

LEGEND

- PROPERTY LINE
- SAN MH 201 PROPOSED SANITARY MH & SEWER
- CBMH 102 PROPOSED CATCHBASIN MH & SEWER
- STMMH 101 PROPOSED STORM MH & SEWER
- DD MECHANICAL DECK DRAIN FOR (COVERED) SURFACE PARKING
- AD AREA DRAIN SURFACE PARKING LOT (EXPOSED TO THE RAIN)
- HYD PROPOSED HYDRANT CW VALVE & VALVE BOX
- M PROPOSED WATER METER AND REMOTE METER
- DC PROPOSED DEPRESSIONED CURB
- 150mmØ PROPOSED WATER SERVICE AND DIAMETER
- VB PROPOSED VALVE & VALVE BOX
- BEND PROPOSED BEND AND THRUSTBLOCK 11.25°, 22.5°, 45° or TEE
- C PROPOSED CAP
- PROPOSED BUILDING ENTRANCE
- THERMAL INSULATION FOR SHALLOW SEWERS
- PROPOSED HYDRO TRANSFORMER
- PROPOSED BUILDING PILLAR
- REMOVALS
- FFE FINISHED FLOOR ELEVATION
- T/FND TOP OF FOUNDATION WALL ELEVATION
- USF UNDERSIDE OF FOOTING ELEVATION

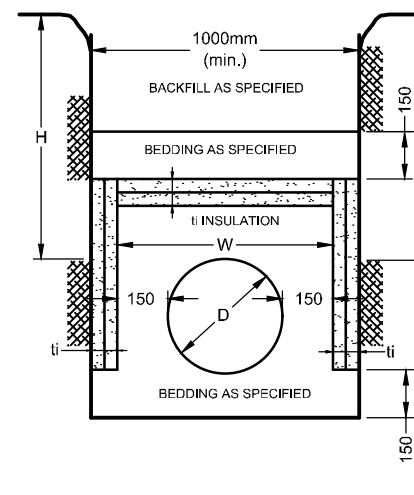
- EXISTING CONCRETE CURB
- EXISTING SANITARY MANHOLE & SEWER
- EXISTING CATCHBASIN MANHOLE
- EXISTING STORM MANHOLE & SEWER
- EXISTING CATCHBASIN CW CATCHBASIN LEAD
- EXISTING WATERMAIN
- EXISTING HYDRANT CW VALVE & LEAD
- EXISTING TREES / VEGETATION
- EXISTING UTILITY POLE
- EXISTING OVERHEAD UTILITY WIRES

INTERNAL SWM STORAGE SYSTEM

DESIGN EVENT	STORAGE SYSTEM CONTROLLED FLOW	STORAGE VOLUMES	
		REQUIRED	PROVIDED
1.2 YR		23.1 m³	>102m³
1.5 YR		34.8 m³	
1:100 YR		80.2 m³	
1:100+20%		101.6 m³	

NOTES:

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

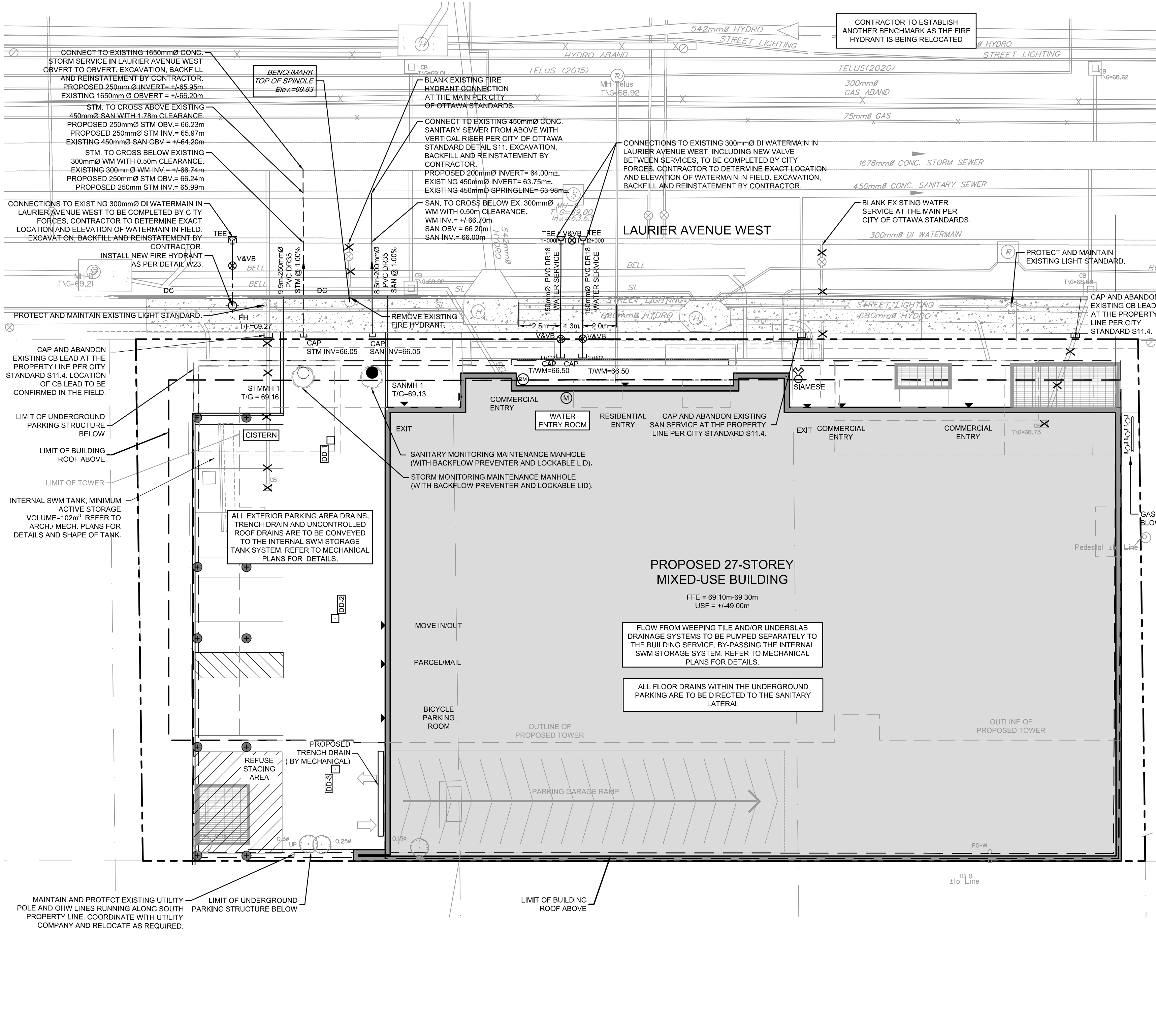
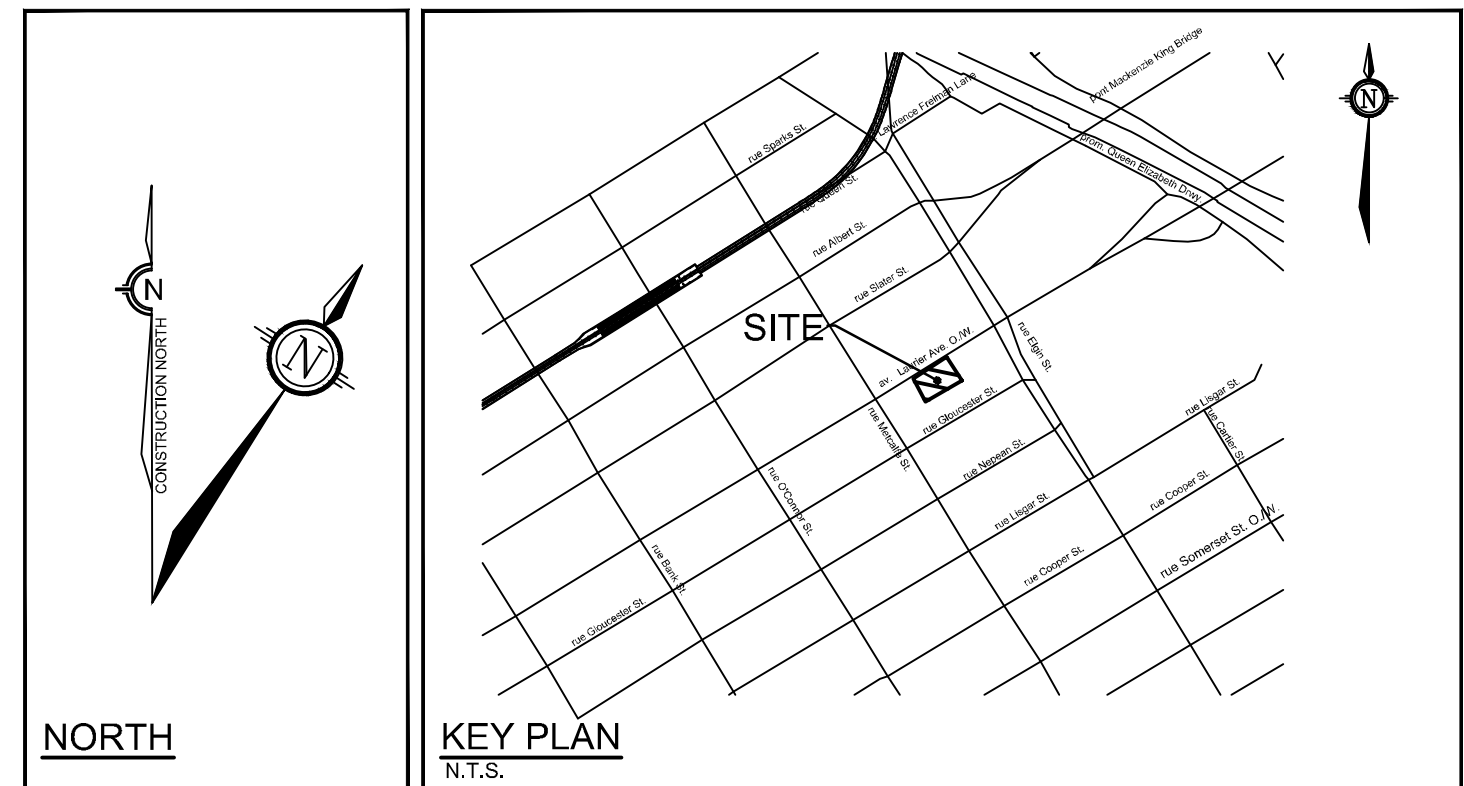


COVER (mm)	THICKNESS (mm)
1800-1500	50
1500-1200	75
1200-900	100
900-600	125

NOTES:

- INSULATE ALL SEWER PIPES THAT ARE LESS THAN 600mmØ AND HAVE LESS THAN 1.8m COVER WITH EXPANDED POLYSTYRENE INSULATION AS SHOWN.
- 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



PROPOSED 150mmØ WATER SERVICE TABLE

Station	FIG ELEVATION	TOP OF WATERMAIN	DESCRIPTION
1+000.00	68.98	66.90 **	ROLLED 150mmØ WM TEE CONNECTION TO EX. 300mmØ DI WM
1+001.00	68.98	66.50	11.25° VERTICAL BEND
1+001.97	68.97	66.50	WATERMAIN TO CROSS UNDER EXISTING BELL LINE
1+003.04	68.96	66.50	WATERMAIN TO CROSS UNDER EXISTING STREET LIGHT LINE
1+003.78	68.97	66.50	WATERMAIN TO CROSS UNDER EXISTING STREET LIGHT LINE
1+004.50	69.16	66.50	WATERMAIN TO CROSS UNDER EXISTING 680mm HYDRO DUCT APPROXIMATE CLEARANCE = +/-0.50m
1+005.81	69.17	66.50	VALVE AND VALVE BOX ON PROPERTY LIMIT
1+006.92	69.19	66.50	CAPPED OUTSIDE FOUNDATION WALL

PROPOSED 150mmØ WATER SERVICE TABLE

Station	FIG ELEVATION	TOP OF WATERMAIN	DESCRIPTION
2+000.00	68.97	66.90 **	ROLLED 150mmØ WM TEE CONNECTION TO EX. 300mmØ DI WM
2+001.00	68.97	66.50	11.25° VERTICAL BEND
2+001.95	68.96	66.50	WATERMAIN TO CROSS UNDER EXISTING BELL LINE
2+003.05	68.95	66.50	WATERMAIN TO CROSS UNDER EXISTING STREET LIGHT LINE
2+003.79	69.12	66.50	WATERMAIN TO CROSS UNDER EXISTING STREET LIGHT LINE
2+004.47	69.13	66.50	WATERMAIN TO CROSS UNDER EXISTING 680mm HYDRO DUCT APPROXIMATE CLEARANCE = +/-0.50m
2+005.80	69.16	66.50	VALVE AND VALVE BOX ON PROPERTY LIMIT
2+006.92	69.18	66.50	CAPPED OUTSIDE FOUNDATION WALL

** CONNECTION TO EXISTING 300mmØ DI 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 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, BY-LAWS AND STANDARDS INCLUDING MATERIALS OF CONSTRUCTION, DISINFECTION AND ALL RELEVANT REFERENCES TO OPSS, OPSD & AVWA 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 (P685195-1, REVISION 2, DATED SEPTEMBER 7, 2023), PREPARED BY PATERSON GROUP INC., 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 ARCHITECTS AND LANDSCAPE ARCHITECT'S DRAWINGS FOR BUILDING AND HARD SURFACED AREAS AND DIMENSIONS.
 - REFER TO THE 'DEVELOPMENT SERVICING STUDY AND STORMWATER MANAGEMENT REPORT' (R-2022-124) PREPARED BY NOVATECH.
 - SAW CUT AND KEYGRIND ASPHALT AT ALL ROAD CUTS AND ASPHALT TIE-IN POINTS AS PER CITY OF OTTAWA STANDARDS (S10).

- 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 (10000)	701.010	OPSD
SANITARY MANHOLE FRAME AND COVER	401.010 - TYPE 'X'	OPSD
STORM/CATCHBASIN MANHOLE (10000)	701.012	OPSD
STORM/CATCHBASIN FRAME AND COVER	401.010 - TYPE 'B'	OPSD
WATERMANT MANHOLE FRAME AND COVER	401.030	OPSD
CATCHBASIN (600x900)	705.010	OPSD
CATCHBASIN FRAME & COVER	519	CITY OF OTTAWA
SEWER TRENCH	86	CITY OF OTTAWA
STORM SEWER	PVC DR 35 (450mmØ PIPE AND SMALLER)	CONCRETE (80-CØ (600mmØ PIPE AND LARGER))
SANITARY SEWER	PVC DR 35	

 - THE SANITARY SEWER 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 90% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. THE USE OF CLEAN CRUSHED STONE AS A BEDDING LAYER SHALL NOT BE PERMITTED.
 - INSULATE ALL PIPES (SAN / STM) THAT HAVE LESS THAN 1.8m COVER WITH H-40 INSULATION PER INSULATION DETAIL FOR SHALLOW SEWERS. PROVIDE 150mm CLEARANCE BETWEEN PIPE AND INSULATION.
 - CONCRETE MANHOLES ARE TO BE 100mmØ STRUCTURES UNLESS OTHERWISE NOTED ON THE DRAWING. FLEXIBLE CONNECTIONS ARE REQUIRED FOR CONNECTING PIPES TO MANHOLES FOR EXAMPLE KOR-SEAL, PSK, POSITIVE SEAL AND DURASEAL. THE CONCRETE CRADLE FOR THE PIPE CAN BE ELIMINATED.
 - TYPICAL STORM MANHOLES AND CATCHBASIN MANHOLES ARE TO HAVE 300mm SUMP UNLESS OTHERWISE INDICATED.
 - THE CONTRACTOR IS TO TELE-TEST (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 TIG 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 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:**
- SUPPLY AND CONSTRUCT ALL WATERMANS 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 WATERMANS	W40	CITY OF OTTAWA
WATERMAIN MATERIAL	PVC DR 18 (150mm AND LARGER)	

 - EXCAVATION, INSTALLATION, BACKFILL AND RESTORATION OF ALL WATERMANS 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.

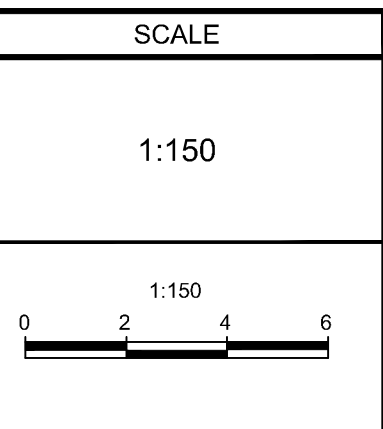
- BENCHMARK NOTES:**
- ELEVATIONS SHOWN ARE GEODETIC AND ARE REFERRED TO THE CVD28 GEODETIC DATUM. DERIVED FROM VERTICAL CONTROL MONUMENT NO. 2011-0073 HAVING AN ELEVATION OF 71.65 METRES.
 - IT IS THE RESPONSIBILITY OF THE USER OF THIS INFORMATION TO VERIFY THAT THE JOB BENCHMARK HAS NOT BEEN ALTERED 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 LOTS 54, 55 AND PART OF LOT 53, SOUTH LAURIER AVENUE, REGISTERED PLAN 4556, CITY OF OTTAWA, SURVEYED BY ANNIS, O'SULLIVAN AND VOLEBEK LTD.

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
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No.	REVISION	DATE	BY
3.	REVISED AS PER CITY COMMENTS	OCT 2023	FST
2.	REVISED AS PER CITY COMMENTS	JUN 5/23	FST
1.	ISSUED FOR SPC APPLICATION	AUG 30/22	FST



FOR REVIEW ONLY

DESIGN	CV
CHECKED	FST
DRAWN	CV
CHECKED	FST
APPROVED	FST

PROFESSIONAL ENGINEER
F.S. THAUETTE
100041399
October 20, 2023
PROVINCE OF ONTARIO

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Website: www.novatech-eng.com

LOCATION
CITY OF OTTAWA
150 LAURIER AVENUE WEST

DRAWING NAME
GENERAL PLAN OF SERVICES

PROJECT No.
122133

REV
REV # 3

DRAWING No.
122133-GP

PLAN #18833

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