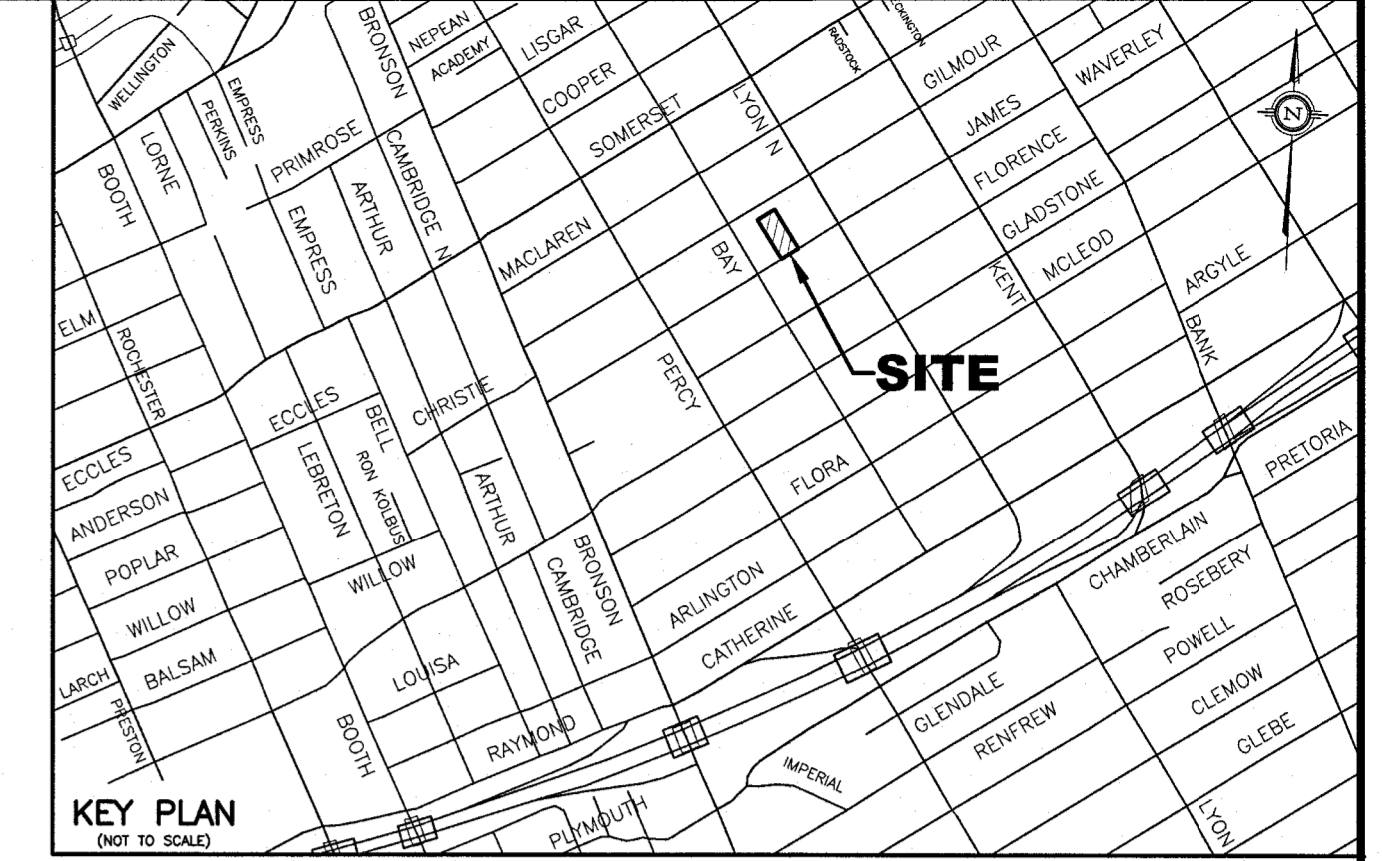


**LEGEND**

---	PROPOSED ELEVATION
---	EXISTING ELEVATION
F.F.	DENOTES TOP OF GROUND FLOOR ELEVATION
T.O.F.	DENOTES TOP OF CONCRETE FOUNDATION ELEVATION
U.S.F.	DENOTES UNDERSIDE OF CONCRETE FOOTING ELEVATION
---	EXISTING COMBINED SEWER
---	EXISTING WATERMAIN
---	PROPOSED 150mm PVC SANITARY LATERAL SERVICE @ 1% (MIN.) SLOPE
---	PROPOSED 150mm PVC STORM LATERAL SERVICE @ 1% (MIN.) SLOPE
---	PROPOSED 50mm WATER SERVICE (COPPER TYPE "K")
○	EXISTING COMBINED MANHOLE
○	EXISTING CATCH BASIN
○	EXISTING FIRE VALVE
○	EXISTING FIRE HYDRANT
○	EXISTING UTILITY POLE
○	EXISTING OVERHEAD WIRES
○	PROPOSED VALVE AND VALVE BOX (V&VB)

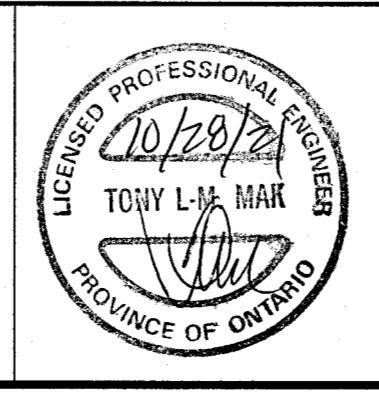


**NOTES**

- EXISTING SERVICES AND UTILITIES SHOWN ON THIS DRAWING WERE TAKEN FROM THE BEST AVAILABLE RECORDS, BUT ARE INCOMPLETE. CONTRACTOR IS REQUIRED 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 BEFORE POURING OF CONCRETE FOOTING AND FOUNDATION. THE OWNER AND/OR CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THE SUBGRADE ON THIS LOT IS SUFFICIENT TO SUPPORT RESIDENTIAL BUILDINGS.
- SITING DETAILS SHOWN FOR THE EXISTING BUILDING AND AMENITIES ON THIS LOT WERE PROVIDED BY THE OWNER'S SURVEYORS FAIRHALL MOFFATT AND WOODLAND LIMITED FROM THEIR TOPOGRAPHICAL SURVEY PLAN (REF. No. 57-30671 - JOB No. AB14300) RECEIVED ON JULY 16, 2021.
- EXISTING HORIZONTAL AND VERTICAL SURVEY DATA SHOWN ON THIS PLAN INCLUDING SITE BENCHMARK, ROAD ELEVATIONS, SEWER INVERT ELEVATIONS, SEWER LOCATIONS, AND TOPOGRAPHICAL INFORMATION OF THE LOT WERE PROVIDED BY FAIRHALL MOFFATT AND WOODLAND LIMITED AS DEPICTED ON THEIR TOPOGRAPHICAL SURVEY PLAN (REF. No. 57-30671 - JOB No. AB14300 COMPLETED ON MARCH 25, 2021) RECEIVED ON JULY 16, 2021. T.L. MAK ENGINEERING CONSULTANTS LTD. DOES NOT TAKE ANY RESPONSIBILITY FOR THE SURVEY INFORMATION SHOWN HERE. FOR INFORMATION ABOUT THE COMBINED SEWER INVERT ELEVATION AT MANHOLES AND WATERMAIN LOCATION AND SIZE, THE CONTRACTOR SHALL FIELD CHECK EXISTING COMBINED SEWER, AND WATERMAIN DEPTH TO THEIR SATISFACTION, AND REFER TO CITY PLAN AND PROFILE DRAWING ENTITLED JAMES STREET FROM PLAN No. 1677 SHEET 1 OF 3 AND 2 OF 3 (CONTRACT No. 82-38) FOR ADDITIONAL DETAILS.
- ALL GRADES SHOWN ARE GEODETIC AND METRIC.
- SANITARY SERVICE BENDS AND RISERS USED MUST BE CONSTRUCTED TO CITY OF OTTAWA'S SATISFACTION.
- CONSTRUCT ALL SANITARY AND STORM PIPES IN ACCORDANCE WITH CITY OF OTTAWA'S LATEST REVISED STANDARD, OTHERWISE AS PER OPSS AND OPSD SPECIFICATIONS.
- ALL WORKS CONSTRUCTED BY THE CONTRACTOR SHALL MEET CITY OF OTTAWA'S CURRENT ENGINEERING STANDARDS AND AS PER CITY OF OTTAWA'S REQUIREMENTS.
- CONTRACTOR SHALL CONSTRUCT AND ENSURE THAT THE 50mm WATERMAIN SERVICE ON THIS LOT SHALL HAVE A MINIMUM OF 2.4m OF GROUND COVER, OTHERWISE INSULATE WITH RIGID S/M STYROFOAM IN ACCORDANCE WITH THE SOILS ENGINEER'S REQUIREMENTS AND AS PER CITY DETAIL W22. WATER SERVICE INSTALLATION SHALL BE COOPER TYPE "K" AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST CITY OF OTTAWA STANDARDS.
- THIS SERVICING DESIGN PLAN WAS PREPARED FOR THE OWNERS FOR BUILDING PERMIT ISSUANCE. ALL WORKS CONSTRUCTED BY THE CONTRACTOR SHALL MEET CITY OF OTTAWA'S CURRENT ENGINEERING STANDARDS AND PER CITY OF OTTAWA'S REQUIREMENTS.
- ALL WATERMAIN SERVICE AND FITTINGS SHALL CONFORM TO APPROVED ANWA AND/OR CSA STANDARDS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS TO COMPLETE THE WORKS.
- EXISTING LOCATION OF JAMES STREET WATERMAIN AND SANITARY AND STORM SEWER SHOWN ON THIS PLAN ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY IN THE FIELD TO CONFIRM ITS EXACT LOCATION BEFORE EXCAVATION. (SEE ALSO NOTE#22).
- PROPOSED SURFACE GRADE SHALL BE 7% MAXIMUM. WHERE THE GROUND DROPS OFF STEEPLY, TERRACE THE GROUND AT 3H MAXIMUM TO 1V AS NECESSARY TO MEET CITY OF OTTAWA'S GRADING REQUIREMENTS.
- WATER SERVICE CONNECTION ON JAMES STREET SHALL BE DONE BY THE CITY OF OTTAWA. ALL CONNECTIONS AND OTHER RELATED WORKS TO WATERMAIN SHALL BE MADE BY THE CITY. EXCAVATION, BACKFILLING, AND REINSTATEMENTS BY CONTRACTOR. ALL WATERWORKS SHALL BE CARRIED OUT TO CITY OF OTTAWA'S SATISFACTION.
- IF WATER SERVICE IS LESS THAN 2.4m FROM SEWER, MANHOLE, OR CATCHBASIN, CONTRACTOR IS REQUESTED TO INSULATE BETWEEN THEM WITH S/M RIGID INSULATION (AS PER CITY DETAIL W22 AND W23).
- PIPE SIZES SHOWN ON THIS PLAN ARE METRIC.
- WATER SERVICE AND WATERMAIN TRENCH DETAILS AS PER CITY W17 DETAIL.
- PROPOSED SANITARY AND STORM SERVICE LATERALS SHALL BE PVC DR-28 OR EQUIVALENT.
- IT IS REQUIRED THAT A FULL PORT BACKWATER VALVE BE INSTALLED FOR THE NEW SANITARY LATERAL SERVICE AND A BACKWATER VALVE BE INSTALLED FOR THE NEW STORM LATERAL SERVICE UNDER THE CURRENT REGULATION OF THE ONTARIO PLUMBING CODE, AND AS PER CITY DETAIL S14, S14.1 & S14.2.
- BEDDING FOR SEWERS AND WATERMAIN INSTALLATION SHALL BE TYPE 'B' COMPACTED TO 95% DRY PROCTOR DENSITY. FOR THE SEWER LATERALS USE 300mm THICK APPROVED GRANULAR COVER MATERIAL COMPACT TO 95% DRY PROCTOR DENSITY. TRENCH BACKFILL WITH NATIVE MATERIAL AND COMPACT TO 95% DRY PROCTOR DENSITY MINIMUM. NO FROZEN MATERIALS ARE TO BE USED AS BACKFILL IN THE SERVICING TRENCHES.
- DETAILS OF EXISTING SEWERS AND WATERMAIN SHOWN ON JAMES STREET FROM THE CITY OF OTTAWA MAY NOT BE CURRENT. CONTRACTOR SHALL REFER TO THE CITY OF OTTAWA'S SEWER AND WATERMAIN DRAWINGS FOR DETAILS BEFORE DIGGING. THE CONTRACTOR IS ADVISED TO EXCAVATE AND INVESTIGATE THE SEWER ELEVATIONS IN FRONT OF THIS PROPERTY FIRST TO ENSURE THAT 1.0% (MIN.) PIPE SLOPE OF THE SANITARY AND STORM LATERALS CAN BE ACHIEVED USING THE PROPOSED UNDERSIDE OF CONCRETE FOOTING ELEVATION. IF THIS IS NOT POSSIBLE, THE CONTRACTOR SHALL CONTACT THE OWNER AND HIS OR HER PROJECT MANAGER TO REPORT THE FINDING IN ORDER TO ADJUST THE BUILDING FOUNDATION GRADES PRIOR TO CONCRETE POURING.
- FOR DEVELOPMENT OF THIS SITE, THE CONTRACTOR MUST FIRST CONSTRUCT THE UNDERGROUND SANITARY AND WATER SERVICES FROM THE SEWER AND WATERMAIN TO THE PROPERTY, PRIOR TO BUILDING CONCRETE FOUNDATION POURING. THE CONTRACTOR SHALL VERIFY SEWER DEPTHS TO ENSURE THAT SEWER LATERALS CAN ACHIEVE A SLOPE OF 1.0% (MINIMUM) AND STILL BE BELOW PROPOSED UNDERSIDE OF CONCRETE FOOTING ELEVATION. IF THIS IS NOT POSSIBLE, THE CONTRACTOR SHALL CONTACT THE OWNER AND HIS OR HER PROJECT MANAGER TO REPORT THE FINDING IN ORDER TO ADJUST THE BUILDING FOUNDATION GRADES PRIOR TO CONCRETE POURING.
- INSULATE HOUSE SERVICE LATERALS WITHIN PRIVATE PROPERTY AND ROAD RIGHT OF WAY WHERE GROUND COVER FOR FROST PROTECTION IS LESS THAN 2.4m. FOR WATER SERVICE AND 2.0m FOR SANITARY GRAVITY SERVICES. MINIMUM GROUND COVER OVER HOUSE SERVICE PIPES SHALL NOT BE LESS THAN 2.0m. EXACT INSULATION THICKNESS SHALL BE DETERMINED BY THE OWNERS' SOILS ENGINEER. ALL INSULATION WORKS SHALL BE CARRIED OUT AS PER CITY OF OTTAWA'S CURRENT ENGINEERING STANDARDS AND AS PER CITY DETAIL W22.
- WHERE FROST COVER FROM UNDERSIDE OF HOUSE CONCRETE FOOTING TO PROPOSED FINISHED GROUND ELEVATION IS LESS THAN 1.5m (MINIMUM) INSULATE (50mm) THE MINIMUM BEING INSTALLED AT BUILDING FOOTING AND FOUNDATION OF HOUSE TO PROVIDE SUFFICIENT FROST COVER FOR FOUNDATION STRUCTURES. INSULATION REQUIREMENTS SHALL BE REVIEWED AND RECOMMENDED BY OWNER'S SOILS ENGINEER. EXACT INSULATION REQUIREMENTS SHALL BE CONFIRMED BY OWNER'S HOUSE DESIGNER AND SITE SOILS ENGINEER TO CONTRACTOR BEFORE INSTALLATION.
- LOCATION AND ELEVATION OF EXISTING COMBINED MANHOLES SHOWN ON THIS DRAWING WERE TAKEN FROM FAIRHALL MOFFATT AND WOODLAND LIMITED'S TOPOGRAPHICAL SURVEY PLAN. CONTRACTOR SHALL OBTAIN AND REVIEW THESE PLANS AND SATISFY HIM/HERSELF AND OBTAIN LOCATES OF THESE SERVICES BEFORE CONSTRUCTION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR REINSTATEMENT OF ALL AREAS DISTURBED DURING CONSTRUCTION, AND SUCH REINSTATEMENT MUST BE UNDERTAKEN IN ACCORDANCE WITH CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS.
- UPON COMPLETION OF NEW SERVICE LATERALS FOR THE EXISTING BUILDING, CONTRACTOR SHALL RESTORE THE EXISTING ROADWAY BOULEVARD ACROSS THIS LOT TO DRAIN POSITIVELY TO ITS EXISTING OUTLET. ALL WORKS SHALL BE CARRIED OUT TO SATISFACTION OF CITY OF OTTAWA.
- CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES REGARDING LOCATION OF EXISTING OVERHEAD UTILITY WIRES FOR RELOCATION AND POSSIBLE CONFLICT CLEARANCE BEFORE CONSTRUCTION.

- CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES TO PROVIDE FOR PROTECTION OF THE RECEIVING STORM SEWER DURING CONSTRUCTION ACTIVITIES. THESE PRACTICES ARE REQUIRED TO ENSURE NO SEDIMENT AND/OR ASSOCIATED POLLUTANTS ARE RELEASED TO THE RECEIVING WATERCOURSE. THESE PRACTICES INCLUDE INSTALLATION OF SEDIMENT BARRIERS (AS PER OPSD 219.10 AND ASSOCIATED SPECIFICATIONS) ALONG THE PROPERTY LIMITS OF PROPOSED DEVELOPMENT AND ALL OTHER AREAS THAT DRAIN OFF SITE. MAINTENANCE HOLE SEDIMENT BARRIERS TO BE AMOCO 4555 NONWOVEN GEOTEXTILE OR APPROVED EQUIVALENT.
- THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE. DURING CONSTRUCTION ACTIVITIES, THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.
- EXISTING HOUSE LATERALS AND WATER SERVICE PIPING HAVE BEEN AND/OR SHALL BE ABANDONED. WATER SERVICE SHALL BE BLANKED AT THE MAIN AS PER CITY'S REQUIREMENTS. SERVICE LATERAL SHALL BE CAPPED AT THE FRONT PROPERTY LINE. ALL WATER AND SEWER LATERAL WORKS SHALL BE CARRIED OUT TO CITY'S SATISFACTION AND AS PER CITY DETAIL S11.4.
- NO EXCESS DRAINAGE, DURING AND AFTER CONSTRUCTION, WILL BE DIRECTED TOWARDS NEIGHBOUR'S PROPERTIES.
- ALL TREES ON THE RIGHT OF WAY ARE TO BE MAINTAINED BEFORE AND AFTER CONSTRUCTION, ALL TREES WITHIN THE PROPERTY SHALL BE PROTECTED AS PER THE "MUNICIPAL TREES AND NATURAL AREAS PROTECTION BYLAWS" AND THE "URBAN TREES CONSERVATION BYLAW" AS AMENDED FROM TIME TO TIME.
- THERE WILL BE NO ALTERATION OF EXISTING GRADE AND DRAINAGE PATTERNS ON THE PROPERTY LINES.

NO.	REVISION	DATE	BY



SCALE	DESIGN	T.L.M.
0 1.25m 3.75m 6.25m	CHECKED	T.L.M.
1:125 HORIZONTAL	DRAWN BY	P.M.
VERTICAL	CHECKED	T.L.M.
	APPROVED	T.L.M.

PROJECT	157 JAMES STREET LOT 21 AND PART OF LOT 20 (NORTH JAMES STREET) REGISTERED PLAN 30671 CITY OF OTTAWA
DRAWING TITLE	PROPOSED SERVICING PLAN

<b>T.L. MAK ENGINEERING CONSULTANTS LTD.</b> CONSULTING ENGINEERS	
PROJECT No.	DATE
821-83	SEPTEMBER 2021
DRAWING No.	G-1