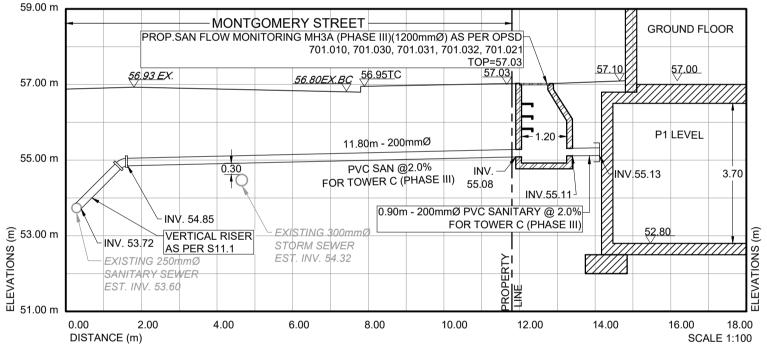


STORM CONNECTION SECTION A-A

SANITARY CONNECTION SECTION C-C

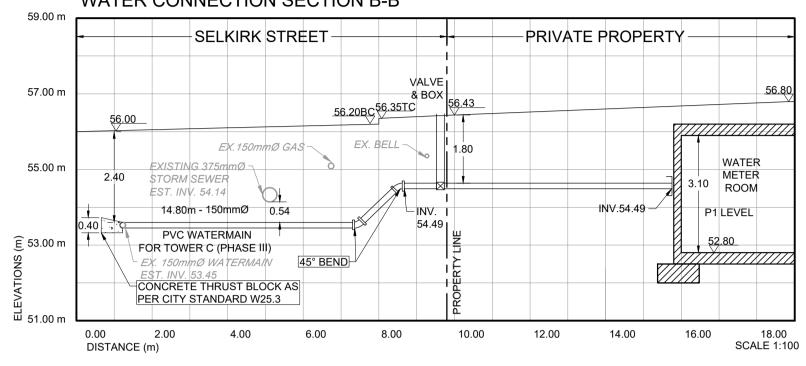


STORM SEWERS

- 1. ALL PVC STORM SEWERS ARE TO BE SDR 35 APPROVED PER C.S.A. B182.2 OR LATEST AMENDMENT,
- UNLESS OTHERWISE SPECIFIED. 2. ALL STORM SEWER TRENCH AND BEDDING SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STD. S6 AND S7 CLASS "B" UNLESS OTHERWISE SPECIFIED. BEDDING AND COVER MATERIAL SHALL BE SPECIFIED
- BY PROJECT GEOTECHNICAL ENGINEER. 3. ALL STORM LATERALS SHALL BE PVC SDR 28, WHITE IN COLOR AND MARKED WITH A 50MMX100MM WOODEN MARKER EXTENDING FROM THE INVERT TO 1.0 M ABOVE GRADE PAINTED GREEN. HOUSE CONNECTIONS SHALL BE 2.0M MIN. BELOW FINISHED GRADE AT STREET LINE WHERE POSSIBLE. SINGLE
- CONNECTIONS SHALL BE 100MM DIA.. 4. ALL STORM SERVICES TO BE EQUIPPED WITH APPROVED BACKWATER VALVES.
- STORM MANHOLE FRAME AND COVERS SHALL BE AS PER CITY OF OTTAWA STD. S24, S24.1, AND S25.
- SAFETY PLATFORMS SHALL BE IN ACCORDANCE WITH OPSD 404.02. 7. STORM SEWER MANHOLES SERVING LOCAL SEWERS LESS THAN 900MM SHALL BE CONSTRUCTED WITH A 300MM SUMP
- 8. THE STORM SEWER CLASSES HAVE BEEN DESIGNED BASED ON BEDDING CONDITIONS SPECIFIED ABOVE. WHERE THE SPECIFIED TRENCH WIDTH IS EXCEEDED, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE ADDITIONAL BEDDING, A DIFFERENT TYPE OF BEDDING OR A HIGHER PIPE STRENGTH AT HIS OWN EXPENSE AND SHALL ALSO BE RESPONSIBLE FOR EXTRA TEMPORARY AND / OR PERMANENT REPAIRS MADE NECESSARY BY THE WIDENED TRENCH.

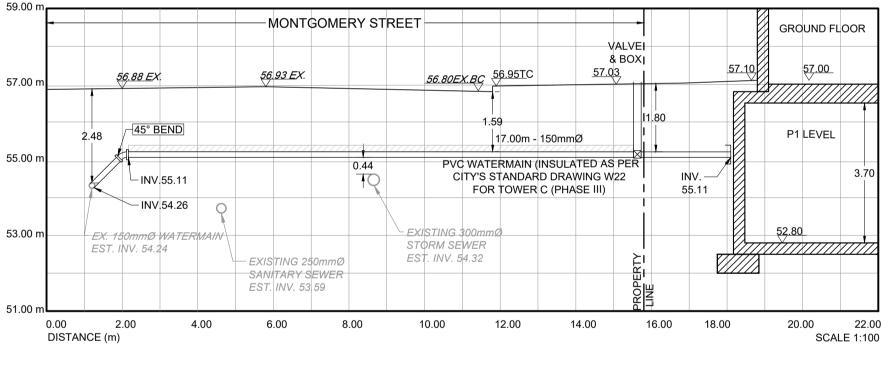
SANITARY SEWERS

- 1. ALL SANITARY SEWERS SHALL BE PVC SDR 35, IPEX "RING-TITE" (OR EQUIVALENT), AS PER CSA STANDARD B182.2 OR LATEST AMENDMENT, UNLESS OTHERWISE NOTED. 2. SANITARY SEWER TRENCH AND BEDDING SHALL BE AS PER CITY OF OTTAWA STD. S6 AND S7 CLASS "B"
- BEDDING UNLESS OTHERWISE NOTED. 3. ALL SANITARY LATERALS ARE TO BE PVC SDR 28, IPEX "RING-TITE" (OR EQUIVALENT), ANY COLOR EXCEPT
- WHITE AND MARKED WITH A 50MMX100MM WOODEN MARKER EXTENDING FROM THE INVERT TO 1.0 M ABOVE GRADE PAINTED RED. HOUSE CONNECTIONS SHALL BE 2.75M MIN. BELOW FINISHED GRADE AT STREET LINE WHERE POSSIBLE. SINGLE CONNECTIONS SHALL BE 135MM DIA.. 4. ALL SANITARY SERVICES TO BE EQUIPPED WITH APPROVED BACKWATER VALVES.
- 5. SANITARY MANHOLE FRAME AND COVERS SHALL BE AS PER CITY OF OTTAWA STD. S24 AND S25.



WATER CONNECTION SECTION B-B

WATER CONNECTION SECTION D-D



6. SAFETY PLATFORMS SHALL BE IN ACCORDANCE WITH OPSD 404.02. 7. SANITARY SEWER MANHOLES SHALL BE BENCHED AS PER OPSD 701.021.

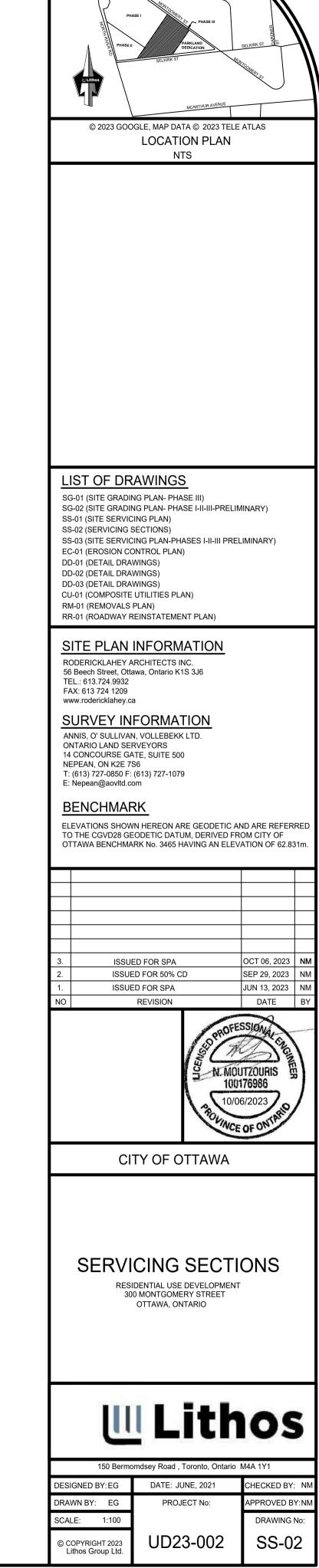
8. SANITARY PRE-CAST MANHOLE SHALL BE CONSTRUCTED WITH A HIGHER PERCENTAGE OF SILICA FUME IN THE CONCRETE TO MAKE IT MORE DENSE AND LESS SUSCEPTIBLE TO CORROSION OR PINHOLE LEAKS. 9. FOR SANITARY MANHOLES, DEPENDING ON THE ELEVATION OF THE GROUNDWATER TABLE, AND BASED ON THE RECOMMENDATION OF THE PROJECT GEOTECHNICAL CONSULTANT, CRETEX SEALS, OR A SIMILAR PRODUCT, SHALL BE INSTALLED IN THE FIRST PRE-CAST MANHOLE SECTION TO JUST BELOW THE MANHOLE FRAME TO PREVENT INFILTRATION.

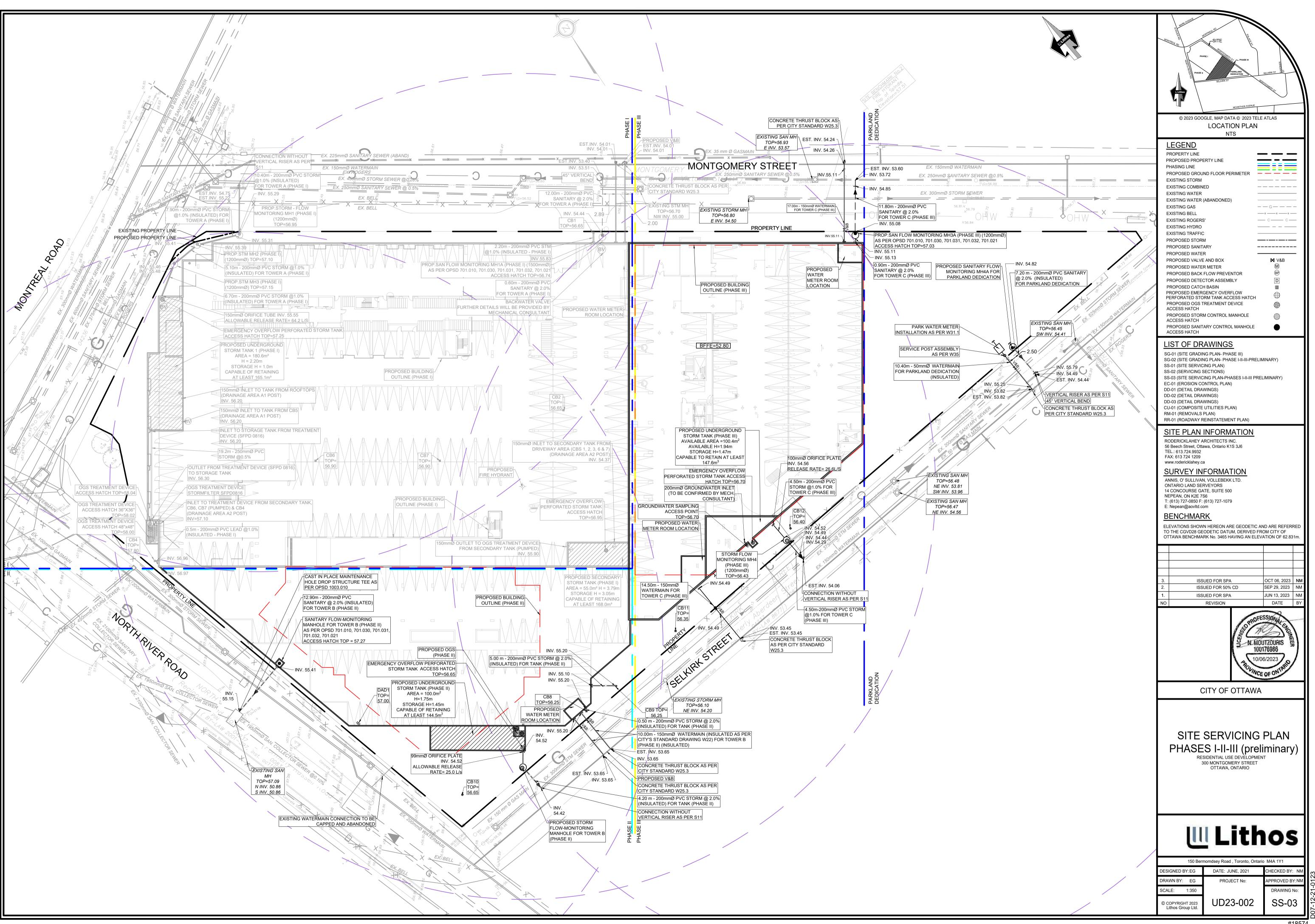
GENERAL NOTES

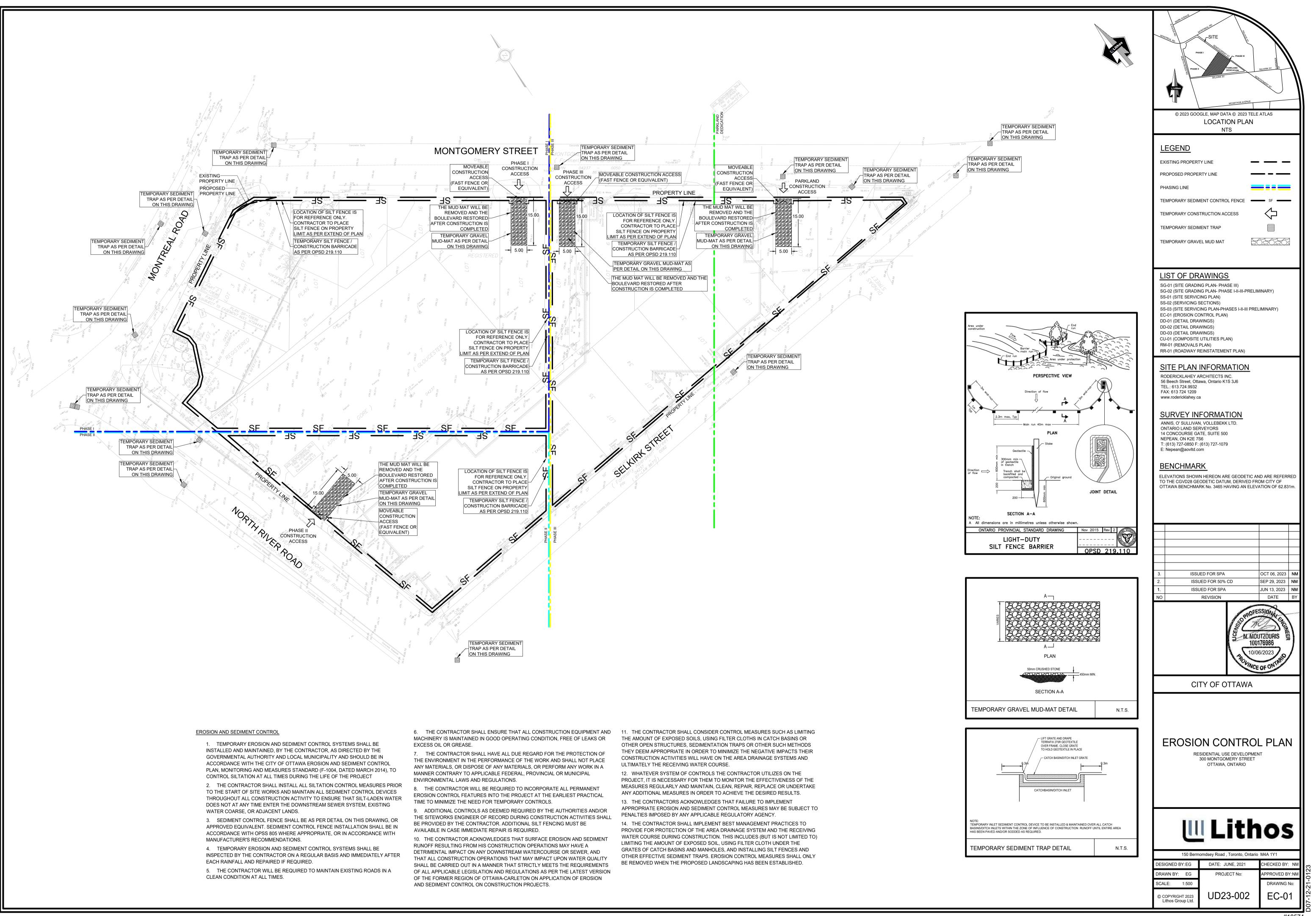
- 1. ALL SEWERS CONSTRUCTED WITH GRADES 0.5% OR LESS, SHALL BE INSTALLED WITH PIPE LASER AND CHECKED WITH LEVEL INSTRUMENTS PRIOR TO BACKFILLING. 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADDITIONAL BEDDING OR ADDITIONAL STRENGTH PIPE IF THE MAXIMUM TRENCH WIDTH, AS SPECIFIED BY OPSD, IS EXCEEDED.
- 3. CONTRACTOR SHALL PERFORM LEAKAGE TESTING, IN THE PRESENCE OF THE CONSULTANT, FOR SANITARY SEWERS IN ACCORDANCE WITH OPSD 410 AND OPSS 407. CONTRACTOR SHALL PERFORM VIDEO INSPECTION OF ALL STORM AND SANITARY SEWERS. A COPY OF THE VIDEO AND INSPECTION REPORT SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
- 4. CLAY SEALS TO BE INSTALLED AS PER CITY STANDARD DRAWING NO. S8. THE SEALS SHOULD BE AT LEAST 1.5M LONG (IN THE TRENCH DIRECTION) AND SHOULD EXTEND FROM TRENCH WALL TO TRENCH WALL. GENERALLY, THE SEALS SHOULD EXTEND FROM BELOW THE FROST LINE, 1,5 TO 2,0 M BELOW FINISH GRADE, AND FULLY PENETRATE THE BEDDING, SUBBEDDING AND PIPE COVER MATERIAL. THE BARRIERS SHOULD CONSIST OF RELATIVELY DRY AND COMPACTABLE BROWN SILTY CLAY PLACED IN MAXIMUM 225MM THICK LOOSE LAYERS COMPACTED TO A MINIMUM OF 95% OF THE MATERIAL'S SPMDD. THE CLAY SEALS SHOULD BE PLACED AT THE SITE BOUNDARIES AND AT STRATEGIC LOCATIONS AT NO MORE THAN 100M INTERVALS IN THE SERVICE TRENCHES.
- 5. ALL INSPECTIONS SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL AND PROVINCIAL PRIVACY LEGISLATION INCLUDING THE CANADIAN PERSONAL INFORMATION PROTECTION AND ELECTRONIC DOCUMENTS ACT (PIPEDA). DOCUMENTATION CONFIRMING COMPLIANCE WITH THIS LEGISLATION SHALL BE MADE AVAILABLE TO THE OWNER AND SUBMITTED WITH THE PRE-CONSTRUCTION INSPECTION REPORT.

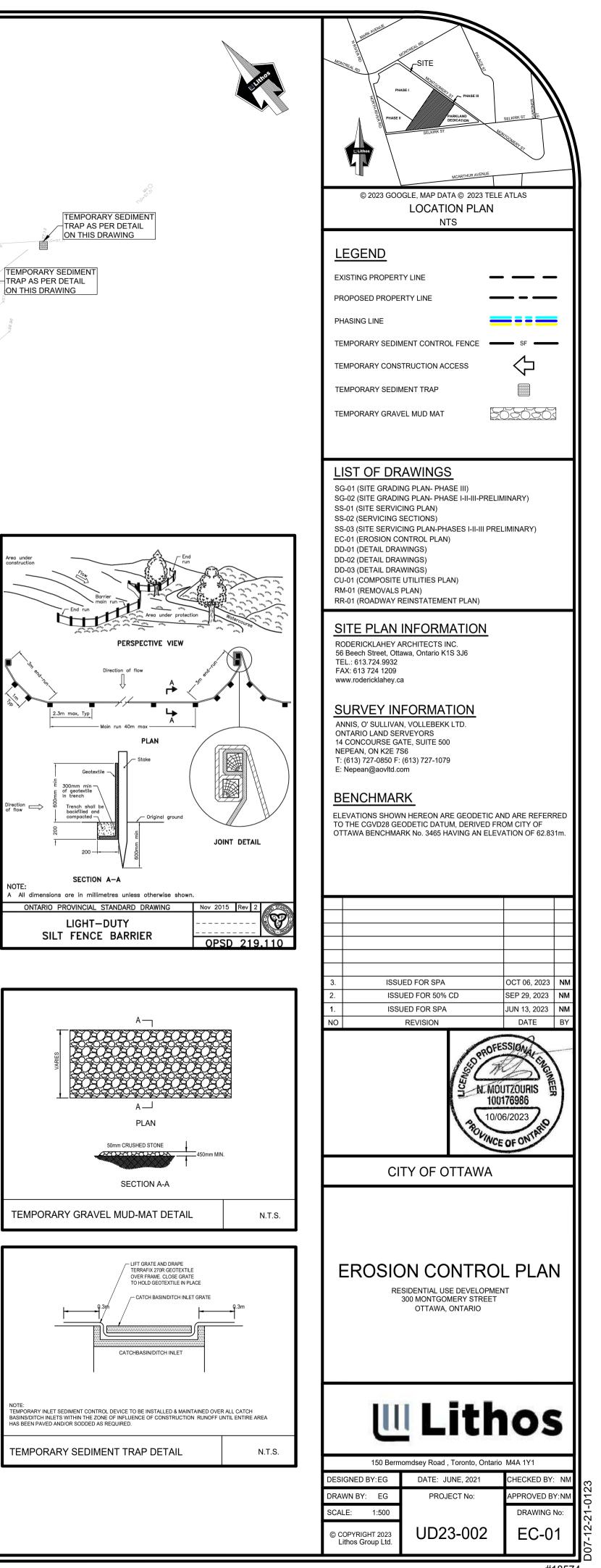
WATER SUPPLY

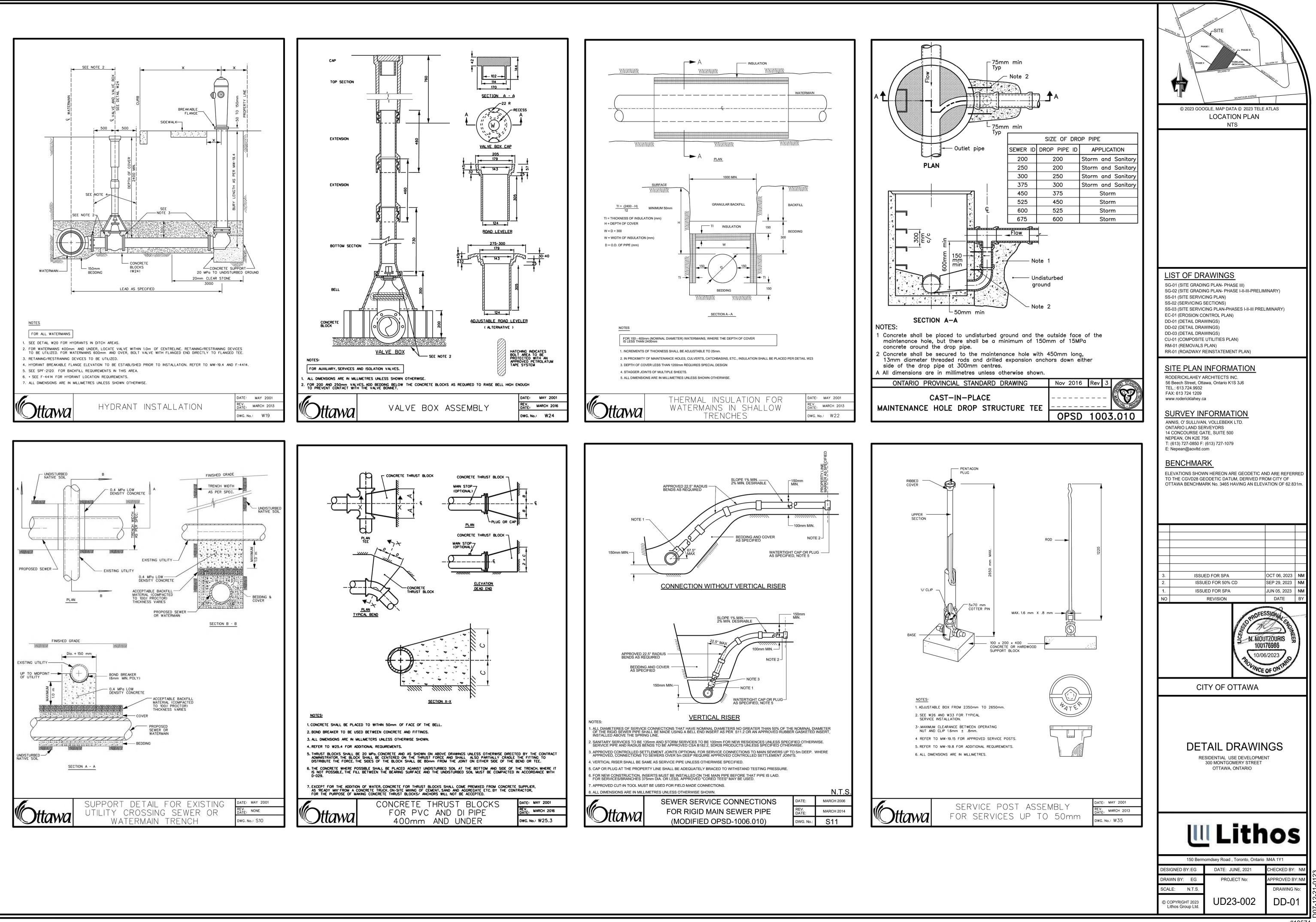
- 1. ALL PVC WATERMAINS SHALL BE EQUAL TO AWWA C-900 CLASS 150, SDR 18, OR APPROVED EQUAL. 2. WATERMAIN TRENCH AND BEDDING SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STANDARD W17, UNLESS OTHERWISE SPECIFIED. BEDDING AND COVER MATERIAL SHALL BE SPECIFIED BY PROJECT
- GEOTECHNICAL ENGINEER. 3. ALL PVC WATERMAINS SHALL BE INSTALLED WITH A 10 GAUGE STRANDER COPPER TWU OR RWU TRACER WIRE IN ACCORDANCE WITH CITY OF OTTAWA STD. W36.
- 4. WATER SERVICES ARE TO BE TYPE K SOFT COPPER AS PER CITY OF OTTAWA STD. W26 UNLESS OTHERWISE SPECIFIED. SINGLE SERVICES SHALL BE 20MM DIA. 50MM DIA COPPER SHALL BE USED FOR PARK SERVICES
- WATER SERVICES SHALL BE MARKED WITH A "50MMX100MM", EXTENDING FROM THE INVERT TO 1.0M ABOVE GRADE PAINTED BLUE. STAND POSTS / SHUT-OFFS SHALL BE INSTALLED AT PROPERTY LINE. 5. CATHODIC PROTECTION IS REQUIRED ON ALL METALLIC FITTINGS AS PER CITY OF OTTAWA STD. W40 AND
- 6. CONTRACTOR TO SUPPLY HYDRANT EXTENSION TO ADJUST THE LENGTH OF HYDRANT BARREL. 7. FIRE HYDRANTS SHALL BE INSTALLED AS PER CITY OF OTTAWA STD. W19, AND LOCATED AS PER CITY
- STD. W18.
- 8. VALVE IN BOXES SHALL BE INSTALLED AS PER CITY OF OTTAWA STD. W24. 9. THRUST BLOCKING OF WATERMAIN TO BE INSTALLED AS PER CITY OF OTTAWA STD. W25.3 AND W25.4.
- 10. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY CAPS, PLUGS AND BLOW-OFFS AND NOZZLES REQUIRED FOR TESTING AND DISINFECTION OF THE WATERMAIN. 11. WHERE SEPARATION BETWEEN SERVICES AND MANHOLES IS LESS THAN 1.2M., WATER SERVICES ARE TO
- BE INSULATED AS PER CITY OF OTTAWA STD. W23. 12. AS PER CITY GUIDELINE, THE MINIMUM VERTICAL CLEARANCE BETWEEN WATERMAIN AND SEWER / UTILITY IS 0.25M FOR CROSSING OVER THE SEWER, AS PER CITY STD W25.2. FOR CROSSING UNDER SEWER. THE MINIMUM VERTICAL CLEARANCE IS 0.50M AS PER CITY STD. W25. FOR CROSSING UNDER SEWER, ADEQUATE STRUCTURAL SUPPORT FOR THE SEWERS IS REQUIRED TO PREVENT EXCESSIVE DEFLECTION OF JOINTS AND SETTLING. THE LENGTH OF WATER PIPE SHALL BE CENTERED AT THE POINT OF CROSSING SO THAT THE JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER.
- 13. ALL WATER SERVICES CROSSING SEWERS ARE TO BE INSTALLED AS PER CITY OF OTTAWA STD. W38.

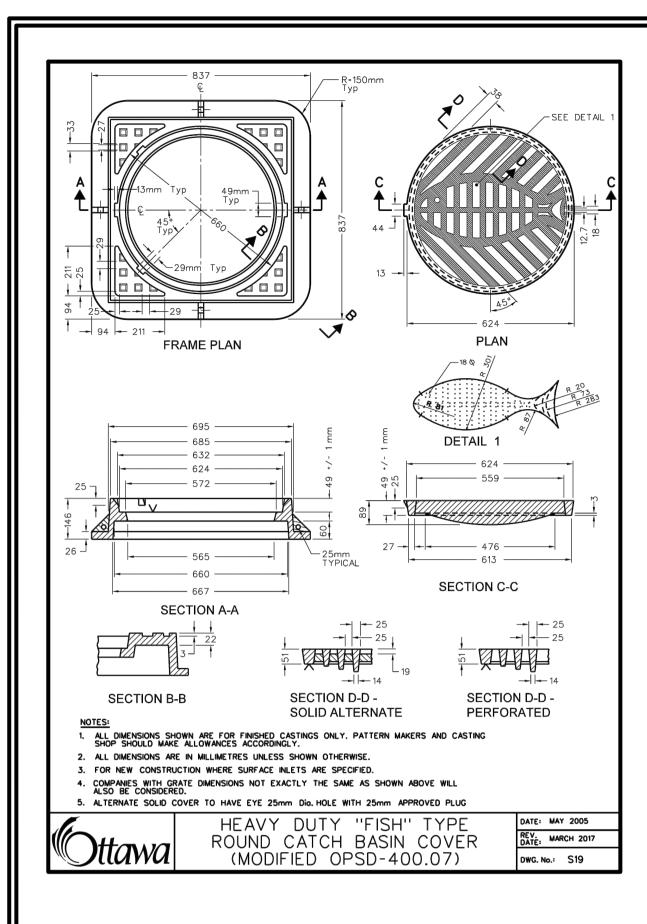


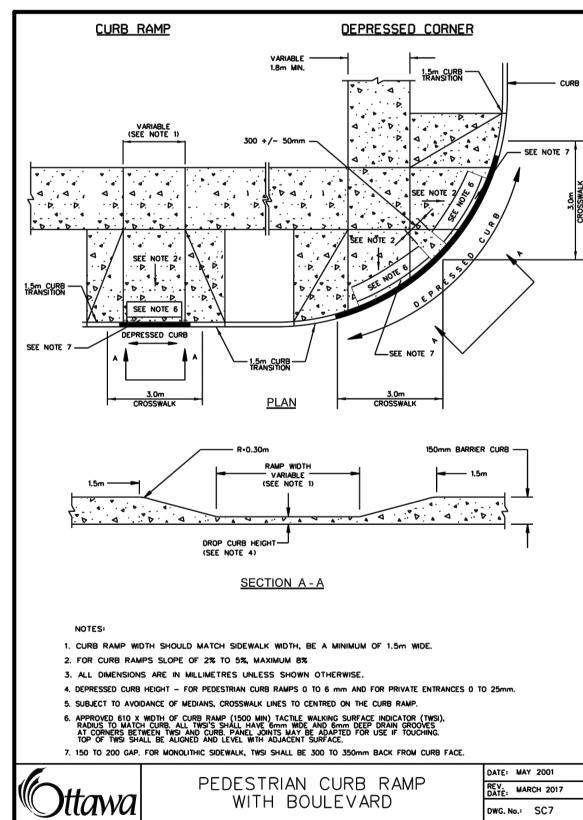






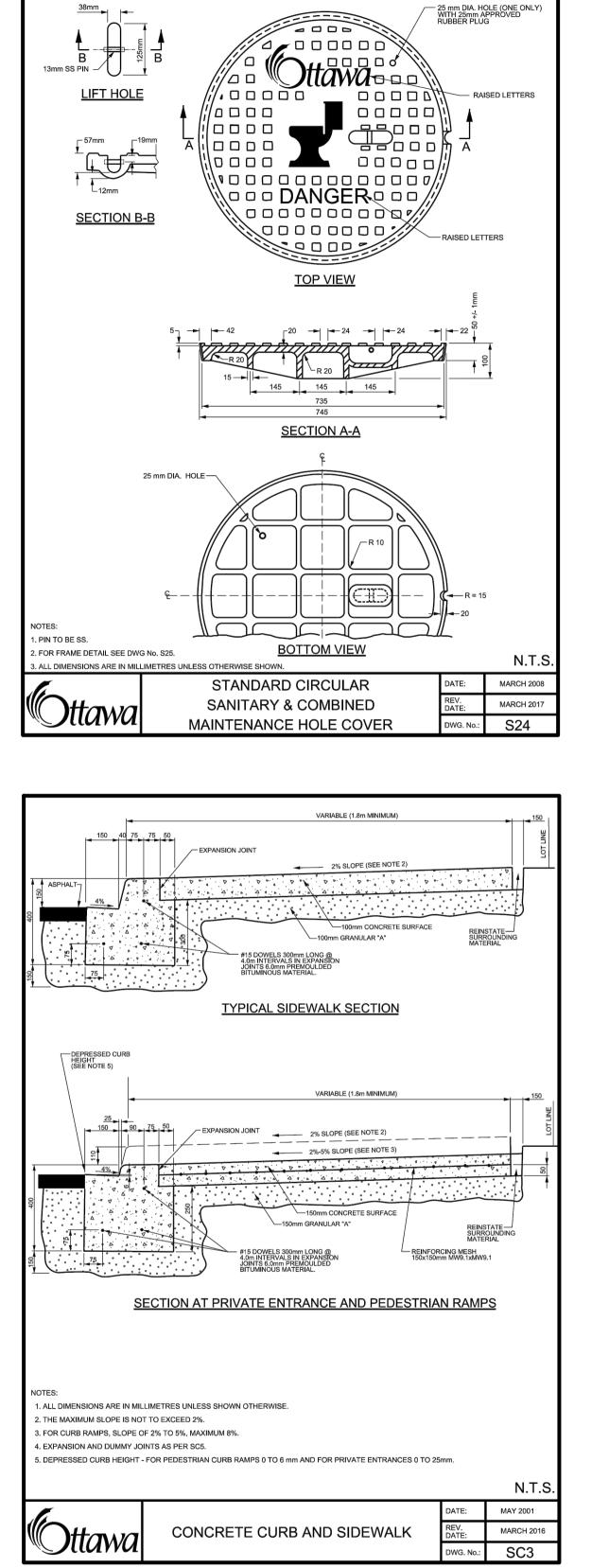


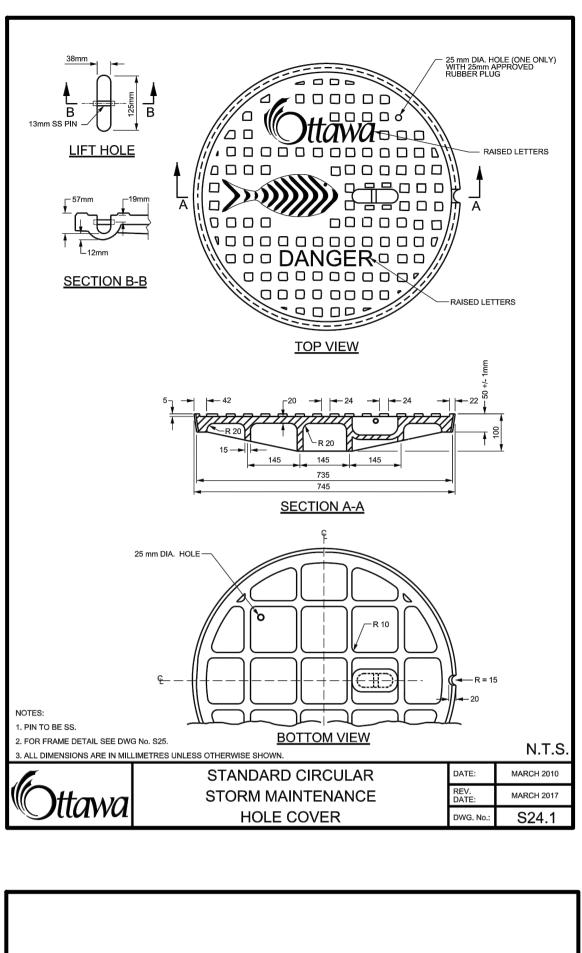


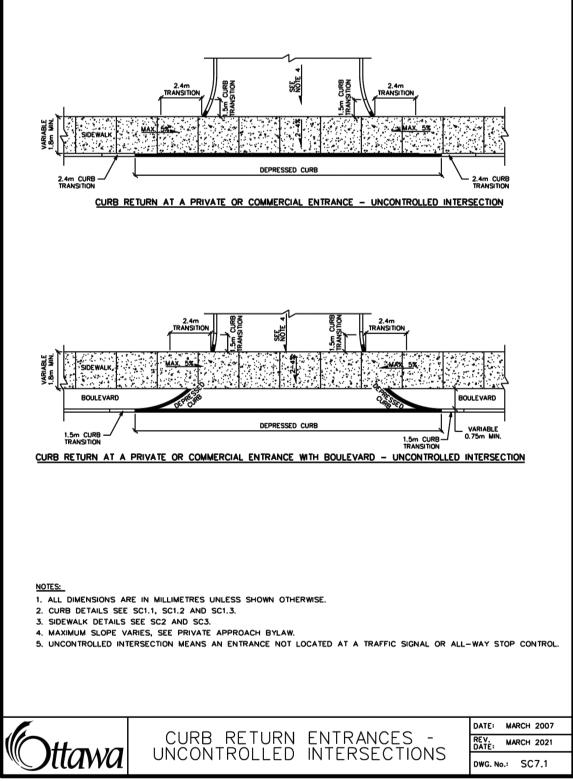


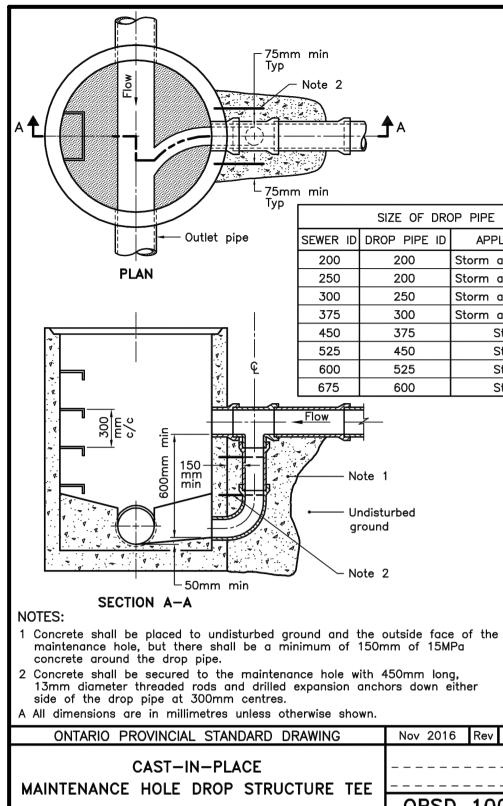
WITH BOULEVARD

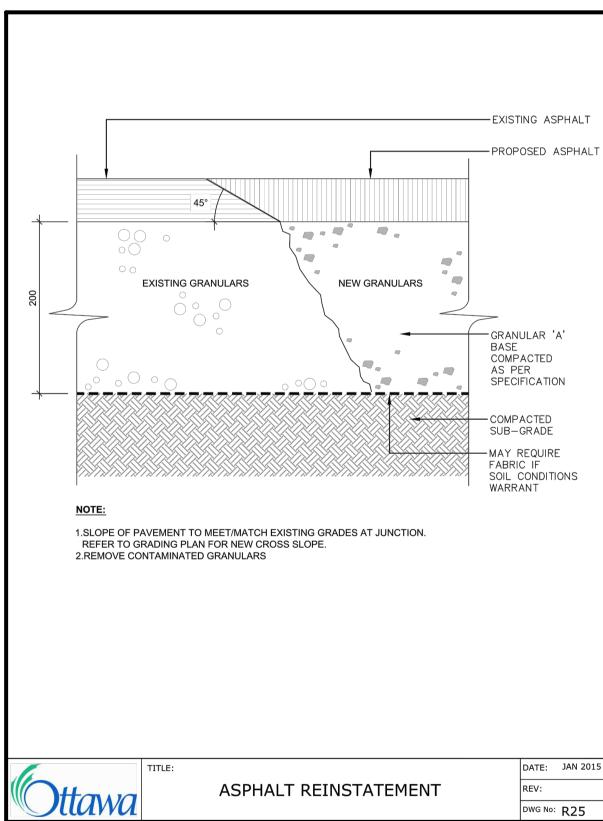
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SIZE OF DROP PIPE							
)	DROP PIPE ID	APPLICATION					
	200	Storm and Sanitary					
	200	Storm and Sanitary					
	250	Storm and Sanitary					
	300	Storm and Sanitary					
	375	Storm					
	450	Storm					
	525	Storm					
	600	Storm					
	4						

Note

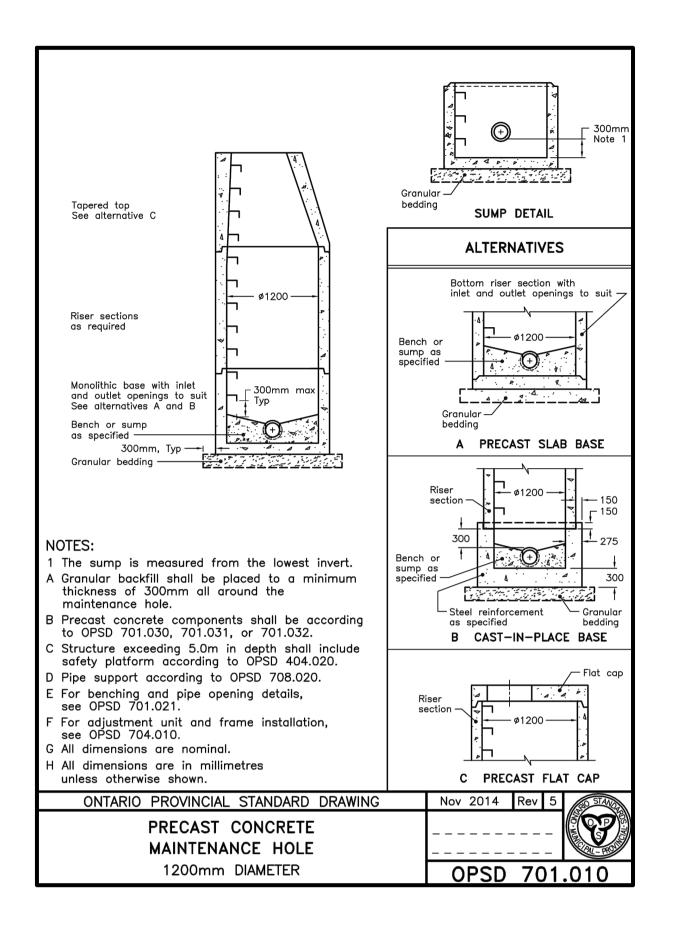
 Undisturbed ground

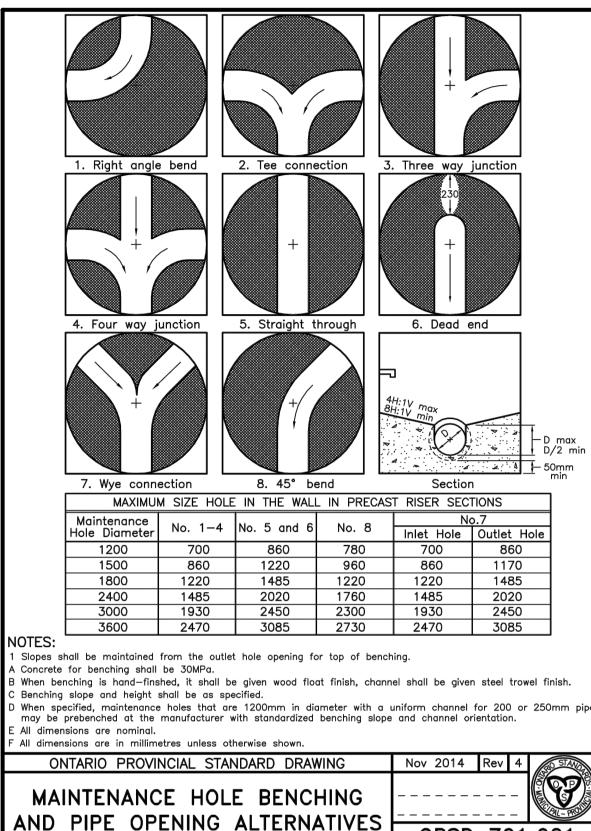
Note 2

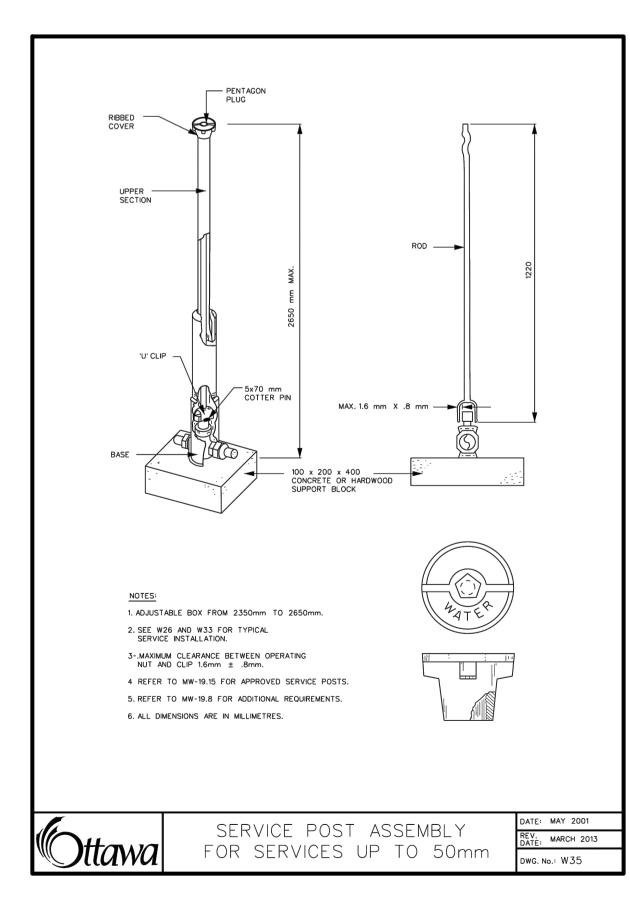
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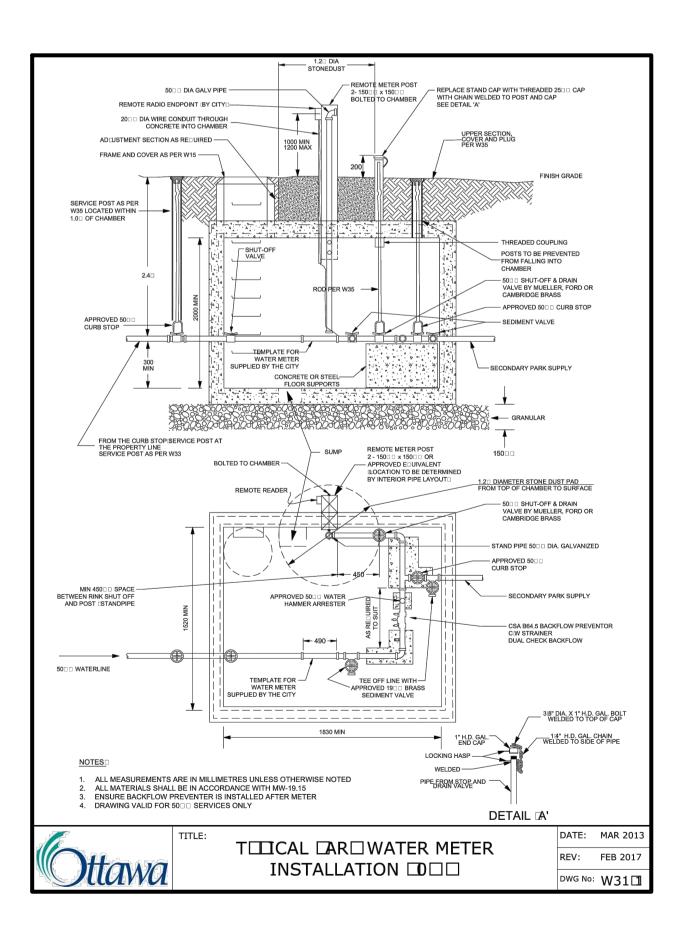
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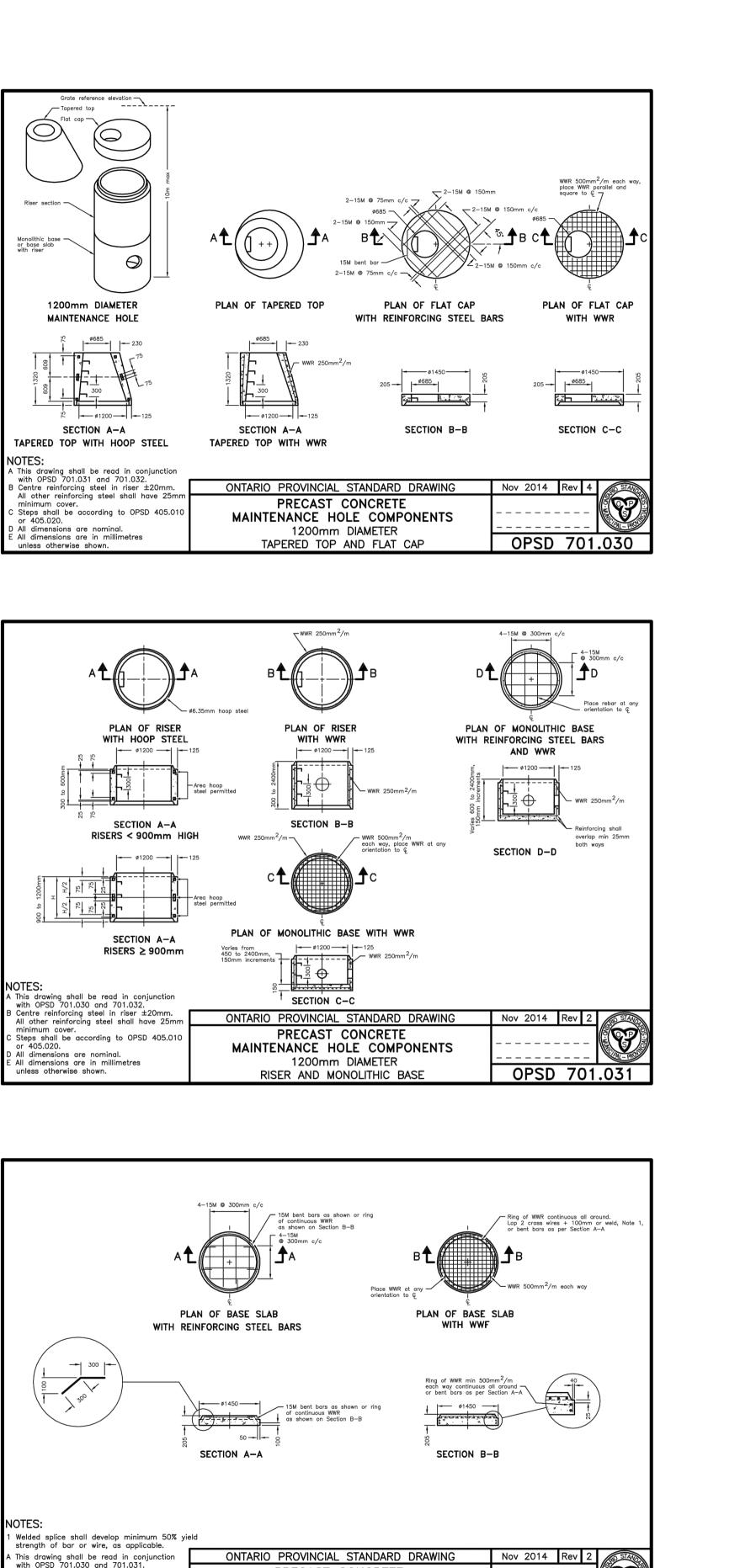


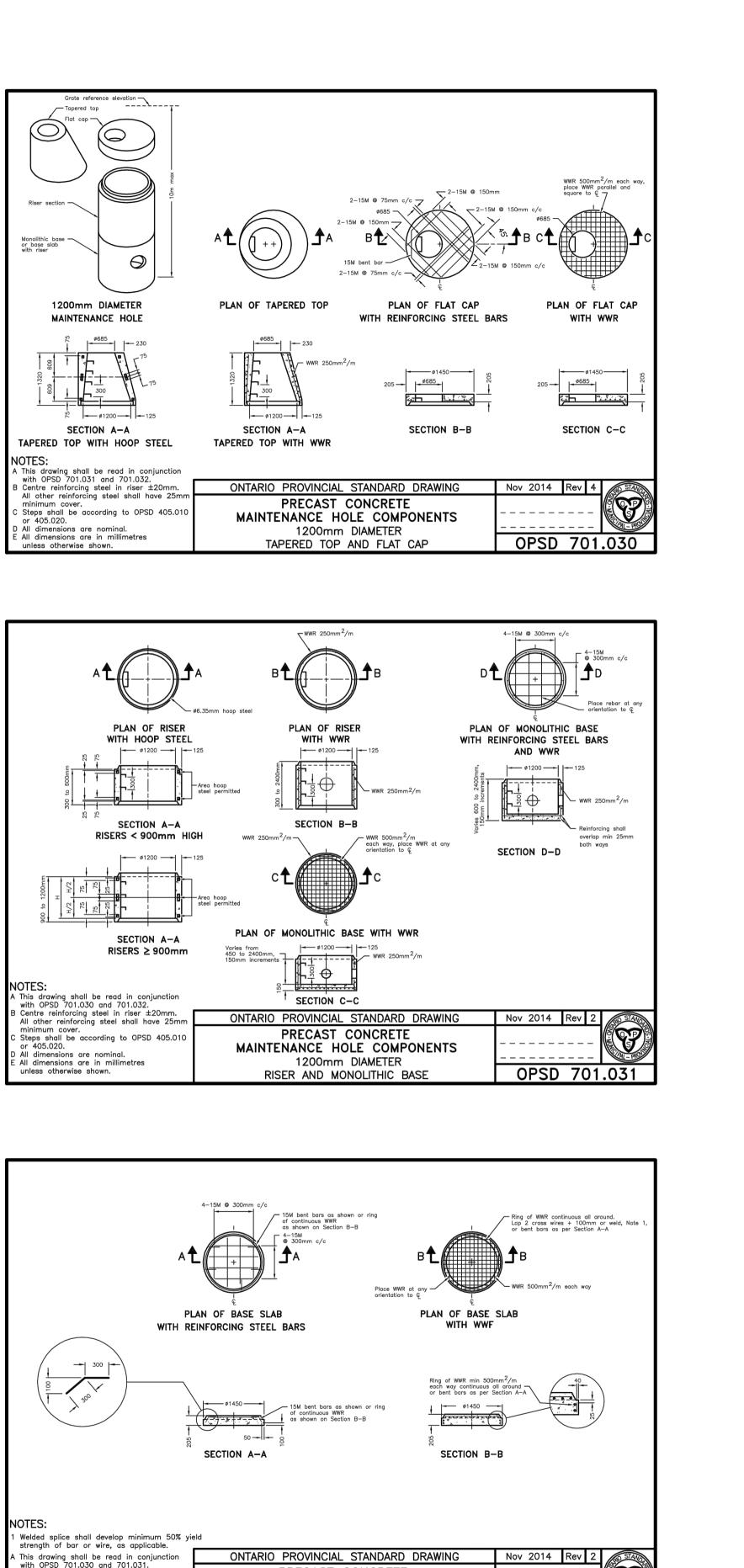


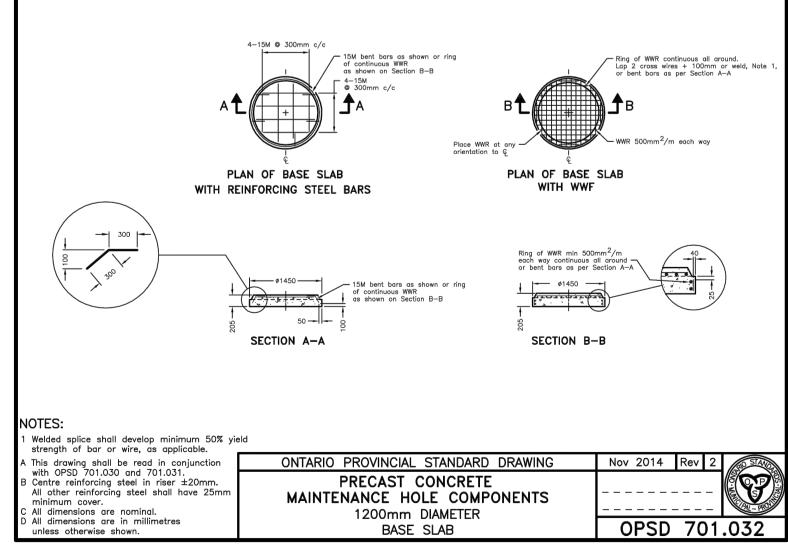


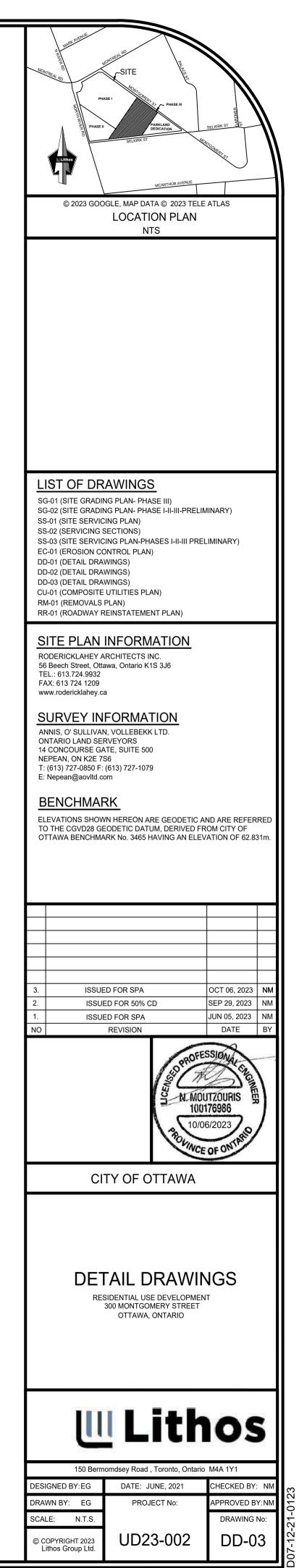


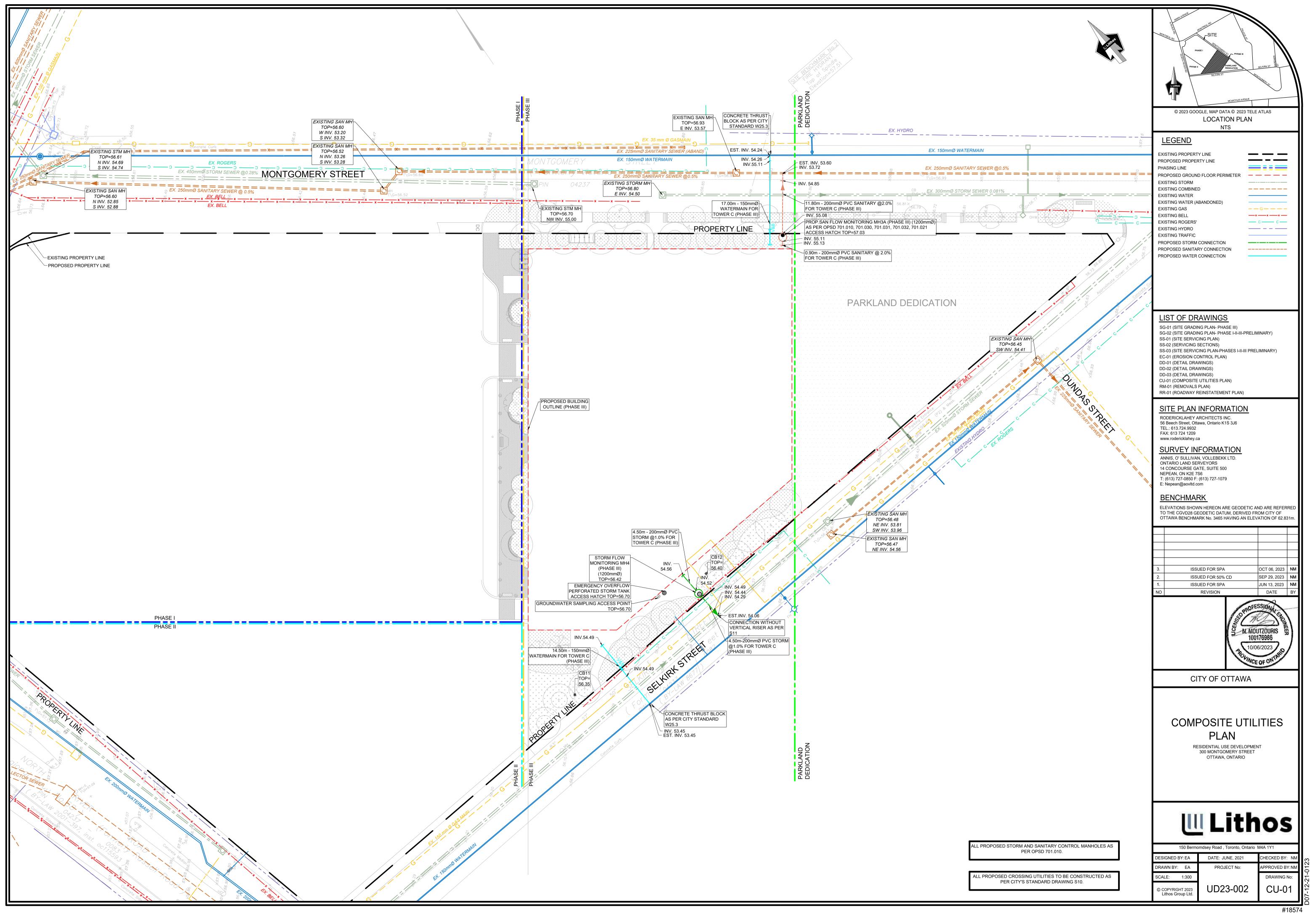
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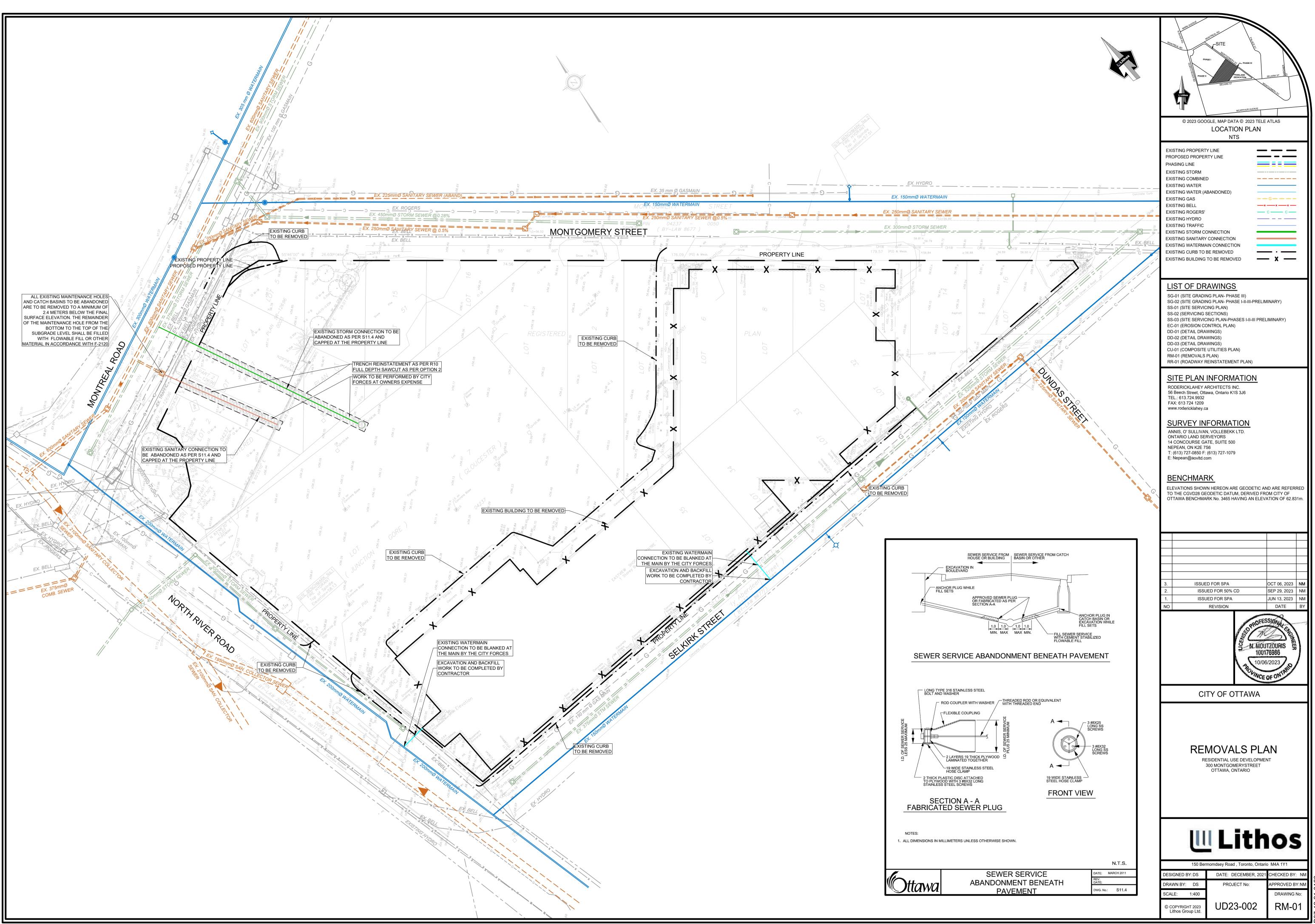












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