



- 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, UNDERGROUND STRUCTURES AND CHECK WITH AUTHORITIES AND UTILITIES TO HIS SATISFACTION BEFORE DIGGING.
 - CONTRACTOR IS ADVISED TO COLLECT INFORMATION ON SOIL CONDITIONS AS DEEMED NECESSARY. REFER TO THE SITE GEOTECHNICAL INVESTIGATION REPORT PREPARED BY THE OWNER'S SOILS ENGINEER PATERSON GROUP (REPORT NO. PG4210-LET.01 DATED AUGUST 29, 2017).
 - EXISTING HORIZONTAL AND VERTICAL SURVEY DATA SHOWN ON THIS PLAN INCLUDING GEODETIC SITE BENCHMARK, ROAD ELEVATIONS, SEWER LOCATION, AND THE TOPOGRAPHICAL INFORMATION OF THE LOT WERE PROVIDED BY J.D. BARNES LTD. AS DERIVED ON THEIR TOPOGRAPHICAL SURVEY PLAN (REF. NO. 17-10-060-00) RECEIVED ON AUGUST 2, 2017. T.L. MAK ENGINEERING CONSULTANTS LTD. DOES NOT TAKE ANY RESPONSIBILITY FOR THE SURVEY INFORMATION SHOWN HEREIN FOR INFORMATION ABOUT THE STRUCTURE AND SANITARY SERVICE AT MANHOLES, AD WATERMAIN LOCATION AND SIZE, THE CONTRACTOR SHALL FIELD CHECK EXISTING SANITARY SEWER, STORM SEWER, AND WATERMAIN DEPTH TO THEIR SATISFACTION AND REFER TO CITY OF OTTAWA'S PLAN AND PROFILE PLAN ENTITLED "ROOSEVELT AVENUE" STORM SEWER CH. 04-175 TO 3+50 (CONTRACT NO. 88-52) PLAN NO. 2179 SHEET 4 OF 11 FOR ADDITIONAL DETAILS.
 - SITE LAYOUT AND DETAILS FOR GRADING AND SWM DESIGN WERE PROVIDED BY THE OWNER'S ARCHITECT, PROJECT 1 STUDIO INC. AS DETAILED ON THEIR SITE PLAN (DWG. NO. SP-01 JOB NO. 2405) RECEIVED FROM PROJECT 1 STUDIO INC. ON 02/24/24. BUILDING ELEVATION AT MANHOLES AND DETAILS SHOWN ON PROJECT 1 STUDIO INC.'S DWG. NO. A301 RECEIVED FROM THE ARCHITECT ON MAY 16, 2024 REGARDING TOP OF GROUND FLOOR, TOP OF FOUNDATION, TOP OF BASEMENT SLAB, TOP OF FOOTING AND U.S.F. ELEVATIONS FOR THE MAIN BUILDING.
 - ALL GRADES SHOWN ARE GEODETIC AND METRIC (SEE J.D. BARNES LTD.'S TOPOGRAPHICAL PLAN). ALL GRADING SHALL BE DONE TO THE SATISFACTION OF THE CITY OF OTTAWA.
 - 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.
 - CONNECTION OF THE 150mm WATER SERVICE TO THE EXISTING ROOSEVELT AVENUE WATERMAIN SHALL BE BY THE CITY OF OTTAWA. EXCAVATION, BACKFILLING, AND RESTORATION SHALL BE CARRIED OUT BY THE CONTRACTOR. CONNECTION SHALL BE AS PER CITY OF OTTAWA DWG. NO. 2405. ALL DETAILS OF ALL WATERWORKS TO BE CONSTRUCTED TO THE CITY OF OTTAWA WATERWORKS STANDARDS AND SPECIFICATIONS.
 - INSULATE BUILDING SERVICE LATERALS AND STORM PIPES WITH PRIVATE PROPERTY AND ROAD RIGHT OF WAY WHERE GROUND COVER FOR FROST PROTECTION IS LESS THAN 2.4m FOR WATER SERVICE AND 2.4m FOR SANITARY AND STORM GRAVITY SEWERS. MINIMUM GROUND COVER OVER INSULATION SHALL BE 2.0m. EXACT INSULATION THICKNESS SHALL BE DETERMINED BY CITY INSPECTOR ON-SITE AND/OR OWNER'S SOILS ENGINEER. ALL INSULATION WORKS SHALL BE CARRIED OUT AS PER CITY OF OTTAWA'S CURRENT ENGINEERING STANDARDS DETAILS W22 AND W23.
 - CONSTRUCT ALL WATERMANS, WATER SERVICES, SANITARY AND STORM SEWER SYSTEMS IN ACCORDANCE WITH CITY OF OTTAWA'S LATEST REVISED STANDARD OTHERWISE AS PER OPSR 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. 55 AND 57.
 - STORM AND SANITARY LATERALS (150mm) SHALL BE PVC DR-28 OR EQUIVALENT.
 - ALL WATER SERVICES/MAINS SHALL HAVE 2.4m COVER (min.). THE 150mm WATER SERVICE SHALL BE PVC CL 150 DR-18. WATER SERVICE AND WATERMAIN TRENCH DETAILS AS PER CITY OF OTTAWA W17 AND W22. THRUST BLOCK DETAILS ARE AS PER CITY DETAIL W25.3 DATED MAY 2001. FITTINGS SHALL CONFORM TO APPROVED AWWA AND/OR CSA STANDARDS. THE CONTRACTOR SHALL CONTACT AND ENSURE THAT THE 150mm WATER SERVICE SHALL HAVE A MINIMUM OF 2.4m OF GROUND COVER.
 - IF WATER SERVICE IS LESS THAN 1.0m FROM SEWER, MANHOLE OR CATCHBASIN, CONTRACTOR IS REQUESTED TO INSULATE BETWEEN THEM WITH S/M RIGID INSULATION (SEE CITY DETAIL DRAWING No. W23).
 - STORMWATER MANAGEMENT NOTES:
- SEE STORM DRAINAGE REPORT NO. R-824-83 DATED AUGUST 2024 ALSO FOR DETAILS.
- CONTROLLED ROOF DRAIN MAXIMUM FLOW RATE SHALL BE 0.95 L/s OR 15.0 U.S. GAL./MIN. PER EACH DRAIN.
- TWO (2) CONTROLLED ROOF DRAINS ARE PROPOSED AT THE FLAT ROOF TOP OF THIS BUILDING.
 - ALL PROPOSED BUILDING SANITARY, STORM AND WATER SERVICES SHALL TERMINATE ± 1.0m OUTSIDE THE FOUNDATION WALL AND CONNECTION TO PLUMBING BY OTHERS.
 - SANITARY BUILDING DRAIN TO BE EQUIPPED WITH A FULL PORT BACKWATER VALVE AND INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS. STORMWATER DRAIN TO BE EQUIPPED WITH A BACKWATER VALVE AND INSTALLED AS PER CITY'S REQUIREMENTS.
 - 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 DETAILS 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, OPSR AND OPSD STANDARDS, AND ONTARIO BUILDING/PLUMBING CODES. WHERE THE LATEST REVISION DIFFERS FROM THE REQUIREMENTS SET OUT IN THIS PLAN, THE CONTRACTOR SHALL PRIOR TO THE WORKS 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 TOP OF ENTRY, TOP OF FOUNDATION, TOP OF BASEMENT SLAB, UNDERSIDE OF FOOTING ELEVATIONS SHALL BE REVIEWED AND APPROVED BY PROJECT 1 STUDIO INC. 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 RECOMMENDATIONS AND 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.
 - THE CONTRACTOR, UPON COMPLETION OF THE NEW SERVICES, SHALL RESTORE THE EXISTING ROOSEVELT AVENUE ROADWAY BULWARK DISTURBED BY CONSTRUCTION WORKS ON THIS PROPERTY. ADDITIONAL ROADWAY GRADING SHALL BE RESTORED AND REGRADED TO DRAIN POSITIVELY TO EXISTING STORMWATER OUTLET AS REQUIRED BY THE CITY INSPECTOR.

- THE RETAINING WALL TO BE CONSTRUCTED AND MATERIAL TYPE SHALL BE SPECIFIED BY THE OWNER'S ARCHITECT AND/OR HIS STRUCTURAL ENGINEER. ANY RETAINING WALLS BUILT ON THIS LOT EXCEEDING 1.0m IN HEIGHT FROM PROPOSED FINISHED GROUND ELEVATION WILL BE REQUIRED TO BE PREPARED AND CERTIFIED BY THE OWNER'S STRUCTURAL ENGINEER AND APPROVED BY THE CITY PRIOR TO CONSTRUCTION.
- WHERE FROST COVER FROM UNDERSIDE OF BUILDING CONCRETE FOOTING TO PROPOSED FINISHED GROUND ELEVATION IS LESS THAN 1.55m, IT IS RECOMMENDED THAT INSULATION (50mm THICK) MINIMUM BE INSTALLED AT THE BUILDING FOOTING AND FOUNDATION TO PROVIDE SUFFICIENT FROST COVER FOR THE FOUNDATION STRUCTURES. THE FOOTINGS WILL NEED TO BE REVIEWED FOR INSULATION BY THE OWNER'S SOILS ENGINEER. EXACT INSULATION REQUIREMENTS SHALL BE AS PER ARCHITECT'S INSULATION DETAILS AS SHOWN ON THEIR ARCHITECTURAL DRAWINGS AND CONFIRMED BY THE OWNER'S SITE SOILS ENGINEER.
- IT IS RECOMMENDED THAT A FULL PORT BACKWATER VALVE BE INSTALLED FOR THE SANITARY SERVICE LATERAL AND A BACKWATER VALVE FOR THE STORM SERVICE LATERAL PROPOSED TO SERVICE THE NEW BUILDING UNDER THE CURRENT REGULATION OF THE ONTARIO PLUMBING CODE AS PER CITY OF OTTAWA S14, S14.1 AND S14.2. THE OWNER'S ARCHITECT AND PLUMBER SHALL CHECK THE CURRENT ONTARIO PLUMBING CODE FOR REQUIREMENTS FOR A BACKWATER VALVE IN THE BUILDING AND AS PER THE MECHANICAL ENGINEER'S DRAWINGS AT THE SANITARY AND STORM SEWER SERVICE LINES.
- EXISTING LATERALS AND WATER SERVICE PIPING HAVE BEEN AND/OR SHALL BE ABANDONED. THE WATER SERVICE SHALL BE BLANKED AND CAPPED AT THE MAIN AS PER CITY'S REQUIREMENTS. THE SEWER LATERAL(S) SHALL BE CAPPED AND/OR PLUGGED AT THE FRONT PROPERTY LINE. ALL WATER AND SEWER LATERAL WORKS SHALL BE CARRIED OUT TO THE CITY'S SATISFACTION.
- a) THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES TO PROVIDE 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 ON ALL CATCH BASIN AND MAINTENANCE HOLES AND A SILT FENCE BARRIER (AS PER OPSD 219.110 AND ASSOCIATED SPECIFICATIONS) ALONG THE PROPERTY LIMITS OF THE PROPOSED DEVELOPMENT AND ALL OTHER AREAS THAT SHEET DRAIN OFF SITE. MAINTENANCE HOLE SEDIMENT BARRIERS TO BE AMCO 4555 NONWOVEN GEOTEXTILE OR APPROVED EQUIVALENT.
b) 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.
- 300mm MINIMUM SEPARATION BETWEEN EXISTING WATERMAIN AND PROPOSED SERVICE LATERALS AS PER CITY STANDARDS. IF 300mm MINIMUM SEPARATION CANNOT BE MET, UNSHRINKABLE FILL SHALL BE USED.
- THE PROPOSED RESIDENTIAL APARTMENT BUILDING WILL HAVE A SPRINKLER SYSTEM FOR FIRE PROTECTION.
- a) GIVEN THE ARCHITECTURAL REQUIREMENTS FOR THE PROPOSED SUNKEN MECHANICAL ROOM IN THIS BUILDING, THE UNDERSIDE OF CONCRETE FOOTING IS BELOW THE PROPOSED SANITARY LATERAL INVERT WHICH OUTLET TO THE ROOSEVELT AVENUE SANITARY SEWER. THE OWNER'S ARCHITECT IS AWARE OF THIS CONSTRAINT. THE DEVELOPER AND HIS ARCHITECT WILL MAKE INTERNAL HOUSE PUMPING PROVISIONS TO PUMP SANITARY BASEMENT SEWAGE FLOW UP TO THE SANITARY LATERAL FROM A SANITARY TANK AND PUMPING SYSTEM FOR THIS BUILDING. LIKEWISE WITH THE STORM PIPE FOR THE WEeping TILE DRAINAGE SYSTEM OF THE BUILDING, THE ARCHITECT WILL MAKE PROVISIONS TO PUMP THE WEeping TILE WATER UP FROM A WEeping TILE STORMWATER TANK COMPLETE WITH PUMPING SYSTEM IN ORDER TO DISCHARGE WEeping TILE WATER TO THE PROPOSED 150mm PVC STORM LATERAL THAT OUTLETS TO THE CITY OF OTTAWA STORM SEWER AT ROOSEVELT AVENUE. SEE LATEST REVISED ARCHITECTURAL PLANS FOR OUTLET LOCATION, DISCHARGE PIPE HEIGHT DETAILS, SEWAGE TANK AND WEeping TILE WATER SIZE AND PUMPING SYSTEM FOR THIS BUILDING. IT IS RECOMMENDED THAT THE SANITARY TANK AND STORMWATER TANK BE OVERSIZED. A DUPLEX PUMPING SYSTEM SHALL BE IN THE SANITARY AND STORM TANK(S).
- b) THE ARCHITECT AND OWNER'S/DEVELOPER'S MECHANICAL ENGINEER SHALL ENSURE THAT SANITARY SEWAGE FLOW FROM FLOOR LEVELS ABOVE THE SUNKEN MECHANICAL ROOM OF THIS BUILDING BE DIRECTED AND OUTLETED TO THE PROPOSED GRAVITY FLOW SANITARY LATERAL PIPE AND NOT INTO THE BASEMENT SEWAGE TANK FOR PUMPING.
- c) THE PROPOSED SANITARY TANK AND PUMPING SYSTEM ARE FOR DRAINAGE OF BASEMENT FIXTURES AND FLOOR DRAINS AS PER ARCHITECT'S DRAWINGS IN ACCORDANCE WITH THE LATEST REVISED ONTARIO BUILDING CODE.
d) SANITARY AND WEeping TILE WATER PUMP AND TANK LOCATION AS PER ARCHITECT'S APPROVED BASEMENT FLOOR PLAN.
- THE OWNER'S ARCHITECTS SHALL INFORM THE OWNERS THAT AN ONGOING YEAR ROUND MAINTENANCE PROGRAM IS REQUIRED FOR THIS BUILDING TO ENSURE THAT THE SEWAGE TANK SHALL BE ANNUALLY INSPECTED AND CLEANED IF NECESSARY. ALL PUMPS USED IN THIS BUILDING ARE TO BE DETERMINED BY THE OWNER'S MECHANICAL ENGINEER AND/OR PLUMBER BASED ON THEIR SPECIFIC USAGE UNDER THE PRESENT PLUMBING CODE AND CITY REQUIREMENTS.
- THE ARCHITECTS SHALL INFORM THE OWNERS THAT AVAILABLE AT ALL TIMES A BACKUP GENERATOR ON STANDBY IN THE BUILDING IN THE EVENT OF A POWER BLACKOUT OR OTHER EMERGENCIES.
- NO EXCESS DRAINAGE, DURING AND AFTER CONSTRUCTION, WILL BE DIRECTED TOWARDS THE NEIGHBORS' PROPERTIES.
- BALL TREES ON THE RIGHT-OF-WAY ARE TO BE MAINTAINED BEFORE AND AFTER CONSTRUCTION AND ALL TREES WITHIN THE PROPERTY SHALL BE PROTECTED AS PER THE MUNICIPAL TREES AND NATURAL AREAS PROTECTION BY-LAWS AND THE URBAN TREES CONSERVATION BY-LAW AS AMENDED FROM TIME TO TIME.
- THERE WILL BE NO ALTERATION TO THE EXISTING GRADE AND DRAINAGE PATTERN ON THE PROPERTY LINES.

<p>SCALE</p>		<p>DESIGN T.L.M.</p> <p>CHECKED T.L.M.</p> <p>DRAWN BY P.M.</p> <p>CHECKED T.L.M.</p> <p>APPROVED T.L.M.</p>	<p>PROJECT</p> <p>342 ROOSEVELT AVENUE LOT 36 REGISTERED PLAN 114 CITY OF OTTAWA</p> <p>DRAWING TITLE</p> <p>PROPOSED SITE GRADING AND SERVICING PLAN</p>	<p>PROJECT No.</p> <p>824-83</p> <p>DATE</p> <p>AUGUST 2024</p> <p>DRAWING No.</p> <p>G-1</p>								
<p>REVISION</p> <table border="1"> <thead> <tr> <th>No.</th> <th>REVISION</th> <th>DATE</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>		No.	REVISION	DATE	BY					<p>T.L. MAK ENGINEERING CONSULTANTS LTD. CONSULTING ENGINEERS</p>		
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