

# LEGEND

---	PROPERTY LINE	---	EXISTING OVERHEAD WIRES
SAN MH 01	PROPOSED SANITARY MH & SEWER	---	EXISTING CONCRETE CURB
CBMH 03	PROPOSED CATCHBASIN MH & SEWER	SANMH	EXISTING SANITARY MANHOLE & SEWER
STM MH 01	PROPOSED STORM MH & SEWER	CBMH	EXISTING CATCHBASIN MANHOLE
CB 02	PROPOSED CATCHBASIN & LEAD	STM MH	EXISTING STORM MANHOLE & SEWER
HYD	PROPOSED HYDRANT c/w VALVE & VALVE BOX	CB	EXISTING CATCHBASIN C/W CATCHBASIN LEAD
ICD	PROPOSED INLET CONTROL DEVICE	HYD	EXISTING HYDRANT & VALVE
RD	CONTROLLED FLOW ROOF DRAIN	EX UP	EXISTING TREES / VEGETATION
WB	PROPOSED WATER METER AND REMOTE METER	EX UP	EXISTING UTILITY POLE
DC	PROPOSED BARRIER CURB	---	EXISTING FENCE
150mmØ	PROPOSED DEPRESSED CURB	---	EXISTING WATERMAIN
VB	PROPOSED VALVE & VALVE BOX	---	EXISTING HYDRANT C/W VALVE & LEAD
BEND	PROPOSED BEND AND THRUSTBLOCK 11.25", 22.5", 45" or TEE	FFE	FINISHED FLOOR ELEVATION
C	PROPOSED CAP	T/FND	TOP OF FOUNDATION WALL ELEVATION
X	PROPOSED BUILDING ENTRANCE	USF	UNDERSIDE OF FOOTING ELEVATION
---	REMOVALS	---	PROPOSED GAS METER
---	THERMAL INSULATION FOR SHALLOW SEWERS	---	PROPOSED HYDRO TRANSFORMER

PROPOSED 200mmØ / 150mmØ WATER SERVICE TABLE			
STATION	SURFACE ELEVATION	T/W M ELEVATION	COMMENTS
0+00	70.58±	68.18±	200mmØ WM CONNECTION TO EX. 300mmØ CI WM
0+08.7	70.66	68.08	FUTURE R.O.W. LIMIT / 200mmØ V&VB
0+09.3	70.66	68.07	HYDRANT LEAD
0+10.6	70.62	68.05	200x150mmØ REDUCER
0+11.2	70.59	68.02	CROSS BELOW 600mmØ STORM (CLEARANCE = 0.45m±)
0+20	70.50	68.05	INSULATE IN PROXIMITY TO OPEN STRUCTURE
0+30	70.60	68.10	---
0+40	70.50	68.10	INSULATE IN PROXIMITY TO OPEN STRUCTURE
0+47.4	70.55	68.15	45° HORIZONTAL BEND
0+50.2	70.58	68.18	45° HORIZONTAL BEND
0+58.0	70.90	68.35	CAP 1.0m FROM FOUNDATION WALL

\* CONNECTION TO EXISTING 300mmØ UCI WATERMAIN. EXACT ELEVATION TO BE FIELD DETERMINED.  
 \*\* PROVIDE THERMAL INSULATION AS PER CITY OF OTTAWA DETAIL W22 IN SHALLOW TRENCHES AND/OR CITY OF OTTAWA DETAIL W23 ADJACENT TO OPEN STRUCTURES.

# 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.
- 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 OPS, OPSD & AWWA GUIDELINES - ALL CURRENT VERSIONS AND 'AS AMENDED'.
- 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.
- 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 GEOTECHNICAL INVESTIGATION REPORT (R66 No. PG4353-2, DATED MAY 19, 2021) PREPARED BY PATERSON GROUP INC. 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 HARD SURFACED AREAS AND DIMENSIONS.
- REFER TO THE 'DEVELOPMENT SERVICING STUDY AND STORMWATER MANAGEMENT REPORT' (R-2021-066) PREPARED BY NOVATECH.
- SAW CUT AND KEYGRIND ASPHALT AT ALL ROAD CUTS AND ASPHALT TIE-IN POINTS AS PER CITY OF OTTAWA STANDARDS (R10).

# SEWER NOTES:

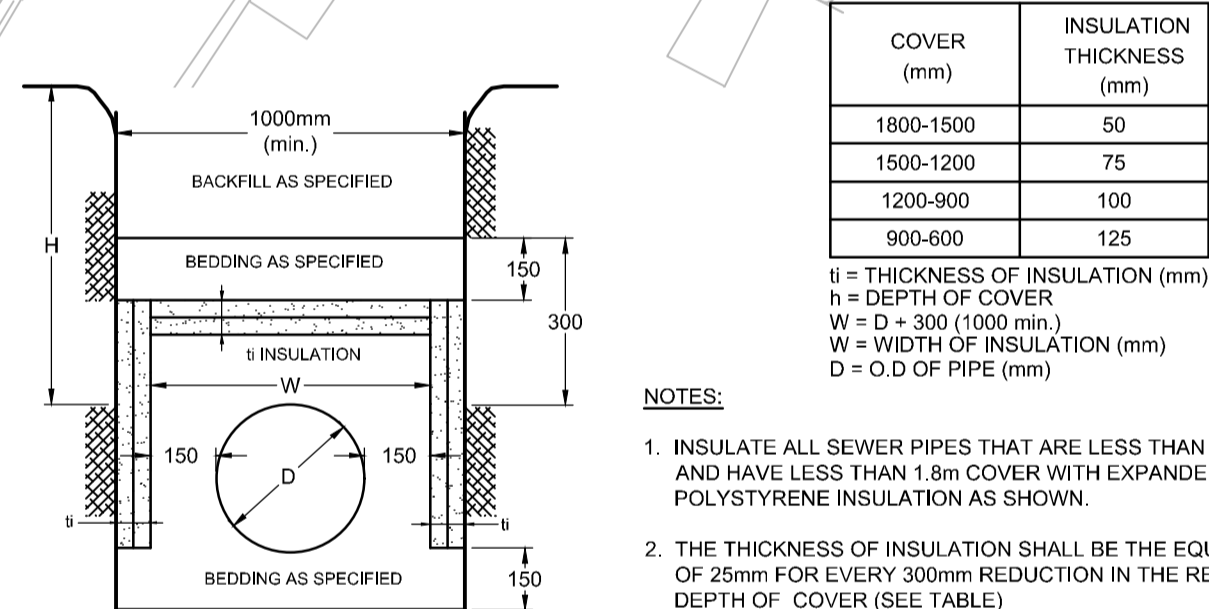
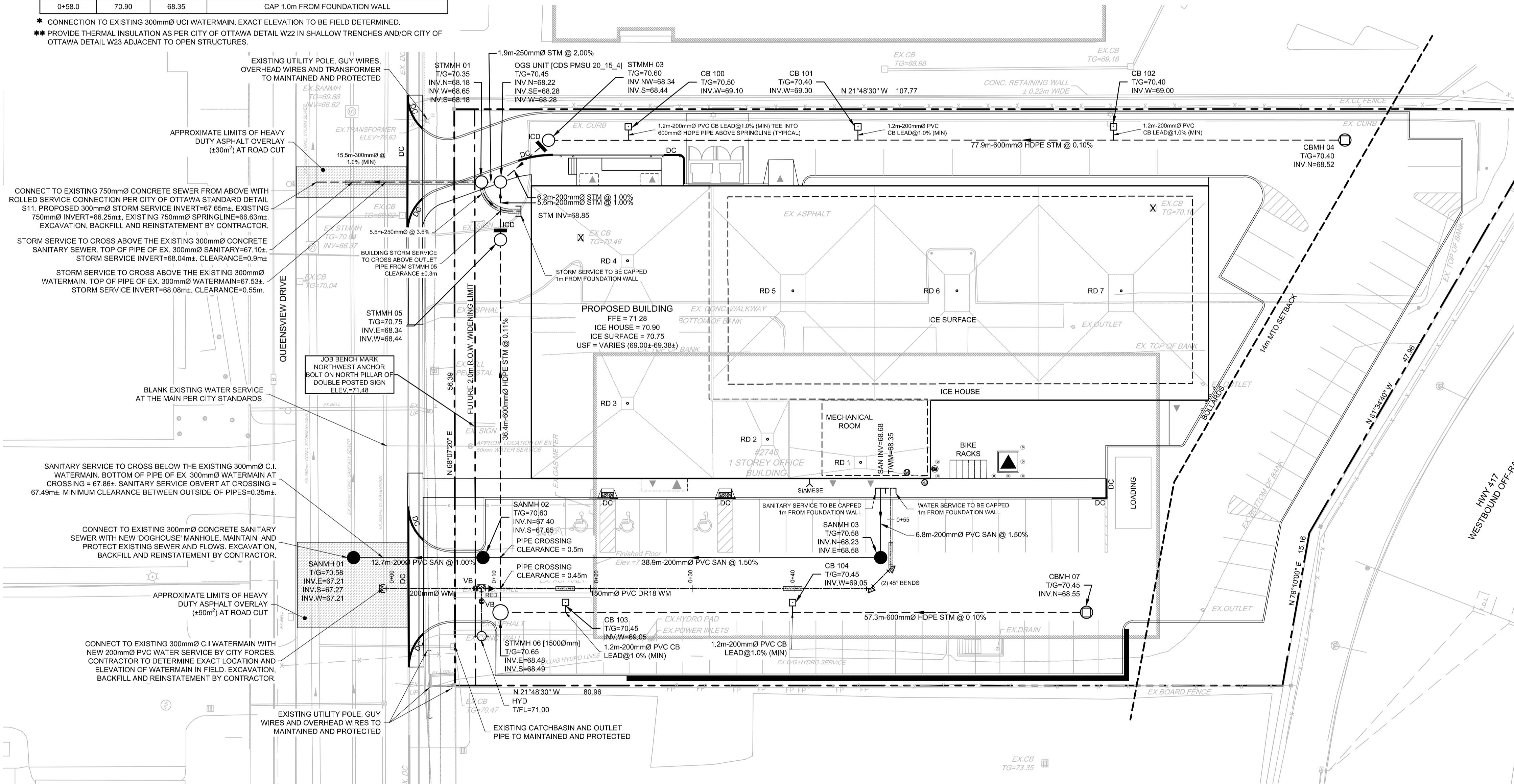
- SUPPLY AND CONSTRUCT ALL SEWERS AND APPURTENANCES IN ACCORDANCE WITH THE MOST CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS - ALL CURRENT VERSIONS AND 'AS AMENDED'.
- SPECIFICATIONS:
 

ITEM	SPEC. No.	REFERENCE
STORM/SANITARY MANHOLE (12000)	701.010	OPSD
STORM/CATCHBASIN MANHOLE (15000)	701.011	OPSD
STORM/CB/MH FRAME AND COVER	401.010 - TYPE 'B'	OPSD
SANITARY MANHOLE FRAME AND COVER	401.010 - TYPE 'A'	OPSD
WATERTIGHT MANHOLE FRAME AND COVER	401.030	OPSD
CATCHBASIN MH FRAME & COVER	401.010 Type 'B'	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)	
SANITARY SEWER	HDPE BOSS 2000 (600mmØ PIPE AND LARGER)	
	PVC DR 35	
- THE SANITARY SERVICE LATERAL SHALL BE EQUIPPED WITH BACKFLOW PREVENTERS WITHIN THE BUILDING FOOTPRINT AS PER CITY OF OTTAWA STANDARD DETAILS S14.1 OR S14.2. REFER TO MECHANICAL PLANS FOR DETAILS.
- THE STORM SERVICE LATERAL SHALL BE EQUIPPED WITH A BACKFLOW PREVENTER WITHIN THE BUILDING FOOTPRINT AS PER CITY OF OTTAWA STANDARD DETAILS S14. REFER TO MECHANICAL PLANS FOR DETAILS.
- 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.
- INSULATE ALL PIPES (SAN / STM) THAT HAVE LESS THAN 1.5m COVER WITH H-40 INSULATION PER INSULATION DETAIL FOR SHALLOW SEWERS. PROVIDE 150mm CLEARANCE BETWEEN PIPE AND INSULATION.
- 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-SEAL, PSX: POSITIVE SEAL AND DUREAL), THE CONCRETE CRADLE FOR THE PIPE CAN BE ELIMINATED.
- TYPICAL STORM MANHOLES AND CATCHBASIN MANHOLES ARE TO HAVE 300mm SUMPS UNLESS OTHERWISE INDICATED.
- THE CONTRACTOR IS TO TELEVIEW (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.
- 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/S ELEVATIONS, STRUCTURE LOCATIONS AND ANY ALIGNMENT CHANGES, ETC.
- 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 OPS S110.07.16, 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:

- SUPPLY AND CONSTRUCT ALL WATERMAINS AND APPURTENANCES IN ACCORDANCE WITH THE CITY OF OTTAWA STANDARDS AND SPECIFICATIONS - ALL CURRENT VERSIONS AND 'AS AMENDED'.
- 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
CATHODIC PROTECTION FOR PVC WATERMAINS	W40	CITY OF OTTAWA
WATERMAIN MATERIAL	PVC DR 18 (100mm AND LARGER)	
- 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.
- WATERMAIN SHALL BE MINIMUM 2.4m DEPTH BELOW GRADE UNLESS OTHERWISE INDICATED.
- PROVIDE MINIMUM 0.5m CLEARANCE BETWEEN OUTSIDE OF PIPES AT ALL CROSSINGS, UNLESS OTHERWISE INDICATED.
- WATER SERVICE IS TO BE CONSTRUCTED TO WITHIN 1.0m OF FOUNDATION WALL AND CAPPED, UNLESS OTHERWISE INDICATED.



INSULATION DETAIL FOR SHALLOW SEWERS ONLY  
NOT TO SCALE

INLET CONTROL DEVICE DATA TABLE - AREA A-1									
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	IPEX TEMPEST VORTEX LMF 65	1200mmØ STM MH 03	200mmØ	2.8	0.46	68.90	17.4	69.9 m³	
1.5 YR				3.3	0.71	69.15	23.8		
1:100 YR				5.5	2.07	70.51	37.0		

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	IPEX TEMPEST VORTEX LMF 65	1200mmØ STM MH 05	200mmØ	5.1	0.56	69.00	26.0	66.1 m³	
1.5 YR				6.8	1.04	69.48	31.0		
1:100 YR				9.5	2.13	70.57	52.6		

PROPOSED SITE FLOWS & STORMWATER MANAGEMENT TABLE									
DESIGN EVENT	PRE-DEVELOPMENT CONDITIONS		POST-DEVELOPMENT CONDITIONS						
	SITE FLOWS (L/s)	TARGET CONTROL RATE (L/s)	A-0 FLOW (L/s)	A-1 FLOW (L/s)	A-2 FLOW (L/s)	R-1 FLOW (L/s)	CONTROL FLOW (L/s)	TOTAL FLOW (L/s)	REDUCTION IN FLOW (L/s or %)
1.2 YR	81.6	[33.5 L/s sha]	2.9	2.8*	5.1*	2.2*	10.1*	13.0	68.6 or 84%
1.5 YR	110.8		4.0	3.3*	6.8*		12.3*	16.3	94.5 or 85%
1:100 YR	212.8		8.1	5.5*	9.5*		17.2*	25.3	187.3 or 88%

\* TOTAL CONTROLLED FLOW IS LESS THAN THE TARGET CONTROL RATE (EXCLUDING A-0 DUE TO DIFFERENT TIMES TO PEAK)  
 \*\*REDUCED FLOW COMPARED TO PRE-DEVELOPMENT UNCONTROLLED CONDITIONS

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.

**Granite Curling Club**  
of West Ottawa

**MORLEY HOPPNER**

OWNER INFORMATION  
 GRANITE CURLING CLUB OF WEST OTTAWA  
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 manager@ottawagranite.com

DESIGN BUILDER INFORMATION  
 MORLEY HOPPNER INC.  
 1818 BRADLEY SIDE ROAD, OTTAWA, ON K0A 1L0  
 CONTACT: KEN HOPPNER, CEO  
 TELEPHONE: 613-831-5490  
 khoppner@morleyhoppner.com

No.	REVISION	DATE	BY
2	ISSUED FOR FINAL SITE PLAN APPROVAL	OCT 22/21	FST
1	ISSUED FOR SITE PLAN APPROVAL	JUL 26/21	FST

SCALE  
1:250

0 2 4 6 8 10

DESIGN	DWM
CHECKED	FST
DRAWN	DWM
CHECKED	FST
APPROVED	FST

# FOR REVIEW ONLY



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LOCATION CITY OF OTTAWA 2740 QUEENSVIEW DRIVE		PROJECT No.	121127-00
DRAWING NAME GENERAL PLAN OF SERVICES		REV	REV # 2
		DRAWING No.	121127-GP