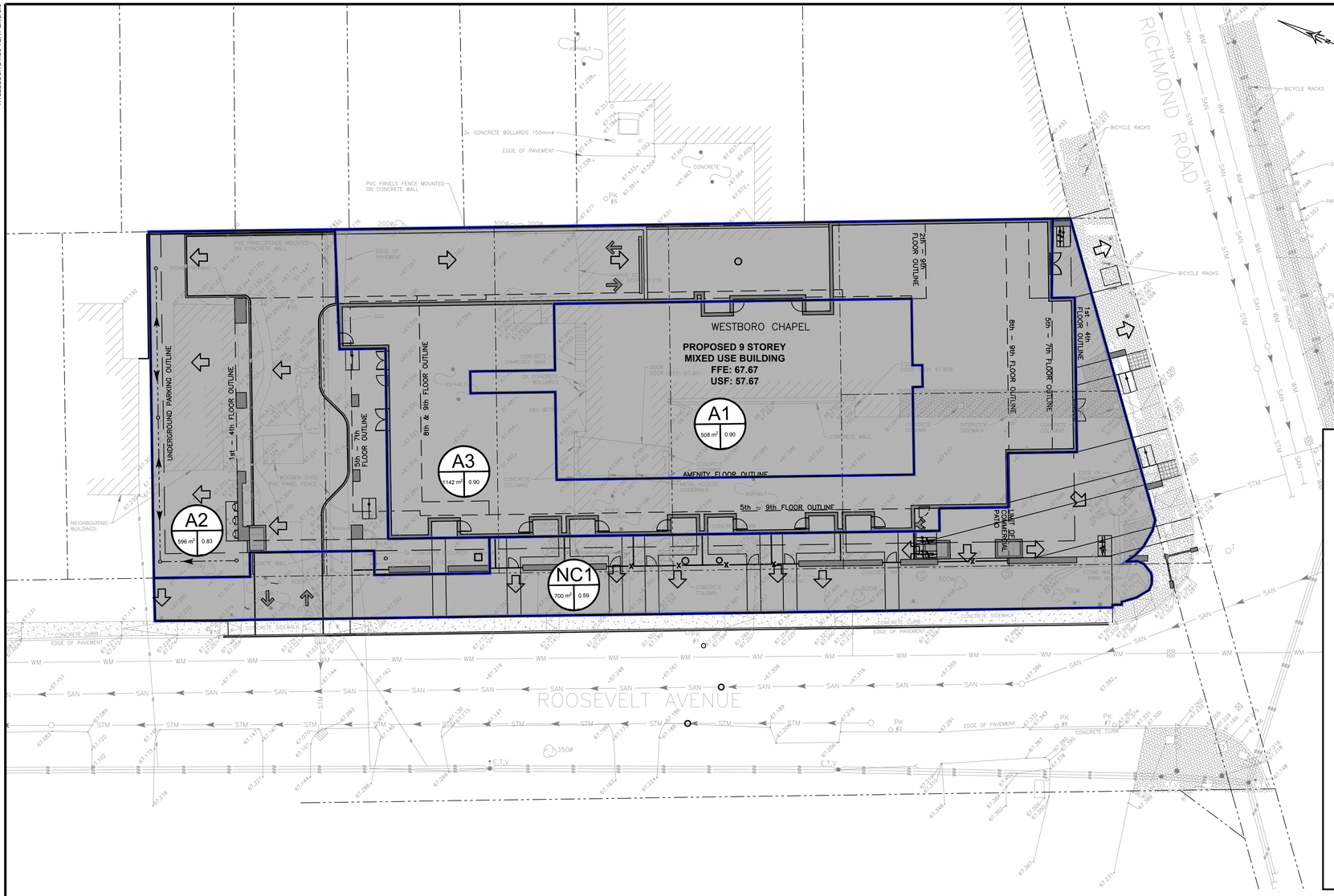



## STORM WATER MANAGEMENT LEGEND

STORM DRAINAGE BOUNDARY

AREA ID — A1 / 588 m² / 0.90

AREA IN m2

RUNOFF COEFFICIENT

| EXISTING | PROPOSED |
|---|---|
| WATERMAIN | |
| SANITARY SEWER | |
| STORM SEWER | |
| DRAIN | |
| GAS LINE (APPROX. LOC.) | |
| UNDERGROUND TELEPHONE (APPROX. LOC.) | |
| UNDERGROUND CABLE (APPROX. LOC.) | |
| FENCE | |
| UNDERGROUND ELECTRICITY (APPROX. LOC.) | |
| OVERHEAD WIRES | |
| LOT LINE | |
| RIGHT-OF-WAY LIMITS | |
| EASEMENT | |
| TOP OF SLOPE | |
| DITCH CENTER | |
| BOTTOM OF SLOPE | |
| WOOD AREA | |
| GRADE CROSSING | |
| FLAGPOLE | |
| CATCHBASIN | |
| MANHOLE/CATCHBASIN | |
| MANHOLE | |
| FIRE HYDRANT | |
| VALVE | |
| REDUCER | |
| TEE | |
| VALVE CHAMBER | |
| PRIVATE UTILITIES (WATERMAIN) | |
| EXTERIOR WATER FAUCET | |
| SLUICEWAY | |
| NATURAL GAS VALVE | |
| SIGN | |
| STOP SIGN | |
| TRAFFIC LIGHT | |
| ELECTRICITY POLE | |
| TELEPHONE POLE | |
| ELECT.-TEL.-STREET LIGHT POLE | |
| ELECT.-TEL.-TRANSFORMER POLE | |
| PRIVATE STREET LIGHT | |
| ELECTICITY MANHOLE | |
| TELEPHONE MANHOLE | |
| SURVEY STATION | |
| ELEVATION | |
| BOREHOLE (LOC. APPROX.) | |
| OVERLAND FLOW | |
| WORK LIMIT | |

1:200
0 2 4 6 12m

## WATTS — Adjustable Accutrol Weir — Adjustable Flow Control for Roof Drains

Tag: _____

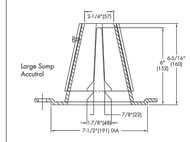
**ADJUSTABLE ACCUTROL (for Large Sump Roof Drains only)**

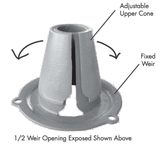
For more flexibility in controlling flow with heads deeper than 2", Watts Drainage offers the Adjustable Accutrol. The Adjustable Accutrol Weir is designed with a single parabolic opening that can be covered to restrict flow above 2" of head to less than 5 gpm per inch, up to 6" of head. To adjust the flow rate for depths over 2" of head, set the slot in the adjustable upper cone according to the flow rate required. Refer to Table 1 below.
Note: Flow rates are directly proportional to the amount of weir opening that is exposed.

**EXAMPLE:**

For example, if the adjustable upper cone is set to cover 1/2 of the weir opening, flow rates above 2"of head will be restricted to 2-1/2 gpm per inch of head.

Therefore, at 3"of head, the flow rate through the Accutrol Weir that has 1/2 the slot exposed will be:
[5 gpm (per inch of head) x 2 inches of head ] + 2-1/2 gpm (for the third inch of head) = 12-1/2 gpm.




1/2 Weir Opening Exposed Shown Above

TABLE 1. Adjustable Accutrol Flow Rate Settings

| Weir Opening Exposed | 1" | 2" | 3" | 4" | 5" | 6" |
|---|---|---|---|---|---|---|
| | Flow Rate (gallons per minute) | | | | | |
| Fully Exposed | 5 | 10 | 15 | 20 | 25 | 30 |
| 3/4 | 5 | 10 | 13.75 | 17.5 | 21.25 | 25 |
| 1/2 | 5 | 10 | 12.5 | 15 | 17.5 | 20 |
| 1/4 | 5 | 10 | 11.25 | 12.5 | 13.75 | 15 |
| Closed | 5 | 5 | 5 | 5 | 5 | 5 |

Job Name _____ Contractor _____
Job Location _____ Contractor's P.O. No. _____
Engineer _____ Representative _____

Watts product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Watts Technical Service. Watts reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Watts products previously or subsequently sold.

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ES-WD-RD-ACCUTROLADJ-CAN 1615



## STORMWATER MANAGEMENT – PRELIMINARY RETENTION CALCULATIONS – 2 YEAR EVENT

| Sub-Area | Total Area ($m^2$) | Available Storage Area ($m^2$) | Catchbasin/ Roof Drain Elevation (m) | Maximum Ponding Elevation (m) | $Y_{max}$ (m) | $V_{max}$ ($m^3$) | $V_{rain}$ ($m^3$) | $V_{acc}$ ($m^3$) | $Y_{rain}$ (m) | $Elev_{rain}$ (m) | $A_{rain}$ ($m^2$) | Q (L/s) | Drawdown Time (min) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A1 | 508 | 508 | 100.00 | 100.15 | 0.15 | 25.4 | 5.8 | 5.8 | 0.07 | 100.07 | 242 | 1.90 | 50 | Controlled roof area |
| A2 | 596 | - | - | - | - | 22.2 | 1.4 | 1.4 | - | - | - | 9.59 | 2 | Area to swale |
| A3 | 1142 | - | - | - | - | 25.0 | 4.0 | 4.0 | - | - | - | 16.25 | 4 | Areas to Tank |
| NC1 | 700 | - | - | - | - | - | - | - | - | - | - | 0.00 | - | Unattenuated Areas |
| **Total** | **2946** | **508** | | | | **72.6** | **11.1** | **11.1** | | | | **27.74** | | |

**DEFINITIONS OF ABBREVIATIONS USED IN CALCULATION TABLE:**

NC = Area is not controlled (unattenuated)
Available Area = Area of water accumulated in sub-area at Max. Elev.
Catchbasin Elev. = Elevation of catchbasin inlet (top of grate).
Max. Elev. = Maximum elevation of water that may be accumulated within sub-area.
$Y_{max}$ = Maximum depth of water that may be accumulated within the sub-area.
$V_{max}$ = Maximum volume of water (capacity) that may be accumulated within the sub-area.
$V_{rain}$ = Volume of water generated by rainfall.
$V_{acc}$ = Total volume of water accumulated within the sub-area in the event of a specific rainfall.
$Y_{rain}$ = Depth of water generated by rainfall.
$Elev_{rain}$ = Elevation of water generated by rainfall.
$A_{rain}$ = Area of water generated by rainfall.
Q = Release flow rate.
Drawdown Time = Time required for the total volume of water accumulated within sub-area to subside.

## STORMWATER MANAGEMENT – PRELIMINARY RETENTION CALCULATIONS – 100 YEAR EVENT

| Sub-Area | Total Area ($m^2$) | Available Storage Area ($m^2$) | Catchbasin/ Roof Drain Elevation (m) | Maximum Ponding Elevation (m) | $Y_{max}$ (m) | $V_{max}$ ($m^3$) | $V_{rain}$ ($m^3$) | $V_{acc}$ ($m^3$) | $Y_{rain}$ (m) | $Elev_{rain}$ (m) | $A_{rain}$ ($m^2$) | Q (L/s) | Drawdown Time (min) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A1 | 508 | 508 | 100.00 | 100.15 | 0.15 | 25.4 | 20.1 | 20.1 | 0.13 | 100.13 | 452 | 1.90 | 177 | Controlled roof area |
| A2 | 596 | - | - | - | - | 22.2 | 11.6 | 11.6 | - | - | - | 9.59 | 20 | Area to swale |
| A3 | 1142 | - | - | - | - | 25.0 | 24.1 | 24.1 | - | - | - | 16.25 | 25 | Areas to Tank |
| NC1 | 700 | - | - | - | - | - | - | - | - | - | - | 0.00 | - | Unattenuated Areas |
| **Total** | **2946** | **508** | | | | **72.6** | **55.9** | **55.9** | | | | **27.74** | | |

**DEFINITIONS OF ABBREVIATIONS USED IN CALCULATION TABLE:**

NC = Area is not controlled (unattenuated)
Available Area = Area of water accumulated in sub-area at Max. Elev.
Catchbasin Elev. = Elevation of catchbasin inlet (top of grate).
Max. Elev. = Maximum elevation of water that may be accumulated within sub-area.
$Y_{max}$ = Maximum depth of water that may be accumulated within the sub-area.
$V_{max}$ = Maximum volume of water (capacity) that may be accumulated within the sub-area.
$V_{rain}$ = Volume of water generated by rainfall.
$V_{acc}$ = Total volume of water accumulated within the sub-area in the event of a specific rainfall.
$Y_{rain}$ = Depth of water generated by rainfall.
$Elev_{rain}$ = Elevation of water generated by rainfall.
$A_{rain}$ = Area of water generated by rainfall.
Q = Release flow rate.
Drawdown Time = Time required for the total volume of water accumulated within sub-area to subside.

ANDREW MCCREIGHT
MANAGER (A), DEVELOPMENT REVIEW CENTRAL
PLANNING, REAL ESTATE & ECONOMIC DEVELOPMENT DEPARTMENT, CITY OF OTTAWA

**APPROVED**
*By Andrew McCreight at 1:17 pm, Mar 02, 2023*

**NOTE OF CAUTION**

THE GEODETIC COORDINATES OF EVERY ITEM INCLUDED AS PART OF THIS DOCUMENT ARE IN **NAD83 - ORIGINAL / MTM -** REFERENCE SYSTEM AND HAVE NO LEGAL VALUE. THE SITE LAYOUT MUST BE COMPLETED USING THE OFFICIAL BENCHMARKS OF AN ACCREDITED LAND SURVEYOR IN THE **NAD83 - ORIGINAL / MTM -** REFERENCE SYSTEM.

THE UNDERGROUND FEATURES AND INFORMATION THAT APPEAR ON THE DRAWINGS WERE OBTAINED FROM THE PUBLIC UTILITY COMPANIES AND/OR FROM THE CITY EACH RESPECTIVELY.

ALL INFORMATION UNDER THE LEGEND 'EXISTING' IS FOR INFORMATION ONLY. COMPLETE OR EXACT LOCATION AND ELEVATION OF UNDERGROUND SERVICES ARE NOT GUARANTEED.

CERTAIN UNDERGROUND FEATURES ON PRIVATE PROPERTY ARE NOT SHOWN ON THE CURRENT DRAWING.

ANYONE WHO PROCEEDS WITH EXCAVATION WORK SHALL VERIFY THE EXACT LOCATION OF ALL UNDERGROUND FEATURES, BY EXPLORATORY EXCAVATIONS, AND SHALL ASSUME FULL RESPONSIBILITY IF THERE IS ANY DAMAGE THAT OCCURS DURING WORK.

THE CONTRACTOR WILL HAVE THE RESPONSIBILITY AND THE OBLIGATION TO VALIDATE, BY EXPLORATORY EXCAVATION, THE SIZE OF THE PUBLIC UTILITIES UNDERGROUND SERVICES AND TO WARN THE ENGINEER OF ANY CONFLICT WITH THE PROJECTED WORK.

| No. | Date | Description | By |
|---|---|---|---|
| 4 | 23/01/20 | RE-ISSUED FOR SITE PLAN CONTROL | T.K |
| 3 | 22/11/07 | RE-ISSUED FOR SITE PLAN CONTROL | T.K |
| 2 | 22/10/14 | RE-ISSUED FOR SITE PLAN CONTROL | T.K |
| 1 | 22/04/07 | ISSUED FOR SITE PLAN CONTROL | T.K |

STAMPS:

LICENSED PROFESSIONAL ENGINEER — J. C. ADAMS — 100519478 — 20 January 2023 — PROVINCE OF ONTARIO
DESIGNED BY

LICENSED PROFESSIONAL ENGINEER — T. G. KENNEDY — 100173201 — January 20, 2023 — PROVINCE OF ONTARIO
APPROVED BY

ENGINEER: CIMA+

CLIENT: The Hazelton Westboro

PROJECT NAME:
403 RICHMOND ROAD &
389 ROOSEVELT AVENUE

SHEET TITLE:
STORM WATER MANAGEMENT PLAN

DISCIPLINE: CIVIL

| | |
|---|---|
| DRAFTER: S.C. POGGIOLI | SCALE: |
| DESIGNER: J. ADAMS | DATE: 2022/04/07 |
| APPROVER: T. KENNEDY | APPROVER: T. KENNEDY |
| PROJECT No: A001046 | DRAWING No: C007 |
| SHEET No: 7 of 12 | |

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