

1039 Riverside LLC

**STORMWATER DRAINAGE SYSTEM  
MAINTENANCE AGREEMENT AND  
RELEASE FROM LIABILITY – UNIT 1**

**IN CONSIDERATION OF** the Site plan and Subdivision plan approvals granted by the Planning Authority of the City of Portland to plans entitled “*Fifth Amended Condominium Plat*” approved on January 17, 2017 and recorded at the Cumberland County Registry of Deeds Plan Book 217, Page 20, (see Exhibit A) and “*Second Tee Condominium Association Business Park Expansion -Unit 1 Grading, Drainage and Erosion Control Plan*” Drawing C-5 prepared for 1039 Riverside, LLC (Unit 1 owner) by Stantec Consulting Services, Inc. dated last revised April 19, 2017 (the “Plan”) (see Exhibit B), respectively, and pursuant to a condition thereof, 1039 Riverside, LLC having a mailing address of 7 Tee Drive, Portland, Maine 04103, the owner of the subject premises, does hereby agree, for itself, its successors and assigns (the “Owner”), as follows:

Maintenance Agreement

That it, its successors and assigns, will, at its own cost and expense and at all times in perpetuity, maintain in good repair and in proper working order the stormwater drainage system, as shown on said plan, including but not limited to the, roof line drip strip, piping, valves, etc. in strict compliance with the Maintenance of Facilities as described in the *Inspection and Maintenance Manual for Stormwater Management and Related Stormwater Facilities* dated April 19, 2017 (see Exhibit C) and Chapter 32 of the Portland City Code. Owner of the subject premises further agrees to keep a Stormwater Maintenance Log that will be made available for inspection by the City of Portland upon reasonable notice and request.

This Agreement is for the benefit of the said City of Portland and all persons in lawful possession of the property; further, that the said City of Portland may enforce this Agreement by an action at law or in equity in any court of competent jurisdiction; further, that after giving the Owner written notice as described in this Agreement, and a stated time to perform, that the said City of Portland, by its authorized agents or representatives, may, but is not obligated to, enter upon the property in question to maintain, repair, or replace said stormwater drainage system, including but not limited to the roofline drip strip, drainage structures, piping, valves etc. thereon in the event of any failure or neglect thereof, the cost and expense thereof to be reimbursed in

full to the said City of Portland by the Owner upon written demand. Any funds owed to the City under this paragraph shall be secured by a lien on the property.

This Agreement shall also not be construed to allow any change or deviation from the requirements of the subdivision and/or site plan most recently and formally approved by the Planning Board of the City of Portland.

This Agreement shall bind the undersigned only so long as it retains any interest in said premises, and shall run with the land and be binding upon the Owner's successors and assigns as their interests may from time to time appear. The Owner agrees to record a copy of this Agreement in the Cumberland County Registry of Deeds within thirty (30) days of final execution of this Agreement. The Owner further agrees to provide a copy of this Agreement to any successor or assign and to forward to the City an Addendum signed by any successor or assign in which the successor or assign states that the successor or assign has read the Agreement, agrees to all its terms and conditions and the successor or assign will obtain and forward to the City's Department of Public Services and Department of Planning and Urban Development a similar Addendum from any other successor or assign.

For the purpose of this Agreement and release "Owner" is any person or entity who is a successor or assign and has a legal interest in part, or all, of the real estate and any building. The real estate shown by chart, block and lot number in the records on file in the City Assessor's office shall constitute "the property" that may be entered by the City and liened if the City is not paid all of its costs and charges following the mailing of a written demand for payment to the Owner pursuant to the process and with the same force and effect as that established by 36 M.R.S.A. §§ 942 and 943 for real estate tax liens.

Any written notices or demands required by this Agreement shall be complete on the date the notice is mailed to the owner of record as shown on the tax roles on file in the City Assessor's Office. If the property has more than one owner on said tax rolls, service shall be complete by mailing it to only the first listed owner. The failure to receive any written notice required by this Agreement shall not prevent the City from entering the property and performing maintenance or repairs on the stormwater system, or any component thereof, or liening it or create a cause of action against the City.

Dated at Portland, Maine this 30 day of May, 2017.

[Signature]  
By: 1039 RIVERSIDE, LLC  
Its: MANAGER

STATE OF MAINE  
CUMBERLAND, ss.

Date: 5-30-17

Personally appeared the above-named Robert Gaudreau and acknowledged the foregoing instrument to be his/his free act and deed in his/her said capacity, and the free act and deed of said H.

Before me,

SEAL

D. Millay  
Notary Public/Attorney at Law

**DAPHNE MILLAY**  
Notary Public, Maine  
My Commission Expires August 14, 2018

Print name: Daphne Millay

**SCHEDULE OF AREAS**

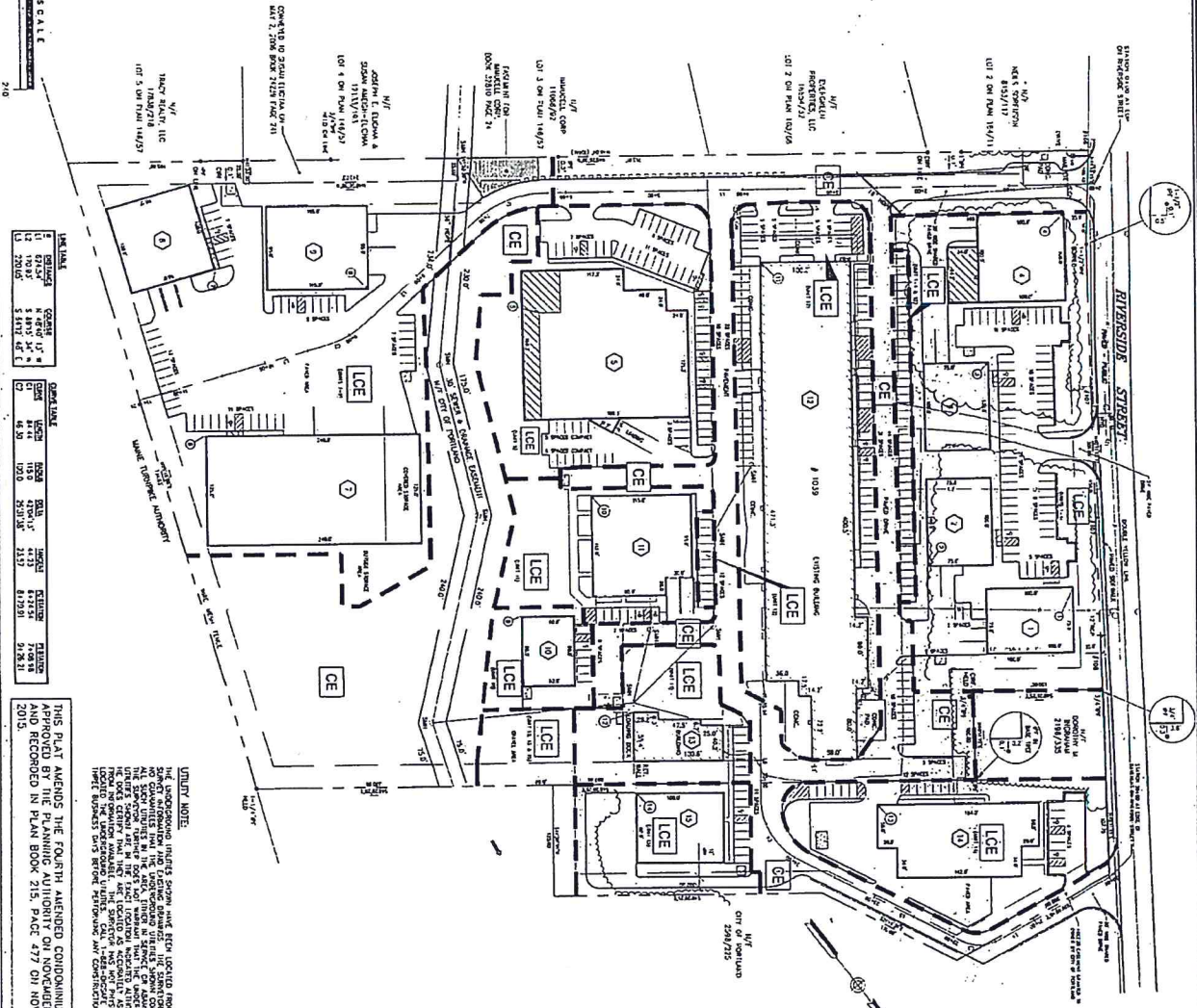
UNIT	NUMBER (CONFORMED)	DATE	STATION	OFFSET
1	1000	01/15/11	1000	0.00
2	1001	01/15/11	1001	0.00
3	1002	01/15/11	1002	0.00
4	1003	01/15/11	1003	0.00
5	1004	01/15/11	1004	0.00
6	1005	01/15/11	1005	0.00
7	1006	01/15/11	1006	0.00
8	1007	01/15/11	1007	0.00
9	1008	01/15/11	1008	0.00
10	1009	01/15/11	1009	0.00
11	1010	01/15/11	1010	0.00
12	1011	01/15/11	1011	0.00
13	1012	01/15/11	1012	0.00
14	1013	01/15/11	1013	0.00
15	1014	01/15/11	1014	0.00
16	1015	01/15/11	1015	0.00
17	1016	01/15/11	1016	0.00
18	1017	01/15/11	1017	0.00
19	1018	01/15/11	1018	0.00
20	1019	01/15/11	1019	0.00
21	1020	01/15/11	1020	0.00

**NOTES**

1. OWNER OF RECORD: 1020 RIVERSIDE, LLC, 55 WEST BROAD STREET, PORTLAND, ME 04101
2. LOTS 5 SHOWN AS LOT 1-4 ON RECORDING ASSISTANT'S MAP 111
3. EASEMENTS ARE NOT SHOWN AS EASEMENTS ON RECORDING ASSISTANT'S MAP 111
4. EASEMENTS ARE SHOWN FROM LOT 5 TO LOT 1-4 WITH THE WORD "EASEMENT" IN THE CENTER OF EACH
5. UNITS 1-20 ARE SHOWN WITH REFERENCE 7 AND 8
6. UNITS 1-20 ARE SHOWN WITH REFERENCE 7 AND 8
7. UNITS 1-20 ARE SHOWN WITH REFERENCE 7 AND 8
8. UNITS 1-20 ARE SHOWN WITH REFERENCE 7 AND 8
9. UNITS 1-20 ARE SHOWN WITH REFERENCE 7 AND 8
10. UNITS 1-20 ARE SHOWN WITH REFERENCE 7 AND 8
11. UNITS 1-20 ARE SHOWN WITH REFERENCE 7 AND 8
12. UNITS 1-20 ARE SHOWN WITH REFERENCE 7 AND 8
13. UNITS 1-20 ARE SHOWN WITH REFERENCE 7 AND 8
14. UNITS 1-20 ARE SHOWN WITH REFERENCE 7 AND 8
15. UNITS 1-20 ARE SHOWN WITH REFERENCE 7 AND 8
16. UNITS 1-20 ARE SHOWN WITH REFERENCE 7 AND 8
17. UNITS 1-20 ARE SHOWN WITH REFERENCE 7 AND 8
18. UNITS 1-20 ARE SHOWN WITH REFERENCE 7 AND 8
19. UNITS 1-20 ARE SHOWN WITH REFERENCE 7 AND 8
20. UNITS 1-20 ARE SHOWN WITH REFERENCE 7 AND 8

**PLAN REFERENCES**

1. TITLE OF PROPERTY IN PLANNING MAP: THE RIVERSIDE APARTMENT, PORTLAND, ME, 5-19, 1971, H. K. LEE, JUNIOR - 2000
2. TOWN OF RECORD: THE TOWN OF PORTLAND, ME
3. TOWN OF RECORD: THE TOWN OF PORTLAND, ME
4. TOWN OF RECORD: THE TOWN OF PORTLAND, ME
5. TOWN OF RECORD: THE TOWN OF PORTLAND, ME
6. TOWN OF RECORD: THE TOWN OF PORTLAND, ME
7. TOWN OF RECORD: THE TOWN OF PORTLAND, ME
8. TOWN OF RECORD: THE TOWN OF PORTLAND, ME
9. TOWN OF RECORD: THE TOWN OF PORTLAND, ME
10. TOWN OF RECORD: THE TOWN OF PORTLAND, ME
11. TOWN OF RECORD: THE TOWN OF PORTLAND, ME
12. TOWN OF RECORD: THE TOWN OF PORTLAND, ME
13. TOWN OF RECORD: THE TOWN OF PORTLAND, ME
14. TOWN OF RECORD: THE TOWN OF PORTLAND, ME
15. TOWN OF RECORD: THE TOWN OF PORTLAND, ME
16. TOWN OF RECORD: THE TOWN OF PORTLAND, ME
17. TOWN OF RECORD: THE TOWN OF PORTLAND, ME
18. TOWN OF RECORD: THE TOWN OF PORTLAND, ME
19. TOWN OF RECORD: THE TOWN OF PORTLAND, ME
20. TOWN OF RECORD: THE TOWN OF PORTLAND, ME



UNIT	AREA	PERCENT	AREA	PERCENT	AREA	PERCENT
1	1000	100%	1000	100%	1000	100%
2	1001	100%	1001	100%	1001	100%
3	1002	100%	1002	100%	1002	100%
4	1003	100%	1003	100%	1003	100%
5	1004	100%	1004	100%	1004	100%
6	1005	100%	1005	100%	1005	100%
7	1006	100%	1006	100%	1006	100%
8	1007	100%	1007	100%	1007	100%
9	1008	100%	1008	100%	1008	100%
10	1009	100%	1009	100%	1009	100%
11	1010	100%	1010	100%	1010	100%
12	1011	100%	1011	100%	1011	100%
13	1012	100%	1012	100%	1012	100%
14	1013	100%	1013	100%	1013	100%
15	1014	100%	1014	100%	1014	100%
16	1015	100%	1015	100%	1015	100%
17	1016	100%	1016	100%	1016	100%
18	1017	100%	1017	100%	1017	100%
19	1018	100%	1018	100%	1018	100%
20	1019	100%	1019	100%	1019	100%
21	1020	100%	1020	100%	1020	100%

THIS PLAN AMENDS THE FOURTH AMENDED CONDOMINIUM PLAN AS APPROVED BY THE PLANNING AUTHORITY ON NOVEMBER 24, 2015 AND RECORDED IN PLAN BOOK 215, PAGE 477 ON NOVEMBER 30, 2015.

**UNITARY NOTE:**  
 THE ASSOCIATION HIGHLIGHTS SHOWN HAVE BEEN LOCATED FROM THIS PLAN AND SHOWN IN THE UNITARY PLAN. THE ASSOCIATION UNITARY PLAN IS THE SOURCE OF THE UNITARY PLAN. THE ASSOCIATION UNITARY PLAN IS THE SOURCE OF THE UNITARY PLAN. THE ASSOCIATION UNITARY PLAN IS THE SOURCE OF THE UNITARY PLAN.

**STATE OF MAINE**  
 Cumberland County SS REGISTRY OF DEEDS  
 RECEIVED January 18, 2017  
 AT 11:12 AM AND RECORDED IN  
 PLAN BOOK 215 PAGE 477  
 REGISTER

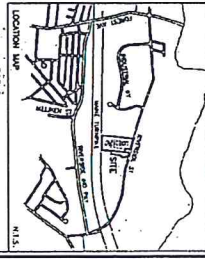
**APPROVAL-CITY OF PORTLAND**  
 PLANNING AUTHORITY  
 1/17/17  
 DATE  
 RAINING SWANSON DIRECTOR

**OWEN HASKELL, INC.**  
 1039 RIVERSIDE STREET, PORTLAND, ME 04102  
 2017  
 1039 RIVERSIDE STREET, PORTLAND, ME 04102  
 2017

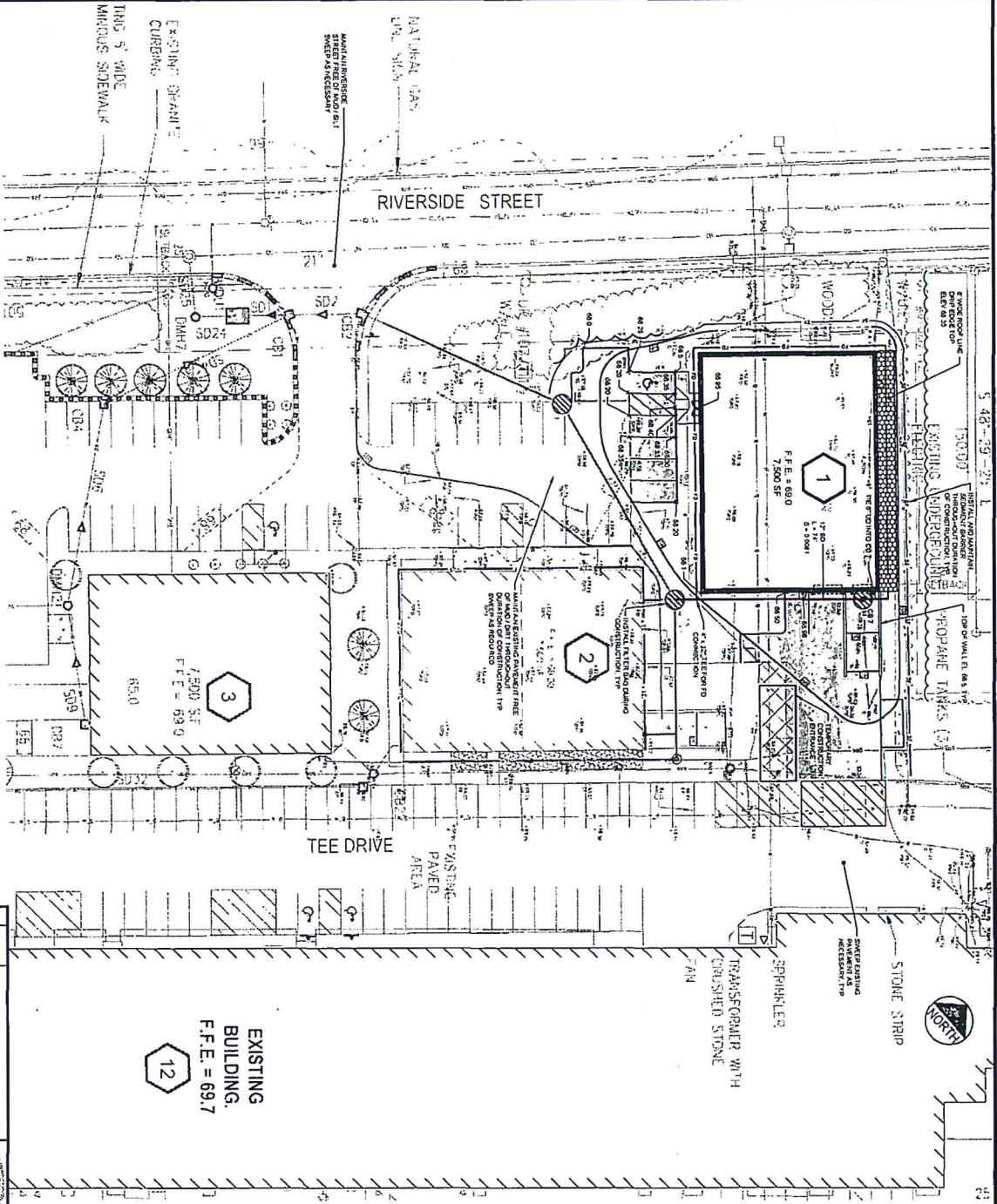
**EXHIBIT A**

**FIFTH AMENDED CONDOMINIUM PLAN**  
 SECOND TRIPLESIDE PROPERTY COMPANY  
 1039 RIVERSIDE STREET, PORTLAND, MAINE  
 04102

**OWEN HASKELL, INC.**  
 1039 RIVERSIDE STREET, PORTLAND, ME 04102  
 2017



PRELIMINARY - NOT FOR CONSTRUCTION



EXISTING BUILDING.  
F.F.E. = 69.7



STRUCTURE SCHEDULE			
STRUCTURE ID	SIZE	INV IN	INV OUT
CS3 BR UNIT 2	4.0	60.21(12)	60.53(12)
CS4 BR UNIT 2	4.0	62.01(12.50)	61.94(12)
CS3 BR UNIT 2	4.0	62.01(12.50)	61.94(12)
CS7	2.00	62.71(12.50)	62.61(12)

- EROSION CONTROL NOTES:**
1. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL THE PROJECT IS COMPLETELY COMPLETED.
  2. EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL THE PROJECT IS COMPLETELY COMPLETED.
  3. EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL THE PROJECT IS COMPLETELY COMPLETED.
  4. EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL THE PROJECT IS COMPLETELY COMPLETED.
  5. EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL THE PROJECT IS COMPLETELY COMPLETED.
  6. EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL THE PROJECT IS COMPLETELY COMPLETED.
  7. EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL THE PROJECT IS COMPLETELY COMPLETED.
  8. EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL THE PROJECT IS COMPLETELY COMPLETED.
  9. EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL THE PROJECT IS COMPLETELY COMPLETED.
  10. EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL THE PROJECT IS COMPLETELY COMPLETED.
  11. EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL THE PROJECT IS COMPLETELY COMPLETED.
  12. EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL THE PROJECT IS COMPLETELY COMPLETED.

PROJECT: SECOND TIER CONDOMINIUM ASSOCIATION - BUSINESS PARK EXPANSION - UNIT 1  
SHEET TITLE: GRADING DRAINAGE AND EROSION CONTROL PLAN  
CLIENT: 1039 RIVERSIDE LLC  
PROJECT: POND/WALKWAY/PAVING/DMH/1

STANTEC CONSULTING SERVICES INC.  
445 BAYVIEW ROAD  
SCARBOROUGH, ONTARIO  
M1S 2Y9  
DATE: JANUARY 2017  
SCALE: 1" = 20'  
DRAWN: [Name]  
CHECKED: [Name]  
DATE: [Date]

Stamp: Professional Engineer, Ontario, License No. [Number]

NOTE: THE CLIENT HAS REVIEWED AND APPROVED THE INFORMATION CONTAINED HEREIN. THE CLIENT IS RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION PROVIDED TO STANTEC CONSULTING SERVICES INC. AND FOR THE RESULTS OF ANY INVESTIGATION OR ANALYSIS CONDUCTED BY STANTEC CONSULTING SERVICES INC. BASED ON THE INFORMATION PROVIDED TO STANTEC CONSULTING SERVICES INC. BY THE CLIENT.

**Exhibit C**  
**INSPECTION AND MAINTENANCE MANUAL**  
**FOR STORMWATER MANAGEMENT AND**  
**RELATED STORMWATER FACILITIES**  
**UNIT 1**

**SECOND TEE BUSINESS PARK**  
**1039 RIVERSIDE STREET**  
**PORTLAND, ME**

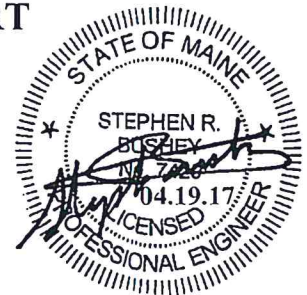
**PREPARED FOR:**

**1039 RIVERSIDE LLC**  
**PORTLAND, MAINE 04101**

**PREPARED BY:**

**STANTEC CONSULTING SERVICES, INC.**  
**482 PAYNE ROAD SCARBOROUGH COURT**  
**SCARBOROUGH, MAINE 04074**  
**(207) 883-3355**

**APRIL 2017**



**TABLE OF CONTENTS**

<u>SECTION</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
I.	<u>SUMMARY</u> .....	1
II.	<u>INTRODUCTION</u> .....	1
	A. <u>GUIDELINES OVERVIEW</u> .....	2
III.	<u>PROJECT OVERVIEW</u> .....	2
IV.	<u>STANDARD INSPECTION/MAINTENANCE DESCRIPTIONS</u> .....	3
	A. <u>VEGETATED SWALES</u> .....	3
	B. <u>TRIBUTARY DRAINAGE SYSTEM</u> .....	4
	C. <u>ROOF DRIPLINE FILTER</u> .....	6
	D. <u>LITTER</u> .....	7
	E. <u>SUMMARY CHECKLIST</u> .....	7
V.	<u>PROGRAM ADMINISTRATION</u> .....	7
	A. <u>GENERAL</u> .....	7
	B. <u>RECORD KEEPING</u> .....	7
	C. <u>CONTRACT SERVICES</u> .....	7

**APPENDICES**

Attachment A – Sample Inspection Logs

Attachment B – Permits for Project

Attachment C – Summary Checklist for Inspection and Maintenance

## I. SUMMARY

The 1039 Riverside Street commercial complex is subject to the City of Portland's Performance Standards for Stormwater Management, specifically, contained in Chapter 32 Storm Water of the City's Code of Ordinances. The responsibilities and requirements for monitoring and reporting the development's stormwater management systems are more fully outlined on the following narrative associated with the Unit 1 development area only. Maintenance of all common areas within the Business Park is the responsibility of the Condominium Association. This Inspection and Maintenance Manual is intended to be a tool for reference by the development's owner/operator and their third party inspector as they perform required inspections and system maintenance. The Unit 1 owner will be responsible for compliance with the "*Stormwater Drainage System Maintenance Agreement and Release of Liability*" to be executed with the City of Portland, prior to the release of a Building permit. These documents are generally common to the entire Second Tee Business Park and the Condominium Association of which all unit owners are members.

## II. INTRODUCTION

Relatively complex stormwater management facilities are commonly installed in development projects including commercial facilities, and many other developments. The complexity and goals of these systems vary with the nature of the receiving water, as well as the type of development. Runoff from developed areas of the project, including rooftops, paved or lawn areas typically contain materials that can impact the receiving waters. Source control and the installation of hydrodynamic sediment removal devices, underdrained filter beds, and green infrastructure practices often combined with pretreatment measures or followed by vegetated buffer strips, filtration, and other best management practices, can significantly reduce the non-point pollution discharge from the developed area. These measures are particularly important to projects in the watersheds of sensitive water bodies, or projects with potential impacts to groundwater. With the increased cost of land and development and operational costs, there is an increased tendency to construct portions of the stormwater management systems underground, to employ green infrastructure practices where practicable, and to enhance pretreatment devices to capture non-point contaminants as close to the source as possible.

The effectiveness of water quality management provisions and other components of the stormwater management system are dependent on the site setting, the design, upkeep, and maintenance to assure they meet their intended function over an extended period of years. It is critical that the stormwater management facilities are designed considering both the opportunities and constraints of the site be regularly inspected, and that maintenance is performed on an as-needed basis. It must also be recognized that the effectiveness of these formal treatment BMP's and their maintenance requirements, are related to the routine maintenance of effective source control, inspection, and maintenance of the stormwater drainage facilities that collect and transport the flow to the hydrodynamic sediment removal devices, underdrained filter beds, green infrastructure elements, and other treatment measures. Thus, maintenance should be directed to the total system, not just the primary stormwater management facility.

The purpose of this document is to define, in detail, the inspection and maintenance requirements deemed necessary to assure that the stormwater management facilities function as intended when they were designed. This manual is specific to this site and the defined BMP's selected for application on this specific project. Subsequent sections identify individual maintenance items; give a brief commentary of the function and need for the item; a description of the work required; and a suggested frequency of accomplishment. While the suggested programs and schedules must be adapted to specific projects, the material presented should provide guidance for a



successful long-term program for operation and maintenance. A supplemental section provides guidance for construction monitoring of the facilities during their installation and more detailed checklists (Attachment D). Certain facilities are not intended to be placed in service until the tributary catchment area has the permanent cover in place and any contributing turf areas have achieved a 90% catch of vegetation (i.e. established). This manual discusses the specific measures designed and intended to be featured in this project.

#### A. GUIDELINES OVERVIEW

A summary of the individual components of stormwater management facilities has been prepared. The format used in the summary is as follows:

Preface: A general description of what function/benefit the element is intended to provide. This is a short summary and not intended to provide the design basis, which can be found in other sources.

Inspection: This section provides the inspection requirements for the individual component.

Maintenance: The section provides general information on the routine maintenance requirements of this element.

Frequency: This section outlines the frequency of maintenance on the system as recommended by the designer.

Comments: This section provides any particular comment on the site-specific features of this element. This is a summary only. The owner/operator should review the design drawings and documents carefully to understand the particular elements of the project. The end of this section should allow the owner/operator to make notes on the specific program. This may include the selected maintenance procedure, cross-references to applicable design drawings, etc.

A list of the individual inspection/maintenance elements is provided in the table of contents. The guidelines are proposed for initial use with adjustments made as appropriate based upon specific project experience.

### III. PROJECT OVERVIEW

Key permits issued (or applied for) on the project include:

- City of Portland Site Plan- Level II
- Maine Department of Environmental Protection Maine Construction General Permit.

The permit applications pending for the project include the design information for the stormwater system.

A copy of the permits and Stormwater Maintenance Agreement should be appended to this manual as Attachment B. The Owner/Operator of the stormwater management system should review these permits for a general description and background of the project, as well as any specific permit conditions or requirements of the project.

The applicant has retained Stantec Consulting Services, Inc. for civil engineering for the new Unit 1 commercial building located at 1039 Riverside Street in Portland, Maine. Stantec has prepared the design for the stormwater management facilities and may be contacted at:

Stantec Consulting Services, Inc.  
482 Payne Road Scarborough Court  
Scarborough, Maine 04074  
Tel. (207) 883-3355

It is recommended the preparer of the plan be contacted with any particular questions on the design intent or similar issues. This plan includes measures for Green Infrastructure elements including roofline drip edges.

The Owner/Operator of the plan will be:

1039 Riverside, LLC  
C/O Hardypond Construction  
7 Tee Drive  
Portland, Maine 04101  
Tel. 207-797-6066

The applicable plans/design documents, which apply to the project, are:

1. Site Plans/Permit Applications
2. The Erosion Control/Sedimentation Control Plan for the project.
3. The Stormwater Management Plan for the project.

A copy of these documents should be retained with the manual.

The proposed design will include roofline filters, proprietary devices, sediment forebays, collection and conveyance discharge systems and drainage swales. All hydrodynamic separators are routinely monitored and maintained through/by contracted service administered by the Condominium Association.

#### IV. STANDARD INSPECTION/MAINTENANCE DESCRIPTIONS

The following narratives describe the inspection/maintenance provisions for the Stormwater Management area. These O&M procedures will complement scheduled source control sweeping of the pavement areas and routine maintenance of the cover in the drainage catchment controlled by the applicant. Source control includes not over-salting the parking field and access roadway which can be encouraged in the design process by maintaining adequate grades to avoid ponding and icing, and generally maintaining the surfaces free of litter and deleterious debris. This also includes elements such as repair of winter damage that can expose cover material to erosion, to maintaining good cover in vegetated areas, to maintaining landscape materials which can reduce storm water flows through infiltration and evapotranspiration. Proper O&M is necessary to make sure the system will provide its intended purpose of conveying runoff, removing a substantial amount of the suspended solids, and other contaminants in the stormwater runoff.

##### A. VEGETATED SWALES

Preface: Vegetated swales are often used to convey stormwater. Swales can be intended to be part of a green infrastructure system and may be:

1. Mowed and maintained grass areas

2. Reverted to wetlands
3. Naturalized ground surfaces

Inspection: Swales should be inspected for erosion and sedimentation and examined for deleterious material that could clog downstream inlets.

Maintenance: Eroded or silted channels need to be repaired when discovered. If erosion is a problem, the swale design should be examined. Likewise, if situation is a continuing problem, the upgradient conditions should be assessed. Vegetated flows paths are often found downgradient of snow stockpiles and are thus subject to seasonal exposure to concentrated runoff, which may result in erosion potential, in what may otherwise appear to be stabilized conditions.

Frequency: It is recommended vegetated swales be inspected quarterly until vegetation is established and a year after installation. Thereafter, if no problems have been noticed, the frequency can be reduced to once per year.

Design Guidelines: The vegetated swale should consider channel cover at the time of construction as well as several years after construction.

Design computations should state the assumed type of vegetative cover (i.e. grass, sod, or other stabilized surface) and provide the basis for the Manning's or other roughness coefficient and for design.

Applicability: The Riverside Street facility will have minor open channel systems as shown on the drainage and stormwater management plans.



**VEGETATED SWALE WITH HAY BALE CHECK DAM TO REDUCE VELOCITIES UNDER CONSTRUCTION**

**B. TRIBUTARY DRAINAGE SYSTEM**

Preface: Stormwater from some of the project will be directed through a conveyance system which transports the flow ultimately to its discharge location. This conveyance system will be principally overland flow and a limited amount of piped drain systems. Most of the sediment carried by the drainage system is intended to be trapped in

sediment sumps in structures or captured within a downstream hydrodynamic separator. Maintenance of this system can play a major role in the long-term maintenance costs and the effectiveness of the stormwater management system.

Inspection: The tributary drainage system should be periodically inspected to assure that it is operating as intended, and that its carrying capacity has not been diminished by accumulations of debris and sediment or other hydraulic impediments. On piped systems the inlets must be inspected to ensure the rims are set at the proper elevation to optimize flow entry and are not clogged with leaves or other debris. The inlet basins are normally equipped with sumps fitted with hooded outlets, which will remove large sediment particles from the flow stream.

The level of sediment in the sumps should be checked to assure their effectiveness. Pipelines connecting the inlets should be checked to determine if siltation is occurring. This will be most critical on drain lines laid at minimal slopes. This can usually be accomplished by a light and mirror procedure.

In some projects most of the stormwater is carried in open swales, channels, or ditches. These conveyance channels may be rip rapped or vegetated, depending on the gradient and expected flow velocities. These facilities must be inspected to insure debris or sedimentation does not reduce their carrying capacity. Excess vegetative growth must also be noted. The surface protection for the channels, either stone or vegetation, must be inspected to insure its integrity. Any areas subject to erosion should be noted.

Maintenance: Maintenance of the storm drainage system must assure that it continues to serve its design function on a long-term basis, and that its operation does not transport excessive sediment volume to any downstream receiving waters. Elevations on the rim of catch basins should be adjusted as needed to assure optimal water entry. Depending on the frost susceptibility of the soil, the rims may become elevated over time causing flow to circumvent the inlet. Sediment sump volume must be monitored and cleaning would normally be accomplished with vacuum trucks contracted as a maintenance service for the site. The removed material must be disposed of at an approved site for such materials.

If sediment in the pipeline exceeds 20% of the diameter of the pipe, it should be removed. This may be accomplished by hydraulic flushing, or by mechanical means. If hydraulic flushing is used the downstream conditions should be analyzed. In general a sump or sediment trap should be used to capture flushed sediment for removal.

Frequency: The piped drainage system should be inspected on an annual basis. Adjustment of inlet rim elevations should be on an as needed basis. Cleaning catch basin sumps and pipelines will depend on the rate of accumulation.

Maintenance/Inspection Responsibility:

Maintenance Personnel: 1039 Riverside LLC

Special Services: The owner may elect to contract with an independent agent for cleaning or replacement of components of the drainage system. Remedial source control measures may be performed by the owner or an outside service depending upon the nature of the particular situation.

**C. ROOF DRIPLINE FILTER**

Preface: Similar to the vegetated soil filter, roof dripline filters control stormwater quality by capturing and retaining runoff within a stone reservoir and passing it through a filter bed comprised of a specific soil filter media. Once through the soil media, the runoff is collected in a perforated underdrain pipe and discharged downstream. The filter structure provides for the slow release of smaller storm events, minimizing potential channel erosion and cooling the discharge.

Inspection: A roof dripline filter must be inspected to ensure it is draining within 48 hours following a one inch storm or greater.

Maintenance: Debris must be removed from the reservoir stone. If the filter is not draining within 72 hours, the filter media shall be replaced.

Frequency: During the first year, the filter should be inspected semi-annually and following all major storm events. Thereafter, the filter should be inspected at least every 6 months. Debris and sediment buildup should be removed as needed.

**D. LITTER**

Litter should be removed as a matter of course by workers and be a part of the grounds maintenance contract for the overall development.

**E. SUMMARY CHECKLIST**

The above described inspection and maintenance items have been summarized on a checklist attached hereto as Attachment C.

**V. PROGRAM ADMINISTRATION**

**A. GENERAL**

A reliable administrative structure must be established to assure implementation of the maintenance programs described in the foregoing section. Key factors that must be considered in establishing a responsive administrative structure include:

1. Administrative body must be responsible for long-term operation and maintenance of the facilities.
2. Administrative body must have the financial resources to accomplish the inspection and maintenance program over the life of the facility.
3. The administrative body must have a responsible administrator to manage the inspection and maintenance programs.
4. The administrative body must have the staff to accomplish the inspection and maintenance programs, or must have authority to contract for the required services.
5. The administrative body must have a management information system sufficient to file, retain, and retrieve all inspection and maintenance records associated with the inspection and maintenance programs.

If any of the above criteria cannot be met by the entity assigned inspection and maintenance responsibilities, it is likely that the system will fail to meet its water quality objectives at some point during its life. While each of the above criteria may be met by a variety of formats, it is critical to clearly establish the assigned administrative body in a responsible and sustainable manner.

**B. RECORD KEEPING**

The owner must comply with the conditions of the construction stormwater management plan and erosion and sediment control plan based on City Standards and State Guidelines. The owner of the approved stormwater management system and all assigns shall comply with the conditions of Chapter 32 Stormwater of the City of Portland Code of Ordinances, including Article III, Post Construction Stormwater Management, which specifies the annual inspections and reporting requirements. The system is the responsibility of the property owner and is subject to a Maintenance Agreement with the City of Portland.

Records of all inspections and maintenance work accomplished must be kept and maintained to document facility operations. These records should be filed and retained for a minimum 5-year time span. The filing system should be capable of ready retrieval of data for periodic reviews by appropriate regulatory bodies. Where possible, copies of such records should also be filed with the designated primary regulatory agency for their review for compliance with permit conditions. Typical inspection and maintenance record forms are attached hereto as Attachment B.

**C. CONTRACT SERVICES**

In some instances or at specific times, the Maintenance Personnel may not have the staff to conduct the required inspection and/or maintenance programs as outlined in this document. In such cases the work should be accomplished on a contractual basis with a firm or organization that has the staff and equipment to accomplish the required work.

The service contract for inspection and maintenance should be formal, well written legal document which clearly defines the services to be provided, the contractual conditions that will apply, and detailed payment schedules. Liability insurance should be required in all contracts.

**ATTACHMENT A**

**Sample Inspection Logs**

**SECOND TEE BUSINESS PARK COMMERCIAL COMPLEX - UNIT 1**  
**PORTLAND, ME**

STORMWATER MANAGEMENT  
 FACILITIES  
 ANNUAL INSPECTION & MAINTENANCE LOG

<b>FACILITY:</b>		<b>YEAR:</b>
<b>LOCATION:</b>		<b>CONTRACTOR:</b>
<b>FUNCTION:</b>		<b>INSPECTOR:</b>
<b>DATE OF INSPECTION:</b>		
<b>ITEM IDENTIFICATION</b>	<b>DESCRIPTION OF CONDITIONS</b>	<b>MAINTENANCE ACCOMPLISHED</b>
<b>GENERAL COMMENTS:</b>		



**SECOND TEE BUSINESS PARK COMMERCIAL COMPLEX - UNIT 1**  
 PORTLAND, ME

STORMWATER MANAGEMENT  
 MONTHLY INSPECTION & MAINTENANCE LOG

FACILITY:		YEAR:				
LOCATION:		CONTRACTOR:				
FUNCTION:						
MONTH	DAY	INSPECTOR	WATER DEPTH	OVERFLOW WEIR		WEIR CONDITION
				CLEAR	DEBRIS	
JANUARY						
FEBRUARY						
MARCH						
APRIL						
MAY						
JUNE						
JULY						
AUGUST						
SEPTEMBER						
OCTOBER						
NOVEMBER						
DECEMBER						
LIST SPECIAL MAINTENANCE UNDERTAKEN:						

*SECOND TEE BUSINESS PARK COMMERCIAL COMPLEX - UNIT 1  
PORTLAND, ME*

STORMWATER MANAGEMENT  
SEMI-ANNUAL INSPECTION & MAINTENANCE LOG

SEMI-ANNUAL INSPECT 1.2		FACILITY:			
DATE:		LOCATION:			
INSPECTOR:		FUNCTION:			
STRUCTURE CONDITION:					
PIPE CONDITIONS:					
FORE BAY SUMP	EST. DEPTH SED.	REMOVED? Y/N	EST. VOL. CY	WHERE DISPOSED OF	STRUCTURAL CONDITION
ROOF DRIP LINE FILTER CONDITIONS:					
DESCRIBE CONDITIONS FOUND & MAINTENANCE ACCOMPLISHED:					

**ATTACHMENT B**

**Permits for Project**

**(To be added at a Subsequent Time)**

**ATTACHMENT C**

**Summary Checklist  
Inspection and Maintenance**

Stormwater Management System Maintenance Program – Summary Checklist						
Item	Commentary	Frequency				
		Monthly	Quarterly	Semi-Annual	Annual	Long Term
Tributary Drainage	Inspect to assure that the carrying capacity has not been diminished by debris, sediment or other hydraulic impediments.			X		
Vegetated Swales	Swales should be inspected for erosion and sedimentation		X (until vegetation established)		X	
Parking Lot Cleaning	Parking lot is to be swept at mid winter and spring. Power washing with an appropriate vacuum/power wash vehicle to be done twice a year.			X		
Litter	Litter should be removed daily.					
Roof Dripline Filter	Inspect dripline filter to ensure it is draining properly within 48 hours following a 1" storm or greater			X		
Berms	Inspect berms for sags, sloughing, or erosion and undesirable tree growth. Mow berm slope to control vegetation repair structure flaws upon identification.	Mow X Summer			X	
Submerged Pipelines and Sediment Storage Catch Basins	The pipeline should be inspected quarterly		X			

Received  
Recorded Register of Deeds  
Jun 08, 2017 01:18:21P  
Cumberland County  
Nancy A. Lane