



- LEGEND**
- 68.20 PROPOSED ELEVATION
 - >67.56 EXISTING ELEVATION
 - T.G.R.F.L. PROPOSED TOP OF GROUND FLOOR SLAB ELEVATION
 - T.O.F. PROPOSED TOP OF FOUNDATION ELEVATION
 - U.S.F. PROPOSED UNDERSIDE OF CONCRETE FOOTING ELEVATION
 - D/W PROPOSED DRIVEWAY
 - S EXISTING COMBINED SEWER
 - W EXISTING WATERMAIN
 - 150mm PVC SANITARY LATERAL SERVICE @ 1% (MIN.) SLOPE
 - 125mm AND 150mm PVC STORM LATERAL SERVICE @ 1% (MIN.) SLOPE
 - 150mm WATER SERVICE PVC CL-150 DR 18
 - EXISTING DEPRESSED CURB
 - EXISTING SANITARY MANHOLE
 - EXISTING STORM MANHOLE
 - EXISTING INLET CATCH BASIN
 - EXISTING FIRE HYDRANT
 - EXISTING WATER VALVE
 - EXISTING UTILITY POLE
 - EXISTING OVERHEAD WIRES
 - PROPOSED V&V
 - PROPOSED DRIVEWAY
 - PROPOSED GENERAL DIRECTION OF LOT GRADING AND SURFACE WATER FLOW
 - PROPOSED ROOF DRAIN LOCATION
 - PROPOSED ROOF SCUPPER LOCATION
 - PROPOSED HIGH RIDGE LINE
 - PROPOSED 5 YEAR FLOOD LIMIT
 - PROPOSED 100 YEAR FLOOD LIMIT
 - SAN. MH PROPOSED SANITARY MANHOLE (1200mm)

- NOTES:**
1. 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.
 2. CONTRACTOR IS ADVISED TO COLLECT INFORMATION ON SOIL CONDITIONS AS DEEMED NECESSARY.
 3. SITING DETAILS FOR THE PROPOSED DWELLING WERE TAKEN FROM THE LATEST REVISED SITE PLAN (DWG. NO. SP-0 REV. 2, PROJECT NO. 0618) PREPARED BY VINCENT P. COLIZZA ARCHITECT (DATED 29/07/16). THE GROUND FLOOR, TOP OF FOUNDATION, LOWER LEVEL SLAB, TOP OF CONCRETE FOOTING ELEVATION, AND UNDERSIDE OF CONCRETE FOOTING WERE PROVIDED BY THE OWNER'S ARCHITECT. SEE ARCHITECTURAL 'EAST ELEVATION' DRAWING (DWG. NO. A2.2 REV. 1) FOR DETAILS.
 4. EXISTING HORIZONTAL AND VERTICAL SURVEY DATA SHOWN ON THIS PLAN INCLUDING SITE BENCHMARK, ROAD ELEVATIONS, SEWER INVERT ELEVATIONS, AND THE TOPOGRAPHICAL INFORMATION OF THE LOT SHOWN, WERE PROVIDED BY ANNIS, O'SULLIVAN, VOLLEBECK LTD. AS SHOWN ON THEIR TOPOGRAPHICAL SURVEY PLAN (JOB 15368-14). T.L. MAK ENGINEERING CONSULTANTS LTD. DOES NOT TAKE ANY RESPONSIBILITY FOR THE SURVEY INFORMATION SHOWN HERE.
 5. ALL GRADING SHALL BE DONE TO THE SATISFACTION OF THE CITY OF OTTAWA. ALL GRADES SHOWN ARE METRIC. EXISTING AND PROPOSED GRADES SHOWN ON THIS DRAWING ARE BASED ON A BENCHMARK PROVIDED BY ANNIS, O'SULLIVAN, VOLLEBECK LTD. AS SHOWN ON THEIR TOPOGRAPHICAL SURVEY PLAN.
 6. THE PROPOSED 100mm DIAMETER WATER SERVICE SHALL BE PVC-CL-150 DR-18.
 7. THE WATERWORKS SHALL BE CONSTRUCTED TO CITY OF OTTAWA LATEST REVISED STANDARDS ON APPROVAL BY THE CITY.
 8. CONSTRUCT ALL SANITARY AND STORM PIPES IN ACCORDANCE WITH CITY OF OTTAWA LATEST REVISED STANDARD, OTHERWISE AS PER OPS AND OPS2 SPECIFICATIONS.
 9. ALL WORKS CONSTRUCTED BY THE CONTRACTOR SHALL MEET CITY OF OTTAWA'S CURRENT ENGINEERING STANDARDS AND AS PER CITY'S REQUIREMENTS.
 10. THE CONTRACTOR SHALL CONSTRUCT AND ENSURE THAT THE 150mm WATER SERVICE ON THIS LOT SHALL HAVE A MINIMUM OF 2.4m OF GROUND COVER. THE WATER SERVICE PIPE MATERIAL SHALL BE PVC-CL-150 DR-18 AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST CITY OF OTTAWA STANDARDS.
 11. IF REQUIRED, THE OWNER AND/OR HIS CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES REGARDING RELOCATION REQUIREMENTS FOR THE EXISTING OVERHEAD UTILITY POLE.
 12. ALL WATERMAIN SERVICE AND FITTINGS SHALL CONFORM TO APPROVED AWWA AND/OR CSA STANDARDS.
 13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS TO COMPLETE THE WORKS.
 14. EXISTING LOCATIONS OF BANK STREET AND CLEW WATERMAIN, STORM SEWER, AND SANITARY SEWER SHOWN ON THIS PLAN APPROXIMATE. THE CONTRACTOR SHALL VERIFY IN THE FIELD TO CONFIRM EXACT LOCATIONS PRIOR TO EXCAVATION (SEE NOTE 23).
 15. PROPOSED SURFACE GRADE SHALL BE 7% (MAXIMUM) WHERE THE GROUND DROPS OFF STEEPLY. TERRACE THE GROUND AT 3H TO 1V (MAXIMUM) AS NECESSARY TO MEET THE CITY'S GRADING REQUIREMENTS.
 16. WATER SERVICE CONNECTION ON CLEW AVENUE SHALL BE DONE BY THE CITY. ALL CONNECTIONS AND OTHER RELATED WORKS FOR THE WATERMAIN SHALL BE MADE BY THE CITY. EXCAVATION, BACKFILLING, AND RESTATEMENTS BY THE CONTRACTOR. ALL WATERWORKS SHALL BE CARRIED OUT TO THE CITY'S SATISFACTION.
 17. IF WATER SERVICE IS LESS THAN 2.4m FROM SEWER, MANHOLE, OR CATCH BASIN, CONTRACTOR IS REQUESTED TO INSULATE BETWEEN THEM WITH S/M RIGID INSULATION (AS PER CITY DETAIL W23).
 18. PIPE SIZES SHOWN ON THIS PLAN ARE METRIC.
 19. WATER SERVICE AND WATERMAIN TRENCH DETAILS AS PER CITY W17 DETAIL.
 20. PROPOSED SANITARY AND STORM SEWER LATERALS SHALL BE PVC-DR-28 OR EQUIVALENT, AND CONNECTION TO THE EXISTING SERVICE SHALL BE AS PER CITY OF OTTAWA DWG. 513. THE WORKS SHALL BE CARRIED OUT TO THE SATISFACTION OF THE CITY OF OTTAWA.
 21. SANITARY AND STORM SEWER SERVICE BENDS AND RISERS USED MUST BE CONSTRUCTED TO THE CITY'S SATISFACTION.
 22. 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 SERVING TRENCHES.
 23. DETAILS OF THE EXISTING SEWERS AND WATERMAIN SHOWN ON BANK STREET AND CLEW FROM THE CITY MAY NOT BE COMPLETE. THE CONTRACTOR SHALL REFER TO THE CITY'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% (MINIMUM) PIPE SLOPE OF THE SANITARY AND STORM LATERALS CAN BE ACHIEVED USING THE PROPOSED UNDERSIDE OF CONCRETE FOOTING ELEVATION. IF 1% (MINIMUM) PIPE SLOPE IS NOT POSSIBLE FROM THE BUILDING TO THE SEWER, THEN THE CONTRACTOR SHOULD INFORM THE OWNER'S PROJECT MANAGER AND THE CITY ACCORDINGLY FOR FURTHER DIRECTION.
 24. FOR DEVELOPMENT OF THIS LOT, THE CONTRACTOR MUST FIRST CONSTRUCT THE UNDERGROUND SANITARY, STORM, 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 THE SEWER LATERALS CAN ACHIEVE A SLOPE OF 1% (MINIMUM) AND STILL BE BELOW PROPOSED UNDERSIDE OF CONCRETE FOOTING ELEVATION. IF THIS IS FOUND NOT POSSIBLE, THE CONTRACTOR SHALL CONTACT THE OWNER AND HIS OR HER PROJECT MANAGER TO REPORT THE FINDING IN ORDER TO ADJUST BUILDING FOUNDATION GRADES PRIOR TO CONCRETE POURING.
 25. REINSTATE EXISTING DEPRESSED CURBING AND DEPRESS CONCRETE SIDEWALKS FOR DEVELOPMENT OF THIS SITE ALONG CLEW AVENUE IN ACCORDANCE WITH CITY OF OTTAWA ENGINEERING STANDARDS AND REQUIREMENTS. ALL WORKS SHALL BE CARRIED OUT TO THE CITY'S SATISFACTION.
 26. INSULATE THE BUILDING SERVICE LATERALS AND WATER SERVICE WITHIN THE ROAD RIGHT OF WAY WHERE GROUND COVER IS LESS THAN 2.4m FOR WATER SERVICE AND SEWER LATERALS OR LESS THAN 2.4m FOR SERVICE LATERALS AND WATER SERVICE FROM ANY EXISTING CATCH BASINS AND/OR MANHOLES.
 27. WHERE FROST COVER FROM UNDERSIDE OF BUILDING CONCRETE FOOTING TO PROPOSED FINISHED GROUND ELEVATION IS LESS THAN 1.6m, 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 VINCENT P. COLIZZA ARCHITECTS INC.'S INSULATION DETAILS SHOWN ON THEIR ARCHITECTURAL DRAWINGS AND CONFIRMED BY THE OWNER'S SITE SOILS ENGINEER.
 28. IT IS RECOMMENDED THAT A CITY-APPROVED BACKWATER VALVE BE INSTALLED AT THE NEW STORM LATERAL SERVICE AND A FULL-PORT BACKWATER VALVE FOR THE SANITARY LATERAL SERVICE, AS PER CITY DETAIL S14, S14-1, AND S14.2.
 29. CONCRETE CURB, SIDEWALK, DEPRESSED CURB, AND DEPRESSED CONCRETE SIDEWALK DETAILS AS PER CITY OF OTTAWA'S STANDARDS (DWG. SC1, SC2 REVISION DATE FEBRUARY 2004 AND SC8 REVISION DATE FEBRUARY 2002). 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.
 30. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES TO PROVIDE FOR THE PROTECTION OF THE AREA DRAINAGE SYSTEM AND RECEIVING WATERCOURSES AND/OR STORM SEWER DURING CONSTRUCTION ACTIVITIES. THESE PRACTICES ARE REQUIRED TO ENSURE NO EXPOSED SOIL, SEDIMENT, AND/OR ASSOCIATED POLLUTANTS ARE RELEASED TO THE RECEIVING WATERCOURSES. THESE PRACTICES INCLUDE INSTALLATION OF SEDIMENT BARRIERS ON ALL CATCH BASIN AND MAINTENANCE HOLES, AND A SILT FENCE BARRIER (AS PER OPS2 219.110 AND ASSOCIATED SPECIFICATIONS) ALONG BANK STREET AND CLEW, AND ALL OTHER AREAS THAT SHEET DRAIN OFF SITE. MAINTENANCE HOLE SEDIMENT BARRIERS TO BE AMOCO 4555 NONWOVEN GEOTEXTILE OR APPROVED EQUIVALENT. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY AN APPLICABLE REGULATORY AGENCY.

- 31. STORMWATER MANAGEMENT NOTES:**
 ROOF DRAINS SHALL BE EACH SIZED FOR A RELEASE RATE OF 10US GAL/MIN OR 0.63L/S. THE OWNER'S MECHANICAL ENGINEER SHALL SPECIFY THE REQUIRED ROOF DRAIN TYPE AND MODEL NUMBER, AND PROVIDE THE NECESSARY INFORMATION TO THE CITY OF OTTAWA FOR THEIR RECORDS TO ENSURE PROPER RELEASE RATE FOR STORMWATER MANAGEMENT COMPLIANCE.
 ROOF PITCH IS ASSUMED TO HAVE 1% (MINIMUM) SLOPE.
 ROOF SCUPPERS ARE RECOMMENDED TO BE INSTALLED 6mm ABOVE EDGE OF ROOFTOP ELEVATION FOR EMERGENCY OVERFLOW PURPOSES AT ROOF AREAS 1, 2, 3, 4, AND 5.
 SEE STORM DRAINAGE REPORT 816-41 DATED JULY 2016 FOR DETAILS.
- 32. WATER SERVICE, STORM SEWER LATERAL, AND SANITARY SEWER LATERAL ARE THE RESPONSIBILITY OF THE OWNER'S PLUMBER FROM 1m OUTSIDE THE FOUNDATION WALL INTO THE PROPOSED BUILDING UNDER THE LATEST REVISION OF THE ONTARIO PLUMBING CODE.**
- 33. PROPOSED ROOF DRAINS AND SCUPPER LOCATIONS SHOWN ON THIS PLAN SHALL BE REVIEWED BY THE OWNER AND OWNER'S ARCHITECT FOR APPROVAL.**
- 34. SANITARY AND STORM LATERAL INVERTS SET 1.0m FROM OUTSIDE OF BUILDING WALL IS BASED ON ASSUMING AN INTERNAL PIPING SLOPE BY THE OWNER'S PLUMBER WILL ACHIEVE 1% SLOPE (MINIMUM).**
- 35. THE OWNER'S ARCHITECT AND STRUCTURAL ENGINEER SHALL ENSURE THAT THE ADDITIONAL STORMWATER STORAGE VOLUME FROM STORMWATER MANAGEMENT MEASURES ARE ACCOUNTED FOR IN THE STRUCTURAL DESIGN OF AND WATERPROOFING OF ROOF AREAS 1, 2, AND 3 AT ROOF DRAINS # 1, 2, AND 3 AND ANY OF THE SUPPORTING STRUCTURES THAT MAY BE AFFECTED BY THE STORED WATER.**
- 36. ALL EXISTING HOUSE SEWER LATERALS SERVING THIS PROPERTY SHALL BE ABANDONED AND TO BE CAPPED AT THE PROPERTY LINE TO THE SATISFACTION OF THE CITY SEWER OPERATIONS DEPARTMENT'S STANDARDS AND REQUIREMENTS.**
- 37. ALL EXISTING HOUSE WATER SERVICE SERVING THIS PROPERTY SHALL BE ABANDONED AND TO BE CAPPED AT THE WATERMAIN TO THE SATISFACTION OF THE CITY WATER OPERATIONS DEPARTMENT'S STANDARDS AND REQUIREMENTS.**
- 38. ROOF DRAINS 1 TO 5 INCLUSIVE SHALL OUTLET INTO THE DESIGNATED 125mm DIAMETER PVC STORMWATER PIPE AS SHOWN ON THIS DRAWING. BUILDING WEeping TILE WATER WILL BE OUTLETING INTO ITS OWN SEPARATE DESIGNATED 125mm DIAMETER PVC STORM LATERAL AS INDICATED ON THIS DRAWING.**

<p>REVISIONS AS PER OWNER'S ARCHITECT'S LATEST REVISED SITE PLAN RECEIVED ON MARCH 23, 2017</p> <p>REVISIONS AS PER OWNER'S ARCHITECT'S LATEST REVISED SITE PLAN RECEIVED ON MARCH 9, 2017</p>		<p>04/11/17</p> <p>03/17/17</p>	<p>TLM</p> <p>TLM</p>
NO.	REVISION	DATE	BY

T.L. MAK
 LICENSED PROFESSIONAL ENGINEER
 PROVINCE OF ONTARIO

SCALE

0 1.25m 3.75m 6.25m

1:125
 HORIZONTAL

VERTICAL

DESIGN T.L.M.

CHECKED T.L.M.

DRAWN BY G.U.

CHECKED T.L.M.

APPROVED T.L.M.

PROJECT

667 BANK STREET
 LOT 2
 REGISTERED PLAN M-62
 CITY OF OTTAWA

DRAWING TITLE

**PROPOSED GRADING, SERVICING
 AND STORMWATER MANAGEMENT PLAN**

PROJECT No. 816-41

DATE JULY 2016

DRAWING No. G-1