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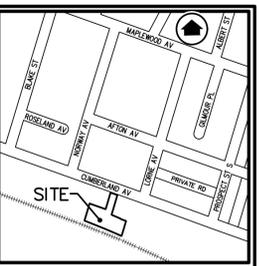
NOTES TO CONTRACTOR:

- INSPECTION**
CONTRACTOR IS RESPONSIBLE FOR CONTACTING ENGINEER 48 HRS PRIOR TO COMMENCING WORK TO ARRANGE FOR INSPECTION. ENGINEER TO DETERMINE DEGREE OF INSPECTION AND TESTING REQUIRED FOR CERTIFICATION OF UNDERGROUND SERVICE INSTALLATION AS MANDATED BY ONTARIO BUILDING CODE DIVISION C, PART 1, SECTION 1.2.2. GENERAL REVIEW, FAILURE TO NOTIFY ENGINEER WILL RESULT IN EXTENSIVE POST CONSTRUCTION INSPECTION AT CONTRACTORS EXPENSE.
- CONFIRMATION OF EXISTING INVERTS**
72 HOURS PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR IS TO LOCATE, EXPOSE AND VERIFY INVERTS OF EXISTING SEWERS AT CONNECTION POINTS. SHOULD THE CONTRACTOR PROCEED WITHOUT COMPLETING THESE LOCATES, EXTRA COSTS RESULTING FROM DELAYS AND STANDBY TIME WILL NOT BE CONSIDERED.

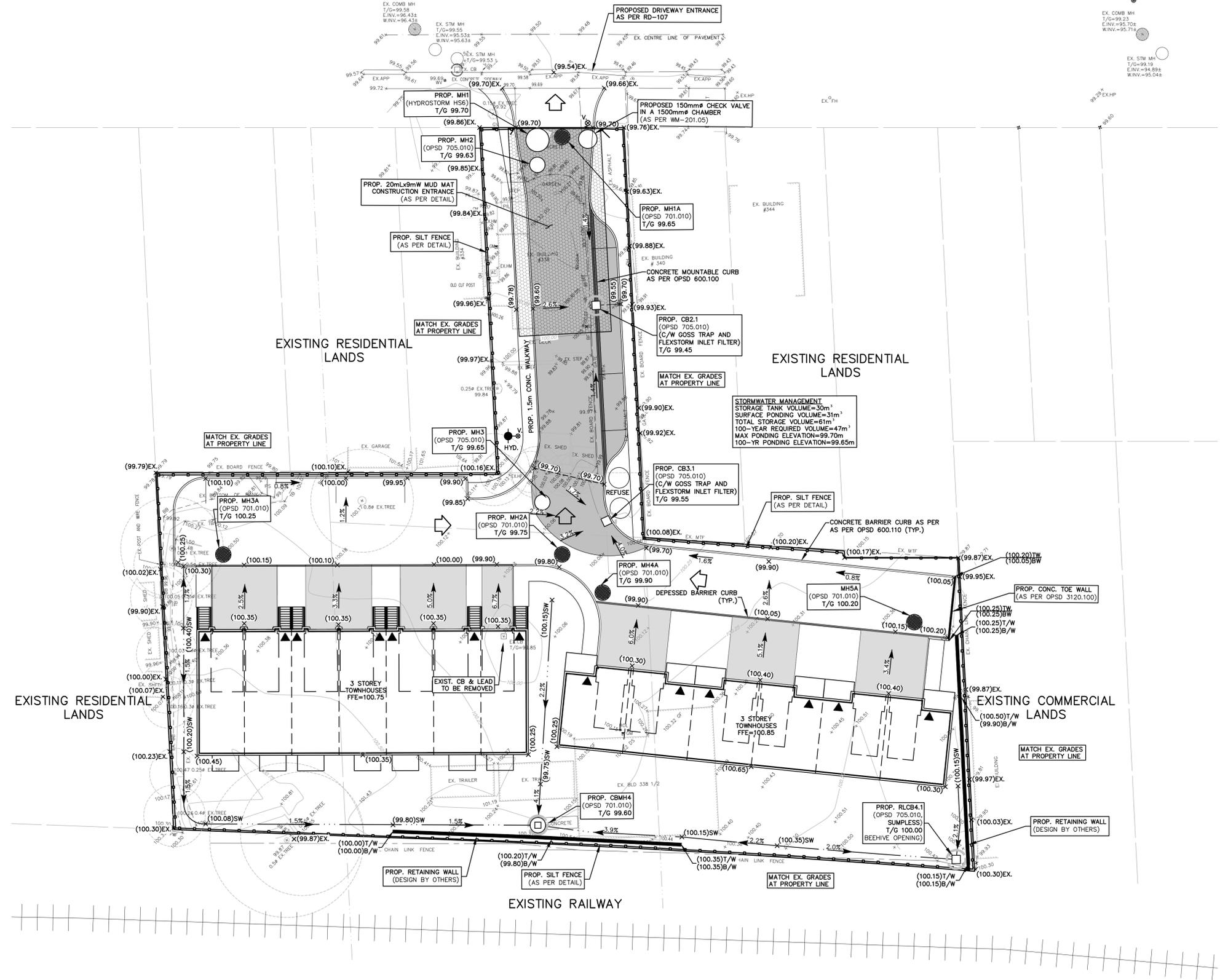
NOTE:
PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL VERIFY THE ELEVATION OF ALL CONNECTION POINTS TO THE EXISTING SEWER AND WATERMAIN SYSTEMS AND REPORT ALL FINDINGS TO THE ENGINEER.

NOTE:
CONTRACTOR TO LOCATE EXISTING SERVICES TO SITE AND ABANDON/REMOVE PER CITY OF HAMILTON STANDARDS.

- LEGEND:**
- EXISTING GROUND ELEVATION
 - x(209.00) PROPOSED GROUND ELEVATION
 - 209.00EX PROPOSED ELEVATION TO MATCH EXISTING
 - (209.00)TW PROPOSED ELEVATION TO MATCH TOP OF WALL
 - 2.0% PROPOSED DIRECTION OF SHEET FLOW
 - EXISTING CATCHBASIN
 - EXISTING STORM/SANITARY MANHOLE
 - PROPOSED CATCHBASIN
 - PROPOSED STORM/SANITARY MANHOLE
 - ⊕ PROPOSED CATCHBASIN MANHOLE
 - PROPOSED SILTATION CONTROL FENCE
 - PROPOSED CATCHBASIN SILT SACK
 - ⇨ OVERLAND FLOW ROUTE
 - ⊗ PROPOSED CURB STOP/GATE VALVE
 - PROPOSED SWALE (AS PER DETAIL)



CUMBERLAND AVENUE



BENCH MARK NOTE:
MONUMENT 00119633498
ADELAIDE HOODLESS SCHOOL ON THE NORTHWEST CORNER OF MAPLEWOOD AVENUE AND SPRINGER AVENUE, ONE BLOCK SOUTH OF MAIN STREET (HIGHWAY NO. 8), 2.9km EAST OF THE POST OFFICE, TABLET IN THE SOUTH CONCRETE FOUNDATION WALL OF THE MOST SOUTHEASTERLY OR NEWEST PORTION OF SCHOLL, 1.21m WEST OF THE SOUTHEAST CORNER AND 12cm BELOW RED BRICK SIDING.
ELEVATION: 94.135 metres CGVD-1928:1978

NO.	DATE	BY	REVISIONS

NOTES TO CONTRACTOR:

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- THE POSITIONS OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVER-GROUND UTILITIES AND STRUCTURES ARE NOT NECESSARILY SHOWN ON THE DRAWINGS, WHERE SHOWN ON THE DRAWINGS, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM THEMSELVES OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.
- ALL DRAWINGS REMAIN THE PROPERTY OF THE ENGINEER AND SHALL NOT BE REPRODUCED, REVISED, OR REVISED WITHOUT THE WRITTEN CONSENT OF S. LLEWELLYN AND ASSOCIATES LIMITED.

DESIGN	SN	CHK'D	SN	DATE
DRAWN	AS	CHK'D	SN	Feb 17, 2022

SCALE 1:200

APPROVALS

STAMP
LICENSED PROFESSIONAL ENGINEER
S. J. Nelson
S. J. NELSON
100228748
Mar. 8/22
PROVINCE OF ONTARIO

S. LLEWELLYN & ASSOCIATES LIMITED CONSULTING ENGINEERS
Tel. (905) 631-6978
Website: www.sla.on.ca
email: info@sla.on.ca
3228 South Service Road, Suite #105 East Wing, Burlington, Ont., L7N 3H8

CLIENT
B.I.Z. MECHANICAL INC.
338 CUMBERLAND AVE.
HAMILTON, ON

PROJECT NAME
338 & 338 1/2 CUMBERLAND AVE.
HAMILTON, ON

TITLE
**PRELIMINARY GRADING & EROSION
SEDIMENT CONTROL PLAN**

PROJECT No. 21081	DRAWING No. C101
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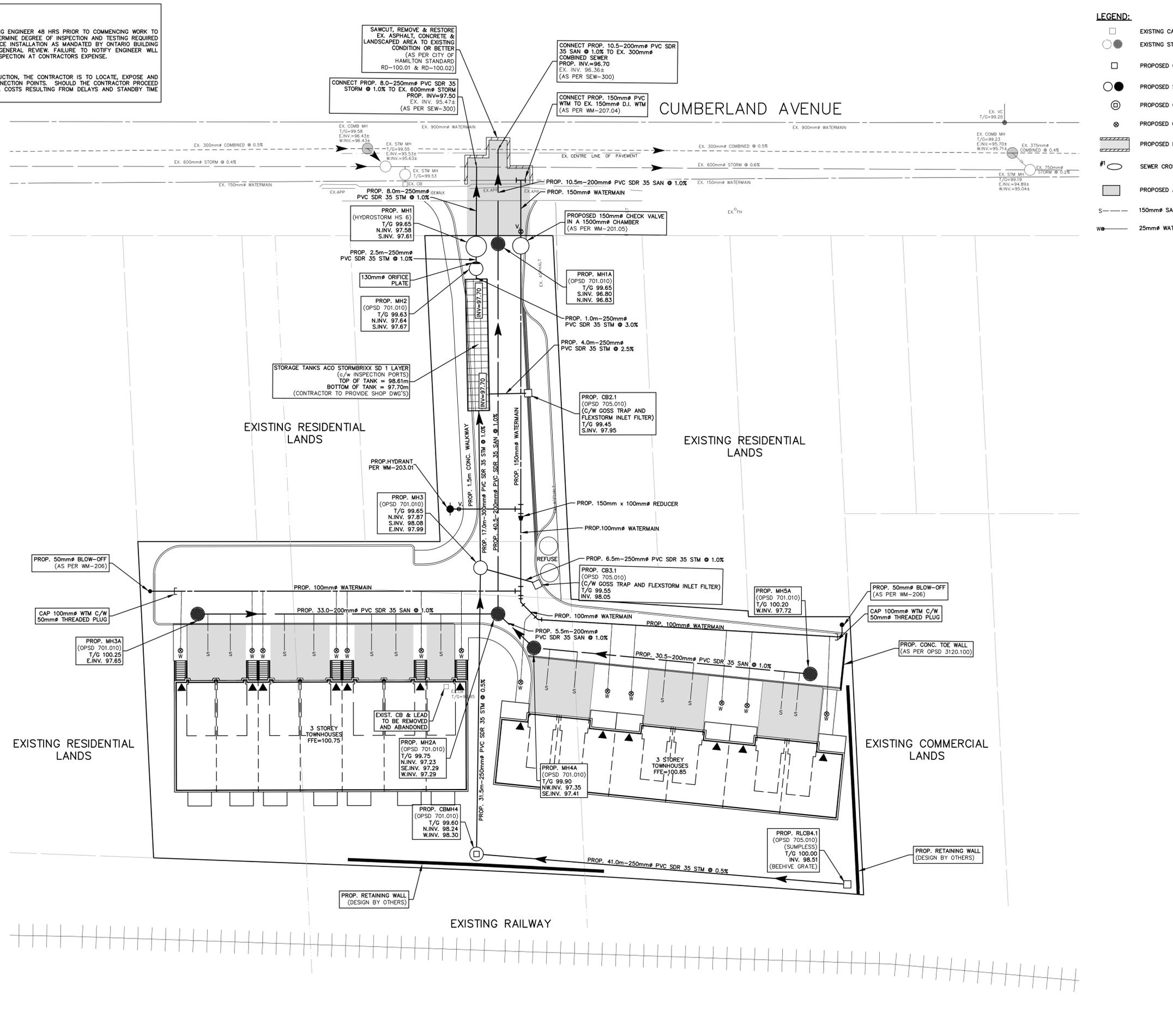
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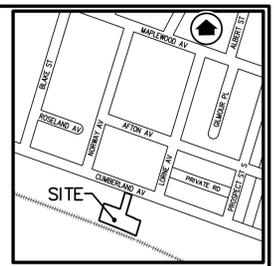
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NOTE:
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- LEGEND:**
- EXISTING CATCHBASIN
 - EXISTING STORM/SANITARY MANHOLE
 - PROPOSED CATCHBASIN
 - PROPOSED STORM/SANITARY MANHOLE
 - ⊕ PROPOSED CATCHBASIN MANHOLE
 - ⊗ PROPOSED CURB STOP/GATE VALVE
 - ▨ PROPOSED ROAD RESTORATION
 - # SEWER CROSSING
 - ▭ PROPOSED ASPHALT DRIVEWAY
 - 150mm# SANITARY SERVICE
 - 25mm# WATER SERVICE



BENCH MARK NOTE:
MONUMENT 001963U3498
ADELAIDE HOODELESS SCHOOL ON THE NORTHWEST CORNER OF MAPLEWOOD AVENUE AND SPRINGER AVENUE, ONE BLOCK SOUTH OF MAIN STREET (HIGHWAY NO. 8), 2.9km EAST OF THE POST OFFICE, TABLET IN THE SOUTH CONCRETE FOUNDATION WALL OF THE MOST SOUTHEASTERLY OR NEWEST PORTION OF SCHOLL, 1.21m WEST OF THE SOUTHEAST CORNER AND 12cm BELOW RED BRICK SIDING.
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CLIENT
B.I.Z. MECHANICAL INC.
338 CUMBERLAND AVE.
HAMILTON, ON

PROJECT NAME
338 & 338 1/2 CUMBERLAND AVE.
HAMILTON, ON

TITLE
PRELIMINARY SERVICING PLAN

PROJECT No. 21081	DRAWING No. C102
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GENERAL NOTES

- 1. THIS/ THESE PLAN(S) IS/ ARE NOT TO BE USED FOR CONSTRUCTION UNTIL SEALED BY THE ENGINEER AND INDICATED ISSUED FOR CONSTRUCTION ON THE DRAWING.
2. THIS/ THESE PLAN(S) IS/ ARE NOT TO BE REPRODUCED IN WHOLE OR IN PART WITHOUT THE WRITTEN PERMISSION OF S. LLEWELLYN AND ASSOCIATES LIMITED.
3. INFORMATION REGARDING ANY EXISTING SERVICES AND/ OR UTILITIES SHOWN ON THE APPROVED SET OF CONSTRUCTION DRAWINGS ARE FURNISHED AS THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL INTERPRET THIS INFORMATION AS HE SEES FIT WITH THE UNDERSTANDING THAT THE OWNER AND HIS AGENTS DISCLAIM ALL RESPONSIBILITY FOR ITS ACCURACY AND/ OR SUFFICIENCY. THE CONTRACTOR SHALL ASSUME LIABILITY FOR ANY DAMAGE TO EXISTING WORKS.
4. EXISTING TOPOGRAPHIC AND LEGAL INFORMATION TAKEN FROM PLANS PREPARED BY A.T. MCLAREN, AUGUST 12, 2021.
5. THIS/ THESE PLAN(S) TO BE READ IN CONJUNCTION WITH THE STORM WATER MANAGEMENT (SWM) REPORT PREPARED BY S. LLEWELLYN AND ASSOCIATES LIMITED.
6. THIS (THESE) PLAN(S) TO BE USED FOR SERVICING AND GRADING ONLY, FOR BUILDING LOCATION REFER TO THE SITE PLAN.
7. MUNICIPAL APPROVAL OF THESE DRAWINGS IS FOR MATERIAL AND COMPLIANCE WITH CITY OF HAMILTON AND PROVINCIAL SPECIFICATIONS AND STANDARDS ONLY. APPROVAL AND INSPECTION OF THE WORKS BY THE CITY OF HAMILTON STAFF DOES NOT CERTIFY THE LINE AND GRADE OF THE WORKS NOR RELIEVE THE CONTRACTOR OF CERTIFICATION OF ALL WORKS BY THE OWNER'S ENGINEER.
8. ALTERNATE MATERIALS MAY BE ACCEPTABLE PROVIDED WRITTEN APPROVAL HAS FIRST BEEN OBTAINED FROM THE CITY OF HAMILTON AND THE ENGINEER.
9. THE APPROVAL OF THIS PLAN DOES NOT EXEMPT THE OWNER'S BONDED CONTRACTOR FROM THE REQUIREMENTS TO OBTAIN THE VARIOUS PERMITS/APPROVALS NORMALLY REQUIRED TO COMPLETE A CONSTRUCTION PROJECT, SUCH AS, BUT NOT LIMITED TO THE FOLLOWING:
- ROAD CUT PERMITS
- SEWER PERMITS
- APPROACH APPROVAL PERMITS
- RELOCATION OF SERVICES
- COMMITTEE OF ADJUSTMENT
- ENCROACHMENT AGREEMENTS

- 10. PRIOR TO CONSTRUCTION THE CONTRACTOR MUST:
i. CHECK AND VERIFY ALL DIMENSIONS AND EXISTING ELEVATIONS WHICH INCLUDE BUT ARE NOT LIMITED TO THE BENCHMARK ELEVATIONS, EXISTING SERVICE CONNECTIONS, EXISTING INVERTS AND REPORT FINDING IN WRITING TO THE ENGINEER.
ii. OBTAIN ALL UTILITY LOCATES AND REQUIRED PERMITS AND LICENSES.
iii. VERIFY ALL FINISHED FLOOR ELEVATIONS AND BASEMENT FLOOR ELEVATIONS WHICH MAY APPEAR ON THESE PLANS COMPLY WITH THE FINAL ARCHITECTURAL DRAWINGS.
iv. CONFIRM ALL DRAWINGS USED FOR CONSTRUCTION ARE OF THE MOST RECENT REVISION.
v. NOTIFY THE ENGINEER OF THE PROPOSED CONSTRUCTION SCHEDULE FOR COORDINATION OF NECESSARY INSPECTIONS.
11. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE ENGINEER 48 HOURS PRIOR TO THE COMMENCING SITE WORKS TO ARRANGE FOR INSPECTION. THE ENGINEER SHALL DETERMINE THE EXTENT OF INSPECTION AND TESTING REQUIRED FOR CERTIFICATION OF THE UNDERGROUND SERVICE INSTALLATION AS MANDATED BY THE ONTARIO BUILDING CODE DIVISION C, PART 1, SECTION 1.2.2, GENERAL REVIEW. FAILURE TO MAKE SUITABLE ARRANGEMENTS FOR INSPECTION WILL LEAD TO POST CONSTRUCTION TESTING AND INSPECTION AS DETERMINED BY THE ENGINEER, THE COSTS OF WHICH INCLUDING ANY DELAYS IN CONSTRUCTION SHALL BE BORNE BY THE CONTRACTOR. FULL PAYMENT FOR UN-INSPECTED WORKS MAY BE WITHHELD UNTIL THE COMPLETION OF THE POST CONSTRUCTION INSPECTION AND TESTING TO THE SATISFACTION OF THE ENGINEER.
12. INSPECTION BY THE OWNER'S ENGINEER IS FOR CERTIFICATION AND GENERAL CONFORMANCE PURPOSES AND DOES NOT CERTIFY LINE AND GRADE OR IMPLY AN ASSURANCE OF QUALITY CONTROL. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THE INSTALLATION OF THE WORKS TO PROPER LINE, GRADE AND QUALITY TO CURRENT INDUSTRY STANDARDS.
13. ANY UTILITY RELOCATIONS AND RESTORATIONS DUE TO THE DEVELOPMENT TO BE UNDERTAKEN AT THE EXPENSE OF THE OWNER/DEVELOPER AND SHALL BE COORDINATED BY THE CONTRACTOR.
14. ALL RESTORATIONS AND RECONSTRUCTIONS SHALL BE TO COMPLETED TO MATCH EXISTING CONDITIONS OR BETTER AND ARE TO BE PERFORMED TO THE SATISFACTION OF THE ENGINEER AND THE CITY OF HAMILTON.
15. RESTORATION OF ROAD OVER UTILITY CUTS IN HAMILTON TO BE AS PER STANDARD DRAWINGS RD-101.01 AND RD-100.02, WITH GRANULAR A BEDDING.
16. SERVICING CONTRACTOR TO MAINTAIN A "CONFINED TRENCH CONDITION" IN ALL SEWER AND WATERMAIN INSTALLATION TRENCHES.
17. THE SITE SERVICING CONTRACTOR SHALL TERMINATE ALL SERVICES 1.0m FROM THE BUILDING FACE.
18. NO BLASTING WILL BE PERMITTED.

SEWERS

- 1. SANITARY AND STORM SEWERS
A. CONSTRUCTION OF SANITARY & STORM SEWERS & PRIVATE DRAINS SHALL BE IN ACCORDANCE WITH CITY STANDARDS & SPECIFICATIONS (LATEST EDITION) AND MINISTRY OF ENVIRONMENT (MOE) GUIDELINES (LATEST EDITION).
B. COVER AND BEDDING MATERIAL FOR CONCRETE PIPE SHALL BE GRANULAR 'A' MATERIAL AS PER OPSD 802.030 OR 802.033, CLASS 'B' BEDDING.
C. COVER AND BEDDING MATERIAL FOR PVC PIPE SHALL BE GRANULAR 'A' MATERIAL AS PER OPSD 802.010 OR 802.013.
D. PVC PIPE WILL REQUIRE SPECIAL CONSTRUCTION PROCEDURES AS PER CITY SPECIFICATIONS.
E. ALL SEWERS TO BE VIDEO INSPECTED AS PER OPSD 409.
F. ALL SEWERS TO BE FLUSHED PRIOR TO VIDEO INSPECTION.
G. MANHOLE FRAMES AND COVERS SHALL BE AS PER OPSD 401.010 (STORM-OPEN, SANITARY-CLOSED).
H. CATCHBASIN FRAMES AND GRATES SHALL BE AS PER OPSD 400.100 IN PAVED AREA AND 400.120 IN LANDSCAPED AREAS.
I. SANITARY SEWERS 200mm TO 375mm IN DIAMETER SHALL BE PVC PIPE, CSA B182.2, SDR-35.
J. STORM SEWERS 200mm TO 600mm IN DIAMETER SHALL BE PVC PIPE, CSA B182.2, SDR-35.
K. ALL PVC STORM SEWERS ARE TO BE TESTED FOR DEFLECTION (MANDREL PASSAGE) AFTER INSTALLATION AS PER OPSD 410. SANITARY SEWERS SHALL BE TESTED FOR DEFLECTION (MANDREL PASSAGE) AND LEAKAGE (LOW AIR PRESSURE METHOD) AS PER OPSD 410.
L. ALL CATCH BASIN MAINTENANCE HOLES AND MAINTENANCE HOLES ARE TO BE SUMPLESS.
M. ALL EXISTING UNUSED SEWER DRAINS, SERVICING A PROPERTY BEING REDEVELOPED, IN WHOLE OR IN PART, MUST BE REMOVED FROM MUNICIPAL PROPERTY I.e. ROAD ALLOWANCE ETC., WITH AN APPROPRIATE REPAIR TO THE MUNICIPAL SEWER MAIN TO WHICH THEY CONNECT, AND EITHER REMOVED FROM PRIVATE PROPERTY OR ABANDONED IN ACCORDANCE WITH CITY MINIMUM REQUIREMENTS I.e. PLUGGING AT EITHER END WITH A MINIMUM 300mm CONCRETE.
N. SEWER DRAINS TO BE INSTALLED WITH A MINIMUM COVER OF 2.2m AT THE PROPERTY LINE BELOW THE FINAL ROAD GRADE OR AT SUCH HIGHER ELEVATION ONLY AS MAY BE NECESSITATED BY THE LEVEL OF THE MAIN SEWER ON PRIVATE PROPERTY THE MINIMUM COVER FOR SEWER DRAINS IS TO BE NO LESS THAN 1.2m.
O. 150mm DIAMETER PVC PIPE, CSA B182.1 M-1983, SDR 28 AS PER FORM 500. STORM PIPE SHALL BE WHITE AND SANITARY SHALL BE ANY COLOR OTHER THAN WHITE. COVER AND BEDDING MATERIAL FOR PRIVATE DRAINS SHALL BE GRANULAR 'A' INSTALLED AS PER OPSD 802.010 OR 802.013.
P. CATCH BASIN CONNECTIONS TO BE 250mm DIAMETER PVC PIPE CSA B182.2, SDR-35 UNLESS OTHERWISE NOTED. SINGLE/DOUBLE STREET CATCH BASINS AS PER OPSD 705.010/705.020 RESPECTIVELY WITH GOSS TRAPS AS PER SEW-304. PRIVATE REAR YARD CATCH BASINS AS PER OPSD 705.010 (NO GOSS TRAPS). STREET CATCH BASIN GRATES AS PER OPSD 400.020 (FLAT) AND REAR YARD CATCH BASIN GRATES TO BE BEEHIVE TYPE GRATE AND COVER.

GRADING NOTES

- A. ALONG ADJOINING PROPERTIES GRADE TO MEET EXISTING OR PROPOSED ELEVATIONS WITH SODDED SLOPES (MIN. 3% TO 1%) AND/OR RETAINING WALLS AS SPECIFIED.
B. ALL RETAINING WALLS, WALKWAYS, CURBS, ETC., SHALL BE PLACED A MIN. OF 0.45m FROM THE PROPERTY LINE. ALL WALLS 1.0m OR HIGHER SHALL BE DESIGNED BY A P.E.N.G.
C. SHOULD A RETAINING WALL BE REQUIRED, THE TOP OF WALL ELEVATIONS SHALL BE SET 150mm ABOVE THE PROPOSED SIDE YARD SWALES.
D. RETAINING WALLS 0.6m IN HEIGHT OR GREATER REQUIRE CONSTRUCTION OF A FENCE OR GUARD RAIL AT THE TOP OF THE REAR OF THE WALL. GUARDS FOR RETAINING WALLS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF EXTERIOR GUARDS AS CONTAINED IN THE ONTARIO BUILDING CODE.
E. TOP OF FOUNDATION WALLS FOR BUILDINGS SHALL BE 150mm (MIN) ABOVE FINISHED GRADE.
F. DRIVEWAY SLOPES SHALL NOT BE LESS THAN 2% AND NOT MORE THAN 7.0% REVERSED SLOPED DRIVEWAYS IN NEW DEVELOPMENTS ARE NOT PERMITTED.
G. IF GRADING IS REQUIRED ON LANDS ADJACENT TO THE DEVELOPMENT WHICH ARE NOT OWNED BY THE DEVELOPER, THEN THE DEVELOPER MUST OBTAIN WRITTEN PERMISSION FROM THE ADJACENT PROPERTY OWNER TO ALLOW THE DEVELOPER TO GRADE ON THE ADJACENT LANDS, OTHERWISE RETAINING WALLS MUST BE USED.
H. THE WRITTEN PERMISSION REQUIRED FROM THE ADJACENT LANDOWNER SHALL BE OBTAINED PRIOR TO ENTERING THE LANDS. SHOULD PERMISSION NOT BE OBTAINED OR IS WITHDRAWN PRIOR TO COMMENCING THE WORK, THEN THE DEVELOPER SHALL LIMIT HIS ACTIVITIES TO THE LIMITS OF THE DEVELOPMENT SITE.
I. DRIVEWAY AND DRIVEWAY APPROACHES SHALL BE LOCATED SUCH THAT HYDRO VAULTS AND OTHER STREET FURNITURE ARE A MIN. OF 1.2m FROM THE PROJECTIONS OF THE OUTSIDE GARAGE WALLS.
J. ANY CHANGES IN GRADES AND CATCH BASINS REQUIRE THE APPROVAL OF THE CITY'S MANAGER OF DEVELOPMENT ENGINEER.

WATERMANS AND WATER SERVICES

- 1. WATERMANS
B. CONSTRUCTION OF WATERMANS & PRIVATE SERVICES SHALL BE IN ACCORDANCE WITH CITY STANDARDS & SPECIFICATIONS (LATEST EDITION) AND MINISTRY OF ENVIRONMENT (MOE) GUIDELINES (LATEST EDITION).
C. ALL WATER SERVICES TO BE INSTALLED WITH A MINIMUM OF 1.6m COVER.
D. WATER SERVICE AND WATERMAIN BEDDING AND COVER MATERIAL TO BE INSTALLED AS PER WM-200.01 WITH GRANULAR 'A' FOR BOTH BEDDING AND COVER.
E. PVC PIPE IN SIZES 100mm THROUGH 300mm SHALL BE CLASS 150 DR18 CONFORMING TO AWWA C900.
F. TRACER WIRE SHALL BE INSTALLED WITH PVC PIPE IN ACCORDANCE WITH FORM 400. IT SHALL BE 12 GAUGE TW75, TW175 OR RW50X1/2 COATED COPPER AND SHALL BE POSITIONED ALONG THE TOP OF THE PIPE AND FASTENED AT 6 METRE INTERVALS. THE WIRE IS TO BE INSTALLED BETWEEN EACH VALVE AND/OR THE END OF THE NEW PVC WATERMAIN JOINTS IN THE WIRE BETWEEN VALVES ARE NOT PERMITTED. AT EACH GATE VALVE A LOOP WIRE IS TO BE BROUGHT UP INSIDE THE VALVE BOX TO THE CAP. THE TRACER WIRE SHALL BE BROUGHT TO THE SURFACE AT THE SECONDARY VALVE ON ALL FIRE HYDRANTS. THE TRACER WIRE SHALL ALSO BE CONNECTED TO THE CATHODIC PROTECTION SYSTEM AS REQUIRED.
G. MOLDED PVC FITTINGS FOR PIPE SIZES 100mm TO 300mm SHALL CONFORM TO AWWA C900 AND CERTIFIED TO CSA B137.2.
H. FABRICATED FITTINGS 250mm AND 300mm SHALL BE MANUFACTURED FROM SEGMENTS OF AWWA C900, CLASS 150 (DR18) PVC PIPE, BONDED TOGETHER AND OVER-WRAIDED WITH FIBREGLASS-REINFORCED POLYESTER TO MEET THE REQUIREMENTS OF CSA B137.3.
I. WHERE METAL FITTINGS ARE TO BE USED ON PVC MAINS SUFFICIENT CATHODIC PROTECTION AS PER FORM 400 AND MUST BE PROVIDED AS PER THE FOLLOWING REQUIREMENTS:
a. ONE (1) 11 kg ZINC ANODE WILL BE PROVIDED FOR EVERY 1000 m TRACER WIRE.
ii. ONE (1) 11 kg ZINC ANODE IS TO BE INSTALLED ON ALL COPPER SERVICE CONNECTIONS, BY MEANS OF A SERVICE GROUND CLAMP, COATED WITH T.C. MASTIC OR WRAPPED WITH 'SCOTCHFIL' ELECTRICAL PUTTY OR APPROVED EQUAL. THE ANODE IS TO BE PLACED AT LEAST 1.0 m AWAY FROM THE WATER SERVICE AND AS DEEP AS THE SERVICE AND WITHIN 1.0 m OF THE CURB STOP.
iii. ONE (1) 11 kg ZINC ANODE IS TO BE INSTALLED ON EACH HYDRANT. IF PVC PIPE IS USED BETWEEN THE HYDRANT TEE OR ANCHOR TEE AND THE HYDRANT BOOT, TWO (2) 11 kg ZINC ANODES SHALL BE USED.
iv. ONE (1) 11 kg ZINC ANODE IS TO BE INSTALLED ON EVERY VALVE, AND EVERY METALLIC FITTING CONNECTED TO A PVC WATERMAIN. FITTINGS INCLUDE BENDS, TEES, CROSSSES, SLEEVES, REDUCERS, PLUGS, CAPS, JOINT RESTRAINERS AND COUPLINGS.
ALL SACRIFICIAL ZINC ANODES SHALL CONFORM TO ASTM B-418 TYPE II AND SHALL BE MADE OF HIGH GRADE ELECTROLYTIC ZINC, 99.99 % PURE. MAGNESIUM ANODES SHALL CONFORM TO ASTM B-107-TYPE M1. FOR ALL ANODES CONNECTED TO NEW PIPE, FITTINGS TO EXISTING METALLIC WATERMANS, A CATHODELDER AND CA-15 OR EQUIVALENT CARTRIDGE SHALL BE USED. ALL THERMITE WELD CONNECTIONS TO BE COATED WITH T.C. MASTIC (TAPECOAT OF CANADA), ROYBOND 747 PRIMER AND ROYSTON HANDY CAP OR APPROVED EQUAL.

- H. BEDDING AND BACKFILL AS PER WM-200.01 AND WM-200.02 GRANULAR 'A' MATERIAL FOR MAINS AND SERVICES GREATER THAN 50mm.
I. MINIMUM HORIZONTAL SEPARATION BETWEEN WATER SERVICES/MAINS AND SEWER DRAINS AND MUNICIPAL SEWER MAINS SHALL BE 2.5m MEASURED FROM THE CLOSEST PIPE EDGE TO THE CLOSEST PIPE EDGE. VERTICAL SEPARATION WHERE WATER SERVICE/MAIN PASSES OVER A SEWER DRAIN OR MUNICIPAL SEWER MAIN MUST BE A MINIMUM OF 0.25m UNLESS GREATER SEPARATION IS PROVIDED TO PROVIDE FOR PROPER BEDDING AND STRUCTURAL SUPPORT. WATER SERVICES/MAINS PASSING UNDER SEWER DRAINS OR MUNICIPAL SEWER MAINS MUST HAVE A SEPARATION OF 0.5m BETWEEN THE INVERT OF THE SEWER MAIN/DRAIN AND THE CROWN OF THE WATER SERVICE/MAIN.
J. WATERMAIN OR WATER SERVICE LOWERINGS, 100 TO 300mm PIPE, TO BE AS PER WM-204.13. WATER SERVICE DEFLECTIONS, WHERE FEASIBLE, SHOULD BE LESS THAN OR EQUAL TO 50% OF THE VALUES RECOMMENDED BY THE MANUFACTURER, AS PER CITY FORM 400.
K. PVC WATER SERVICE/MAIN MATERIAL, CATHODIC PROTECTION, TRACER WIRE ETC. MUST BE AS PER FORM 400.
L. ALL BACKFLOW PREVENTION DEVICES MUST BE SELECTED, INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE CITY OF HAMILTON'S BACKFLOW PREVENTION BY-LAW #10-103, INCLUDING THE MANUFACTURER'S SPECIFICATIONS FOR INSTALLATION ETC., AND GUIDELINES SET OUT IN THE MOST RECENT VERSIONS OF THE 'AWWA CANADIAN CROSS CONNECTION CONTROL MANUAL' AND THE 'CSA 864-10/07/864.10-07 STANDARDS'. IN SELECTING A BACKFLOW DEVICE FOR A PROPERTY, CONSIDERATION MUST BE GIVEN TO FUTURE POSSIBLE USES OF THE SITE WHICH COULD RESULT IN A HIGHER RISK TO THE MUNICIPAL DRINKING WATER SYSTEM, THUS MAKING THE DEVICE INITIALLY CHOSEN INADEQUATE FOR THE NEW PURPOSE AND REQUIRE FUTURE CHANGE OUT AT THE OWNER'S EXPENSE.
M. ALL EXISTING WATER METERS ON SYSTEMS TO BE ABANDONED MUST BE REMOVED AND SALVAGED BY THE CITY OF HAMILTON. THE SERVICING CONTRACTOR SHOULD CONTACT THE WATER AND WASTEWATER SECTION, PUBLIC WORKS DEPARTMENT AT 905 546-4426 TO ARRANGE FOR THE WORK.
N. WATERMAIN DEFLECTION FOR PVC PIPE:
i. MAXIMUM ALLOWABLE DEFLECTION OF 1.5 DEGREES PER JOINT UP TO 250mm DIAMETER (160mm PER 6.1m PIPE LENGTH) AND 1.2 DEGREES FOR 300mm DIAMETER (128mm PER 6.1m PIPE LENGTH) SHALL NOT BE EXCEEDED.
ii. ALL JOINTS SHALL BE DEFLECTED AN EQUAL AMOUNT.

- 2. FLUSHING, SWABBING AND TESTING
A. ALL NEW WATERMANS ARE TO BE SWABBED IN ACCORDANCE WITH CITY SPECIFICATIONS.
B. A REDUCED PRESSURE ZONE BACKFLOW PREVENTER (WATTS SERIES 909 OR APPROVED EQUAL) IS REQUIRED ON THE TEMPORARY SUPPLY LINES USED FOR FILLING AND FLUSHING OR SWABBING OF WATERMANS.
C. UPON COMPLETION OF INSTALLATION, THE CONTRACTOR SHALL PERFORM A PRESSURE TEST ON THE WATERMANS AS PER FORM 400. WATERMAIN IS TO BE TESTED PRIOR TO CONNECTION TO EXISTING WATERMANS USING TEMPORARY CAPS OR PLUGS. PIPE CLOSURES WHERE REQUIRED, ARE TO BE SUPPLIED BY THE CONTRACTOR. THE CONTRACTOR WILL ALSO SUPPLY AND INSTALL ALL ADAPTOR PIECES IN ORDER TO CONNECT TO EXISTING WATERMANS.
3. VALVES & VALVE BOXES
A. ALL VALVE BOXES TO BE SET TO PROPOSED GRADES.
B. 100mm TO 300mm GATE VALVE & VALVE BOXES AS PER WM-202.
4. ANCHOR BLOCKS
A. FOR 100mm TO 300mm WATERMANS STANDARD CONCRETE ANCHOR BLOCKS AS PER WM-204.01.
5. WATERMAIN SHUTDOWN
A. MAXIMUM 4-HOUR SHUTDOWN OF EXISTING MAIN AT A TIME CONVENIENT TO THE CITY OF HAMILTON AND ADJUTING USERS.
B. CONTRACTOR TO GIVE 48-HOUR PRIOR NOTIFICATION USING THE "CITY OF HAMILTON NOTICE OF SHUTDOWN" FOR ALL AFFECTED AREAS.
C. IN THE EVENT A SCHEDULED SHUTDOWN IS CANCELLED BY THE CITY OF HAMILTON, THE CONTRACTOR SHALL HAVE NO CLAIMS AGAINST THE CITY.

WATERMANS AND WATER SERVICES (CON'T)

- 7. HYDRANTS
A. TO BE INSTALLED WITH SECONDARY VALVES AS PER WM-203.01 OR WM-203.02 AS DETAILED. THEY SHALL OPEN COUNTER-CLOCKWISE (LEFT) AND HAVE A '1' PAINTED ON THE BARREL SECTION. THE 100mm PUMPER "STORZ" CONNECTION SHALL FACE THE ROADWAY AND BE PAINTED BLACK.
B. ALL FIRE HYDRANTS SHALL CONFORM TO THE CITY OF HAMILTON (MUNICIPALITY) FIRE DEPARTMENT'S REQUIREMENTS AND SHALL BE OF SAME MANUFACTURE.
C. ANCHOR OR TRUST BLOCKS ARE TO BE INSTALLED AT ALL WATER SERVICE ELBOWS, TEES, PLUGS etc. FOR 300mm DIAMETER WATER SERVICES AND SMALLER, ANCHOR BLOCKS ARE TO BE AS PER WM-204.01.

COMPACTION REQUIREMENTS

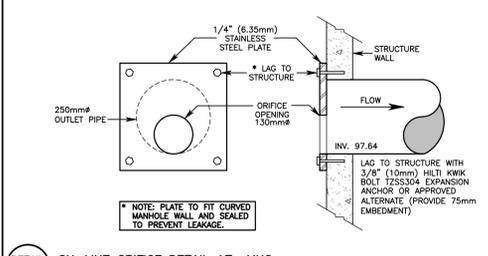
- UNLESS OTHERWISE NOTED OR DIRECTED BY THE GEOTECHNICAL CONSULTANT, THE FOLLOWING SHALL APPLY:
A. ALL BEDDING AND BACKFILL MATERIAL, ROAD SUB-GRADES AND GENERALLY ALL MATERIAL USED FOR LOT GRADING AND FILL SECTIONS, ETC., SHALL BE COMPACTED TO MIN. 98% SPD. ALL MATERIAL SHALL BE PLACED IN LAYERS NOT EXCEEDING 300mm LIFTS.
B. ALL GRANULAR ROAD BASE MATERIALS SHALL BE COMPACTED TO 98% SPD.
C. FOR ALL SEWERS AND WATERMANS IN FILL SECTIONS, THE COMPACTION SHALL BE CERTIFIED BY A GEOTECHNICAL ENGINEER PRIOR TO LAYING OF PIPE.

SILTATION AND EROSION CONTROL

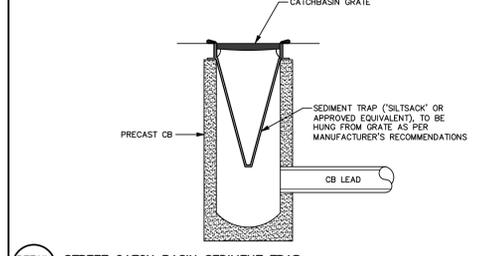
- A. SILTATION CONTROL BARRIERS SHALL BE PLACED AS DETAILED.
B. ALL SILTATION CONTROL MEASURES SHALL BE CLEANED AND MAINTAINED AFTER EACH RAINFALL AS DIRECTED AND TO THE SATISFACTION OF THE CITY OF HAMILTON AND/OR THE HAMILTON CONSERVATION AUTHORITY.
C. ADDITIONAL SILT CONTROL LOCATIONS MAY BE REQUIRED AS DETERMINED BY THE ENGINEER, THE CITY OF HAMILTON AND/OR THE HAMILTON CONSERVATION AUTHORITY.
D. ALL EROSION AND SEDIMENT CONTROL DEVICES MUST BE INSTALLED PRIOR TO DEVELOPMENT AND MAINTAINED THROUGHOUT THE CONSTRUCTION PROCESS, UNTIL ALL DISTURBED AREAS HAVE BEEN RE-ESTABLISHED.
E. ALL EROSION AND SEDIMENT CONTROL DEVICES SHOULD BE INSPECTED MINIMUM WEEKLY, AFTER EVERY RAINFALL AND MAINTAINED AND CLEANED AS REQUIRED.
F. THE OWNER IS RESPONSIBLE FOR THE REMOVAL OF ALL MUD AND DEBRIS THAT ARE TRACKED ONTO THE ROADWAYS FROM VEHICLES ENTERING AND LEAVING THE CONSTRUCTION SITE. THE OWNER SHALL, UPON VERBAL AND/OR REQUEST BY THE CITY, IMMEDIATELY PROCEED WITH THE CLEANUP OPERATION AT THEIR EXPENSE. SHOULD THE OWNER FAIL TO MAINTAIN THE ROAD AS DIRECTED, THE CITY WILL HAVE THE CLEANING CARRIED OUT, AND DRAW ON THE SECURITY FOR COSTS AND/OR LAY CHARGES.

SEWER/WATER ABANDONMENT

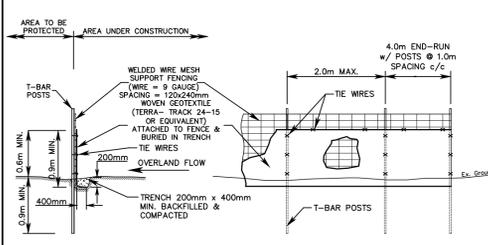
- 1. ALL EXISTING UNUSED SEWERS MUST BE PROPERLY ABANDONED BY DISCONNECTING SEWER AT THE MAIN AND GROUTING EITHER END OF THE SEWER WITH A MINIMUM 300mm OF CONCRETE.
2. UNUSED MAINTENANCE HOLES AND CATCHBASINS MUST BE COMPLETELY REMOVED.
3. OPENINGS IN MAINTENANCE HOLES AND CATCHBASINS WHERE SERVICES WERE REMOVED OR ABANDONED MUST BE BRICKED AND PARGED.
4. ALL EXISTING UNUSED WATER SERVICES MUST BE PROPERLY ABANDONED AS FOLLOWS:
4.1. FOR COPPER SERVICES: REMOVE CURB STOP, SHUT OFF MAIN STOP, CUT & CRIMP WATER SERVICE AT THE MAIN.
4.2. FOR PVC SERVICES: REMOVE GATE VALVE, REMOVE TEE AND REPLACE WITH SLEEVE. IF A TAPPING VALVE WAS USED, CONTACT THE CITY OF HAMILTON FOR FURTHER DIRECTION.



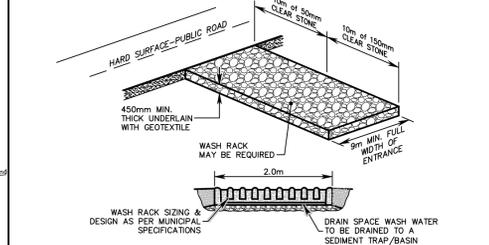
DETAIL 1 ON-LINE ORIFICE DETAIL AT MH2 SCALE: N.T.S.



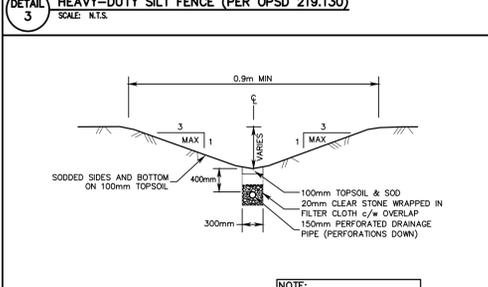
DETAIL 2 STREET CATCH BASIN SEDIMENT TRAP SCALE: N.T.S.



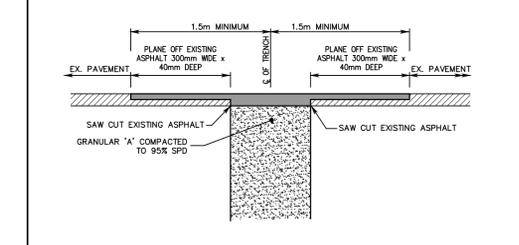
DETAIL 3 HEAVY-DUTY SILT FENCE (PER OPSD 219.130) SCALE: N.T.S.



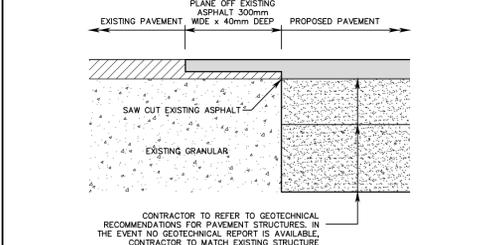
DETAIL 4 MUD MAT CONSTRUCTION ENTRANCE SCALE: N.T.S.



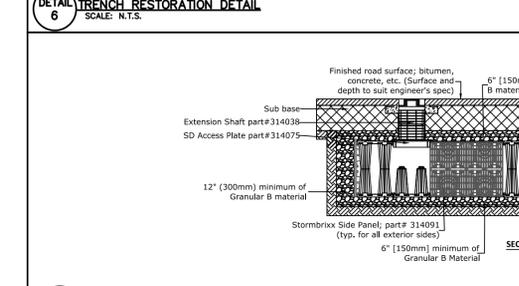
DETAIL 5 TYPICAL SWALE DETAIL SCALE: N.T.S.



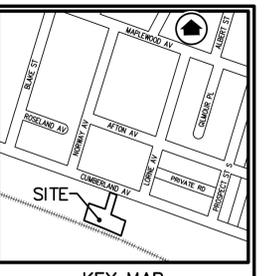
DETAIL 6 TRENCH RESTORATION DETAIL SCALE: N.T.S.



DETAIL 7 ASPHALT LAP JOINT SCALE: N.T.S.



DETAIL 8 STORMBRIXX SD TYPICAL SECTION SCALE: N.T.S.

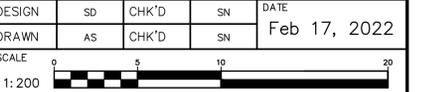


KEY MAP N.T.S.

BENCHMARK NOTE:
MONUMENT 00196331498
ADELAIDE HOODESS SCHOOL ON THE NORTHWEST CORNER OF MAPLEWOOD AVENUE AND SPRINGER AVENUE, ONE BLOCK SOUTH OF MAIN STREET (HIGHWAY NO. 8), 2.9km EAST OF THE POST OFFICE, TABLET IN THE SOUTH CONCRETE FOUNDATION WALL OF THE MOST SOUTHEASTERLY OR NEWEST PORTION OF SCHOLL, 1.21m WEST OF THE SOUTHEAST CORNER AND 12cm BELOW RED BRICK SIDING.
ELEVATION: 94.135 metres CGVD-1928-1978

Table with columns: NO., DATE, BY, REVISIONS. It is currently empty.

NOTES TO CONTRACTOR:
1. CONTRACTORS AND SUBCONTRACTORS SHALL NOT SCALE FROM THIS DRAWING.
2. ANY INCONSISTENCIES AND OMISSIONS FOUND ON THE DRAWINGS MUST BE REPORTED TO THE ENGINEER FOR CLARIFICATION BEFORE COMMENCING THE WORK.
3. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND ELEVATIONS AND REPORT ALL FINDINGS TO THE ENGINEER. ONCE CONSTRUCTION HAS COMMENCED, THE CONTRACTOR ACCEPTS RESPONSIBILITY FOR ALL DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS.
4. THE POSITIONS OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVER-GROUND UTILITIES AND STRUCTURES ARE NOT NECESSARILY SHOWN ON THE DRAWINGS, WHERE SHOWN ON THE DRAWINGS, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM THEMSELVES OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.
5. ALL DRAWINGS REMAIN THE PROPERTY OF THE ENGINEER AND SHALL NOT BE REPRODUCED, REUSED, OR REVISED WITHOUT THE WRITTEN CONSENT OF S. LLEWELLYN AND ASSOCIATES LIMITED.



APPROVALS

Professional Engineer stamp for S.J. NELSON, 100228748, Mar 8/22, PROVINCE OF ONTARIO.

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CLIENT
B.I.Z. MECHANICAL INC.
338 CUMBERLAND AVE.
HAMILTON, ON

PROJECT NAME
338 & 338 1/2 CUMBERLAND AVE.
HAMILTON, ON
TITLE
PRELIMINARY GENERAL NOTES & DETAILS PLAN

Table with columns: PROJECT No., DRAWING No. Values: 21081, C103