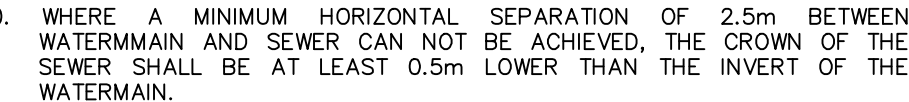
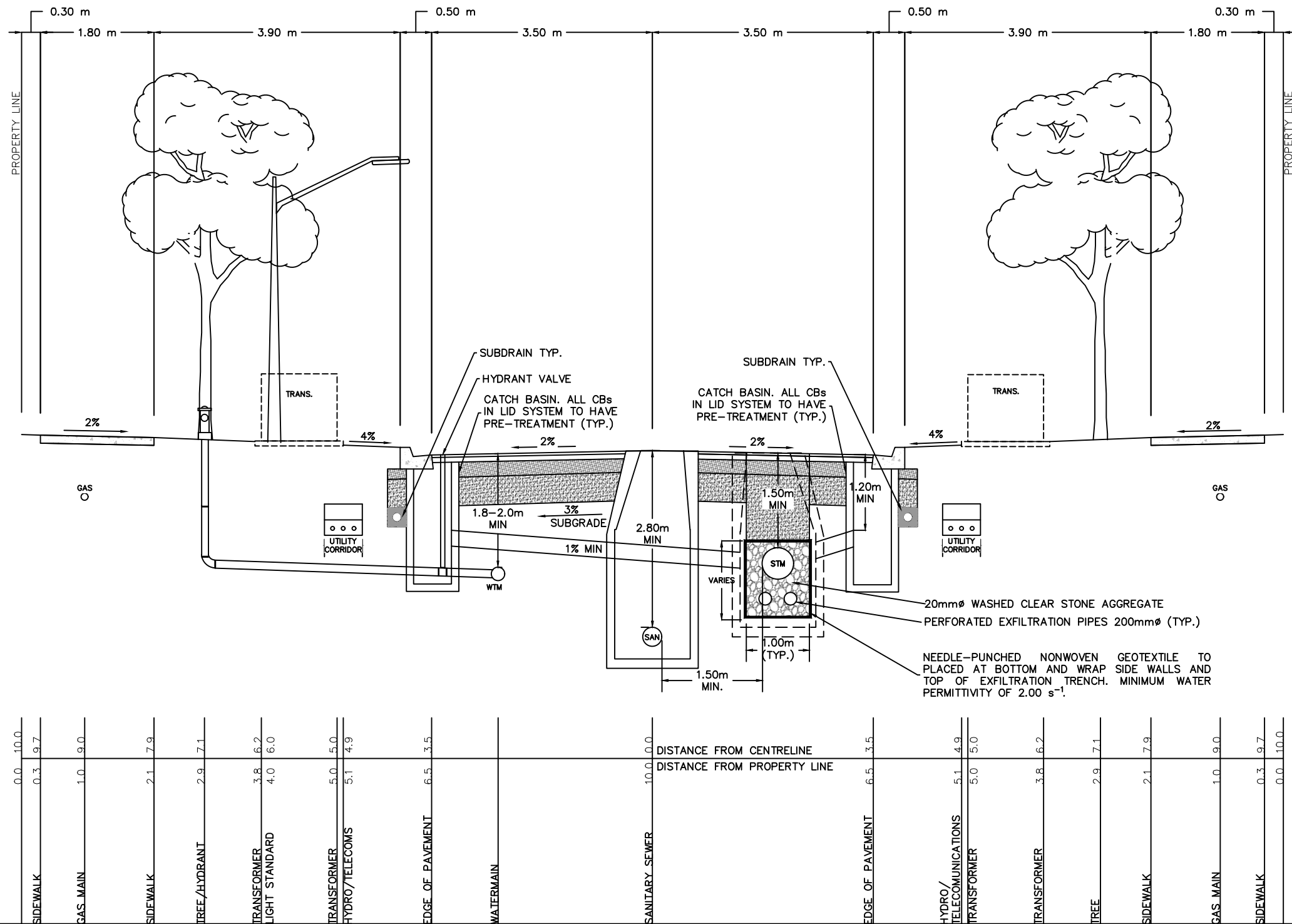


10. WHERE A MINIMUM HORIZONTAL SEPARATION OF 2.5m BETWEEN WATERMAIN AND SEWER CAN NOT BE ACHIEVED, THE CROWN OF THE SEWER SHALL BE AT LEAST 0.5m LOWER THAN THE INVERT OF THE WATERMAIN.



4	GAS MAIN LOCATION	JAN. 2025	SCALE:	1: 75
3	MANUAL UPDATE	SEP. 2021		
2	MANUAL UPDATE	FEB. 2020	DATE:	FEB. 2020
NO.	REVISION	DATE	STANDARD No.:	L.1.3



- NOTES

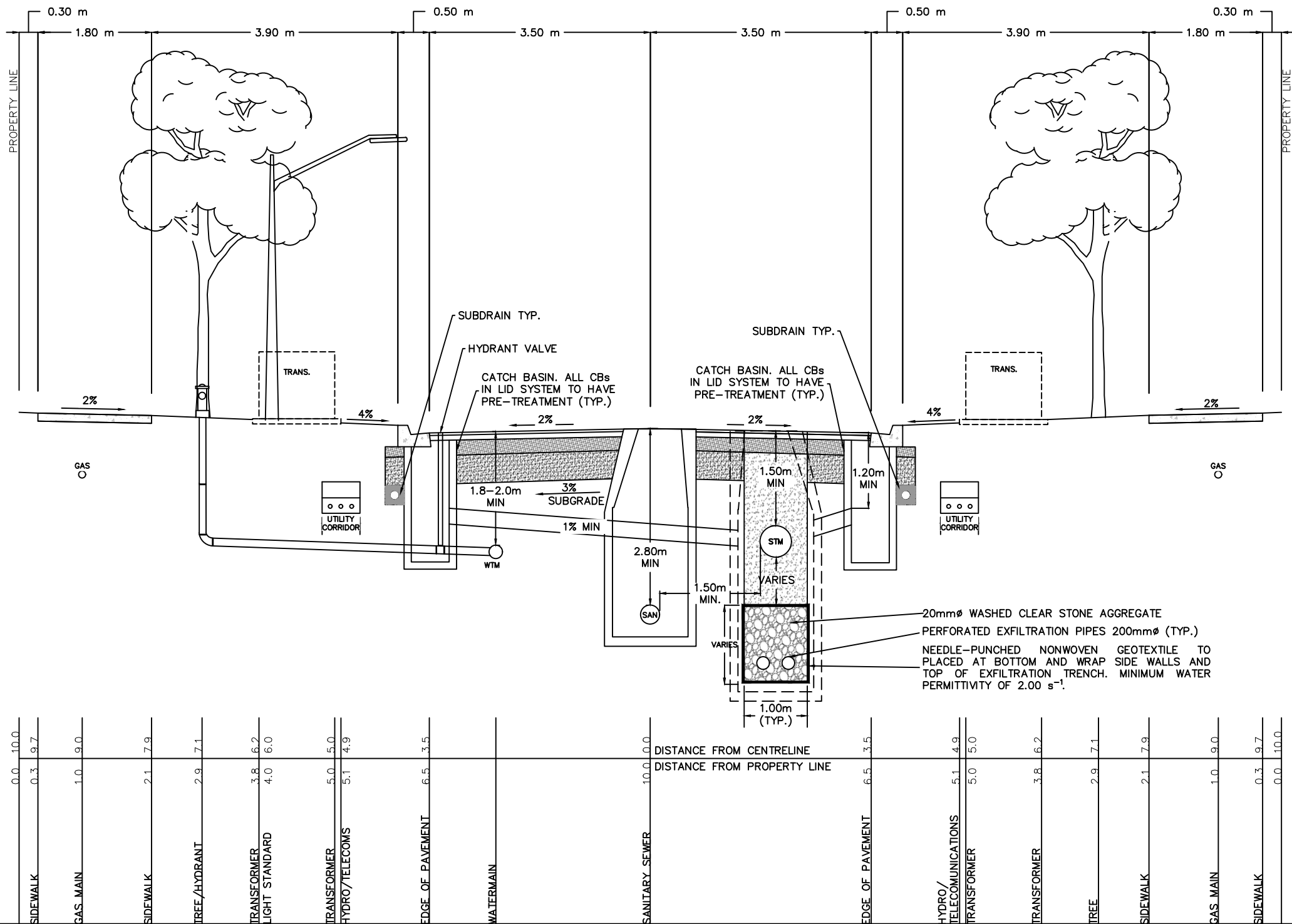
 - UTILITY CORRIDOR (HYDRO & TELECOMMUNICATIONS) SHALL BE 0.6m WIDE.
 - UTILITY CORRIDOR TO HAVE A MINIMUM COVER OF 0.9m.
 - WATERMAIN TO HAVE MINIMUM COVER OF 2.0m FOR 300mm AND SMALLER DIAMETER AND 1.8m FOR 450mm DIAMETER AND LARGER.
 - CLEAR SEPARATION BETWEEN WATERMAIN AND SEWERS SHALL BE AS PER MOE REQUIREMENTS.
 - MINIMUM SEPARATION BETWEEN THE SANITARY AND STORM SEWERS SHALL NOT BE LESS THAN 1.5m WHERE EES IS UTILIZED.
 - JOINT USE TRENCHES SHALL BE USED BY HYDRO AND TELECOMMUNICATION.
- THE FOLLOWING IS A MINIMUM ROAD BASE AND WILL REQUIRE A SOILS REPORT VERIFICATION TO DETERMINE IF ADDITIONAL THICKNESS IS REQUIRED.
 - 40mm HL3
 - 80mm HL4 (100mm FOR BUS ROUTES)
 - 210mm GRANULAR "A" (NO RAP)
 - 450mm GRANULAR "B" (470mm FOR BUS ROUTES)
 - SUB-GRADE SHALL BE COMPACTED TO 100% OF STANDARD PROCTOR DENSITY AT MAX. DRY DENSITY.
- WHERE A MINIMUM HORIZONTAL SEPARATION OF 2.5m BETWEEN WATERMAIN AND SEWER CAN NOT BE ACHIEVED, THE CROWN OF THE SEWER SHALL BE AT LEAST 0.5m LOWER THAN THE INVERT OF THE WATERMAIN.

20.0m R.O.W. MINOR COLLECTOR, PREFERRED STANDARD
COMBINED EXFILTRATION TRENCH WITHIN ROADWAY

The Corporation Of The
**CITY OF
KITCHENER**



4	GAS MAIN LOCATION	JAN. 2025	SCALE:	1:75
3	MANUAL UPDATE	SEP. 2021	DATE:	FEB. 2020
2	MANUAL UPDATE	FEB. 2020		
NO.	REVISION	DATE	STANDARD No.:	MinC.1.1



NOTES

- UTILITY CORRIDOR (HYDRO & TELECOMMUNICATIONS) SHALL BE 0.6m WIDE.
- UTILITY CORRIDOR TO HAVE A MINIMUM COVER OF 0.9m.
- WATERMAIN TO HAVE MINIMUM COVER OF 2.0m FOR 300mm AND SMALLER DIAMETER AND 1.8m FOR 450mm DIAMETER AND LARGER.
- CLEAR SEPARATION BETWEEN WATERMAIN AND SEWERS SHALL BE AS PER MOE REQUIREMENTS.
- MINIMUM SEPARATION BETWEEN THE SANITARY AND STORM SEWERS SHALL NOT BE LESS THAN 1.5m WHERE EES IS UTILIZED.
- JOINT USE TRENCHES SHALL BE USED BY HYDRO AND TELECOMMUNICATION.

- THE FOLLOWING IS A MINIMUM ROAD BASE AND WILL REQUIRE A SOILS REPORT VERIFICATION TO DETERMINE IF ADDITIONAL THICKNESS IS REQUIRED.
40mm HL3
80mm HL4 (100mm FOR BUS ROUTES)
210mm GRANULAR "A" (NO RAP)
450mm GRANULAR "B" (470mm FOR BUS ROUTES)
- SUB-GRADE SHALL BE COMPACTED TO 100% OF STANDARD PROCTOR DENSITY AT MAX. DRY DENSITY.

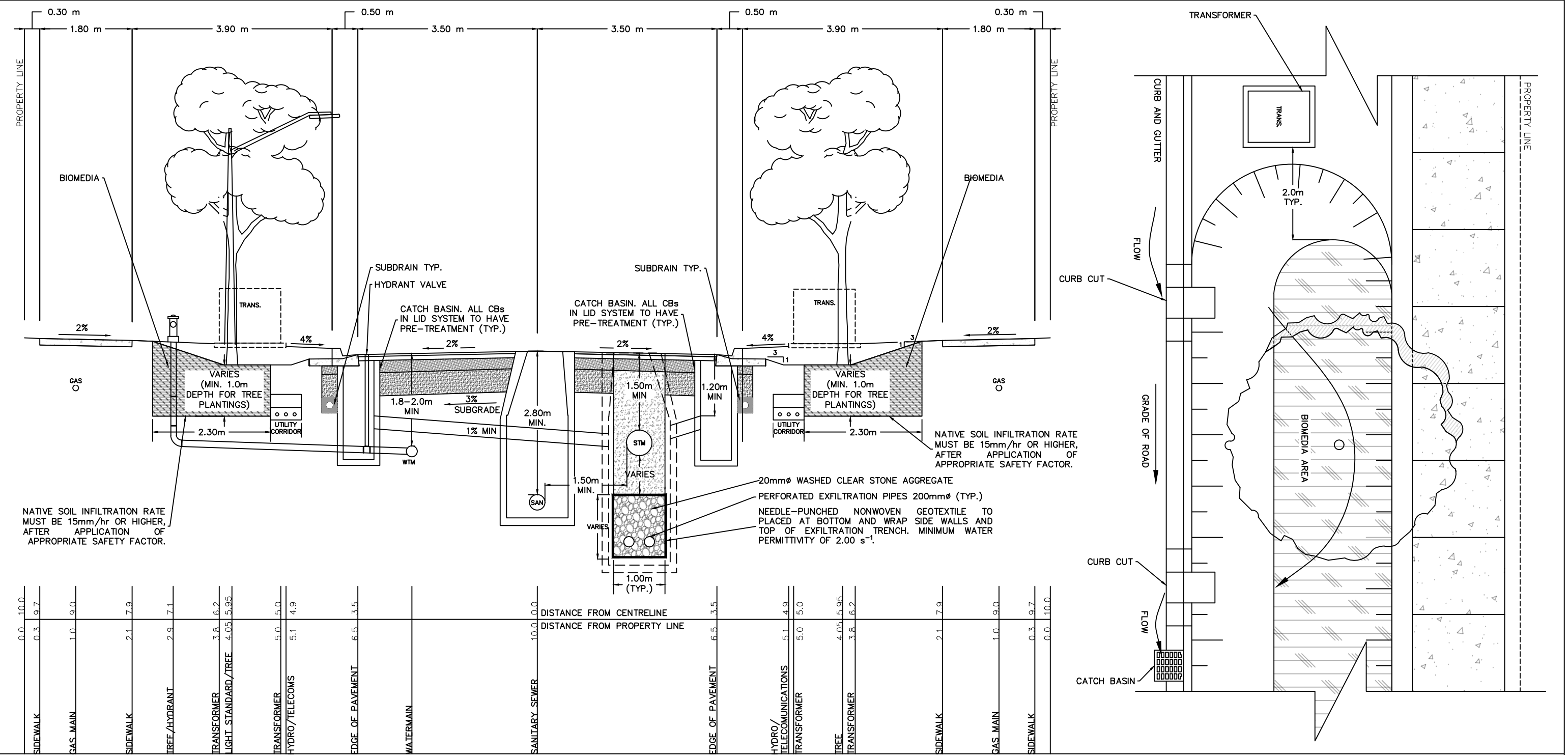
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20.0m R.O.W. MINOR COLLECTOR, PREFERRED STANDARD SEGREGATED EXFILTRATION TRENCH WITHIN ROADWAY

The Corporation Of The
CITY OF KITCHENER



4	GAS MAIN LOCATION	JAN. 2025	SCALE:	1:75
3	MANUAL UPDATE	SEP. 2021	DATE:	FEB. 2020
2	MANUAL UPDATE	FEB. 2020	STANDARD No.:	MinC.1.2
NO.	REVISION	DATE		



NOTES

1. UTILITY CORRIDOR (HYDRO & TELECOMMUNICATIONS) SHALL BE 0.6m WIDE.
2. UTILITY CORRIDOR TO HAVE A MINIMUM COVER OF 0.9m.
3. WATERMAIN TO HAVE MINIMUM COVER OF 2.0m FOR 300mm AND SMALLER DIAMETER AND 1.8m FOR 450mm DIAMETER AND LARGER.
4. CLEAR SEPARATION BETWEEN WATERMAIN AND SEWERS SHALL BE AS PER MOE REQUIREMENTS.
5. MINIMUM SEPARATION BETWEEN THE SANITARY AND STORM SEWERS SHALL NOT BE LESS THAN 1.5m WHERE EES IS UTILIZED.
6. JOINT USE TRENCHES SHALL BE USED BY HYDRO AND TELECOMMUNICATION.

7. THE FOLLOWING IS A MINIMUM ROAD BASE AND WILL REQUIRE A SOILS REPORT VERIFICATION TO DETERMINE IF ADDITIONAL THICKNESS IS REQUIRED.
 - 40mm HL3
 - 80mm HL4 (100mm FOR BUS ROUTES)
 - 210mm GRANULAR "A" (NO RAP)
 - 450mm GRANULAR "B" (470mm FOR BUS ROUTES)
8. SUB-GRADE SHALL BE COMPACTED TO 100% OF STANDARD PROCTOR DENSITY AT MAX. DRY DENSITY.

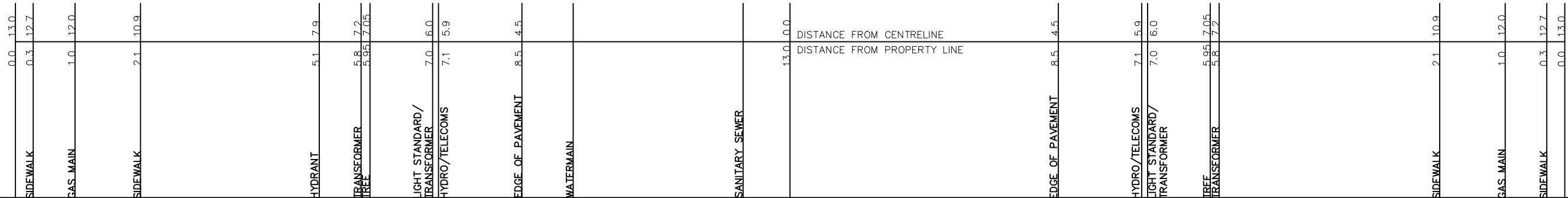
9. WHERE A MINIMUM HORIZONTAL SEPARATION OF 2.5m BETWEEN WATERMAIN AND SEWER CAN NOT BE ACHIEVED, THE CROWN OF THE SEWER SHALL BE AT LEAST 0.5m LOWER THAN THE INVERT OF THE WATERMAIN.

20.0m R.O.W. MINOR COLLECTOR, PREFERRED STANDARD SEGREGATED EXFILTRATION TRENCH AND BIOMEDIA AREA

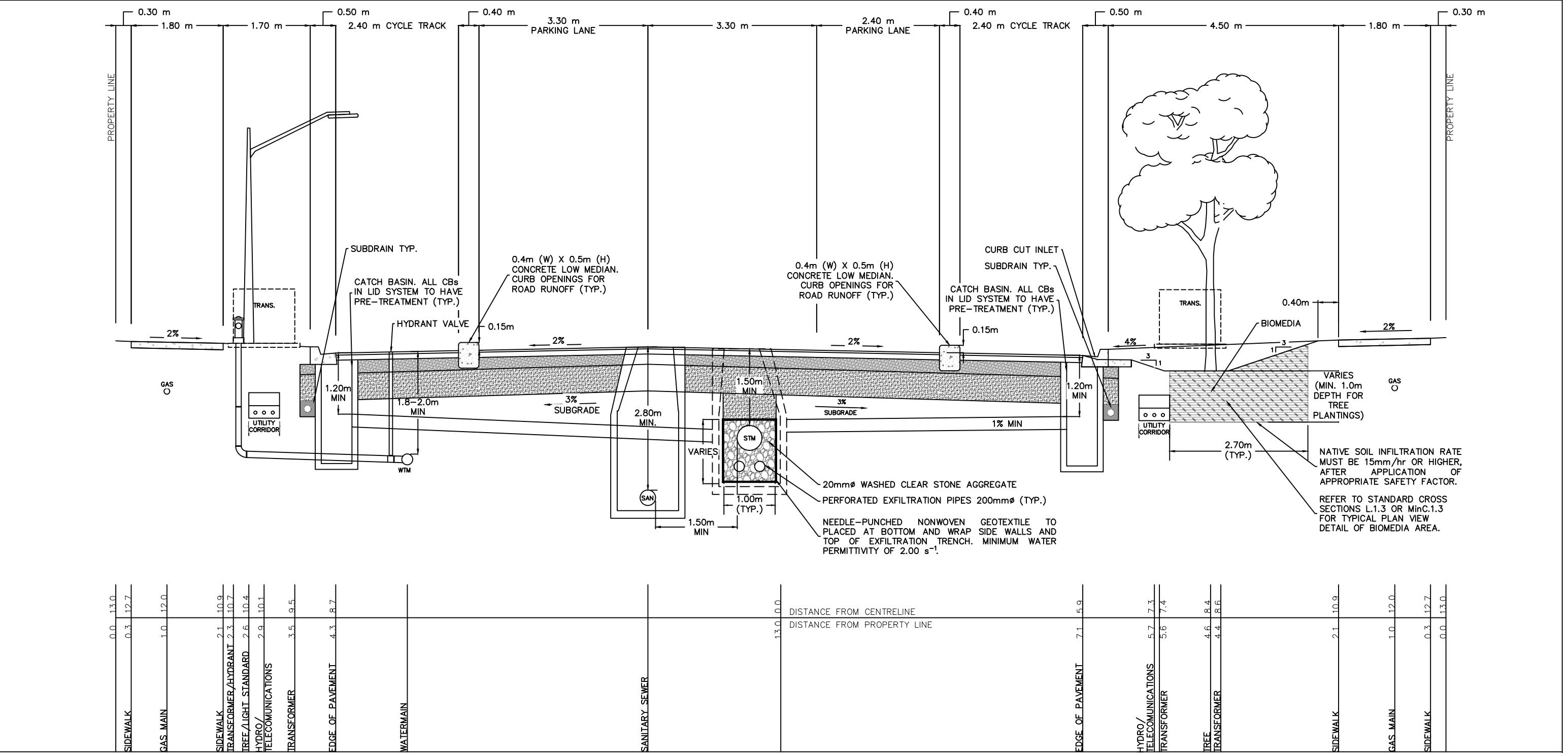
The Corporation Of The
CITY OF KITCHENER



4	GAS MAIN LOCATION	JAN. 2025	SCALE:	1:75
3	MANUAL UPDATE	SEP. 2021	DATE:	FEB. 2020
2	MANUAL UPDATE	FEB. 2020		
NO.	REVISION	DATE	STANDARD No.:	MinC.1.3



4	GAS MAIN LOCATION	JAN. 2025	SCALE:	1:75
3	MANUAL UPDATE	SEP. 2021	DATE:	FEB. 2020
2	MANUAL UPDATE	FEB. 2020	STANDARD No.:	MajC.1.1
NO.	REVISION	DATE		



- NOTES
1. UTILITY CORRIDOR (HYDRO & TELECOMMUNICATIONS) SHALL BE 0.6m WIDE.

2. UTILITY CORRIDOR TO HAVE A MINIMUM COVER OF 0.9m.

3. WATERMAIN TO HAVE MINIMUM COVER OF 2.0m FOR 300mm AND SMALLER DIAMETER AND 1.8m FOR 450mm DIAMETER AND LARGER.

4. CLEAR SEPARATION BETWEEN WATERMAIN AND SEWERS SHALL BE AS PER MOE REQUIREMENTS.

5. MINIMUM SEPARATION BETWEEN THE SANITARY AND STORM SEWERS SHALL NOT BE LESS THAN 1.5m, WHERE EES IS UTILIZED.

6. JOINT USE TRENCHES SHALL BE USED BY HYDRO AND TELECOMMUNICATION.
7. THE FOLLOWING IS A MINIMUM ROAD BASE AND WILL REQUIRE A SOILS REPORT VERIFICATION TO DETERMINE IF ADDITIONAL THICKNESS IS REQUIRED.

40mm HL3

80mm HL4

210mm GRANULAR "A" (NO RAP)

450mm GRANULAR "B"
8. SUB-GRADE SHALL BE COMPACTED TO 100% OF STANDARD PROCTOR DENSITY AT MAX. DRY DENSITY.

9. THIS CROSS-SECTION IS TO BE USED IN HIGHER DENSITY MIXED-USE ENVIRONMENTS, APPROVAL REQUIRED BY TRANSPORTATION SERVICES.
10. THIS CROSS-SECTION IS APPLICABLE FOR SOILS WITH HIGH INFILTRATION RATE ($\geq 15\text{mm/hr}$).

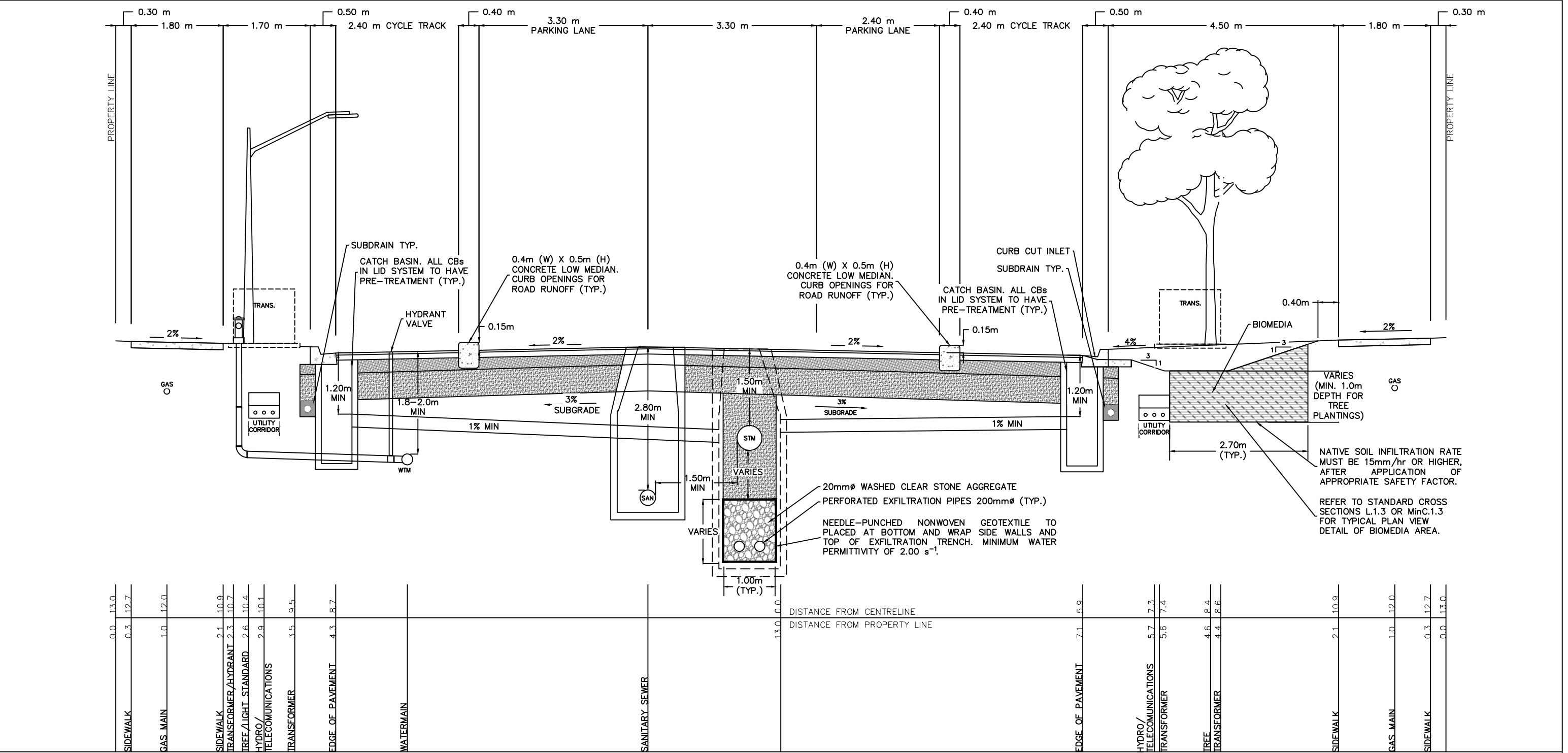
11. WHERE A MINIMUM HORIZONTAL SEPARATION OF 2.5m BETWEEN WATERMAIN AND SEWER CAN NOT BE ACHIEVED, THE CROWN OF THE SEWER SHALL BE AT LEAST 0.5m LOWER THAN THE INVERT OF THE WATERMAIN.

26.0m R.O.W. MAJOR COLLECTOR, ALTERNATIVE: SEPARATED BIKE LANES
COMBINED EXFILTRATION TRENCH AND BIOMEDIA AREA

The Corporation Of The
CITY OF
KITCHENER



4	GAS MAIN LOCATION	JAN. 2025	SCALE:	1:75
3	MANUAL UPDATE	SEP. 2021	DATE:	FEB. 2020
2	MANUAL UPDATE	FEB. 2020		
NO.	REVISION	DATE	STANDARD No.:	MajC.2.1



- NOTES
1. UTILITY CORRIDOR (HYDRO & TELECOMMUNICATIONS) SHALL BE 0.6m WIDE.

2. UTILITY CORRIDOR TO HAVE A MINIMUM COVER OF 0.9m.

3. WATERMAIN TO HAVE MINIMUM COVER OF 2.0m FOR 300mm AND SMALLER DIAMETER AND 1.8m FOR 450mm DIAMETER AND LARGER.

4. CLEAR SEPARATION BETWEEN WATERMAIN AND SEWERS SHALL BE AS PER MOE REQUIREMENTS.

5. MINIMUM SEPARATION BETWEEN THE SANITARY AND STORM SEWERS SHALL NOT BE LESS THAN 1.5m, WHERE EES IS UTILIZED.

6. JOINT USE TRENCHES SHALL BE USED BY HYDRO AND TELECOMMUNICATION.
7. THE FOLLOWING IS A MINIMUM ROAD BASE AND WILL REQUIRE A SOILS REPORT VERIFICATION TO DETERMINE IF ADDITIONAL THICKNESS IS REQUIRED.

40mm HL3

80mm HL4

210mm GRANULAR "A" (NO RAP)

450mm GRANULAR "B"
8. SUB-GRADE SHALL BE COMPACTED TO 100% OF STANDARD PROCTOR DENSITY AT MAX. DRY DENSITY.

9. THIS CROSS-SECTION IS TO BE USED IN HIGHER DENSITY MIXED-USE ENVIRONMENTS, APPROVAL REQUIRED BY TRANSPORTATION SERVICES.
10. THIS CROSS-SECTION IS APPLICABLE FOR SOILS WITH HIGH INFILTRATION RATE ($\geq 15\text{mm/hr}$).

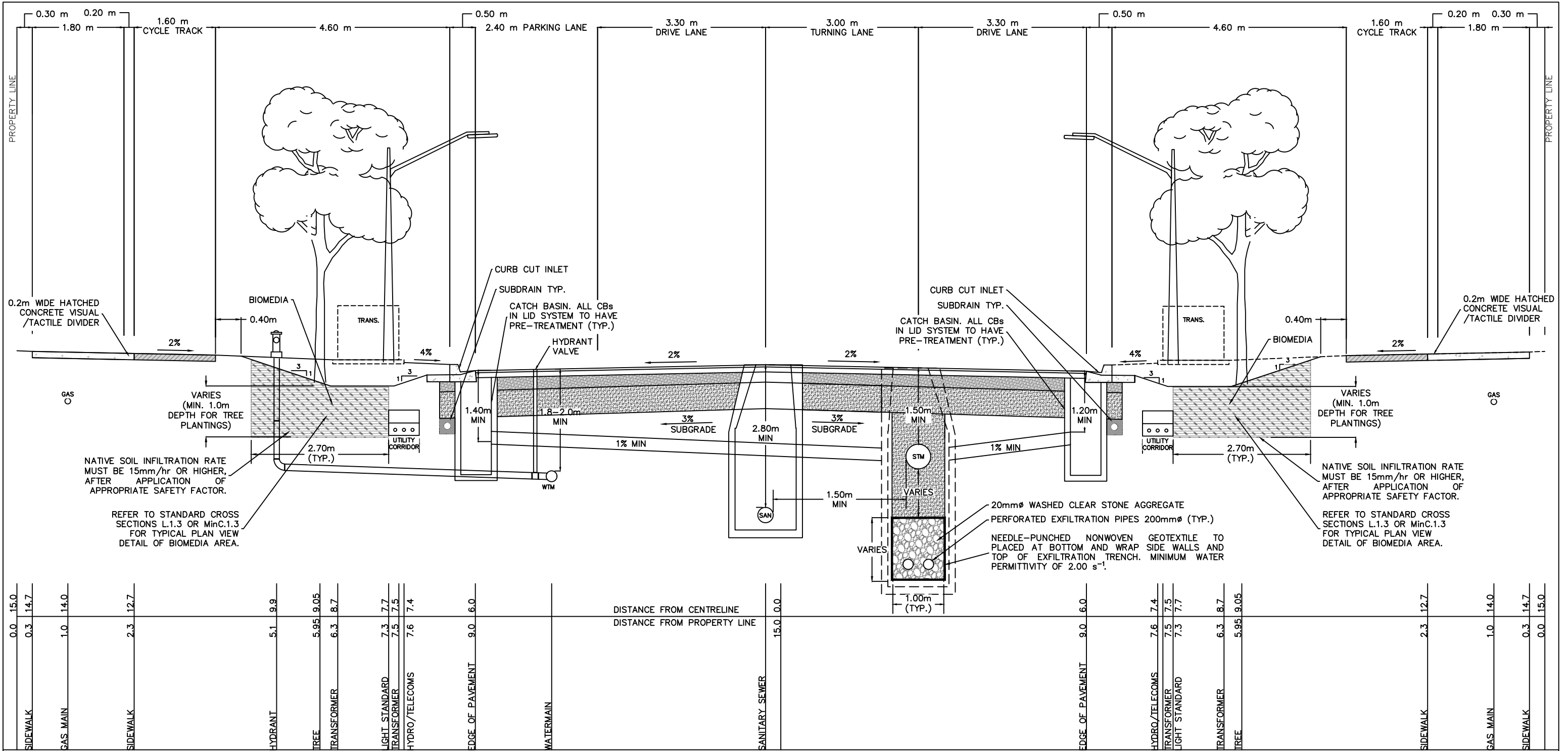
11. WHERE A MINIMUM HORIZONTAL SEPARATION OF 2.5m BETWEEN WATERMAIN AND SEWER CAN NOT BE ACHIEVED, THE CROWN OF THE SEWER SHALL BE AT LEAST 0.5m LOWER THAN THE INVERT OF THE WATERMAIN.

26.0m R.O.W. MAJOR COLLECTOR, ALTERNATIVE: SEPARATED BIKE LANES
SEGREGATED EXFILTRATION TRENCH AND BIOMEDIA AREA

The Corporation Of The
**CITY OF
KITCHENER**



4	GAS MAIN LOCATION	JAN. 2025	SCALE:	1:75
3	MANUAL UPDATE	SEP. 2021	DATE:	FEB. 2020
2	MANUAL UPDATE	FEB. 2020		
NO.	REVISION	DATE	STANDARD No.:	MajC.2.2



NOTES

1. UTILITY CORRIDOR (HYDRO & TELECOMMUNICATIONS) SHALL BE 0.6m WIDE.
2. UTILITY CORRIDOR TO HAVE A MINIMUM COVER OF 0.9m.
3. WATERMAIN TO HAVE MINIMUM COVER OF 2.0m FOR 300mm AND SMALLER DIAMETER AND 1.8m FOR 450mm DIAMETER AND LARGER.
4. CLEAR SEPARATION BETWEEN WATERMAIN AND SEWERS SHALL BE AS PER MOE REQUIREMENTS.
5. MINIMUM SEPARATION BETWEEN THE SANITARY AND STORM SEWERS SHALL NOT BE LESS THAN 1.5m WHERE EES IS UTILIZED.
6. JOINT USE TRENCHES SHALL BE USED BY HYDRO AND TELECOMMUNICATION.

7. THE FOLLOWING IS A MINIMUM ROAD BASE AND WILL REQUIRE A SOILS REPORT VERIFICATION TO DETERMINE IF ADDITIONAL THICKNESS IS REQUIRED.
 - 40mm HL3
 - 100mm HL4
 - 200mm GRANULAR "A" (NO RAP)
 - 520mm GRANULAR "B"
8. SUB-GRADE SHALL BE COMPACTED TO 100% OF STANDARD PROCTOR DENSITY AT MAX. DRY DENSITY.
9. THIS CROSS-SECTION IS TO BE USED WHERE LAND-USE IS PRIMARILY INDUSTRIAL. APPROVAL REQUIRED BY TRANSPORTATION SERVICES.

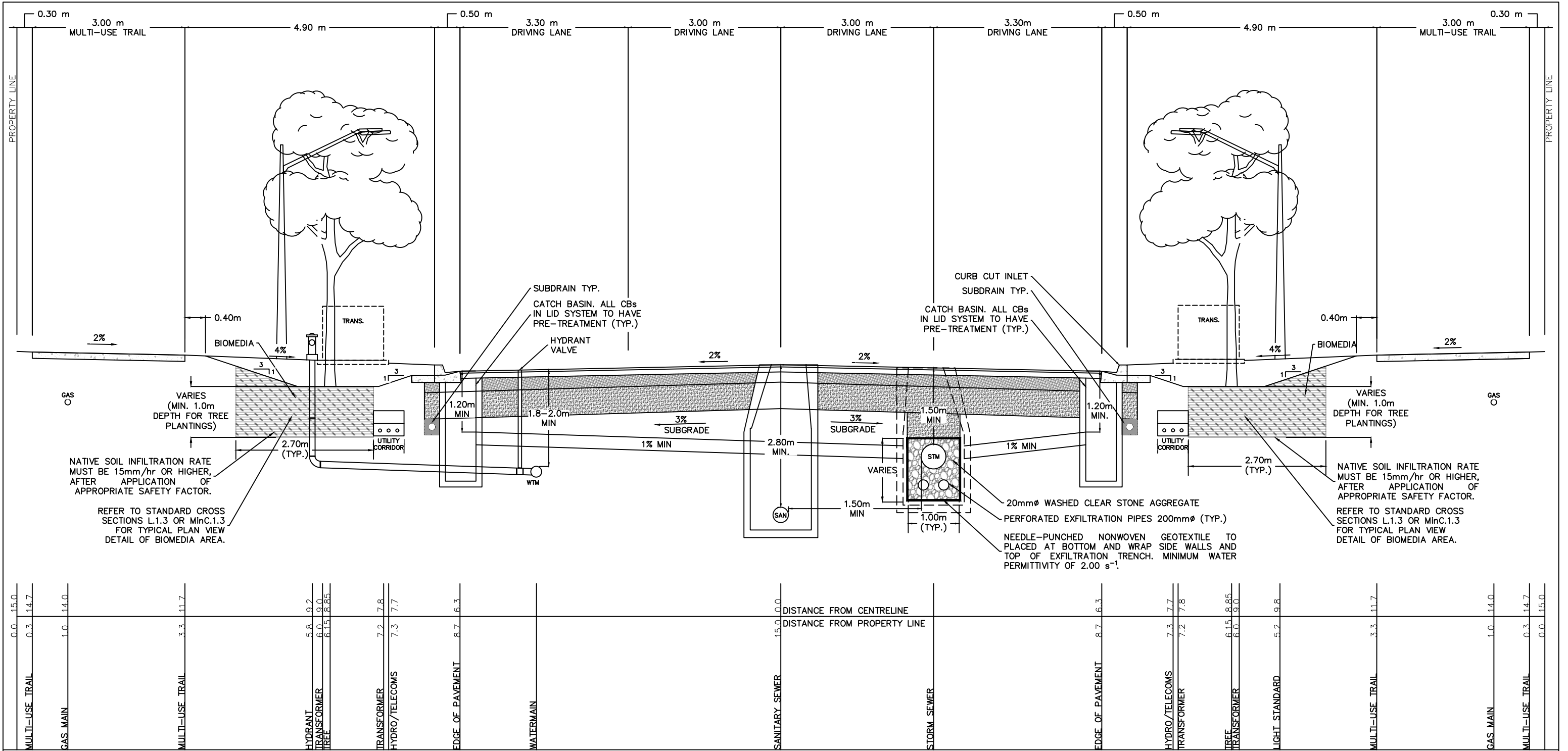
10. MULTI-USE TRAIL TO HAVE GRANULAR BASE OF A MINIMUM OF 300 mm GRANULAR 'A'. SURFACE IS HL3 ASPHALT, 70 mm DEPTH.
11. THIS CROSS-SECTION IS APPLICABLE FOR SOILS WITH HIGH INFILTRATION RATE ($\geq 15\text{mm/hr}$).
12. WHERE A MINIMUM HORIZONTAL SEPARATION OF 2.5m BETWEEN WATERMAIN AND SEWER CAN NOT BE ACHIEVED, THE CROWN OF THE SEWER SHALL BE AT LEAST 0.5m LOWER THAN THE INVERT OF THE WATERMAIN.

30.0m R.O.W. CITY ARTERIAL, MULTI-USE TRAILS
SEGREGATED EXFILTRATION TRENCH AND BIOMEDIA AREA

The Corporation Of The
**CITY OF
KITCHENER**



4	GAS MAIN LOCATION	JAN. 2025	SCALE:	1:75
3	MANUAL UPDATE	SEP. 2021	DATE:	FEB. 2020
2	MANUAL UPDATE	FEB. 2020		
NO.	REVISION	DATE	STANDARD No.:	A.1.3



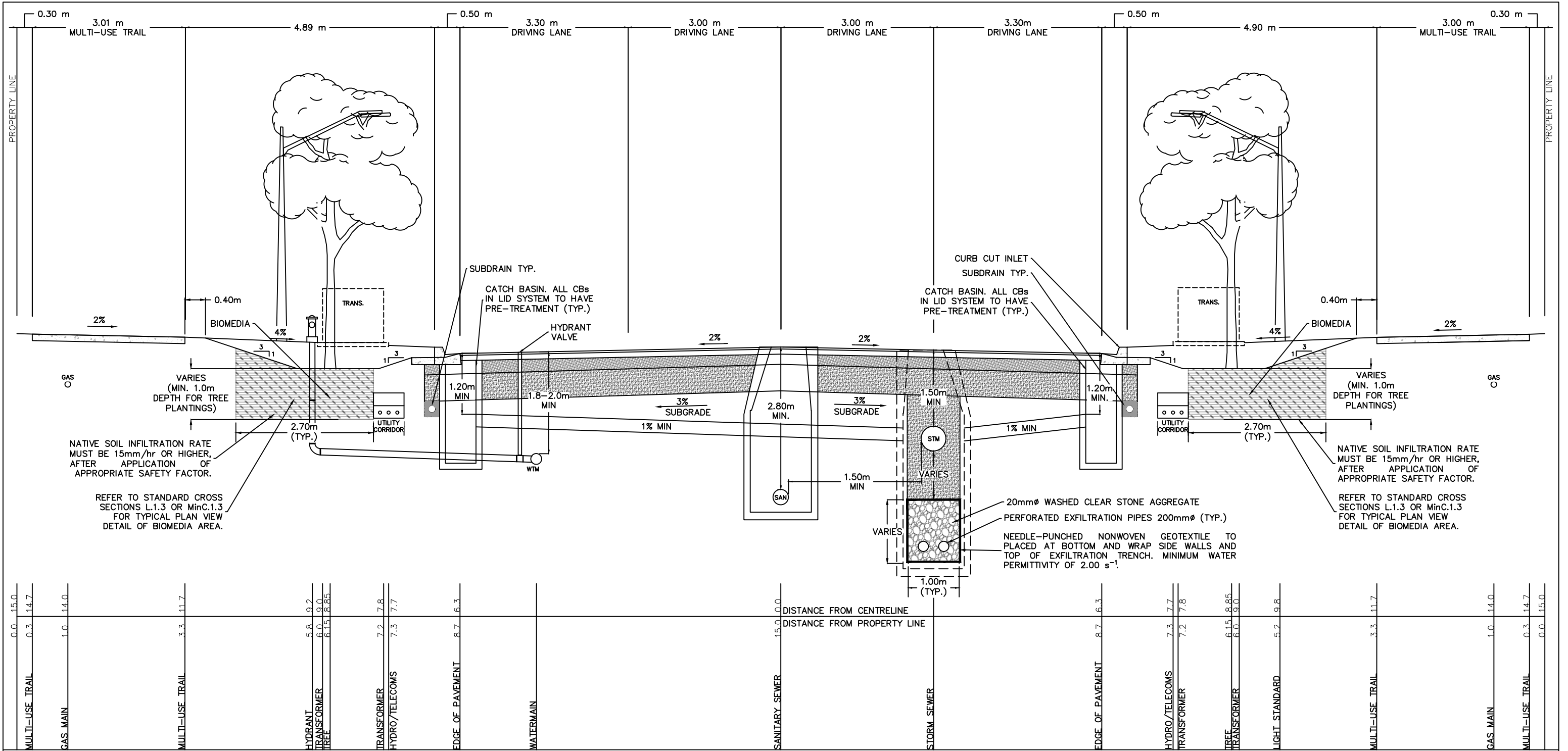
- NOTES
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40mm HL3
100mm HL4
200mm GRANULAR "A" (NO RAP)
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 - SUB-GRADE SHALL BE COMPACTED TO 100% OF STANDARD PROCTOR DENSITY AT MAX. DRY DENSITY.
 - THIS CROSS-SECTION IS TO BE USED WHERE LAND-USE IS PRIMARILY INDUSTRIAL. APPROVAL REQUIRED BY TRANSPORTATION SERVICES.
 - MULTI-USE TRAIL TO HAVE GRANULAR BASE OF A MINIMUM OF 300 mm GRANULAR 'A'. SURFACE IS HL3 ASPHALT, 70 mm DEPTH.
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30.0m R.O.W. CITY ARTERIAL, ALTERNATIVE: MULTI-USE TRAILS
COMBINED EXFILTRATION TRENCH AND BIOMEDIA AREA

The Corporation Of The
**CITY OF
KITCHENER**



4	GAS MAIN LOCATION	JAN. 2025	SCALE:	1:75
3	MANUAL UPDATE	SEP. 2021	DATE:	FEB. 2020
2	MANUAL UPDATE	FEB. 2020		
NO.	REVISION	DATE	STANDARD No.:	A.2.1



NOTES

1. UTILITY CORRIDOR (HYDRO & TELECOMMUNICATIONS) SHALL BE 0.6m WIDE.
2. UTILITY CORRIDOR TO HAVE A MINIMUM COVER OF 0.9m.
3. WATERMAIN TO HAVE MINIMUM COVER OF 2.0m FOR 300mm AND SMALLER DIAMETER AND 1.8m FOR 450mm DIAMETER AND LARGER.
4. CLEAR SEPARATION BETWEEN WATERMAIN AND SEWERS SHALL BE AS PER MOE REQUIREMENTS.
5. MINIMUM SEPARATION BETWEEN THE SANITARY AND STORM SEWERS SHALL NOT BE LESS THAN 1.5m WHERE EES IS USED.
6. JOINT USE TRENCHES SHALL BE USED BY HYDRO AND TELECOMMUNICATION.

7. THE FOLLOWING IS A MINIMUM ROAD BASE AND WILL REQUIRE A SOILS REPORT VERIFICATION TO DETERMINE IF ADDITIONAL THICKNESS IS REQUIRED.
 - 40mm HL3
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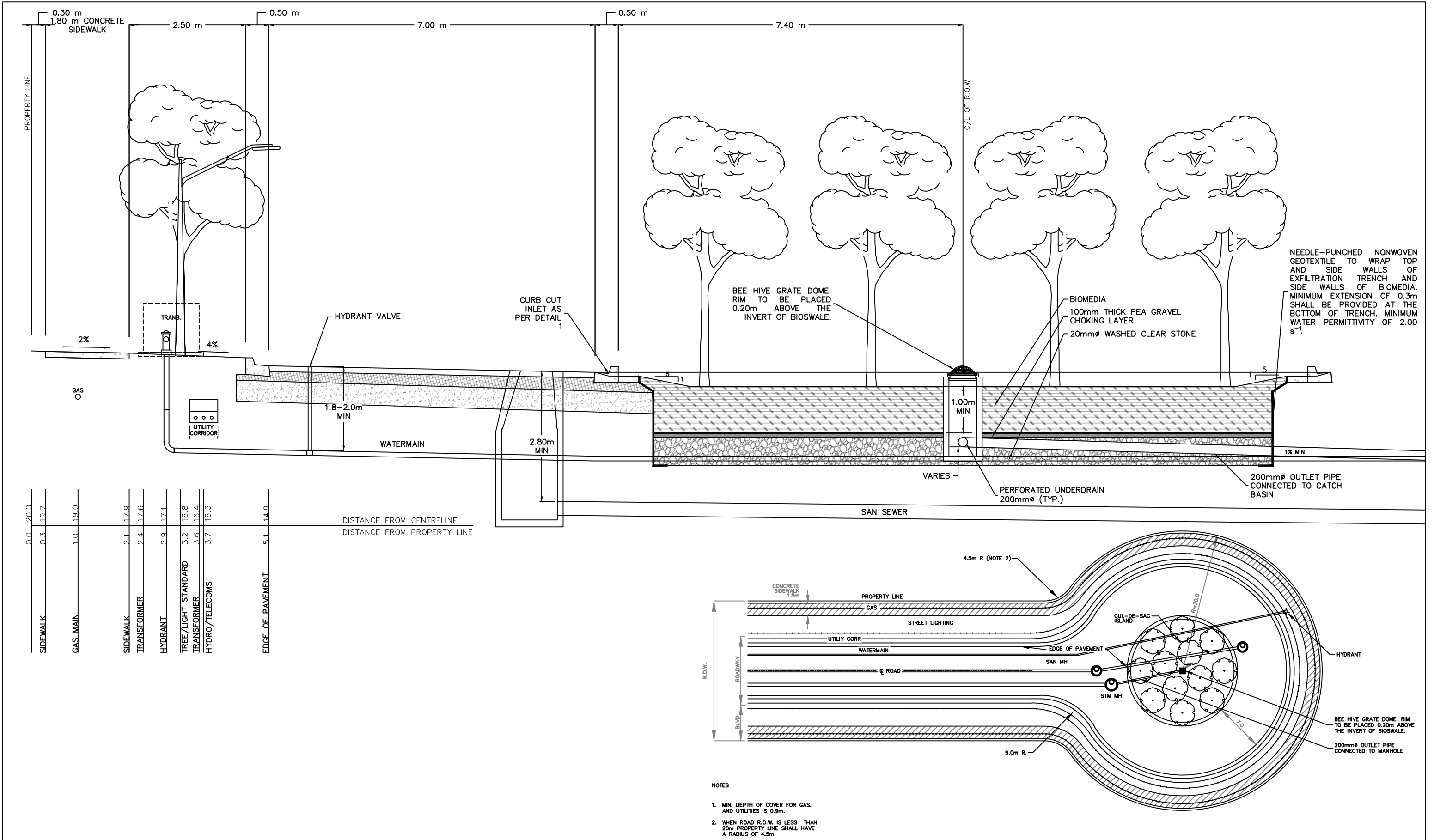
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30.0m R.O.W. CITY ARTERIAL, ALTERNATIVE: MULTI-USE TRAILS
SEGREGATED EXFILTRATION TRENCH AND BIOMEDIA AREA

The Corporation Of The
**CITY OF
KITCHENER**



4	GAS MAIN LOCATION	JAN. 2025	SCALE:	1:75
3	MANUAL UPDATE	SEP. 2021	DATE:	FEB. 2020
2	MANUAL UPDATE	FEB. 2020		
NO.	REVISION	DATE	STANDARD No.:	A.2.2



RESIDENTIAL CUL-DE-SAC & STANDARD UTILITY LOCATIONS
FOR 20m R.O.W. CUL-DE-SAC – BIORETENTION AT CENTRE ISLAND

The Corporation Of The
CITY OF KITCHENER



4	GAS MAIN LOCATION	JAN. 2025	SCALE:	1:75
3	MANUAL UPDATE	SEP. 2021	DATE:	FEB. 2020
2	MANUAL UPDATE	FEB. 2020		
NO.	REVISION	DATE	STANDARD No.:	Cul.1.1