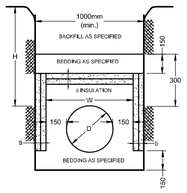
LEGEND

PROPERTY LINE	
200mmØ SAN @ 1.00% — PROPOSED SANITARY SERVICE	
200mmØ STM @ 1.00% — PROPOSED STORM SERVICE	
DD □ — MECHANICAL DECK DRAIN ABOVE U/G PARKING	
AD □ — AREA DRAIN OUTSIDE OF U/G PARKING LIMITS	
(M) (IM) — PROPOSED WATER METER AND REMOTE METER	
PROPOSED BARRIER CURB	
DC — PROPOSED DEPRESSED CURB	
FUTURE 103.9m-150mmØ PVC SAN @ 0.30% — PROPOSED SANITARY SEWER (PER HAWTHORNE RECONSTRUCTION PROJECT)	
CICB □ — PROPOSED CATCHBASIN C/W LEAD (PER HAWTHORNE RECONSTRUCTION PROJECT)	
FUTURE 103.2m-450mmØ CONC. STM @ 0.30% — PROPOSED STORM SEWER (PER HAWTHORNE RECONSTRUCTION PROJECT)	
HYD — VB — PROPOSED HYDRANT c/w LEAD & VALVE & VALVE BOX (PER HAWTHORNE RECONSTRUCTION PROJECT)	
FUTURE 203mmØ PVC WM — PROPOSED WATERMAIN (PER HAWTHORNE RECONSTRUCTION PROJECT)	
PROPOSED HYDRO DUCTS (PER HAWTHORNE RECONSTRUCTION PROJECT)	
150mmØ — PROPOSED WATER SERVICE AND DIAMETER	
VB — PROPOSED VALVE & VALVE BOX	
PROPOSED TEE C/W THRUSTBLOCK	
PROPOSED CAP	
PROPOSED BUILDING ENTRANCE	
REMOVALS	
PROPOSED SIAMESE CONNECTION	
LS — PROPOSED STREET LIGHT	
FFE — FINISHED FLOOR ELEVATION	
USF — UNDERSIDE OF FOOTING ELEVATION	
EXISTING CONCRETE CURB	
MH-S — EXISTING SANITARY MANHOLE & SEWER	
MH-ST — EXISTING STORM MANHOLE & SEWER	
CB — EXISTING CATCHBASIN C/W CATCHBASIN LEAD	
150mmØ WM — EXISTING WATERMAIN	
EX UP — EXISTING TREES / VEGETATION	
EXISTING UTILITY POLE	
OHW — EXISTING OVERHEAD UTILITY WIRES	



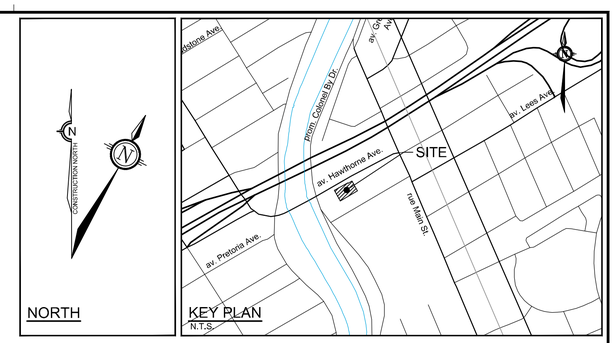
COVER (mm)	THICKNESS (mm)
1800-1500	50
1500-1200	75
1200-900	100
900-600	125

t = THICKNESS OF INSULATION (mm)
h = DEPTH OF COVER
W = D + 300 (1000 min.)
W = WIDTH OF INSULATION (mm)
D = O.D OF PIPE (mm)

NOTES:

1. INSULATE ALL SEWER PIPES THAT ARE LESS THAN 600mmØ AND HAVE LESS THAN 1.8m COVER WITH EXPANDED POLYSTYRENE INSULATION AS SHOWN.
2. THE THICKNESS OF INSULATION SHALL BE THE EQUIVALENT OF 25mm FOR EVERY 300mm REDUCTION IN THE REQUIRED DEPTH OF COVER (SEE TABLE)

INSULATION DETAIL FOR SHALLOW SEWERS ONLY
NOT TO SCALE



GENERAL NOTES:

1. COORDINATE AND SCHEDULE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
2. DETERMINE THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION. PROTECT AND ASSUME RESPONSIBILITY FOR ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON THIS DRAWING.
3. OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF OTTAWA BEFORE COMMENCING CONSTRUCTION.
4. BEFORE COMMENCING CONSTRUCTION OBTAIN AND PROVIDE PROOF OF COMPREHENSIVE, ALL RISK AND OPERATIONAL LIABILITY INSURANCE FOR $5,000,000.00, INSURANCE POLICY TO NAME OWNERS, ENGINEERS AND ARCHITECTS AS CO-INSURED.
5. COMPLETE ALL WORKS IN ACCORDANCE WITH THE MOST CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS USING THE CURRENT GUIDELINES, BYLAWS AND STANDARDS INCLUDING MATERIALS OF CONSTRUCTION, DISINFECTION AND ALL RELEVANT REFERENCES TO OPSS, OPSD & AWWA GUIDELINES - ALL CURRENT VERSIONS AND 'AS AMENDED.
6. RESTORE ALL DISTURBED AREAS ON-SITE AND OFF-SITE, INCLUDING TRENCHES AND SURFACES ON PUBLIC ROAD ALLOWANCES TO EXISTING CONDITIONS OR BETTER TO THE SATISFACTION OF MUNICIPAL AUTHORITIES.
7. REMOVE FROM SITE ALL EXCESS EXCAVATED MATERIAL, ORGANIC MATERIAL AND DEBRIS UNLESS OTHERWISE INSTRUCTED BY ENGINEER. EXCAVATE AND REMOVE FROM SITE ANY CONTAMINATED MATERIAL. ALL CONTAMINATED MATERIAL SHALL BE DISPOSED OF AT A LICENSED LANDFILL FACILITY.
8. ALL ELEVATIONS ARE GEODETIC.
9. REFER TO GEOTECHNICAL INVESTIGATION REPORT (58-8PPA-R0, DATED AUGUST 04, 2022), PREPARED BY YURI MENDEZ ENGINEERING); CONSTRUCTION RECOMMENDATIONS AND GEOTECHNICAL INSPECTION REQUIREMENTS. THE GEOTECHNICAL CONSULTANT IS TO REVIEW ON-SITE CONDITIONS AFTER EXCAVATION PRIOR TO PLACEMENT OF THE GRANULAR MATERIAL.
10. REFER TO ARCHITECT'S AND LANDSCAPE ARCHITECT'S DRAWINGS FOR BUILDING AND HARD SURFACED AREAS AND DIMENSIONS.
11. REFER TO THE 'DEVELOPMENT SERVICING STUDY AND STORMWATER MANAGEMENT REPORT' (R-2022-143) PREPARED BY NOVATECH.
12. SAW CUT AND KEYGRIND ASPHALT AT ALL ROAD CUTS AND ASPHALT TIE-IN POINTS AS PER CITY OF OTTAWA STANDARDS (R10).

SEWER NOTES:

1. SUPPLY AND CONSTRUCT ALL SEWERS AND APPURTENANCES IN ACCORDANCE WITH THE MOST CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS - ALL CURRENT VERSIONS AND 'AS AMENDED'.
2. SPECIFICATIONS:

ITEM	SPEC. No.	REFERENCE
STORM / SANITARY MANHOLE (1200Ø)	701.010	OPSD
SANITARY MANHOLE FRAME AND COVER	401.010 - TYPE 'A'	OPSD
STORM/CATCHBASIN MANHOLE (1800Ø)	701.012	OPSD
STORM/CBMH FRAME AND COVER	401.010 - TYPE 'B'	OPSD
WATERTIGHT MANHOLE FRAME AND COVER	401.030	OPSD
CATCHBASIN (600x600)	705.010	OPSD
CATCHBASIN FRAME & COVER	S19	CITY OF OTTAWA
SEWER TRENCH	S6	CITY OF OTTAWA
STORM SEWER	PVC DR 35 (450mmØ PIPE AND SMALLER)	
STORM SEWER	CONCRETE 65-D (600mmØ PIPE AND LARGER)	
SANITARY SEWER	PVC DR 35	

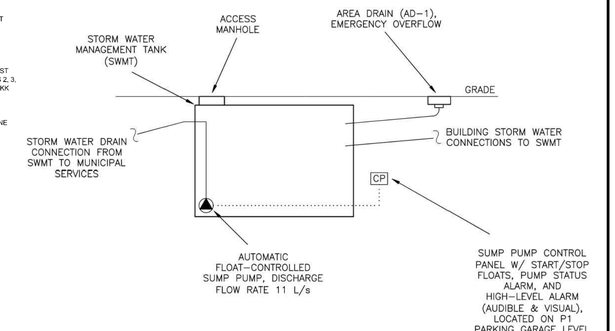
3. THE SANITARY SERVICE LATERAL SHALL BE EQUIPPED WITH A BACKFLOW PREVENTER WITHIN THE BUILDING FOOTPRINT AS PER CITY OF OTTAWA STANDARD DETAIL S14.1 OR S14.2. REFER TO MECHANICAL PLANS FOR DETAILS.
4. THE STORM SERVICE LATERAL SHALL BE EQUIPPED WITH A BACKFLOW PREVENTER WITHIN THE BUILDING FOOTPRINT AS PER CITY OF OTTAWA STANDARD DETAIL S14 TO PROTECT THE WEEPING TILE. FURTHERMORE, THE PUMP WITHIN THE INTERNAL SWM TANK WILL ACT AS A BACKFLOW PREVENTER FOR THE TANK ITSELF. REFER TO MECHANICAL PLANS FOR DETAILS.
5. SERVICES ARE TO BE CONSTRUCTED TO 1.0m FROM FACE OF BUILDING AT A MINIMUM SLOPE OF 1.0%.
6. PIPE BEDDING, COVER AND BACKFILL ARE TO BE COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. THE USE OF CLEAR CRUSHED STONE AS A BEDDING LAYER SHALL NOT BE PERMITTED.
7. INSULATE ALL PIPES (SAN / STM) THAT HAVE LESS THAN 1.8m COVER WITH HI-40 INSULATION PER INSULATION DETAIL FOR SHALLOW SEWERS, PROVIDE 150mm CLEARANCE BETWEEN PIPE AND INSULATION.
8. CONCRETE MANHOLES ARE TO BE 1200mmØ STRUCTURES UNLESS OTHERWISE NOTED ON THE DRAWING. FLEXIBLE CONNECTIONS ARE REQUIRED FOR CONNECTING PIPES TO MANHOLES (FOR EXAMPLE KOR-N-SEAL, PSX; POSITIVE SEAL AND DURASEAL), THE CONCRETE CRADLE FOR THE PIPE CAN BE ELIMINATED.
9. TYPICAL STORM MANHOLES AND CATCHBASIN MANHOLES ARE TO HAVE 300mm SUMPS UNLESS OTHERWISE INDICATED.
10. THE CONTRACTOR IS TO TELEVISE (CCTV) ALL PROPOSED SEWERS, 200mmØ OR GREATER PRIOR TO BASE COURSE ASPHALT. UPON COMPLETION OF CONTRACT, THE CONTRACTOR IS RESPONSIBLE TO FLUSH AND CLEAN ALL SEWERS & APPURTENANCES, PROVIDE A COPY OF ALL CCTV INSPECTION REPORTS TO THE ENGINEER FOR REVIEW.
11. CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GENERAL PLAN OF SERVICES INDICATING ALL APPLICABLE SERVICING AS-BUILT INFORMATION SHOWN ON THIS PLAN. AS-BUILT INFORMATION MUST INCLUDE: PIPE MATERIAL, SIZES, LENGTHS, SLOPES, INVERT AND T/G ELEVATIONS, STRUCTURE LOCATIONS AND ANY ALIGNMENT CHANGES, ETC.
12. THE OWNER SHALL REQUIRE THAT THE SITE SERVICING CONTRACTOR PERFORM FIELD TESTS FOR QUALITY CONTROL OF ALL SANITARY SEWERS. LEAKAGE TESTING SHALL BE COMPLETED IN ACCORDANCE WITH OPSS 410.07.16, 410.07.16.04 AND 407.07.24. DYE TESTING IS TO BE COMPLETED ON ALL SANITARY SERVICES TO CONFIRM PROPER CONNECTION TO THE SANITARY SEWER MAIN. THE FIELD TESTS SHALL BE PERFORMED IN THE PRESENCE OF A CERTIFIED PROFESSIONAL ENGINEER WHO SHALL SUBMIT A CERTIFIED COPY OF THE TEST RESULTS.

WATERMAIN NOTES:

1. SUPPLY AND CONSTRUCT ALL WATERMAINS AND APPURTENANCES IN ACCORDANCE WITH THE CITY OF OTTAWA STANDARDS AND SPECIFICATIONS - ALL CURRENT VERSIONS AND 'AS AMENDED'.
2. SPECIFICATIONS:

ITEM:	SPEC. No.	REFERENCE
WATERMAIN TRENCHING	W17	CITY OF OTTAWA
HYDRANT INSTALLATION	W19	CITY OF OTTAWA
THERMAL INSULATION IN SHALLOW TRENCHES	W22	CITY OF OTTAWA
THERMAL INSULATION BY OPEN STRUCTURES	W23	CITY OF OTTAWA
VALVE BOX ASSEMBLY	W24	CITY OF OTTAWA
WATERMAIN CROSSING BELOW SEWERS	W25	CITY OF OTTAWA
WATERMAIN CROSSING ABOVE SEWERS	W25.2	CITY OF OTTAWA
CATHODIC PROTECTION FOR PVC WATERMAINS	W40	CITY OF OTTAWA
WATERMAIN MATERIAL	PVC DR 18 (100mm AND LARGER)	

3. EXCAVATION, INSTALLATION, BACKFILL AND RESTORATION OF ALL WATERMAINS BY THE CONTRACTOR. CONNECTIONS AND SHUT-OFFS AT THE MAIN AND CHLORINATION OF THE WATER SYSTEM SHALL BE PERFORMED BY CITY OFFICIALS.
4. WATERMAIN SHALL BE MINIMUM 2.4m DEPTH BELOW GRADE UNLESS OTHERWISE INDICATED.
5. PROVIDE MINIMUM 0.5m CLEARANCE BETWEEN OUTSIDE OF PIPES AT ALL CROSSINGS, UNLESS OTHERWISE INDICATED.
6. WATER SERVICE IS TO BE CONSTRUCTED TO WITHIN 1.0m OF FOUNDATION WALL AND CAPPED, UNLESS OTHERWISE INDICATED.



STORMWATER MANAGEMENT TANK SCHEMATIC
NOT TO SCALE
(REFER TO ARCH./MECH. PLANS FOR DETAILS)

INTERNAL SWM STORAGE TANK

DESIGN EVENT	STORAGE SYSTEM CONTROLLED FLOW	STORAGE VOLUMES REQUIRED	STORAGE VOLUMES PROVIDED
1:2 YR	PUMPED FLOW RATE = 11.0 L/s	8.4 m³	> 52 m³
1:5 YR		14.5 m³	
1:100 YR		40.0 m³	
1:100+20%		52.1 m³	

NOTES:

1. ALL DRAINAGE FROM AREA A-2 (PROPOSED AMENITY AREA DECK DRAINS/AREA DRAINS AND ALL ROOF DRAINS) TO BE DIRECTED TO THE INTERNAL STORMWATER STORAGE SYSTEM. REFER TO ARCHITECTURAL AND MECHANICAL PLANS FOR DETAILS.
2. REFER TO ARCHITECTURAL AND STRUCTURAL PLANS FOR EXACT SIZE AND DETAILS OF INTERNAL STORMWATER STORAGE SYSTEM.
3. REFER TO ARCHITECTURAL AND MECHANICAL PLANS FOR LOCATION AND CONNECTIONS AND DETAILS OF THE INTERNAL STORMWATER STORAGE SYSTEM.

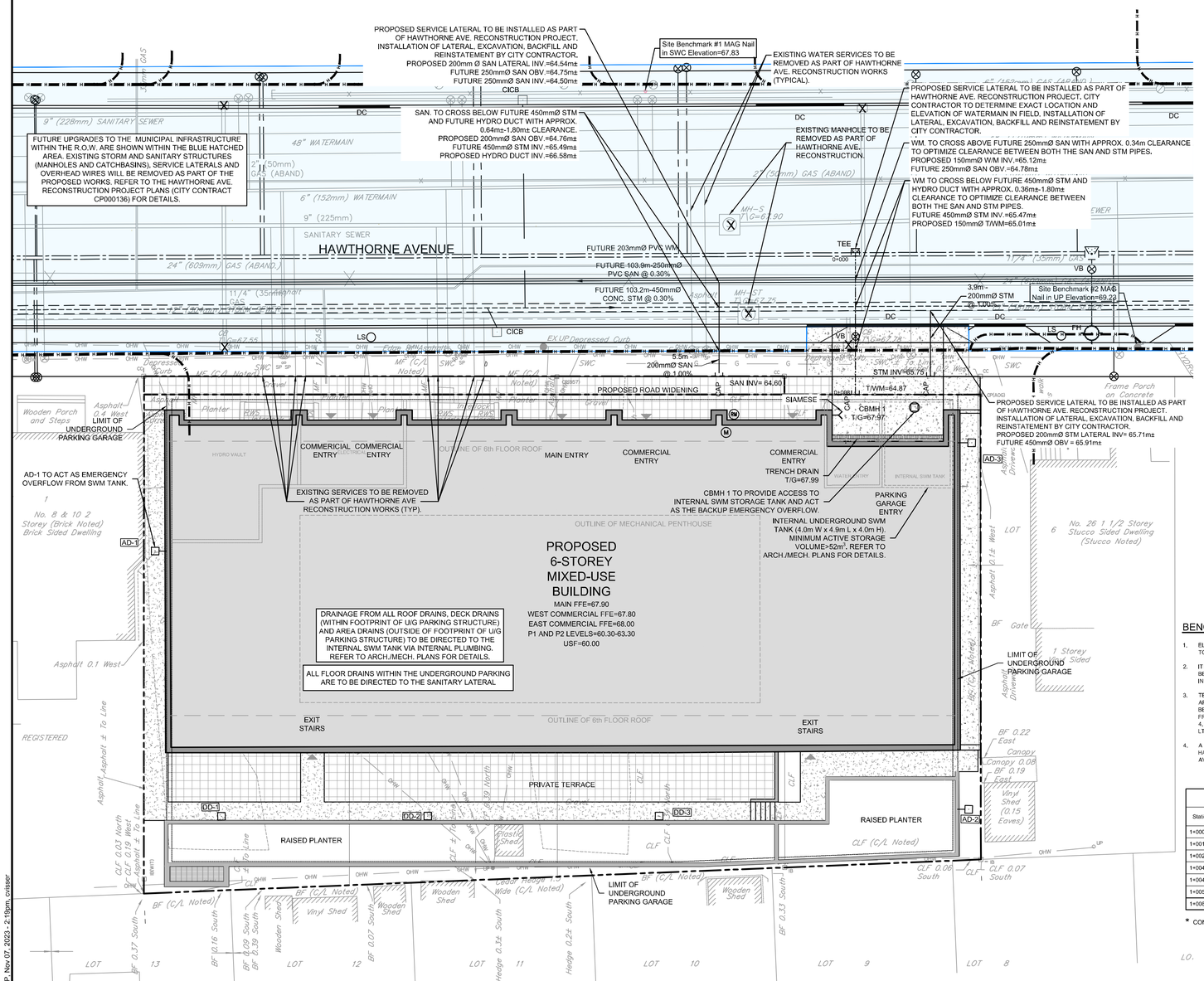
BENCHMARK NOTES:

1. ELEVATIONS SHOWN ARE GEODETIC AND ARE REFERRED TO THE CGVD28 GEODETIC DATUM, AND ARE REFERRED TO CITY OF OTTAWA BENCHMARK OTT 25, HAVING AN ELEVATION OF 69.613.
2. IT IS THE RESPONSIBILITY OF THE USER OF THIS INFORMATION TO VERIFY THAT THE JOB BENCHMARK HAS NOT BEEN ALTERED OR DISTURBED AND THAT IT'S RELATIVE ELEVATION AND DESCRIPTION AGREES WITH THE INFORMATION SHOWN ON THIS DRAWING.
3. TEMPORARY JOB BENCHMARK #1 DESCRIPTION IS LOCATED ON MAG NAIL IN CONCRETE SIDEWALK LOCATED APPROXIMATELY 18m NORTH OF THE NORTH PROPERTY BOUNDARY ALONG HAWTHORNE AVE. TEMPORARY BENCHMARK #2 DESCRIPTION IS MAG NAIL IN UTILITY POLE LOCATED ON BOULEVARD APPROXIMATELY 10m EAST FROM EAST PROPERTY BOUNDARY ALONG HAWTHORNE AVE. SEE TOPOGRAPHICAL PLAN OF SURVEY OF LOTS 2, 3, 4, 5 AND PART OF LOT 6, REGISTERED PLAN 220, CITY OF OTTAWA, SURVEYED BY ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
4. A NEW TEMPORARY BENCHMARK MAY BE REQUIRED IF EXISTING BENCHMARKS ARE DISTURBED DURING THE HAWTHORNE AVE. RECONSTRUCTION PROJECT. ALTERNATIVELY, CONTRACTOR MAY NEED TO USE HAWTHORNE AVENUE RECONSTRUCTION PROJECT BENCHMARKS.

PROPOSED 150mmØ WATER SERVICE TABLE

Station	F/G ELEVATION	TOP OF WATERMAIN	DESCRIPTION
1+000.00	67.91	65.51 *	CONNECTION TO FUTURE 200mmØ WM
1+001.40	67.86	65.27	WATERMAIN CROSSING ABOVE SAN (0.34m CLEARANCE)
1+002.98	67.81	65.01	WATERMAIN CROSSING UNDER STORM (0.36m CLEARANCE)
1+004.63	67.84	64.77	11.25° VERTICAL BEND
1+004.80	67.85	64.78	VALVE BOX AT PROPERTY LINE (~3.0m DEPTH)
1+005.56	67.87	64.81	WATERMAIN CROSSING UNDER HYDRO DUCT (1.8m CLEARANCE
1+008.17	67.96	64.92	CAP

* CONNECTION TO FUTURE 200mmØ PVC WATERMAIN. EXACT ELEVATION TO BE FIELD DETERMINED.



NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

OWNER INFORMATION
JBPA Developments Inc.
107 Pretoria Avenue
Ottawa, ON, K1S 1W8

CONTACT: KEVIN FAGAN
Tel: (613) 695-6767
EMAIL: kfagan@jbpa.ca

No.	REVISION	DATE	BY
3.	REVISED PER CITY COMMENTS	NOV 7/23	FST
2.	REVISED PER CITY COMMENTS	JULY 26/23	FST
1.	ISSUED FOR SITE PLAN CONTROL APPROVAL	APRIL 12/23	FST

SCALE: 1:150
1:150
0 2 4 6

DESIGN: CV/ZA
CHECKED: FST
DRAWN: ZA
CHECKED: FST
APPROVED: FST

FOR REVIEW ONLY

LICENSED PROFESSIONAL ENGINEER — F.S. THAUVETTE — 100041399 — November 7, 2023 — PROVINCE OF ONTARIO

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Engineers, Planners & Landscape Architects
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Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

LOCATION
CITY OF OTTAWA
12-24 HAWTHORNE AVENUE

DRAWING NAME
GENERAL PLAN OF SERVICES

PROJECT No. 122152
REV REV # 3
DRAWING No. 122152-GP

D07-12-23-0043

PLAN #19052