

**LEGEND**

SAN MH 1	PROPOSED SANITARY MH & SEWER (WT+WATERIGHT COVER)		EXISTING CONCRETE CURB
CBMH 3	PROPOSED CATCHBASIN MANHOLE & SEWER		EXISTING SANITARY MANHOLE AND SEWER
STMMH 128	PROPOSED STORM MANHOLE & SEWER (WT+WATERIGHT COVER)		EXISTING CATCHBASIN MANHOLE AND SEWER
CB 100	PROPOSED CATCHBASIN AND LEAD		EXISTING STORM MANHOLE AND SEWER
HYD	PROPOSED HYDRANT AND VALVE		EXISTING CATCHBASIN CW CATCHBASIN LEAD
DC	PROPOSED DEPRESSIONED CURB		EXISTING HYDRANT
200mmØ	PROPOSED WATERMAIN AND DIAMETER		EXISTING UTILITY POLE CW GUY WIRES
VB	PROPOSED VALVE BOX		EXISTING WATERMAIN
BEND	PROPOSED BEND AND THRUSTBLOCK 11.25°, 22.5°, 45° or TEE		EXISTING HYDRANT CW VALVE & LEAD
C	PROPOSED CAP		EXISTING LIGHT STANDARD
ICD	PROPOSED INLET CONTROL DEVICE		EXISTING FENCE
RD	CONTROLLED FLOW ROOF DRAIN		EXISTING OVERHEAD UTILITY WIRES
	THERMAL INSULATION FOR SHALLOW SEWERS		
	PROPOSED BUILDING ENTRANCE		
	PROPOSED RETAINING WALL		
	PROPOSED WATER METER AND REMOTE METER		
	PROPOSED GAS METER		
FFE = 92.00	PROPOSED FINISHED FLOOR ELEVATION		
USF = 90.50	PROPOSED UNDERSIDE OF FOOTING ELEVATION		
	PROPOSED LANDSCAPE WALL		

**PROPOSED 150mmØ WATER SERVICE TABLE**

Station	F/G ELEVATION	TOP OF WATERMAIN	DESCRIPTION
1+000.00	91.42	89.02	TEE CONNECTION TO EX. 400mmØ WM
1+016.69	91.35	88.95	VALVE & VALVE BOX
1+018.20	91.39	88.99	WATERMAIN CROSSING UNDER STORM (0.61m CLEARANCE)
1+022.88	91.52	88.45	TEE CONNECTION FOR FIRE HYDRANT
1+024.06	91.56	88.45	22.5° VERTICAL BEND
1+025.52	91.60	88.45	22.5° VERTICAL BEND
1+026.62	91.63	88.45	TEE CONNECTION FOR BUILDING B (150mmØ WM SERVICE)
1+033.32	91.69	88.66	WATERMAIN CROSSING UNDER SAN (0.50m CLEARANCE)
1+034.42	91.69	88.66	22.5° VERTICAL BEND
1+035.42	91.68	89.15	22.5° VERTICAL BEND
1+037.21	91.68	89.15	WATERMAIN CROSSING UNDER STORM (0.50m CLEARANCE)
1+040.26	91.81	89.18	45° HORIZONTAL BEND
1+045.67	91.58	89.18	45° HORIZONTAL BEND
1+048.02	91.57	89.19	WATERMAIN CROSSING UNDER STORM (0.55m CLEARANCE)
1+055.85	91.63	89.23	VALVE AND VALVE BOX
1+058.77	91.84	89.23	CAP (1.0m FROM BUILDING FACE)
2+000.00	91.63	88.45	TEE CONNECTION FOR BUILDING B (150mmØ WM SERVICE)
2+002.50	91.65	88.45	WATERMAIN CROSSING UNDER STORM (1.16m CLEARANCE)
2+004.64	91.66	88.43	45° HORIZONTAL BEND
2+005.12	91.67	88.43	WATERMAIN CROSSING UNDER STORM (0.50m CLEARANCE)
2+005.81	91.69	88.43	22.5° VERTICAL BEND
2+007.61	91.73	89.33	22.5° VERTICAL BEND
2+025.82	91.72	89.34	45° HORIZONTAL BEND
2+027.07	91.74	89.33	VALVE AND VALVE BOX
2+029.57	91.94	89.37	CAP (1.0m FROM BUILDING FACE)

\* CONNECTION TO EXISTING 400mmØ WATERMAIN, EXACT ELEVATION TO BE FIELD DETERMINED.

**INLET CONTROL DEVICE DATA TABLE: AREA A-2**

DESIGN EVENT	ICD TYPE (PLUG TYPE)	OUTLET STRUCTURE	DIAMETER OF OUTLET PIPE (mm)	PEAK DESIGN FLOW (L/s)	DESIGN HEAD (m)	WATER ELEVATION (m)	VOLUME (m³)	AVAILABLE STORAGE
1.2 YR	IPX TEMPEST	CBMH 106	450mmØ	11.1	1.56	91.47	19.1	
1.5 YR	VORTEX LMF 100			11.8	1.68	91.59	28.9	105.8m³
1.100 YR				11.8	1.75	91.67	69.3	

**INLET CONTROL DEVICE DATA TABLE: AREA A-5**

DESIGN EVENT	ICD TYPE (PLUG TYPE)	OUTLET STRUCTURE	DIAMETER OF OUTLET PIPE (mm)	PEAK DESIGN FLOW (L/s)	DESIGN HEAD (m)	WATER ELEVATION (m)	VOLUME (m³)	AVAILABLE STORAGE
1.2 YR	IPX TEMPEST	CBMH 124	450mmØ	11.5	1.66	91.52	11.9	52.1 m³
1.5 YR	VORTEX LMF 100			11.8	1.75	91.61	18.6	
1.100 YR				12.2	1.83	91.69	46.0	

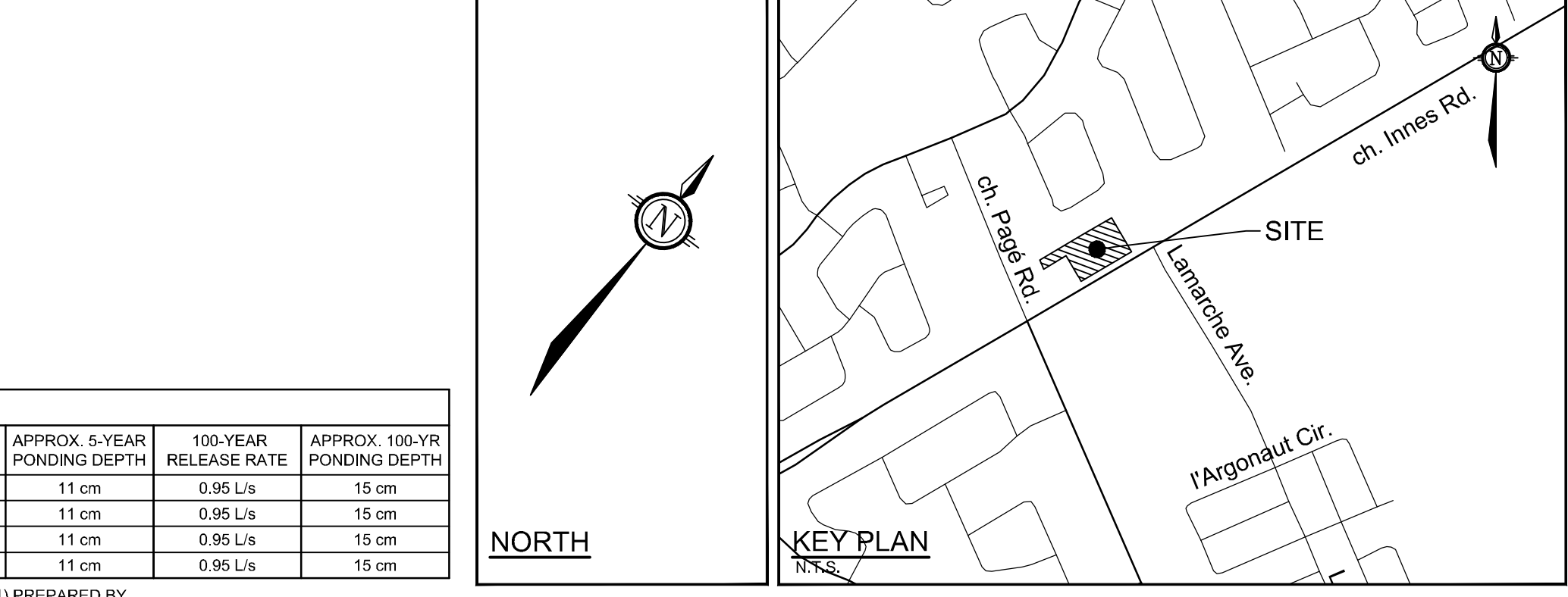
**ROOF DRAIN TABLE**

AREA ID *	ROOF DRAIN No. (WATTS MODEL)	ROOF DRAIN OPENING SETTING	2 YEAR RELEASE RATE	APPROX. 2-YR PONDING DEPTH	5-YEAR RELEASE RATE	APPROX. 5-YEAR PONDING DEPTH	100-YEAR RELEASE RATE	APPROX. 100-YR PONDING DEPTH
A-3	RD 1 (RD-100-A-ADJ)	1/4 EXPOSED	0.75 L/s	9 cm	0.83 L/s	11 cm	0.95 L/s	15 cm
A-3	RD 2 (RD-100-A-ADJ)	1/4 EXPOSED	0.75 L/s	10 cm	0.83 L/s	11 cm	0.95 L/s	15 cm
A-6	RD 3 (RD-100-A-ADJ)	1/4 EXPOSED	0.79 L/s	10 cm	0.83 L/s	11 cm	0.95 L/s	15 cm
A-6	RD 4 (RD-100-A-ADJ)	1/4 EXPOSED	0.79 L/s	10 cm	0.83 L/s	11 cm	0.95 L/s	15 cm

\* REFER TO THE DEVELOPMENT SERVICING STUDY AND STORMWATER MANAGEMENT REPORT (R-2022-171) PREPARED BY NOVATECH FOR DRAINAGE AREA IDENTIFIERS AND STORMWATER MANAGEMENT DETAILS.  
 \*\* ALL CONTROLLED FLOW ROOF DRAINS TO BE WATTS' ADJUSTABLE ACCUTROL® ROOF DRAINS.

**SEWER PIPE CROSSING TABLE**

CROSSING	HIGHER PIPE	LOWER PIPE	CLEARANCE
Ⓐ	250mmØ STM INV=89.86	200mmØ SAN OBV=89.61	± 0.25m
Ⓑ	200mmØ SAN INV=89.16	150mmØ T/W=88.66	± 0.50m
Ⓒ	300mmØ STM INV=89.60	200mmØ SAN=89.29	± 0.31m
Ⓓ	200mmØ STM INV=89.61	150mmØ T/W=88.45	± 1.16m
Ⓔ	200mmØ SAN INV=89.33	150mmØ T/W=88.43	± 0.50m
Ⓕ	300mmØ STM OBV=89.65	150mmØ T/W=89.15	± 0.50m
Ⓖ	300mmØ STM OBV=89.74	150mmØ T/W=89.19	± 0.55m



**GENERAL NOTES:**

- COORDINATE AND SCHEDULE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
- 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.
- OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF OTTAWA BEFORE COMMENCING CONSTRUCTION.
- 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.
- 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 THE CITY OF OTTAWA AND ENGINEER.
- 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.
- ALL ELEVATIONS ARE GEODETIC.
- REFER TO THE GEOTECHNICAL INVESTIGATION PROPOSED DEVELOPMENT - 3493-3499 INNES ROAD - (REPORT NO. PG575-LET.01) PREPARED BY PATERSON GROUP ON APRIL 5, 2021. FOR SUBSURFACE CONDITIONS, CONSTRUCTION RECOMMENDATIONS, AND GEOTECHNICAL INSPECTION REQUIREMENTS. THE GEOTECHNICAL CONSULTANT IS TO REVIEW ON-SITE CONDITIONS AFTER EXCAVATION PRIOR TO PLACEMENT OF THE GRANULAR MATERIAL.
- REFER TO ARCHITECT'S AND LANDSCAPE ARCHITECT'S DRAWINGS FOR BUILDING AND HARDSURFACE AREAS AND DIMENSIONS.
- REFER TO DEVELOPMENT SERVICING STUDY & STORMWATER MANAGEMENT REPORT (R-2022-171) PREPARED BY NOVATECH ENGINEERING CONSULTANTS LTD.
- SAW CUT AND KEY GRIND ASPHALT AT ALL ROAD CUTS AND ASPHALT TIE IN POINTS AS PER CITY OF OTTAWA STANDARDS (R10).
- PROVIDE LINE/PARKING PAINTING.
- CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GENERAL PLAN OF SERVICES INDICATING ALL SERVICES AS-BUILT INFORMATION SHOWN ON THIS PLAN. AS-BUILT INFORMATION MUST INCLUDE: PIPE MATERIAL, SIZES, LENGTHS, SLOPES, INVERT AND T/G ELEVATIONS, STRUCTURE LOCATIONS, VALVE AND HYDRANT LOCATIONS, T/W ELEVATIONS AND ANY ALIGNMENT CHANGES, ETC.

**SEWER NOTES:**

- SUPPLY AND CONSTRUCT ALL SEWERS AND APPURTENANCES IN ACCORDANCE WITH THE MOST CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS.
- SPECIFICATIONS:
 

ITEM	SPEC. No.	REFERENCE
CATCHBASIN (600x600mm)	705.010	OPSD
STORM / SANITARY MANHOLE (1200mmØ)	701.010	OPSD
CB, FRAME & COVER	400.020	OPSD
STORM / SANITARY MH FRAME & COVER	401.010	OPSD
WATERTIGHT MH FRAME AND COVER	401.030	OPSD
SEWER TRENCH	56	CITY OF OTTAWA
STORM SEWER	PVC DR 35	
SANITARY SEWER	PVC DR 35	
CATCHBASIN LEAD	PVC DR 35	
- ALL STORM AND SANITARY SERVICE LATERALS SHALL BE EQUIPPED WITH BACKFLOW PREVENTION DEVICES AS PER THE CITY OF OTTAWA STANDARD DETAILS S14 AND S14.1 OR S14.2.
- INSULATE ALL PIPES (SAN/STM) THAT HAVE LESS THAN 1.5m COVER WITH HI-40 INSULATION PER INSULATION DETAIL FOR SHALLOW SEWERS. PROVIDE 150mm CLEARANCE BETWEEN PIPE AND INSULATION.
- SERVICES ARE TO BE CONSTRUCTED TO 1.0m FROM FACE OF BUILDING AT A MINIMUM SLOPE OF 1.0%.
- 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.
- 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.
- 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.
- ALL STORM MANHOLES AND CATCHBASIN MANHOLES ARE TO HAVE 300mm SUMP UNLESS OTHERWISE INDICATED. ALL CATCHBASINS ARE TO HAVE 600mm SUMP UNLESS OTHERWISE INDICATED.
- ALL CATCHBASIN, MANHOLES AND/OR CATCHBASIN MANHOLES THAT ARE TO HAVE ICD'S INSTALLED WITHIN THEM ARE TO HAVE 600mm SUMP.
- ALL WEEPING TILE CONNECTIONS TO BE MADE TO THE PROPOSED STORM SEWER SYSTEM DOWNSTREAM OF ANY INLET CONTROL DEVICES.
- CONTRACTOR TO TELE/ISE (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.

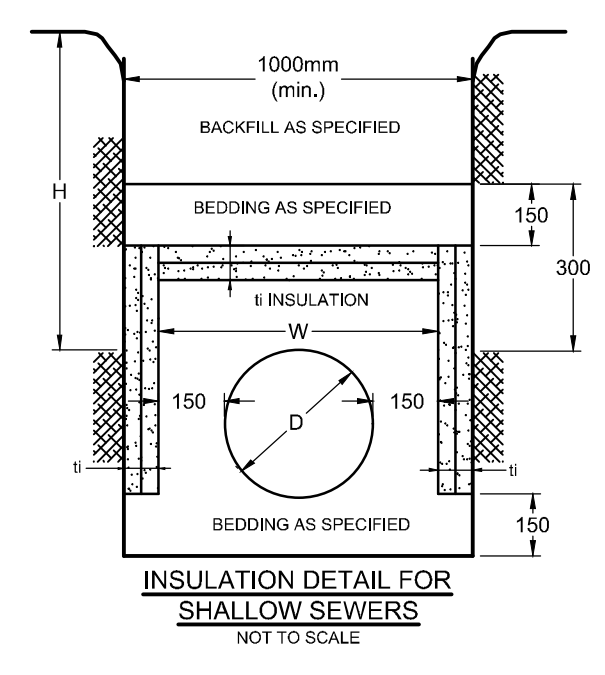
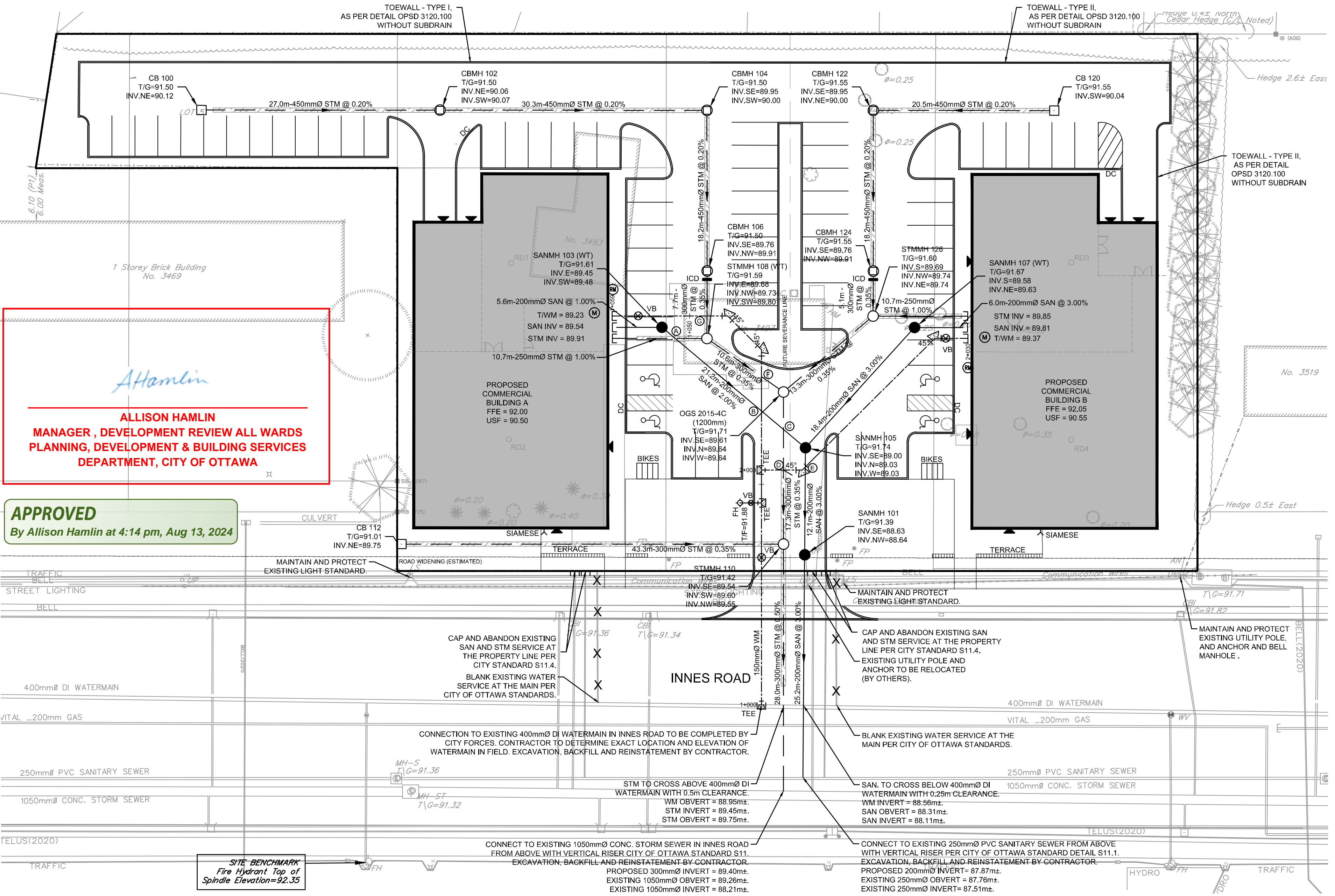
**WATERMAIN NOTES:**

- SUPPLY AND CONSTRUCT ALL WATERMANS AND APPURTENANCES IN ACCORDANCE WITH THE CITY OF OTTAWA STANDARDS AND SPECIFICATIONS. EXCAVATION, INSTALLATION, BACKFILL AND RESTORATION OF ALL WATERMANS BY THE CONTRACTOR. CONNECTIONS, SHUT-OFFS AT THE MAIN AND CHLORINATION OF THE WATER SYSTEM SHALL BE PERFORMED BY CITY OF OTTAWA FORCES.
- SPECIFICATIONS:
 

ITEM	SPEC. No.	REFERENCE
WATERMAIN TRENCHING	W17	CITY OF OTTAWA
FIRE HYDRANT INSTALLATION	W19	CITY OF OTTAWA
THERMAL INSULATION IN SHALLOW TRENCHES	W22	CITY OF OTTAWA
INSULATION ADJACENT TO OPEN STRUCTURES	W23	CITY OF OTTAWA
VALVE BOX ASSEMBLY	W24	CITY OF OTTAWA
WATERMAIN	PVC DR 18	
WATERMAIN CROSSING BELOW SEWER	W25	CITY OF OTTAWA
WATERMAIN CROSSING ABOVE SEWER	W25.2	CITY OF OTTAWA
- WATERMAIN SHALL BE MINIMUM 2.4m DEPTH BELOW GRADE UNLESS OTHERWISE INDICATED.
- PROVIDE MINIMUM 0.5m CLEARANCE BETWEEN OUTSIDE OF PIPES AT ALL CROSSINGS, IF SEWER IS ABOVE WATERMAIN.
- PROPOSED WATER SERVICES ARE TO BE CONSTRUCTED TO WITHIN 1.0m OF FOUNDATION WALL AND CAPPED, UNLESS OTHERWISE INDICATED.

**BENCHMARK NOTES:**

- ELEVATIONS SHOWN ARE GEODETIC AND ARE REFERRED TO THE COVD28 GEODETIC DATUM.
- IT IS THE RESPONSIBILITY OF THE USER OF THIS INFORMATION TO VERIFY THAT THE JOB BENCHMARK HAS NOT BEEN ALTERED OR DISTURBED AND THAT ITS RELATIVE ELEVATION AND DESCRIPTION AGREES WITH THE INFORMATION SHOWN ON THIS DRAWING.
- BENCHMARK WAS PROVIDED ON SURVEYOR'S REAL PROPERTY REPORT PART 1, PLAN OF PART OF LOT 5, CONECTION 2 (OTTAWA FRONT) GEOGRAPHIC TOWNSHIP OF GLOUCESTER, CITY OF OTTAWA, SURVEYED BY ANNIS, O'SULLIVAN AND VOLEBEK LTD.



**INSULATION NOTES:**

1. THE THICKNESS OF SEWER INSULATION SHALL BE THE EQUIVALENT OF 25mm FOR EVERY 300mm REDUCTION IN THE REQUIRED DEPTH OF COVER (SEE TABLE).

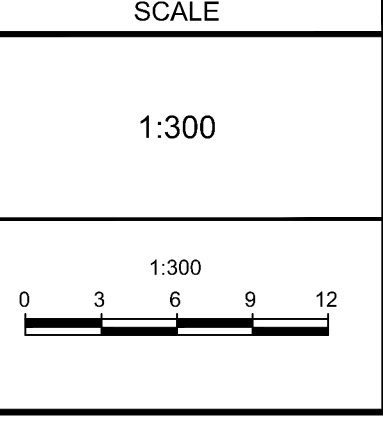
COVER (mm)	INSULATION THICKNESS (mm)
1800-1500	50
1500-1200	75
1200-900	100
900-600	125

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

**NOTE:**  
 THE POSITION OF ALL POLE LINES, CONDUITS, WATERMANS, 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**  
 6587712 CANADA INC.  
 1085 BOULEVARD DE LA CARRIERE,  
 GATINEAU, QUEBEC, J8Y 6V4  
 VALÉRIE LAPENSAÉE  
 PHONE: (819) 664-4306  
 EMAIL: valerie@matelapensee.ca

No.	REVISION	DATE	BY
2.	REVISED AS PER CITY COMMENTS	JUN 7/23	FST
1.	ISSUED FOR SITE PLAN APPROVAL	DEC 22/22	FST



**FOR REVIEW ONLY**

DESIGN	CV
CHECKED	FST
DRAWN	CVZA
CHECKED	FST
APPROVED	FST

PROFESSIONAL ENGINEER  
 F.S. THAUVETTE  
 100041399  
 June 9, 2023  
 PROVINCE OF ONTARIO

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**LOCATION**  
 CITY OF OTTAWA  
 3493, 3497 & 3499 INNES ROAD

**DRAWING NAME**  
 GENERAL PLAN OF SERVICES

PROJECT No.	118204
REV	REV # 2
DRAWING No.	118204-GP

PLAN #19124

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