGRESS DRAWING FILE TO DESIGN TEAM

PROJ. NO: 16042 | DWG NAME: 160442EC | SCALE: 1" = 20' | PLAN BY: DED & SMM

NAME: -
LIC. #

DONALD E. DOSTIE
PLS #2147

STATE OF MAINE
DONALD E. DOSTIE
2147
PROFESSIONAL LAND SURVEYOR

AMENDED SUBDIVISION PLAN – LOT 29
OF:
SPARE-TIME RECREATION SUBDIVISION
1-4 MOLLISON WAY
LEWISTON, MAINE
FOR RECORD OWNER:
ONE MOLLISON WAY LLC
195 MAIN STREET
AUBURN, MAINE 04210

Four Points Associates, Inc.
Donald E. Dostie PLS, Principal
9 Regis Avenue, Lewiston, ME 04240 Tel. 207-377-3840

PLAN DATE JAN 10, 2017

LOCATION MAP

SITE TABULATIONS

TOTAL PARCEL AREA = 83,615 sf / 1.92 ACRES

EXISTING CONDITIONS -
- BUILDINGS - 0 sf
- PAVEMENT - 15,940 sf
- IMPERVIOUS AREA - 15,940 sf (19.1%)
- LAWN AND WOODED AREAS - 67,675 sf (80.9%)
- EXISTING PARKING SPACES = 45

PROPOSED CONDITIONS -
- BUILDINGS - 4,860 sf
- PAVED/CONCRETE AREAS - 22,770 sf
- IMPERVIOUS AREA - 27,630 sf (33.0%)
- LAWN AND WOODED AREAS - 55,985 sf (67.0%)
- PROPOSED PARKING SPACES = 39

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

1) EXISTING CONDITIONS IS BASED UPON A PLAN ENTITLED "EXISTING CONDITIONS PLAN, LOT 29, SPARE TIME RECREATION SUBDIVISION", REVISION DATED JANUARY 30, 2011, PREPARED BY FOUR POINTS ASSOCIATES, INC.

2) ALL BOOK AND PAGE NUMBERS REFER TO THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS.

3) OWNER - ONE MOLLISON WAY, LLC
DEED REFERENCE - BOOK 9378, PAGE 201
TAX MAP 169, LOT 38

4) THE LOCATION, DEPTH, SIZE & EXISTENCE OF ALL UNDERGROUND UTILITY LINES, TANKS AND/OR STRUCTURES WAS NOT VERIFIED. CONTRACTOR SHALL CONTACT DIGSAFE/ON-TARGET PRIOR TO EXCAVATION TO CONFIRM THE LOCATION OF ALL PUBLIC & PRIVATE UTILITIES WITHIN THE PROJECT AREA.

5) THE PARCEL IS LOCATED IN THE COMMUNITY BUSINESS ZONING DISTRICT.
MINIMUM LOT SIZE = NONE, MINIMUM FRONTAGE = 100'
MAXIMUM BUILDING HEIGHT = 50'
MINIMUM BUILDING SETBACK - FRONT, SIDE & REAR = 20'
MINIMUM YARD SETBACKS - FRONT = 15', SIDE & REAR = 10'
MAXIMUM LOT COVERAGE = 50%, MAXIMUM IMPERVIOUS COVERAGE = 75%

6) THE PARCEL IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON THE F.E.M.A. FLOOD INSURANCE RATE MAP, PANEL #2300IC 0327E, DATED JULY 8, 2013.

7) ALL SIGNAGE TO BE OBTAINED AND INSTALLED BY THE OWNER.

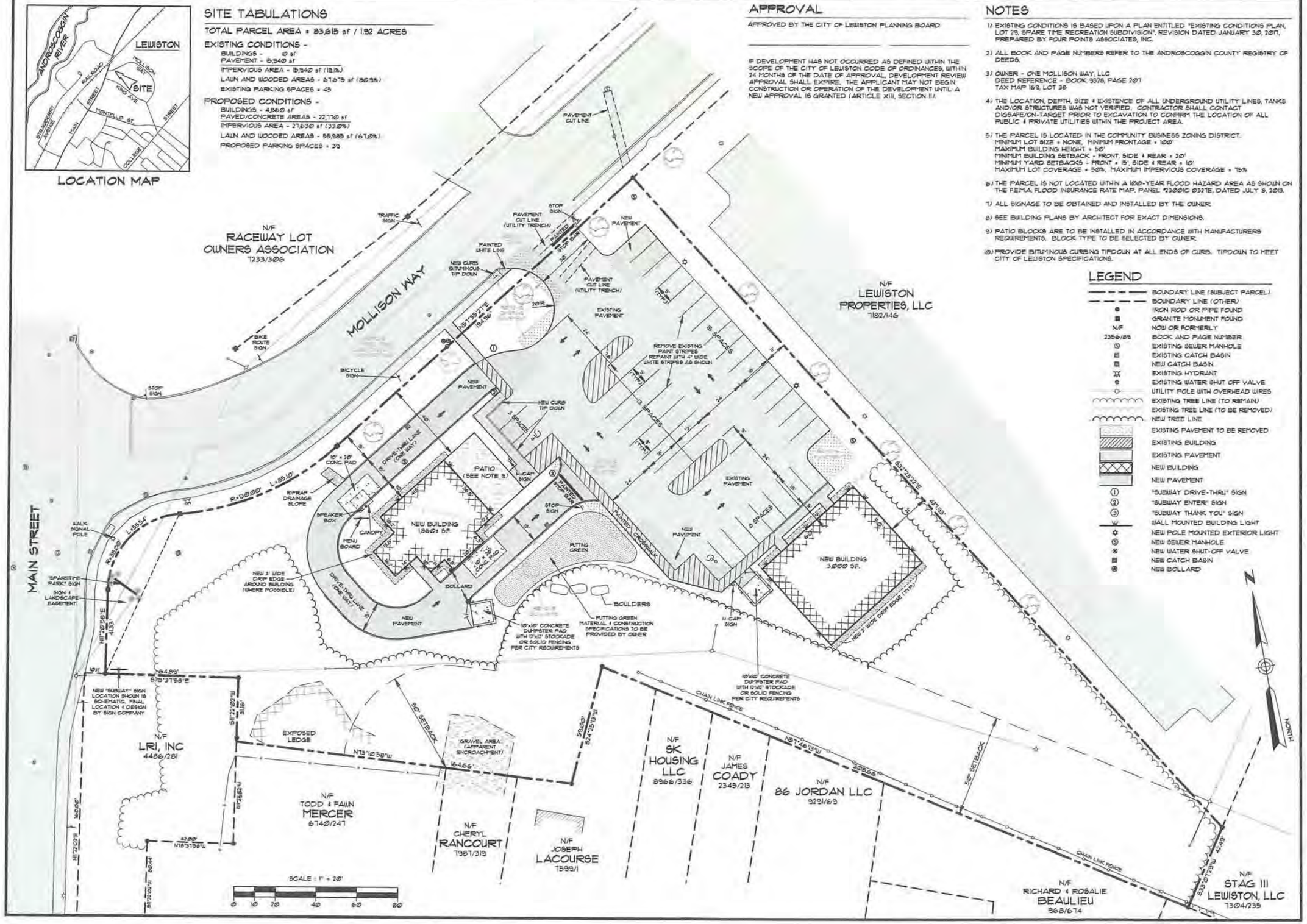
8) SEE BUILDING PLANS BY ARCHITECT FOR EXACT DIMENSIONS.

9) PATIO BLOCKS ARE TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS. BLOCK TYPE TO BE SELECTED BY OWNER.

10) PROVIDE BITUMINOUS CURBING TIPDOWN AT ALL ENDS OF CURB. TIPDOWN TO MEET CITY OF LEWISTON SPECIFICATIONS.

LEGEND

- BOUNDARY LINE (SUBJECT PARCEL)
- BOUNDARY LINE (OTHER)
- IRON ROD OR PIPE FOUND
- GRANITE MONUMENT FOUND
- N/F NOW OR FORMERLY
- 2356/88 BOOK AND PAGE NUMBER
- EXISTING SEWER MANHOLE
- EXISTING CATCH BASIN
- NEW CATCH BASIN
- EXISTING HYDRANT
- EXISTING WATER SHUT OFF VALVE
- UTILITY POLE WITH OVERHEAD WIRES
- EXISTING TREE LINE (TO REMAIN)
- EXISTING TREE LINE (TO BE REMOVED)
- NEW TREE LINE
- EXISTING PAVEMENT TO BE REMOVED
- EXISTING BUILDING
- EXISTING PAVEMENT
- NEW BUILDING
- NEW PAVEMENT
- "SUBWAY DRIVE-THRU" SIGN
- "SUBWAY ENTER" SIGN
- "SUBWAY THANK YOU" SIGN
- WALL MOUNTED BUILDING LIGHT
- NEW POLE MOUNTED EXTERIOR LIGHT
- NEW SEWER MANHOLE
- NEW WATER SHUT-OFF VALVE
- NEW CATCH BASIN
- NEW BOLLARD



REV.	DATE	CHANGES
3	3-6-11	CHANGES PER CITY REVIEW COMMENTS
2	2-17-11	FINAL EDITS BEFORE SUBMITTAL
1	2-6-11	PARKING & BUILDING LOCATION CHANGES

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

FOR APPROVALS ONLY

Stonybrook Consultants, Inc.
456 Buckfield Road - Turner, Me 04282
(207) 514-7491 Voice
(207) 514-7492 Fax

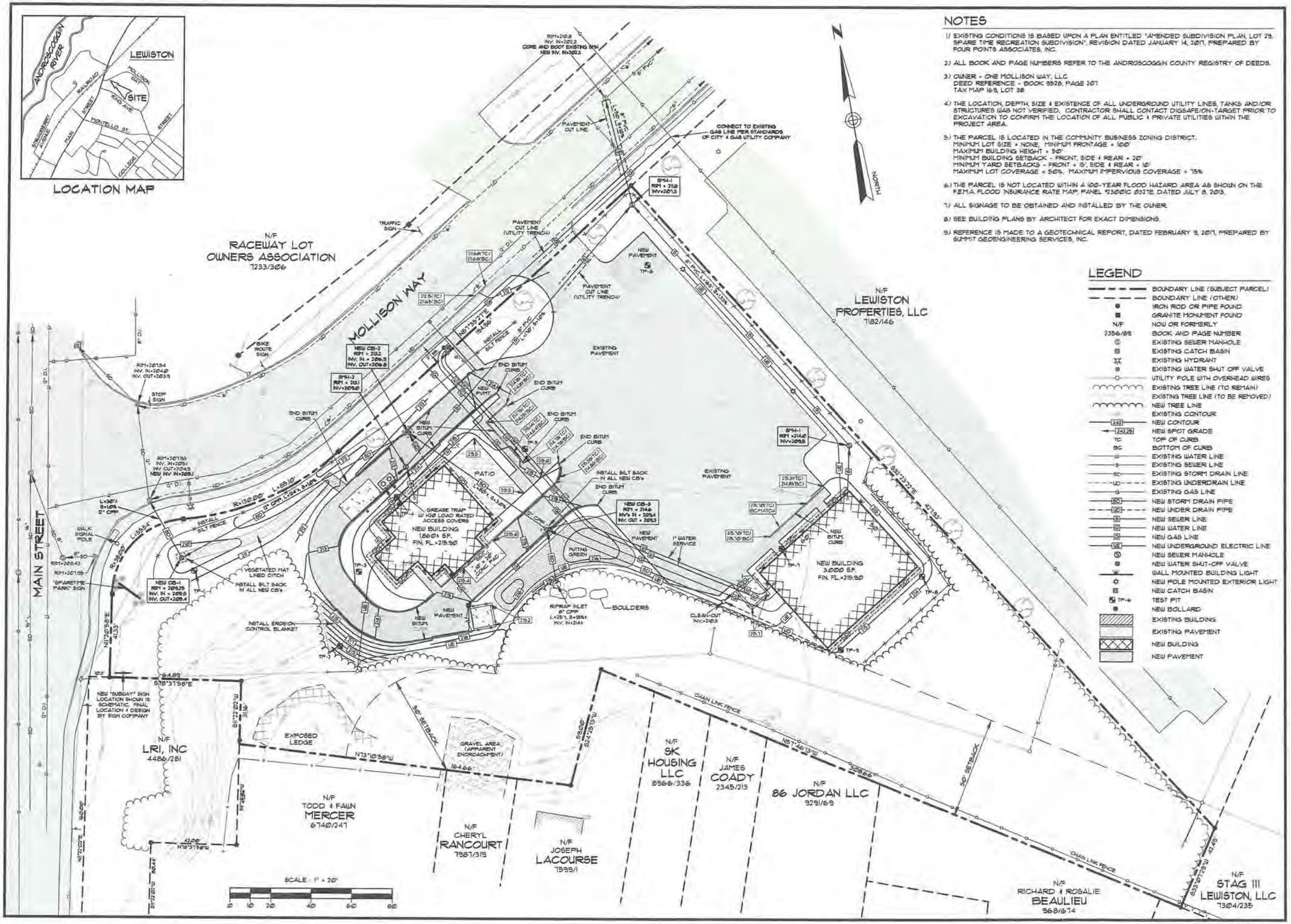
SJR ENGINEERING, INC.
21 MAYFLOWER ROAD
AUGUSTA, MAINE 04330
(207) 622-1676 tel & fax
steve@sjreng.com

SITE & DEMOLITION PLAN
1 MOLLISON WAY
LEWISTON, MAINE
PREPARED FOR
ONE MOLLISON WAY, LLC
195 CENTER STREET - AUBURN, MAINE 04210

DATE	PROJECT
JAN. 2011	2011-01
DRAWN BY	SCALE
SJR	1" = 20'

SHEET 1

LOCATION MAP



NOTES

1) EXISTING CONDITIONS IS BASED UPON A PLAN ENTITLED "AMENDED SUBDIVISION PLAN, LOT 29, SPARE TIME RECREATION SUBDIVISION", REVISION DATED JANUARY 14, 2011, PREPARED BY FOUR POINTS ASSOCIATES, INC.

2) ALL BOOK AND PAGE NUMBERS REFER TO THE ANDROSCOGGIN COUNTY REGISTRY OF DEEDS.

3) OWNER - ONE MOLLISON WAY, LLC
DEED REFERENCE - BOOK 8528, PAGE 207
TAX MAP 169, LOT 38

4) THE LOCATION, DEPTH, SIZE & EXISTENCE OF ALL UNDERGROUND UTILITY LINES, TANKS AND/OR STRUCTURES WAS NOT VERIFIED. CONTRACTOR SHALL CONTACT DIGSAFE/ON-TARGET PRIOR TO EXCAVATION TO CONFIRM THE LOCATION OF ALL PUBLIC & PRIVATE UTILITIES WITHIN THE PROJECT AREA.

5) THE PARCEL IS LOCATED IN THE COMMUNITY BUSINESS ZONING DISTRICT.
MINIMUM LOT SIZE = NONE, MINIMUM FRONTAGE = 100'
MAXIMUM BUILDING HEIGHT = 50'
MINIMUM BUILDING SETBACK - FRONT, SIDE & REAR = 20'
MINIMUM YARD SETBACKS - FRONT = 15', SIDE & REAR = 10'
MAXIMUM LOT COVERAGE = 50%, MAXIMUM IMPERVIOUS COVERAGE = 75%

6) THE PARCEL IS NOT LOCATED WITHIN A 100-YEAR FLOOD HAZARD AREA AS SHOWN ON THE F.E.M.A. FLOOD INSURANCE RATE MAP, PANEL #23001C 0337E, DATED JULY 8, 2013.

7) ALL SIGNAGE TO BE OBTAINED AND INSTALLED BY THE OWNER.

8) SEE BUILDING PLANS BY ARCHITECT FOR EXACT DIMENSIONS.

9) REFERENCE IS MADE TO A GEOTECHNICAL REPORT, DATED FEBRUARY 9, 2017, PREPARED BY SUMMIT GEOENGINEERING SERVICES, INC.

LEGEND

- BOUNDARY LINE (SUBJECT PARCEL)
- BOUNDARY LINE (OTHER)
- IRON ROD OR PIPE FOUND
- GRANITE MONUMENT FOUND
- N/F — NOW OR FORMERLY
- 7356/88 — BOOK AND PAGE NUMBER
- EXISTING SEWER MANHOLE
- EXISTING CATCH BASIN
- EXISTING HYDRANT
- EXISTING WATER SHUT OFF VALVE
- EXISTING UTILITY POLE WITH OVERHEAD WIRES
- EXISTING TREE LINE (TO REMAIN)
- EXISTING TREE LINE (TO BE REMOVED)
- NEW TREE LINE
- EXISTING CONTOUR
- 242 — NEW CONTOUR
- 242.26 — NEW SPOT GRADE
- TC — TOP OF CURB
- BC — BOTTOM OF CURB
- EXISTING WATER LINE
- EXISTING SEWER LINE
- SD — EXISTING STORM DRAIN LINE
- UD — EXISTING UNDERDRAIN LINE
- EXISTING GAS LINE
- SD — NEW STORM DRAIN PIPE
- UD — NEW UNDER DRAIN PIPE
- S — NEW SEWER LINE
- W — NEW WATER LINE
- G — NEW GAS LINE
- UE — NEW UNDERGROUND ELECTRIC LINE
- NEW SEWER MANHOLE
- NEW WATER SHUT-OFF VALVE
- WALL MOUNTED BUILDING LIGHT
- NEW POLE MOUNTED EXTERIOR LIGHT
- NEW CATCH BASIN
- TP-4 — TEST PIT
- NEW BOLLARD
- EXISTING BUILDING
- EXISTING PAVEMENT
- NEW BUILDING
- NEW PAVEMENT

STEPHEN J. ROBERGE — MAINE — LICENSED PROFESSIONAL ENGINEER

FOR APPROVALS ONLY

REV.	DATE	CHANGES
3	3-6-17	CHANGES PER CITY REVIEW COMMENTS
2	2-13-17	FINAL EDITS BEFORE SUBMITTAL
1	2-6-17	PARKING & BUILDING LOCATION CHANGES

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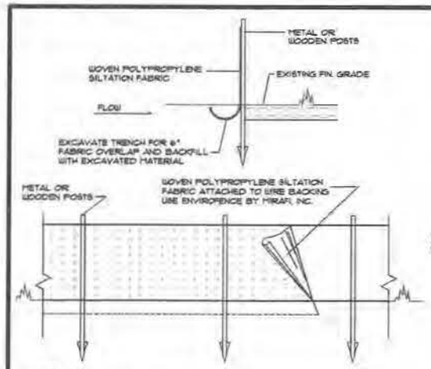
SJR ENGINEERING

GRADING & UTILITY PLAN
1 MOLLISON WAY
LEWISTON, MAINE
PREPARED FOR
ONE MOLLISON WAY, LLC
195 CENTER STREET - AUBURN, MAINE 04210

DATE	PROJECT
JAN 2017	2017-01
DRAWN BY	SCALE
SJR	1" = 20'

SHEET 2



NOTES

REFERENCE IS MADE TO THE BEST MANAGEMENT PRACTICE FOR EROSION AND SEDIMENT CONTROL: B-1 SEDIMENT BARRIERS.

SILTATION FABRIC WITH INTEGRAL MESH AND POSTS MAY BE USED.

EROSION CONTROL FILTER BERM IS AN ACCEPTABLE ALTERNATIVE TO SILT FENCING.

SILT FENCE DETAIL

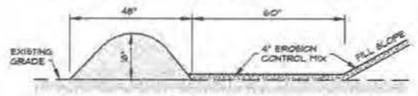
NOT TO SCALE

THE FILTER BERM SHALL CONSIST OF A WOOD WASTE COMPOST/BARK MULCH MIX OR RECYCLED COMPOSTED BARK PLUME GRIT AND FRAGMENTED WOOD GENERATED FROM WATER PLUME LOG HANDLING SYSTEMS. COMPARABLE COMPOSTED MIXES CAN BE USED UPON WRITTEN APPROVAL OF THE ENGINEER.

THE MIX SHALL CONFORM TO THE FOLLOWING: pH BETWEEN 5.0-8.0, PARTICLE SIZE - 100% PASSING THROUGH A 6" SCREEN AND 80% RETAINED ON A ¼" SCREEN. SOLUBLE SALTS CONTENT SHALL BE LESS THAN 4.0 mmhos/cm.

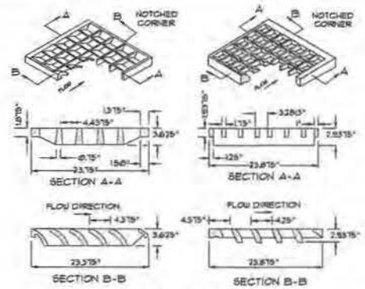
THE COMPOSTED BERM SHALL BE PLACED, UNCOMPACTED, ALONG A RELATIVELY LEVEL CONTOUR.

THE BERM MAY BE USED IN COMBINATION WITH SILT FENCE TO IMPROVE SEDIMENT REMOVAL AND PREVENT CLOGGING OF THE BERM BY LARGER SEDIMENT PARTICLES (SILT FENCE PLACED ON THE UPHILL SIDE OF BERM).



EROSION CONTROL FILTER BERM

NOT TO SCALE

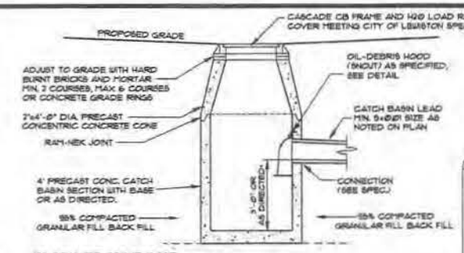


CASCADE CB FRAME AND GRATE TO MEET H20 LOAD RATED REQUIREMENTS

CASCADE GRATES TO MEET CITY OF LEWISTON CONSTRUCTION STANDARDS

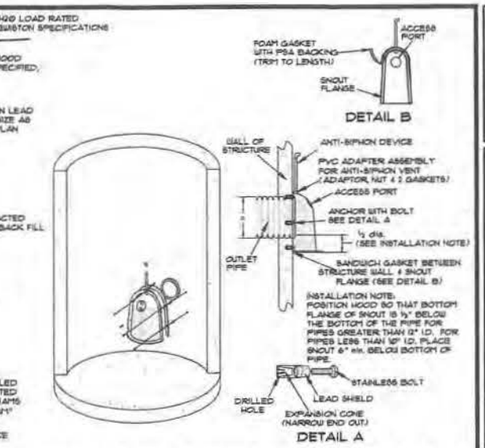
CASCADE TYPE GRATES

NOT TO SCALE



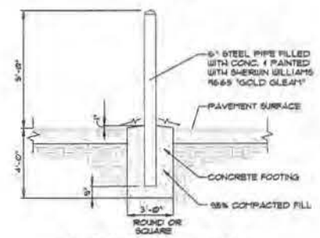
4'-Ø" DIA. CATCH BASIN

NOT TO SCALE



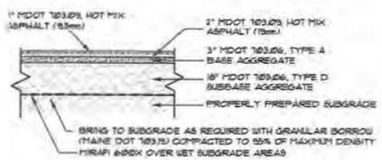
CATCH BASIN SNOUT INSTALLATION DETAIL

NOT TO SCALE



BOLLARD DETAIL

NOT TO SCALE



NOTES

1) COMPACT GRAVEL SUBBASE, BASE COURSE TO 95% OF THEIR MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557.

2) HOT MIX ASPHALT PAVEMENT MUST BE COMPACTED TO 92%-97% OF ITS THEORETICAL MAXIMUM DENSITY AS DETERMINED BY ASTM D-2041.

3) A TACK COAT MUST BE USED BETWEEN SUCCESSIVE LIFTS OF BITUMINOUS PAVEMENT.

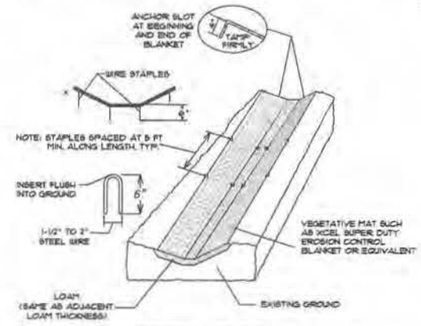
4) PROVIDE NON-FROST SUSCEPTIBLE COMPACTED FILL GRANULAR BORROW (MDOT 703.19) BELOW PAVEMENT IN FILL AREAS.

5) CONTRACTOR SHALL SET GRADE STAKES MARKING SUBBASE AND FINISH GRADE ELEVATIONS FOR CONSTRUCTION REFERENCE.

REFERENCE IS MADE TO A GEOTECHNICAL REPORT PREPARED BY SUMMIT GEOENGINEERING SERVICES FOR CONSTRUCTION RECOMMENDATIONS.

PAVED AREA CROSS SECTION

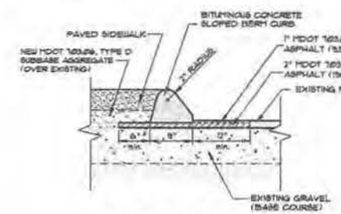
NOT TO SCALE



PERSPECTIVE VIEW

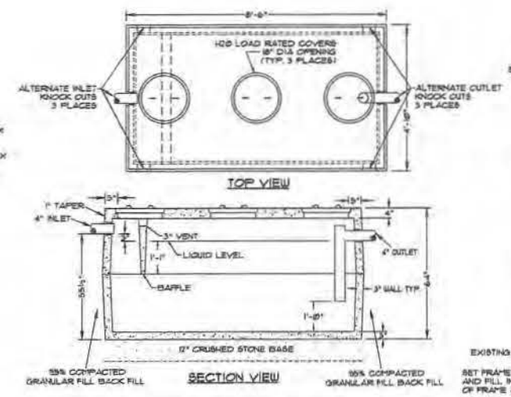
VEGETATIVE MAT LINED DITCH

NOT TO SCALE



BITUMINOUS CURBING

NOT TO SCALE



PRECAST OF MAINE ITEM #A-902

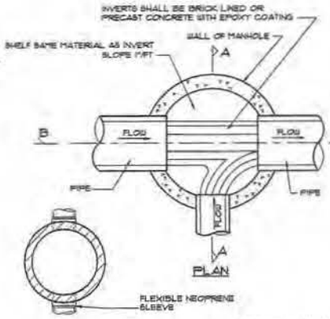
WEIGHT = 8100 lbs, LIQUID CAPACITY = 1000 gal.

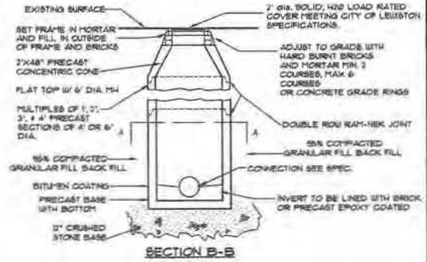
DESIGN NOTES:

1 - CONCRETE 4000 PSI AT 28 DAYS.
2 - INLET BAFFLE IS PRECAST AS ONE UNIT WITH THE TOP SECTION OF THE SEPTIC TANK.
3 - TANKS REINFORCED WITH 6x6x6x10 G.A. WIRE.
4 - KEYED JOINTS SEALED WITH ASPHALT SEALANT.
5 - HEAVY DUTY SEPTIC TANK TOPS REINFORCED WITH 1/2" REBAR ON 6" CENTERS EACH WAY.
6 - GREASE FILTER AVAILABLE.

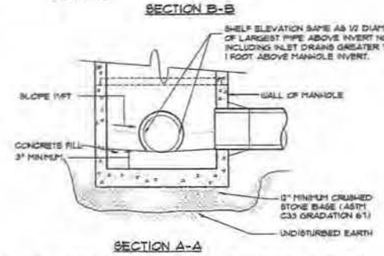
GREASE TRAP

NOT TO SCALE





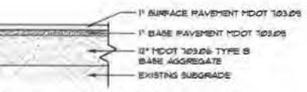
SECTION B-B



SECTION A-A

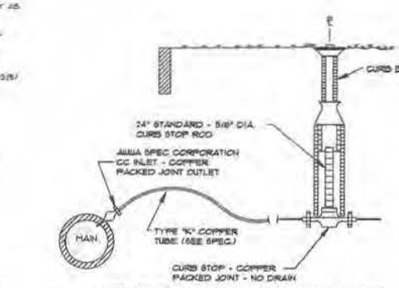
PRECAST CONCRETE SEWER MANHOLE

NOT TO SCALE



SIDEWALK CROSS SECTION

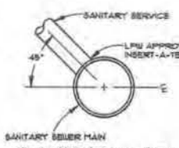
NOT TO SCALE



NOTE: INSTALL 6" (18" IN ROCK) OF SAND, OR WATER DISTRICT APPROVED BACKFILL, ALL AROUND SERVICE LINE.

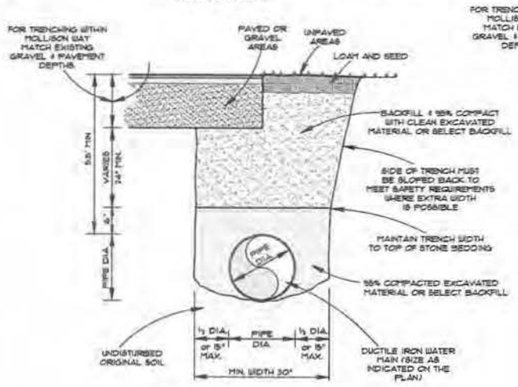
TYPICAL DOMESTIC WATER SERVICE

NOT TO SCALE



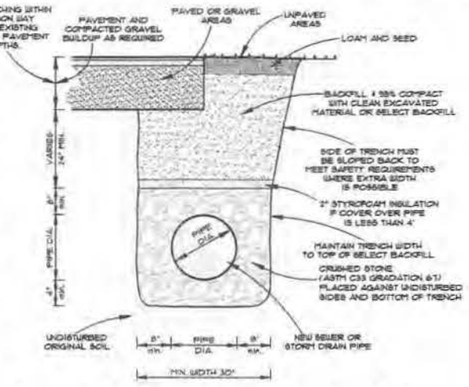
SANITARY SEWER SERVICE CONNECTIONS

NOT TO SCALE



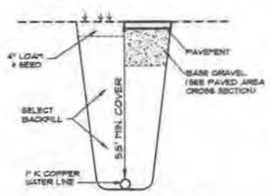
WATER MAIN TRENCH DETAIL

NOT TO SCALE



STORM DRAIN / SEWER TRENCH DETAIL

NOT TO SCALE



WATER SERVICE TRENCH DETAIL

NOT TO SCALE

STATE OF MAINE STEPHEN J. ROBERGE No. 6382 LICENSED PROFESSIONAL ENGINEER

FOR APPROVALS ONLY

REV.	DATE:	CHANGES:
2	3-6-11	CHANGES PER CITY REVIEW COMMENTS
1	2-9-11	FINAL EDITS BEFORE SUBMITTAL

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

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456 Buckfield Road - Turner, Me 04282
(207) 514-7491 Voice
(207) 514-7492 Fax

SJR ENGINEERING, INC.
21 MAYFLOWER ROAD
AUGUSTA, MAINE 04330
(207) 622-1616 tel & fax
stevesjr@mg.com
SJR ENGINEERING

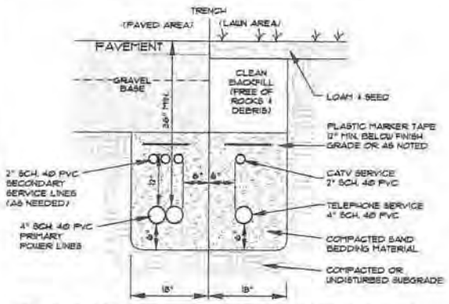
CONSTRUCTION DETAILS
1 MOLLISON WAY
LEWISTON, MAINE

PREPARED FOR

ONE MOLLISON WAY, LLC
195 CENTER STREET - AUBURN, MAINE 04210

DATE	PROJECT
FEB. 2011	2011-01
DRAWN BY	SCALE
SJR	NTS

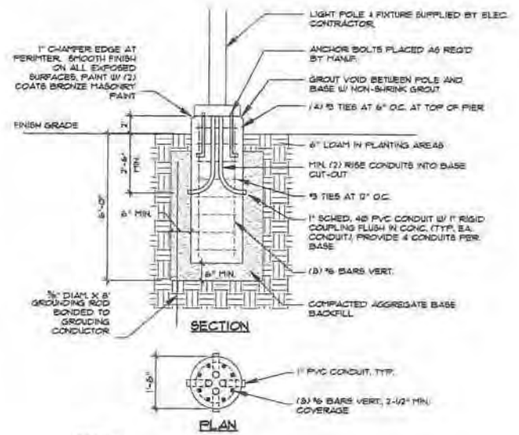
SHEET 3



NOTE: ALL WORK IS TO COMPLY WITH THE RESPECTIVE UTILITY COMPANY STANDARDS

UNDERGROUND UTILITY TRENCH DETAIL

NOT TO SCALE

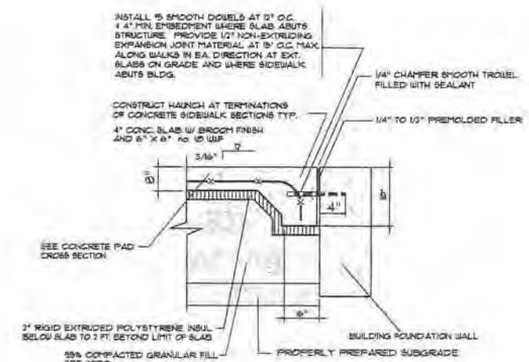


NOTES:

1. CONTRACTOR MAY SUBSTITUTE PRECAST BASE EQUAL TO ABOVE SPECS WITH ARCHITECT APPROVAL
2. CONCRETE: 4000 PSI, 3/4" AGG. W/ ENTRAINED AIR AGENT

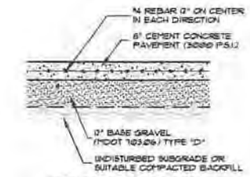
LIGHT POLE FOUNDATION DETAIL

NOT TO SCALE



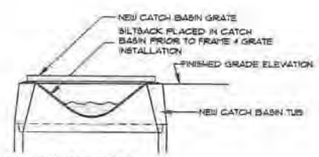
CONCRETE PAD/FOUNDATION WALL JOINT DETAIL

NOT TO SCALE



CROSS SECTION CONCRETE PAD

NOT TO SCALE

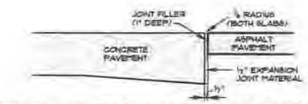


NEW INSTALLATION

NOTE:
REMOVE SILT SACK AFTER VEGETATIVE COVER IS GREATER THAN 75% ESTABLISHED.

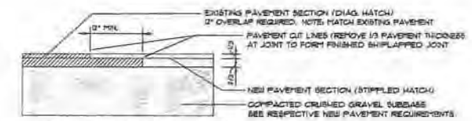
SILTSACK DETAIL

NOT TO SCALE



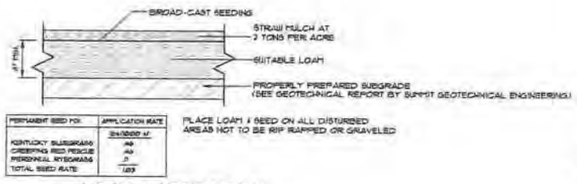
CONCRETE PAD / ASPHALT INTERFACE

NOT TO SCALE



PAVEMENT SAWCUT JOINT DETAIL

NOT TO SCALE

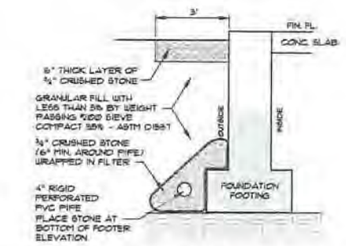


PERMANENT SEED MIX	APPLICATION RATE
	lbs/1000 s.f.
KENTUCKY BLUEGRASS	.46
CREEPING RED FESCUE	.46
PERENNIAL RYEGRASS	.23
TOTAL SEED RATE	1.03

PLACE LOAM & SEED ON ALL DISTURBED AREAS NOT TO BE RIP RAPPED OR GRAVELED

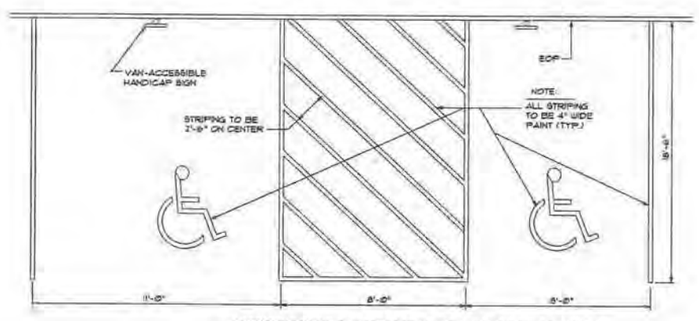
LOAM & SEED DETAIL

NOT TO SCALE



FOUNDATION UNDERDRAIN DETAIL STONE DRIP EDGE

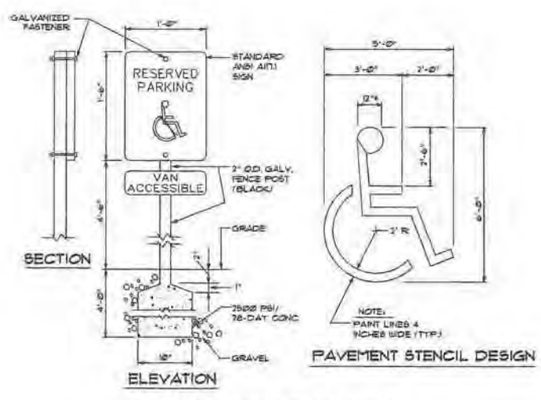
NOT TO SCALE



ACCESSIBLE PARKING SPACES ARE 8' WIDE. VAN ACCESSIBLE SPACES ARE 11' WIDE. ACCESS AISLES FOR EITHER TYPE OF SPACE ARE 5' WIDE. AN ALTERNATIVE DESIGN ALLOWS A VAN-ACCESSIBLE SPACE TO BE 8' WIDE IF THE ADJACENT ACCESS AISLE IS ALSO 8' WIDE.

HANDICAPPED PARKING SPACE DETAIL

NOT TO SCALE



HANDICAP SIGN DETAIL

NOT TO SCALE

FOR APPROVALS ONLY

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2	3-6-17	CHANGES PER CITY REVIEW COMMENTS
1	2-13-17	FINAL EDITS BEFORE SUBMITTAL

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AUGUSTA, MAINE 04330
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stevesjr@eng.com

CONSTRUCTION DETAILS
1 MOLLISON WAY

LEWISTON, MAINE

PREPARED FOR:

ONE MOLLISON WAY, LLC

195 CENTER STREET - AUBURN, MAINE 04210

DATE	PROJECT
FEB. 2017	2017-01
DRAWN BY	SCALE
SJR	NTS

SHEET 4

GENERAL NOTES

1) THE CONTRACTOR IS REFERRED TO THE SPECIFICATIONS REGARDING COORDINATION WITH OTHERS, INCLUDING RESPONSIBILITIES AND RELATED COSTS. ALL UTILITY CONSTRUCTION IS SUBJECT TO APPROVAL INSPECTION BY UTILITY COMPANY PERSONNEL PRIOR TO BACKFILL OF TRENCHES.

2) BELOW GRADE UTILITY INFORMATION IS BASED UPON FIELD SURVEY, MDOT PLANS, CITY OF LEWISTON PLANS, CITY OF LEWISTON GIS WEBSITE, AND INFORMATION PROVIDED BY INDIVIDUAL UTILITY COMPANIES. LOCATIONS AND ELEVATIONS OF PUBLIC UTILITIES SHOWN ARE ONLY APPROXIMATE AND MAY NOT BE COMPLETE. PRIVATE UNDERGROUND UTILITIES SUCH AS, BUT NOT LIMITED TO, SEWER LINES, WATER LINES AND BURIED ELECTRICAL SERVICE ENTRANCES ARE NOT SHOWN. THE CONTRACTOR SHALL ASCERTAIN THE LOCATION AND SIZE OF EXISTING UTILITIES IN THE FIELD WITH THE RESPECTIVE UTILITY REPRESENTATIVE PRIOR TO COMMENCING WORK. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES, INCLUDING SERVICES. SHOULD ANY UNCHARTED OR INCORRECTLY CHARTED UTILITIES BE FOUND, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY FOR DIRECTION BEFORE PROCEEDING FURTHER WITH THE WORK IN THIS AREA. ADDITIONAL TEST PITS, BEYOND THOSE SHOWN, MAY BE REQUIRED. UTILITY CONTACTS ARE AS FOLLOWS:

DIG SAFE:
1-888-344-7233

ELECTRICAL:
CENTRAL MAINE POWER
83 EDISON DRIVE
AUGUSTA, ME 04336
TEL. (207) 779-9118

GAS:
UNITIL
1075 FOREST AVENUE
PORTLAND, ME 04104
TEL. (207) 797-8002

TELECOMMUNICATIONS:
OXFORD NETWORKS
491 LISBON STREET
LEWISTON, ME 04240
TEL. (207) 336-9911

TIME WARNER CABLE:
7 ALFRED PLOURDE PARKWAY
LEWISTON, ME 04240
TEL. 1-800-833-2253

FAIRPOINT COMMUNICATIONS:
921 E. MOREHEAD ST.
PORTLAND, ME 04101
TEL. 1-800-585-4466

WATER AND SEWER:
KEVIN GAGNE
LEWISTON PUBLIC WORKS DEPT.
WATER AND SEWER DIVISION
103 ADAMS AVENUE
LEWISTON, ME 04240
TEL. (207) 513-3003

3) THE CONTRACTOR IS HEREBY CAUTIONED THAT ALL SITE FEATURES SHOWN HEREON ARE BASED ON FIELD OBSERVATIONS BY THE SURVEYOR AND BY INFORMATION PROVIDED BY UTILITY COMPANIES. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT DIG SAFE (1-888-DIGSAFE) AT LEAST THREE (3) BUT NOT MORE THAN THIRTY (30) DAYS PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION TO VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES.

4) CONTRACTOR SHALL BE AWARE THAT DIG SAFE ONLY NOTIFIES ITS "MEMBER" UTILITIES ABOUT THE DIG. WHEN NOTIFIED, DIG SAFE WILL ADVISE CONTRACTOR OF MEMBER UTILITIES IN THE AREA. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND CONTACTING NON-MEMBER UTILITIES DIRECTLY. NON-MEMBER UTILITIES MAY INCLUDE CITY WATER AND SEWER DISTRICTS AND SMALL LOCAL UTILITIES, AS WELL AS USG PUBLIC WORKS SYSTEMS.

5) CONTRACTORS SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE REQUIREMENTS OF 23 MRSA 3360-A. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE APPROPRIATE UTILITIES TO OBTAIN AUTHORIZATION PRIOR TO RELOCATION OF ANY EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS. IF A UTILITY CONFLICT ARISES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER, THE CITY, AND APPROPRIATE UTILITY COMPANY PRIOR TO PROCEEDING WITH ANY RELOCATION.

6) ALL EXISTING STORM DRAIN LINES ENCOUNTERED DURING CONSTRUCTION ARE TO REMAIN IN SERVICE. ANY EXISTING STORM DRAIN LINES OR CULVERTS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CITY. ALL TEST PITS SHALL BE EXCAVATED PRIOR TO CONSTRUCTION LAYOUT AND RESULTS REPORTED TO ENGINEER FOR REVIEW FOR CONFORMANCE WITH PLANS.

7) THE CONTRACTOR MAY ENCOUNTER ASBESTOS CEMENT PIPE DURING PROSECUTION OF THE WORK. CONTRACTOR SHALL CONFORM TO ALL APPLICABLE PROVISIONS OF OSHA, USEPA, MDEP AND ALL OTHER FEDERAL, STATE AND LOCAL REGULATIONS WHEN HANDLING AND/OR DISPOSING OF ASBESTOS CEMENT PRODUCTS.

8) ALL STRUCTURES AND PIPELINES LOCATED ADJACENT TO THE TRENCH EXCAVATION SHALL BE PROTECTED AND FIRMLY SUPPORTED BY THE CONTRACTOR UNTIL THE TRENCH IS BACKFILLED. INJURY TO ANY SUCH STRUCTURES CAUSED BY, OR RESULTING FROM, THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. ALL UTILITIES REQUIRING REPAIR, RELOCATION OR ADJUSTMENT AS A RESULT OF THE PROJECT SHALL BE COORDINATED THROUGH THE RESPECTIVE UTILITY.

9) ALL TEST PITS SHALL BE COMPLETED A MINIMUM OF TWO WEEKS PRIOR TO ORDERING THE ADJACENT STRUCTURES. THE INFORMATION FROM THE TEST PITS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND REVISION.

10) IN THOSE INSTANCES WHERE POWER OR TELEPHONE POLE SUPPORT IS REQUIRED, THE CONTRACTOR SHALL PROVIDE A MINIMUM 48-HOUR NOTIFICATION TO CMP OR FAIRPOINT, RESPECTIVELY. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR TEMPORARY BRACING OF UTILITIES.

11) IN THOSE INSTANCES THAT A UTILITY NEEDS TO BE RELOCATED, THE CONTRACTOR SHALL COORDINATE WITH THE RESPECTIVE UTILITY DIVISION/COMPANY TO SCHEDULE THE WORK AFTER THE COMPLETION OF THE TEST PITS.

12) CONTRACTOR SHALL INSTALL AND MAINTAIN TRAFFIC CONTROL SIGNS IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

13) THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TRAFFIC FLOW AT ALL TIMES. THE CONTRACTOR IS REQUIRED TO SUBMIT A TRAFFIC CONTROL PLAN TO THE CITY OR THEIR REPRESENTATIVE AT THE PRE-CONSTRUCTION MEETING. THE LEWISTON CITY PUBLIC WORKS DIRECTOR OR HIS DESIGNATE SHALL BE NOTIFIED AT THE PRE-CONSTRUCTION MEETING OF ANY PLANNED STREET CLOSINGS OR DETOURS. ALL TRAFFIC CONTROL SHALL BE IN COMPLIANCE WITH THE MUTCD.

14) THE CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING ALL PERMITS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE FAMILIAR WITH THE APPLICABLE PROVISIONS OF EACH PERMIT AS THEY APPLY TO THE WORK PRIOR TO BIDDING AND ABIDE BY THOSE PROVISIONS DURING CONSTRUCTION. THE CONTRACTOR SHALL POST ALL BONDS AS REQUIRED, PAY ALL FEES & PROVIDE PROOF OF INSURANCE AS NECESSARY FOR THIS WORK.

15) THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY RIGHTS OF WAY AND EASEMENTS. THE CONTRACTOR SHALL VERIFY THAT THE NECESSARY EASEMENTS HAVE BEEN SECURED BY THE OWNER. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE FAMILIAR WITH THE APPLICABLE PROVISIONS OF EACH EASEMENT AS THEY APPLY TO THE WORK PRIOR TO BIDDING AND ABIDE BY THOSE PROVISIONS DURING CONSTRUCTION. COPIES OF ALL RIGHTS-OF-WAY AND EASEMENTS ARE AVAILABLE FOR REVIEW AT THE OWNER'S OFFICE.

16) THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT OF ALL PROPOSED LINES AND GRADES AS SHOWN ON THE DRAWINGS. THE HORIZONTAL ALIGNMENT OF THE NEW STORM DRAINS AND SANITARY SEWER MAY BE ADJUSTED IN THE FIELD SUBJECT TO PRIOR APPROVAL BY THE ENGINEER.

17) THE SURVEYOR SHALL PROVIDE THE NECESSARY HORIZONTAL AND VERTICAL CONTROL POINTS FOR THE CONTRACTOR FOR WORK OUTSIDE THE STREET RIGHT-OF-WAY AND CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THIS INFORMATION THROUGHOUT CONSTRUCTION. ALL ELEVATIONS REFER TO THE 1988 NATIONAL GEODETIC VERTICAL DATUM UNLESS OTHERWISE NOTED ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ALL ELEVATION REFERENCE INFORMATION PRIOR TO USE IN CONSTRUCTION.

18) THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESETTING ALL EXISTING PROPERTY MONUMENTATION THAT IS DISTURBED BY HIS OPERATIONS AT NO EXPENSE TO THE CITY. THIS WORK IS TO BE DONE BY A LAND SURVEYOR REGISTERED IN THE STATE OF MAINE.

19) THE CONTRACTOR SHALL BE RESPONSIBLE FOR SEDIMENT CONTROL AND THE PREVENTION OF EROSION. ALL DISTURBED EARTH SURFACES ARE TO BE STABILIZED IN THE SHORTEST PRACTICAL TIME AND TEMPORARY SEDIMENT AND EROSION CONTROL DEVICES SHALL BE EMPLOYED UNTIL SUCH TIME AS ADEQUATE SOIL STABILIZATION HAS BEEN ACHIEVED. TEMPORARY STORAGE OF EXCAVATED MATERIAL IS TO BE IN A MANNER THAT WILL MINIMIZE EROSION. MATERIALS AND METHODS USED FOR TEMPORARY SEDIMENT AND EROSION CONTROL SHALL BE AS SPECIFIED BY THE LATEST EDITION OF THE "MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES" PREPARED BY THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

20) COMPACTION TESTS SHALL BE PERFORMED IN ACCORDANCE WITH MDOT SPECIFICATIONS WITH RESULTS OF TESTING SUBMITTED TO THE OWNER. ANY SETTLEMENT OCCURRING WITHIN ONE YEAR OF SUBSTANTIAL COMPLETION OF THE PROJECT WILL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.

21) OPEN TRENCHES OUTSIDE OF THE RIGHT OF WAY MAY BE LEFT OPEN IF THE CONTRACTOR PROVIDES SAFE BARRICADING AND LIGHTS.

22) PROPER IMPLEMENTATION AND MAINTENANCE OF EROSION CONTROL MEASURES ARE OF PARAMOUNT IMPORTANCE FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL EROSION CONTROL MEASURES SHOWN ON THE PLANS. ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY ONSITE INSPECTIONS OF THE OWNER, THEIR REPRESENTATIVES, OR STATE/LOCAL/ FEDERAL INSPECTORS AT NO ADDITIONAL COST TO THE OWNER.

GENERAL NOTES CONTINUED

23) CONTRACTOR SHALL CONTROL DUST WITH APPROPRIATE DUST CONTROL MEASURES. CONTRACTOR SHALL NOT TRACK OR SPILL EARTH AND DEBRIS ON PUBLIC STREETS OUTSIDE THE PROJECT AREA. STREETS OPENED TO THE PUBLIC SHALL BE KEPT SWEPT AND FREE OF DEBRIS.

24) ALL ROAD SURFACES SHALL PITCH 1/4 INCH PER FOOT MINIMUM FROM CENTERLINE TO GUTTER UNLESS OTHERWISE NOTED. ALL VEGETATED AREAS THAT ARE EXCAVATED, FILLED OR OTHERWISE DISTURBED BY THE CONTRACTOR AND ARE NOT TO BE PAVED OR FILLED WITH RIP-RAP SHALL BE LOAMED, GRADED, LIMED, FERTILIZED, SEEDED AND MULCHED AT NO ADDITIONAL EXPENSE TO THE CITY/OWNER.

25) THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND ALL OTHER APPLICABLE LOCAL, STATE AND FEDERAL RULES, REGULATIONS AND LAWS.

26) THE CONTRACTOR SHALL NOT HAVE ANY RIGHT OF PROPERTY IN ANY SUITABLE MATERIALS TAKEN FROM ANY EXCAVATION. SUITABLE EXCAVATED MATERIAL, AS APPROVED BY THE ENGINEER, MAY BE INCORPORATED IN THE PROJECT, WITH EXCESS MATERIAL DISPOSED OF AT A LOCATION APPROVED BY THE CITY/OWNER. THESE PROVISIONS SHALL IN NO WAY RELIEVE THE CONTRACTOR OF HIS OBLIGATIONS TO PROPERLY DISPOSE OF AND REPLACE ANY MATERIAL DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING. THE CONTRACTOR SHALL DISPOSE OF UNSUITABLE AND EXCESS MATERIAL IN ACCORDANCE WITH THE APPLICABLE RULES AND REGULATIONS.

27) THE CONTRACTOR IS TO TAKE SPECIAL CARE NOT TO DAMAGE TREES WITHIN THE CONSTRUCTION AREA UNLESS THEY ARE NOTED TO BE REMOVED.

28) EXISTING STORM MANHOLES OR CATCH BASINS NOT TO REMAIN IN SERVICE SHALL BE REMOVED BY THE CONTRACTOR.

29) PROVIDE 2" RIGID INSULATION OVER WATER AND SEWER MAINS AND SERVICES WHEN COVER IS LESS THAN 4 FEET AND WHERE DIRECTED BY THE ENGINEER. CONTRACTOR SHALL SUPPLY INSULATION.

30) MINOR ADJUSTMENTS TO THE ALIGNMENT OF PROPOSED UTILITIES SHALL BE ALLOWED TO ACCOMMODATE EXISTING UTILITIES WHERE APPROPRIATE AS APPROVED BY THE ENGINEER.

31) A MINIMUM VERTICAL OR HORIZONTAL SEPARATION OF 6 INCHES BETWEEN THE WATER LINES (INCLUDING SERVICES) AND STORM DRAINAGE PIPES AND STRUCTURES, SHALL BE MAINTAINED. 2" RIGID INSULATION SHALL BE INSTALLED WHEN SEPARATION IS LESS THAN 18 INCHES.

32) EXISTING SIGNS THAT ARE IMPACTED BY THIS PROJECT SHALL BE RESET IN ACCORDANCE WITH M.U.T.C.D.

33) CONTRACTOR SHALL RESET OR REBUILD WALKWAY STEPS WHEN NECESSARY. WORK SHALL BE CONSIDERED INCIDENTAL.

34) ALL TEST PITS SHALL BE EXCAVATED PRIOR TO CONSTRUCTION LAYOUT AT THE APPROXIMATE LOCATIONS NOTED ON THE PLANS AND ACTUAL LOCATIONS OF SUBSURFACE UTILITIES SHALL BE REPORTED TO THE CITY ENGINEER WHERE APPROPRIATE. MINOR ADJUSTMENTS TO THE ALIGNMENTS OF PROPOSED LINES SHALL BE MADE TO ACCOMMODATE EXISTING UTILITIES.

35) THE INVERTS INDICATED ON THE PLAN AND PROFILE SHEETS ARE TO THE INSIDE FACE OF THE MANHOLE.

36) STATIONS AND OFFSETS INDICATED ON THE PLAN AND PROFILE SHEETS ARE TO THE CENTER OF THE CATCH BASIN GRATE AND THE CENTER OF THE SEWER AND STORM DRAIN MANHOLE COVER.

37) DEWATERING EFFORTS FROM SANITARY OR COMBINED SEWERS SHALL NOT BE DISCHARGED TO THE STORMDRAIN. DEWATERING EFFORTS FROM STORMWATER SHALL NOT BE DISCHARGED TO THE SEWER OR COMBINED SYSTEM.

38) STORM DRAIN INVERTS FOR CROSS STREET CONNECTIONS SHALL BE BASED ON ELEVATIONS OF EXISTING UTILITIES AS DETERMINED IN THE FIELD. CONTRACTOR SHALL COORDINATE PROPOSED STORM DRAIN INVERTS WITH THE ENGINEER.

39) CONTRACTOR TO VERIFY TYPE (BRICK OR PRECAST CONCRETE) AND CONDITION OF ALL SMH'S AND DMH'S IMPACTED AS PART OF THIS WORK. CONTRACTOR TO MAINTAIN THE INTEGRITY OF ALL STRUCTURES TO BE REUSED. DAMAGE TO EXISTING STRUCTURES SHALL BE REPAIRED AT CONTRACTORS EXPENSE.

40) CONTRACTOR TO REPLACE OR RESET ALL DISTURBED CURBING UPON COMPLETION OF UNDERGROUND UTILITY WORK.

41) CONTRACTOR TO RESTORE SIDEWALKS AND DRIVEWAYS IMPACTED BY CONSTRUCTION.

42) CONTRACTOR TO REGRADE AND REPLANT ESPLANADE AREAS IMPACTED BY CONSTRUCTION.

43) CONTRACTOR TO SAWCUT PAVEMENT AS NECESSARY TO INSTALL UTILITY IMPROVEMENTS. CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING AREAS WHERE THE EXISTING PAVEMENT WAS REMOVED FOR PAVING, INCLUDING GRADING AND ADDITIONAL SAWCUTTING AS REQUIRED BY THE ENGINEER.

44) CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGNING, FURNISHING, INSTALLING AND MONITORING ANY SHORING, BRACING OR OTHER EXCAVATION SUPPORT THAT MAY BE REQUIRED TO PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENT OR OTHER FACILITIES THAT COULD BE DAMAGED BY SETTLEMENT, LATERAL MOVEMENTS, UNDERMINING, WASHOUT OR OTHER HAZARDS THAT COULD DEVELOP DURING EXCAVATION SUPPORT AND PROTECTION OPERATIONS.

45) CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIM OR HERSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIM OR HERSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.

46) INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND OWNER'S REQUIREMENTS UNLESS SPECIFICALLY OTHERWISE INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.

47) CONTRACTOR SHALL CLEAN AND REMOVE DEBRIS AND SEDIMENT DEPOSITED ON PUBLIC STREETS, SIDEWALKS, ADJACENT AREAS, OR OTHER PUBLIC WAYS DUE TO CONSTRUCTION DAILY.

48) THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ANY CHANGES AND DEVIATION OF APPROVED PLANS NOT AUTHORIZED BY THE ENGINEER AND/OR OWNER.

49) DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. ANY MODIFICATION TO SUIT FIELD DIMENSION AND CONDITION SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ANY WORK.

50) BEFORE THE FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT AND MATERIALS, REPAIR OR REPLACE PRIVATE OR PUBLIC PROPERTY WHICH MAY HAVE BEEN DAMAGED OR DESTROYED DURING CONSTRUCTION AS DETERMINED BY THE CITY, CLEAN THE AREAS WITHIN AND ADJACENT TO THE PROJECT WHICH HAVE BEEN OBSTRUCTED BY HIS/HER OPERATIONS, AND LEAVE THE PROJECT AREA NEAT AND PRESENTABLE.

51) THE CONTRACT WORK TO BE PERFORMED ON THIS PROJECT CONSISTS OF FURNISHING ALL REQUIRED LABOR, MATERIALS, EQUIPMENT, IMPLEMENTS, PARTS AND SUPPLIES NECESSARY FOR, OR APPURTENANT TO, THE INSTALLATION OF CONSTRUCTION IMPROVEMENTS IN ACCORDANCE WITH THESE DRAWINGS AND AS FURTHER ELABORATED IN ANY ACCOMPANYING SPECIFICATIONS.

52) THE WORK SHALL BE PERFORMED IN A THOROUGH WORKMANLIKE MANNER. ANY REFERENCE TO A SPECIFICATION OR DESIGNATION OF THE AMERICAN SOCIETY FOR TESTING MATERIALS, FEDERAL SPECIFICATIONS, OR OTHER STANDARDS, CODES OR ORDERS, REFERS TO THE MOST RECENT OR LATEST SPECIFICATION OR DESIGNATION.

53) THE CONTRACTOR SHALL GUARANTEE THE FAITHFUL REMEDY OF ANY DEFECTS DUE TO FAULTY MATERIALS OR WORKMANSHIP AND GUARANTEES PAYMENT FOR ANY RESULTING DAMAGE WHICH SHALL APPEAR WITHIN A PERIOD OF ONE (1) YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION OF THE PROJECT.

54) THE CONTRACTOR SHALL NOT USE PRIVATE PROPERTY FOR STOCKPILING MATERIALS OR PARKING EQUIPMENT OR VEHICLES WITHOUT WRITTEN CONSENT FROM THE PROPERTY OWNER. ANY DAMAGE DONE TO PRIVATE PROPERTY RESULTING FROM THESE ACTIVITIES SHALL BE THE RESPONSIBLITY OF THE CONTRACTOR TO REPAIR AT NO ADDITIONAL COST TO THE CITY/OWNER.

EROSION & SEDIMENTATION CONTROL NOTES

1) THE CONTRACTOR SHALL INSPECT EROSION & SEDIMENT CONTROL MEASURES WEEKLY AND AFTER HEAVY RAINFALLS THROUGHOUT THE DURATION OF THE PROJECT INCLUDING WEEKENDS AND HOLIDAYS. INSPECTION REPORTS MUST BE PROVIDED TO THE CITY AND OWNER WITHIN 48-HOURS OF INSPECTION. ALL EROSION AND SEDIMENT CONTROLS SHALL BE MAINTAINED PER BEST MANAGEMENT PRACTICES.

2) THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTING THE EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH THE "MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES", DEPARTMENT OF ENVIRONMENTAL PROTECTION, DATED MARCH 2015 (DEPLW 588) AND IN ACCORDANCE WITH THE STORMWATER REPORT INCLUDED WITH THE PERMIT APPLICATION APPROVED BY THE CITY OF LEWISTON. ADDITIONAL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY DURING ON-SITE INSPECTIONS BY THE OWNER, THEIR REPRESENTATIVES OR STATE/LOCAL/FEDERAL INSPECTORS AT NO ADDITIONAL COST TO THE OWNER.

3) PRIOR TO CONSTRUCTION, PROPERLY INSTALL SEDIMENT BARRIERS AT THE DOWN GRADIENT EDGE OF THE DISTURBED AREA AND ADJACENT TO DRAINAGE CHANNELS WITHIN THIS AREA.

4) SILT FENCE AND BARK MULCH BERM LOCATIONS SHOWN ARE APPROXIMATE. INSTALL WHERE APPROPRIATE TO CONTROL SEDIMENTATION ON AND OFF SITE. SILT FENCE SHALL BE REMOVED AFTER THE SITE IS STABILIZED WITH AT LEAST 90% VEGETATED GROWTH.

5) NO SLOPES, EITHER PERMANENT OR TEMPORARY, SHALL BE STEEPER THAN TWO TO ONE (2 TO 1).

6) AREAS DISTURBED DURING CONSTRUCTION SHALL BE MINIMIZED. AREAS SHALL BE TEMPORARILY STABILIZED WITH MULCH OR NON-ERODABLE COVER IF EXPOSED SOILS WILL NOT BE WORKED FOR MORE THAN 7 DAYS. PERMANENT SEEDING SHALL TAKE PLACE WITHIN 7 DAYS OF FINAL GRADING.

7) IF FINAL SEEDING OF THE DISTURBED AREAS IS NOT COMPLETED 45 DAYS PRIOR TO THE FIRST KILLING FROST, USE TEMPORARY MULCHING (DORMANT SEEDING MAY BE ATTEMPTED AS WELL) TO PROTECT THE SITE AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.

8) TEMPORARY SEEDING OF DISTURBED AREAS THAT HAVE NOT BEEN FINAL GRADED SHALL BE COMPLETED BY AUGUST 15th OR 45 DAYS PRIOR TO THE FIRST KILLING FROST (OCT. 1) TO PROTECT FROM SPRING RUNOFF PROBLEMS.

9) REVEGETATION MEASURES WILL COMMENCE UPON COMPLETION OF CONSTRUCTION EXCEPT AS NOTED ABOVE. ALL DISTURBED AREAS NOT OTHERWISE STABILIZED WILL BE GRADED, SMOOTHED AND PREPARED FOR FINAL SEEDING AS FOLLOWS:

A) 4" OF LOAM WILL BE SPREAD OVER DISTURBED AREAS AND SMOOTHED TO A UNIFORM SURFACE.

B) APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 200 POUNDS PER ACRE OR 15 POUNDS PER SQUARE FOOT USING 10-20-20 (N-P2O5-K2O) OR EQUIVALENT. APPLY GROUND LIMESTONE (EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF 3.3 TONS PER ACRE (150 lbs. PER 1000 s.f.)

C) FOLLOWING SEED BED PREPARATION, DITCHES AND BARK SLOPES WILL BE SEEDED TO A MIXTURE OF 47% CREEPING RED FESCUE, 5% REDTOP AND 48% TALL FESCUE. THE LAWN AREAS WILL BE SEEDED TO A PREMIUM TURF MIXTURE OF 44% KENTUCKY BLUEGRASS, 44% CREEPING RED FESCUE AND 12% PERENNIAL RYEGRASS. SEEDING RATE IS ONE POUND PER 1000 s.f. LAWN QUALITY SOD MAY BE SUBSTITUTED FOR SEED. SEED MIX SHALL CONTAIN 10% ANNUAL RYEGRASS.

D) HAY MULCH AT THE RATE OF 70-90 lbs PER 1000 s.f. OR A HYDRO-APPLICATION OF ASPHALT, WOOD OR PAPER FIBER SHALL BE APPLIED FOLLOWING SEEDING. A SUITABLE BINDER SUCH AS CURASOL OR RMB PLUS WILL BE USED ON HAY MULCH FOR WIND CONTROL.

WINTER CONSTRUCTION NOTES

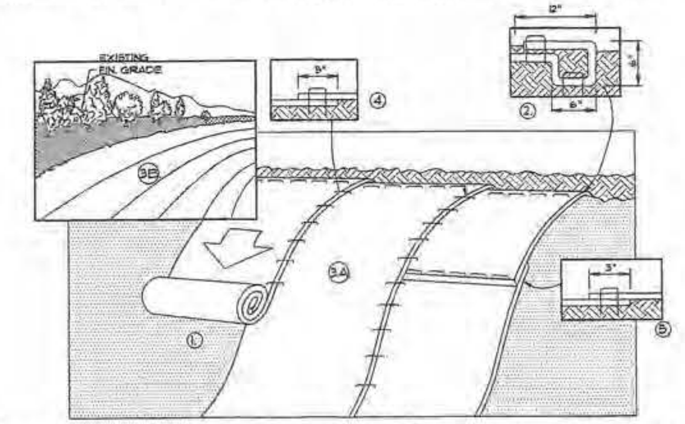
1) WINTER CONSTRUCTION IS CONSTRUCTION ACTIVITY PERFORMED DURING THE PERIOD FROM NOVEMBER 1 - APRIL 15. IF DISTURBED AREAS ARE NOT STABILIZED WITH PERMANENT MEASURES BY NOVEMBER 1 OR NEW SOIL DISTURBANCE OCCURS AFTER NOVEMBER 1, BUT BEFORE APRIL 15, THEN THESE AREAS MUST BE PROTECTED AND RUNOFF FROM THEM MUST BE CONTROLLED BY ADDITIONAL MEASURES AND RESTRICTIONS.

2) SITE STABILIZATION - FOR WINTER STABILIZATION, HAY MULCH IS APPLIED AT TWICE THE STANDARD TEMPORARY STABILIZATION RATE. AT THE END OF EACH CONSTRUCTION DAY, AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE MUST BE STABILIZED. MULCH MAY NOT BE SPREAD ON TOP OF SNOW.

3) SEDIMENT BARRIERS - ALL AREAS WITHIN 75' OF A PROTECTED NATURAL RESOURCE MUST BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIERS.

4) DITCH - ALL VEGETATIVE DITCH LINES THAT HAVE NOT BEEN STABILIZED BY NOVEMBER 1, OR WILL BE WORKED DURING THE WINTER CONSTRUCTION PERIOD, MUST BE STABILIZED WITH AN APPROPRIATE STONE LINING BACKED BY AN APPROPRIATE GRAVEL BED OR GEOTEXTILE UNLESS SPECIFICALLY RELEASED FROM THIS STANDARD BY THE DEPARTMENT.

5) SLOPES - MULCH NETTING MUST BE USED TO ANCHOR MULCH ON ALL SLOPES GREATER THAN 8% UNLESS EROSION CONTROL BLANKETS OR EROSION CONTROL MIX IS BEING USED ON THESE SLOPES.



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.

2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.

3. ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.

4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.

5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.
NOTE: IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

EROSION CONTROL MAT DETAIL

NOT TO SCALE

STATE OF MAINE
STEPHEN J. ROBERGE
#4832
LICENSED
PROFESSIONAL ENGINEER

FOR APPROVALS ONLY

REV.	DATE:	CHANGES:
1	3-6-17	CHANGES PER CITY REVIEW COMMENTS

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

Stoneybrook Consultants, Inc.
456 Buckfield Road - Turner, Me 04282
(207) 514-7491 Voice
(207) 514-7492 Fax

SJR ENGINEERING, INC.
21 MAYFLOWER ROAD
AUGUSTA, MAINE 04330
(207) 622-1676 tel & fax
steve@sjreng.com
SJR ENGINEERING

CONSTRUCTION NOTES
1 MOLLISON WAY
LEWISTON, MAINE
PREPARED FOR
ONE MOLLISON WAY, LLC
195 CENTER STREET - AUBURN, MAINE 04210

DATE	PROJECT
FEB. 2017	2017-01
DRAWN BY	SCALE
SJR	NTS

SHEET 5

CITY OF LEWISTON

Department of Planning & Code Enforcement

TO: **Planning Board**
FROM: **David Hediger, City Planner**
DATE: **March 10, 2017**
RE: **March 13, 2017, Planning Board Agenda Item IV(d)**

Consider an application submitted by Tighe & Bond on behalf of Compounding Solutions, LLC for the construction of a 40,000 sf addition to an existing manufacturing facility at 258 Goddard Road.

This project consists a proposed 40,000 square foot addition to an existing plastics manufacturing facility at 258 Goddard Road, Compounding Solutions. This 10.14 acre lot, located in the Industrial (I) district, consists of a 42,400 square light industrial structure in which said use is allowed. The proposed addition includes additional parking, space for tractor trailer deliveries, and stormwater improvements. The project is being reviewed under the city's delegated review authority from Maine DEP as the proposed improvements will result in a total site developed with approximately 3.5 acres of impervious area.

The applicant has provided revisions and responses to staff's initial review comments. The following should be noted:

- The stormwater water system includes the construction of a new wet pond to handle the existing and proposed impervious area of the lot. An additional 1.29 acres of impervious area is being added to the existing 2.25 acres. The development is located within the urban impaired stream watershed of Hart Brook. Therefore, the pond has been designed to address by quality and quantity with respect to drainage. The stormwater improvements have been reviewed to the satisfaction of Public Services. The applicant has acknowledged that prior to any certificate of occupancy being issued the need to:
    - Provide evidence of the post-construction stormwater management guarantee having been recorded at the Registry of Deeds must be provided; and,
    - Provide evidence of a final inspection of the storm water system shall be provided to the city by the designing engineer along with a written statement indicating that the storm water system and all site improvements have been completed in accordance with the approved plans.
- No wetlands are being impacted with the proposed development.
- All space and bulk requirements of the I district are being met.
- A total of 97 parking spaces are being provided, exceeding the code's requirements for industrial uses.

- During construction, there may be as much as 4.7 acres of disturbed area. Staff stresses the need to ensure the submitted erosion control plan is implemented and followed, especially since the site is located within an impaired watershed. The applicant has noted on Sheet G-101, Erosion Control Note #5 that erosion control inspection reports must be provided to the city within 48-hours of each rain event of 0.25 inches or greater.
- Revisions with respect to Public Works comments are being reviewed by staff. An update will be provided at the meeting, with the recommended condition if necessary, that prior the issuance of any building permits or construction activity, any remaining issues be resolved to the satisfaction of Public Works.

While this is a large development with significant site improvements, the proposed project is rather straight forward and located in a zoning district specifically targeted for this type of development. At this time, staff is recommending approval of the proposed project with the following conditions:

1. Prior to any certificate of occupancy being issued:
    a. Evidence of the post-construction stormwater management guarantee having been recorded at the Registry of Deeds must be provided.
    b. Evidence of a final inspection of the storm water system shall be provided to the city by the designing engineer along with a written statement indicating that the storm water system and all site improvements have been completed in accordance with the approved plans.
2. Prior the issuance of any building permits or construction activity, any remaining issues must be resolved to the satisfaction of Public Works.

ACTIONS NECESSARY

Make a motion that the application submitted by Tighe & Bond on behalf of Compounding Solutions, LLC for the construction of a 40,000 sf addition to an existing manufacturing facility at 258 Goddard Road meets all of the necessary criteria contained in the Zoning and Land Use Code, including but not limited to, Article XIII, Sections 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).

Tighe&Bond
Engineers | Environmental Specialists

C1118-1
March 1, 2017

David Hediger
City of Lewiston Department
of Planning and Code Enforcement
27 Pine Street
Lewiston, Maine 04240

Re: **Proposed Building Expansion, 258 Goddard Road, Lewiston, Maine**

Dear David:

Tighe & Bond, Inc. (Tighe & Bond) prepared a January 16, 2017 Development Review Application for the above mentioned project. The following comments were provided on the Development Review Applications:

- City of Lewiston Department of Planning & Code Enforcement comments and concerns memo dated February 17, 2017.
- City of Lewiston Department of Public Works comments memo dated February 14, 2017.

The following provides responses (in **bold**) to the Lewiston Department of Planning & Code Enforcement comments and concerns and the Lewiston Department of Public Works comments.

Department of Planning & Code Enforcement Comments and Concerns

1. Referenced must be made to Article XIII, Section 15, Post-construction stormwater management, whereby a recorded maintenance agreement/performance guarantee must be provided. This should be completed prior to any certificates of occupancy being issued.

   Acknowledged

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

   Acknowledged

3. Title Cover Sheet:
   a. Add expiration language found in Article XIII, Section 12. Also add signature block for City of Lewiston Planning Board Chair.

      The Cover Sheet has been revised to include the expiration language noted above as well as City of Lewiston Planning Board Chair signature block.

   b. Address is 258 Goddard Road.

      The address has been revised to 258 Goddard Road on the Cover Sheet.

4. G-101: Erosion control notes. Add to note #5 that inspection reports must be provided to the city within 48-hours of inspection.

   Erosion Control Note #5 on Sheet G-101 has been revised to state that inspection reports must be provided to the City within 48-hours of inspection.

5. C-104:
   a. C-501 show detail for erosion control blanket. Erosion control plan does not show installation locations.

      Sheet C-104 has been revised to show the approximate locations/limits for erosion control blanket, detailed on Sheet C-501.

   b. Proposed retaining wall exceeds 6' in height. This must be designed by a PE. See Article XII, Section 7.

      Site Note #14 on Sheet G-101 states, "Contractor shall be responsible for obtaining retaining wall design from wall manufacturers, and submitting stamped drawings for approval prior to commencing construction. Contractor shall furnish all labor, materials and equipment required to construct wall in accordance with design approved by the engineer."

6. C-107: confirm these are cut-off or shielded fixtures.

   The fixtures callout out on Sheet C-107 have been confirmed to be cut-off or shielded (dark sky compliant) fixtures. A note has also been added to Sheet C-107 stating that all fixtures are be cut-off or shielded fixtures.

7. Plans label side yard along Alfred Plourde and Challenger. Any land area abutting a city street is subject to front yard and setback requirements.

   The Plans have been revise to note all property lines abutting a city street are front yards/setbacks.

Lewiston Department of Public Works Comments

Application Comments:

1. Submission Checklist - Section 12.E.3.d. Emergency Spillway Calculations – Calculations are required.

   The HydroCAD model has been revised to include the 100-year storm event summary for the proposed wet pond showing the emergency overflow grate can pass the 100-year storm event.

2. Submission Checklist - Section 13 – Urban Impaired Stream Submissions are required.

   The Section 13 narrative has been revised to outline how the urban impaired stream submission requirements are addressed for this project.

3. Submission Checklist - Section 16.A.5. – Ability to serve requests should be submitted to Kevin Gagne the Water Superintendent.

Ability to serve request has been submitted to Kevin Gagne and we are awaiting a confirmation letter.

4. Submission Checklist - Section 16.C. – Water Usage Information should be provided.

   Section 16 narrative has been revised to include the anticipated water usage for the proposed expansion as well as the approximate overall water usage for the site, 1,800 GPD and 3,500 GPD respectively.

5. Submission Checklist - Section 17.D. – Ability to serve requests should be submitted to Kevin Gagne the Sewer Superintendent.

   Ability to serve request has been submitted to Kevin Gagne and we are awaiting a confirmation letter.

6. Section 12 – Stormwater Management - The rainfall intensities are not correct in the hydrocad model, they should be modeled as:

COUNTY	Storm Type	1-YR	2-YR	5-YR	10-YR	25-YR	50-YR	100-YR	500-YR
ANDROSCOGGIN	III	2.5	3.0	3.7	4.3	5.4	6.4	7.6	11.1

   The HydroCAD models have been revise to use the above mentioned rainfall intensities.

7. Stormwater calculations for the previous phase of this project Completed by Summit included only enough clearing to accommodate the proposed expansion. During construction it appears that approximately 2.2 acres trees were cleared on the Challenger Drive side of the site. This area should be modeled as wooded in the predevelopment calculations since it was not included in the previous permit.

   The Pre-Development watershed model has been revised to account for this area being wooded, as well as to be consistent with how the site was previously modeled.

8. What are the Tc in the pre and post condition, based on the model it appears they were modeled as 0.0 mins.

   The Tc values in the pre development model has been revised to be consistent with how the Tc values were previously modeled by Summit and the Tc values for the post-development have been revised to reflect the proposed conditions of the site.

9. The outlet control structure for the existing wet pond modeled in the pre-condition does not match the wet pond that was modeled by Summit it should be modeled as:

Device	Routing	Invert	Outlet Devices
#1	Primary	262.30'	**8.0" x 55.0' long Culvert** CPP, square edge headwall, Ke= 0.500 Outlet Invert= 253.50' S= 0.1600 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior
#2	Device 1	262.80'	**0.5" Vert. Orifice/Grate X 1.25** C= 0.600
#3	Device 1	266.80'	**3.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	267.30'	**18.0" Horiz. Orifice/Grate** Limited to weir flow C= 0.600

   The post development condition completed by Summit for the wet pond does not match the predevelopment calculations completed by Tighe&Bond.

   Existing Wet Pond Discharge

Summit – Post (CFS)	Tighe&Bond – Pre (CFS)
0.02	1.50
0.12	1.58
0.35	1.66

The pre-development drainage model has been revised to match the modeling previously conducted by Summit.

10. The outlet control structure for the proposed wet pond includes at 48”x360” Orifice Grate, what is the device, it is not shown on the plans.

    The 48”x360” orifice grate modeled in the proposed wet pond HydroCAD analysis is the gravel trench stormwater runoff passes through before entering the underdrain.

11. Section 20 – Blasting – The section indicates shallow bedrock is present on the site, has it been determined if bedrock exists in the location of the proposed pond? Will a liner be necessary?

    The permanent pool prepared subgrade detail on Sheet C-502 calls for an 12” compacted clay layer to act as an impervious liner for the pond.

Plan Comments:

12. Sheet C-101 - A waterline does not exist where the new service is proposed; it turns down Apple Road as shown on the adjacent map.

The proposed location for the new water services expansion have been revised to reflect the approximate location of the existing water main shown no the above map.

13. Sheet C-105 – The fire and domestic water services must be separated at the right of way line with separate shut offs.

    The proposed / existing fire and domestic water services have been revised to have separate lines with shuts offs at the right of way.

14. Sheet C-502 – Utility Trench Detail – In Challenger Drive 4" of Hot mix asphalt and 24" of gravel shall be required, in Alfred Plourde Parkway 6" of Hot mix asphalt and 24" of gravel shall be required.

    The Utility Trench detail on Sheet C-502 has been revised to reflect the information shown above.

15. Sheet C-503 – Sewer manholes shall have bituminous coating and two layers of butyl sealant.

    A note has been added to the sewer manhole detail on Sheet C-503 stating that all sewer manholes are to have bituminous coating and two layers of butyl sealant.

Wet Pond Comments:

16. A maintenance access way should be included to allow access for maintenance of the pond and outlet control structure.

    A maintenance access way to the proposed wet pond has been added off Challenger Drive.

17. What is the mean depth of the wetpond?

    The mean depth of the wet pond is approximately 3.47'

    Permanent pool elevation = 243.15
    Pond volume at elevation 242.15 = 22,022 CF
    Pond surface area at elevation 242.15 = 6,348 SF
    Mean depth = 22,022 CF / 6,348 SF = 3.47'

18. A sediment forebay should be considered to prevent sediment from entering the wet pond.

    In lieu of a forebay the proposed drainage design calls for deep sump catch basins with oil/water separator hoods to provide pretreatment of runoff prior to be directed to the wet pond.

19. Please provide calculations showing that the emergency spill way can independently convey the 25 year storm with one foot of freeboard, and independently convey the 100 year storm without overtopping.

    Separate HydroCAD analyses have been included for the wet pond showing the emergency overflow grate can independently convey the 25 year storm with one foot of freeboard, and independently convey the 100 year storm without overtopping the pond.

20. The MaineDEP BMP Chapter 4 recommends a 6" underdrain in the gravel underdrain trench, a 4" is shown.

    The underdrain for the proposed wet pond has been revised to be a 6" underground.

21. The MaineDEP BMP Chapter 4 recommends an orifice be installed on the 6" underdrain to control the draining of a pond.

The proposed wet pond underdrain has been revised to include a cap with an orifice to control the draining of the wet pond.

22. A maintenance agreement as outlined in Chapter 4 of the Maine Stormwater Best Management Practices Manual should be created for the long term inspection and maintenance of the Wet Pond.

    A long term operation and maintenance plan has been prepared and is included in Section 12.

Very truly yours,

TIGHE & BOND, INC.

Bradlee Mezquita, P.E.
Vice President

Enclosures
Copy:

J:\C\C1118 Compounding Solutions\Report_Evaluation\Development Review App_REVISED\Comment Responce Letter.docx

Addressing Appendix A - Article XIII – Sections 4 & 11

TO: David Hediger
City Planner/Deputy Director Planning and Code Enforcement
City of Lewiston

FROM: Bradlee L. Mezquita
Tighe & Bond Inc.

DATE: February 2, 2017

Tighe & Bond is please to submit the following information regarding the requirements of the City of Lewiston Zoning and Land Use Code Appendix A, Article XII, Sections 4 – Approval Criteria and Section 11 – Expiration of Approval.

Section 4 – Approval Criteria

a) Utilization of the Site

The proposed building expansion project utilizes the site in the same manner, with the same tenant as the current development, with no impacts to any wetlands on site.

b) Traffic Movement into and out of the Development Area

The traffic movement into and out of the development will not be changed with the proposed building expansion. It is not anticipated that the building expansion will warrant any modification to the existing curb cut.

c) Access to the Site

The existing driveway entrance from Goddard road is not being modified as part of the proposed work, access to the site will remain the same.

d) Internal Vehicular Circulation

The layout of the proposed site is consistent with the existing site and has been designed to allow for truck circulation around the site to access the existing/proposed loading areas.

e) Pedestrian Circulation

The pedestrian circulation for the proposed building expansion is consistent with the need of the current site design and expectations of the sites use.

f) Stormwater Management

The stormwater management is similar to the existing stormwater design. The proposed building expansion project has been designed to meet the requirements of the Maine DEP Stormwater Management Law.

g) Erosion Control

The proposed building expansion project is required to meet the requirements of the Maine DEP Stormwater Management Law, which included erosion control measures, and has been designed as such.

h) Water Supply

The proposed water supply for the building expansion is consistent with the existing building. A new connection to City's water main is proposed as part of this project.

i) Sewer Disposal

The proposed sewage disposal for the building expansion is consistent with the existing building. A new sewer connection to City's sewer main in Challenger Drive is proposed as part of this project.

j) Utilities

The proposed utilities, including site lighting, is consistent with the existing use of the site.

k) Natural Features

To the extent possible the existing natural features have been preserved. There is no impact to any existing vegetation adjacent to wetlands on site.

l) Groundwater Protection

The proposed building expansion will not adversely affect groundwater quality as the drainage system has been designed to treat runoff prior to directing it off site.

m) Water and Air Pollution

The proposed building expansion is consistent with the existing use and will not result in undue water or air pollution.

n) Exterior Lighting

The proposed building expansion is consistent with the existing use. The proposed site lighting is adequate for safe use of the development in nighttime hours. All proposed lighting shall be dark sky compliant.

o) Waste Disposal

Waste disposal will be disposed of in the same manner that it is currently handled.

p) Lot Layout

The proposed building expansion site layout design does not require modification to the existing lot.

q) Landscaping

The proposed building expansion is in the rear of the site within a wooded area and the existing landscaping on site will not be changed.

r) Shoreland Relationship

There are no navigable water bodies within the vicinity of the proposed site, thus there will be no adverse effects due to the proposed project.

s) Open Space

The proposed building expansion is consistent with the existing use and meets the city requirements.

t) Technical and Financial Capacity

The project will be founded independently by Compounding Solutions, LLC.

u) Buffering

The development is surrounded by woods providing buffering to the adjacent properties.

v) Compliance with District Regulations

The development is designed to be consistent with the district regulations of Article XI of the City of Lewiston's ordinance.

w) Design Consistent with Performance Review Standards

The development is designed to be consistent with the Performance Review Standards.

Section 11 – Expiration of Approval

a) Initiation of Development within two Years

The proposed building expansion project is anticipated to begin with the required two (2) year window.

b) Reexamination after Five Years

The applicant is aware of the five (5) year threshold and anticipates the project being completed within the timeframe.

J:\C\C1118 Compounding Solutions\Report_Evaluation\Development Review App\Addressing Appendix A.doc

CITY OF LEWISTON, MAINE

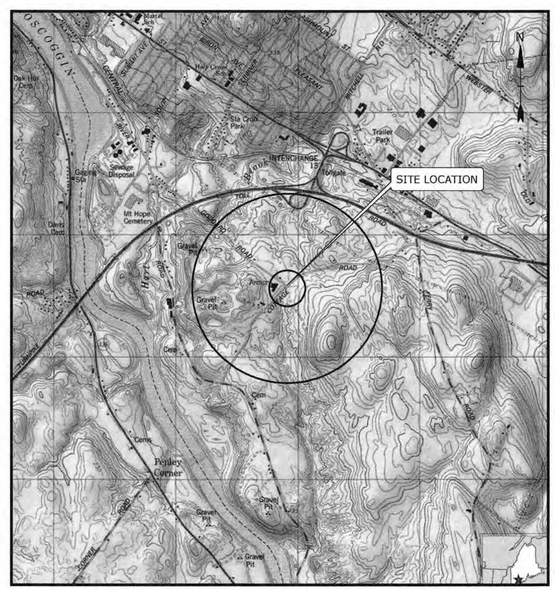
PROPOSED BUILDING EXPANSION

PERMITTING DRAWINGS

JANUARY 16, 2017

LAST REVISED (MARCH 1, 2017)

LIST OF DRAWINGS		
SHEET NO.	SHEET TITLE	LAST REVISED
	COVER SHEET	03/01/2017
G-101	GENERAL NOTES & ABBREVIATIONS SHEET	03/01/2017
C-101	OVERALL EXISTING CONDITIONS PLAN	03/01/2017
C-102	DEMOLITION PLAN	03/01/2017
C-103	SITE PLAN	03/01/2017
C-104	GRADING, DRAINAGE & EROSION CONTROL PLAN	03/01/2017
C-105	UTILITY PLAN	03/01/2017
C-106	SEWER PLAN & PROFILE	03/01/2017
C-107	PHOTOMETRIC PLAN	03/01/2017
C-501	DETAILS SHEET	03/01/2017
C-502	DETAILS SHEET	03/01/2017
C-503	DETAILS SHEET	03/01/2017



LOCATION MAP
SCALE: 1" = 2,000'

PREPARED BY:

Tighe&Bond
Engineers | Environmental Specialists

STATE OF MAINE
Bradlee Mazzuchi
9410
LICENSED
PROFESSIONAL ENGINEER

APPLICANT:

Compounding Solutions
258 Goddard Road
Lewiston, Maine 04240

EXPIRATION OF APPROVAL REQUIREMENTS:

1. INITIATION OF DEVELOPMENT WITHIN TWO YEARS.
   - 1.1. IF DEVELOPMENT HAS NOT OCCURRED AS DEFINED WITHIN THE SCOPE OF THIS CODE WITHIN TWO YEARS, DEVELOPMENT REVIEW APPROVAL SHALL EXPIRE. THE APPLICANT MAY NOT BEGIN CONSTRUCTION OR OPERATION OF THE DEVELOPMENT UNTIL A NEW APPROVAL IS GRANTED. A STATEMENT TO THIS EFFECT MUST APPEAR ON ALL APPROVED PLANS.
   - 1.2. AN EXTENSION OF DEVELOPMENT REVIEW APPROVAL MUST BE MADE WITHIN TWO YEARS OF THE INITIAL GRANTING OF APPROVAL. THE APPLICANT MUST STATE THE REASONS WHY THE DEVELOPMENT WAS NOT BEGUN WITHIN TWO YEARS FROM THE GRANTING OF THE INITIAL APPROVAL AND THE REASONS WHY THE APPLICANT WILL BE ABLE TO BEGIN THE ACTIVITY WITHIN TWO YEARS FROM THE GRANTING OF AN EXTENSION, IF GRANTED. EXTENSIONS OF APPROVAL MAY INCLUDE INFORMATION SUBMITTED IN THE INITIAL APPLICATION BY REFERENCE. ONLY ONE EXTENSION OF THE INITIAL APPROVAL SHALL BE ALLOWED UNDER THESE PROVISIONS.
2. REEXAMINATION AFTER FIVE YEARS.
   - 2.1. IF THE APPROVED DEVELOPMENT IS NOT COMPLETED WITHIN FIVE YEARS FROM THE DATE OF THE GRANTING OF APPROVAL OR EXTENSION OF APPROVAL, SAID APPROVAL SHALL EXPIRE AND THE APPLICANT SHALL REAPPLY FOR A NEW APPROVAL. A STATEMENT TO THIS EFFECT MUST APPEAR ON ALL APPROVED PLANS. THE APPROPRIATE REVIEWING AUTHORITY MUST REEXAMINE ITS INITIAL APPROVAL AND MAY IMPOSE ADDITIONAL TERMS OR CONDITIONS OR PRESCRIBE OTHER NECESSARY CORRECTIVE ACTION TO RESPOND TO SIGNIFICANT CHANGES IN CIRCUMSTANCES WHICH MAY HAVE OCCURRED BETWEEN THE DATE OF ORIGINAL APPROVAL AND THE DATE OF EXPIRATION OF THAT APPROVAL, INCLUDING ANY EXTENSION THERETO. WITHIN THE SCOPE OF THIS CODE, THESE CHANGES MAY INCLUDE, BUT NOT BE LIMITED TO ZONING, STORMWATER, ENVIRONMENT, AND TRAFFIC REGULATIONS. THE APPROPRIATE REVIEWING AUTHORITY MAY WAIVE REQUIRING ANY ADDITIONAL TERMS OR CONDITIONS OR OTHER NECESSARY CORRECTIVE ACTIONS FOR A PARTICULAR DEVELOPMENT FOR WHICH IT IS DETERMINED THE CHANGES TO BE INSIGNIFICANT.

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL NOT RELY ON SCALED DIMENSIONS AND SHALL CONTACT THE ENGINEER FOR CLARIFICATION IF A REQUIRED DIMENSION IS NOT PROVIDED ON THE PLANS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS AND METHODS, AND FOR SITE CONDITIONS THROUGHOUT CONSTRUCTION. NEITHER THE PLANS NOR THE SEAL OF THE ENGINEER AFFIXED HEREON EXTEND TO OR INCLUDE SYSTEMS REQUIRED FOR THE SAFETY OF THE CONTRACTOR, THEIR EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING AND IMPLEMENTING SAFETY PROCEDURES AND SYSTEMS AS REQUIRED BY THE UNITED STATES OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), AND ANY STATE OR LOCAL SAFETY REGULATIONS.
3. TIGHE & BOND. ASSUMES NO RESPONSIBILITY FOR ANY ISSUES LEGAL OR OTHERWISE, RESULTING FROM CHANGES MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION OF TIGHE & BOND.

SIGNATURE BLOCK:

CITY OF LEWISTON PLANNING BOARD CHAIR:

_____ DATE: _____

COMPLETE SET 12 SHEETS

811 DigSafe MA-ME-NH-RI-VT

Last Save Date: February 26, 2017 10:36 PM By: CML
Plot Date: Monday, February 27, 2017 Plotted By: Craig M. Langton
T&B File Location: J:\C\C1119 Compounding Solutions\Drawings_Figures\AutoCAD\Sheets\G-000.dwg Layout Tab: 22X34 CS

DEMOLITION NOTES:

1. THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR THE ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK.
2. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES. CALL DIG SAFE AT LEAST 72 HOURS PRIOR TO THE COMMENCEMENT OF ANY DEMOLITION/CONSTRUCTION ACTIVITIES.
3. ALL MATERIALS SCHEDULED TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS, ORDINANCES AND CODES.
4. COORDINATE REMOVAL, RELOCATION, DISPOSAL OR SALVAGE OF UTILITIES WITH THE OWNER AND APPROPRIATE UTILITY COMPANY.
5. ANY EXISTING WORK OR PROPERTY DAMAGED OR DISRUPTED BY CONSTRUCTION/ DEMOLITION ACTIVITIES SHALL BE REPLACED OR REPAIRED TO MATCH ORIGINAL EXISTING CONDITIONS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
6. SAW CUT AND REMOVE PAVEMENT ONE (1) FOOT OFF PROPOSED EDGE OF PAVEMENT OR EXISTING CURB LINE IN ALL AREAS WHERE PAVEMENT TO BE REMOVED ABUTS EXISTING PAVEMENT OR CONCRETE TO REMAIN.
7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE THEMSELVES WITH THE CONDITIONS OF ALL OF THE PERMIT APPROVALS.
8. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ADDITIONAL PERMITS, NOTICES AND FEES NECESSARY TO COMPLETE THE WORK AND ARRANGE FOR AND PAY FOR NECESSARY INSPECTIONS AND APPROVALS FROM THE AUTHORITIES HAVING JURISDICTION.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION AND OFF-SITE DISPOSAL OF MATERIALS REQUIRED TO COMPLETE THE WORK, EXCEPT FOR WORK NOTED TO BE COMPLETED BY OTHERS.
10. UTILITIES SHALL BE TERMINATED AT THE MAIN LINE PER UTILITY COMPANY STANDARDS. THE CONTRACTOR SHALL REMOVE ALL ABANDONED UTILITIES LOCATED WITHIN THE LIMITS OF WORK. CONTRACTOR SHALL VERIFY ORIGIN OF ALL DRAINS AND UTILITIES PRIOR TO REMOVAL/TERMINATION TO DETERMINE IF DRAINS OR UTILITY IS ACTIVE, AND SERVICES ANY ON OR OFF-SITE STRUCTURE TO REMAIN. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY OF ANY SUCH UTILITY FOUND AND SHALL MAINTAIN THESE UTILITIES UNTIL PERMANENT SOLUTION IS IN PLACE.
11. PAVEMENT REMOVAL LIMITS ARE SHOWN FOR CONTRACTOR'S CONVENIENCE. ADDITIONAL PAVEMENT REMOVAL MAY BE REQUIRED DEPENDING ON THE CONTRACTOR'S OPERATION. CONTRACTOR TO VERIFY FULL LIMITS OF PAVEMENT REMOVAL PRIOR TO BID.
12. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING STRUCTURES, CONCRETE PADS, UTILITIES AND PAVEMENT WITHIN THE WORK LIMITS SHOWN UNLESS SPECIFICALLY IDENTIFIED TO REMAIN. ITEMS TO BE REMOVED INCLUDE BUT ARE NOT LIMITED TO: CONCRETE, PAVEMENT, CURBS, LIGHTING, MANHOLES, CATCH BASINS, UNDER GROUND PIPING, POLES, SIGNS, FENCES, RAMPS, BOLLARDS, TREES AND LANDSCAPING.
13. COORDINATE ALL WORK WITHIN THE PUBLIC RIGHT OF WAYS WITH THE CITY OF LEWISTON.
14. REMOVE TREES AND BRUSH AS REQUIRED FOR COMPLETION OF WORK. CONTRACTOR SHALL GRUB AND REMOVE ALL STUMPS WITHIN LIMITS OF WORK AND DISPOSE OF OFF SITE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.
15. CONTRACTOR SHALL PROTECT ALL PROPERTY MONUMENTATION THROUGHOUT DEMOLITION AND CONSTRUCTION OPERATIONS. SHOULD ANY MONUMENTATION BE DISTURBED BY BY THE CONTRACTOR, THE CONTRACTOR SHALL EMPLOY A MAINE LICENSED SURVEYOR TO REPLACE DISTURBED MONUMENTS.
16. PROVIDE INLET PROTECTION BARRIERS AT ALL CATCH BASINS/CURB INLETS WITHIN CONSTRUCTION LIMITS AS WELL AS CATCH BASINS/CURB INLETS THAT MAY RECEIVE RUNOFF FROM CONSTRUCTION ACTIVITIES. INLET PROTECTION BARRIERS SHALL BE MAINTAINED FOR THE DURATION OF THE PROJECT. INLET PROTECTION BARRIERS SHALL BE "HIGH FLOW SILT SACK" BY ACF ENVIRONMENTAL OR EQUAL. INSPECT BARRIERS WEEKLY AND AFTER EACH RAIN EVENT OF 0.25 INCHES OR GREATER. CONTRACTOR SHALL COMPLETE A MAINTENANCE INSPECTION REPORT AFTER EACH INSPECTION. SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT OR MORE OFTEN IF THE FABRIC BECOMES CLOGGED OR SEDIMENT HAS ACCUMULATED TO 1/3 THE DESIGN DEPTH OF THE BARRIER.
17. THE CONTRACTOR SHALL PHASE DEMOLITION AND CONSTRUCTION AS REQUIRED TO PROVIDE CONTINUOUS SERVICE TO EXISTING BUSINESSES AND HOMES THROUGHOUT THE CONSTRUCTION PERIOD. EXISTING BUSINESS AND HOME SERVICES INCLUDE, BUT ARE NOT LIMITED TO ELECTRICAL, COMMUNICATION, FIRE PROTECTION, DOMESTIC WATER AND SEWER SERVICES. TEMPORARY SERVICES, IF REQUIRED, SHALL COMPLY WITH ALL FEDERAL, STATE, LOCAL AND UTILITY COMPANY STANDARDS. CONTRACTOR SHALL PROVIDE DETAILED CONSTRUCTION SCHEDULE TO OWNER PRIOR TO ANY DEMOLITION/CONSTRUCTION ACTIVITIES.
18. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF ANY CLEARING OR DEMOLITION ACTIVITIES.
19. THE CONTRACTOR SHALL PAY ALL COSTS NECESSARY FOR TEMPORARY PARTITIONING, BARRICADING, FENCING, SECURITY AND SAFETY DEVICES REQUIRED FOR THE MAINTENANCE OF A CLEAN AND SAFE CONSTRUCTION SITE.
20. SAW CUT AND REMOVE PAVEMENT AND CONSTRUCT PAVEMENT TRENCH PATCH FOR ALL UTILITIES TO BE REMOVED AND PROPOSED UTILITIES LOCATED IN EXISTING PAVEMENT AREAS TO REMAIN.

SITE NOTES:

1. STRIPE PARKING AREAS AS SHOWN, INCLUDING PARKING SPACES AND ADA SYMBOLS. (ALL MARKINGS EXCEPT CENTERLINE AND MEDIAN ISLANDS TO BE CONSTRUCTED USING WHITE TRAFFIC PAINT. CENTERLINE AND MEDIAN ISLANDS TO BE CONSTRUCTED USING YELLOW TRAFFIC PAINT. ALL TRAFFIC PAINT SHALL MEET THE REQUIREMENTS OF AASHTO M248 TYPE "F").
2. ALL PAVEMENT MARKINGS AND SIGNS TO CONFORM TO "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS", AND THE AMERICANS WITH DISABILITIES ACT REQUIREMENTS, LATEST EDITIONS.
3. SEE DETAILS FOR PARKING STALL MARKINGS, ADA SYMBOLS, SIGNS AND SIGN POSTS.
4. THE CONTRACTOR SHALL EMPLOY A MAINE LICENSED SURVEYOR OR PROFESSIONAL ENGINEER TO DETERMINE ALL LINES AND GRADES.
5. CLEAN AND COAT VERTICAL FACE OF EXISTING PAVEMENT AT SAW CUT LINE WITH RS-1 EMULSION IMMEDIATELY PRIOR TO PLACING NEW BITUMINOUS CONCRETE.
6. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE FEDERAL, STATE AND/OR CITY CODES & SPECIFICATIONS.
7. COORDINATE ALL WORK WITHIN PUBLIC RIGHT OF WAYS WITH THE CITY OF LEWISTON.
8. CONTRACTOR TO SUBMIT AS-BUILT PLANS ON REPRODUCIBLE MYLARS AND IN DIGITAL FORMAT (.DWG FILE) ON DISK TO THE OWNER AND ENGINEER UPON COMPLETION OF THE PROJECT. AS-BUILTS SHALL BE PREPARED AND CERTIFIED BY A MAINE LICENSED LAND SURVEYOR OR PROFESSIONAL ENGINEER.
9. SEE ARCHITECTURAL/BUILDING DRAWINGS FOR ALL CONCRETE PADS & SIDEWALKS ADJACENT TO BUILDING.
10. ALL WORK SHALL CONFORM TO THE CITY OF LEWISTON DEPARTMENT OF PUBLIC WORKS, STANDARD SPECIFICATIONS.
11. ALL LIGHT POLE BASES NOT PROTECTED BY A RAISED CURB SHALL BE PAINTED YELLOW.
12. COORDINATE ALL WORK ADJACENT TO BUILDING WITH BUILDING CONTRACTOR.
13. ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING RETAINING WALL DESIGN FROM WALL MANUFACTURERS, AND SUBMITTING STAMPED DRAWINGS FOR APPROVAL PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED TO CONSTRUCT WALL IN ACCORDANCE WITH DESIGN APPROVED BY THE ENGINEER.

GRADING AND DRAINAGE NOTES:

1. COMPACTION REQUIREMENTS:

BELOW PAVED OR CONCRETE AREAS	95%
TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL	95%
BELOW LOAM AND SEED AREAS	90%

* ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557, METHOD C FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM D-1556 OR ASTM-2922.

2. ALL STORM DRAINAGE PIPES SHALL BE HIGH DENSITY POLYETHYLENE (HANCOR HI-Q, ADS N-12 OR EQUAL) OR RCP CLASS IV, UNLESS OTHERWISE SPECIFIED.
3. SEE UTILITY PLAN FOR ALL SITE UTILITY INFORMATION.
4. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
5. CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE AND LAWN AREAS FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCES, EXITS, RAMPS AND LOADING DOCK AREAS ADJACENT TO THE BUILDING.
6. CONTRACTOR SHALL THOROUGHLY CLEAN ALL CATCH BASINS AND DRAIN LINES, WITHIN THE LIMIT OF WORK, OF SEDIMENT IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.
7. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE FEDERAL, STATE AND LOCAL CODES.
8. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED FERTILIZER AND MULCH.
9. ALL STORM DRAIN CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE MAINEDOT STANDARD SPECIFICATIONS, LATEST EDITION.
10. ALL PROPOSED CATCHBASINS SHALL BE EQUIPPED WITH OIL/GAS SEPARATOR HOODS AND 4' SUMPS.
11. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE FEDERAL, STATE AND CITY OF LEWISTON DEPARTMENT OF PUBLIC WORKS AND CONSTRUCTION SPECIFICATIONS, LATEST REVISIONS.
12. SEE REFERENCE PLANS FOR BENCH MARK INFORMATION.

EROSION CONTROL NOTES:

1. INSTALL EROSION CONTROL BARRIERS AS SHOWN AS FIRST ORDER OF WORK.
2. SEE GENERAL EROSION CONTROL NOTES ON "EROSION CONTROL NOTES & DETAILS SHEET".
3. PROVIDE INLET PROTECTION AROUND ALL EXISTING AND PROPOSED CATCH BASIN INLETS WITHIN THE WORK LIMITS. MAINTAIN FOR THE DURATION OF THE PROJECT UNTIL PAVEMENT HAS BEEN INSTALLED.
4. INSTALL STABILIZED CONSTRUCTION ENTRANCES.
5. INSPECT INLET PROTECTION AND PERIMETER EROSION CONTROL MEASURES DAILY AND AFTER EACH RAIN STORM OF 0.25 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY OF FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE FILTER HEIGHT. INSPECTION REPORTS SHALL BE PROVIDED TO THE CITY WITHIN 48-HOURS OF INSPECTION.
6. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER AND MULCH.
7. CONSTRUCT EROSION CONTROL BLANKET ON ALL SLOPES STEEPER THAN 3:1.
8. PRIOR TO ANY WORK OR SOIL DISTURBANCE COMMENCING ON THE SUBJECT PROPERTY, INCLUDING MOVING OF EARTH, THE APPLICANT SHALL INSTALL ALL EROSION AND SILTATION MITIGATION AND CONTROL MEASURES AS REQUIRED BY STATE AND LOCAL PERMITS AND APPROVALS.
9. CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST AND WIND EROSION THROUGHOUT THE CONSTRUCTION PERIOD. DUST CONTROL MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO, SPRINKLING WATER ON UNSTABLE SOILS SUBJECT TO ARID CONDITIONS.
10. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF CONSTRUCTION.
11. ALL CATCH BASIN SUMPS AND PIPING SHALL BE THOROUGHLY CLEANED TO REMOVE ALL SEDIMENT AND DEBRIS AFTER THE PROJECT HAS BEEN FULLY PAVED.
12. TEMPORARY SOIL STOCKPILE SHALL BE SURROUNDED BY SILT FENCE AND SHALL BE STABILIZED BY TEMPORARY EROSION CONTROL SEEDING. STOCKPILE AREAS TO BE LOCATED AS FAR AS POSSIBLE FROM THE DELINEATED EDGE OF WETLANDS.
13. SAFETY FENCING SHALL BE PROVIDED AROUND STOCKPILES OVER 10 FT.
14. CONCRETE TRUCKS WILL BE REQUIRED TO WASH OUT (IF NECESSARY) SHOOTS ONLY WITHIN AREAS WHERE CONCRETE HAS BEEN PLACED. NO OTHER WASH OUT WILL BE ALLOWED.

UTILITY NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES, AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK AT NO ADDITIONAL COST TO THE OWNER.
2. COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY COMPANY.
   WATER - CITY OF LEWISTON DPW - WATER AND SEWER DIVISION
   SEWER - CITY OF LEWISTON DPW - WATER AND SEWER DIVISION
   ELECTRIC - CENTRAL MAINE POWER COMPANY
3. SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION.
4. SEE GRADING, DRAINAGE & EROSION CONTROL PLAN FOR PROPOSED GRADING AND EROSION CONTROL MEASURES.
5. ALL SEWER PIPE SHALL BE PVC SDR 35 UNLESS OTHERWISE STATED.
6. CONTRACTOR SHALL MAINTAIN UTILITY SERVICES TO ABUTTING PROPERTIES THROUGHOUT CONSTRUCTION.
7. EXISTING UTILITIES TO BE REMOVED SHALL BE CAPPED AT THE MAIN AND MEET THE DEPARTMENT OF PUBLIC WORKS STANDARDS FOR CAPPING OF WATER AND SEWER SERVICES.
8. ALL ELECTRICAL MATERIAL WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRIC CODE, LATEST EDITION, AND ALL APPLICABLE STATE AND LOCAL CODES.
9. THE EXACT LOCATION OF NEW UTILITY SERVICES AND CONNECTIONS SHALL BE COORDINATED WITH THE BUILDING DRAWINGS AND THE APPLICABLE UTILITY COMPANIES.
10. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.
11. THE CONTRACTOR SHALL OBTAIN, PAY FOR, AND COMPLY WITH ALL REQUIRED PERMITS, ARRANGE FOR ALL INSPECTIONS, AND SUBMIT COPIES OF ACCEPTANCE CERTIFICATES TO THE OWNER PRIOR TO THE COMPLETION OF THIS PROJECT.
12. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL.
13. A 10-FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN ALL WATER AND SANITARY SEWER LINES. AN 18-INCH MINIMUM OUTSIDE TO OUTSIDE VERTICAL SEPARATION SHALL BE PROVIDED AT ALL WATER/SANITARY SEWER CROSSINGS.
14. THE CONTRACTOR SHALL CONTACT "DIG-SAFE" 72 HOURS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL HAVE THE "DIG-SAFE" NUMBER ON SITE AT ALL TIMES.
18. SAW CUT AND REMOVE PAVEMENT AND CONSTRUCT PAVEMENT TRENCH PATCH FOR ALL PROPOSED UTILITIES LOCATED IN EXISTING PAVEMENT AREAS TO REMAIN
19. HYDRANTS, GATE VALVES, FITTINGS, ETC. SHALL MEET THE REQUIREMENTS OF THE CITY OF LEWISTON.
20. COORDINATE TESTING OF SEWER CONSTRUCTION WITH THE CITY OF LEWISTON.
21. ALL SEWER PIPE WITH LESS THAN 5' OF COVER SHALL BE INSULATED.
22. CONTRACTOR SHALL COORDINATE ALL ELECTRIC WORK INCLUDING BUT NOT LIMITED TO: CONDUIT CONSTRUCTION, UTILITY POLE CONSTRUCTION, AND TRANSFORMER CONSTRUCTION WITH POWER COMPANY.
23. CONTRACTOR SHALL PHASE UTILITY CONSTRUCTION AS TO MAINTAIN CONTINUOUS SERVICE TO ABUTTING PROPERTIES. CONTRACTOR SHALL COORDINATE TEMPORARY SERVICES TO ABUTTERS WITH THE UTILITY COMPANY AND AFFECTED ABUTTER.
24. SITE LIGHTING SPECIFICATIONS, CONDUIT LAYOUT AND CIRCUITRY FOR PROPOSED SITE LIGHTING AND SIGN ILLUMINATION SHALL BE PROVIDED BY THE PROJECT ELECTRICAL ENGINEER.
25. CONTRACTOR SHALL CONSTRUCT ALL UTILITIES AND DRAINS TO WITHIN 10' OF THE FOUNDATION WALLS AND CONNECT THESE TO SERVICE STUBS FROM THE BUILDING.

EXISTING CONDITIONS PLAN NOTES:

1. REFERENCE PLANS:
   1.1. "TOPOGRAPHIC SITE PLAN", DATED DECEMBER 2009, LAST REVISED JANUARY 7, 2010, PREPARED BY SUMMIT ENVIRONMENTAL.
   1.2. "SOUTH PARK - REVISION 6", DATED JULY 10, 1997, RECORDED AT ANDROSCOGGIN COUNTY REGISTRY OF DEEDS IN PLAN BOOK 39, PAGE 182.
2. EXISTING CONDITIONS ARE BASED ON A FIELD SURVEY BY JONES ASSOCIATES IN DECEMBER 2009, AND REFERENCE PLAN 1.1.
3. WETLAND DELINEATION AND FIELD LOCATED BY JONES ASSOCIATES IN DECEMBER 2009.

LEGEND

	PROPOSED DEMOLITION
	PAVEMENT TO BE REMOVED
	PROPOSED ASPHALT ROADWAY
	RIP RAP
	PROPOSED CONCRETE SIDWALK
3.0%	PROPOSED SLOPE
273.10	PROPOSED SPOT GRADE
	PROPOSED FLARED END SECTION
	PROPOSED ACCESSIBLE PARKING
	PROPOSED WALL PACK LIGHT
	PROPOSED SIGN
	PROPOSED LIGHT POLE
	PROPOSED CATCHBASIN
	PROPOSED DRAIN MANHOLE
	EXISTING WETLAND
	PROPERTY LINE
	APPROXIMATE ABUTTER PROPERTY LINE
	SITE SETBACK
	PROPOSED LIMIT OF WORK
	PROPOSED SAWCUT
PW	APPROXIMATE EXISTING WATER
PW	PROPOSED WATER
SS	APPROXIMATE EXISTING SEWER
SS	PROPOSED SEWER
G	APPROXIMATE EXISTING GAS
UD	PROPOSED UNDER DRAIN
RL	EXISTING ROOF LEADER/UNDERDRAIN
RL	PROPOSED ROOF LEADER
	EXISTING DRAINLINE
	PROPOSED DRAINLINE
246	EXISTING CONTOURS
246	PROPOSED CONTOURS
246.15	PROPOSED CONTOURS
	PROPOSED GUARDRAIL
	PROPOSED PERIMETER EROSION CONTROL
	APPROXIMATE LOCTION/LIMIT OF EROSION CONTROL MATTING

SITE DATA

LOCATION: TAX MAP 153, LOT 14
258 GODDARD ROAD
LEWISTON, MAINE

ZONING DISTRICT: URBAN ENTERPRISE
ALLOWED USE: LIGHT INDUSTRIAL

DIMENSIONAL REQUIREMENTS:

	REQUIRED	PROVIDED
MINIMUM LOT AREA:	5,000 SF	±441,698 SF (±10.14 AC)
MINIMUM STREET FRONTAGE:	100 FT	±1,369 FT
MINIMUM SETBACKS:		
FRONT:	25 FT	±76.3 FT
SIDE:	20 FT	±30.3 FT
REAR:	20 FT	±240.3 FT
MINIMUM YARDS:		
FRONT:	10 FT	±12 FT
SIDE:	10 FT	±10.2 FT
REAR:	10 FT	±27 FT
MAXIMUM BUILDING HEIGHT:	80 FT	<80 FT
MAXIMUM LOT COVERAGE RATIO:	0.60	±0.19
MAXIMUM IMPERVIOUS COVERAGE:	0.80	±0.43
MINIMUM OPEN SPACE	25 %	41.7± %

PARKING REQUIREMENTS:

	REQUIRED	PROVIDED
PARKING STALL LAYOUT: STANDARD 90°:	9' X 18'	9' X 18'
DRIVE AISLE WIDTH: 90° (2-WAY TRAFFIC):	22 FT	24 FT
PARKING SPACE REQUIREMENTS:		
INDUSTRIAL: 1 / 500 SF (FOR 1ST 3,000 SF) +1 / 1,000 SF (FOR EXCESS SF) = 3,000 SF / 500 SF/SPACE +78,730 SF / 1,000 SF/SPACE =	85 SPACES	
OFFICE: 1 / 300 SF = 3,000 SF / 300 SF/SPACE =	10 SPACES	
TOTAL REQUIRED PARKING:	95 SPACES	97 SPACES*

* - FOUR (4) ADA SPACES PROVIDED

LOADING REQUIREMENTS:

	REQUIRED	PROVIDED
LOADING SPACE LAYOUT:	12' X 55'	>12' X 55'
LOADING SPACE REQUIREMENTS: 80,000 SF - 127,999 SF:	2 SPACES	6 SPACES

ABBREVIATIONS

ADA	AMERICANS WITH DISABILITIES ACT
BCC	BITUMINOUS CONCRETE CURB
BOC	BOTTOM OF CURB
BOW	BOTTOM OF WALL
CB	CATCH BASIN
CCB	CAPE COD BERM
CONST.	CONSTRUCT
DIA	DIAMETER
DMH	DRAINAGE MANHOLE
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
EXIST	EXISTING
FES	FLARED END SECTION
FF	FINISHED FLOOR
HDPE	HIGH DENSITY POLYETHYLENE
HYD	HYDRANT
ID	INSIDE DIAMETER
INV	INVERT
LF	LINEAR FEET
MAX	MAXIMUM
MIN	MINIMUM
PCB	PROPOSED CATCH BASIN
PDMH	PROPOSED DRAINAGE MANHOLE
POS	PROPOSED OUTLET STRUCTURE
PROP	PROPOSED
PSMH	PROPOSED SEWER MANHOLE
PVC	POLYVINYL CHLORIDE
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RL	ROOF LEADER
ROW	RIGHT OF WAY
SF	SQUARE FEET
TBR	TO BE REMOVED
TOC	TOP OF CURB
TOW	TOP OF WALL
TYP	TYPICAL
UD	UNDERDRAIN
W/	WITH
BLDG	BUILDING
DWG	DRAWING

Tighe&Bond
Engineers | Environmental Specialists

STATE OF MAINE
Bradley Marquis
9410
LICENSED
PROFESSIONAL ENGINEER

ISSUED FOR PERMITTING

Proposed Building Expansion

Compounding Solutions

Lewiston, Maine

MARK	DATE	DESCRIPTION
A	01/16/2017	Development Review Submission

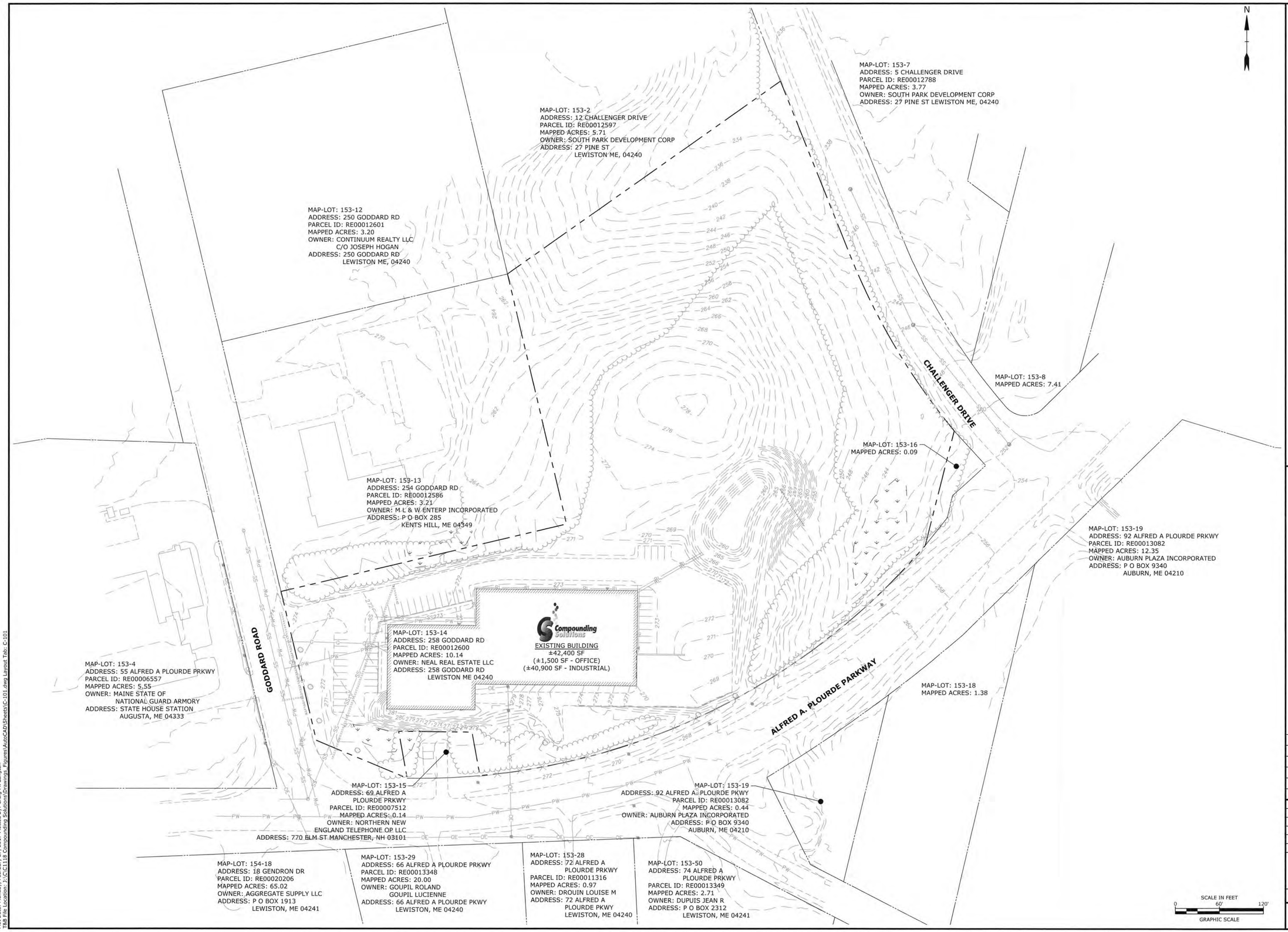
PROJECT NO:	C-1118-1
DATE:	01/16/2017
FILE:	G-101.DWG
DRAWN BY:	TPD/CML
CHECKED:	BLM
APPROVED:	GMM

GENERAL NOTES & ABBREVIATIONS SHEET

SCALE: AS SHOWN

G-101

Last Save Date: January 16, 2017 5:42 AM By: CML
Plot Date: Monday, February 27, 2017 Plotted By: Craig M. Langton
Plot File Location: J:\CE\1118 Compounding Solutions\Drawings_Figures\AutoCAD\Sheets\G-101.dwg Layout Tab: G-101



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PROJECT NO:	C-1118-1
DATE:	01/16/2017
FILE:	C-101.DWG
DRAWN BY:	TPD/CML
CHECKED:	BLM
APPROVED:	GMM

OVERALL EXISTING CONDITIONS PLAN

SCALE: AS SHOWN

C-101

Last Save Date: January 16, 2017 5:41 AM By: CML
Plot Date: Monday, February 27, 2017 Plotted By: Craig M. Langton
T&B File Location: J:\CC\1118 Compounding Solutions\Drawings_Figures\AutoCAD\Sheets\C-101.dwg Layout Tab: C-101

Tighe&Bond
Engineers | Environmental Specialists

STATE OF MAINE
Brentse Mazzuchi
9410
LICENSED
PROFESSIONAL ENGINEER

ISSUED FOR PERMITTING

Proposed Building Expansion

Compounding Solutions

Lewiston, Maine

MARK	DATE	DESCRIPTION
A	01/16/2017	Development Review Submission

PROJECT NO:	C-1118-1
DATE:	01/16/2017
FILE:	C-102.DWG
DRAWN BY:	TPD/CML
CHECKED:	BLM
APPROVED:	GMM

DEMOLITION PLAN

SCALE: AS SHOWN

C-102

Last Save Date: January 16, 2017 5:41 AM By: CML
Plot Date: Monday, February 27, 2017 Plotted By: Craig M. Langton
T&B File Location: J:\C\C1118 Compounding Solutions\Drawings_Figures\AutoCAD\Sheets\C-102.dwg Layout Tab: C-102

SITE DATA

LOCATION: TAX MAP 153, LOT 14
258 GODDARD ROAD
LEWISTON, MAINE

ZONING DISTRICT: URBAN ENTERPRISE
ALLOWED USE: LIGHT INDUSTRIAL

DIMENSIONAL REQUIREMENTS:

	REQUIRED	PROVIDED
MINIMUM LOT AREA:	5,000 SF	±441,698 SF (±10.14 AC)
MINIMUM STREET FRONTAGE:	100 FT	±1,369 FT
MINIMUM SETBACKS:		
FRONT:	25 FT	±76.3 FT
SIDE:	20 FT	±30.3 FT
REAR:	20 FT	±240.3 FT
MINIMUM YARDS:		
FRONT:	10 FT	±12 FT
SIDE:	10 FT	±10.2 FT
REAR:	10 FT	±27 FT
MAXIMUM BUILDING HEIGHT:	80 FT	<80 FT
MAXIMUM LOT COVERAGE RATIO:	0.60	±0.19
MAXIMUM IMPERVIOUS COVERAGE:	0.80	±0.43
MINIMUM OPEN SPACE	25 %	41.7± %

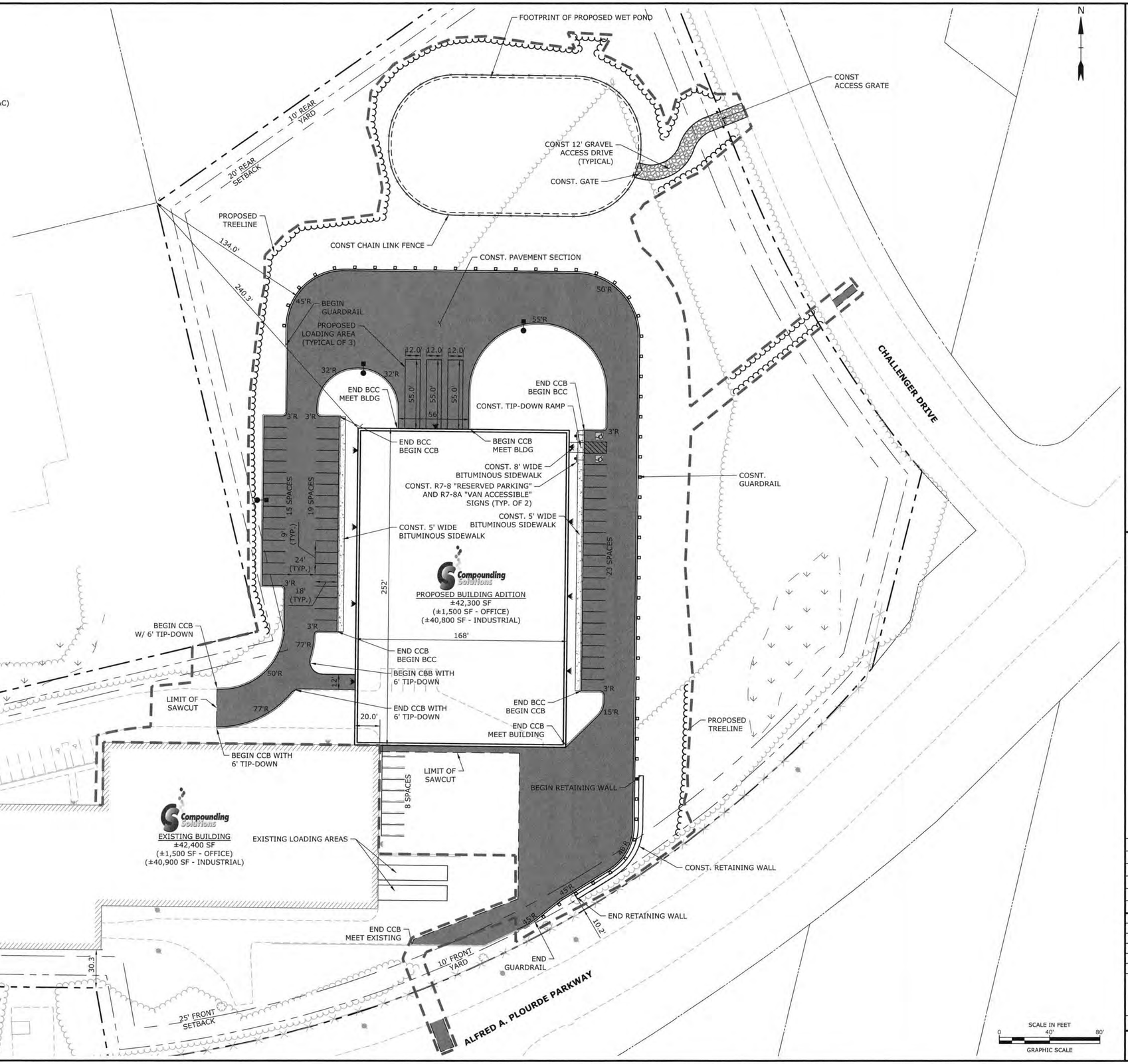
PARKING REQUIREMENTS:

	REQUIRED	PROVIDED
PARKING STALL LAYOUT: STANDARD 90°:	9' X 18'	9' X 18'
DRIVE AISLE WIDTH: 90° (2-WAY TRAFFIC):	22 FT	24 FT
PARKING SPACE REQUIREMENTS:		
INDUSTRIAL:		
1 / 500 SF (FOR 1ST 3,000 SF)		
+1 / 1,000 SF (FOR EXCESS SF)		
= 3,000 SF / 500 SF/SPACE		
+78,730 SF / 1,000 SF/SPACE =	85 SPACES	
OFFICE:		
1 / 300 SF		
= 3,000 SF / 300 SF/SPACE =	10 SPACES	
TOTAL REQUIRED PARKING:	95 SPACES	97 SPACES*

* - FOUR (4) ADA SPACES PROVIDED

LOADING REQUIREMENTS:

	REQUIRED	PROVIDED
LOADING SPACE LAYOUT:	12' X 55'	>12' X 55'
LOADING SPACE REQUIREMENTS: 80,000 SF - 127,999 SF:	2 SPACES	6 SPACES



Tighe&Bond
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STATE OF MAINE
Brecken Mezquita
9410
LICENSED
PROFESSIONAL ENGINEER

ISSUED FOR PERMITTING

Proposed Building Expansion

Compounding Solutions

Lewiston, Maine

MARK	DATE	DESCRIPTION
C	03/01/2017	Revised Development Review Submission
A	01/16/2017	Development Review Submission

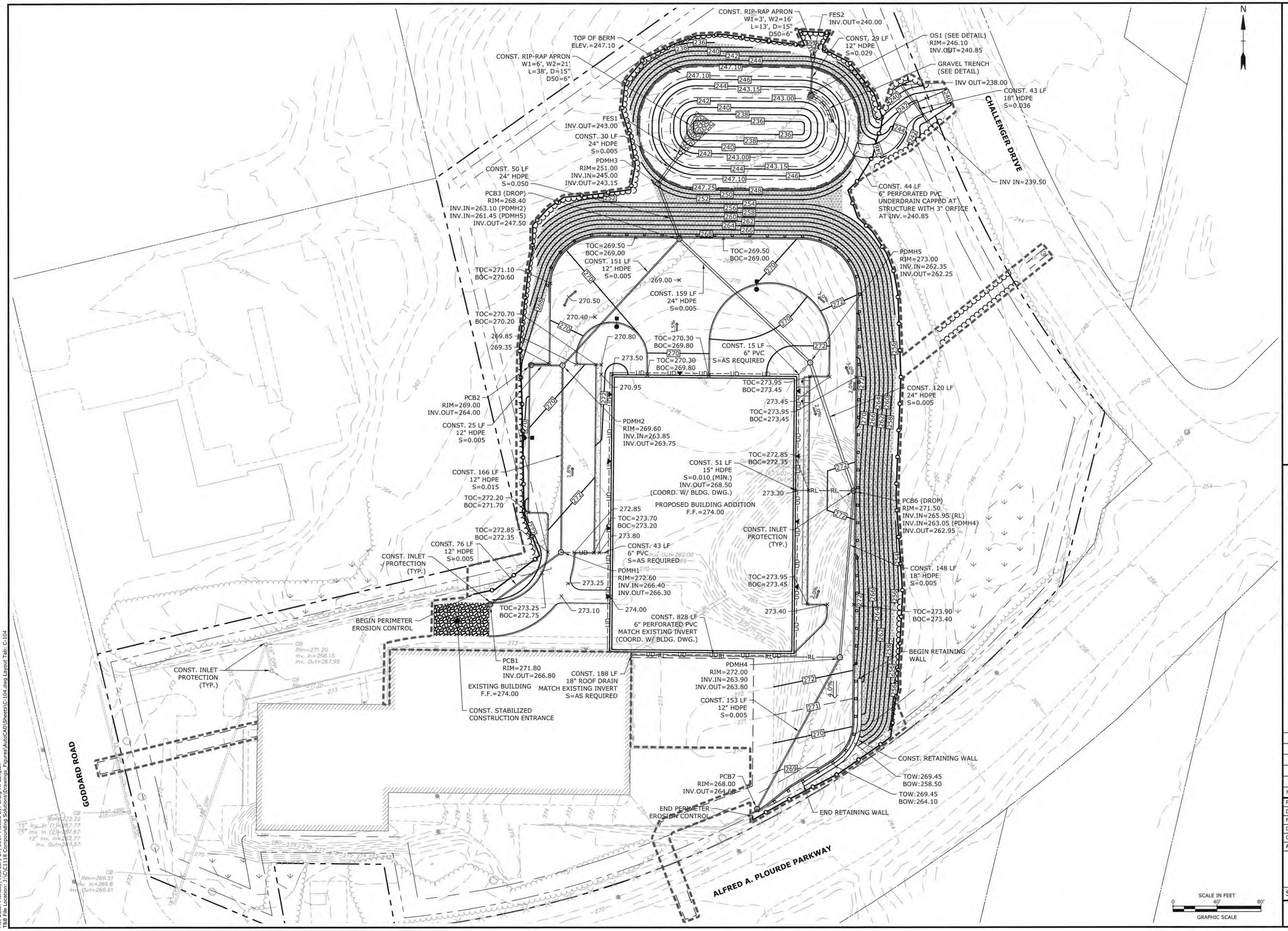
PROJECT NO:	C-1118-1
DATE:	01/16/2017
FILE:	C-103.DWG
DRAWN BY:	TPD/CML
CHECKED:	BLM
APPROVED:	GMM

SITE PLAN

SCALE: AS SHOWN

C-103

Last Save Date: February 26, 2017 10:00 PM By: CML
Plot Date: Wednesday, February 22, 2017 Plotted By: Cindy M. Langton
T&B File Location: J:\C\C1118 Compounding Solutions\Drawings_Figures\AutoCAD\Sheets\C-103.dwg Layout Tab: C-103



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STATE OF MAINE
Bradlee Mazzulla
9410
LICENSED
PROFESSIONAL ENGINEER

ISSUED FOR PERMITTING

Proposed Building Expansion

Compounding Solutions

Lewiston, Maine

MARK	DATE	DESCRIPTION
A	01/16/2017	Development Review Submission

PROJECT NO:	C-1118-1
DATE:	01/16/2017
FILE:	C-104.DWG
DRAWN BY:	TPD/CML
CHECKED:	BLM
APPROVED:	GMM

GRADING, DRAINAGE & EROSION CONTROL PLAN

SCALE: AS SHOWN

C-104

Last Save Date: January 16, 2017 5:40 AM By: CML
Plot Date: Monday, February 27, 2017 Plotted By: Craig M. Langton
T&B File Location: J:\C\C1118 Compounding Solutions\Drawings_Figures\AutoCAD\Sheets\C-104.dwg Layout Tab: C-104

Last Save Date: January 16, 2017 5:40 AM By: CML
Plot Date: Monday, February 27, 2017 Plotted By: Craig M. Langton
T&B File Location: J:\C\C1118 Compounding Solutions\Drawings_Figures\AutoCAD\Sheets\C-105.dwg Layout Tab: C-105

Tighe&Bond
Engineers | Environmental Specialists

STATE OF MAINE
Bradley Mesquita
9410
LICENSED
PROFESSIONAL ENGINEER
4/27/17

ISSUED FOR PERMITTING

Proposed Building Expansion

Compounding Solutions

Lewiston, Maine

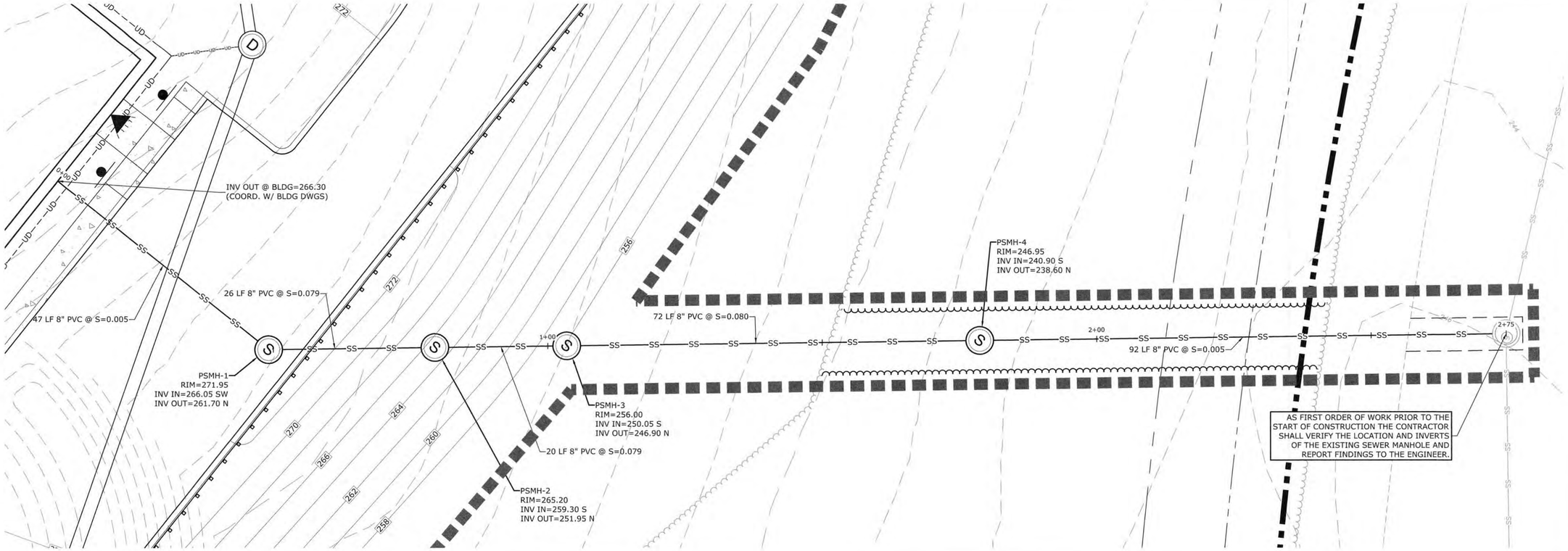
MARK	DATE	DESCRIPTION
A	01/16/2017	Development Review Submission

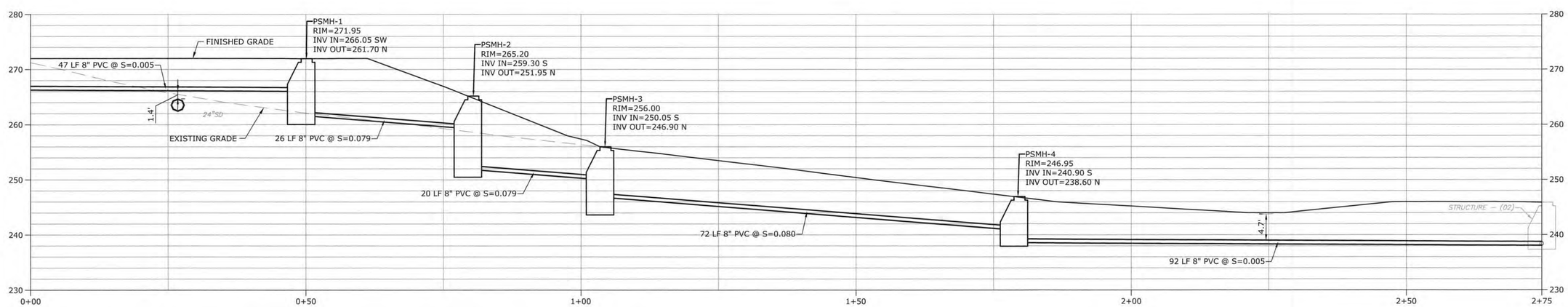
PROJECT NO:	C-1118-1
DATE:	01/16/2017
FILE:	C-105.DWG
DRAWN BY:	TPD/CML
CHECKED:	BLM
APPROVED:	GMM

UTILITY PLAN

SCALE: AS SHOWN

C-105





PROPOSED SEWER PROFILE

SCALE IN FEET
0 10' 20'
GRAPHIC SCALE

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STATE OF MAINE
Bradley Mesquita
9410
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PROFESSIONAL ENGINEER

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Compounding Solutions

Lewiston, Maine

MARK	DATE	DESCRIPTION
A	01/16/2017	Development Review Submission

PROJECT NO:	C-1118-1
DATE:	01/16/2017
FILE:	C-106.DWG
DRAWN BY:	TPD/CML
CHECKED:	BLM
APPROVED:	GMM

SEWER PLAN & PROFILE

SCALE: AS SHOWN

C-106

Last Save Date: January 16, 2017 5:40 AM By: CML
Plot Date: Monday, February 27, 2017 Plotted By: Craig M. Langton
T&B File Location: J:\C\C1118 Compounding Solutions\Drawings_Figures\AutoCAD\Sheets\C-106.dwg Layout Tab: C-106

StatArea_1
WESTERN PKG LOT OF ADDITION
Illuminance (Fc)
Average = 1.52
Maximum = 3.9
Minimum = 0.5
Avg/Min Ratio = 3.04
Max/Min Ratio = 7.80

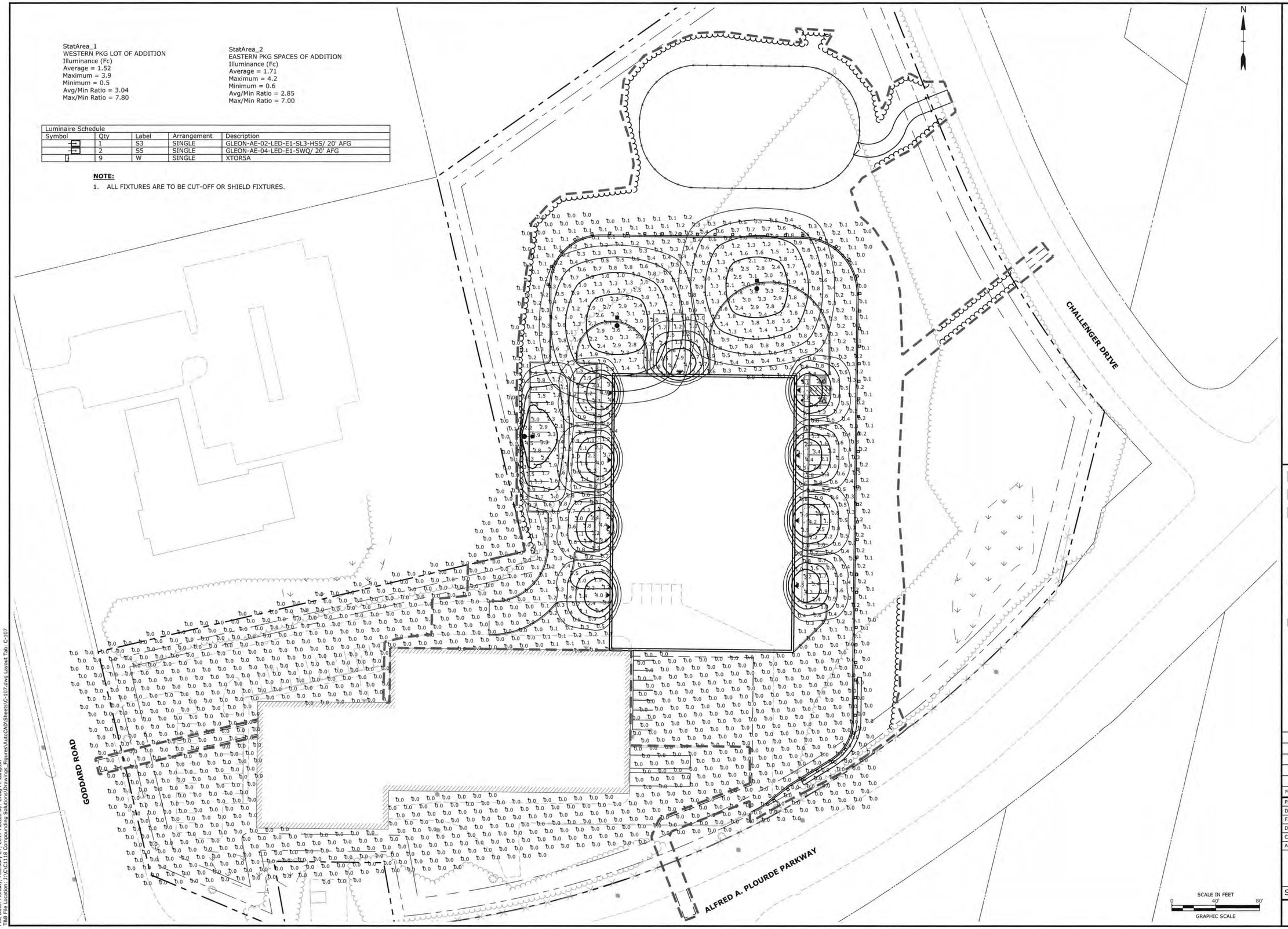
StatArea_2
EASTERN PKG SPACES OF ADDITION
Illuminance (Fc)
Average = 1.71
Maximum = 4.2
Minimum = 0.6
Avg/Min Ratio = 2.85
Max/Min Ratio = 7.00

Luminaire Schedule

Symbol	Qty	Label	Arrangement	Description
	1	S3	SINGLE	GLEON-AE-02-LED-E1-SL3-HSS/ 20' AFG
	2	S5	SINGLE	GLEON-AE-04-LED-E1-5WQ/ 20' AFG
	9	W	SINGLE	XTOR5A

NOTE:

1. ALL FIXTURES ARE TO BE CUT-OFF OR SHIELD FIXTURES.



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Compounding Solutions

Lewiston, Maine

MARK	DATE	DESCRIPTION
A	01/16/2017	Development Review Submission

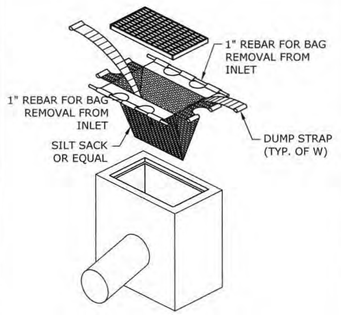
PROJECT NO:	C-1118-1
DATE:	01/16/2017
FILE:	C-107.DWG
DRAWN BY:	TPD/CML
CHECKED:	BLM
APPROVED:	

PHOTOMETRIC PLAN

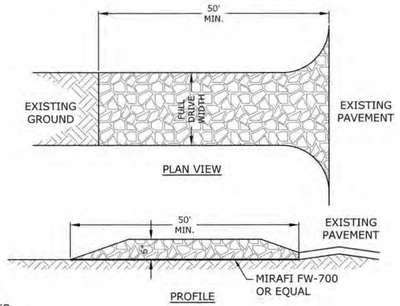
SCALE: AS SHOWN

C-107

Last Save Date: January 16, 2017 3:38 AM By: CML
Plot Date: Monday, February 27, 2017 Plotted By: Craig M. Langton
B:\Re-accounts\J1101\118 Compounding Solutions\Drawings_Figures\AutoCAD\Sheets\C-107.dwg Layout Tab: C-107



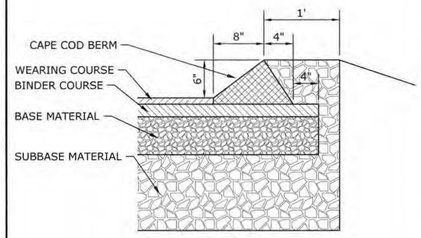
SILT SACK
NO SCALE



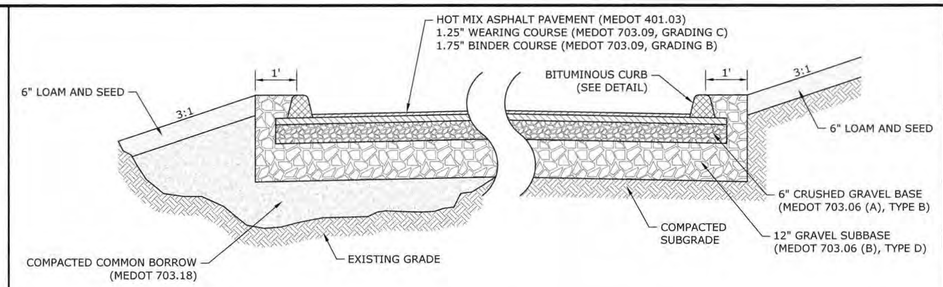
NOTES:

1. SEE EROSION CONTROL NOTES FOR MATERIAL, INSTALLATION AND MAINTENANCE REQUIREMENTS.

STABILIZED CONSTRUCTION ENTRANCE
NO SCALE



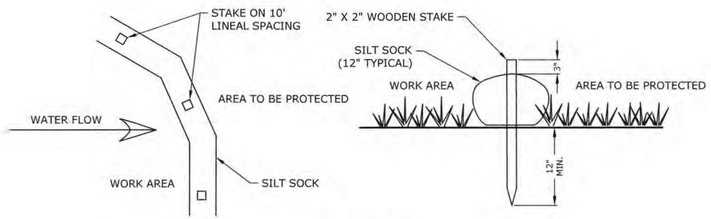
CAPE COD BERM
NO SCALE



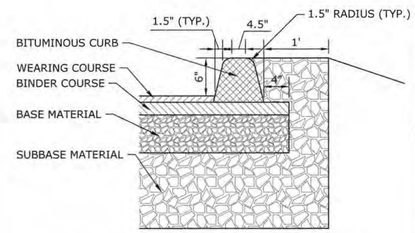
NOTES:

1. SEE SITE PLAN FOR PAVEMENT WIDTHS AND LOCATIONS.
2. SEE GRADING, DRAINAGE & EROSION CONTROL PLAN FOR PAVEMENT SLOPES AND CROSS SLOPES.
3. A TACK COAT SHALL BE APPLIED TO THE TOP OF THE BINDER COURSE PRIOR TO PLACING THE WEARING COURSE.

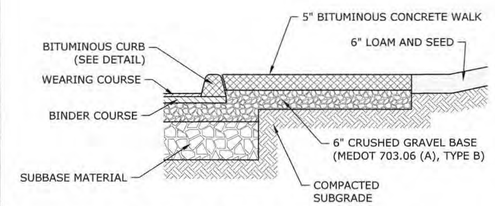
PAVEMENT SECTION
NO SCALE



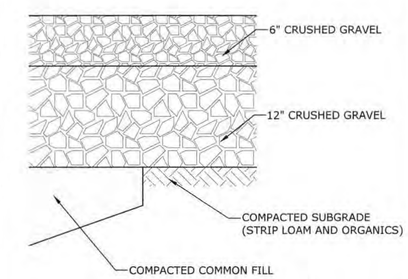
SILT SOCK
NO SCALE



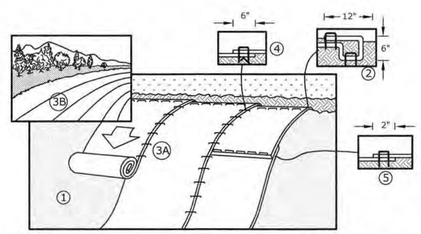
BITUMINOUS CONCRETE CURB
NO SCALE



BITUMINOUS CONCRETE SIDEWALK
NO SCALE



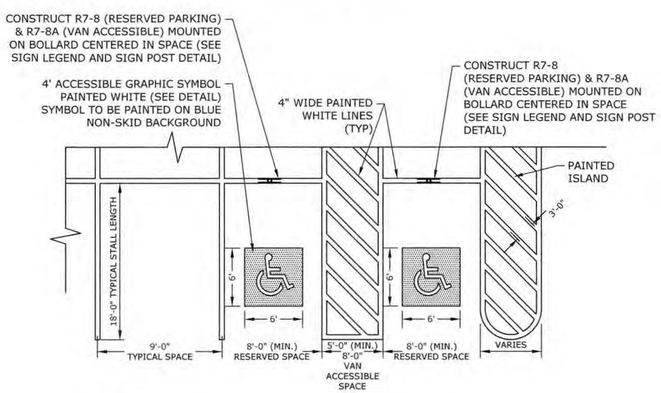
GRAVEL DRIVE SECTION
NO SCALE



NOTES:

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE, 36" OVER THE GRADE BREAK, BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UPSLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF TAPLES/STAKES 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES SPACED 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS DOWN THE SLOPE. ALL BLANKETS MUST BE SECURELY FASTENED TO THE SOIL SURFACE BY PLACING STAPLES IN APPROPRIATE LOCATIONS AS SHOWN ON THE STAPLE PATTERN GUIDE.
4. STAPLE LENGTHS SHALL BE A MINIMUM OF 8 INCHES.

EROSION CONTROL BLANKET FOR SLOPE PROTECTION
NO SCALE



NOTES:

1. ALL PAINT SHALL BE FAST DRYING TRAFFIC PAINT, MEETING THE REQUIREMENTS OF AASHTO M248-TYPE F. PAINT SHALL BE APPLIED AS SPECIFIED BY MANUFACTURER.
2. SYMBOLS & PARKING STALLS SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT AND LOCAL AND STATE REQUIREMENTS.
3. FINISH PAVEMENT GRADES AT ALL HANDICAP ACCESSIBLE STALLS AND PAINTED ACCESS AISLES SHALL NOT EXCEED 2% IN ANY DIRECTION.

STALL STRIPING
NO SCALE

Tighe&Bond
Engineers | Environmental Specialists

STATE OF MAINE
Bradley Marquette
9410
LICENSED
PROFESSIONAL ENGINEER
3-27-17

ISSUED FOR PERMITTING

Proposed Building Expansion

Compounding Solutions

Lewiston, Maine

MARK	DATE	DESCRIPTION
C	03/01/2017	Revised Development Review Submission
A	01/16/2017	Development Review Submission

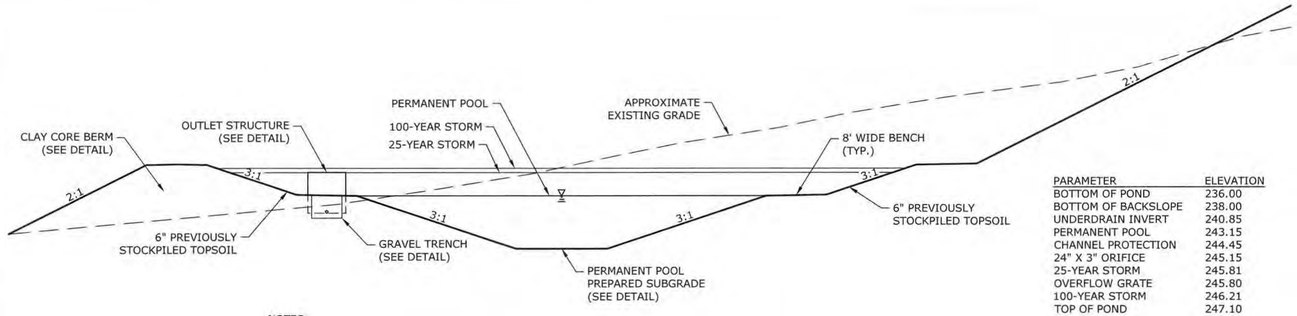
PROJECT NO:	C-1118-1
DATE:	01/16/2017
FILE:	C-1118-1-C-DETAILS.DWG
DRAWN BY:	TPD/CML
CHECKED:	BLM
APPROVED:	GMM

DETAILS SHEET

SCALE: AS SHOWN

C-501

Last Save Date: February 27, 2017 11:12 AM By: CML
Plot Date: Monday, February 27, 2017 Plotted By: Craig M. Langton
T&B File Location: J:\C\C1118 Compounding Solutions\Drawings_Figures\AutoCAD\Sheets\C-1118-1-C-DETAILS.dwg Layout Tab: C-501

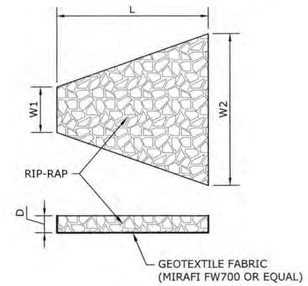


PARAMETER	ELEVATION
BOTTOM OF POND	236.00
BOTTOM OF BACKSLOPE	238.00
UNDERDRAIN INVERT	240.85
PERMANENT POOL	243.15
CHANNEL PROTECTION	244.45
24" X 3" ORIFICE	245.15
25-YEAR STORM	245.81
OVERFLOW GRATE	245.80
100-YEAR STORM	246.21
TOP OF POND	247.10
TOP OF SLOPE	268.00

NOTES:

1. PRIOR TO POND EXCAVATION, CONTRACTOR SHALL STRIP AND STOCKPILE TOPSOIL FOR REUSE.
2. POND BENCHES AND SIDE SLOPES SHALL BE PLANTED WITH AN APPROPRIATE WETLAND SEED MIX.
3. WHERE BEDROCK IS ENCOUNTERED UNDER THE POND BENCHES AND SIDE SLOPES, THE POND SHALL BE OVEREXCAVATED BY 12" TO ACCOMMODATE A 6" MIN. LAYER OF COMMON FILL (MEDOT 703.18) AND A 6" LAYER OF PREVIOUSLY STOCKPILED TOPSOIL.
4. NO WATER SHALL BE DIRECTED TO THE WET POND UNTIL IT HAS BEEN FULLY STABILIZED.

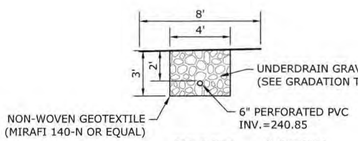
WET POND SECTION A-A
NO SCALE



RIP-RAP APRON
NO SCALE

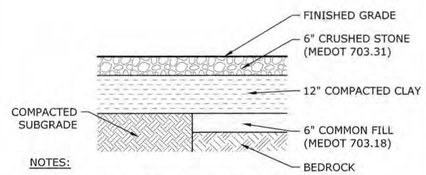
NOTES:

1. SEE GRADING, DRAINAGE & EROSION CONTROL PLAN FOR DIMENSIONS AND STONE SIZE.
2. STONE SHALL CONSIST OF SUB-ANGULAR FIELD STONE OR ROUGH UNHEWN QUARRY STONE OF APPROXIMATELY RECTANGULAR SHAPE. FLAT OR ROUND STONES ARE NOT ACCEPTABLE. THE STONE SHALL BE HARD AND OF SUCH QUALITY THAT IT WILL NOT DISINTEGRATE ON EXPOSURE TO WATER OR WEATHERING, BE CHEMICALLY STABLE ANDBE SUITABLE IN ALL OTHER RESPECTS FOR THE PURPOSE INTENDED. THE BULK SPECIFIC GRAVITY (SATURATED SURFACE-DRY BASIS) OF THE INDIVIDUAL STONES SHALL BE AT LEAST 2.5.
3. STONE SHALL BE COMPOSED OF A WELL-GRADED MIXTURE DOWN TO THE ONE-INCH SIZE PARTICLE SUCH THAT 50 PERCENT OF THE MIXTURE BY WEIGHT SHALL BE LARGER THAN THE D50 SIZE SPECIFIED. A WELL-GRADED MIXTURE IS DEFINED AS A MIXTURE COMPOSED PRIMARILY OF THE LARGER STONE SIZE BUT WITH A SUFFICIENT MIXTURE OF OTHER SIZES TO FILL THE PROGRESSIVELY SMALLER VOIDS BETWEEN THE STONES. THE DIAMETER SHALL BE 1.5 TIMES THE D50 SIZE.



SIEVE SIZE	% PASSING
1"	95-100
1/2"	75-100
#4	50-100
#20	15-80
#50	10-15
#200	0-5

GRAVEL TRENCH SECTION
NO SCALE



NOTES:

1. SEE GRADING, DRAINAGE & EROSION CONTROL PLAN FOR PERMANENT POOL LOCATIONS.
2. CONTRACTOR SHALL TAKE SPECIAL CARE TO PREVENT SEDIMENT MIGRATION WHILE PLACING CLAY LAYER.

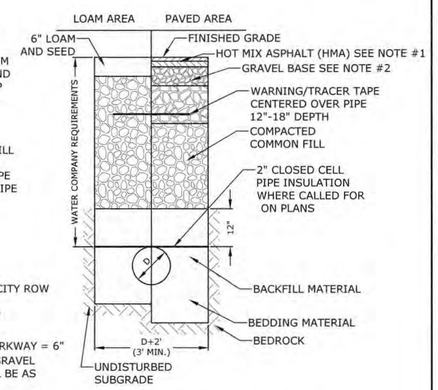
PERMANENT POOL PREPARED SUBGRADE
NO SCALE

STORM DRAINAGE AND SANITARY SEWER PIPE:

CRUSHED STONE BEDDING AND BACKFILL FOR FULL WIDTH OF THE TRENCH FROM 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK UP TO 12" ABOVE TOP OF PIPE.

WATER AND GAS PIPE:

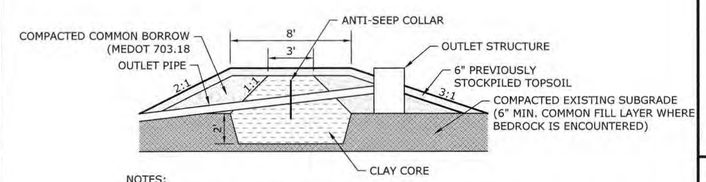
SAND BEDDING AND BACKFILL FOR FULL WIDTH OF THE TRENCH FROM 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK UP TO 12" ABOVE TOP OF PIPE.



NOTES:

1. WIDTH OF HMA WITHIN CITY ROW SHALL BE AS FOLLOWS:
   - CHALENGER DRIVE = 4"
   - GODDARD ROAD = 4"
   - ALFRED A. PLOURDE PARKWAY = 6"
2. WIDTH OF COMPACTED GRAVEL WITHIN CITY ROW SHALL BE AS FOLLOWS:
   - CHALENGER DRIVE = 24"
   - GODDARD ROAD = 24"
   - ALFRED A. PLOURDE PARKWAY = 24"

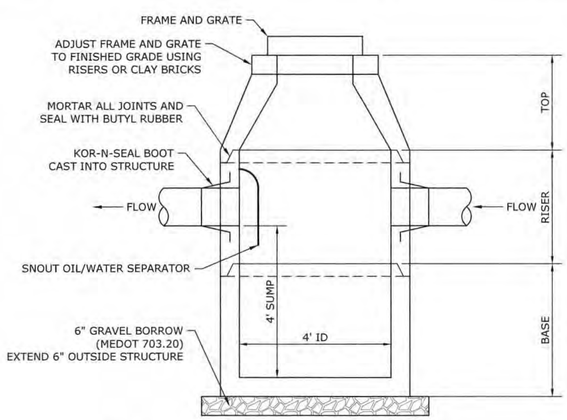
UTILITY TRENCH
NO SCALE



NOTES:

1. CORE MATERIAL SHALL MEET USGS CLASSIFICATION SC, SM, CL OR ML.
2. CORE MATERIAL SHALL HAVE A PERMEABILITY LESS THAN 0.000005 CM/S
3. CORE MATERIAL SHALL HAVE 100% PASSING THE 3" SIEVE AND 50%-100% PASSING THE #200 SIEVE.

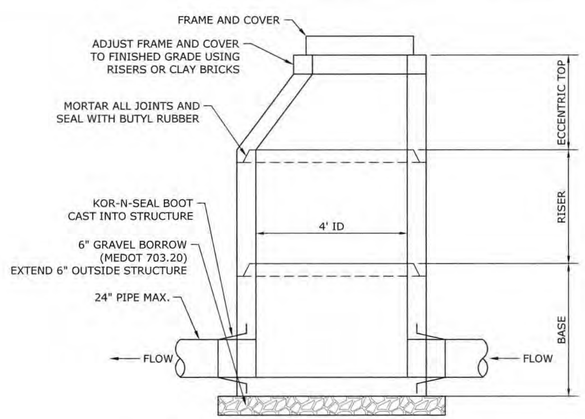
CLAY CORE BERM
NO SCALE



NOTES:

1. ALL CATCHBASINS SHALL BE CONSTRUCTED TO MEDOT STANDARD SPECIFICATIONS, LATEST EDITION.
2. ALL CATCHBASINS SHALL BE CONSTRUCTED FOR H20 LOADING.

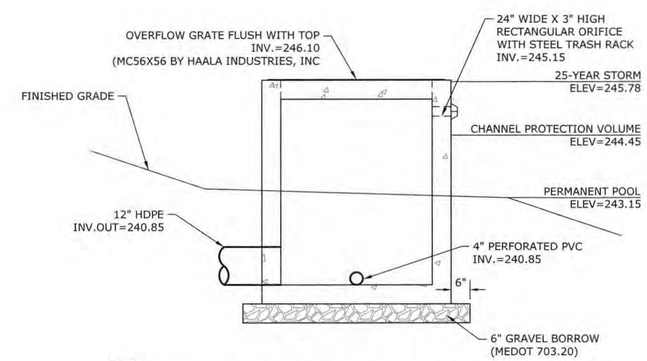
4' DIAMETER CATCHBASIN
NO SCALE



NOTES:

1. ALL CATCHBASINS SHALL BE CONSTRUCTED TO MEDOT STANDARD SPECIFICATIONS, LATEST EDITION.
2. ALL CATCHBASINS SHALL BE CONSTRUCTED FOR H20 LOADING.

4' DIAMETER MANHOLE
NO SCALE



NOTES:

1. ALL SECTIONS SHALL BE 4,000 PSI CONCRETE (TYPE II CEMENT).
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQUARE INCHES PER LINEAR FOOT IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER OF THE THIRDE WALL.
3. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQUARE INCHES PER LINEAR FOOT.
4. THE STRUCTURES SHALL BE DESIGNED FOR H20 LOADING.
5. ALL JOINTS ON THE STRUCTURE AND PIPING SHALL BE WATERTIGHT.

OUTLET STRUCTURE
NO SCALE

Tighe&Bond
Engineers | Environmental Specialists

STATE OF MAINE
Bradley Mazzuchi
9410
LICENSED
PROFESSIONAL ENGINEER
2.27.17

ISSUED FOR PERMITTING

Proposed Building Expansion

Compounding Solutions

Lewiston, Maine

MARK	DATE	DESCRIPTION
C	03/01/2017	Revised Development Review Submission
A	01/16/2017	Development Review Submission

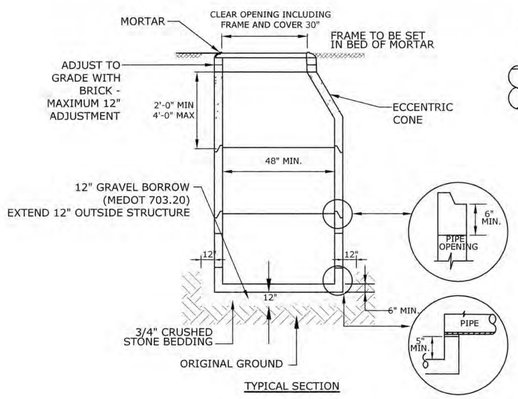
PROJECT NO:	C-1118-1
DATE:	01/16/2017
FILE:	C-1118-1-C-DETAILS.DWG
DRAWN BY:	TPD/CML
CHECKED:	BLM
APPROVED:	GMM

DETAILS SHEET

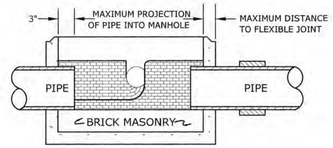
SCALE: AS SHOWN

C-502

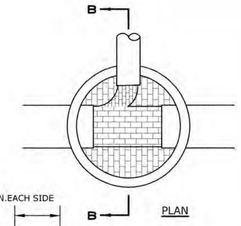
Last Save Date: February 27, 2017 11:12 AM By: CML
Plot Date: Monday, February 27, 2017 Plotted By: Craig M. Langton
T&B File Location: J:\C\C1118 Compounding Solutions\Drawings_Figures\AutoCAD\Sheets\C-1118-1-C-DETAILS.dwg Layout Tab: C-502



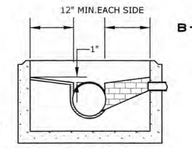
TYPICAL SECTION



SECTION A-A



PLAN



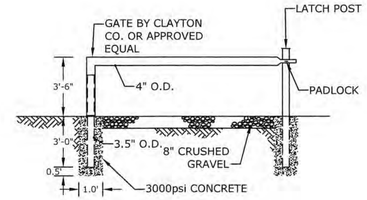
TOP OF SHELF SHALL BE 1" ABOVE CROWN OF HIGHEST PIPE

SECTION B-B

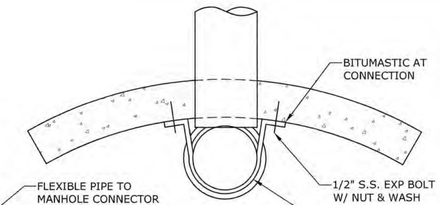
NOTES:

1. ALL SEWER MANHOLES SHALL HAVE BITUMINOUS COATING AND TWO (2) LAYERS BUTYL SEALANT.
2. ALL SEWER MANHOLES SHALL BE CONSTRUCTED TO MEDOT STANDARD SPECIFICATIONS, LATEST EDITION.
3. ALL SEWER MAHOLES SHALL BE CONSTRUCTED FOR H20 LOADING.

SEWER MANHOLE
NO SCALE



ACCESS GATE
NO SCALE



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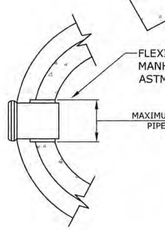

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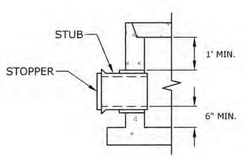
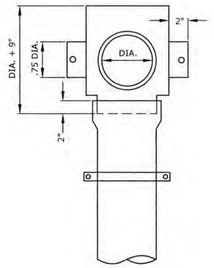


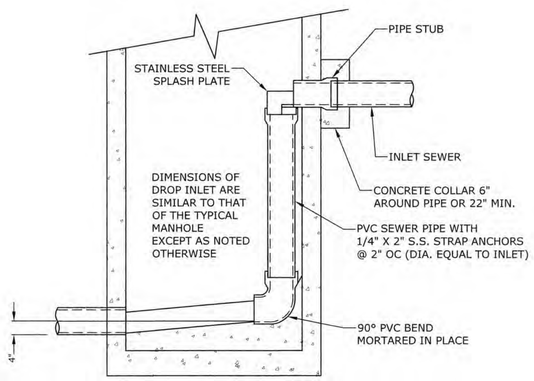
SECTION

MANHOLE STUB AND STOPPER



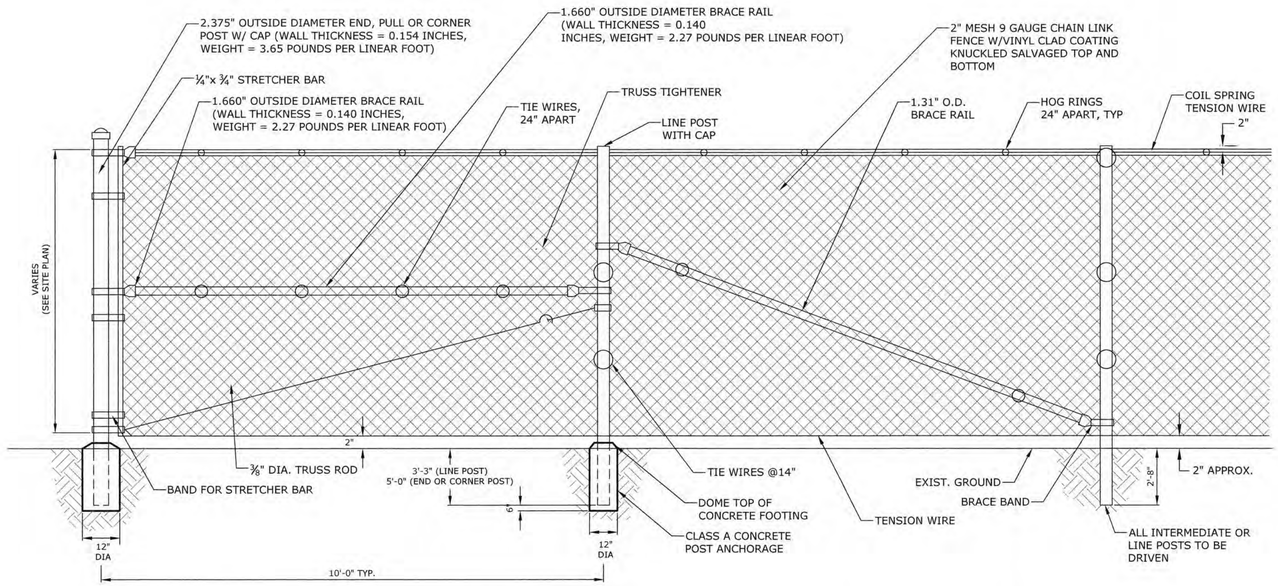
ELEVATION

SHIELD FOR DROP MANHOLE



ELEVATION

INSIDE DROP MANHOLE
NO SCALE



NOTES:

1. CORNER POSTS SHALL BE USED AT SHARP BREAKS IN GRADE AND CHANGES IN HORIZONTAL ALIGNMENT OF 15' OR MORE.
2. POSTS, RAILS & BRACES SHALL BE TYPE I, SCHEDULE 40 BLACK VINYL COATED PIPE.
3. FABRIC TO BE BLACK VINYL COATED.
4. TIE WIRES SHALL BE 9 GAUGE GALVANIZED STEEL WIRE FOR ATTACHMENT OF FABRIC TO LINE POSTS.
5. TIE WIRES SHALL BE 13 GAUGE GALVANIZED STEEL WIRE FOR ATTACHMENT OF FABRIC TO RAILS AND BRACES.
6. HOG RING TIES SHALL BE 12- 1/2 GUAGE GALVANIZED STEEL WIRE FOR ATTACHMENT OF FABRIC TO TENSION WIRE.

CHAIN LINK FENCE
NO SCALE

Tighe&Bond
Engineers | Environmental Specialists

STATE OF MAINE
Bradley Marcotte
9410
LICENSED
PROFESSIONAL ENGINEER
2-27-17

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Proposed Building Expansion

Compounding Solutions

Lewiston, Maine

MARK	DATE	DESCRIPTION
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DRAWN BY:	TPD/CML
CHECKED:	BLM
APPROVED:	GMM

DETAILS SHEET

SCALE: AS SHOWN

C-503

Last Save Date: February 27, 2017 11:12 AM By: CML
Plot Date: Monday, February 27, 2017 Plotted By: Craig M. Langton
T&B File Location: J:\C\C1118 Compounding Solutions\Drawings_Figures\AutoCAD\Sheets\C-1118-1-C-DETAILS.dwg Layout Tab: C-503

Tighe&Bond

Proposed Building Expansion
258 Goddard Road, Lewiston ME

Development Review Report

Prepared For:

Compounding Solutions LLC
Lewiston, Maine

January 16, 2017
(Revised: March 1, 2017)

Development Review Application & Checklist

Maine DEP Site Location of Development Permit Application

Maine DEP Stormwater Application Form

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1.2 Topographic Map 1-1
1.3 Construction Plan 1-2
1.4 Drawings 1-2

Section 2 Title, Right or Interest

Section 3 Financial Capacity

Section 4 Technical Ability

Section 5 Noise

Section 6 Visual Quality & Scenic Character

Section 7 Wildlife & Fisheries

Section 8 Historic Sites

Section 9 Unusual Natural Areas

Section 10 Buffers

Section 11 Soils

Section 12 Stormwater Management (Law)

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Section 1
Development Description

1.1 Narrative

The project consists of the construction of an addition to an existing manufacturing facility, previously constructed in 2010. The current facility is approximately 40,000 sf and the proposed addition will double the size to a total of approximately 80,000 sf. Included in the project is the construction of a parking lot that will provide additional parking as well as access to the loading docks located at the rear of the building. The stormwater management system will be upgraded to handle the additional impervious.

1.2 Topographic Map

1.3 Construction Plan

Construction is expected to begin once final approvals are granted. The goal is to have the facility operational summer of 2018. The entire project is anticipated to be completed in one phase with the pond to be constructed first.

1.4 Drawings

Plans bound separately.

Section 2
Title, Right or Interest

See Appendix A

Section 3
Financial Capacity

The project will be founded independently by Compounding Solutions, LLC.

Section 4
Technical Ability

Tighe & Bond has extensive experience in the design, permitting and construction administration of several projects in the state of Maine.

See Appendix B for Personnel Resumes

Section 5
Noise

The noise coming from the site will not change as a result of the building expansion. The use of the site is not changing, the light manufacturing is completely indoors and enclosed, and the traffic to the site will not increase to a point where noise will be an issue. Additionally, the site is located in an industrial area and will not impact residential areas. Therefore, a noise study has not been performed.

Section 6
Visual Quality & Scenic Character

In order to maintain the visual quality and scenic character of the area, care will be taken when clearing the site of trees and vegetation. Along Challenger Road, a wooded buffer approximately 45' at the narrowest is being maintained to screen the site from the road. Additionally, a wooded buffer approximately 10' wide at the narrowest is being maintained along the rear property lines to screen the abutters view of the building and parking area.

Section 7
Wildlife & Fisheries

Per review by the State of Maine Department of Inland Fisheries & Wildlife there have not been Essential Habitats or Fisheries habitats mapped that would be directly affected by the proposed project.

See Appendix C for Documentation

Section 8
Historic Sites

Pre review by the Maine Historic Preservation Commission there will be no historic properties affected by the proposed project.

See Appendix C for Documentation

Section 9
Unusual Natural Areas

Pre review by the State of Maine Department of Agriculture, Conservation & Forestry there are no rare botanical features documented specifically within the proposed project area.

See Appendix C for Documentation

Section 10
Buffers

Forested buffers for screening the property from abutters and adjacent roadways have been provided. Since no untreated stormwater is being directed to these buffers, they have not sized for treatment.

Section 11
Soils

The previous Site Location of Development Permit and Stormwater Management Permit Applications used the SCS soil information obtained from the Web Soil Survey. This same information has been used for the redevelopment of the project for easier comparisons between the existing and proposed conditions.

See Appendix D for Soils Map & Report

Section 12
Stormwater Management (Law)

12.1 Narrative

The proposed project, located at 258 Goddard Road, Lewiston ME, consists of the construction of an addition to an existing manufacturing facility. The site is approximately 10.14 acres. The current facility is approximately 40,000 sf and the proposed addition will double the size to a total of approximately 80,000 sf. Included in the project is the construction of a parking lot that will provide additional parking as well as access to the loading docks located at the rear of the building. In total the proposed project will increase the overall developed and impervious areas by approximately 3.1 and 2.1 acres, respectively. There will also be associated site improvements that include utilities, site lighting, landscaping, and updating the stormwater management system.

There are two (2) wetland areas existing on/around the project site are not to be impacted as part of the proposed work. The site is not located within a 100-year floodplain so it is not anticipated that the runoff will affect flood potential in the area. The site terrain in the area of the proposed work primarily slopes from a south to north from a high point of 278' to 238' in a road side swale along challenger drive. The project will result in approximately 50,000 sf of tree clearing. As the site is located in the Hart Brook watershed, the proposed redevelopment at the site will require treatment for Basic, General, and Flooding Standards. Stormwater runoff from the site will be treated and flows will be attenuated by a wet pond per MEDEP requirements prior to discharge to a downstream wetland.

12.2 Modeling Assumptions & Calculation Methods

The design storms analyzed in this study are the 2-year, 10-year and 25-year 24-hour duration storm events. The stormwater modeling system, HydroCAD 10.0 was utilized to predict the peak runoff rates from these storm events. A Type III storm pattern was used in the model.

The time of concentration (T_c) was computed using the TR-55 Method, which provides a means of determining the time for an entire watershed to contribute runoff to a specific location via sheet flows, shallow concentrated flow and channel flow. A baseline minimum T_c value of five (5) minutes is assumed for all watershed areas. Runoff curve numbers were calculated by estimating the coverage areas and then summing the curve number for the coverage area as a percent of the entire watershed.

<u>References:</u>

HydroCAD Stormwater Modeling System, by HydroCAD Software Solutions LLC, Chocorua, New Hampshire.

12.3 USGS Map

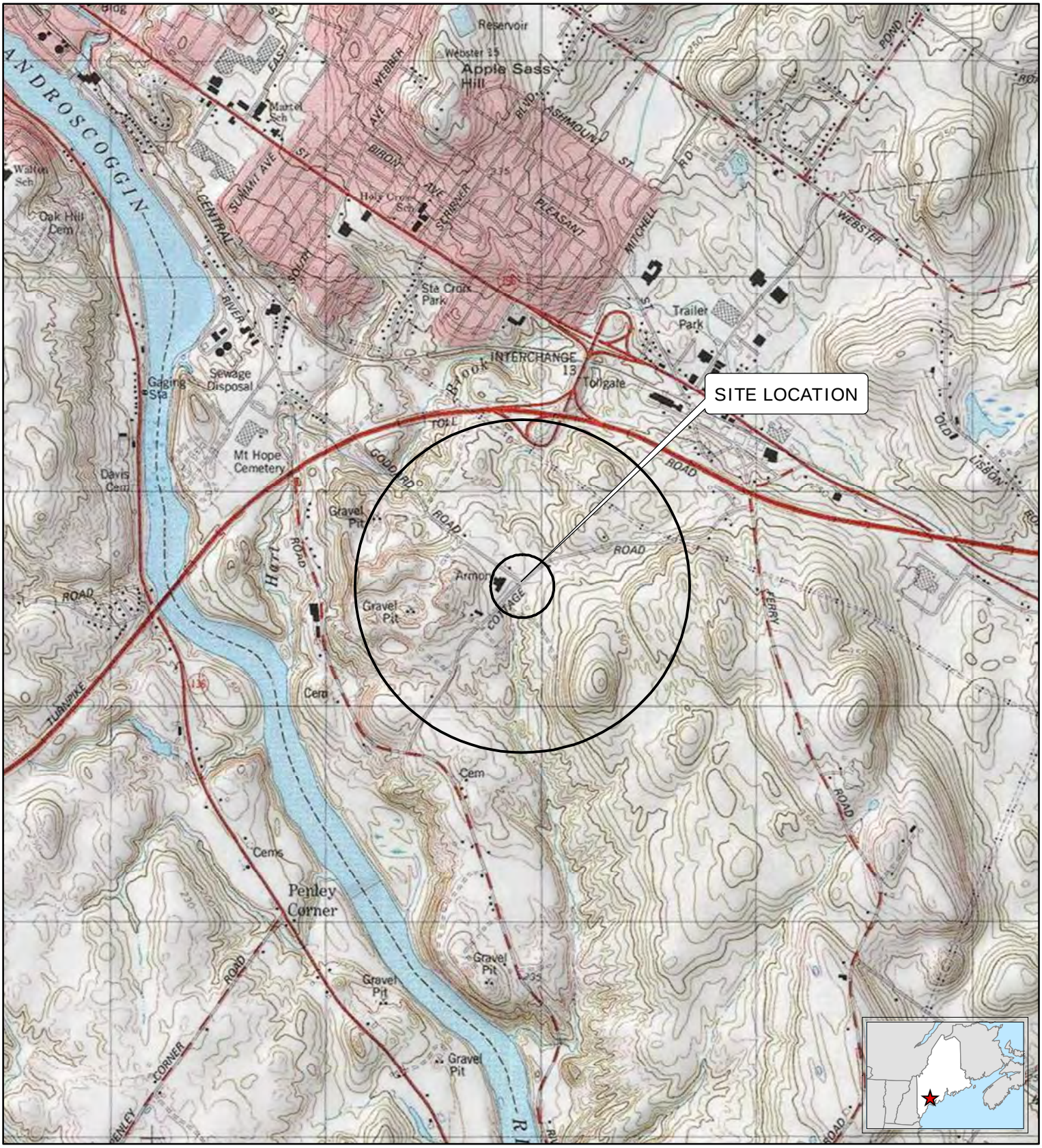


FIGURE 1
SITE LOCATION MAP

258 Goddard Road
Lewiston, Maine

Tighe&Bond
Consulting Engineers
Environmental Specialists

Based on USGS Topographic Map for
Lewiston, ME 1979.
Contour Interval Equals 10-Feet.
Circles indicate 500-foot and half-mile radii

1:24,000

0 1,000 2,000
Feet

N

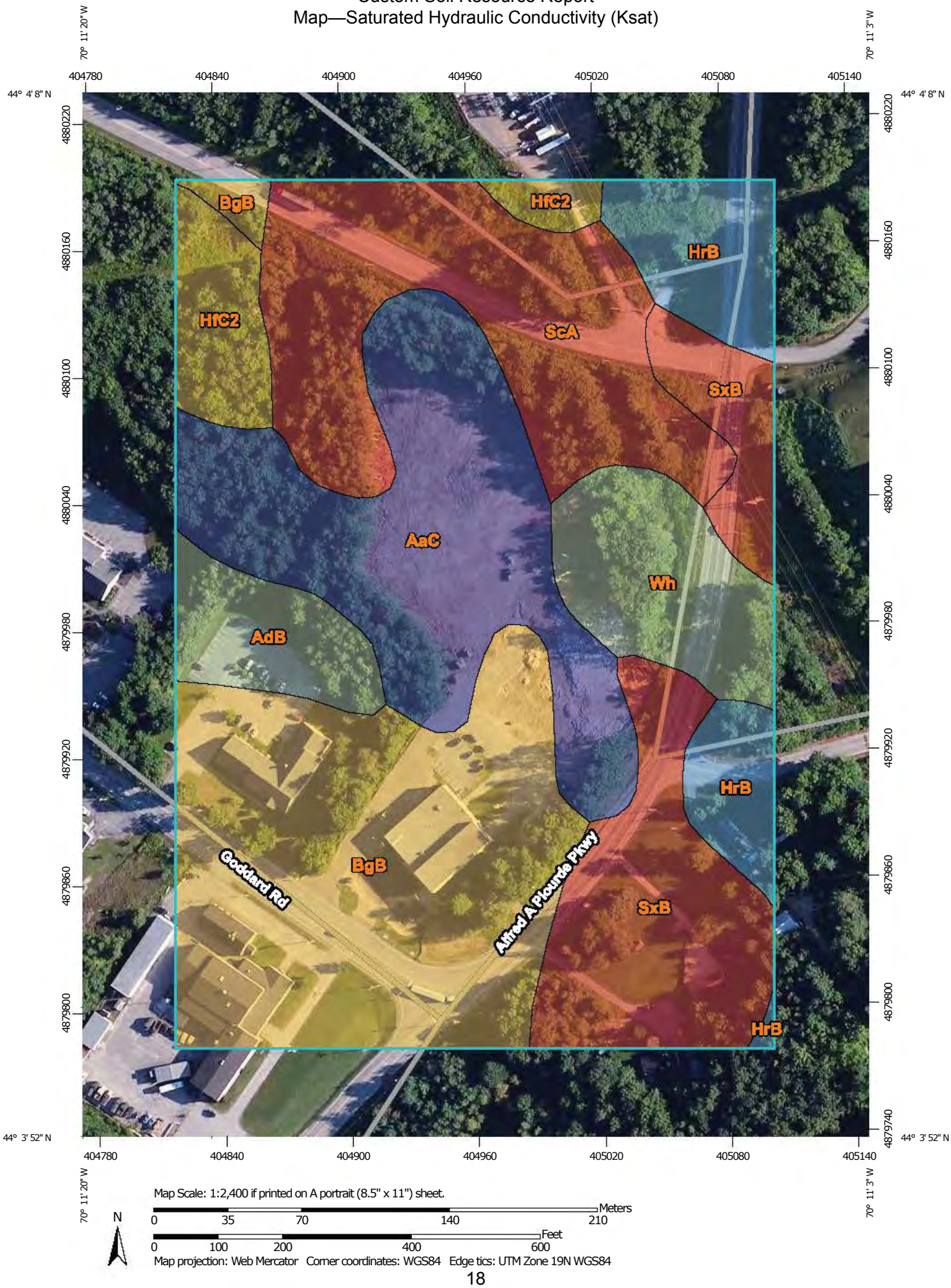
March 2016

V:\Projects\C\C1118\258GoddardRdLewistonMEME_topo.mxd

C-1118

12.4 Soils Map

Map—Saturated Hydraulic Conductivity (Ksat)



Map Scale: 1:2,400 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 35 70 140 210

Feet: 0 100 200 400 600

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 Rating Polygons

<= 5.4805

> 5.4805 and <= 10.2328

> 10.2328 and <= 16.7481

> 16.7481 and <= 23.1905

> 23.1905 and <= 111.5969

Not rated or not available

Soil Rating Lines

<= 5.4805

> 5.4805 and <= 10.2328

> 10.2328 and <= 16.7481

> 16.7481 and <= 23.1905

> 23.1905 and <= 111.5969

Not rated or not available

Soil Rating Points

<= 5.4805

> 5.4805 and <= 10.2328

> 10.2328 and <= 16.7481

> 16.7481 and <= 23.1905

> 23.1905 and <= 111.5969

Not rated or not available

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: http://websoilsurvey.nrcs.usda.gov
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 16, Sep 14, 2015

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.

Table—Saturated Hydraulic Conductivity (Ksat)

Saturated Hydraulic Conductivity (Ksat)— Summary by Map Unit — Androscoggin and Sagadahoc Counties, Maine (ME606)				
Map unit symbol	**Map unit name**	**Rating (micrometers per second)**	**Acres in AOI**	**Percent of AOI**
AaC	Adams loamy sand, 8 to 15 percent slopes	111.5969	5.6	19.2%
AdB	Agawam fine sandy loam, 2 to 8 percent slopes	16.0371	1.3	4.3%
BgB	Belgrade very fine sandy loam, 2 to 8 percent slopes	10.2328	7.7	26.7%
HfC2	Hartland very fine sandy loam, 8 to 15 percent slopes, eroded	9.1700	1.3	4.6%
HrB	Hollis fine sandy loam, 0 to 8 percent slopes	23.1905	2.1	7.2%
ScA	Scantic silt loam, 0 to 3 percent slopes	2.1552	4.9	16.9%
SxB	Sutton loam, 0 to 8 percent slopes	5.4805	4.1	14.1%
Wh	Whitman loam	16.7481	2.0	6.9%
Totals for Area of Interest			**28.9**	**100.0%**

Rating Options—Saturated Hydraulic Conductivity (Ksat)

Units of Measure: micrometers per second

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Fastest

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): All Layers (Weighted Average)

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

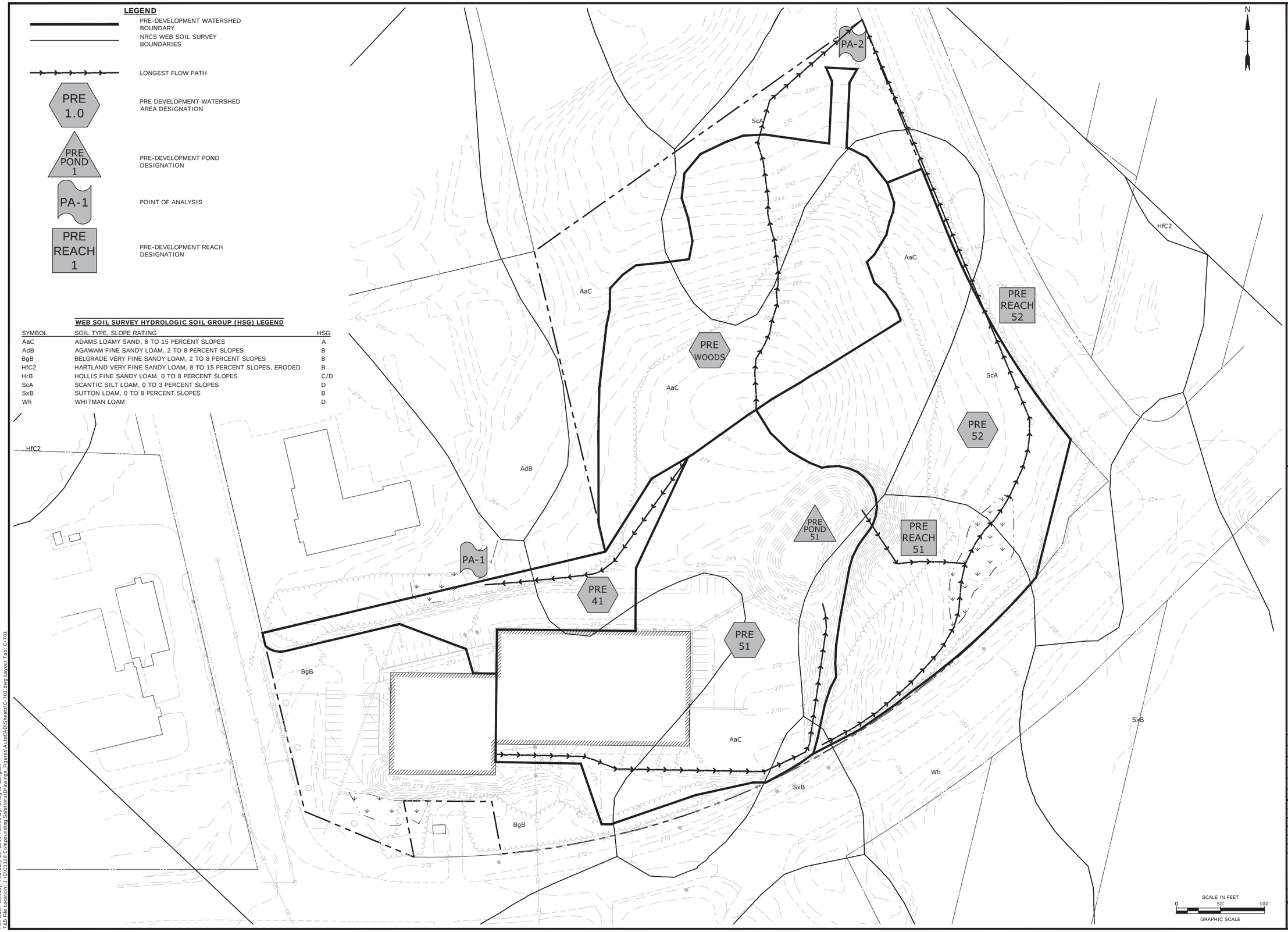
12.5 Pre-Development Drainage Plan

LEGEND

- PRE-DEVELOPMENT WATERSHED BOUNDARY
- NRCS WEB SOIL SURVEY BOUNDARIES
- LONGEST FLOW PATH
- PRE 1.0 — PRE DEVELOPMENT WATERSHED AREA DESIGNATION
- PRE POND 1 — PRE-DEVELOPMENT POND DESIGNATION
- PA-1 — POINT OF ANALYSIS
- PRE REACH 1 — PRE-DEVELOPMENT REACH DESIGNATION

WEB SOIL SURVEY HYDROLOGIC SOIL GROUP (HSG) LEGEND

SYMBOL	SOIL TYPE, SLOPE RATING	HSG
AaC	ADAMS LOAMY SAND, 8 TO 15 PERCENT SLOPES	A
AdB	AGAWAM FINE SANDY LOAM, 2 TO 8 PERCENT SLOPES	B
BgB	BELGRADE VERY FINE SANDY LOAM, 2 TO 8 PERCENT SLOPES	B
HfC2	HARTLAND VERY FINE SANDY LOAM, 8 TO 15 PERCENT SLOPES, ERODED	B
HrB	HOLLIS FINE SANDY LOAM, 0 TO 8 PERCENT SLOPES	C/D
ScA	SCANTIC SILT LOAM, 0 TO 3 PERCENT SLOPES	D
SxB	SUTTON LOAM, 0 TO 8 PERCENT SLOPES	B
Wh	WHITMAN LOAM	D



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Engineers | Environmental Specialists

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Compounding Solutions

Lewiston, Maine

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PROJECT NO:	C-1118-1
DATE:	01/16/2017
FILE:	C-701.DWG
DRAWN BY:	TPD/CML
CHECKED:	BLM
APPROVED:	GMM

PRE-DEVELOPMENT DRAINAGE PLAN

SCALE: AS SHOWN

C-701

Last Save Date: February 26, 2017 8:01 PM By: CML
Plot Date: Sunday, February 26, 2017 Plotted By: Craig M. Langton
T&B File Location: J:\C\C1118 Compounding Solutions\Drawings Figures\AutoCAD\Sheets\C-701.dwg Layout Tab: C-701

12.6 Pre-Development Runoff Analysis

The Pre-Development conditions are considered, for this study, to be only the area of the site that is to be impacted by the proposed work. In order to analyze the Pre-Development conditions, the site was divided into four (4) separate watersheds (Pre woods, Pre 41, Pre 51, and Pre 52) as shown on the Pre-Development Drainage Plan.

12.6.1 Point of Analysis 1 (PA-1)

PA-1 is comprised of only Pre 41, which is comprised of a small portion of the Pre-Development conditions along the southeastern side of the site. Runoff to PA-1 flows from west side of the existing building, across the existing drive, down the side slope and ultimately an existing pocket wetland.

12.6.2 Point of Analysis 2 (PA-2)

PA-2 is comprised of Pre Woods, Pre 51, and Pre 52 is comprised of the roof of the existing building, a majority of the parking lot in the north of the site, as well as grassed area were the existing stormwater management wet pond (Pre Pond 1) is also located. Runoff from Pre 51 to PA-2 flows from along the southern corner of the existing building, across the existing parking/loading area, through a drainage swale, to the existing pond. Runoff from the wet pond is discharged down the pond embankment, through an existing wetland area, to a roadside swale, which has been modeled as a reach (Pre Reach 52) in order to accurately analysis the runoff. The runoff from Pre 2.0 ultimately flows the northern corner of the site. Pre 52 is comprised of the remainder of the Pre Development conditions which is comprised of grassed and wooded areas. Runoff from Pre 52 to PA-2 flows from the high point in the middle of the site down the slope and ultimately to road side swale in the northern corner of the site at PA-2.

12.6.3 Pre-Development Runoff Analysis Calculations

See Appendix E for HydoCAD Pre-Development Runnoff Analysis

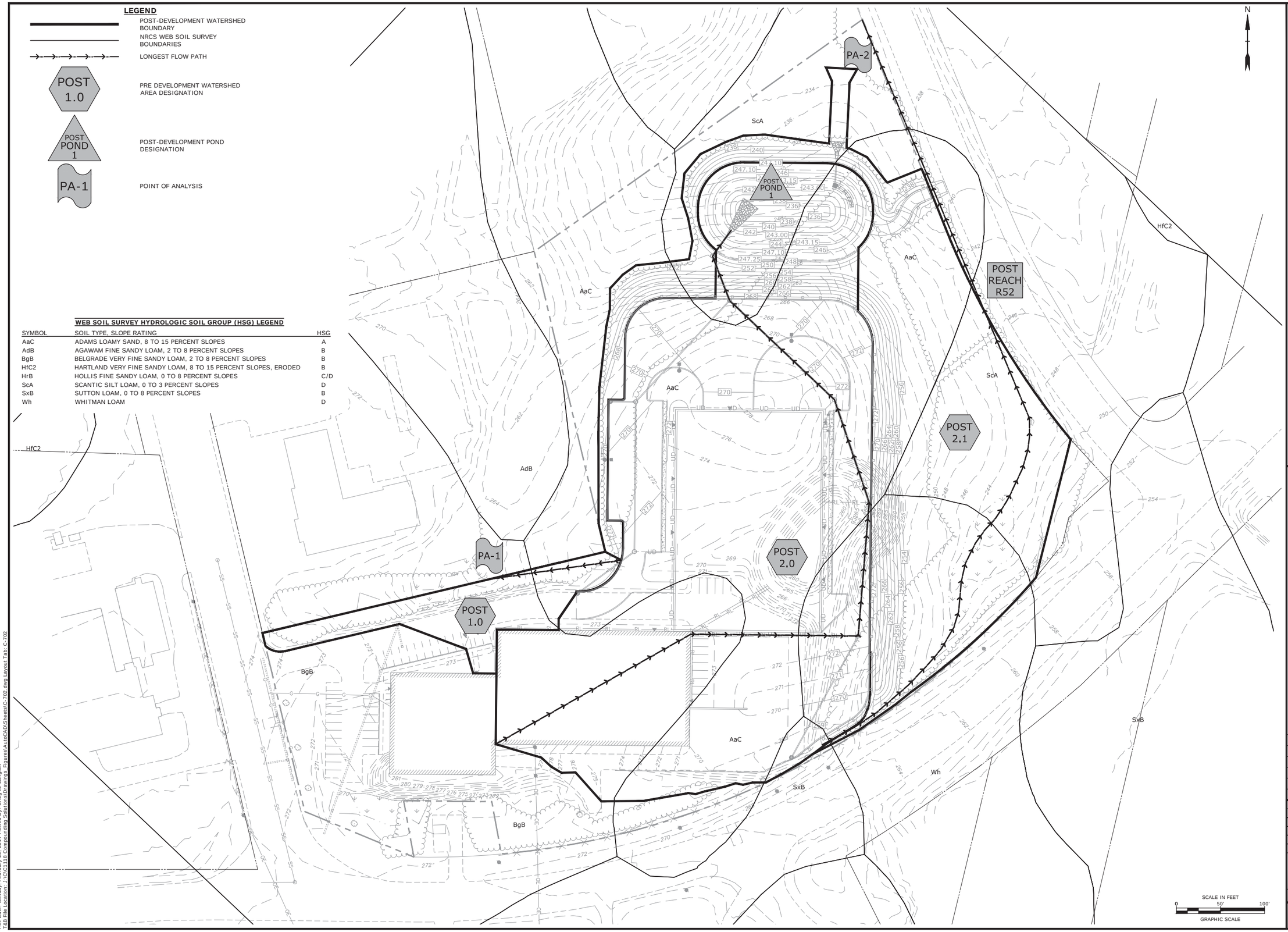
12.7 Post-Development Drainage Plan

LEGEND

- POST-DEVELOPMENT WATERSHED BOUNDARY
- NRCS WEB SOIL SURVEY BOUNDARIES
- LONGEST FLOW PATH
- POST 1.0 — PRE DEVELOPMENT WATERSHED AREA DESIGNATION
- POST POND 1 — POST-DEVELOPMENT POND DESIGNATION
- PA-1 — POINT OF ANALYSIS

WEB SOIL SURVEY HYDROLOGIC SOIL GROUP (HSG) LEGEND

SYMBOL	SOIL TYPE, SLOPE RATING	HSG
AaC	ADAMS LOAMY SAND, 8 TO 15 PERCENT SLOPES	A
AdB	AGAWAM FINE SANDY LOAM, 2 TO 8 PERCENT SLOPES	B
BgB	BELGRADE VERY FINE SANDY LOAM, 2 TO 8 PERCENT SLOPES	B
HfC2	HARTLAND VERY FINE SANDY LOAM, 8 TO 15 PERCENT SLOPES, ERODED	B
HrB	HOLLIS FINE SANDY LOAM, 0 TO 8 PERCENT SLOPES	C/D
ScA	SCANTIC SILT LOAM, 0 TO 3 PERCENT SLOPES	D
SxB	SUTTON LOAM, 0 TO 8 PERCENT SLOPES	B
Wh	WHITMAN LOAM	D



Tighe&Bond
Engineers | Environmental Specialists

ISSUED FOR PERMITTING

Proposed Building Expansion

Compounding Solutions

Lewiston, Maine

MARK	DATE	DESCRIPTION
C	03/01/2017	Revised Development Review Submission
A	01/16/2017	Development Review Submission

PROJECT NO:	C-1118-1
DATE:	01/16/2017
FILE:	C-702.DWG
DRAWN BY:	TPD/CML
CHECKED:	BLM
APPROVED:	GMM

POST-DEVELOPMENT DRAINAGE PLAN

SCALE: AS SHOWN

C-702

Last Save Date: February 26, 2017 9:53 PM By: CML
Plot Date: Sunday, February 26, 2017 Plotted By: Craig M. Langton
T&B File Location: J:\C\C1118 Compounding Solutions\Drawings Figures\AutoCAD\Sheets\C-702.dwg Layout Tab: C-702

12.8 Post-Development Runoff Analysis

The Post-Development conditions are considered, for this study, to be only the area of the site that is to be impacted by the proposed work. The Post-Development conditions are characterized as three (3) separate watersheds (Post 1.0, Post 2.0 and Post 3.0) as shown on the Post-Development Drainage Plan.

12.8.1 Point of Analysis 1 (PA-1)

PA-1 is comprised of only Post 1.0, which is comprised of a small portion of the Post-Development conditions along the southeastern side of the site. Runoff to PA-1 flows west down the slope of drive and ultimately an existing pocket wetland.

12.8.2 Point of Analysis 2 (PA-2)

PA-2 is comprised of Post 2.0 and Post 2.1. Pre 2.0 is comprised of the roofs of the existing building and proposed building addition, the proposed parking and loading area, as well as a portion of grassed area where the proposed wet pond (Post Pond 1) is located. Runoff from Post 2.0 to PA-2 flows from along the southern corner of the existing building, across the parking/loading area, where it enters a closed drainage system which outlets to the proposed wet pond. Runoff from the proposed wet pond is discharged down the pond embankment to the roadside swale in the northern corner of the site at PA-2. Post 2.1 is comprised of the remainder of the Post Development conditions which is comprised of grassed and wooded areas. To be conservative the flow from this area was modeled flowing directly to PA-2.

12.8.3 Post-Development Runoff Analysis Calculations

See Appendix F for HydoCAD Post-Development Runnoff Analysis

12.9 Peak Runoff Rate Comparisons

The following table summarizes and compares the Pre- and Post-Development peak runoff rates for the 2-year, 10-year, and 25-year storm events. The post-development peak rate of runoff for each discharge point has been determined to be less than the peak runoff rate generated during the pre-development condition.

Point of Analysis	Pre/**Post** 2-Year Storm (cfs)	Pre/**Post** 10-Year Storm (cfs)	Pre/**Post** 25-Year Storm (cfs)
PA-1	0.26/**0.22**	0.62/**0.49**	0.97/**0.75**
PA-2	1.16/**0.77**	2.25/**1.32**	3.31/**3.12**

12.10 Wet Pond Sizing Calculations

12.10.1 Permanent Pool Volume

The permanent pool must have a storage volume (V_{pp}) below the permanent pool elevation at least equal to 2.0 inches times the subcatchment's impervious area (A_I) plus 0.8 inch times the subcatchment's non-impervious developed area (A_p).

$$V_{pp} = (2.0”/12”^{/’})A_I + (0.8”/ 12”^{/’})A_p$$

Where: A_I = 153,205 sf
A_p = 50,791 sf

Thus V_{pp} = 28,920 cf which is less than the design storage volume of 29,092 cf below the permanent pool elevation (243.15).

12.10.2 Channel Protection Volume

Wet ponds must detain, above the permanent pool, a runoff volume (V_{cp}) equal to 1.0 inch times the subcatchment's impervious area (A_I) plus 0.4 inch times the landscaped developed area (A_p).

$$V_{cp} = (1.0”/12”^{/’})A_I + (0.4”/ 12”^{/’})A_p$$

Where: A_I = 153,205 sf
A_p = 50,791 sf

Thus V_{pp} = 14,460 cf which is less than the design storage volume of 22,990 cf between the permanent pool elevation (243.15) and the first outlet elevation (245.15) above the gravel trench.

12.11 Rip Rap Apron Calculations

Tighe&Bond
Consulting Engineers
Environmental Specialists

Project: Compounding Solutions
Location: Lewiston, Maine
T&B #: C-1118-1
Calculations By: TPD/CML
Checked By: BLM
Date: 12/27/2016
Revised: 03/01/2017

APRON DESIGN

Terms:	FES2	
length of apron (ft.)	L_a	
discharge from pipe (cfs)	Q	(25 YR STORM EVENT)
pipe dia. or channel width (ft.)	Do	
tailwater depth (ft.)	T_w	
width of apron (at outlet)(ft)	W1	
width of apron (downstream)(ft)	W2	
median stone diameter (ft.)	d_{50}	

Equations Used:

Length of Apron (L_a)

when Tw < .5*Do L_a= $\frac{1.8(Q)}{Do^{(3/2)}}$ + 7Do

when Tw >= .5*Do L_a= $\frac{3(Q)}{Do^{(3/2)}}$ + 7Do

Width of Apron (W1)

W1= 3Do

Width of Apron (W2)

when Tw < .5*Do W2= 3Do + La

when Tw >= .5*Do W2= 3Do + 0.4La

Median Diameter d_{50}= $\frac{0.02 * Q^{(1.3)}}{(Tw * Do)}$

Input:		
Q (cfs)	2.69	cfs
Do (ft.)	1.00	ft
T_w (ft.)	0.40	ft

Output:		
Width of Apron (W1)	3	ft.
Width of Apron (W2)	15	ft.
Length of Apron (L_a)	12	ft.
Median Diameter	0.50	ft.
Riprap min. depth	1.13	ft.

Tighe&Bond
Consulting Engineers
Environmental Specialists

Project:	Compounding Solutions
Location:	Lewiston, Maine
T&B #:	C-1118-1
Calculations By:	TPD
Checked By:	BLM
Date:	05/05/2016
Revised:	03/01/2017

APRON DESIGN

Terms:	FES1	
length of apron (ft.)	L_a	
discharge from pipe (cfs)	Q	(25 YR STORM EVENT)
pipe dia. or channel width (ft.)	Do	
tailwater depth (ft.)	T_w	
width of apron (at outlet)(ft)	W1	
width of apron (downstream)(ft)	W2	
median stone diameter (ft.)	d_{50}	

Equations Used:

Length of Apron (L_a)

when Tw < .5*Do L_a= $\frac{1.8(Q)}{Do^{(3/2)}}$ + 7Do

when Tw >= .5*Do L_a= $\frac{3(Q)}{Do^{(3/2)}}$ + 7Do

Width of Apron (W1)

W1= 3Do

Width of Apron (W2)

when Tw < .5*Do W2= 3Do + La

when Tw >= .5*Do W2= 3Do + 0.4La

Median Diameter d_{50}= $\frac{0.02 * Q^{(1.3)}}{(Tw * Do)}$

Input:		
Q (cfs)	21.36	cfs
Do (ft.)	2.00	ft
T_w (ft.)	2.00	ft

Output:		
Width of Apron (W1)	6	ft.
Width of Apron (W2)	21	ft.
Length of Apron (L_a)	37	ft.
Median Diameter	0.50	ft.
Riprap min. depth	1.13	ft.

12.12 Stabilization & Erosion Control Practices

All soil erosion and sediment control measures shall be in accordance with regulations and principles as outlined in the Stormwater Management for Maine: Best Management Practices and Maine Erosion and Sediment Control Handbook for Construction. The intent of the outlined measures is to minimize erosion and sedimentation during construction, stabilize and protect the site from erosion after construction is complete and improve stormwater quality from the site. Best Management Practices for this project include:

- Temporary practices to be implemented during construction.
- Permanent practices to be implemented after construction.
- Stormwater treatment devices.

12.12.1 Temporary Practices

12.12.1.1 Sequencing

1. Construct temporary and permanent sediment, erosion and detention control facilities. Erosion, sediment and detention measures shall be installed prior to any earth moving operations that will influence stormwater runoff such as:

    - New construction
    - Development of borrow pit areas
    - Disposal of sediment spoil, stump and other solid waste
    - Control of dust

2. All permanent ditches, swales, detention, retention and sedimentation basins to be stabilized using the vegetative and nonstructural BMPs prior to directing runoff to them.

3. Clear and dispose of debris.

4. Construct temporary culverts and diversion channels as required.

5. Begin permanent and temporary seeding and mulching. All cut and fill slopes shall be seeded and mulched immediately after their construction.

6. Daily, or as required, construct temporary berms, drains, ditches, silt socks, sediment traps etc., mulch and seed as required.

7. Finish pave all roadways and parking lots.

8. Inspect and maintain all erosion and sediment control measures.

9. Complete permanent seeding and landscaping.

10. Remove trapped sediment from collection devices as appropriate and then remove temporary erosion control measures.

12.12.1.2 Stabilization Practices

1. Install stabilized construction entrance at the location shown on plans.

2. Loam stockpiles shall be mulched, seeded and contained by a silt sock barrier.

3. All erosion control devices, including silt socks and storm drain inlet filters, shall be inspected at least once per week and following any rainfall of 1/4 inch or greater. All necessary maintenance shall be completed within 48 hours. A Maintenance Inspection Report shall be kept on site and made available by the contractor at the City's request.

4. Inactivity: Area of the site which has been disturbed, where construction activity will not occur for more than twenty-one (21) days, shall be temporarily stabilized by mulching and seeding.

12.12.2 Permanent Practices

The objectives for developing permanent Best Management Practices for this site include the following:

- Develop a plan that provides the best hydrologic condition both on site and downstream.
- Provide a higher level of removal of pollutants from stormwater runoff.
- Minimize impact on the natural environment.
- Minimize future maintenance.

12.13 Long Term Operation & Maintenance Plan

It is the intent of this Operation and Maintenance Plan to identify the areas of this site that need special attention and consideration, as well as implementing a plan to assure routine maintenance. By identifying the areas of concern as well as implementing a frequent and routine maintenance schedule the site will maintain a high quality of stormwater runoff.

12.13.1 Contact/Responsible Party

Gene Girouard
Compounding Solutions LLC
258 Goddard Road, Lewiston, ME
207.777.1122

(Note: The contact information for the Contact/Responsible Party shall be kept current. If ownership changes, the Operation and Maintenance Plan must be transferred to the new party.)

12.13.2 Overall Site Operations & Maintenance Schedule

Inspection and maintenance plan for stormwater management structures (bmps)		
BMP	**Inspection schedule**	**Corrective actions**
Vegetated areas	Annually early spring and after heavy rains	Inspect all slopes and embankments and replant areas of bare soil or with sparse growth
		Armor rill erosion areas with riprap or divert the runoff to a stable area
		Inspect and repair down-slope of all spreaders and turn-outs for erosion
		Mow vegetation as specified for the area
Ditches, swales and open stormwater channels	Annually spring and late fall and after heavy rains	Remove obstructions, sediments or debris from ditches, swales and other open channels
		Repair any erosion of the ditch lining
		Mow vegetated ditches
		Remove woody vegetation growing through riprap
		Repair any slumping side slopes
		Repair riprap where underlying filter fabric or gravel is showing or if stones have dislodge
Culverts	Spring and late fall and after heavy rains	Remove accumulated sediments and debris at the inlet, outlet, or within the conduit
		Remove any obstruction to flow
		Repair any erosion damage at the culvert's inlet and outlet
Catchbasins	Annually in the spring	Remove sediments and debris from the bottom of the basin and inlet grates
		Remove floating debris and oils (using oil absorptive pads) from any trap
Roadways and parking areas	Annually in the spring or as needed	Clear and remove accumulated winter sand in parking lots and along roadways
		Sweep pavement to remove sediment
		Grade road shoulders and remove accumulated winter sand
		Grade gravel roads and gravel shoulders
		Clean-out the sediment within water bars or open-top culverts
		Ensure that stormwater runoff is not impeded by false ditches of sediment in the shoulder
Wetponds and detention basins	Annually in fall and after heavy rains	Inspect the embankments for settlement, slope erosion, piping, and slumping
		Mow the embankment to control woody vegetation
		Inspect the outlet structure for broken seals, obstructed orifices, and plugged trash racks
		Remove and dispose of sediments and debris within the control structure
		Repair any damage to trash racks or debris guards
		Replace any dislodged stone in riprap spillways
		Remove and dispose of accumulated sediments within the impoundment and forebay

12.13.3 Disposal Requirements

Disposal of debris, trash, sediment and other waste material should be done at suitable disposal/recycling sites and in compliance with all applicable local, state and federal waste regulations.

12.13.4 Snow & Ice Management for Standard Asphalt and Walkways

Snow storage areas shall be located such that no direct untreated discharges are possible to receiving waters from the storage sit. Curb cuts shown on the plan shall remain free of snow and ice buildup. Salt storage areas shall be covered or located such that no direct untreated discharges are possible to receiving waters from the storage site.

12.13.5 Annual Updates & Log Requirements

The Owner and/or Contact/Responsible Party shall review this Operation and Maintenance Plan once per year for its effectiveness and adjust the plan and deed as necessary.

A log of all preventative and corrective measures for the stormwater system shall be kept on-site and be made available upon request by any public entity with administrative, health environmental or safety authority over the site.

Stormwater BMP Inspection Log						
Project Name		**Proposed Building Expansion 258 Goddard Road, Lewiston, ME**				
BMP Description	**Date of Inspection**	**Inspector**	**BMP Installed and Operating Properly?**	**Cleaning / Corrective Action Needed**	**Date of Cleaning / Repair**	**Performed By**
			❑Yes ❑No			
			❑Yes ❑No			
			❑Yes ❑No			
			❑Yes ❑No			
			❑Yes ❑No			
			❑Yes ❑No			

12.14 Phosphorus Control Requirements

As depicted on the following "Worksheet 1 – PPB calculations", and supplemental information the proposed project does not trigger any phosphorus control requirements.

Worksheet 1 - PPB calculations

Project Name: Proposed Building Expansion

Lake Watershed: Hartt Brook

Town: Lewiston

Note: Steep slope defined as +20% per (http://www.maine.gov/dep/land/slz/citizenguide.pdf)

Standard Calculations

Watershed per acre phosphorus budget (Appendix C)	**PAPB**	0.028	lbs P/acre/year
Total acreage of development parcel:	**TA**	10.14	acres
NWI wetland acreage:	**WA**	0.17	acres
Steep slope acreage:	**SA**	1.32	acres
Project acreage: A = TA - (WA+ SA)	**A**	8.65	acres
Project Phosphorus Budget: PPB = P x A	**PPB**	0.2422	**lbs P/year**

Small Watershed Adjustment

If Project Acreage (A) is greater than the threshold acreage for the small watershed threshold (SWT, from pertinent lake and town info in the table in Appendix C), calculate an alternative PPB using the analysis below and use this value if it is less than the the Standard Calculation PPB.

Small Watershed Threshold (Appendix C):	**SWT**	47	acres
Project acreage:	**A**	4.76	acres
Allowable increase in town's share of annual phosphorus load to lake (Appendix C):	**FC**	5.22	lbs P/year
Area available for development (Appendix C):	**AAD**	624	acres
Ratio of A to AAD (R=A/AAD)	**R**	N/A	

Project Phosphorus Budget

If R < 0.5, PPB = [(FC x R)/2] + [FC/4]	**PPB**	N/A	**lbs P/year**
If R> 0.5, PPB = FC x R	**PPB**	N/A	**lbs P/year**

Appendix C

Per Acre Phosphorus Allocations for Selected Maine Lakes

Updated 11/8/10

This **Appendix C** presents per acre phosphorus allcations (**P**) for all to the lake watersed/town combinations that have been dertermined by the Department to this point. It also presents the information and assumptions used to derive the value for **P**, as well as the small watershed threshold value (**SWT**). This Appendix will be modified on a regular basis as additional lake watershed/town combinations are added and/or allocations are amended as new information becomes available. It was last updated on 11/8/10. If you do not find the lake watershed/town combination that you are looking for in the table, contact Jeff Dennis at the DEP Division of Watershed Management (207-287-7847 or jeff.dennis@maine.gov) to request an allocation for the watershed of concern.

Lake Name	Town in which development is located	Direct Watershed Area in Town (acres) **DDA**	Area not available for development (acres) **ANAD**	Area available for development (acres) **AAD**	**GF**	Expected developed area (acres) **D**	(lbP/y) **F**	Water Quality Category **WQC**	**LOP**	**C**	**FC**	Per acre phosphorus allocation (lb/acre/yr) **P**	Small Watershed Threshold (acres) **SWT**
Wilson Lake	Acton	2241	300	1941	0.3	582	26.17	mod-sensitive	h	0.75	19.63	0.034	146
Balch Pond	Acton	597	60	537	0.3	161	6.81	mod-sensitive	m	1.00	6.81	0.042	40
Great East Lake	Acton	2391	300	2091	0.3	627	40.1	outstanding	h	0.50	20.05	0.032	157
Hansen Pond	Acton	219	20	199	0.2	40	1.65	mod-sensitive	m	1.00	1.65	0.041	10
Horn Pond	Acton	373	60	313	0.3	94	7.05	mod-sensitive	h	0.75	5.29	0.056	23
Loon Pond	Acton	420	50	370	0.3	111	4.38	mod-sensitive	m	1.00	4.38	0.039	28
Moose Pond	Acton	79	8	71	0.25	18	1.05	mod-sensitive	h	0.75	0.79	0.044	4
Mousam Lake, North Basin	Acton	625	150	475	0.35	166	9.63	mod-sensitive	h	0.75	7.22	0.043	42
Mousam Lake, South Basin	Acton	4539	700	3839	0.3	1152	50.97	mod-sensitive	h	0.75	38.23	0.033	288
Northeast Pond	Acton	3484	600	2884	0.25	721	27.91	mod-sensitive	m	1.00	27.91	0.039	180
Square Pond	Acton	2646	200	2446	0.3	734	39.38	mod-sensitive	h	0.75	29.54	0.040	183
Swan Pond	Acton	667	70	597	0.2	119	4.05	mod-sensitive	m	1.00	4.05	0.034	30
Mooselookmeguntic Lake	Adamstown Twp	8539	1025	7514	0.2	1503	161.1	mod-sensitive	h	0.75	120.80	0.080	376
Estes Lake	Alfred	11149	1115	10034	0.3	3010	72.73	mod-sensitive	m	1.00	72.73	0.024	753
Johnson Pond	Appleton	69	5	64	0.25	16	0.74	mod-sensitive	m	1.00	0.74	0.046	4
Medomak Pond	Appleton	8122	1000	7122	0.2	1424	54.79	mod-sensitive	m	1.00	54.79	0.038	356
Newbert Pond	Appleton	333	75	258	0.2	52	3.17	mod-sensitive	m	1.00	3.17	0.061	13
Sennebec Pond	Appleton	11336	1500	9836	0.25	2459	101.3	mod-sensitive	h	0.75	76.01	0.031	615
Shermans Mill Pond	Appleton	884	100	784	0.2	157	5.71	mod-sensitive	m	1.00	5.71	0.036	39
Little Wilson Pond	Auburn	116	15	101	0.3	30	1.01	mod-sens	h	0.75	0.76	0.025	8
Taylor Pond	Auburn	3874	500	3374	0.3	1012	35.25	mod-sensitive	m	1.00	35.25	0.035	253
Lake Auburn	Auburn	4704	350	4354	0.35	1524	109.9	good	h	1.00	109.87	0.072	381
Anderson Pond	Augusta	96	5	91	0.3	27	1.16	mod-sensitive	h	0.75	0.87	0.032	7
Dam Pond	Augusta	766	115	651	0.3	195	9.81	mod-sensitive	m	1.00	9.81	0.050	49
Greeley Pond	Augusta	1074	130	944	0.3	283	7.16	mod-sensitive	m	1.00	7.16	0.025	71
Little Togus Pond	Augusta	126	10	116	0.3	35	1.54	mod-sensitive	m	1.00	1.54	0.044	9
Mud Pond	Augusta	111	12	99	0.25	25	0.88	mod-sensitive	m	1.00	0.88	0.036	6
Spectacle Pond	Augusta	323	30	293	0.3	88	4.34	good	h	1.00	4.34	0.049	22
Threecornered Pond	Augusta	1472	110	1362	0.3	409	11.53	mod-sensitive	m	1.00	11.53	0.028	102
Threemile Pond	Augusta	118	35	83	0.25	21	1.38	poor restorable	m	0.50	0.69	0.033	5
Togus Pond	Augusta	2184	125	2059	0.3	618	37.35	poor restorable	m	0.50	18.68	0.030	154
Togus Pond (Lower)	Augusta	2839	350	2489	0.25	622	28.53	poor restorable	m	0.50	14.27	0.023	156

Appendix C

Per Acre Phosphorus Allocations for Selected Maine Lakes

Updated 11/8/10

Lake Name	Town in which development is located	Direct Watershed Area in Town (acres) **DDA**	Area not available for development (acres) **ANAD**	Area available for development (acres) **AAD**	**GF**	Expected developed area (acres) **D**	(lbP/y) **F**	Water Quality Category **WQC**	**LOP**	**C**	**FC**	Per acre phosphorus allocation (lb/acre/yr) **P**	Small Watershed Threshold (acres) **SWT**
Island Pond	Leeds	81	10	71	0.2	14	0.81	mod-sensitive	m	1.00	0.81	0.057	4
Little Sabattus Pond	Leeds	773	150	623	0.2	125	4.6	mod-sensitive	m	1.00	4.60	0.037	31
No Name Pond	Lewiston	724	100	624	0.3	187	6.96	mod-sensitive	h	0.75	5.22	0.028	47
Gilman Pond	Lexington Twp	19061	1500	17561	0.15	2634	105.7	mod-sensitive	m	1.00	105.68	0.040	659
Holland Pond (Sokokis L.)	Limerick	2327	500	1827	0.25	457	16.94	mod-sensitive	m	1.00	16.94	0.037	114
Pickerel Pond	Limerick	358	100	258	0.25	65	3.19	mod-sensitive	m	1.25	3.99	0.062	16
Unnamed Pond (Spencer Brook)	Limerick	691	70	621	0.2	124	3.79	mod-sensitive	m	1.00	3.79	0.031	31
Boyd Pond	Limington	336	35	301	0.25	75	2.82	mod-sensitive	m	1.00	2.82	0.037	19
Doles Pond	Limington	724	100	624	0.2	125	4.43	mod-sensitive	m	1.00	4.43	0.035	31
Horne Pond	Limington	1821	400	1421	0.25	355	17.97	mod-sensitive	h	0.75	13.48	0.038	89
Isinglass Pond	Limington	126	15	111	0.25	28	1.23	mod-sensitive	h	0.75	0.92	0.033	7
Killick Pond	Limington	103	10	93	0.2	19	0.63	mod-sensitive	m	1.00	0.63	0.034	5
Sand Pond	Limington	27	6	21	0.25	5	0.52	mod-sensitive	h	0.75	0.39	0.074	1
Wards Pond	Limington	783	160	623	0.25	156	6.41	mod-sensitive	m	1.00	6.41	0.041	39
Crooked Pond	Lincoln	1107	110	997	0.25	249	11.53	mod-sensitive	m	1.00	11.53	0.046	62
Folsom Pond	Lincoln	2438	200	2238	0.25	560	26.63	mod-sensitive	m	1.00	26.63	0.048	140
Mattanawcook Pond	Lincoln	10299	1600	8699	0.25	2175	91.97	mod-sensitive	m	1.00	91.97	0.042	544
Upper Pond	Lincoln	1924	130	1794	0.25	449	19.55	mod-sensitive	m	1.00	19.55	0.044	112
Caribou Pond (Caribou, Egg, & Long)	Lincoln	2050	150	1900	0.2	380	32.63	mod-sensitive	m	1.00	32.63	0.086	95
Egg Pond (Egg, Long, & Caribou)	Lincoln	420	30	390	0.2	78	4.71	mod-sensitive	m	1.00	4.71	0.060	20
Long Pond (Long, Caribou and Egg)	Lincoln	3417	210	3207	0.2	641	42.9	mod-sensitive	m	1.00	42.90	0.067	160
Madagascal Pond	Lincoln	3862	360	3502	0.2	700	29.7	mod-sensitive	h	0.75	22.28	0.032	175
Mattakeunk Lake (Silver Lake)	Lincoln	261	5	256	0.2	51	2.69	good	m	1.50	4.04	0.079	13
Cambolasse Pond	Lincoln	837	120	717	0.25	179	13.2	mod-sensitive	m	1.00	13.20	0.074	45
Center Pond	Lincoln	1262	120	1142	0.2	228	11.26	mod-sensitive	m	1.00	11.26	0.049	57
Cold Stream Pond - Upper Basin	Lincoln	2068	160	1908	0.2	382	27.45	mod-sensitive	h	0.75	20.59	0.054	95
Little Round Pond	Lincoln	385	15	370	0.25	93	4.12	mod-sensitive	h	0.75	3.09	0.033	23
Snag Pond	Lincoln	1102	170	932	0.2	186	15.96	mod-sensitive	m	1.00	15.96	0.086	47
Upper Cold Stream Pond (west)	Lincoln	736	160	576	0.25	144	14.2	outstanding	h	0.50	7.10	0.049	36
Upper Cold Stream Pond (east)	Lincoln	558	90	468	0.25	117	7.78	good	h	1.00	7.78	0.066	29
Norton Pond	Lincolnville	5228	700	4528	0.25	1132	41.87	mod-sensitive	h	0.75	31.40	0.028	283
Coleman Pond	Lincolnville	1225	125	1100	0.25	275	14.83	mod-sensitive	m	1.00	14.83	0.054	69
Knight Pond	Lincolnville	49	3	46	0.2	9	0.48	mod-sensitive	m	1.00	0.48	0.052	2
Levenseller Pond	Lincolnville	32	5	27	0.25	7	0.3	mod-sensitive	m	1.00	0.30	0.044	2

Section 13
Urban Impaired Stream Submissions

All additional proposed impervious areas are being treated prior to being directed off site. Likewise portions of existing impervious areas previously not treated are now directed through the wet pond for treatment before being directed off site. As part of the proposed design we are treating all of the new impervious (±91,500 SF) along with existing impervious area (±2,750 SF) for a total of approximately 94,250 SF of the entire site.

Section 14
Basic Standards

The Basic Standards requirements for the proposed project have been substantially meet as described in Section 12: Stormwater Management, above.

Section 15
Groundwater

The site is located in an area with shallow bedrock. Therefore, groundwater is not expected to be encountered. Additionally, runoff from impervious areas are being treated prior to discharge and no infiltration of untreated stormwater is proposed.

Section 16
Water Supply

The site currently and will continue to be serviced by a municipal water system. The anticipated water usage for the site after of the proposed expansion is approximately 3,500 GPD. Of that, approximately 1,800 GPD will be from the proposed expansion.

Section 17
Wastewater Disposal

The site currently and will continue be serviced by a municipal sewer system.

Section 18
Solid Waste

The site currently has a solid waste disposal program in place. The program will be expanded to account for the potential increase in solid waste generation due to the building expansion.

Section 19
Flooding

The site is not located within a 100-year floodplain so it is not anticipated that the runoff will affect flood potential in the area.

Section 20
Blasting

Since the site is located in an area with shallow bedrock, it is expected that blasting will be required. The areas that will potentially require blasting include the area under the proposed building, trenches for drainage pipes and structures, and the area around the proposed wet pond. A qualified blasting contractor will be employed and blasting plan prepared if required.

Section 21
Air Emissions

The site will not require an Air Emissions License.

Section 22
Odors

The development will not create any significant odors.

Section 23
Water Vapor

The development will not create any large scale water vapor emissions.

Section 24
Sunlight

The development will not block direct sunlight to any active or passive solar facilities.

Section 25
Notices

25.1 Abutters List

Map-Lot: 153-15
Address: 69 Alfred A Plourde Pkwy
Owner: Northern New England Telephone OP LLC
Owner Address: 770 Elm St. Manchester, NH 03101

Map-Lot: 152-7
Address: 5 Challenger Drive
Owner: South Park Development Corp.
Owner Address: 27 Pine St. Lewiston, ME 04240

Map-Lot: 152-2
Address: 12 Challenger Dr
Owner: South Park Development Corp.
Owner Address: 27 Pine St. Lewiston, ME 04240

Map-Lot: 153-12
Address: 250 Goddard Rd
Owner: Continuum Realty LLC
Owner Address: C/O Joseph Hogan, 250 Goddard Rd, Lewiston, ME 04240

Map-Lot: 153-13
Address: 254 Goddard Rd
Owner: ML&W Enterprise Incorporated
Owner Address: PO Box 285 Kents Hill, ME 04349

Map-Lot: 153-4
Address: 55 Alfred A Plourde Pkwy
Owner: State of Maine / National Guard Armory
Owner Address: State House Station Augusta, ME 04333

Map-Lot: 154-18
Address: 18 Gendron Dr
Owner: Aggregate Supply LLC
Owner Address: PO BOX 1913 Lewiston, ME 04241

Map-Lot: 153-29
Address: 66 Alfred A Plourde Pkwy
Owner: Roland and Lucienne Goupil
Owner Address: 66 Alfred A Plourde Pkwy, Lewiston, ME

Map-Lot: 153-28
Address: 72 Alfred A Plourde Pkwy
Owner: Louise M Drouin
Owner Address: 72 Alfred A Plourde Pkwy, Lewiston, ME 04240

Map-Lot:	153-50
Address:	74 Alfred A Plourde Pkwy
Owner:	Jean R Dupuis
Owner Address:	PO Box 2312 Lewiston, ME 04241

25.2 Form B

FORM B

PUBLIC NOTICE:
NOTICE OF INTENT TO FILE

Please take notice that

Compounding Solutions LLC, 258 Goddard Road, Lewiston, ME, 207.777.1122

(*Name, Address and Phone # of Applicant*)

is intending to file a Site Location of Development Act permit application with the Maine Department of Environmental Protection pursuant to the provisions of 38 M.R.S.A. §§ 481 thru 490 on or about

01/16/2017

(Anticipated Filing Date)

The application is for

Addition to existing building on 10.14 acre parcel, with associated site improvements.

(Description of the Project)

at the following location:

258 Goddard Road, Lewiston, ME

(*Project Location*)

A request for a public hearing or a request that the Board of Environmental Protection assume jurisdiction over this application must be received by the Department in writing, no later than 20 days after the application is found by the Department to be complete and is accepted for processing. A public hearing may or may not be held at the discretion of the Commissioner or Board of Environmental Protection. Public comment on the application will be accepted throughout the processing of the application.

For Federally licensed, permitted, or funded activities in the Coastal Zone, review of this application shall also constitute the State's consistency review in accordance with the Maine Coastal Program pursuant to Section 307 of the federal Coastal Zone Management Act, 16 U.S.C. § 1456. (Delete if not applicable.)

The application will be filed for public inspection at the Department of Environmental Protection's office in (*Portland, Augusta or Bangor*)(circle one) during normal working hours. A copy of the application may also be seen at the municipal offices in Lewiston, Maine.

(*Town*)

Written public comments may be sent to the regional office in Portland, Augusta, or Bangor where the application is filed for public inspection:

MDEP, Central Maine Regional Office, 17 State House Station, Augusta, Maine 04333
MDEP, Southern Maine Regional Office, 312 Canco Road, Portland, Maine 04103
MDEP, Eastern Maine Regional Office, 106 Hogan Road, Bangor, Maine 04401

25.3 Form C

J:\C\C1118 Compounding Solutions\Permitting_Applications and Reports\State\C-1118-1_Site Law.doc

FORM C

PUBLIC NOTICE FILING AND CERTIFICATION

The DEP Rules, Chapter 2, require an applicant to provide public notice for all Site Location projects with the exception of minor revisions and condition compliance applications. In the notice, the applicant must describe the proposed activity and where it is located. **"Abutter"** for the purposes of the notice provision means any person who owns property that is BOTH (1) adjoining and (2) within one mile of the delineated project boundary, including owners of property directly across a public or private right of way.

1. **Newspaper:** You must publish the Notice of Intent to File in a newspaper circulated in the area where the activity is located. The notice must appear in the newspaper within 30 days prior to the filing of the application with the Department. You may use the attached Notice of Intent to File form, or one containing identical information, for newspaper publication and certified mailing.

2. **Abutting Property Owners:** You must send a copy of the Notice of Intent to File by certified mail to the owners of the property abutting the activity. Their names and addresses can be obtained from the town tax maps or local officials. They must receive notice within 30 days prior to the filing of the application with the Department.

3. **Municipal Office:** You must send a copy of the Notice of Intent to File and a **duplicate of the entire application** to the Municipal Office.

   ATTACH a list of the names and addresses of the owners of abutting property.

CERTIFICATION

By signing below, the applicant or authorized agent certifies that:

1. A Notice of Intent to File was published in a newspaper circulated in the area where the project site is located within 30 days prior to filing the application;
2. A certified mailing of the Notice of Intent to File was sent to all abutters within 30 days of the filing of the application;
3. A certified mailing of the Notice of Intent to File, and a duplicate copy of the application was sent to the town office of the municipality in which the project is located; and
4. Provided notice of, if required, and held a public informational meeting in accordance with Chapter 2, Rules Concerning the Processing of Applications, Section 14, prior to filing the application. Notice of the meeting was sent by certified mail to abutters and to the town office of the municipality in which the project is located at least ten days prior to the meeting. Notice of the meeting was also published once in a newspaper circulated in the area where the project site is located at least seven days prior to the meeting.

The Public Informational Meeting was held on _____.
Date

Approximately _____ members of the public attended the Public Informational Meeting.

_____ _____
Signature of Applicant or Authorized Agent Date

Tighe&Bond

APPENDIX A

Bk 7582 Pg272 #24074
12-08-2008 @ 02:57p

WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS,

THAT THE FIELDING GROUP, LLC, a Maine limited liability company, with a principal place of business in Scarborough, Cumberland County, Maine, for consideration paid, grants to **NEAL SPECIALTY COMPOUNDING, LLC,** a Maine limited liability company, with a principal place of business in Lewiston, Androscoggin County, Maine, whose mailing address is: 258 Goddard Road, Lewiston, ME 04240, with **warranty covenants**, the land in Lewiston, Androscoggin County, Maine, described as follows:

A certain lot or parcel of land, with any buildings thereon, situated in Lewiston, Androscoggin County, Maine, more particularly described as follows:

Land described as Lot F on the Plan of Southpark, Revision 6, dated July 10, 1997, consisting of 7.61 acres, more or less, recorded in the Androscoggin County Registry of Deeds in Plan Book 39, Page 182.

Meaning and intending to convey the same premises conveyed to Ronald A. LeBlanc by Warranty Deed of Southpark Development Corporation, dated April 4, 2000, and recorded at the Androscoggin County Registry of Deeds in Book 4424, Page 136.

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

Being the same premises described by Warranty Deed of Ronald A. LeBlanc to William J. Fielding, III, William J. Fielding, IV and David J. Fielding, dated January 21, 2005, recorded in the Androscoggin County Registry of Deeds in Book 6216, Page 325.

IN WITNESS WHEREOF, it, **THE FIELDING GROUP, LLC**, has hereunto set its hand and seal this ~~25th~~ 15th day of the month of ~~November~~ December, 2008.

Signed, Sealed and Delivered in presence of

THE FIELDING GROUP, LLC

witness

by: William J. Fielding, III, Member

'NE REAL ESTATE
ANSFER TAX PAID

STATE OF MAINE
COUNTY OF Androscoggin, ss.

~~November 25th, 2008~~
December 1, 2008

Personally appeared the above-named William J. Fielding, III, in his capacity as Member of The Fielding Group, LLC, and made oath that the foregoing instrument is his free act and deed and the free act and deed of said The Fielding Group, LLC..

Notary Public/Attorney at Law

Print Name: N. J. Rattey

ANDROSCOGGIN COUNTY
Tina N. Chaunard
REGISTER OF DEEDS

BK04323 PG125 22572
09-29-1999 @ 11:40a

WARRANTY DEED

SOUTHPARK DEVELOPMENT CORPORATION, a corporation of Lewiston, in the County of Androscoggin, and State of Maine, for consideration paid, grants to ***NEAL SPECIALTY COMPOUNDING, L.L.C.***, a Maine limited liability company of Lewiston, in the County of Androscoggin, State of Maine, with **WARRANTY COVENANTS**, a certain lot or parcel of land, situated in **Lewiston**, County of **Androscoggin** and State of **Maine**, and more particularly described as follows:

> Land described as Lot G on the Plan of Southpark, Revision 6, dated July 10, 1997, consisting of 2.53 acres, more or less, recorded in the Androscoggin County Registry of Deeds in Plan Book 39, Page 182.

MAINE REAL ESTATE TRANSFER TAX PAID

IN WITNESS WHEREOF, the Grantor has set their hands and seals on this 20th day of September, 1999.

SOUTHPARK DEVELOPMENT CORPORATION

Witness

By: Robert J. Mulready
Its: Director

STATE OF MAINE
ANDROSCOGGIN, SS.

September 20, 1999

Then personally appeared the above-named Robert J. Mulready and acknowledged the foregoing instrument to be his free act and deed in his capacity and the free act and deed of Southpark Development Corporation.

SEAL

Before me,

Notary Public/~~Attorney at Law~~
Print Name: Dorothy A. Perham-Whittier
My Commission Expires:

Dorothy Ann Perham-Whittier, Notary Public
State of Maine
My Commission Expires 6/26/2002

REGISTER OF DEEDS
ANDROSCOGGIN COUNTY

H:\CLIENTS\LEWISTON\SPD\NEAL\WARRANTY.DEE

Tighe&Bond

APPENDIX B

BRADLEE L. MEZQUITA, P.E., LEED AP | *Vice President*

YEARS OF EXPERIENCE

25

SPECIALTIES

Civil/Site Design

Low Impact Design & Sustainability

Athletic Fields & Track

Roadway & Drainage Improvements

LICENSES/REGISTRATIONS

Professional Engineer – MA (#42446)

Professional Engineer – NH (#8830)

Professional Engineer – ME (#9410)

Leadership in Energy and Environmental Design Accredited Professional (LEED AP)

EDUCATION

Bachelor of Science
Civil Engineering
University of New Hampshire

Leadership in Energy and Environmental Design (LEED) Accredited Professional

New Hampshire Subsurface Designer

PROFESSIONAL AFFILIATIONS

American Sports Builders Association (ASBA)

New England Water Environment Association (NEWEA)

Bradlee Mezquita is vice president with more than 25 years of experience in civil engineering, site design, permitting and construction. He administers all aspects of development from project initiation though construction and is a strong advocate of sustainability as part of the overall design process.

Professional Experience

Civil/Site Design & Permitting

- **Stormwater Regulations**: Served as project manager for providing Low Impact Design regulations to the City of Somersworth, NH through the Piscataqua Region Estuaries Program. Performed similar role for stormwater ordinance work in New Durham, NH.

- **Great Bay Community College LID Improvements**: Designed and permitted site improvements for this community college in Portsmouth, NH. As part of the project, implemented sustainable design practices that included porous pavement and rain gardens.

- **University of New Hampshire:** Provided designs for numerous on-call projects with the University of New Hampshire in Durham. Projects have included a new 140-vehicle porous asphalt parking lot the Alumni Center, a new permeable paver driveway and parking lot for Hood House, as well as various walkway, drainage and landscaping improvements throughout the campus. Also included road reconstruction and reconstruction of synthetic turf at Bremner Field, and Memorial Field improvements.

- **University of New Hampshire Stadium:** Managed design services, as part of a design/build team, for the construction of a new stadium across from an existing fieldhouse with seating for approximately 10,000 spectators. Engineering services for this project included all utilities, service/emergency access, and pedestrian access associated with this new facility.

- **Nashoba Valley Technical High School Athletic Fields & Track:** Prepared a feasibility study to determine the best location for a new synthetic field, track and tennis courts in Westford, MA. Based on the conclusions in the feasibility study, provided design services, permitting and construction documents for a new six-lane track, a new synthetic turf multi-purpose field interior to the proposed track, four new tennis courts, site lighting, bleachers and an area for a new practice field.

- **Newmarket Elementary School**: Designed and permitted an elementary school in Newmarket, NH. The project required the widening of ½ mile of roadway that included revised signal timing and pedestrian access. Sustainable elements incorporated into the design include a stormwater wetland and multiple rain gardens.

- **Windham High School**: Designed and permitted a new $50 million high school for the Windham, NH School District. The project required the design of a new ¾ mile roadway to access the site, including the avoidance of a historically significant bridge structure.

- **Exeter High School**: Provided site design for a new $45 million high school for Exeter, NH. Site design included nine ball fields, a running track and an athletic stadium with synthetic turf.

- **Hooksett Middle School:** Oversaw the site design for the Hooksett Middle School in Hooksett, NH. The Middle School required road widening along NH Route 27, a water booster station, four athletic fields and parking for more than 200 vehicles.

- **Somersworth Elementary School:** Designed and permitted an elementary school in Somersworth, NH. The project required the widening of ½ mile of roadway that included revised signal timing and pedestrian access. Sustainable elements incorporated into the design include a stormwater wetland and multiple rain gardens.

- **Somersworth School District:** Provided civil engineering, permitting, and construction administration services for various schools within the Somersworth, NH School District. Projects involved stormwater management design, traffic engineering, traffic circulation, as well as pedestrian access and circulation.

- **Athletic Facilities:** Designed dozens of athletic facilities for numerous schools and colleges that include football, baseball, softball, lacrosse, soccer fields, running tracks, and synthetic turf fields. The designs incorporate solar orientation, drainage design and predominant wind direction into the site layout.

- **Wentworth by the Sea Hotel:** Functioned as the principal site designer for the restoration of the Wentworth by the Sea Hotel in New Castle, NH. The hotel was listed as one of the Americas Most Endangered Historic Places prior to the renovation. The project included a new sewer system, upgrading the town's water system and the relocation of US Route 1B.

- **Medway Retail Center**: Designed a 130,000 square foot mixed use retail center in Medway, MA. The project incorporated sustainable stormwater treatment practices, construction of more than 3,000 lineal feet of sidewalk and a public park area within the plaza.

- **BJ's Wholesale Club**: Designed and permitted a BJ's Wholesale Club in Revere, MA. The project was part of a redevelopment site that was previously a salvage yard. Coordination with the MassDEP was required for impacts within the Area of Critical Environmental Concern (ACEC).

- **Northeast Rehabilitation Hospital**: Managed project and acted as lead designer for a new rehabilitation hospital in Portsmouth, NH. The project required multiple redesigns to minimize the removal of ledge and maximize the useable acreage. Stormwater is treated and detained by one of the first gravel wetlands in the state. Included construction of a new two-story, 26,175 square foot building with associated utilities, parking and landscaping on a 7.4 acre lot.

- **McGrath Park**: Served as project manager for the redesign, permitting and construction oversight of the $1 million overhaul of McGrath Park in Salem, MA. The project included reconstruction of the stormwater drainage system, and the construction of a new parking area to increase parking capacity from 60 to 130 spaces.

- **Dartmouth Solar Energy**: Served as project manager for the new solar array on the former Dartmouth landfill in Dartmouth, MA. Working with Borrego Solar Systems, provided design of the system, as well as permitting through the Town of Dartmouth and the MassDEP. Also provided construction oversight and project closeout.

- **Supermarket Sites**: Designed and permitted several supermarket sites throughout New England. Responsible for conceptual layout, design, permitting and construction oversight.

- **Dartmouth Shaw's:** Served as the project manager for the Shaw's supermarket design, permitting, and construction administration for the Shaw's Supermarket on Route 6 in Dartmouth, MA. Worked closely with both planning and engineering staff to work through complex environmental and abutter issues.

- **Tobey Building Renovation**: Served as project manager of civil engineering services for a building renovation project in Concord, NH that included a new parking deck over a surface lot. Project included grading and utilities adjacent to area (drainage, water, sewer, and gas).

- **Anna Philbrook Improvements**: Served as project manager for civil engineering services associated with a new 160 car parking area related to the renovations to the Anna Philbrook Building in Concord, NH. The site is currently occupied by the existing retirement facility. Prepared site plan review package including site layout, landscaping, drainage improvements, and utilities for the proposed project. Following approval, preparing construction documents and providing construction administration services.

Additional Projects

Civil/Site Design & Permitting

- **Aquarion Water Company of NH:** Serves as project manager for various task order assignments, some of which have included replacement of a water main, electrical condition audits at multiple facilities and booster pumping station upgrades.

- **New Hampshire Army National Guard, Concord:** Served as Principal-in-Charge for Building B-C-E site/fence improvements, as well as the rehabilitation of an existing parking lot. Included installation of a new sidewalk system, drainage improvements and landscaping, as well as the installation of new K8 crash rated security perimeter fence.

- **New Hampshire Army National Guard, Franklin:** Served as Principal-in-Charge for a site plan to expand the Personally Owned Vehicles (POV), and the Military Owned Vehicle (MOV) areas; the latter will require fencing. Fieldwork included a topographic and boundary survey of the parcel, as well as wetlands delineation

- **New Hampshire Army National Guard, Lebanon:** Served as Principal-in-Charge for expanding the POV parking area and MOV storage area. In addition, two rain grades will be constructed to mitigate effects of the proposed improvements.

- **New Hampshire Army National Guard, Littleton:** Served as Principal-in-Charge for expansion concepts for the existing parking area. Also designed site improvements for the existing waterline to improve an existing problematic issue.

- **New Hampshire Army National Guard, Milford:** Served as Principal-in-Charge for a boundary survey and wetland delineation of the site.

- **New Hampshire Army National Guard, Portsmouth:** Served as Principal-in-Charge for design and permitting relative to site improvements. Included an underground detention area, stormwater rain garden, a new parking area, and an expanded MOV area.

- **New Hampshire Army National Guard, Rochester:** Served as Principal-in-Charge for design, permitting and construction administration for improvements to the existing readiness center including a stormwater pond, new POV, and MOV area.

- **New Hampshire Army National Guard, Strafford:** Served as Principal-in-Charge for design, permitting and construction administration for reclamation of existing parking lots, drive aisles and access ways, coordination with NHDOT for state driveway permits, installation of photovoltaic site lighting and a secure gravel lot for MOV.

- **New Hampshire Army National Guard Prototypical Drawings/Master Specifications:** Serving as Principal-in-Charge to develop a set of drawings and specifications to help standardize the construction standards at all of the NHARNG properties.

- **New Hampshire Army National Guard Environmental Studies:** Serving as Principal-in-Charge for two environmental assessments at the Rochester and Concord sites.

- **New Hampshire Army National Guard Real Property Development Plans:** Served as Principal-in-Charge for eight Real Property Development Plans (Franklin, Littleton, Milford, Plymouth, Portsmouth, Rochester, Somersworth, and Strafford.)

TRISTAN P. DONOVAN | *Staff Engineer*

YEARS OF EXPERIENCE

3

SPECIALTIES

Coastal/Waterfront Engineering

Watershed Management

Site/Civil Design

Environmental Design & Permitting

Construction Administration

LICENSES/REGISTRATIONS

NAUI Scuba Diver

NHDOT LPA Certified

EDUCATION

Bachelor of Science
Civil Engineering
University of New Hampshire

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers

Environmental Business Council of New England

Engineers Without Borders New Hampshire Professional Chapter

Dover Conservation Commission

Dover Planning Board

Tristan Donovan is a staff engineer with coastal/waterfront engineering, watershed management and site/civil engineering. His experience includes seawall assessment and design, structural design and analysis, stream restoration, storm hardening, climate change/sea level rise planning and mitigation, green infrastructure and low impact development, stormwater management, project presentations and permitting for numerous projects throughout New England.

Professional Experience

Coastal/ Waterfront Engineering

- **Harborwalk Park:** Permitted, designed and provided project LPA observation for the construction of a new waterfront park, including repair and replacement of stone seawalls, historical interpretive display and triangular harbor overlook pier in Portsmouth, NH.
- **Harbour Place Wharf & Marina Assessment:** Above and underwater assessment of a 400' long timber wharf and adjacent marina in Portsmouth, NH.
- **North Hampton Beach State Park:** Design and permitting for a replacement seawall, revetment & ADA Improvements at this park in North Hampton, NH.
- **Borden Remington *M/T BOW SPRING* Damage Assessment:** Engineering assessment of vessel berthing damage at a marine terminal in Fall River, MA.
- **Great Bay Discovery Center Boardwalk:** Engineering design for a wetland timber boardwalk supported on helical piles designed for lateral load resistance in Greenland, NH.
- **Great Bay Tide Gauge:** Designed the platform for the tide gauge. This included calculating vertical and lateral loads acting on the system, sizing members to withstand projected loads, and designing the connections between members as well as to the existing piles.
- **Bicentennial Seawall Assessment:** Inspected and assessed the existing conditions of the seawall in Hampton, NH. Utilized the collected data to inspect, model and analyze the existing wall and develop options for repair/reconstruction. Created a comparison chart of several options that balanced construction costs, permitting effort, expected design life, expected load resistances and aesthetics.
- **Quincy, Massachusetts:** Worked on several coastal projects for the City, including:
  - **Maritime Center:** Designed and permitted a replacement for the existing boat ramp and the reconstruction of the Quincy Homeland Security building.
  - **Merrymount Park:** Designed and permitted a timber pedestrian bridge and stone fishing platform in Blacks Creek as part of a park wide master plan.

TRISTAN P. DONOVAN | *Staff Engineer*

Watershed Management

- **University of New Hampshire:** Assisted with the design and drafting of the restoration of Pettee Brook. Work included coordinating with professors from UNH to create the final design of the stream and the floodplain. Also included the design of stabilization and vegetative systems to mitigate erosion.

- **Wolfeboro, New Hampshire:** Worked with project team on the Lake Wentworth/Crescent Lake Watershed Management Plan Implementation Project funded by a 319 Watershed Assistance Grant. The project involved performing hydraulic modeling, stormwater BMP design of retrofit installations, site plan development, and general drafting.

- **Manchester-by-the-Sea, Massachusetts:** Worked on several projects for the Town, including:

  - **Coastal Pollutant Remediation Grant Program:** Assisted in the design of green infrastructure and low impact development upgrades to the downtown stormwater collection/treatment system.

  - **Sawmill Brook Watershed Management Plan:** Project was funded by CZM grant program to assess and mitigate flooding in the watershed based on existing conditions, and projected sea level rise/climate change. Assisted in data collection of 20+ culverts/crossings along the brook, analyzed HEC-RAS model outputs to identify areas of greatest flooding, designed and drafted conceptual plans at areas of greatest need, and designed and drafted plans for 3 new culverts and increased flood storage capacity.

Site/Civil

- **University of New Hampshire:** Designed and drafted various projects around campus. Design includes stormwater management, utility design including sewer, water, steam/condensate and hot water heating lines, parking lot design and roadway design. Projects include South Drive, West Stadium, Fieldhouse Parking Lot and College Brook Wetland Impact Mitigation for South Drive and West Stadium.

- **Army National Guard Readiness Centers:** Assisted with site improvement designs and permitting for multiple Army National Guard Readiness Centers throughout New Hampshire. Work included the drafting/designing of site plans from the conceptual phases through construction documents. Other duties included review and approval of contractor's shop drawings.

- **Compounding Solutions:** Designed, drafted and permitted industrial site in Lewiston, Maine. The project included stormwater management, historical and natural reviews, coordination with local and state agencies on requirements, and presentations to local land use boards. Prepared both permitting and construction documents.

Construction Administration & Permitting

- **NHDOT Local Public Agency Program:** Certified to oversee projects federally funded through the NHDOT LPA program. This includes design phase and construction phase services. Participated in training to meet the requirements set forth by the Federal Highway Administration and experienced in dealing with the paper work and requirements that are enforced by NHDOT.

- **State and Local Permitting:** Responsible for the completion and any design plans for multiple local, state and federal government permits. This includes NHDES Wetland Permits, NHDHR Project Reviews, USACOE Programmatic General Permits, MassDEP Chapter 91 Licensing, MassDEP Section 401 Permits as well as other necessary local land use permits/approvals.

CRAIG M. LANGTON, P.E. | *Project Engineer*

YEARS OF EXPERIENCE

4

SPECIALTIES

Site/Civil Design & Permitting

Stormwater Management

Peer Review

Construction Observation & Oversight

LICENSES/REGISTRATIONS

Professional Engineer – NH (#14745)

EDUCATION

Bachelor of Science
Civil Engineering
University of New Hampshire

PROFESSIONAL AFFILIATIONS

City of Manchester Zoning Board Member, November 2010 – Present

American Society of Civil Engineers

Craig Langton is a proejct engineer who has experience in site/civil engineering projects. His experience includes stormwater management, site design, permitting, and peer review, for numerous projects throughout New England. Craig also regularly performs erosion control and construction observations and oversight for projects under construction.

Professional Experience

Site/Civil Engineering

- **Pinkerton Place:** Assisted with the design and permitting of a commercial redevelopment site on Route 28 in Derry, New Hampshire for 49,000 square feet of retail. Work included the drafting/designing of site plan from the conceptual phases all the way through construction document. Also assisted in the stormwater management design using HydroCAD modeling.

- **Army National Guard Readiness Centers:** Assisted with site improvement designs and permitting for multiple Army National Guard Readiness Centers throughout New Hampshire. Work included the drafting/designing of site plan from the conceptual phases through construction documents. Also assisted in the stormwater management designs including HydroCAD modeling for an underground detention system and multiple rain gardens. Other duties included the review and approval of contractor's shop drawings.

- **Cobham:** Assisted with permitting and designed a 140,000 square foot expansion to an existing manufacturing building in Exeter, New Hampshire. Work included the drafting/designing of site plans. Also assisted in the stormwater management designs which included the addition of multiple tree box filters, two underground infiltration basins, and the re-designing of an existing detention pond to a state of the art gravel wetland system.

- **Solar/Landfill Projects:** Assisted with the drafting/design of permitting plan sets for the development of solar arrays on caped landfills. Projects included a 1.28MW solar facility in Dartmouth, Massachusetts, a 1.287MW solar facility in Methuen, Massachusetts, and a 1.856MW solar facility in Easton, Massachusetts. Have also helped with layout and design of multiple conceptual landfills and calculating the available storage volumes.

- **Commercial Developments:** Assisted with sewer design and layout for multiple commercial developments, as well as the design and permitting for more than a mile of gravity sewers for a 619 bed residential project in Durham New Hampshire.

- **Site Design Peer Review:** Conducted third-party peer reviews for various projects throughout New England. Responsible for reviewing the projects' conformance with required state and local regulations, design standards, developer standards, as well as stormwater design recommendations.

Construction Administration/Observation & Permitting:

- **Construction Observations/Oversight:** Performed full time on site construction observations and oversight for the City of Quincy, MA seawall reconstruction.

Tighe&Bond

APPENDIX C

PAUL R. LEPAGE
GOVERNOR

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

CHANDLER E. WOODCOCK
COMMISSIONER

May 9, 2016

Bradlee Mezquita
Tighe & Bond, Inc.
177 Corporate Drive
Portsmouth, NH 03801-6825

RE: Information Request - 258 Goddard Road, Lewiston

Dear Bradlee:

Per your request received May 3, 2016, we have reviewed current Maine Department of Inland Fisheries and Wildlife (MDIFW) information for known locations of Endangered, Threatened, and Special Concern species; designated Essential and Significant Wildlife Habitats; and fisheries habitat concerns within the vicinity of the *258 Goddard Road Project* in Lewiston.

Our Department has not mapped any Essential Habitats or fisheries habitats that would be directly affected by your project.

Endangered, Threatened, and Special Concern Species

Bats

Of the eight species of bats that occur in Maine, the three *Myotis* species are protected under Maine's Endangered Species Act (MESA) and are afforded special protection under 12 M.R.S §12801 - §12810. The three *Myotis* species include little brown bat (*M. lucifugus,* State Endangered); northern long-eared bat (*M. septentrionalis,* State Endangered); and eastern small-footed bat (*M. leibii,* State Threatened). Four of the remaining bat species are listed as Special Concern: red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), silver-haired bat (*Lasionycteris noctivagans*), and tri-colored bat (*Perimyotis subflavus*).

While a comprehensive statewide inventory for bats has not been completed, it is likely that several of these species occur within the project area during migration and/or the breeding season. We recommend that you contact the U.S. Fish and Wildlife Service Maine Field Office (Wende Mahaney, 207-866-3344) for further guidance, as the northern long-eared bat is also listed as a Threatened Species under the Federal Endangered Species Act.

Significant Wildlife Habitat

Significant Vernal Pools

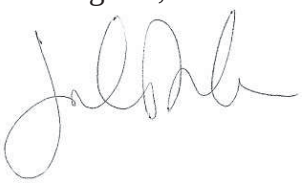
At this time, MDIFW Significant Wildlife Habitat (SWH) maps indicate no known presence of SWHs within the project area, which include Waterfowl and Wading Bird Habitats, Deer Wintering Areas,

Seabird Nesting Islands, Shorebird Areas, and Significant Vernal Pools. However, a comprehensive statewide inventory for Significant Vernal Pools has not been completed. Therefore, we strongly recommend that surveys for vernal pools be conducted within the project boundary by qualified wetland scientists prior to final project design to determine whether there are Significant Vernal Pools present in the area. These surveys should extend up to 250 feet beyond the anticipated project footprint because of potential performance standard requirements for off-site Significant Vernal Pools, assuming such pools are located on land owned or controlled by the applicant. Once surveys are completed, our Department will need to review and verify any vernal pool data prior to final determination of significance.

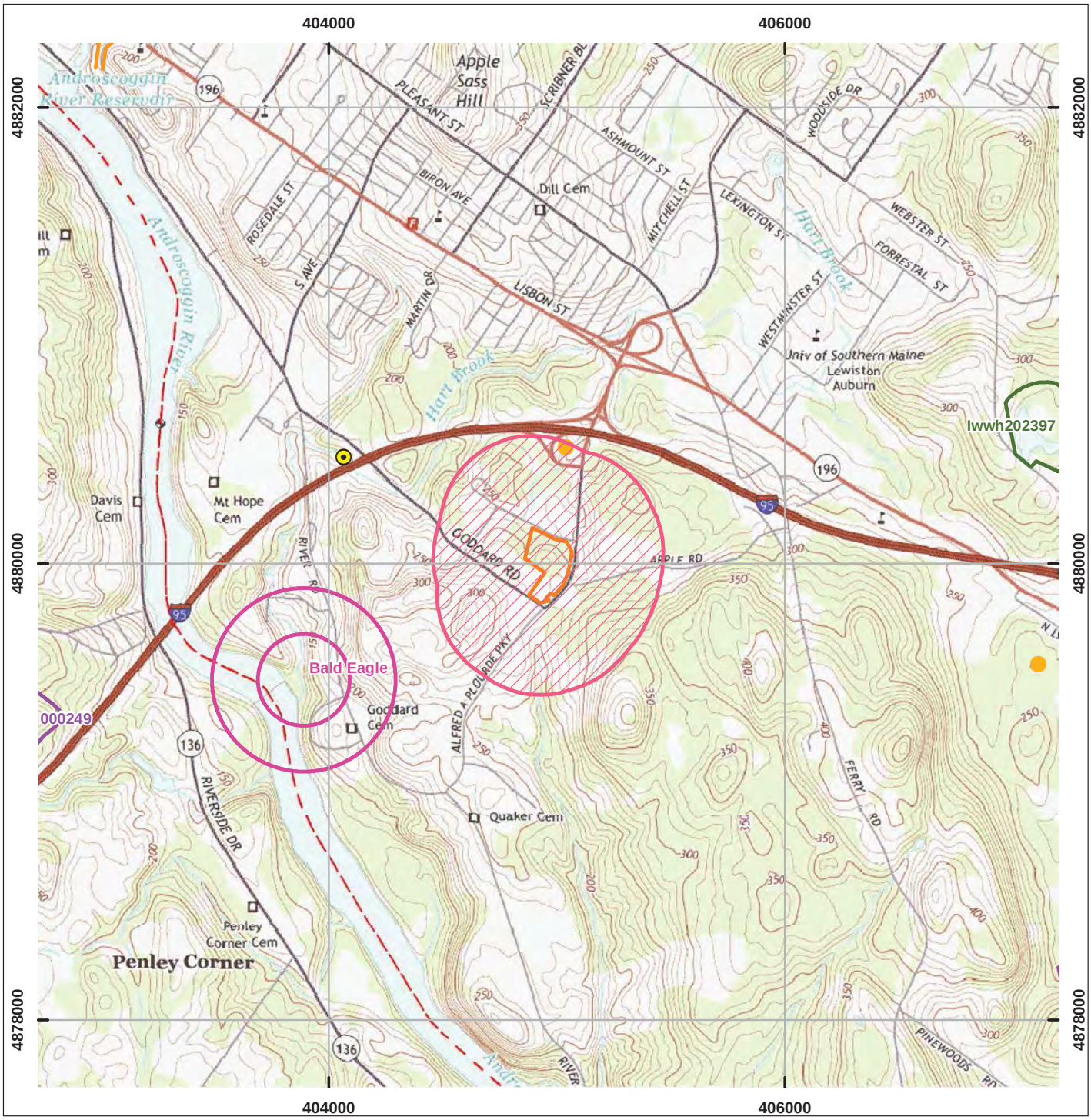
This consultation review has been conducted specifically for known MDIFW jurisdictional features and should not be interpreted as a comprehensive review for the presence of other regulated features that may occur in this area. Prior to the start of any future site disturbance we recommend additional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

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

Best regards,



John Maclaine
Biologist



Environmental Review of Fish and Wildlife Observations and Priority Habitats

Project Name: Lewiston, 258 Goddard Road (Version 1)

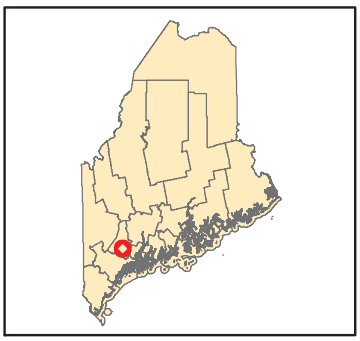
Maine Department of
Inland Fisheries and Wildlife

0 0.125 0.25 0.5 0.75 1 Miles

Projection: UTM, NAD83, Zone 19N

Date: 5/4/2016

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



Tighe&Bond
Engineers | Environmental Specialists

C-1118-1
May 2, 2016

Earle G. Shettleworth, Jr., Director
Maine Historic Preservation Commission
55 Capitol Street
Augusta, Maine 04333-0065

MAY 05 2016
0680-16

Re: **Proposed Building Expansion, 258 Goddard Road, Lewiston, Maine**

Dear Mr. Shettleworth:

I am writing to request a Project Review for the site located at 258 Goddard Road in Lewiston, Maine. The project requires a Site Location of Development Application and Stormwater Management Law Application from the Maine Department of Environmental Protection. Therefore, it must be demonstrated that the project will not adversely affect any historic sites, structures or archaeological sites.

The project consists of the construction of an addition to an existing manufacturing facility. The current facility is approximately 40,000 sf and the proposed addition will double the size to a total of approximately 80,000 sf. Included in the project is the construction of a parking lot that will provide additional parking as well as access to the loading docks located at the rear of the building. The stormwater management system will be upgraded to handle the additional impervious area and new utility lines will be constructed to service the new building.

The existing building is less than 50 years old and there are no other buildings on site. The site is located in an area that is zoned as industrial use and no buildings in the area are more than 50 years old. There are no known archaeological or historical resources located on-site or in the vicinity of the site.

If you have any further questions or require additional information, please feel to contact me by email at BLMezquita@tighebond.com.

Very truly yours,

TIGHE & BOND, INC.

BMezquita

Bradlee Mezquita, P.E.
Vice President

J:\C\C1118 Compounding Solutions\Permitting\Historical Review\C-1118-1_Historical Review Cover Letter.Docx

Based on the information submitted, I have concluded that there will be no historic properties affected by the proposed undertaking, as defined by Section 106 of the National Historic Preservation Act. Consequently, pursuant to 36 CFR 800.4(d)(1), no further Section 106 consultation is required unless additional resources are discovered during project implementation pursuant to 36 CFR 800.13.

Kirk F. Mohney

Kirk F. Mohney,
[redacted] State Historic Preservation Officer
Maine Historic Preservation Commission

5/10/16
Date

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
93 STATE HOUSE STATION
AUGUSTA, MAINE 04333

PAUL R. LEPAGE
GOVERNOR

WALTER E. WHITCOMB
COMMISSIONER

May 3, 2016

Bradlee Mezquita
Tighe & Bond, Inc.
177 Corporate Drive
Portsmouth, NE 03801

Via email: blmezquita@tighebond.com

Re: Rare and exemplary botanical features in proximity to: Project C-1118-1, Building Expansion, Goddard Road, Lewiston, Maine

Dear Mr. Mezquita:

I have searched the Natural Areas Program's Biological and Conservation Data System files in response to your request received May 2, 2016 for information on the presence of rare or unique botanical features documented from the vicinity of the project in Lewiston, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

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

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. This lack of data may indicate minimal survey efforts rather than confirm the absence of rare botanical features. You may want to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed.

If a field survey of the project area is conducted, please refer to the enclosed supplemental information regarding rare and exemplary botanical features documented to occur in the vicinity of the project site. The list may include information on features that have been known to occur historically in the area as well as recently field-verified information. While historic records have not been documented in several years, they may persist in the area if suitable habitat exists. The enclosed list identifies features with potential to occur in the area, and it should be considered if you choose to conduct field surveys.

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

MOLLY DOCHERTY, DIRECTOR
MAINE NATURAL AREAS PROGRAM

PHONE: (207) 287-8044
FAX: (207) 287-8040
WWW.MAINE.GOV/DACF/MNAP

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

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

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

Sincerely,

Don Cameron | Ecologist | Maine Natural Areas Program
207-287-8041 | don.s.cameron@maine.gov

Rare and Exemplary Botanical Features within 4 miles of

Project: #C-1118-1, building expansion, Goddard Road, Lewiston, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Broad Beech Fern						
	SC	S2	G5	1991-06	18	Hardwood to mixed forest (forest, upland)
Dry Land Sedge						
	SC	S2	G5	1997-07-08	3	Old field/roadside (non-forested, wetland or upland)
	SC	S2	G5	2007-09-14	4	Old field/roadside (non-forested, wetland or upland)
Fern-leaved False Foxglove						
	SC	S3	G5	1938-08-18	11	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
Smooth Winterberry Holly						
	SC	S3	G5	1989	22	Forested wetland

STATE RARITY RANKS

S1 Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.
S2 Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
S3 Rare in Maine (20-100 occurrences).
S4 Apparently secure in Maine.
S5 Demonstrably secure in Maine.
SU Under consideration for assigning rarity status; more information needed on threats or distribution.
SNR Not yet ranked.
SNA Rank not applicable.
S#? Current occurrence data suggests assigned rank, but lack of survey effort along with amount of potential habitat create uncertainty (e.g. S3?).

Note: **State Rarity Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines State Rarity Ranks for animals.

GLOBAL RARITY RANKS

G1 Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extinction.
G2 Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
G3 Globally rare (20-100 occurrences).
G4 Apparently secure globally.
G5 Demonstrably secure globally.
GNR Not yet ranked.

Note: **Global Ranks** are determined by NatureServe.

STATE LEGAL STATUS

Note: State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine's **Endangered** and **Threatened** plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program's database to recommend status changes to the Department of Conservation.

E ENDANGERED; Rare and in danger of being lost from the state in the foreseeable future; or federally listed as Endangered.
T THREATENED; Rare and, with further decline, could become endangered; or federally listed as Threatened.

NON-LEGAL STATUS

SC SPECIAL CONCERN; Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.
PE Potentially Extirpated; Species has not been documented in Maine in past 20 years or loss of last known occurrence has been documented.

Visit our website for more information on rare, threatened, and endangered species!
http://www.maine.gov/dacf/mnap

ELEMENT OCCURRENCE RANKS - EO RANKS

Element Occurrence ranks are used to describe the quality of a rare plant population or natural community based on three factors:

- **Size**: Size of community or population relative to other known examples in Maine. Community or population's viability, capability to maintain itself.
- **Condition**: For communities, condition includes presence of representative species, maturity of species, and evidence of human-caused disturbance. For plants, factors include species vigor and evidence of human-caused disturbance.
- **Landscape context**: Land uses and/or condition of natural communities surrounding the observed area. Ability of the observed community or population to be protected from effects of adjacent land uses.

These three factors are combined into an overall ranking of the feature of **A**, **B**, **C**, or **D**, where **A** indicates an **excellent** example of the community or population and **D** indicates a **poor** example of the community or population. A rank of **E** indicates that the community or population is **extant** but there is not enough data to assign a quality rank. The Maine Natural Areas Program tracks all occurrences of rare (S1-S3) plants and natural communities as well as A and B ranked common (S4-S5) natural communities.

Note: **Element Occurrence Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines Element Occurrence ranks for animals.

Visit our website for more information on rare, threatened, and endangered species!
http://www.maine.gov/dacf/mnap

Tighe&Bond

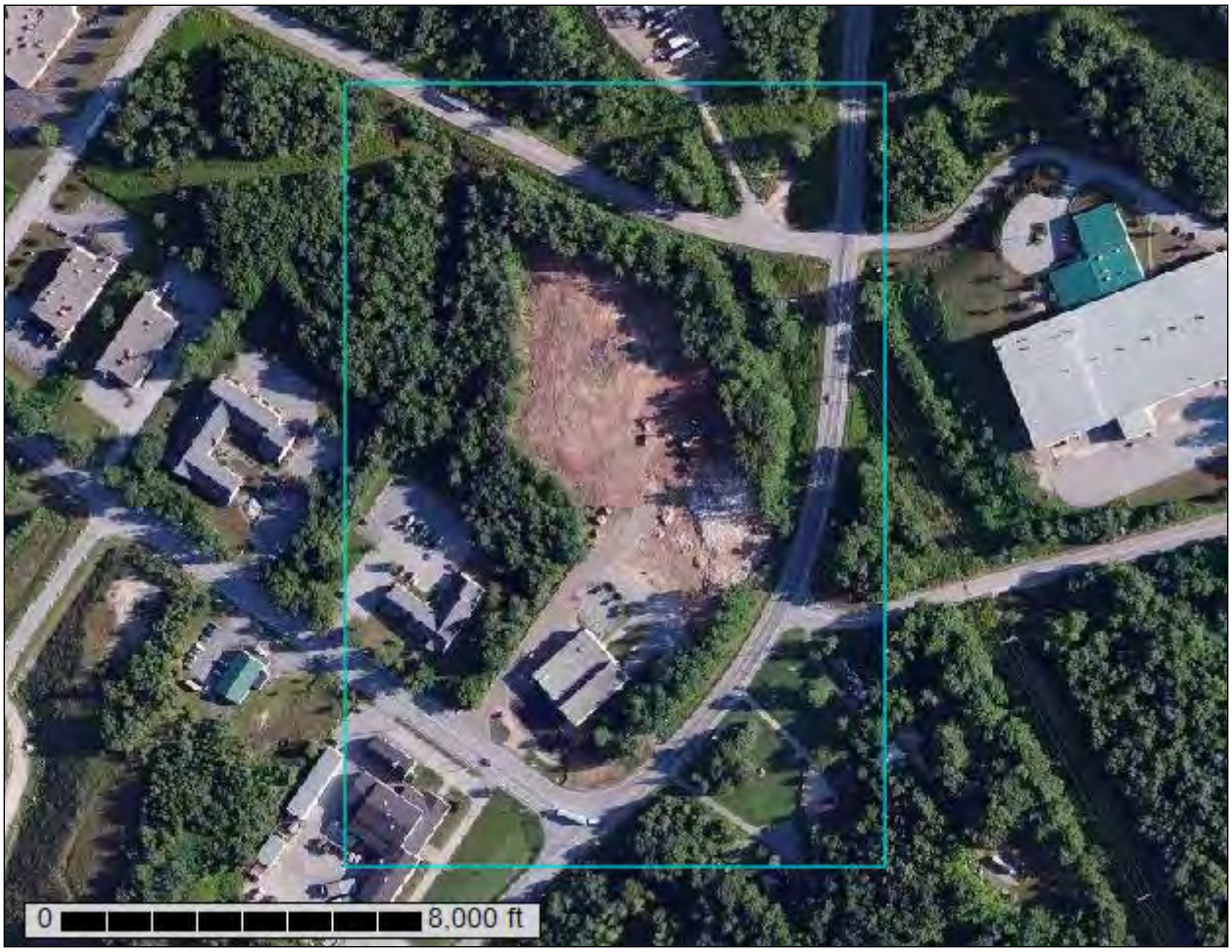
APPENDIX D

United States Department of Agriculture

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



April 4, 2016

Preface

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 (http://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).

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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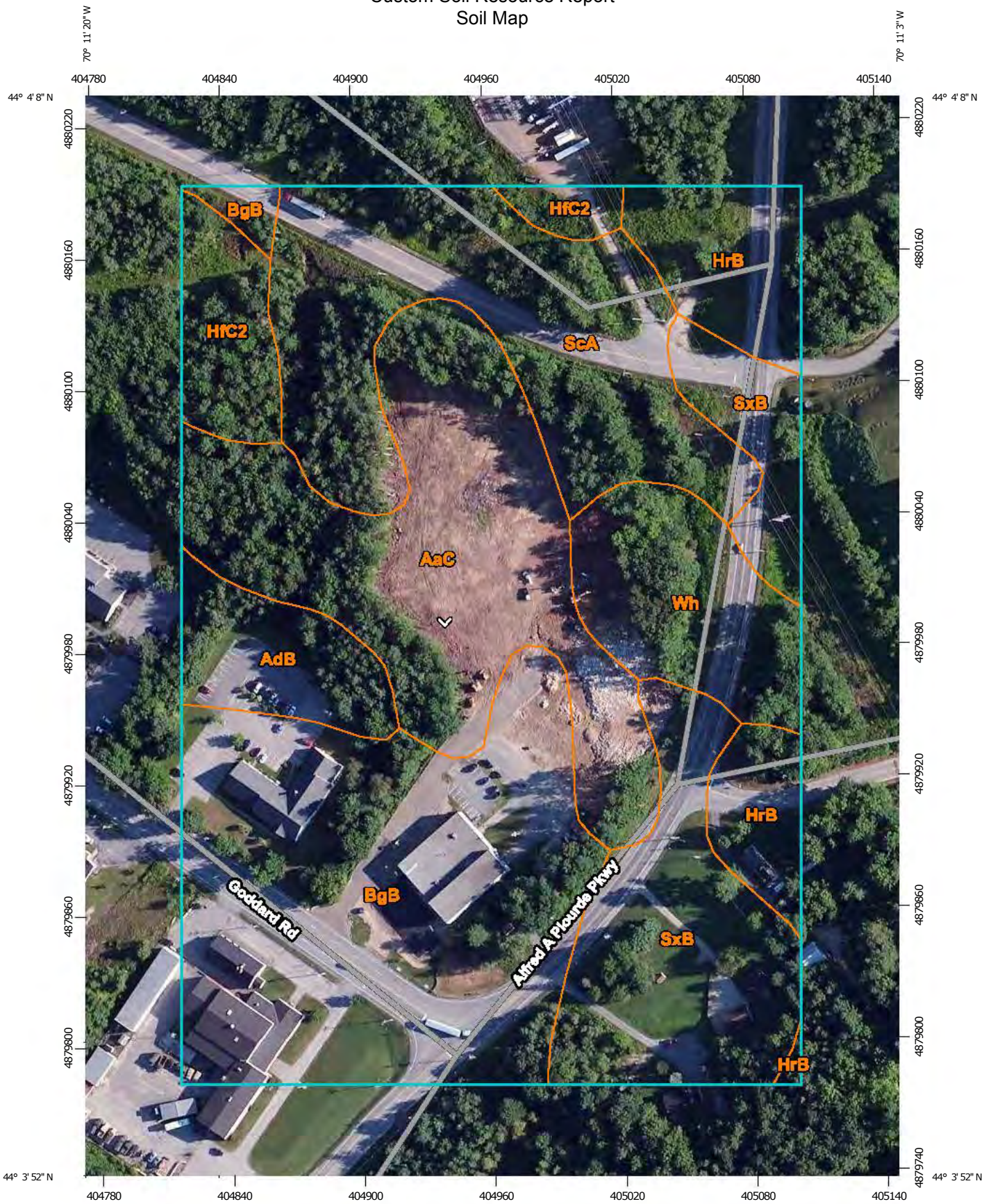
Soil Map

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: 1:2,400 if printed on A portrait (8.5" x 11") sheet.

N

0 35 70 140 210 Meters

0 100 200 400 600 Feet

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: http://websoilsurvey.nrcs.usda.gov
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 16, Sep 14, 2015

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

Androscoggin and Sagadahoc Counties, Maine (ME606)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
AaC	Adams loamy sand, 8 to 15 percent slopes	5.6	19.2%
AdB	Agawam fine sandy loam, 2 to 8 percent slopes	1.3	4.3%
BgB	Belgrade very fine sandy loam, 2 to 8 percent slopes	7.7	26.7%
HfC2	Hartland very fine sandy loam, 8 to 15 percent slopes, eroded	1.3	4.6%
HrB	Hollis fine sandy loam, 0 to 8 percent slopes	2.1	7.2%
ScA	Scantic silt loam, 0 to 3 percent slopes	4.9	16.9%
SxB	Sutton loam, 0 to 8 percent slopes	4.1	14.1%
Wh	Whitman loam	2.0	6.9%
Totals for Area of Interest		**28.9**	**100.0%**

Map Unit Descriptions

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

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the

contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Androscoggin and Sagadahoc Counties, Maine

AaC—Adams loamy sand, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 9kcd
Elevation: 300 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

Adams and similar soils: 85 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: 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): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
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): 4e
Hydrologic Soil Group: A

AdB—Agawam fine sandy loam, 2 to 8 percent slopes

Map Unit Composition

Agawam and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Agawam

Setting

Landform: Outwash plains
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Coarse-loamy glaciofluvial deposits derived from slate

Typical profile

H1 - 0 to 3 inches: fine sandy loam
H2 - 3 to 37 inches: fine sandy loam
H3 - 37 to 72 inches: very fine sand

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: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B

BgB—Belgrade very fine sandy loam, 2 to 8 percent slopes

Map Unit Composition

Belgrade and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Belgrade

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 9 inches: very fine sandy loam
H2 - 9 to 16 inches: silt loam
H3 - 16 to 28 inches: silt 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: 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 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.9 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B

HfC2—Hartland very fine sandy loam, 8 to 15 percent slopes, eroded

Map Unit Composition
Hartland and similar soils: 85 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

HrB—Hollis fine sandy loam, 0 to 8 percent slopes

Map Unit Composition

Hollis and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hollis

Setting

Landform: Hills
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Crest, interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Coarse-loamy supraglacial meltout till derived from mica schist

Typical profile

H1 - 0 to 2 inches: fine sandy loam
H2 - 2 to 18 inches: channery fine sandy loam
R - 18 to 22 inches: bedrock

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Somewhat excessively 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: 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): 3e
Hydrologic Soil Group: D

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

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Scantic

Setting

Landform: River valleys, marine terraces
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

SxB—Sutton loam, 0 to 8 percent slopes

Map Unit Composition

Sutton and similar soils: 85 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

Wh—Whitman loam

Map Unit Setting

National map unit symbol: 9kfs
Elevation: 0 to 2,100 feet
Mean annual precipitation: 28 to 45 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 100 to 195 days
Farmland classification: Not prime farmland

Map Unit Composition

Whitman and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Whitman

Setting

Landform: Till plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-loamy supraglacial meltout till derived from mica schist

Typical profile

H1 - 0 to 9 inches: mucky loam
H2 - 9 to 30 inches: sandy loam
H3 - 30 to 42 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 18 to 31 inches to densic material
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: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Physical Properties

Soil Physical Properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

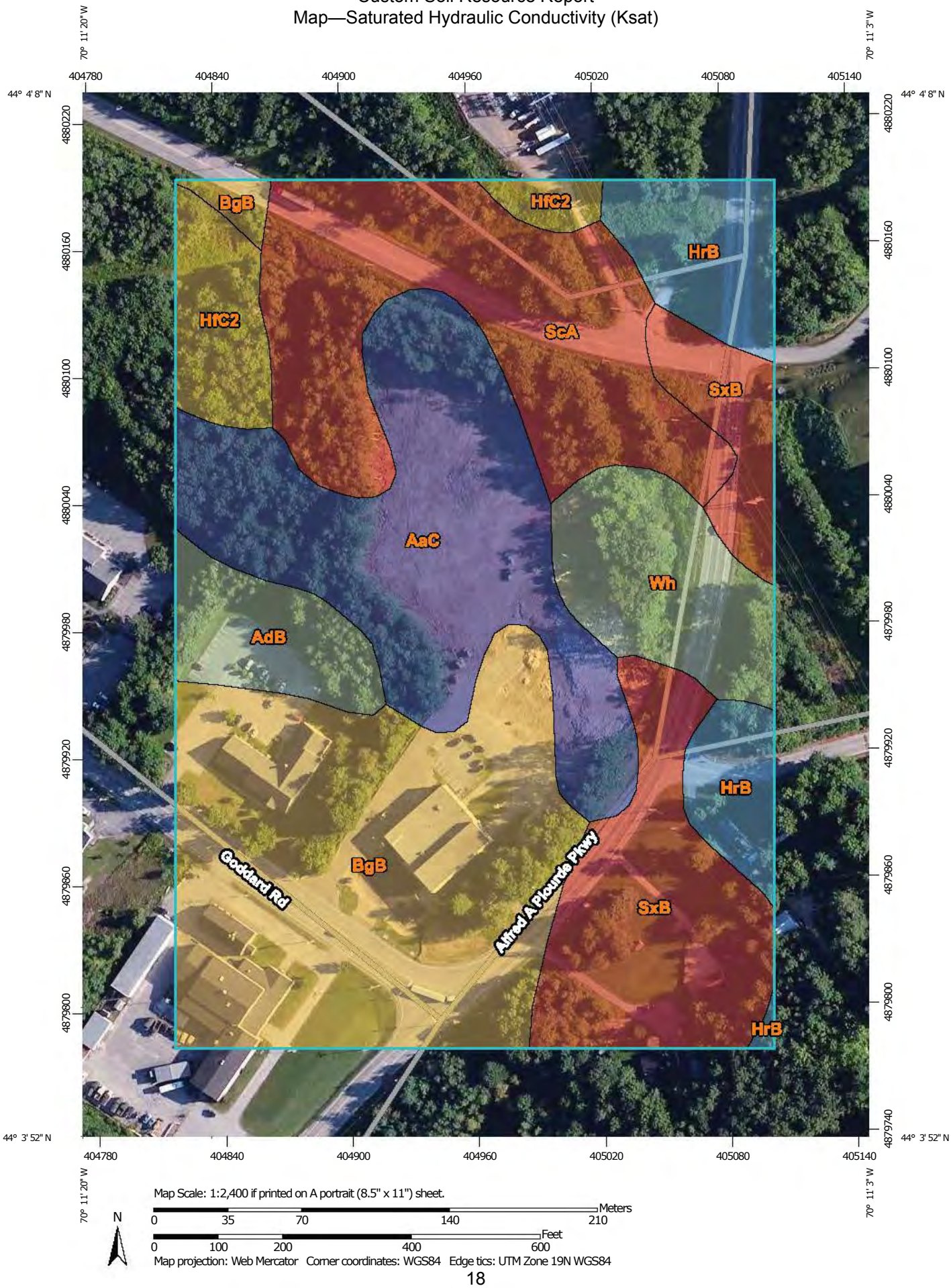
Saturated Hydraulic Conductivity (Ksat)

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity is considered in the design of soil drainage systems and septic tank absorption fields.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

The numeric Ksat values have been grouped according to standard Ksat class limits.

Map—Saturated Hydraulic Conductivity (Ksat)



Map Scale: 1:2,400 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 35 70 140 210

Feet: 0 100 200 400 600

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 Rating Polygons

<= 5.4805

> 5.4805 and <= 10.2328

> 10.2328 and <= 16.7481

> 16.7481 and <= 23.1905

> 23.1905 and <= 111.5969

Not rated or not available

Soil Rating Lines

<= 5.4805

> 5.4805 and <= 10.2328

> 10.2328 and <= 16.7481

> 16.7481 and <= 23.1905

> 23.1905 and <= 111.5969

Not rated or not available

Soil Rating Points

<= 5.4805

> 5.4805 and <= 10.2328

> 10.2328 and <= 16.7481

> 16.7481 and <= 23.1905

> 23.1905 and <= 111.5969

Not rated or not available

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: http://websoilsurvey.nrcs.usda.gov
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 16, Sep 14, 2015

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.

Table—Saturated Hydraulic Conductivity (Ksat)

Saturated Hydraulic Conductivity (Ksat)— Summary by Map Unit — Androscoggin and Sagadahoc Counties, Maine (ME606)				
Map unit symbol	**Map unit name**	**Rating (micrometers per second)**	**Acres in AOI**	**Percent of AOI**
AaC	Adams loamy sand, 8 to 15 percent slopes	111.5969	5.6	19.2%
AdB	Agawam fine sandy loam, 2 to 8 percent slopes	16.0371	1.3	4.3%
BgB	Belgrade very fine sandy loam, 2 to 8 percent slopes	10.2328	7.7	26.7%
HfC2	Hartland very fine sandy loam, 8 to 15 percent slopes, eroded	9.1700	1.3	4.6%
HrB	Hollis fine sandy loam, 0 to 8 percent slopes	23.1905	2.1	7.2%
ScA	Scantic silt loam, 0 to 3 percent slopes	2.1552	4.9	16.9%
SxB	Sutton loam, 0 to 8 percent slopes	5.4805	4.1	14.1%
Wh	Whitman loam	16.7481	2.0	6.9%
Totals for Area of Interest			**28.9**	**100.0%**

Rating Options—Saturated Hydraulic Conductivity (Ksat)

Units of Measure: micrometers per second

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Fastest

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): All Layers (Weighted Average)

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

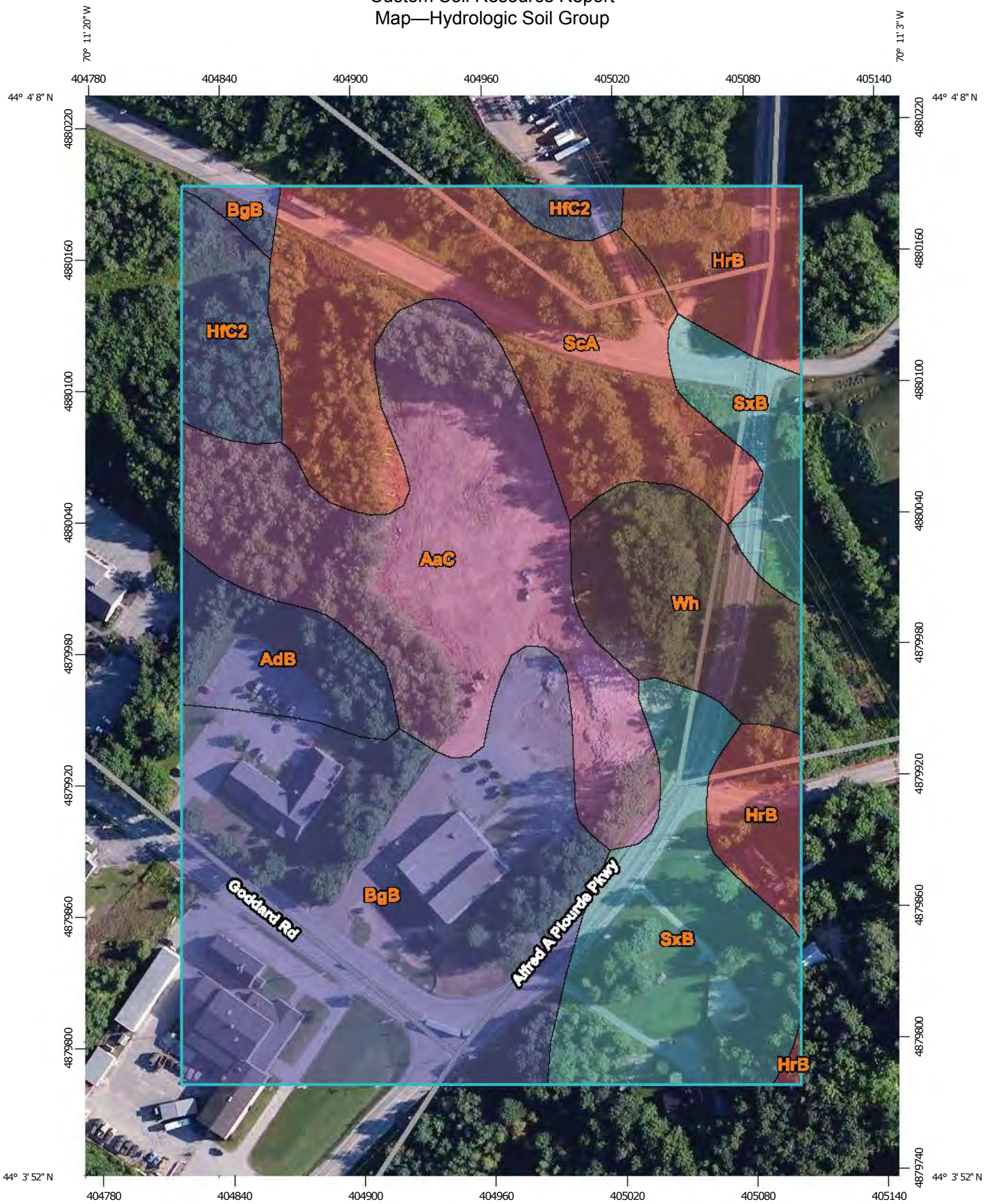
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Map—Hydrologic Soil Group



Map Scale: 1:2,400 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 35 70 140 210

Feet: 0 100 200 400 600

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 Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

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.

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Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

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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 16, Sep 14, 2015

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.

Table—Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Androscoggin and Sagadahoc Counties, Maine (ME606)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
AaC	Adams loamy sand, 8 to 15 percent slopes	A	5.6	19.2%
AdB	Agawam fine sandy loam, 2 to 8 percent slopes	B	1.3	4.3%
BgB	Belgrade very fine sandy loam, 2 to 8 percent slopes	B	7.7	26.7%
HfC2	Hartland very fine sandy loam, 8 to 15 percent slopes, eroded	B	1.3	4.6%
HrB	Hollis fine sandy loam, 0 to 8 percent slopes	D	2.1	7.2%
ScA	Scantic silt loam, 0 to 3 percent slopes	D	4.9	16.9%
SxB	Sutton loam, 0 to 8 percent slopes	C	4.1	14.1%
Wh	Whitman loam	B/D	2.0	6.9%
Totals for Area of Interest			**28.9**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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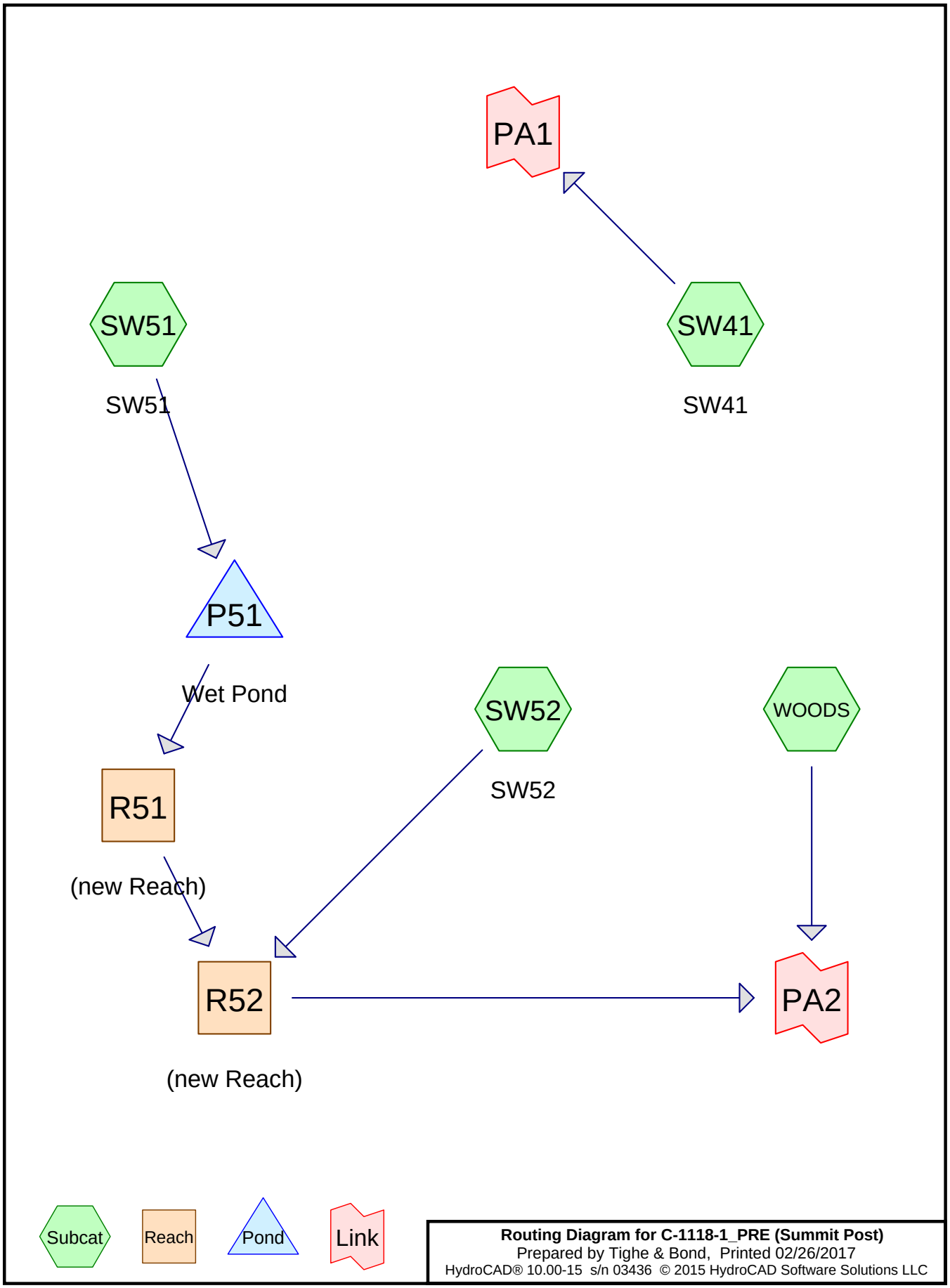
Tighe&Bond

APPENDIX E



Routing Diagram for C-1118-1_PRE (Summit Post)
Prepared by Tighe & Bond, Printed 02/26/2017
HydroCAD® 10.00-15 s/n 03436 © 2015 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.298	61	>75% Grass cover, Good, HSG B (SW41, SW52)
1.543	98	Paved parking, HSG B (SW41, SW51)
0.152	98	Water Surface, 0% imp, HSG B (SW51)
1.479	60	Woods, Fair, HSG B (SW41, SW51)
2.321	79	Woods, Fair, HSG D (SW52)
1.815	30	Woods, Good, HSG A (WOODS)
0.248	77	Woods, Good, HSG D (WOODS)
7.856	**67**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
1.815	HSG A	WOODS
3.472	HSG B	SW41, SW51, SW52
0.000	HSG C	
2.569	HSG D	SW52, WOODS
0.000	Other	
7.856		**TOTAL AREA**

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

Subcatchment SW41: SW41 Runoff Area=32,192 sf 24.85% Impervious Runoff Depth>0.63"
Flow Length=325' Tc=40.9 min CN=70 Runoff=0.26 cfs 0.039 af

Subcatchment SW51: SW51 Runoff Area=113,496 sf 52.16% Impervious Runoff Depth>1.28"
Flow Length=500' Tc=3.4 min CN=82 Runoff=4.50 cfs 0.277 af

Subcatchment SW52: SW52 Runoff Area=106,676 sf 0.00% Impervious Runoff Depth>1.01"
Flow Length=300' Tc=65.7 min CN=78 Runoff=1.16 cfs 0.206 af

Subcatchment WOODS: Runoff Area=89,864 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=400' Slope=0.0800 '/' Tc=16.8 min CN=36 Runoff=0.00 cfs 0.000 af

Reach R51: (new Reach) Avg. Flow Depth=0.01' Max Vel=0.20 fps Inflow=0.02 cfs 0.012 af
n=0.100 L=90.0' S=0.0889 '/' Capacity=0.97 cfs Outflow=0.02 cfs 0.011 af

Reach R52: (new Reach) Avg. Flow Depth=0.26' Max Vel=0.46 fps Inflow=1.18 cfs 0.217 af
n=0.100 L=195.0' S=0.0103 '/' Capacity=237.39 cfs Outflow=1.16 cfs 0.214 af

Pond P51: Wet Pond Peak Elev=266.19' Storage=11,574 cf Inflow=4.50 cfs 0.277 af
Outflow=0.02 cfs 0.012 af

Link PA1: Inflow=0.26 cfs 0.039 af
Primary=0.26 cfs 0.039 af

Link PA2: Inflow=1.16 cfs 0.214 af
Primary=1.16 cfs 0.214 af

Total Runoff Area = 7.856 ac Runoff Volume = 0.522 af Average Runoff Depth = 0.80"
80.36% Pervious = 6.314 ac 19.64% Impervious = 1.543 ac

Summary for Subcatchment SW41: SW41

Runoff = 0.26 cfs @ 12.64 hrs, Volume= 0.039 af, Depth> 0.63"

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 Rainfall=3.00"

Area (sf)	CN	Description
8,000	98	Paved parking, HSG B
7,441	61	>75% Grass cover, Good, HSG B
16,751	60	Woods, Fair, HSG B
32,192	70	Weighted Average
24,192		75.15% Pervious Area
8,000		24.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.6	220	0.0227	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
1.3	105	0.0381	1.37		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
40.9	325	Total			

Summary for Subcatchment SW51: SW51

Runoff = 4.50 cfs @ 12.06 hrs, Volume= 0.277 af, Depth> 1.28"

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 Rainfall=3.00"

Area (sf)	CN	Description
59,200	98	Paved parking, HSG B
47,696	60	Woods, Fair, HSG B
6,600	98	Water Surface, 0% imp, HSG B
113,496	82	Weighted Average
54,296		47.84% Pervious Area
59,200		52.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.88		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.4	50	0.0800	2.02		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.4	30	0.0333	1.28		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.3	220	0.0182	2.74		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.4	150	0.0133	5.57	74.30	**Parabolic Channel,** W=10.00' D=2.00' Area=13.3 sf Perim=11.0' n= 0.035 Earth, dense weeds

3.4	500	Total

Summary for Subcatchment SW52: SW52

Runoff = 1.16 cfs @ 12.93 hrs, Volume= 0.206 af, Depth> 1.01"

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 Rainfall=3.00"

Area (sf)	CN	Description
5,560	61	>75% Grass cover, Good, HSG B
101,116	79	Woods, Fair, HSG D
106,676	78	Weighted Average
106,676		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.5	80	0.0138	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.00"
27.8	130	0.0769	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.00"
0.4	90	0.0222	3.49	349.25	**Parabolic Channel,** W=50.00' D=3.00' Area=100.0 sf Perim=50.5' n= 0.100
65.7	300	Total			

Summary for Subcatchment WOODS:

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

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 Rainfall=3.00"

Area (sf)	CN	Description
10,803	77	Woods, Good, HSG D
79,061	30	Woods, Good, HSG A
89,864	36	Weighted Average
89,864		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	50	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.00"
4.1	350	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.8	400	Total			

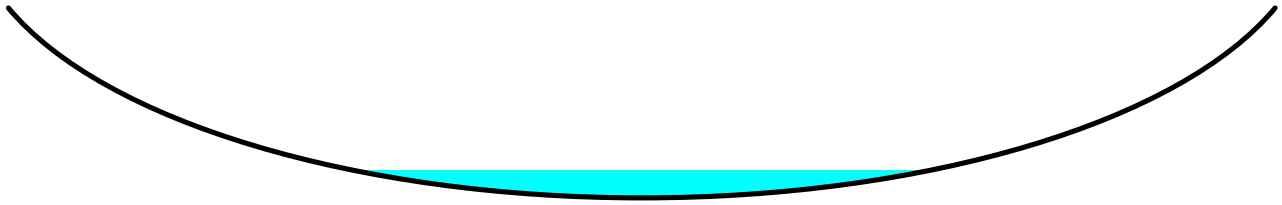
Summary for Reach R51: (new Reach)

Inflow Area = 2.606 ac, 52.16% Impervious, Inflow Depth > 0.05" for 2-Year event
Inflow = 0.02 cfs @ 20.00 hrs, Volume= 0.012 af
Outflow = 0.02 cfs @ 20.00 hrs, Volume= 0.011 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= 0.20 fps, Min. Travel Time= 7.4 min
Avg. Velocity = 0.19 fps, Avg. Travel Time= 8.1 min

Peak Storage= 7 cf @ 20.00 hrs
Average Depth at Peak Storage= 0.01'
Bank-Full Depth= 0.10' Flow Area= 1.3 sf, Capacity= 0.97 cfs

20.00' x 0.10' deep Parabolic Channel, n= 0.100 Very weedy reaches w/pools
Length= 90.0' Slope= 0.0889 '/'
Inlet Invert= 253.00', Outlet Invert= 245.00'



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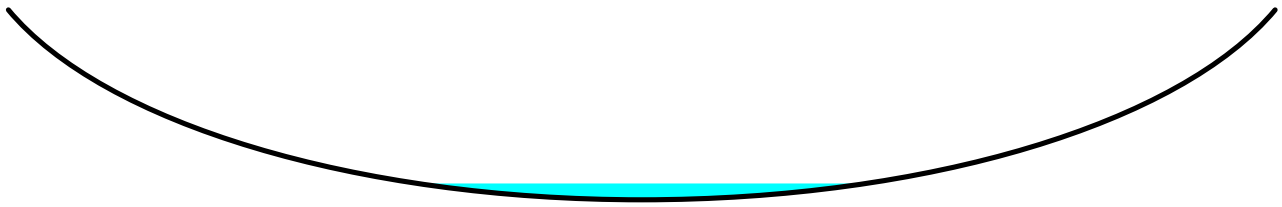
Summary for Reach R52: (new Reach)

Inflow Area = 5.054 ac, 26.89% Impervious, Inflow Depth > 0.52" for 2-Year event
Inflow = 1.18 cfs @ 12.93 hrs, Volume= 0.217 af
Outflow = 1.16 cfs @ 13.14 hrs, Volume= 0.214 af, Atten= 2%, Lag= 12.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.46 fps, Min. Travel Time= 7.0 min
Avg. Velocity = 0.25 fps, Avg. Travel Time= 12.8 min

Peak Storage= 487 cf @ 13.02 hrs
Average Depth at Peak Storage= 0.26'
Bank-Full Depth= 3.00' Flow Area= 100.0 sf, Capacity= 237.39 cfs

50.00' x 3.00' deep Parabolic Channel, n= 0.100 Very weedy reaches w/pools
Length= 195.0' Slope= 0.0103 '/'
Inlet Invert= 245.00', Outlet Invert= 243.00'



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Summary for Pond P51: Wet Pond

Inflow Area = 2.606 ac, 52.16% Impervious, Inflow Depth > 1.28" for 2-Year event
Inflow = 4.50 cfs @ 12.06 hrs, Volume= 0.277 af
Outflow = 0.02 cfs @ 20.00 hrs, Volume= 0.012 af, Atten= 100%, Lag= 476.6 min
Primary = 0.02 cfs @ 20.00 hrs, Volume= 0.012 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 266.19' @ 20.00 hrs Surf.Area= 11,774 sf Storage= 11,574 cf

Plug-Flow detention time= 276.8 min calculated for 0.011 af (4% of inflow)
Center-of-Mass det. time= 118.7 min (917.8 - 799.1)

Volume	Invert	Avail.Storage	Storage Description
#1	265.00'	35,849 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
265.00	7,298	0	0
266.00	11,471	9,385	9,385
267.00	13,080	12,276	21,660
268.00	15,298	14,189	35,849

Device	Routing	Invert	Outlet Devices
#1	Primary	262.30'	**8.0" Round Culvert** L= 55.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 262.30' / 253.50' S= 0.1600 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.35 sf
#2	Device 1	262.80'	**0.5" Vert. Orifice/Grate X 1.25** C= 0.600
#3	Device 1	266.80'	**3.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	267.30'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.02 cfs @ 20.00 hrs HW=266.19' (Free Discharge)
└─**1=Culvert** (Passes 0.02 cfs of 3.17 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.02 cfs @ 11.04 fps)
  ├─**3=Orifice/Grate** (Controls 0.00 cfs)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Summary for Link PA1:

Inflow Area = 0.739 ac, 24.85% Impervious, Inflow Depth > 0.63" for 2-Year event
Inflow = 0.26 cfs @ 12.64 hrs, Volume= 0.039 af
Primary = 0.26 cfs @ 12.64 hrs, Volume= 0.039 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link PA2:

Inflow Area = 7.117 ac, 19.09% Impervious, Inflow Depth > 0.36" for 2-Year event
Inflow = 1.16 cfs @ 13.14 hrs, Volume= 0.214 af
Primary = 1.16 cfs @ 13.14 hrs, Volume= 0.214 af, Atten= 0%, Lag= 0.0 min

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

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

Subcatchment SW41: SW41 Runoff Area=32,192 sf 24.85% Impervious Runoff Depth>1.38"
Flow Length=325' Tc=40.9 min CN=70 Runoff=0.62 cfs 0.085 af

Subcatchment SW51: SW51 Runoff Area=113,496 sf 52.16% Impervious Runoff Depth>2.30"
Flow Length=500' Tc=3.4 min CN=82 Runoff=8.08 cfs 0.499 af

Subcatchment SW52: SW52 Runoff Area=106,676 sf 0.00% Impervious Runoff Depth>1.93"
Flow Length=300' Tc=65.7 min CN=78 Runoff=2.26 cfs 0.394 af

Subcatchment WOODS: Runoff Area=89,864 sf 0.00% Impervious Runoff Depth>0.02"
Flow Length=400' Slope=0.0800 '/' Tc=16.8 min CN=36 Runoff=0.01 cfs 0.003 af

Reach R51: (new Reach) Avg. Flow Depth=0.03' Max Vel=0.30 fps Inflow=0.05 cfs 0.019 af
n=0.100 L=90.0' S=0.0889 '/' Capacity=0.97 cfs Outflow=0.05 cfs 0.019 af

Reach R52: (new Reach) Avg. Flow Depth=0.35' Max Vel=0.57 fps Inflow=2.28 cfs 0.413 af
n=0.100 L=195.0' S=0.0103 '/' Capacity=237.39 cfs Outflow=2.25 cfs 0.408 af

Pond P51: Wet Pond Peak Elev=266.94' Storage=20,905 cf Inflow=8.08 cfs 0.499 af
Outflow=0.05 cfs 0.019 af

Link PA1: Inflow=0.62 cfs 0.085 af
Primary=0.62 cfs 0.085 af

Link PA2: Inflow=2.25 cfs 0.411 af
Primary=2.25 cfs 0.411 af

Total Runoff Area = 7.856 ac Runoff Volume = 0.982 af Average Runoff Depth = 1.50"
80.36% Pervious = 6.314 ac 19.64% Impervious = 1.543 ac

Summary for Subcatchment SW41: SW41

Runoff = 0.62 cfs @ 12.60 hrs, Volume= 0.085 af, Depth> 1.38"

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 Rainfall=4.30"

Area (sf)	CN	Description
8,000	98	Paved parking, HSG B
7,441	61	>75% Grass cover, Good, HSG B
16,751	60	Woods, Fair, HSG B
32,192	70	Weighted Average
24,192		75.15% Pervious Area
8,000		24.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.6	220	0.0227	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
1.3	105	0.0381	1.37		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
40.9	325	Total			

Summary for Subcatchment SW51: SW51

Runoff = 8.08 cfs @ 12.05 hrs, Volume= 0.499 af, Depth> 2.30"

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 Rainfall=4.30"

Area (sf)	CN	Description
59,200	98	Paved parking, HSG B
47,696	60	Woods, Fair, HSG B
6,600	98	Water Surface, 0% imp, HSG B
113,496	82	Weighted Average
54,296		47.84% Pervious Area
59,200		52.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.88		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.4	50	0.0800	2.02		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.4	30	0.0333	1.28		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.3	220	0.0182	2.74		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.4	150	0.0133	5.57	74.30	**Parabolic Channel,** W=10.00' D=2.00' Area=13.3 sf Perim=11.0' n= 0.035 Earth, dense weeds

3.4	500	Total

Summary for Subcatchment SW52: SW52

Runoff = 2.26 cfs @ 12.91 hrs, Volume= 0.394 af, Depth> 1.93"

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 Rainfall=4.30"

Area (sf)	CN	Description
5,560	61	>75% Grass cover, Good, HSG B
101,116	79	Woods, Fair, HSG D
106,676	78	Weighted Average
106,676		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.5	80	0.0138	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.00"
27.8	130	0.0769	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.00"
0.4	90	0.0222	3.49	349.25	**Parabolic Channel,** W=50.00' D=3.00' Area=100.0 sf Perim=50.5' n= 0.100
65.7	300	Total			

Summary for Subcatchment WOODS:

Runoff = 0.01 cfs @ 17.31 hrs, Volume= 0.003 af, Depth> 0.02"

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 Rainfall=4.30"

Area (sf)	CN	Description
10,803	77	Woods, Good, HSG D
79,061	30	Woods, Good, HSG A
89,864	36	Weighted Average
89,864		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	50	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.00"
4.1	350	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.8	400	Total			

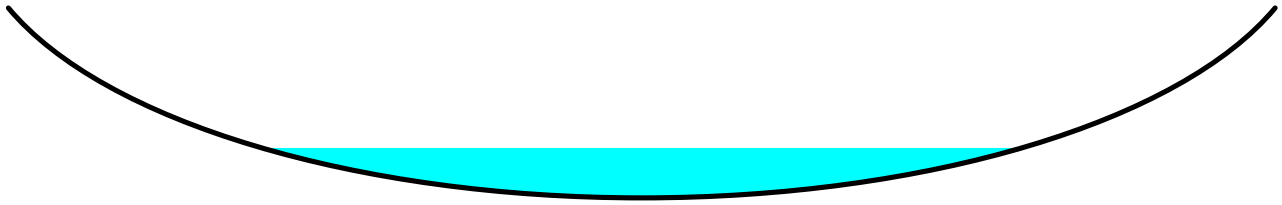
Summary for Reach R51: (new Reach)

Inflow Area = 2.606 ac, 52.16% Impervious, Inflow Depth > 0.09" for 10-Year event
Inflow = 0.05 cfs @ 20.00 hrs, Volume= 0.019 af
Outflow = 0.05 cfs @ 20.00 hrs, Volume= 0.019 af, Atten= 2%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.30 fps, Min. Travel Time= 5.0 min
Avg. Velocity = 0.20 fps, Avg. Travel Time= 7.4 min

Peak Storage= 16 cf @ 20.00 hrs
Average Depth at Peak Storage= 0.03'
Bank-Full Depth= 0.10' Flow Area= 1.3 sf, Capacity= 0.97 cfs

20.00' x 0.10' deep Parabolic Channel, n= 0.100 Very weedy reaches w/pools
Length= 90.0' Slope= 0.0889 '/'
Inlet Invert= 253.00', Outlet Invert= 245.00'



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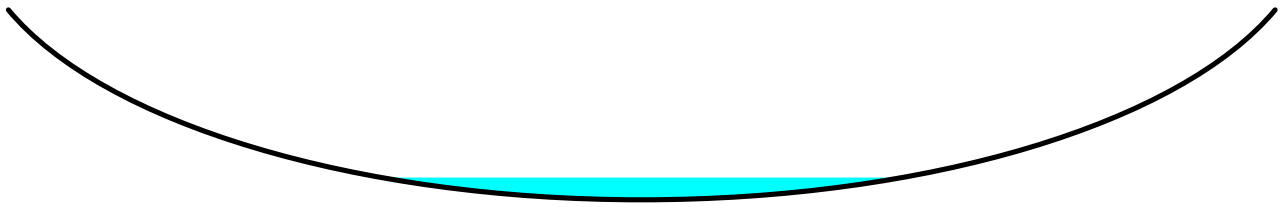
Summary for Reach R52: (new Reach)

Inflow Area = 5.054 ac, 26.89% Impervious, Inflow Depth > 0.98" for 10-Year event
Inflow = 2.28 cfs @ 12.91 hrs, Volume= 0.413 af
Outflow = 2.25 cfs @ 13.07 hrs, Volume= 0.408 af, Atten= 1%, Lag= 9.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.57 fps, Min. Travel Time= 5.7 min
Avg. Velocity = 0.29 fps, Avg. Travel Time= 11.3 min

Peak Storage= 773 cf @ 12.97 hrs
Average Depth at Peak Storage= 0.35'
Bank-Full Depth= 3.00' Flow Area= 100.0 sf, Capacity= 237.39 cfs

50.00' x 3.00' deep Parabolic Channel, n= 0.100 Very weedy reaches w/pools
Length= 195.0' Slope= 0.0103 '/'
Inlet Invert= 245.00', Outlet Invert= 243.00'



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Summary for Pond P51: Wet Pond

Inflow Area = 2.606 ac, 52.16% Impervious, Inflow Depth > 2.30" for 10-Year event
Inflow = 8.08 cfs @ 12.05 hrs, Volume= 0.499 af
Outflow = 0.05 cfs @ 20.00 hrs, Volume= 0.019 af, Atten= 99%, Lag= 476.7 min
Primary = 0.05 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= 266.94' @ 20.00 hrs Surf.Area= 12,987 sf Storage= 20,905 cf

Plug-Flow detention time= 371.0 min calculated for 0.019 af (4% of inflow)
Center-of-Mass det. time= 169.5 min (955.2 - 785.7)

Volume	Invert	Avail.Storage	Storage Description
#1	265.00'	35,849 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
265.00	7,298	0	0
266.00	11,471	9,385	9,385
267.00	13,080	12,276	21,660
268.00	15,298	14,189	35,849

Device	Routing	Invert	Outlet Devices
#1	Primary	262.30'	**8.0" Round Culvert** L= 55.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 262.30' / 253.50' S= 0.1600 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.35 sf
#2	Device 1	262.80'	**0.5" Vert. Orifice/Grate X 1.25** C= 0.600
#3	Device 1	266.80'	**3.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	267.30'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.05 cfs @ 20.00 hrs HW=266.94' (Free Discharge)
└─**1=Culvert** (Passes 0.05 cfs of 3.43 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.02 cfs @ 12.22 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 0.04 cfs @ 1.28 fps)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Summary for Link PA1:

Inflow Area = 0.739 ac, 24.85% Impervious, Inflow Depth > 1.38" for 10-Year event
Inflow = 0.62 cfs @ 12.60 hrs, Volume= 0.085 af
Primary = 0.62 cfs @ 12.60 hrs, Volume= 0.085 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link PA2:

Inflow Area = 7.117 ac, 19.09% Impervious, Inflow Depth > 0.69" for 10-Year event
Inflow = 2.25 cfs @ 13.07 hrs, Volume= 0.411 af
Primary = 2.25 cfs @ 13.07 hrs, Volume= 0.411 af, Atten= 0%, Lag= 0.0 min

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

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

Subcatchment SW41: SW41 Runoff Area=32,192 sf 24.85% Impervious Runoff Depth>2.13"
Flow Length=325' Tc=40.9 min CN=70 Runoff=0.97 cfs 0.131 af

Subcatchment SW51: SW51 Runoff Area=113,496 sf 52.16% Impervious Runoff Depth>3.23"
Flow Length=500' Tc=3.4 min CN=82 Runoff=11.23 cfs 0.701 af

Subcatchment SW52: SW52 Runoff Area=106,676 sf 0.00% Impervious Runoff Depth>2.79"
Flow Length=300' Tc=65.7 min CN=78 Runoff=3.27 cfs 0.570 af

Subcatchment WOODS: Runoff Area=89,864 sf 0.00% Impervious Runoff Depth>0.13"
Flow Length=400' Slope=0.0800 '/' Tc=16.8 min CN=36 Runoff=0.05 cfs 0.023 af

Reach R51: (new Reach) Avg. Flow Depth=0.05' Max Vel=0.47 fps Inflow=0.24 cfs 0.107 af
n=0.100 L=90.0' S=0.0889 '/' Capacity=0.97 cfs Outflow=0.24 cfs 0.106 af

Reach R52: (new Reach) Avg. Flow Depth=0.41' Max Vel=0.64 fps Inflow=3.29 cfs 0.675 af
n=0.100 L=195.0' S=0.0103 '/' Capacity=237.39 cfs Outflow=3.26 cfs 0.668 af

Pond P51: Wet Pond Peak Elev=267.33' Storage=26,029 cf Inflow=11.23 cfs 0.701 af
Outflow=0.24 cfs 0.107 af

Link PA1: Inflow=0.97 cfs 0.131 af
Primary=0.97 cfs 0.131 af

Link PA2: Inflow=3.31 cfs 0.690 af
Primary=3.31 cfs 0.690 af

Total Runoff Area = 7.856 ac Runoff Volume = 1.424 af Average Runoff Depth = 2.18"
80.36% Pervious = 6.314 ac 19.64% Impervious = 1.543 ac

Summary for Subcatchment SW41: SW41

Runoff = 0.97 cfs @ 12.59 hrs, Volume= 0.131 af, Depth> 2.13"

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 Rainfall=5.40"

Area (sf)	CN	Description
8,000	98	Paved parking, HSG B
7,441	61	>75% Grass cover, Good, HSG B
16,751	60	Woods, Fair, HSG B
32,192	70	Weighted Average
24,192		75.15% Pervious Area
8,000		24.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.6	220	0.0227	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
1.3	105	0.0381	1.37		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
40.9	325	Total			

Summary for Subcatchment SW51: SW51

Runoff = 11.23 cfs @ 12.05 hrs, Volume= 0.701 af, Depth> 3.23"

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

Area (sf)	CN	Description
59,200	98	Paved parking, HSG B
47,696	60	Woods, Fair, HSG B
6,600	98	Water Surface, 0% imp, HSG B
113,496	82	Weighted Average
54,296		47.84% Pervious Area
59,200		52.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.88		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.4	50	0.0800	2.02		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
0.4	30	0.0333	1.28		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.3	220	0.0182	2.74		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.4	150	0.0133	5.57	74.30	**Parabolic Channel,** W=10.00' D=2.00' Area=13.3 sf Perim=11.0' n= 0.035 Earth, dense weeds

3.4	500	Total

Summary for Subcatchment SW52: SW52

Runoff = 3.27 cfs @ 12.89 hrs, Volume= 0.570 af, Depth> 2.79"

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 Rainfall=5.40"

Area (sf)	CN	Description
5,560	61	>75% Grass cover, Good, HSG B
101,116	79	Woods, Fair, HSG D
106,676	78	Weighted Average
106,676		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.5	80	0.0138	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.00"
27.8	130	0.0769	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.00"
0.4	90	0.0222	3.49	349.25	**Parabolic Channel,** W=50.00' D=3.00' Area=100.0 sf Perim=50.5' n= 0.100
65.7	300	Total			

Summary for Subcatchment WOODS:

Runoff = 0.05 cfs @ 13.88 hrs, Volume= 0.023 af, Depth> 0.13"

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 Rainfall=5.40"

Area (sf)	CN	Description
10,803	77	Woods, Good, HSG D
79,061	30	Woods, Good, HSG A
89,864	36	Weighted Average
89,864		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	50	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.00"
4.1	350	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.8	400	Total			

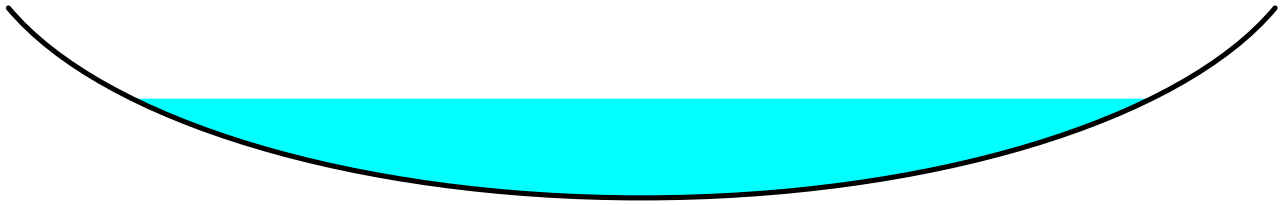
Summary for Reach R51: (new Reach)

Inflow Area = 2.606 ac, 52.16% Impervious, Inflow Depth > 0.50" for 25-Year event
Inflow = 0.24 cfs @ 17.52 hrs, Volume= 0.107 af
Outflow = 0.24 cfs @ 17.61 hrs, Volume= 0.106 af, Atten= 0%, Lag= 5.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.47 fps, Min. Travel Time= 3.2 min
Avg. Velocity = 0.31 fps, Avg. Travel Time= 4.9 min

Peak Storage= 45 cf @ 17.56 hrs
Average Depth at Peak Storage= 0.05'
Bank-Full Depth= 0.10' Flow Area= 1.3 sf, Capacity= 0.97 cfs

20.00' x 0.10' deep Parabolic Channel, n= 0.100 Very weedy reaches w/pools
Length= 90.0' Slope= 0.0889 '/'
Inlet Invert= 253.00', Outlet Invert= 245.00'



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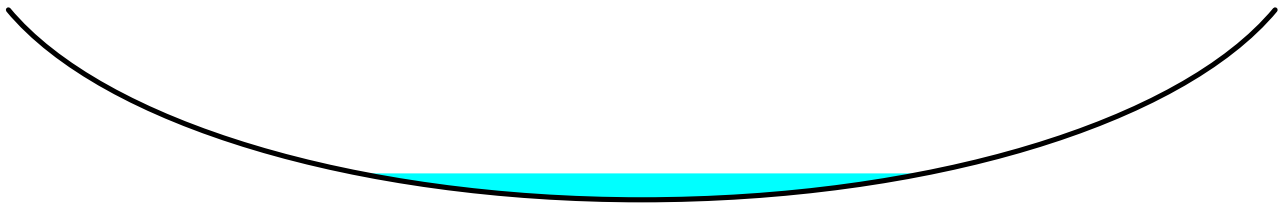
Summary for Reach R52: (new Reach)

Inflow Area = 5.054 ac, 26.89% Impervious, Inflow Depth > 1.60" for 25-Year event
Inflow = 3.29 cfs @ 12.90 hrs, Volume= 0.675 af
Outflow = 3.26 cfs @ 13.04 hrs, Volume= 0.668 af, Atten= 1%, Lag= 8.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.64 fps, Min. Travel Time= 5.1 min
Avg. Velocity = 0.33 fps, Avg. Travel Time= 9.9 min

Peak Storage= 999 cf @ 12.96 hrs
Average Depth at Peak Storage= 0.41'
Bank-Full Depth= 3.00' Flow Area= 100.0 sf, Capacity= 237.39 cfs

50.00' x 3.00' deep Parabolic Channel, n= 0.100 Very weedy reaches w/pools
Length= 195.0' Slope= 0.0103 '/'
Inlet Invert= 245.00', Outlet Invert= 243.00'



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Summary for Pond P51: Wet Pond

Inflow Area = 2.606 ac, 52.16% Impervious, Inflow Depth > 3.23" for 25-Year event
Inflow = 11.23 cfs @ 12.05 hrs, Volume= 0.701 af
Outflow = 0.24 cfs @ 17.52 hrs, Volume= 0.107 af, Atten= 98%, Lag= 328.1 min
Primary = 0.24 cfs @ 17.52 hrs, Volume= 0.107 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 267.33' @ 17.52 hrs Surf.Area= 13,801 sf Storage= 26,029 cf

Plug-Flow detention time= 359.6 min calculated for 0.107 af (15% of inflow)
Center-of-Mass det. time= 219.9 min (997.7 - 777.8)

Volume	Invert	Avail.Storage	Storage Description
#1	265.00'	35,849 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
265.00	7,298	0	0
266.00	11,471	9,385	9,385
267.00	13,080	12,276	21,660
268.00	15,298	14,189	35,849

Device	Routing	Invert	Outlet Devices
#1	Primary	262.30'	**8.0" Round Culvert** L= 55.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 262.30' / 253.50' S= 0.1600 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.35 sf
#2	Device 1	262.80'	**0.5" Vert. Orifice/Grate X 1.25** C= 0.600
#3	Device 1	266.80'	**3.0" Vert. Orifice/Grate** C= 0.600
#4	Device 1	267.30'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.23 cfs @ 17.52 hrs HW=267.33' (Free Discharge)
└─**1=Culvert** (Passes 0.23 cfs of 3.48 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.02 cfs @ 12.77 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 0.15 cfs @ 3.05 fps)
  └─**4=Orifice/Grate** (Weir Controls 0.06 cfs @ 0.52 fps)

Summary for Link PA1:

Inflow Area = 0.739 ac, 24.85% Impervious, Inflow Depth > 2.13" for 25-Year event
Inflow = 0.97 cfs @ 12.59 hrs, Volume= 0.131 af
Primary = 0.97 cfs @ 12.59 hrs, Volume= 0.131 af, Atten= 0%, Lag= 0.0 min

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

Summary for Link PA2:

Inflow Area = 7.117 ac, 19.09% Impervious, Inflow Depth > 1.16" for 25-Year event
Inflow = 3.31 cfs @ 13.05 hrs, Volume= 0.690 af
Primary = 3.31 cfs @ 13.05 hrs, Volume= 0.690 af, Atten= 0%, Lag= 0.0 min

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

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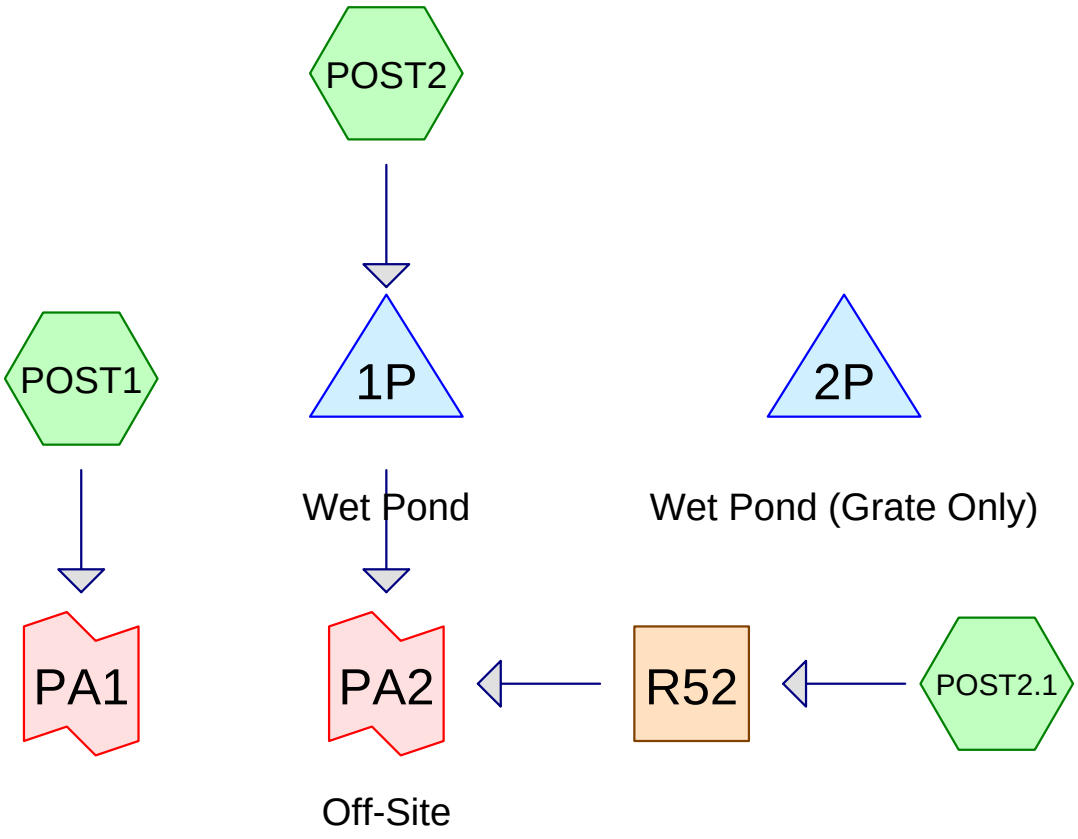
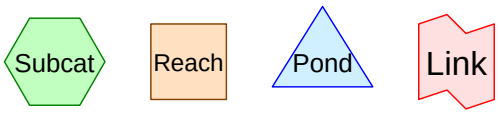
APPENDIX F





Routing Diagram for C-1118-1_POST
Prepared by Tighe & Bond, Printed 02/26/2017
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.079	61	>75% Grass cover, Good, HSG B (POST1, POST2, POST2.1)
3.651	98	Paved parking, HSG B (POST1, POST2)
0.143	60	Woods, Fair, HSG B (POST1)
1.734	30	Woods, Good, HSG A (POST2.1)
0.248	77	Woods, Good, HSG D (POST2.1)
7.856	**72**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
1.734	HSG A	POST2.1
5.874	HSG B	POST1, POST2, POST2.1
0.000	HSG C	
0.248	HSG D	POST2.1
0.000	Other	
7.856		**TOTAL AREA**

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment POST1: Runoff Area=18,730 sf 31.14% Impervious Runoff Depth=0.81"
Flow Length=150' Slope=0.0300 '/' Tc=26.1 min CN=72 Runoff=0.22 cfs 0.029 af

Subcatchment POST2: Runoff Area=203,996 sf 75.10% Impervious Runoff Depth=1.90"
Flow Length=949' Tc=6.4 min CN=89 Runoff=10.07 cfs 0.741 af

Subcatchment POST2.1: Runoff Area=119,474 sf 0.00% Impervious Runoff Depth=0.01"
Flow Length=162' Slope=0.1050 '/' Tc=12.0 min CN=43 Runoff=0.00 cfs 0.002 af

Reach R52: Avg. Flow Depth=0.01' Max Vel=0.11 fps Inflow=0.00 cfs 0.002 af
n=0.100 L=195.0' S=0.0103 '/' Capacity=237.39 cfs Outflow=0.00 cfs 0.002 af

Pond 1P: Wet Pond Peak Elev=244.41' Storage=42,979 cf Inflow=10.07 cfs 0.741 af
Outflow=0.77 cfs 0.741 af

Pond 2P: Wet Pond (Grate Only) Peak Elev=243.15' Storage=29,092 cf Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Link PA1: Inflow=0.22 cfs 0.029 af
Primary=0.22 cfs 0.029 af

Link PA2: Off-Site Inflow=0.77 cfs 0.743 af
Primary=0.77 cfs 0.743 af

Total Runoff Area = 7.856 ac Runoff Volume = 0.772 af Average Runoff Depth = 1.18"
53.53% Pervious = 4.205 ac 46.47% Impervious = 3.651 ac

Summary for Subcatchment POST1:

Runoff = 0.22 cfs @ 12.41 hrs, Volume= 0.029 af, Depth= 0.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.00"

Area (sf)	CN	Description
5,832	98	Paved parking, HSG B
6,661	61	>75% Grass cover, Good, HSG B
6,237	60	Woods, Fair, HSG B
18,730	72	Weighted Average
12,898		68.86% Pervious Area
5,832		31.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.1	150	0.0300	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"

Summary for Subcatchment POST2:

Runoff = 10.07 cfs @ 12.10 hrs, Volume= 0.741 af, Depth= 1.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.00"

Area (sf)	CN	Description
82,269	98	Paved parking, HSG B
70,936	98	Paved parking, HSG B
50,791	61	>75% Grass cover, Good, HSG B
203,996	89	Weighted Average
50,791		24.90% Pervious Area
153,205		75.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	100	0.0050	0.76		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.8	154	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	188	0.0050	4.20	7.43	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
0.6	148	0.0050	4.20	7.43	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
0.4	120	0.0050	5.09	16.00	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
0.5	159	0.0050	5.09	16.00	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
0.1	50	0.0500	16.10	50.59	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
0.1	30	0.0050	5.09	16.00	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
6.4	949	Total			

Summary for Subcatchment POST2.1:

Runoff = 0.00 cfs @ 22.28 hrs, Volume= 0.002 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.00"

Area (sf)	CN	Description
33,128	61	>75% Grass cover, Good, HSG B
10,803	77	Woods, Good, HSG D
75,543	30	Woods, Good, HSG A
119,474	43	Weighted Average
119,474		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.4	100	0.1050	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
0.6	62	0.1050	1.62		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.0	162	Total			

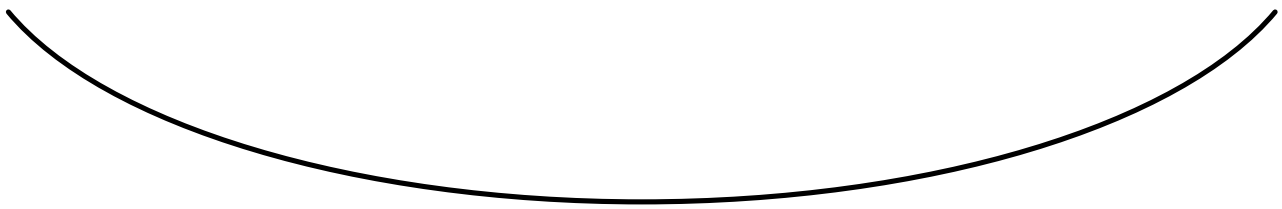
Summary for Reach R52:

Inflow Area = 2.743 ac, 0.00% Impervious, Inflow Depth = 0.01" for 2-Year event
Inflow = 0.00 cfs @ 22.28 hrs, Volume= 0.002 af
Outflow = 0.00 cfs @ 22.76 hrs, Volume= 0.002 af, Atten= 0%, Lag= 29.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.11 fps, Min. Travel Time= 29.3 min
Avg. Velocity = 0.11 fps, Avg. Travel Time= 29.3 min

Peak Storage= 7 cf @ 22.76 hrs
Average Depth at Peak Storage= 0.01'
Bank-Full Depth= 3.00' Flow Area= 100.0 sf, Capacity= 237.39 cfs

50.00' x 3.00' deep Parabolic Channel, n= 0.100 Very weedy reaches w/pools
Length= 195.0' Slope= 0.0103 '/'
Inlet Invert= 245.00', Outlet Invert= 243.00'



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Summary for Pond 1P: Wet Pond

Inflow Area = 4.683 ac, 75.10% Impervious, Inflow Depth = 1.90" for 2-Year event
Inflow = 10.07 cfs @ 12.10 hrs, Volume= 0.741 af
Outflow = 0.77 cfs @ 13.50 hrs, Volume= 0.741 af, Atten= 92%, Lag= 84.1 min
Primary = 0.77 cfs @ 13.50 hrs, Volume= 0.741 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 243.15' Surf.Area= 10,251 sf Storage= 29,092 cf
Peak Elev= 244.41' @ 13.50 hrs Surf.Area= 11,815 sf Storage= 42,979 cf (13,887 cf above start)
Flood Elev= 247.10' Surf.Area= 15,468 sf Storage= 79,587 cf (50,495 cf above start)

Plug-Flow detention time= 724.2 min calculated for 0.074 af (10% of inflow)
Center-of-Mass det. time= 169.9 min (984.0 - 814.0)

Volume	Invert	Avail.Storage	Storage Description
#1	236.00'	79,587 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
236.00	1,204	220.9	0	0	1,204
238.00	2,642	258.6	3,753	3,753	2,720
240.00	4,307	296.3	6,882	10,635	4,475
242.00	6,197	334.0	10,447	21,081	6,468
243.00	7,228	352.8	6,706	27,787	7,552
243.15	10,251	403.1	1,304	29,092	10,578
244.00	11,299	419.1	9,155	38,247	11,682
246.00	13,927	456.8	25,180	63,427	14,451
247.10	15,468	477.5	16,160	79,587	16,074

Device	Routing	Invert	Outlet Devices
#1	Primary	240.85'	**18.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 240.85' / 240.50' S= 0.0087 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	240.85'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 2	243.15'	**48.0" x 360.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	245.15'	**24.0" W x 3.0" H Vert. Orifice/Grate** C= 0.600
#5	Device 1	245.80'	**4.0" x 4.0" Horiz. Orifice/Grate X 104.00** C= 0.600 in 48.0" x 48.0" Grate (72% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.77 cfs @ 13.50 hrs HW=244.41' TW=0.00' (Dynamic Tailwater)
- **1=Culvert** (Passes 0.77 cfs of 14.26 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 0.77 cfs @ 8.87 fps)
    - **3=Orifice/Grate** (Passes 0.77 cfs of 314.30 cfs potential flow)
  - **4=Orifice/Grate** (Controls 0.00 cfs)
  - **5=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 2P: Wet Pond (Grate Only)

Inflow	=	0.00 cfs @	0.00 hrs, Volume=	0.000 af	
Outflow	=	0.00 cfs @	0.00 hrs, Volume=	0.000 af,	Atten= 0%, Lag= 0.0 min
Primary	=	0.00 cfs @	0.00 hrs, Volume=	0.000 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 243.15' Surf.Area= 10,251 sf Storage= 29,092 cf
Peak Elev= 243.15' @ 0.00 hrs Surf.Area= 10,251 sf Storage= 29,092 cf
Flood Elev= 247.10' Surf.Area= 15,468 sf Storage= 79,587 cf (50,495 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	236.00'	79,587 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
236.00	1,204	220.9	0	0	1,204
238.00	2,642	258.6	3,753	3,753	2,720
240.00	4,307	296.3	6,882	10,635	4,475
242.00	6,197	334.0	10,447	21,081	6,468
243.00	7,228	352.8	6,706	27,787	7,552
243.15	10,251	403.1	1,304	29,092	10,578
244.00	11,299	419.1	9,155	38,247	11,682
246.00	13,927	456.8	25,180	63,427	14,451
247.10	15,468	477.5	16,160	79,587	16,074

Device	Routing	Invert	Outlet Devices
#1	Primary	240.85'	**18.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 240.85' / 240.50' S= 0.0087 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	245.80'	**4.0" x 4.0" Horiz. Orifice/Grate X 104.00** C= 0.600 in 48.0" x 48.0" Grate (72% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=243.15' (Free Discharge)
└─**1=Culvert** (Passes 0.00 cfs of 10.18 cfs potential flow)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Link PA1:

Inflow Area = 0.430 ac, 31.14% Impervious, Inflow Depth = 0.81" for 2-Year event
Inflow = 0.22 cfs @ 12.41 hrs, Volume= 0.029 af
Primary = 0.22 cfs @ 12.41 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Summary for Link PA2: Off-Site

Inflow Area = 7.426 ac, 47.36% Impervious, Inflow Depth = 1.20" for 2-Year event
Inflow = 0.77 cfs @ 13.50 hrs, Volume= 0.743 af
Primary = 0.77 cfs @ 13.50 hrs, Volume= 0.743 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment POST1: Runoff Area=18,730 sf 31.14% Impervious Runoff Depth=1.67"
Flow Length=150' Slope=0.0300 '/' Tc=26.1 min CN=72 Runoff=0.49 cfs 0.060 af

Subcatchment POST2: Runoff Area=203,996 sf 75.10% Impervious Runoff Depth=3.11"
Flow Length=949' Tc=6.4 min CN=89 Runoff=16.19 cfs 1.212 af

Subcatchment POST2.1: Runoff Area=119,474 sf 0.00% Impervious Runoff Depth=0.18"
Flow Length=162' Slope=0.1050 '/' Tc=12.0 min CN=43 Runoff=0.09 cfs 0.042 af

Reach R52: Avg. Flow Depth=0.07' Max Vel=0.20 fps Inflow=0.09 cfs 0.042 af
n=0.100 L=195.0' S=0.0103 '/' Capacity=237.39 cfs Outflow=0.08 cfs 0.042 af

Pond 1P: Wet Pond Peak Elev=245.30' Storage=54,034 cf Inflow=16.19 cfs 1.212 af
Outflow=1.25 cfs 1.212 af

Pond 2P: Wet Pond (Grate Only) Peak Elev=243.15' Storage=29,092 cf Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Link PA1: Inflow=0.49 cfs 0.060 af
Primary=0.49 cfs 0.060 af

Link PA2: Off-Site Inflow=1.32 cfs 1.254 af
Primary=1.32 cfs 1.254 af

Total Runoff Area = 7.856 ac Runoff Volume = 1.314 af Average Runoff Depth = 2.01"
53.53% Pervious = 4.205 ac 46.47% Impervious = 3.651 ac

Summary for Subcatchment POST1:

Runoff = 0.49 cfs @ 12.38 hrs, Volume= 0.060 af, Depth= 1.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
5,832	98	Paved parking, HSG B
6,661	61	>75% Grass cover, Good, HSG B
6,237	60	Woods, Fair, HSG B
18,730	72	Weighted Average
12,898		68.86% Pervious Area
5,832		31.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.1	150	0.0300	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"

Summary for Subcatchment POST2:

Runoff = 16.19 cfs @ 12.09 hrs, Volume= 1.212 af, Depth= 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
82,269	98	Paved parking, HSG B
70,936	98	Paved parking, HSG B
50,791	61	>75% Grass cover, Good, HSG B
203,996	89	Weighted Average
50,791		24.90% Pervious Area
153,205		75.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	100	0.0050	0.76		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.8	154	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	188	0.0050	4.20	7.43	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
0.6	148	0.0050	4.20	7.43	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
0.4	120	0.0050	5.09	16.00	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
0.5	159	0.0050	5.09	16.00	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
0.1	50	0.0500	16.10	50.59	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
0.1	30	0.0050	5.09	16.00	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
6.4	949	Total			

Summary for Subcatchment POST2.1:

Runoff = 0.09 cfs @ 12.56 hrs, Volume= 0.042 af, Depth= 0.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.30"

Area (sf)	CN	Description
33,128	61	>75% Grass cover, Good, HSG B
10,803	77	Woods, Good, HSG D
75,543	30	Woods, Good, HSG A
119,474	43	Weighted Average
119,474		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.4	100	0.1050	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
0.6	62	0.1050	1.62		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.0	162	Total			

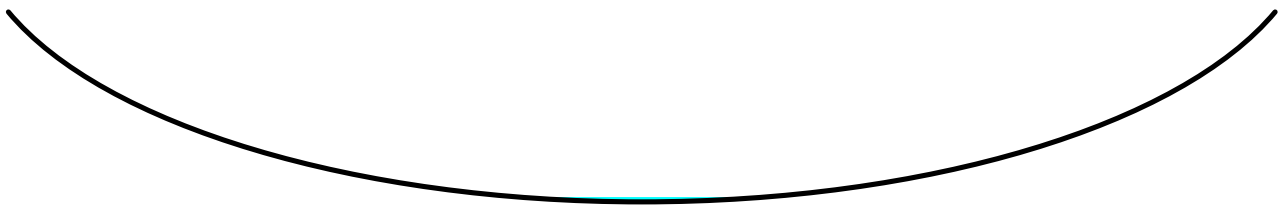
Summary for Reach R52:

Inflow Area = 2.743 ac, 0.00% Impervious, Inflow Depth = 0.18" for 10-Year event
Inflow = 0.09 cfs @ 12.56 hrs, Volume= 0.042 af
Outflow = 0.08 cfs @ 13.05 hrs, Volume= 0.042 af, Atten= 19%, Lag= 29.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.20 fps, Min. Travel Time= 15.9 min
Avg. Velocity = 0.16 fps, Avg. Travel Time= 20.9 min

Peak Storage= 72 cf @ 13.05 hrs
Average Depth at Peak Storage= 0.07'
Bank-Full Depth= 3.00' Flow Area= 100.0 sf, Capacity= 237.39 cfs

50.00' x 3.00' deep Parabolic Channel, n= 0.100 Very weedy reaches w/pools
Length= 195.0' Slope= 0.0103 '/'
Inlet Invert= 245.00', Outlet Invert= 243.00'



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Summary for Pond 1P: Wet Pond

Inflow Area = 4.683 ac, 75.10% Impervious, Inflow Depth = 3.11" for 10-Year event
Inflow = 16.19 cfs @ 12.09 hrs, Volume= 1.212 af
Outflow = 1.25 cfs @ 13.35 hrs, Volume= 1.212 af, Atten= 92%, Lag= 75.1 min
Primary = 1.25 cfs @ 13.35 hrs, Volume= 1.212 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 243.15' Surf.Area= 10,251 sf Storage= 29,092 cf
Peak Elev= 245.30' @ 13.35 hrs Surf.Area= 12,978 sf Storage= 54,034 cf (24,943 cf above start)
Flood Elev= 247.10' Surf.Area= 15,468 sf Storage= 79,587 cf (50,495 cf above start)

Plug-Flow detention time= 678.2 min calculated for 0.544 af (45% of inflow)
Center-of-Mass det. time= 268.0 min (1,068.2 - 800.2)

Volume	Invert	Avail.Storage	Storage Description
#1	236.00'	79,587 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
236.00	1,204	220.9	0	0	1,204
238.00	2,642	258.6	3,753	3,753	2,720
240.00	4,307	296.3	6,882	10,635	4,475
242.00	6,197	334.0	10,447	21,081	6,468
243.00	7,228	352.8	6,706	27,787	7,552
243.15	10,251	403.1	1,304	29,092	10,578
244.00	11,299	419.1	9,155	38,247	11,682
246.00	13,927	456.8	25,180	63,427	14,451
247.10	15,468	477.5	16,160	79,587	16,074

Device	Routing	Invert	Outlet Devices
#1	Primary	240.85'	**18.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 240.85' / 240.50' S= 0.0087 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	240.85'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 2	243.15'	**48.0" x 360.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	245.15'	**24.0" W x 3.0" H Vert. Orifice/Grate** C= 0.600
#5	Device 1	245.80'	**4.0" x 4.0" Horiz. Orifice/Grate X 104.00** C= 0.600 in 48.0" x 48.0" Grate (72% open area) Limited to weir flow at low heads

Primary OutFlow Max=1.25 cfs @ 13.35 hrs HW=245.30' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 1.25 cfs of 16.37 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.87 cfs @ 9.97 fps)
  │ └─**3=Orifice/Grate** (Passes 0.87 cfs of 701.79 cfs potential flow)
  ├─**4=Orifice/Grate** (Orifice Controls 0.38 cfs @ 1.25 fps)
  └─**5=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 2P: Wet Pond (Grate Only)

Inflow	=	0.00 cfs @	0.00 hrs, Volume=	0.000 af	
Outflow	=	0.00 cfs @	0.00 hrs, Volume=	0.000 af, Atten= 0%, Lag= 0.0 min	
Primary	=	0.00 cfs @	0.00 hrs, Volume=	0.000 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 243.15' Surf.Area= 10,251 sf Storage= 29,092 cf
Peak Elev= 243.15' @ 0.00 hrs Surf.Area= 10,251 sf Storage= 29,092 cf
Flood Elev= 247.10' Surf.Area= 15,468 sf Storage= 79,587 cf (50,495 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	236.00'	79,587 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
236.00	1,204	220.9	0	0	1,204
238.00	2,642	258.6	3,753	3,753	2,720
240.00	4,307	296.3	6,882	10,635	4,475
242.00	6,197	334.0	10,447	21,081	6,468
243.00	7,228	352.8	6,706	27,787	7,552
243.15	10,251	403.1	1,304	29,092	10,578
244.00	11,299	419.1	9,155	38,247	11,682
246.00	13,927	456.8	25,180	63,427	14,451
247.10	15,468	477.5	16,160	79,587	16,074

Device	Routing	Invert	Outlet Devices
#1	Primary	240.85'	**18.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 240.85' / 240.50' S= 0.0087 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	245.80'	**4.0" x 4.0" Horiz. Orifice/Grate X 104.00** C= 0.600 in 48.0" x 48.0" Grate (72% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=243.15' (Free Discharge)
└─**1=Culvert** (Passes 0.00 cfs of 10.18 cfs potential flow)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Link PA1:

Inflow Area = 0.430 ac, 31.14% Impervious, Inflow Depth = 1.67" for 10-Year event
Inflow = 0.49 cfs @ 12.38 hrs, Volume= 0.060 af
Primary = 0.49 cfs @ 12.38 hrs, Volume= 0.060 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Summary for Link PA2: Off-Site

Inflow Area = 7.426 ac, 47.36% Impervious, Inflow Depth = 2.03" for 10-Year event
Inflow = 1.32 cfs @ 13.33 hrs, Volume= 1.254 af
Primary = 1.32 cfs @ 13.33 hrs, Volume= 1.254 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment POST1: Runoff Area=18,730 sf 31.14% Impervious Runoff Depth=2.51"
Flow Length=150' Slope=0.0300 '/' Tc=26.1 min CN=72 Runoff=0.75 cfs 0.090 af

Subcatchment POST2: Runoff Area=203,996 sf 75.10% Impervious Runoff Depth=4.16"
Flow Length=949' Tc=6.4 min CN=89 Runoff=21.36 cfs 1.622 af

Subcatchment POST2.1: Runoff Area=119,474 sf 0.00% Impervious Runoff Depth=0.47"
Flow Length=162' Slope=0.1050 '/' Tc=12.0 min CN=43 Runoff=0.55 cfs 0.108 af

Reach R52: Avg. Flow Depth=0.17' Max Vel=0.35 fps Inflow=0.55 cfs 0.108 af
n=0.100 L=195.0' S=0.0103 '/' Capacity=237.39 cfs Outflow=0.48 cfs 0.108 af

Pond 1P: Wet Pond Peak Elev=245.81' Storage=60,739 cf Inflow=21.36 cfs 1.622 af
Outflow=2.69 cfs 1.622 af

Pond 2P: Wet Pond (Grate Only) Peak Elev=243.15' Storage=29,092 cf Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Link PA1: Inflow=0.75 cfs 0.090 af
Primary=0.75 cfs 0.090 af

Link PA2: Off-Site Inflow=3.12 cfs 1.730 af
Primary=3.12 cfs 1.730 af

Total Runoff Area = 7.856 ac Runoff Volume = 1.820 af Average Runoff Depth = 2.78"
53.53% Pervious = 4.205 ac 46.47% Impervious = 3.651 ac

Summary for Subcatchment POST1:

Runoff = 0.75 cfs @ 12.37 hrs, Volume= 0.090 af, Depth= 2.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.40"

Area (sf)	CN	Description
5,832	98	Paved parking, HSG B
6,661	61	>75% Grass cover, Good, HSG B
6,237	60	Woods, Fair, HSG B
18,730	72	Weighted Average
12,898		68.86% Pervious Area
5,832		31.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.1	150	0.0300	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"

Summary for Subcatchment POST2:

Runoff = 21.36 cfs @ 12.09 hrs, Volume= 1.622 af, Depth= 4.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.40"

Area (sf)	CN	Description
82,269	98	Paved parking, HSG B
70,936	98	Paved parking, HSG B
50,791	61	>75% Grass cover, Good, HSG B
203,996	89	Weighted Average
50,791		24.90% Pervious Area
153,205		75.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	100	0.0050	0.76		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.8	154	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	188	0.0050	4.20	7.43	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
0.6	148	0.0050	4.20	7.43	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
0.4	120	0.0050	5.09	16.00	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
0.5	159	0.0050	5.09	16.00	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
0.1	50	0.0500	16.10	50.59	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
0.1	30	0.0050	5.09	16.00	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
6.4	949	Total			

Summary for Subcatchment POST2.1:

Runoff = 0.55 cfs @ 12.40 hrs, Volume= 0.108 af, Depth= 0.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.40"

Area (sf)	CN	Description
33,128	61	>75% Grass cover, Good, HSG B
10,803	77	Woods, Good, HSG D
75,543	30	Woods, Good, HSG A
119,474	43	Weighted Average
119,474		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.4	100	0.1050	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
0.6	62	0.1050	1.62		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.0	162	Total			

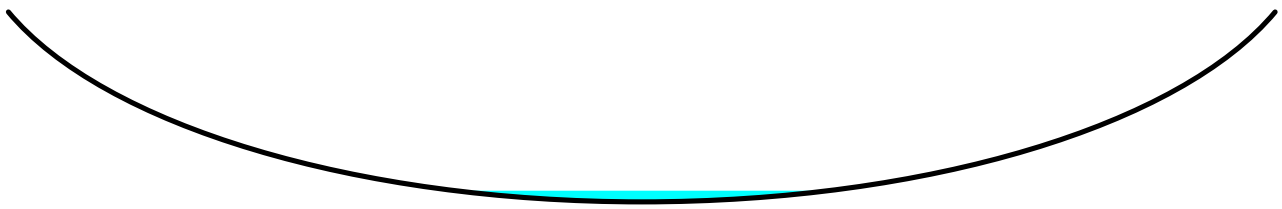
Summary for Reach R52:

Inflow Area = 2.743 ac, 0.00% Impervious, Inflow Depth = 0.47" for 25-Year event
Inflow = 0.55 cfs @ 12.40 hrs, Volume= 0.108 af
Outflow = 0.48 cfs @ 12.53 hrs, Volume= 0.108 af, Atten= 11%, Lag= 7.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.35 fps, Min. Travel Time= 9.2 min
Avg. Velocity = 0.19 fps, Avg. Travel Time= 17.1 min

Peak Storage= 265 cf @ 12.53 hrs
Average Depth at Peak Storage= 0.17'
Bank-Full Depth= 3.00' Flow Area= 100.0 sf, Capacity= 237.39 cfs

50.00' x 3.00' deep Parabolic Channel, n= 0.100 Very weedy reaches w/pools
Length= 195.0' Slope= 0.0103 '/'
Inlet Invert= 245.00', Outlet Invert= 243.00'



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Summary for Pond 1P: Wet Pond

Inflow Area = 4.683 ac, 75.10% Impervious, Inflow Depth = 4.16" for 25-Year event
Inflow = 21.36 cfs @ 12.09 hrs, Volume= 1.622 af
Outflow = 2.69 cfs @ 12.69 hrs, Volume= 1.622 af, Atten= 87%, Lag= 35.9 min
Primary = 2.69 cfs @ 12.69 hrs, Volume= 1.622 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 243.15' Surf.Area= 10,251 sf Storage= 29,092 cf
Peak Elev= 245.81' @ 12.69 hrs Surf.Area= 13,659 sf Storage= 60,739 cf (31,648 cf above start)
Flood Elev= 247.10' Surf.Area= 15,468 sf Storage= 79,587 cf (50,495 cf above start)

Plug-Flow detention time= 553.8 min calculated for 0.954 af (59% of inflow)
Center-of-Mass det. time= 239.1 min (1,031.2 - 792.1)

Volume	Invert	Avail.Storage	Storage Description
#1	236.00'	79,587 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
236.00	1,204	220.9	0	0	1,204
238.00	2,642	258.6	3,753	3,753	2,720
240.00	4,307	296.3	6,882	10,635	4,475
242.00	6,197	334.0	10,447	21,081	6,468
243.00	7,228	352.8	6,706	27,787	7,552
243.15	10,251	403.1	1,304	29,092	10,578
244.00	11,299	419.1	9,155	38,247	11,682
246.00	13,927	456.8	25,180	63,427	14,451
247.10	15,468	477.5	16,160	79,587	16,074

Device	Routing	Invert	Outlet Devices
#1	Primary	240.85'	**18.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 240.85' / 240.50' S= 0.0087 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	240.85'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 2	243.15'	**48.0" x 360.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	245.15'	**24.0" W x 3.0" H Vert. Orifice/Grate** C= 0.600
#5	Device 1	245.80'	**4.0" x 4.0" Horiz. Orifice/Grate X 104.00** C= 0.600 in 48.0" x 48.0" Grate (72% open area) Limited to weir flow at low heads

Primary OutFlow Max=2.69 cfs @ 12.69 hrs HW=245.81' TW=0.00' (Dynamic Tailwater)
- **1=Culvert** (Passes 2.69 cfs of 17.45 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 0.92 cfs @ 10.54 fps)
    - **3=Orifice/Grate** (Passes 0.92 cfs of 941.48 cfs potential flow)
  - **4=Orifice/Grate** (Orifice Controls 1.75 cfs @ 3.50 fps)
  - **5=Orifice/Grate** (Weir Controls 0.02 cfs @ 0.23 fps)

Summary for Pond 2P: Wet Pond (Grate Only)

Inflow	=	0.00 cfs @	0.00 hrs,	Volume=	0.000 af
Outflow	=	0.00 cfs @	0.00 hrs,	Volume=	0.000 af, Atten= 0%, Lag= 0.0 min
Primary	=	0.00 cfs @	0.00 hrs,	Volume=	0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 243.15' Surf.Area= 10,251 sf Storage= 29,092 cf
Peak Elev= 243.15' @ 0.00 hrs Surf.Area= 10,251 sf Storage= 29,092 cf
Flood Elev= 247.10' Surf.Area= 15,468 sf Storage= 79,587 cf (50,495 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	236.00'	79,587 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
236.00	1,204	220.9	0	0	1,204
238.00	2,642	258.6	3,753	3,753	2,720
240.00	4,307	296.3	6,882	10,635	4,475
242.00	6,197	334.0	10,447	21,081	6,468
243.00	7,228	352.8	6,706	27,787	7,552
243.15	10,251	403.1	1,304	29,092	10,578
244.00	11,299	419.1	9,155	38,247	11,682
246.00	13,927	456.8	25,180	63,427	14,451
247.10	15,468	477.5	16,160	79,587	16,074

Device	Routing	Invert	Outlet Devices
#1	Primary	240.85'	**18.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 240.85' / 240.50' S= 0.0087 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	245.80'	**4.0" x 4.0" Horiz. Orifice/Grate X 104.00** C= 0.600 in 48.0" x 48.0" Grate (72% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=243.15' (Free Discharge)
└─**1=Culvert** (Passes 0.00 cfs of 10.18 cfs potential flow)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Link PA1:

Inflow Area = 0.430 ac, 31.14% Impervious, Inflow Depth = 2.51" for 25-Year event
Inflow = 0.75 cfs @ 12.37 hrs, Volume= 0.090 af
Primary = 0.75 cfs @ 12.37 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Summary for Link PA2: Off-Site

Inflow Area = 7.426 ac, 47.36% Impervious, Inflow Depth = 2.80" for 25-Year event
Inflow = 3.12 cfs @ 12.58 hrs, Volume= 1.730 af
Primary = 3.12 cfs @ 12.58 hrs, Volume= 1.730 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Summary for Subcatchment POST2:

Runoff = 21.36 cfs @ 12.09 hrs, Volume= 1.622 af, Depth= 4.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.40"

Area (sf)	CN	Description
82,269	98	Paved parking, HSG B
70,936	98	Paved parking, HSG B
50,791	61	>75% Grass cover, Good, HSG B
203,996	89	Weighted Average
50,791		24.90% Pervious Area
153,205		75.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	100	0.0050	0.76		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.8	154	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	188	0.0050	4.20	7.43	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
0.6	148	0.0050	4.20	7.43	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
0.4	120	0.0050	5.09	16.00	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
0.5	159	0.0050	5.09	16.00	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
0.1	50	0.0500	16.10	50.59	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
0.1	30	0.0050	5.09	16.00	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
6.4	949	Total			

Summary for Pond 2P: Wet Pond (Grate Only)

Inflow Area = 4.683 ac, 75.10% Impervious, Inflow Depth = 4.16" for 25-Year event
Inflow = 21.36 cfs @ 12.09 hrs, Volume= 1.622 af
Outflow = 8.29 cfs @ 12.34 hrs, Volume= 0.897 af, Atten= 61%, Lag= 15.1 min
Primary = 8.29 cfs @ 12.34 hrs, Volume= 0.897 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Starting Elev= 243.15' Surf.Area= 10,251 sf Storage= 29,092 cf
Peak Elev= 246.09' @ 12.34 hrs Surf.Area= 14,054 sf Storage= 64,726 cf (35,635 cf above start)
Flood Elev= 247.10' Surf.Area= 15,468 sf Storage= 79,587 cf (50,495 cf above start)

Plug-Flow detention time= 610.1 min calculated for 0.229 af (14% of inflow)
Center-of-Mass det. time= 111.9 min (904.0 - 792.1)

Volume	Invert	Avail.Storage	Storage Description
#1	236.00'	79,587 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
236.00	1,204	220.9	0	0	1,204
238.00	2,642	258.6	3,753	3,753	2,720
240.00	4,307	296.3	6,882	10,635	4,475
242.00	6,197	334.0	10,447	21,081	6,468
243.00	7,228	352.8	6,706	27,787	7,552
243.15	10,251	403.1	1,304	29,092	10,578
244.00	11,299	419.1	9,155	38,247	11,682
246.00	13,927	456.8	25,180	63,427	14,451
247.10	15,468	477.5	16,160	79,587	16,074

Device	Routing	Invert	Outlet Devices
#1	Primary	240.85'	**18.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 240.85' / 240.50' S= 0.0087 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	245.80'	**4.0" x 4.0" Horiz. Orifice/Grate X 104.00** C= 0.600 in 48.0" x 48.0" Grate (72% open area) Limited to weir flow at low heads

Primary OutFlow Max=8.27 cfs @ 12.34 hrs HW=246.09' (Free Discharge)
└─**1=Culvert** (Passes 8.27 cfs of 18.03 cfs potential flow)
  └─**2=Orifice/Grate** (Weir Controls 8.27 cfs @ 1.77 fps)

Summary for Subcatchment POST2:

Runoff = 31.62 cfs @ 12.09 hrs, Volume= 2.457 af, Depth= 6.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=7.60"

Area (sf)	CN	Description
82,269	98	Paved parking, HSG B
70,936	98	Paved parking, HSG B
50,791	61	>75% Grass cover, Good, HSG B
203,996	89	Weighted Average
50,791		24.90% Pervious Area
153,205		75.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	100	0.0050	0.76		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.8	154	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	188	0.0050	4.20	7.43	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
0.6	148	0.0050	4.20	7.43	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
0.4	120	0.0050	5.09	16.00	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
0.5	159	0.0050	5.09	16.00	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
0.1	50	0.0500	16.10	50.59	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
0.1	30	0.0050	5.09	16.00	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
6.4	949	Total			

Summary for Pond 2P: Wet Pond (Grate Only)

Inflow Area = 4.683 ac, 75.10% Impervious, Inflow Depth = 6.29" for 100-Year event
Inflow = 31.62 cfs @ 12.09 hrs, Volume= 2.457 af
Outflow = 18.94 cfs @ 12.21 hrs, Volume= 1.732 af, Atten= 40%, Lag= 7.0 min
Primary = 18.94 cfs @ 12.21 hrs, Volume= 1.732 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Starting Elev= 243.15' Surf.Area= 10,251 sf Storage= 29,092 cf
Peak Elev= 246.55' @ 12.21 hrs Surf.Area= 14,693 sf Storage= 71,352 cf (42,260 cf above start)
Flood Elev= 247.10' Surf.Area= 15,468 sf Storage= 79,587 cf (50,495 cf above start)

Plug-Flow detention time= 280.6 min calculated for 1.063 af (43% of inflow)
Center-of-Mass det. time= 77.6 min (858.6 - 781.0)

Volume	Invert	Avail.Storage	Storage Description
#1	236.00'	79,587 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
236.00	1,204	220.9	0	0	1,204
238.00	2,642	258.6	3,753	3,753	2,720
240.00	4,307	296.3	6,882	10,635	4,475
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244.00	11,299	419.1	9,155	38,247	11,682
246.00	13,927	456.8	25,180	63,427	14,451
247.10	15,468	477.5	16,160	79,587	16,074

Device	Routing	Invert	Outlet Devices
#1	Primary	240.85'	**18.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 240.85' / 240.50' S= 0.0087 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	245.80'	**4.0" x 4.0" Horiz. Orifice/Grate X 104.00** C= 0.600 in 48.0" x 48.0" Grate (72% open area) Limited to weir flow at low heads

Primary OutFlow Max=18.93 cfs @ 12.21 hrs HW=246.55' (Free Discharge)
└─**1=Culvert** (Inlet Controls 18.93 cfs @ 10.71 fps)
  └─**2=Orifice/Grate** (Passes 18.93 cfs of 33.90 cfs potential flow)