

Melville® Aqua Pavers

1. Permeable paver 60 or 80 mm (Melville Aqua, Mondrian Plus, Trafalgar, Verdone)

2. Open-graded bedding course 25 to 50 mm (open-graded aggregate 2.5 to 5 mm)

3. Upper base, open-graded aggregate 100 to 150 mm (clear crushed stone 14 to 28 mm)

4. Lower aggregate base 300 to 450 mm (D to 20 mm crushed stone compacted to 95% modified Proctor density)

5. Existing soil with adequate bearing capacity (minimum of 150 kPa)

6. Geotextile membrane (with 2% minimum slope, if required)

7. Permeable joint material (open-graded aggregate 2.5 to 5 mm)

8. Existing soil with a minimum infiltration rate of 3 in/hour (to be validated with tests)

Notes

1. Installation designed to withstand pedestrian traffic.

2. Permeable designed to drain water through.

3. Permeable designed to drain water through.

4. Permeable designed to drain water through.

5. Permeable designed to drain water through.

6. Permeable designed to drain water through.

7. Permeable designed to drain water through.

8. Permeable designed to drain water through.

9. Permeable designed to drain water through.

10. Permeable designed to drain water through.

SUMP PUMP – To Drain Water at Footing Level

Because existing Storm Sewer Elevation is too high in street

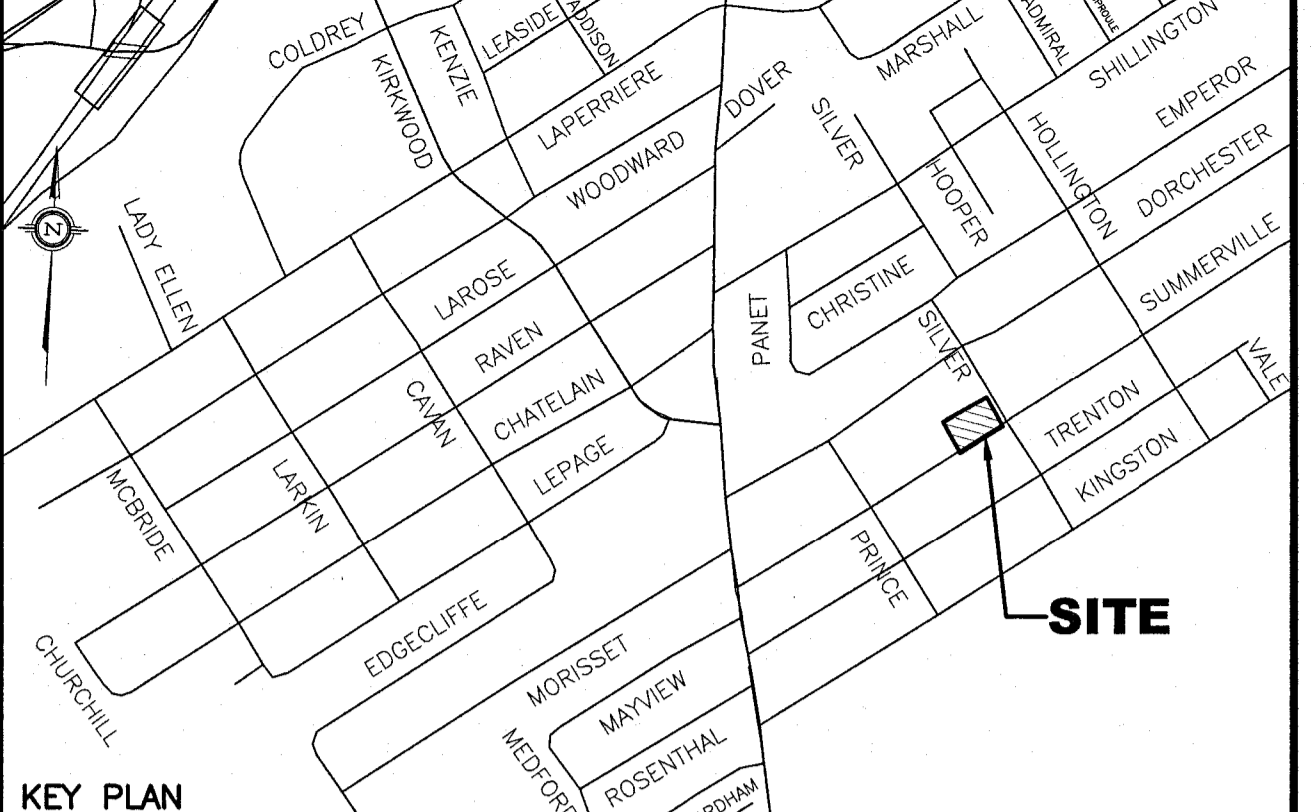
CAUTION: SUMP PUMP USE

Because the City Municipal Storm Sewer exists along this street is at too high an elevation to be gravity drained from the proposed storm lateral at the house to the existing storm main, we have proposed a sump pump to be installed to drain the water at the footing level. The proposed underside of footing (USF) elevation (which has been calculated based on architectural plan parameters/basement heights and/or at the instruction of client/agent) has the potential to be too low for this development with respect to possible water drainage issues at footing levels.

The Normal High Ground Water Table (NHGW) elevation must be verified prior to or at the time of excavation (per City of Ottawa Building Code services requirements). If it is determined that the proposed footing elevation will be below the NHGW elevation it will be the responsibility of the owner and their representatives to mitigate/rectify the situation by either raising the footing elevation above the NHGW elevation or demonstrate the use of appropriate foundation water proofing methods as per current building code requirements. The owners and their representatives must apply for and receive any applicable permits from the City before proceeding with the aforementioned works.

T.L. Mak Engineering Consultants Ltd. assumes no responsibility or liability in regards to the impact on footings and/or basement drainage issues (at time of excavation or future) due to this design.

- LEGEND**
- PROPOSED ELEVATION
 - EXISTING ELEVATION
 - F.F. PROPOSED TOP OF GROUND FLOOR ELEVATION
 - T.O.F. PROPOSED TOP OF CONCRETE FOUNDATION ELEVATION
 - U.S.F. PROPOSED UNDERSIDE OF CONCRETE FOOTING ELEVATION
 - D/W PROPOSED DRIVEWAY
 - EXISTING SANITARY SEWER
 - EXISTING STORM SEWER
 - EXISTING WATERMAIN
 - PROPOSED 150mm PVC SANITARY LATERAL SERVICE @ 1% (MIN.) SLOPE
 - PROPOSED 150mm PVC STORM LATERAL SERVICE @ 1% (MIN.) SLOPE
 - PROPOSED 150mm WATER SERVICE (COPPER TYPE "K")
 - EXISTING SANITARY MANHOLE
 - EXISTING STORM MANHOLE
 - EXISTING CATCH BASIN
 - EXISTING WATER VALVE
 - EXISTING FIRE HYDRANT
 - EXISTING UTILITY POLE
 - EXISTING OVERHEAD WIRES
 - PROPOSED VALVE AND VALVE BOX (V&VB)
 - PROPOSED GENERAL DIRECTION OF LOT GRADING AND SURFACE FLOW
 - PROPOSED HIGH RIDGE LINE
 - PROPOSED RETAINING WALL
 - PROPOSED TOP OF RETAINING WALL ELEVATION
 - PROPOSED BOTTOM OF RETAINING WALL ELEVATION
 - PROPOSED SURFACE ROOF-TOP DRAIN LOCATION AND ROOF DRAIN NUMBER
 - PROPOSED WEeping TILE SUMP PIT LOCATION C/W DUPLEX SUMP PUMPS (REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS)
 - PROPOSED SANITARY TANK LOCATION
 - PROPOSED WASTEWATER SAMPLING INSPECTION CHAMBER LOCATION (PER CITY DETAIL S18.1)
 - PROPOSED DEPRESSED CURB
 - PROPOSED SCUPPER LOCATION
 - PROPOSED RIGID STYROFOAM INSULATION 50mm THICK (MIN.)
 - PROPOSED ASPHALT OVERLAY AREA CONSISTING OF: A 40mm LIFT OF HMA SUPPERPAVE 12.5mm PG 58-34 LEVEL B
 - DENOTES SOFT LANDSCAPING AREA AT GRADE (REFER TO LANDSCAPING PLAN FOR DETAILS)
 - DENOTES PROPOSED CLEARSTONE AREA PER LANDSCAPING PLAN
 - DENOTES LIMIT OF ROAD CUT AND REINSTATEMENT (SEE NOTE #43)
 - DENOTES PROPOSED CONCRETE SPLASH PAD FOR BACK-UP SURFACE DISCHARGE TO RIGHT OF WAY (SEE NOTE #43)



NOTES

- EXISTING SERVICES AND UTILITIES SHOWN ON THIS DRAWING WERE TAKEN FROM THE BEST AVAILABLE RECORDS BUT ARE NOT COMPLETE. CONTRACTOR IS REQUESTED TO CHECK IN THE FIELD FOR LOCATION AND ELEVATION OF PIPES AND CHECK WITH AUTHORITIES AND UTILITIES TO HIS SATISFACTION BEFORE DIGGING.
- CONTRACTOR IS ADVISED TO COLLECT INFORMATION ON SOIL CONDITIONS AS DEEMED NECESSARY. REFER ALSO TO THE SITE GEOTECHNICAL INVESTIGATION REPORT PREPARED BY THE OWNER'S GEOTECHNICAL CONSULTANTS PATRICKSON GROUP ENTITLED "GEOTECHNICAL INVESTIGATION - PROPOSED RESIDENTIAL BUILDING FILE NO. P0815-LET.01 REV. NO. 1 DATED OCTOBER 7, 2022 FOR DETAILS.
- PERMISSIBLE GRADE RAISE RESTRICTION FOR THIS SITE IS 2.0m. SEE PAGE NO. 6 OF SOILS REPORT.
- DETAILS OF PAVEMENT STRUCTURE REFER TO PAGE NO. 8 OF SOILS REPORT.
- EXISTING BUILDING AND STRUCTURE LOCATION, TOPOGRAPHICAL INFORMATION ON THIS DRAWING, GEODETIC SITE BENCHMARK, SEWER LOCATION AND MANHOLE LOCATIONS, ETC. SHOWN ON THIS PLAN WERE PROVIDED BY J.D. BARNES LIMITED (REF. No. 21-10-008-00 COMPLETED FEBRUARY 2, 2021) AND RECEIVED ON APRIL 26, 2021. SANITARY AND STORM SEWER INVERT INFORMATION ALONG SUMMERVILLE AVENUE AND SILVER STREET CAN BE REFERENCED FROM THE CITY'S PLAN AND PROFILE DRAWING ENTITLED SUMMERVILLE AVENUE - CHEVRIER TO MERVILLE ROAD DWG. NO. K-89 REF. PLAN NO. 372 AND SILVER STREET 310 N/S/SHILLINGTON TO KINGSTON AVE. PLAN NO. K-93 DATED MAY 28, 1994. THE CONTRACTOR SHALL FIELD SURVEY AND VERIFY THIS INFORMATION TO HIS OR HER SATISFACTION PRIOR TO CONSTRUCTION. T.L. MAK ENGINEERING CONSULTANTS LTD. DOES NOT TAKE ANY RESPONSIBILITY FOR THE SURVEY INFORMATION SHOWN HERE. THE CONTRACTOR IS ADVISED TO OBTAIN AND REVIEW TO HIS SATISFACTION THIS SURVEY/TOPOGRAPHICAL PLAN PRIOR TO CONSTRUCTION.
- SITE LAYOUT AND DETAILS FOR GRADING AND SWM DESIGN WERE PROVIDED BY THE OWNER'S ARCHITECT S.J. BARNES ARCHITECT INC. AS DETAIL ON THEIR SITE PLAN DWG. NO. A10 REV. NO. 4 (09 No. SL-1046-21) DATED MARCH 16, 2022 AND RECEIVED ON MARCH 17, 2022. SCHEMATIC ELEVATIONS PLAN DWG. NO. A4.0 RECEIVED FROM THE ARCHITECT ON FEBRUARY 7, 2022 WAS USED TO ESTABLISH THE F.F., T.O.F., TOP OF BASEMENT SLAB AND U.S.F. ELEVATIONS.
- ALL GRADES SHOWN ARE GEODETIC AND METRIC (SEE J.D. BARNES LIMITED'S TOPOGRAPHICAL PLAN).
- PIPE SIZES SHOWN ON THIS PLAN ARE METRIC.
- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY EQUIPMENT, LABOUR AND MATERIALS RELATING TO ALL CIVIL WORKS REQUIRED FOR THIS SITE AND BY THE CITY OF OTTAWA TO CONNECT INTO THE WATERMAIN.
- ALL GRADING SHALL BE DONE TO THE SATISFACTION OF THE CITY OF OTTAWA.
- CONNECTION OF THE 150mm WATER SERVICE TO THE EXISTING 150mm WATERMAIN ON SUMMERVILLE AVENUE SHALL BE BY THE CITY OF OTTAWA AND EXCAVATION, BACKFILLING AND REINSTATEMENT SHALL BE CARRIED OUT BY THE CONTRACTOR. ALL WATERWORKS TO BE CONSTRUCTED TO CITY OF OTTAWA WATER ENGINEERING STANDARDS AND SPECIFICATIONS.
- CONSTRUCT ALL WATERMAIN, WATER SERVICES, SANITARY AND STORM SEWER SYSTEMS IN ACCORDANCE WITH CITY OF OTTAWA'S LATEST REVISED STANDARD OTHERWISE AS PER OPSD REQUIREMENT AND DONE TO THE SATISFACTION OF THE CITY.
- BEDDING AND HAUNCHING MATERIAL FOR SEWER INSTALLATIONS TO BE GRANULAR "A" INSTALLED AND COMPACTED AS PER CITY STANDARD DETAIL DWG. NO. S6 AND S7.
- STORM AND SANITARY LATERALS (150mm) SHALL BE PVC DR-28 OR EQUIVALENT. SEWER CONNECTION DETAILS PER CITY DETAIL S11.1 FOR FLEXIBLE PIPES AND S11 FOR RIGID PIPES.
- ALL WATER SERVICES/MAINS SHALL HAVE A 2.4m COVER (MIN.). THE 150mm WATER SERVICE SHALL BE 13-150 PVC DR-18. WATER SERVICE AND WATERMAIN TRENCH DETAILS AS PER CITY OF OTTAWA W17. THRUST BLOCK DETAILS AS PER CITY DETAIL W17. FITTINGS SHALL CONFORM TO APPROVED AWWA AND/OR CSA STANDARDS. CATHODIC PROTECTION FOR NEW WATERMAIN AND SERVICE AS PER CITY DETAIL W40 REV. DATE MARCH 2005.
- IF WATER SERVICE IS LESS THAN 1.0m FROM SEWER, MANHOLE OR CATCHBASIN, CONTRACTOR IS REQUESTED TO INSULATE BETWEEN THEM WITH 50mm RIGID INSULATION (SEE CITY DETAIL DRAWING NO. W23).
- STORM MANAGEMENT NOTES
 - REFER TO PROPOSED ROOFTOP STORMWATER MANAGEMENT PLAN (DWG. NO. 821-10 SWM-1) FOR ROOFTOP
 - SEE STORM DRAINAGE REPORT NO. R-821-10 REV. NO. 2 DATED FEBRUARY 2023 ALSO FOR DETAILS.
 - CONTROLLED ROOF DRAIN MAXIMUM FLOW RATE FOR EACH DRAIN SHALL BE 0.95 L/s OR 15.0 U.S. GAL/MIN.
- ALL PROPOSED BUILDING SANITARY, STORM AND WATER SERVICES SHALL TERMINATE ±1.0m OUTSIDE THE FOUNDATION WALL AND CONNECTION TO PLUMBING BY OTHERS.
- IT IS REQUIRED THAT A CITY APPROVED BACKWATER VALVE BE INSTALLED AT THE NEW 150mm DIA. (FOUNDATION DRAINS) STORM LATERAL SERVICE AND A FULL PORT BACKWATER VALVE BE INSTALLED FOR THE NEW SANITARY LATERAL SERVICE AS PER CITY DETAIL S14.1, S14.1.1 AND S14.2.
- PRIOR TO CONCRETE FOOTING AND FOUNDATION POURING, THE OWNERS AND/OR CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THE SUBGRADE ON THIS LOT IS SUFFICIENT TO SUPPORT THE PROPOSED BUILDING.
- FOR DEVELOPMENT OF THIS LOT, THE CONTRACTOR MUST FIRST CONSTRUCT THE UNDERGROUND SANITARY, STORM AND WATER SERVICES FROM THE SEWER AND WATERMAIN TO SERVICE THE ENTIRE PROPERTY. PRIOR TO BUILDING CONCRETE FOUNDATION POURING, THE CONTRACTOR SHALL VERIFY SEWER DEPTHS TO ENSURE THAT SEWER LATERALS CAN ACHIEVE A SLOPE OF 1% (MIN.) AND STILL BE BELOW PROPOSED UNDERSIDE OF CONCRETE FOOTING ELEVATION. IF THIS IS FOUND NOT POSSIBLE, THE CONTRACTOR SHALL CONTACT THE OWNER TO REPORT THE FINDING IN ORDER TO ADJUST THE BUILDING FOUNDATION GRADES PRIOR TO CONCRETE POURING.
- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY EQUIPMENT, LABOUR AND MATERIALS RELATING TO THE CIVIL WORKS REQUIRED FOR INSTALLATION OF NEW SITE SERVICES. PROVINCIAL HEALTH AND SAFETY REGULATIONS MUST BE FOLLOWED DURING CONSTRUCTION.
- IT IS THE RESPONSIBILITY OF THE SITE SERVICES CONTRACTOR TO OBTAIN AND CONSTRUCT THE WORKS TO MEET THE LATEST REVISIONS IN CURRENT CIRCULATION OF THE CITY OF OTTAWA'S ENGINEERING STANDARDS, OPSD & OPSD STANDARDS, AND ONTARIO BUILDING/PLUMBING CODES, WHERE THE LATEST REVISION DIFFERS FROM THE REQUIREMENTS SET OUT IN THIS DRAWING. THE CONTRACTOR SHALL BE RESPONSIBLE TO MEET LATEST REVISED STANDARDS IN HIS PRICE BID FOR THIS PROJECT. THE CONTRACTOR SHALL INFORM THE ENGINEERS OF ANY CHANGES PRIOR TO COMMENCEMENT OF THE WORKS.
- PROPOSED GROUND FLOOR, TOP OF CONCRETE FOUNDATION, TOP OF BASEMENT SLAB AND UNDERSIDE OF FOOTING ELEVATIONS SHALL BE REVIEWED AND APPROVED BY OWNER'S ARCHITECTS PRIOR TO CONSTRUCTION.
- IF EXISTING GRADES ALONG ANY EXISTING ADJUTING PROPERTY LIMITS EXCEED THE PROPOSED GRADES ON THIS PROPERTY BY A HEIGHT DIFFERENTIAL THAT EXCEEDS TERRACING OF 3H TO 1V, THEN INSTALL A RETAINING WALL AS PER OWNER'S REQUIREMENTS.
- SITE SERVICING BEDDING, BACKFILL REQUIREMENTS ALONG WITH ROADWAY AND PARKING LOT PAVEMENT STRUCTURES SHALL MEET REQUIREMENTS SET OUT IN THE OWNER'S SOILS ENGINEER'S REPORT. ALL WORKS TO BE CARRIED OUT BY THE CONTRACTOR ON THE PROPOSED ASPHALT ACCESS LANEWAY AND PRIVATE DRIVEWAY STRUCTURE SHALL BE APPROVED BY SOILS ENGINEER ON SITE PRIOR TO CONSTRUCTION.
- CONCRETE BARRIER CURB AND DEPRESSED CURB DETAILS AS PER CITY OF OTTAWA STANDARDS (DWG. NO. SC1.1 AND SC1.4 MARCH 2007 AND SC6, MAY 2007). CONCRETE CURB AND CONCRETE SIDEWALK CONSTRUCTION AND REINSTATEMENT SHALL BE DONE TO THE SATISFACTION OF THE CITY OF OTTAWA AND IN ACCORDANCE WITH THE LATEST REVISED CITY ENGINEERING STANDARDS.
- CONCRETE SIDEWALK, DEPRESSED CURB, AND DEPRESSED CONCRETE SIDEWALK DETAILS AS PER CITY OF OTTAWA STANDARDS (DWG. NO. SC1 AND SC1.4 REV. DATE MARCH 2007, SC4 REV. DATE MARCH 2007 AND SC7.1 REV. DATE MARCH 2007). CONCRETE CURB AND SIDEWALK CONSTRUCTION AND REINSTATEMENT SHALL BE DONE TO THE SATISFACTION OF THE CITY OF OTTAWA AND IN ACCORDANCE WITH THE LATEST REVISED CITY ENGINEERING STANDARDS.
- THE EXISTING CONCRETE CURB AND SIDEWALK ON SUMMERVILLE AVENUE AND SILVER STREET IF DAMAGED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE REINSTATEMENT BY THE CONTRACTOR TO THE SATISFACTION OF THE CITY OF OTTAWA AND IN ACCORDANCE WITH THE LATEST REVISED CITY ENGINEERING STANDARDS.
- THE CONTRACTOR, UPON COMPLETION OF THE NEW DRIVEWAY, SHALL RESTORE THE EXISTING SUMMERVILLE AVENUE AND SILVER STREET ROADWAY BOUNDARIES DISTURBED BY CONSTRUCTION WORKS ON THIS PROPERTY. ADDITIONALLY, THE ROADWAY GRADING SHALL BE RESTORED AND REGRADDED TO DRAIN POSITIVELY TO EXISTING STORMWATER OUTLET AS REQUIRED BY THE CITY INSPECTOR.

SCALE

0 1.5 4.5 7.5m

1:150 HORIZONTAL

VERTICAL

DESIGN T.L.M.

CHECKED T.L.M.

DRAWN BY P.M.

CHECKED T.L.M.

APPROVED T.L.M.

PROJECT

1058, 1062 AND 1066 SILVER STREET
PART OF LOT 31
REGISTERED PLAN 294
CITY OF OTTAWA

DRAWING TITLE

PROPOSED SITE GRADING
AND SERVICING PLAN

PROJECT No. 821-10

DATE APRIL 2021

DRAWING No. G-1

T.L. MAK ENGINEERING CONSULTANTS LTD.
CONSULTING ENGINEERS

NO.	REVISION	DATE	BY
7	REVISIONS AS PER ARCHITECT'S SITE PLAN OF FEBRUARY 1, 2023 AND CITY'S REVIEW COMMENTS OF JANUARY 31, 2023	02/24/23	TLM
6	REVISIONS AS PER CITY'S AMALGAMATED REVIEW COMMENTS OF MAY 4, 2022	10/20/22	TLM
5	REVISIONS AS PER LATEST REVISED LANDSCAPING PLAN PROVIDED ON MARCH 31, 2022	04/01/22	TLM
4	REVISIONS AS PER ARCHITECT'S LATEST SITE PLAN DETAILS OF MARCH 17, 2022 AND CITY'S REVIEW COMMENTS OF OCTOBER 11, 2021	03/22/22	TLM
3	REVISIONS AS PER NEW SITE PLAN DETAILS OF FEBRUARY 7, 2022 FOR A 32 UNITS APARTMENT BUILDING	02/11/22	TLM
2	REVISIONS AS PER LATEST REVISED SITE AND LANDSCAPING PLAN OF JULY 9, 2021	07/20/21	TLM
1	REVISIONS TO LOWER GRADE AROUND THE AMENITY AREA PER LANDSCAPING ARCHITECT'S COMMENTS OF MAY 21, 2021	05/14/21	TLM



D02-02-21-0073: D07-12-21-0112