

- 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.
- 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)
 - 400mm 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 WATERMMAIN AND SEWER CAN NOT BE ACHIEVED, THE CROWN OF THE SEWER SHALL BE AT LEAST 0.5m LOWER THAN THE INVERT OF THE WATERMAIN.

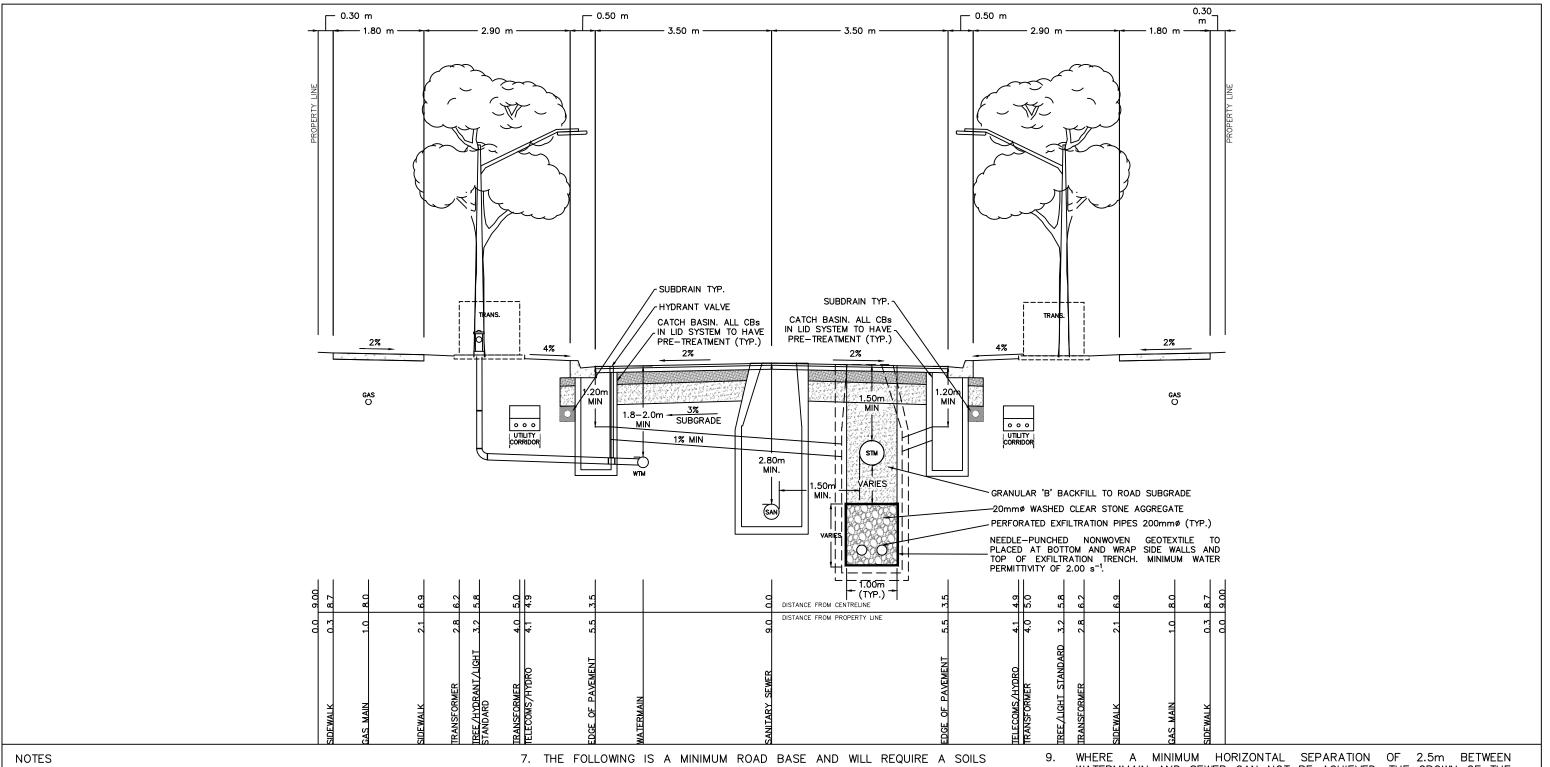
18.0m R.O.W. LOCAL, PREFERRED STANDARD COMBINED EXFILTRATION TRENCH WITHIN ROADWAY



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4	GAS MAIN LOCATION	JAN. 2025
3	MANUAL UPDATE	SEP. 2021
2	MANUAL UPDATE	FEB. 2020
NO.	REVISION	DATE

SCALE:	1:75
DATE:	FEB. 2020
STANDARD No.:	L.1.1



- 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.
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- 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.
- THE FOLLOWING IS A MINIMUM ROAD BASE AND WILL REQUIRE A SOILS REPORT VERIFICATION TO DETERMINE IF ADDITIONAL THICKNESS IS REQUIRED.

80mm HL4 (100mm FOR BUS ROUTES)

210mm GRANULAR "A" (NO RAP)

400mm 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 WATERMMAIN AND SEWER CAN NOT BE ACHIEVED, THE CROWN OF THE SEWER SHALL BE AT LEAST 0.5m LOWER THAN THE INVERT OF THE WATERMAIN.

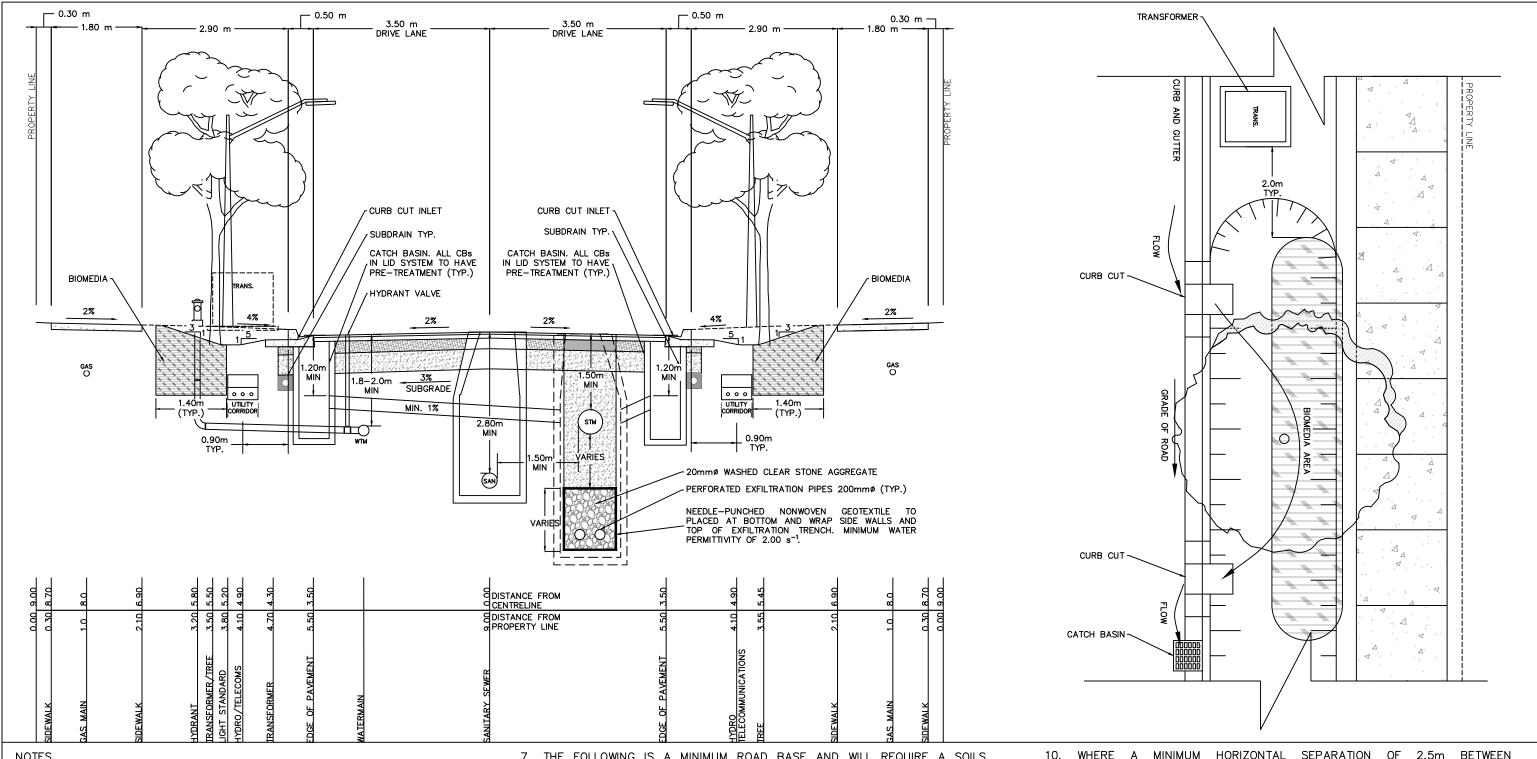
18.0m R.O.W. LOCAL, PREFERRED STANDARD SEGREGATED EXFILTRATION TRENCH WITHIN ROADWAY



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4	GAS MAIN LOCATION	JAN. 2025	Γ,
3	MANUAL UPDATE	SEP. 2021	ļ
2	MANUAL UPDATE	FEB. 2020	ŀ.
NO.	REVISION	DATE	:

SCALE:	1: 75
DATE:	FEB. 2020
STANDARD No.:	L.1.2



- UTILITY CORRIDOR (HYDRO & TELECOMMUNICATIONS) SHALL BE 0.6m WIDE.
- 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.
- CLEAR SEPARATION BETWEEN WATERMAIN AND SEWERS SHALL BE AS PER MOE REQUIREMENTS.
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80mm HL4 (100mm FOR BUS ROUTES)

210mm GRANULAR "A" (NO RAP)

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- 8. SUB-GRADE SHALL BE COMPACTED TO 100% OF STANDARD PROCTOR DENSITY AT MAX. DRY DENSITY.
- 9. THIS CROSS-SECTION IS APPLICABLE FOR SOILS WITH HIGH INFILTRATION RATE (≥ 15mm/hr).

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

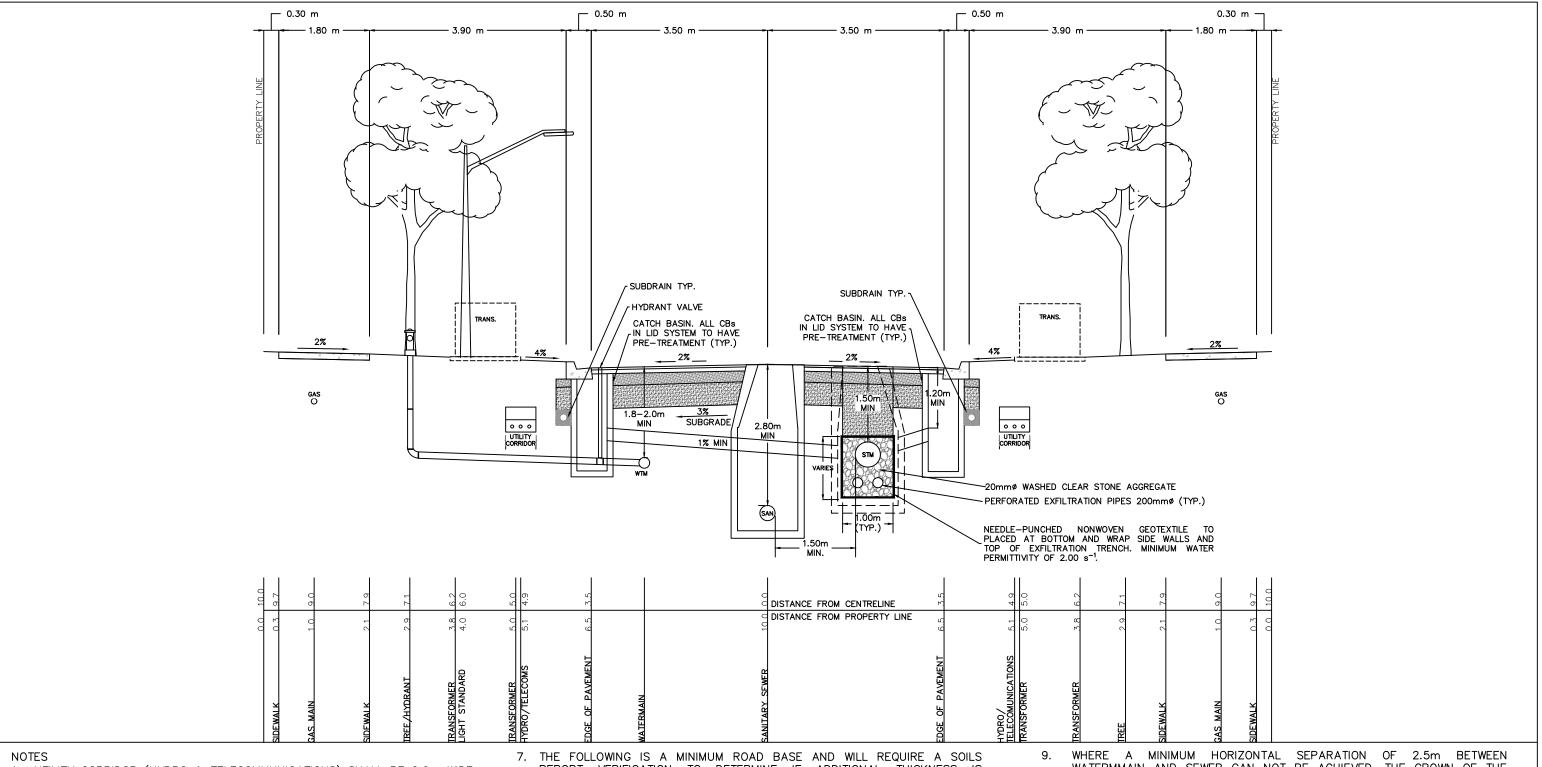
18.0m R.O.W. LOCAL, PREFERRED STANDARD SEGREGATED EXFILTRATION TRENCH AND BIOMEDIA AREA





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3	MANUAL UPDATE	SEP. 2021	H
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SCALE:	1: 75
DATE:	FEB. 2020
STANDARD No.:	L.1.3



- 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.
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 - 40mm HL3
 - 80mm HL4 (100mm FOR BUS ROUTES)
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- 8. SUB-GRADE SHALL BE COMPACTED TO 100% OF STANDARD PROCTOR DENSITY AT MAX. DRY DENSITY.

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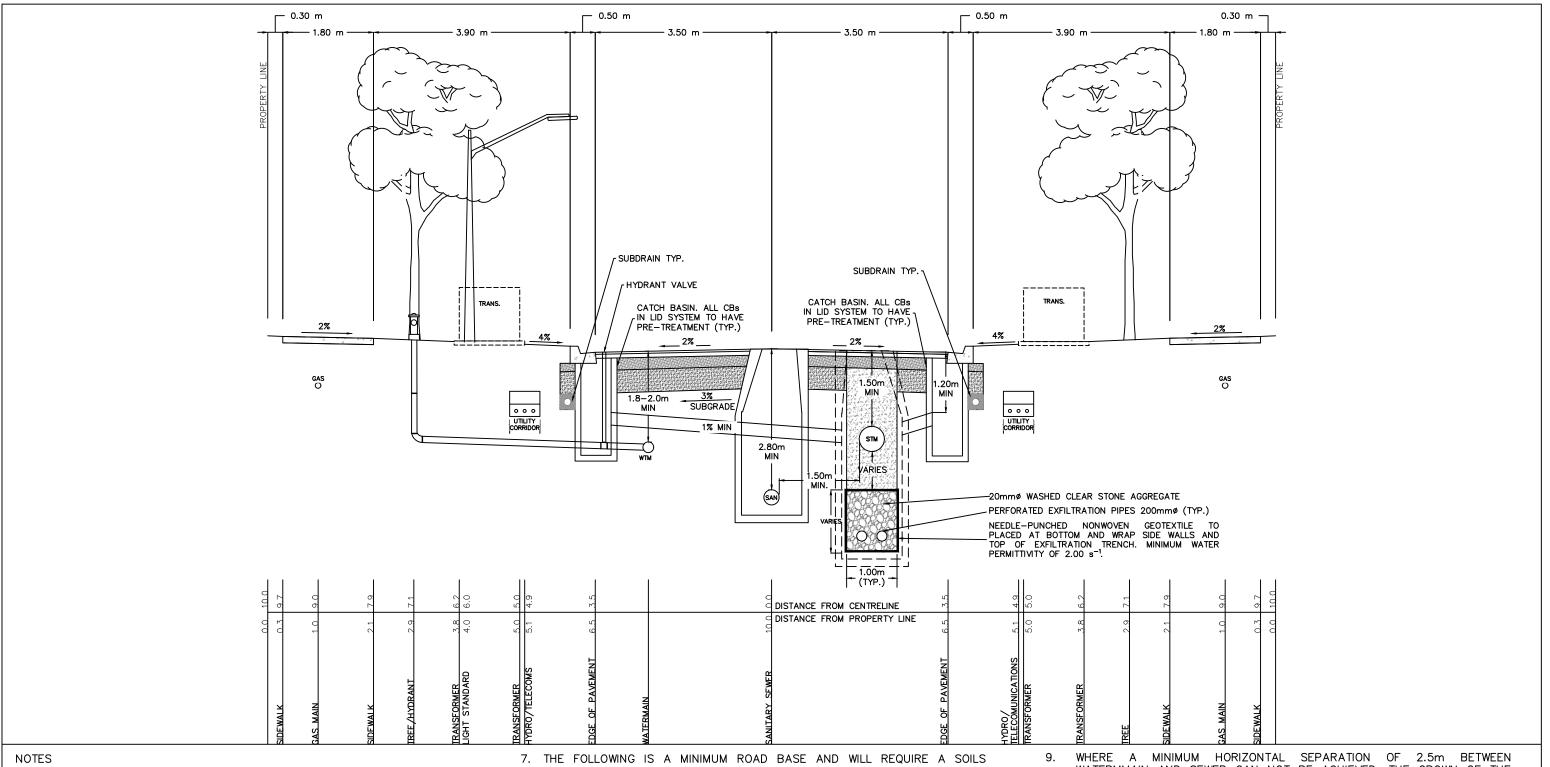
20.0m R.O.W. MINOR COLLECTOR, PREFERRED STANDARD COMBINED EXFILTRATION TRENCH WITHIN ROADWAY





4	GAS MAIN LOCATION	JAN. 2025
3	MANUAL UPDATE	SEP. 2021
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0	DATE:	FEB. 2020	
\dashv	STANDARD No.:	MinC.1.1	



- 1. UTILITY CORRIDOR (HYDRO & TELECOMMUNICATIONS) SHALL BE 0.6m WIDE.
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80mm HL4 (100mm FOR BUS ROUTES)

210mm GRANULAR "A" (NO RAP)

450mm GRANULAR "B" (470mm FOR BUS ROUTES)

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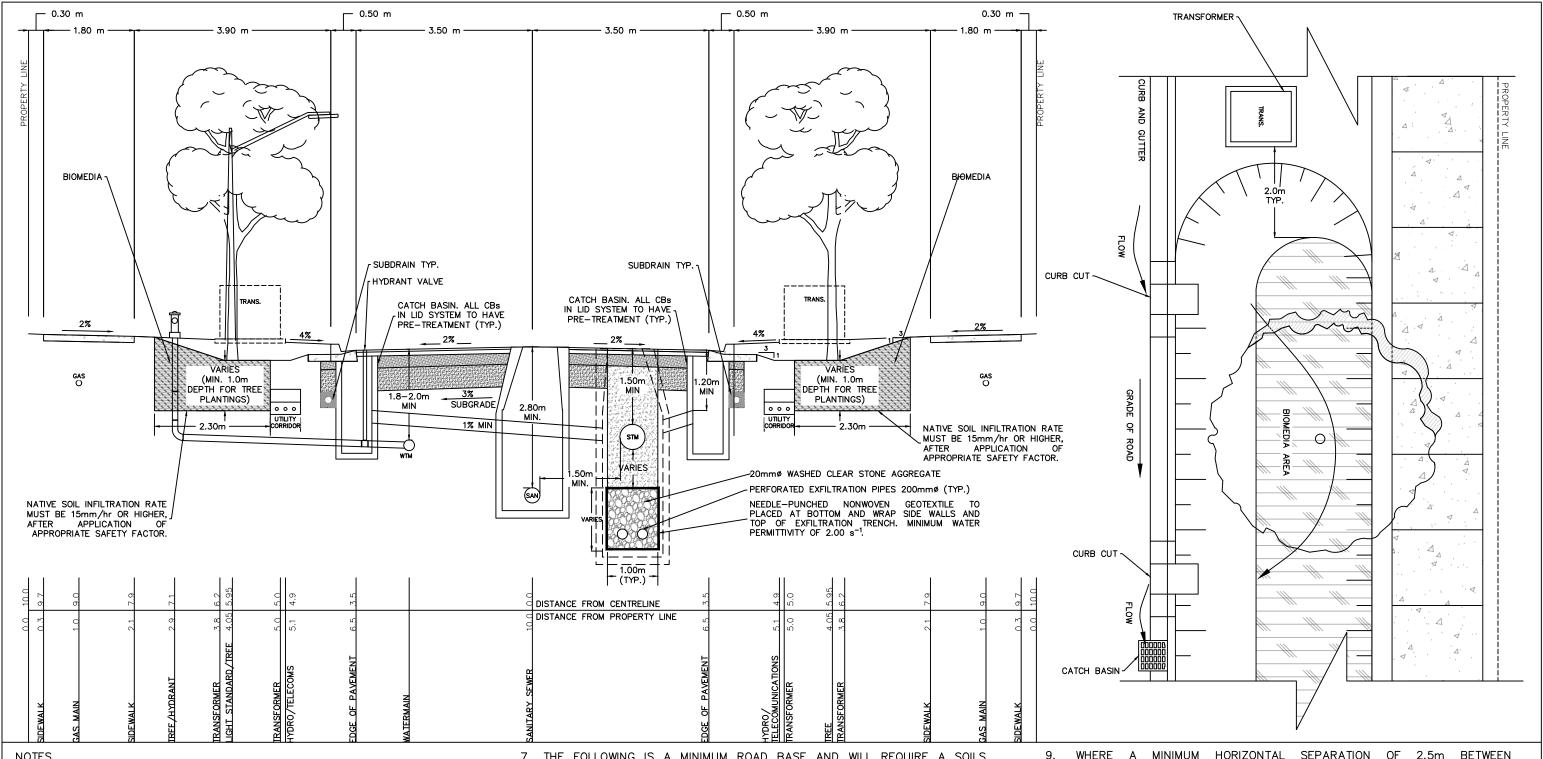
20.0m R.O.W. MINOR COLLECTOR, PREFERRED STANDARD SEGREGATED EXFILTRATION TRENCH WITHIN ROADWAY





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SCALE:	1:75
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STANDARD No.:	MinC.1.2



NOIF2

- 1. UTILITY CORRIDOR (HYDRO & TELECOMMUNICATIONS) SHALL BE 0.6m WIDE.
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- 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)
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 - 450mm GRANULAR "B" (470mm FOR BUS ROUTES)
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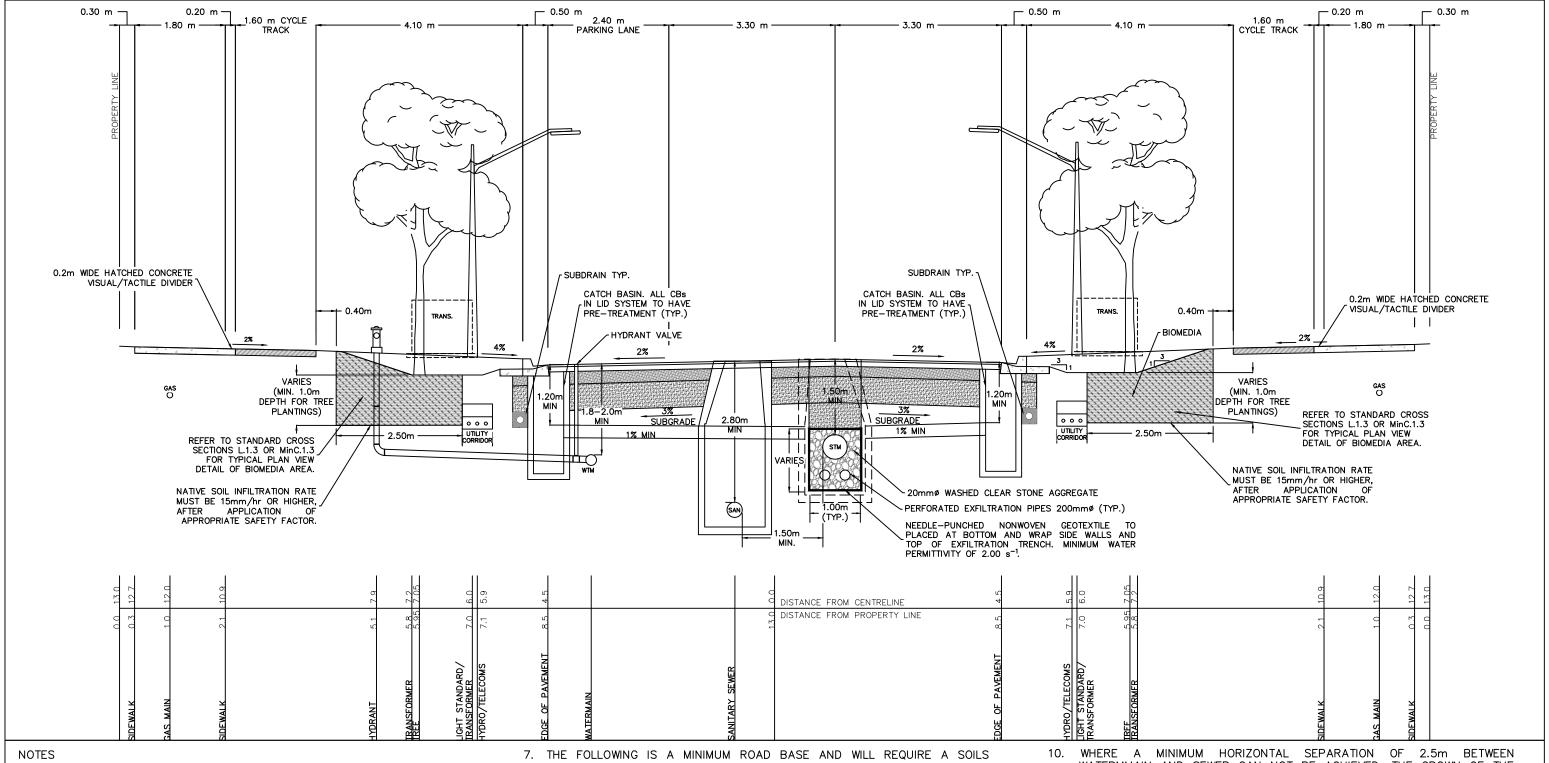
20.0m R.O.W. MINOR COLLECTOR, PREFERRED STANDARD SEGREGATED EXFILTRATION TRENCH AND BIOMEDIA AREA



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SCALE: 1: 75		
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- 1. UTILITY CORRIDOR (HYDRO & TELECOMMUNICATIONS) SHALL BE 0.6m WIDE.
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80mm HL4 (100mm FOR BUS ROUTES)

210mm GRANULAR "A" (NO RAP)

- 450mm GRANULAR "B" (470mm FOR BUS ROUTES)
- 3. SUB-GRADE SHALL BE COMPACTED TO 100% OF STÁNDARD PROCTOR DENSITY AT MAX. DRY DENSITY.
- 9. THIS CROSS-SECTION IS APPLICABLE FOR SOILS WITH HIGH INFILTRATION RATE (≥15mm/hr).

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

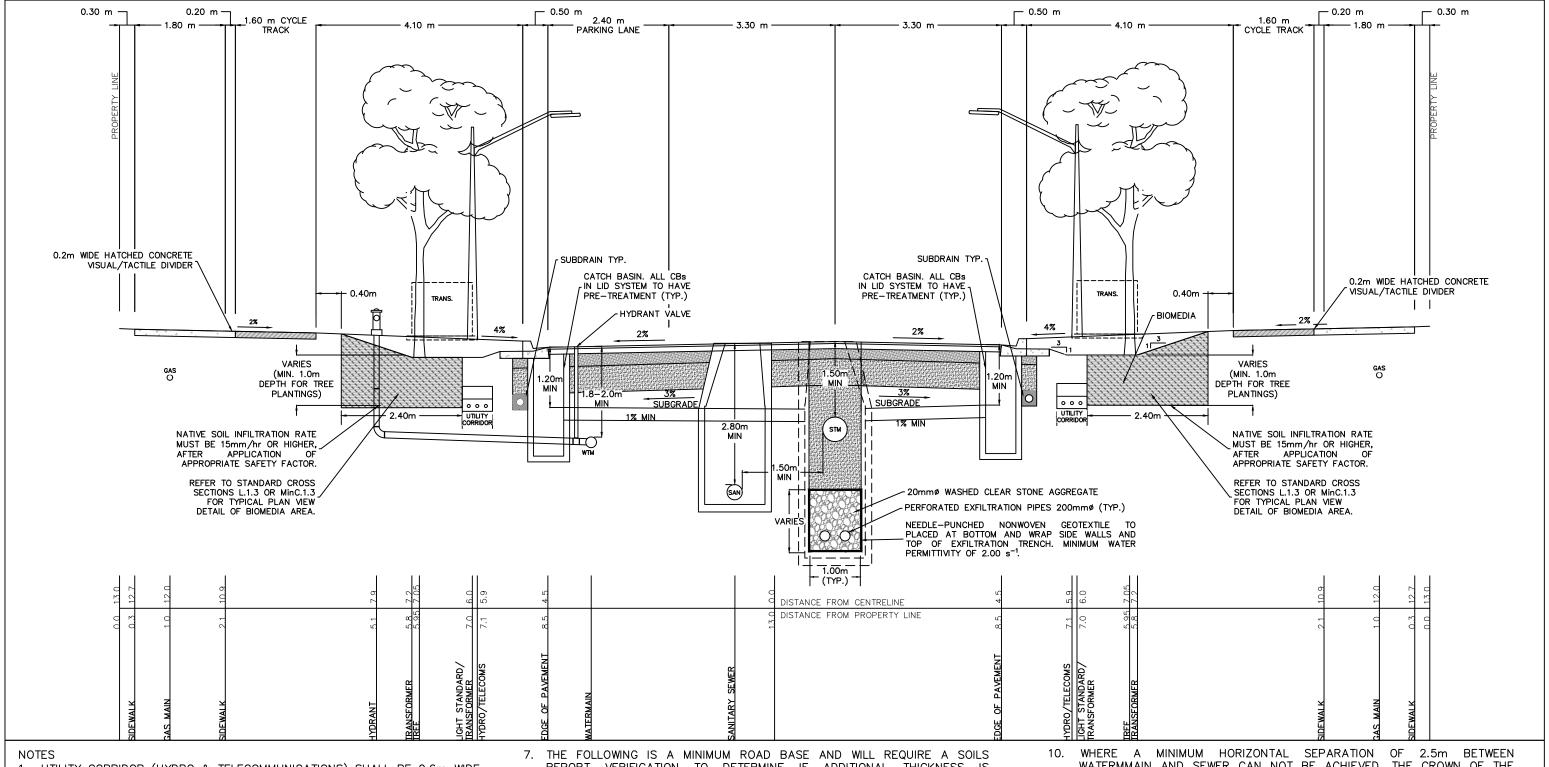
26.0m R.O.W. MAJOR COLLECTOR, PREFERRED STANDARD COMBINED EXFILTRATION TRENCH AND BIOMEDIA AREA



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- 1. UTILITY CORRIDOR (HYDRO & TELECOMMUNICATIONS) SHALL BE 0.6m WIDE.
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- THE FOLLOWING IS A MINIMUM ROAD BASE AND WILL REQUIRE A SOILS REPORT VERIFICATION TO DETERMINE IF ADDITIONAL THICKNESS IS REQUIRED.

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. THIS CROSS-SECTION IS APPLICABLE FOR SOILS WITH HIGH INFILTRATION RATE (≥15mm/hr).

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

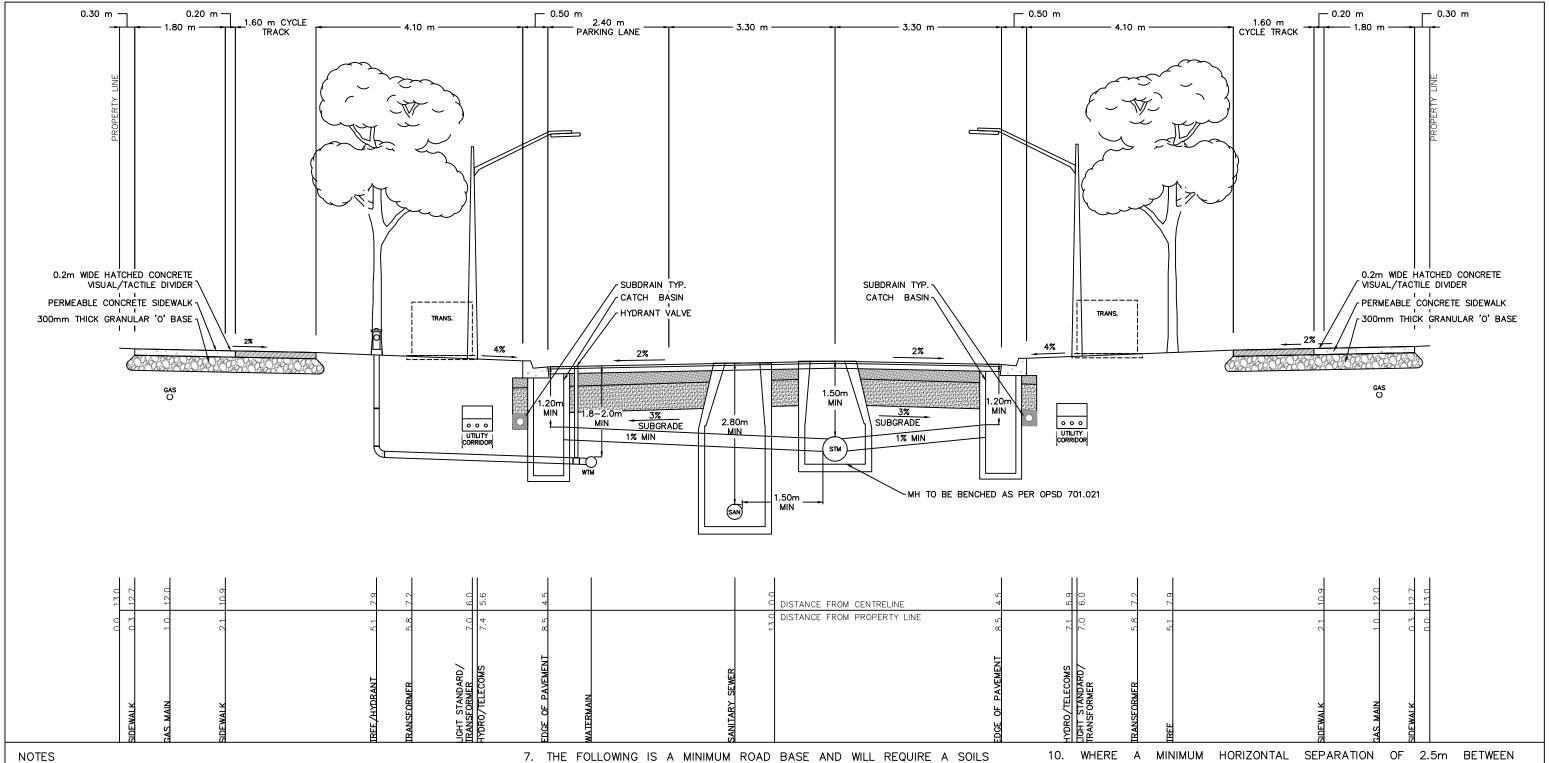
26.0m R.O.W. MAJOR COLLECTOR, PREFERRED STANDARD SEGREGATED EXFILTRATION TRENCH AND BIOMEDIA AREA





4	GAS MAIN LOCATION	JAN. 2025	Ī
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2	MANUAL UPDATE	FEB. 2020	Ľ
NO.	REVISION	DATE	:

SCALE:	1: 75	
DATE:	FEB. 2020	
STANDARD No.:	MajC.1.2	



- 1. UTILITY CORRIDOR (HYDRO & TELECOMMUNICATIONS) SHALL BE 0.6m WIDE.
- 2. 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.
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- 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)
- SUB-GRADE SHALL BE COMPACTED TO 100% OF STÁNDARD PROCTOR DENSITY AT MAX. DRY DENSITY.
- 9. THIS CROSS-SECTION IS APPLICABLE FOR SOILS WITH HIGH INFILTRATION RATE ($\geq 15 \text{mm/hr}$).

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

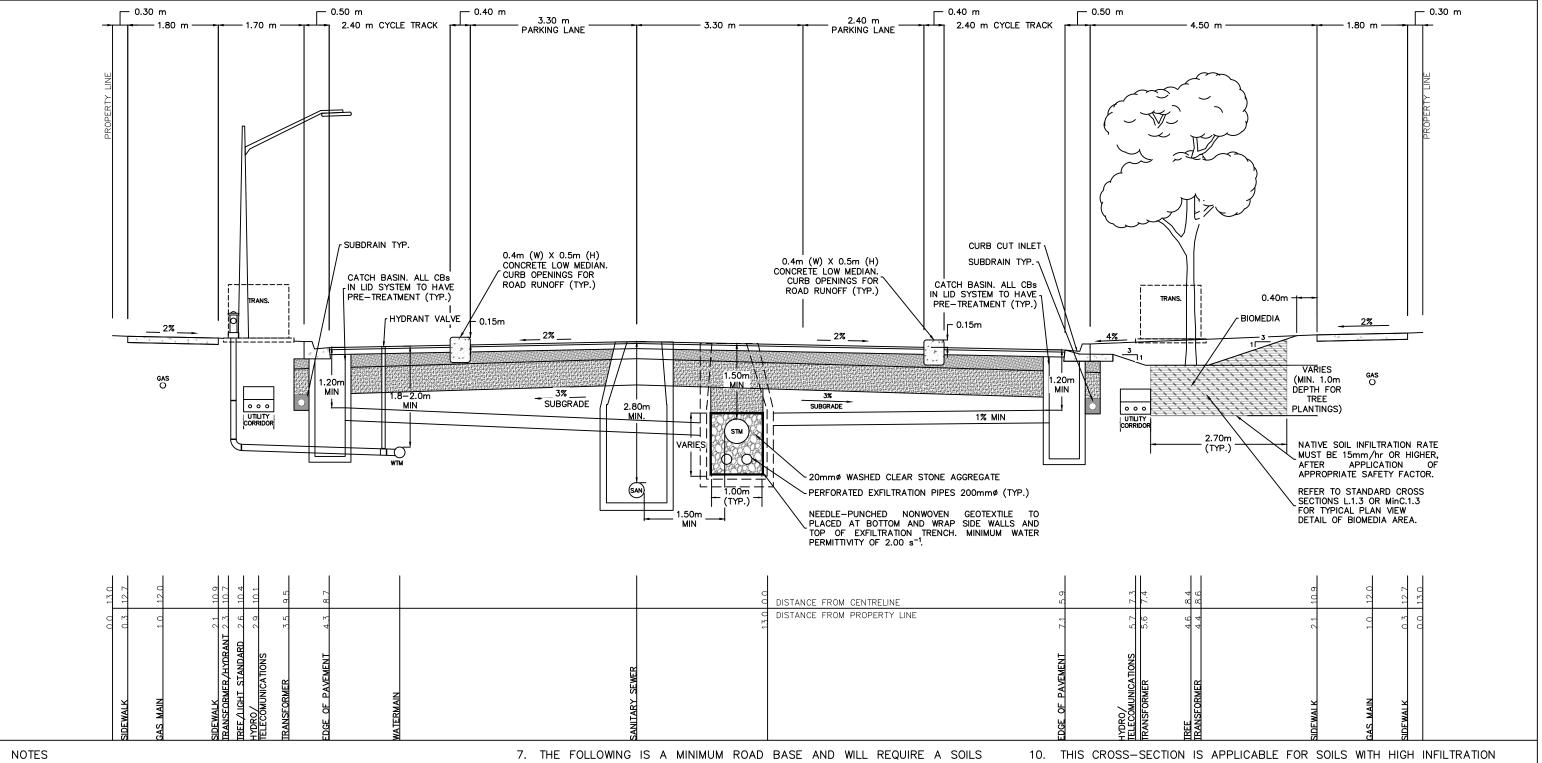
26.0m R.O.W. MAJOR COLLECTOR, PREFERRED STANDARD PERMEABLE SIDEWALK



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SCALE:	1: 75	
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- 1. UTILITY CORRIDOR (HYDRO & TELECOMMUNICATIONS) SHALL BE 0.6m WIDE.
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- 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.
- 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.
- THIS CROSS-SECTION IS APPLICABLE FOR SOILS WITH HIGH INFILTRATION RATE (≥15mm/hr).
- II. WHERE A MÍNIMUM HORIZONTAL SEPARATION OF 2.5m BETWEEN WATERMMAIN AND SEWER CAN NOT BE ACHIEVED, THE CROWN OF THE SEWER SHALL BE AT LEAST 0.5m LOWER THAN THE INVERT OF THE WATERMAIN.

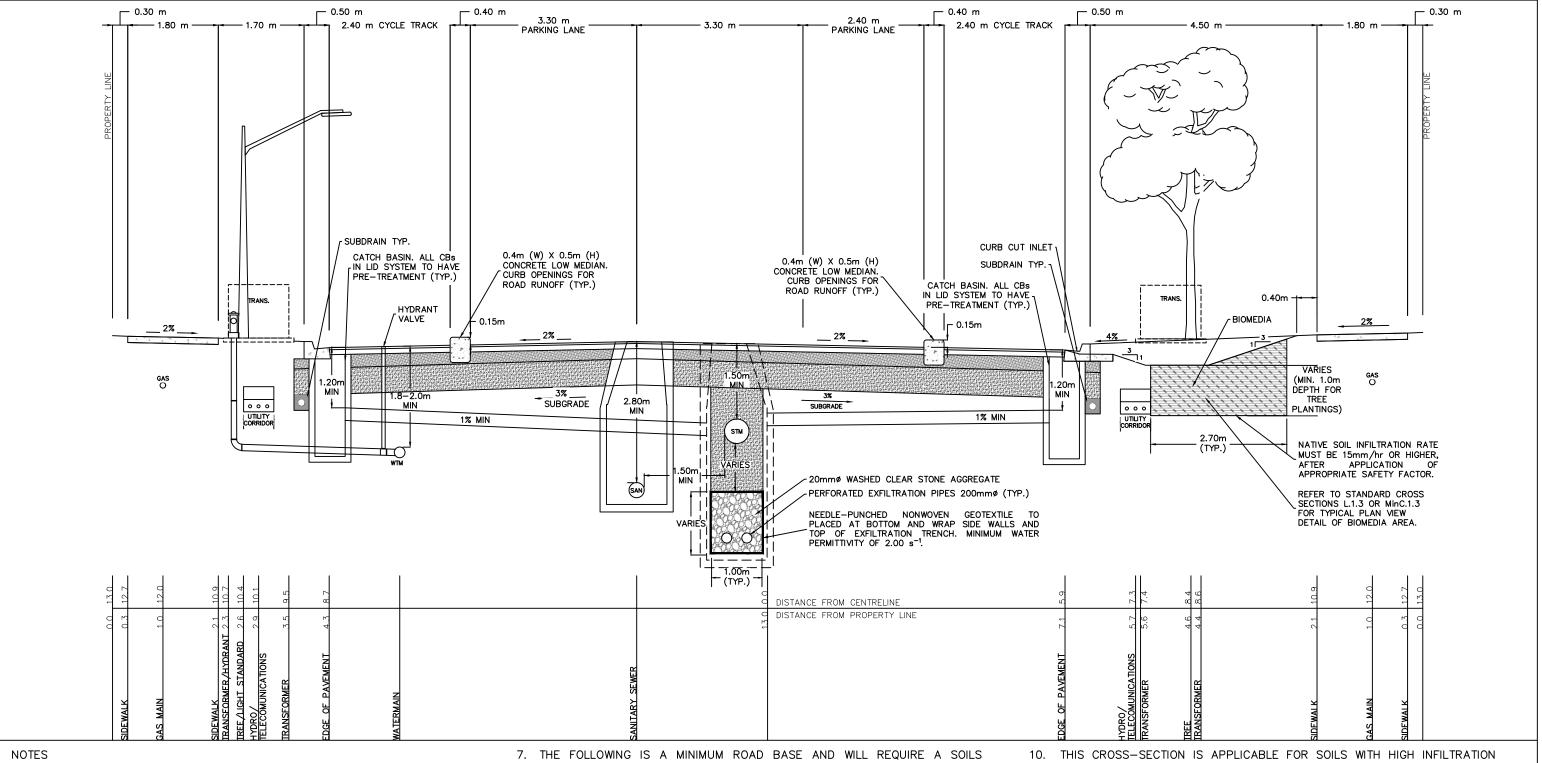
26.0m R.O.W. MAJOR COLLECTOR, ALTERNATIVE: SEPARATED BIKE LANES COMBINED EXFILTRATION TRENCH AND BIOMEDIA AREA



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4	GAS MAIN LOCATION	JAN. 2025
3	MANUAL UPDATE	SEP. 2021
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NO.	REVISION	DATE

SCALE:	1: 75	
DATE:	FEB. 2020	
STANDARD No.:	MajC.2.1	



- 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.
- THIS CROSS-SECTION IS APPLICABLE FOR SOILS WITH HIGH INFILTRATION RATE (≥15mm/hr).
- II. WHERE A MÍNIMUM HORIZONTAL SEPARATION OF 2.5m BETWEEN WATERMMAIN AND SEWER CAN NOT BE ACHIEVED, THE CROWN OF THE SEWER SHALL BE AT LEAST 0.5m LOWER THAN THE INVERT OF THE WATERMAIN.

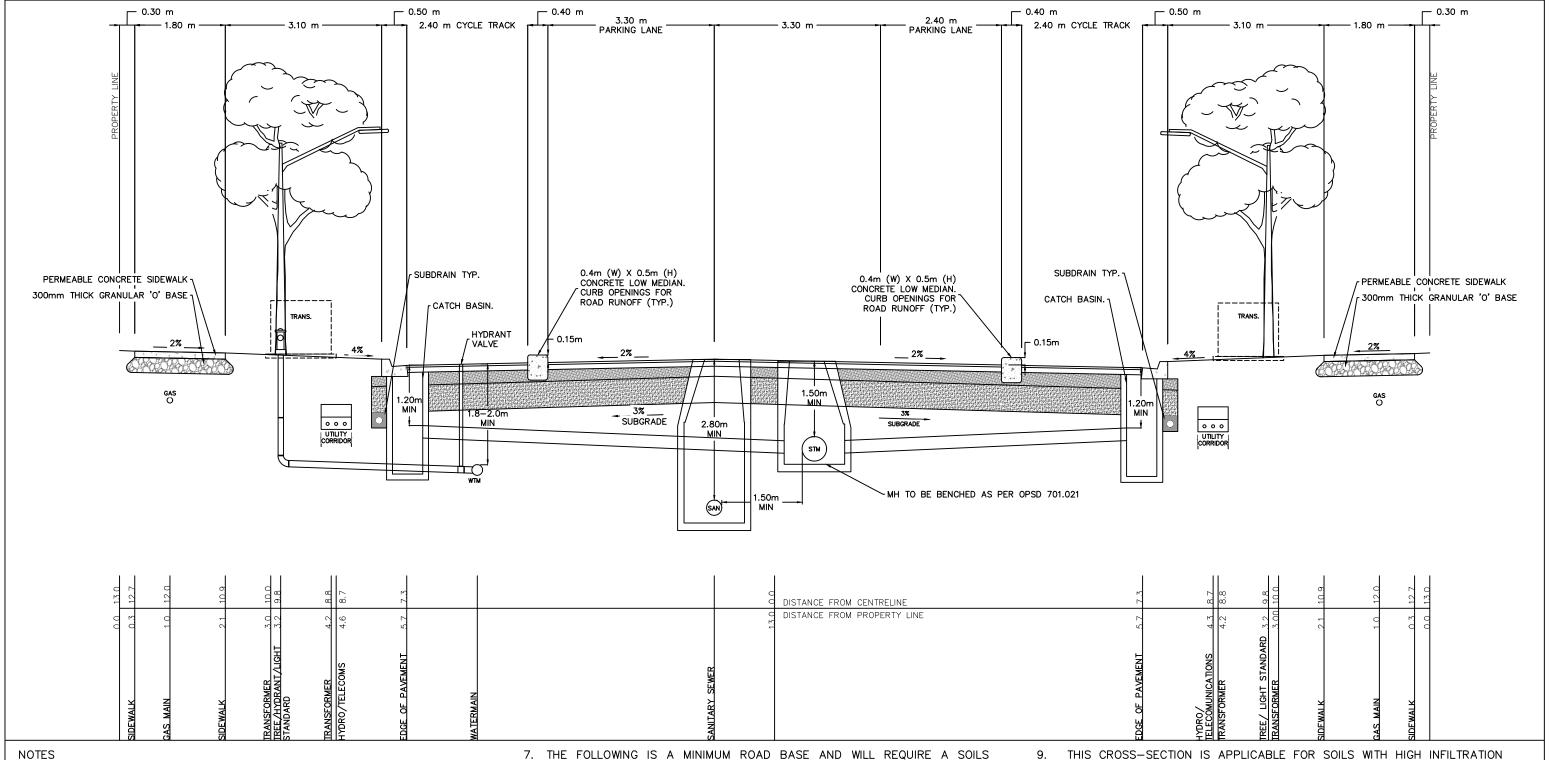
26.0m R.O.W. MAJOR COLLECTOR, ALTERNATIVE: SEPARATED BIKE LANES SEGREGATED EXFILTRATION TRENCH AND BIOMEDIA AREA





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- UTILITY CORRIDOR (HYDRO & TELECOMMUNICATIONS) SHALL BE 0.6m WIDE.
- 2. UTILITY CORRIDOR TO HAVE A MINIMUM COVER OF 0.9m.
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- 6. JOINT USE TRENCHES SHALL BE USED BY HYDRO AND TELECOMMUNICATION.
- 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.
- THIS CROSS-SECTION IS TO BE USED IN HIGHER DENSITY MIXED-USE ENVIRONMENTS, APPROVAL REQUIRED BY TRANSPORTATION SERVICES.
- RATE (≥15mm/hr).
- WHERE A MINIMUM HORIZONTAL SEPARATION OF 2.5m BETWEEN WATERMMAIN AND SEWER CAN NOT BE ACHIEVED, THE CROWN OF THE SEWER SHALL BE AT LEAST 0.5m LOWER THAN THE INVERT OF THE WATERMAIN.

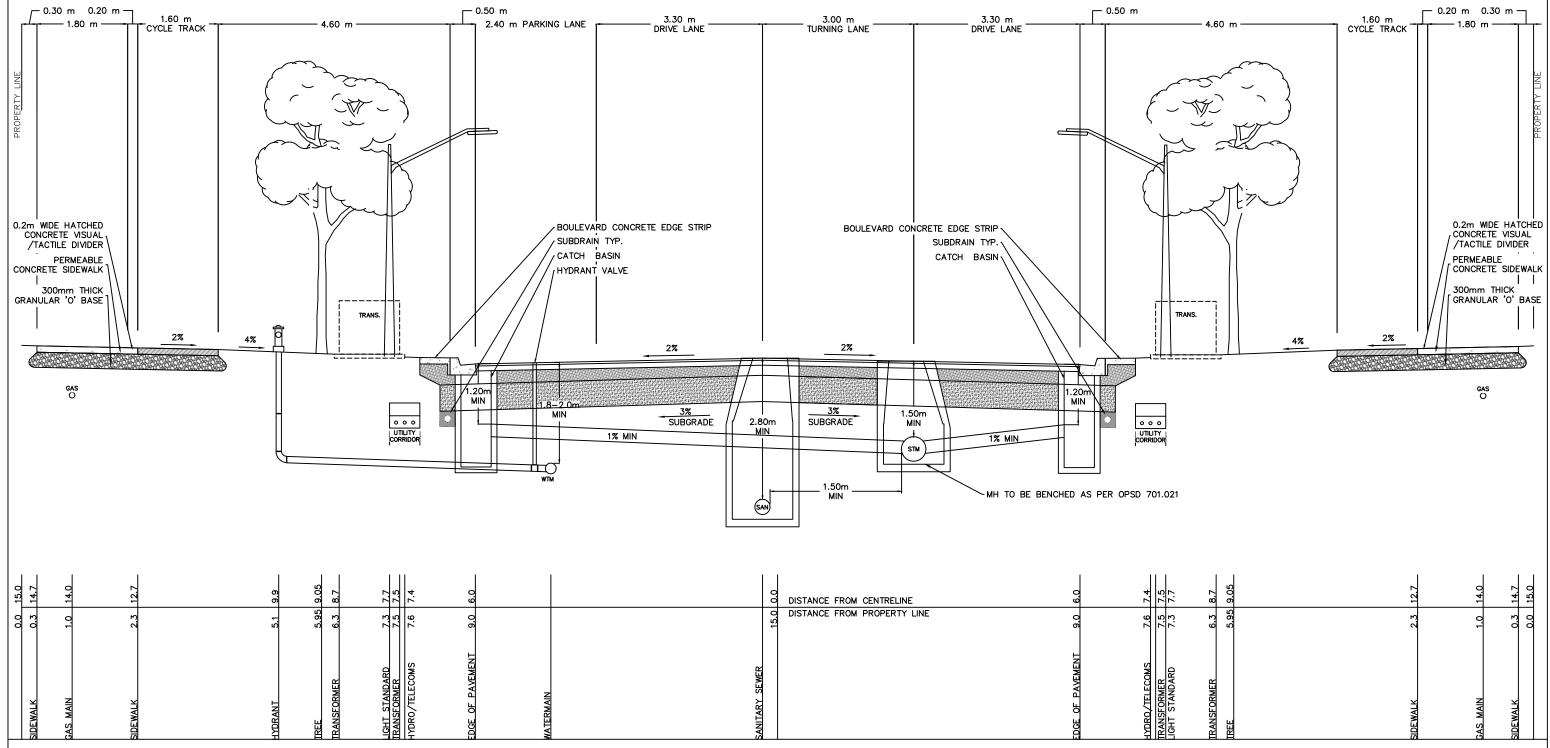
26.0m R.O.W. MAJOR COLLECTOR, ALTERNATIVE: SEPARATED BIKE LANES PERMEABLE SIDEWALK





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- 1. UTILITY CORRIDOR (HYDRO & TELECOMMUNICATIONS) SHALL BE 0.6m WIDE.
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- 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 (≥15mm/hr).
- 12. WHERE A MINIMUM HORIZONTAL SEPARATION OF 2.5m BETWEEN WATERMMAIN AND SEWER CAN NOT BE ACHIEVED, THE CROWN OF THE SEWER SHALL BE AT LEAST 0.5m LOWER THAN THE INVERT OF THE WATERMAIN.

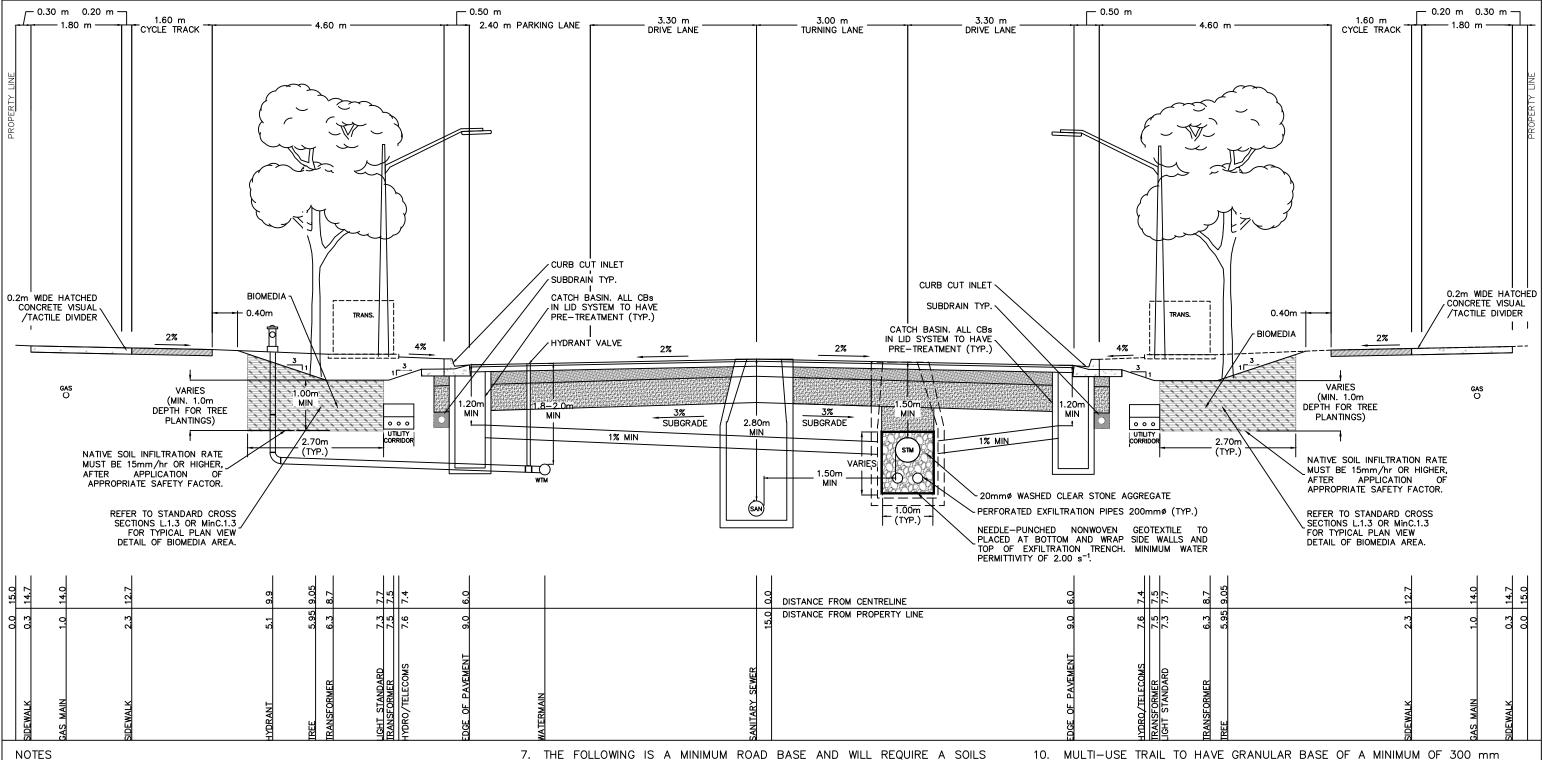
30.0m R.O.W. CITY ARTERIAL, PREFERRED STANDARD PERMEABLE SIDEWALK





4	GAS MAIN LOCATION	JAN. 2025
3	MANUAL UPDATE	SEP. 2021
2	MANUAL UPDATE	FEB. 2020
NO.	REVISION	DATE

SCALE:	1: 75
DATE:	FEB. 2020
STANDARD No.:	A.1.1



- UTILITY CORRIDOR (HYDRO & TELECOMMUNICATIONS) SHALL BE 0.6m WIDE.
- 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.
- 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.
- REPORT VERIFICATION TO DETERMINE IF ADDITIONAL THICKNESS IS REQUIRED.
 - 40mm HL3 100mm HL4
 - 200mm GRANULAR "A" (NO RAP) 520mm GRANULAR "B"
- 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.
- GRANULAR 'A'. SURFACE IS HL3 ASPHALT, 70 mm DEPTH.
- THIS CROSS-SECTION IS APPLICABLE FOR SOILS WITH HIGH INFILTRATION RATE (≥15mm/hr).
- WHERE A MINIMUM HORIZONTAL SEPARATION OF 2.5m BETWEEN WATERMMAIN AND SEWER CAN NOT BE ACHIEVED, THE CROWN OF THE SEWER SHALL BE AT LEAST 0.5m LOWER THAN THE INVERT OF THE WATERMAIN.

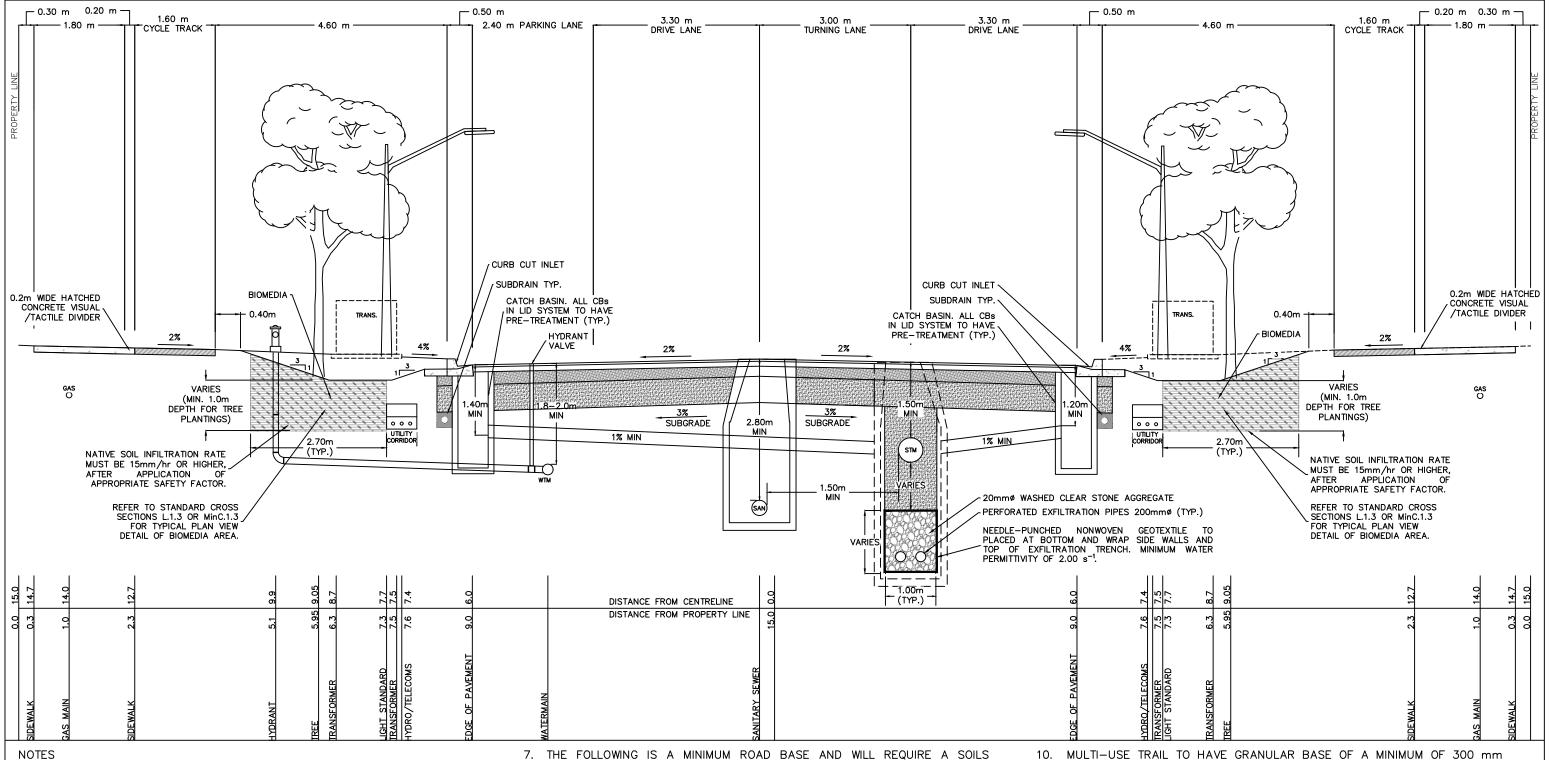
30.0m R.O.W. CITY ARTERIAL, MULTI-USE TRAILS COMBINED EXFILTRATION TRENCH AND BIOMEDIA AREA



KITCHENER

4	GAS MAIN LOCATION	JAN. 2025
3	MANUAL UPDATE	SEP. 2021
2	MANUAL UPDATE	FEB. 2020
NO.	REVISION	DATE

1:75 SCALE: DATE: FEB. 2020 A.1.2 STANDARD No.:



- UTILITY CORRIDOR (HYDRO & TELECOMMUNICATIONS) SHALL BE 0.6m WIDE.
- UTILITY CORRIDOR TO HAVE A MINIMUM COVER OF 0.9m.

6. JOINT USE TRENCHES SHALL BE USED

TELECOMMUNICATION.

- 3. 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.
- REPORT VERIFICATION TO DETERMINE IF ADDITIONAL THICKNESS IS REQUIRED.
 - 40mm HL3 100mm HL4
 - 200mm GRANULAR "A" (NO RAP) 520mm GRANULAR "B"
- 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.
- GRANULAR 'A'. SURFACE IS HL3 ASPHALT, 70 mm DEPTH.
- THIS CROSS-SECTION IS APPLICABLE FOR SOILS WITH HIGH INFILTRATION RATE (≥15mm/hr).
- WHERE A MINIMUM HORIZONTAL SEPARATION OF 2.5m BETWEEN WATERMMAIN 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

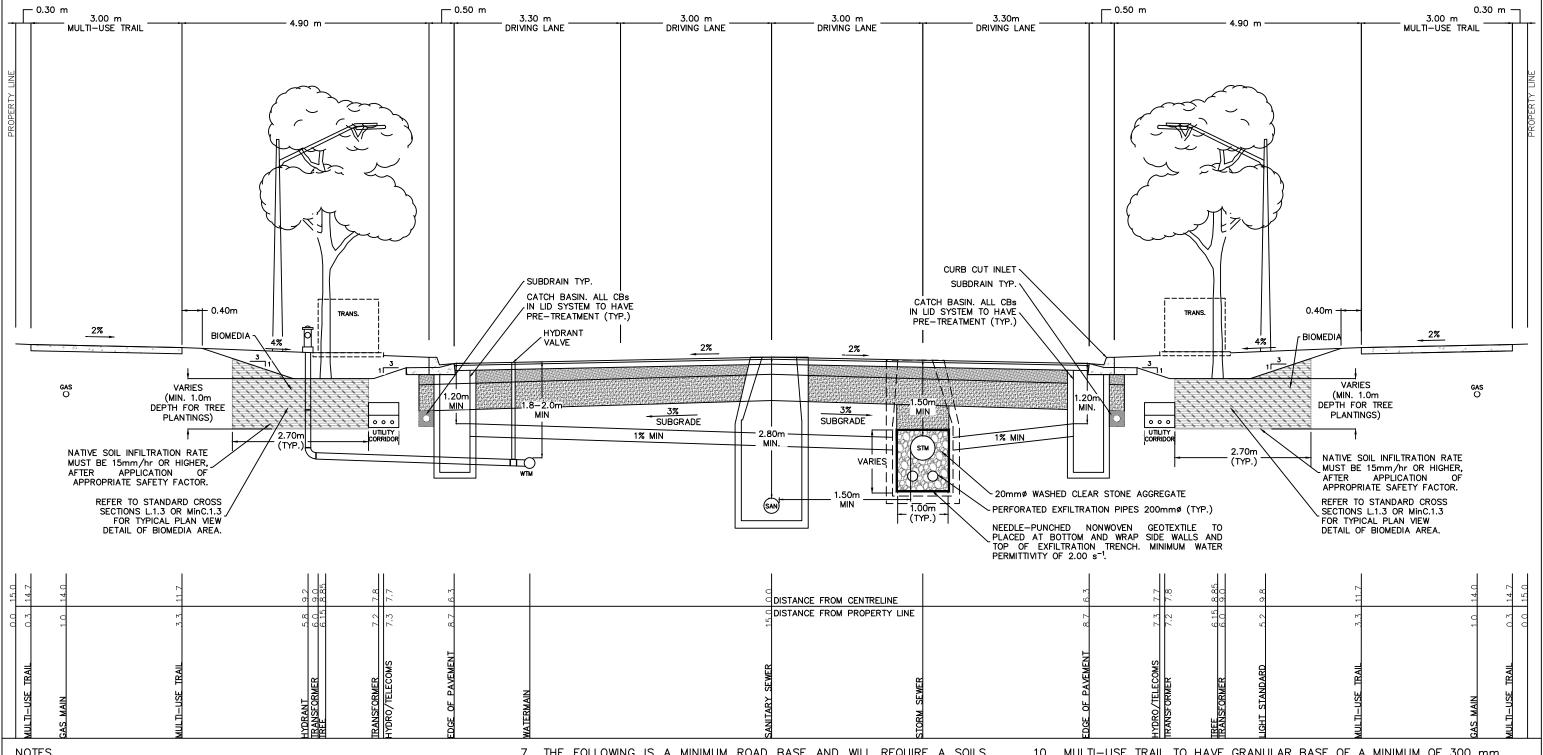
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4	GAS MAIN LOCATION	JAN. 2025
3	MANUAL UPDATE	SEP. 2021
2	MANUAL UPDATE	FEB. 2020
NO.	REVISION	DATE

1:75 SCALE: DATE: FEB. 2020 A.1.3 STANDARD No.:



- UTILITY CORRIDOR (HYDRO & TELECOMMUNICATIONS) SHALL BE 0.6m WIDE.
- 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.
- 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.
- 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" 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.
- 10. MULTI-USE TRAIL TO HAVE GRANULAR BASE OF A MINIMUM OF 300 mm GRANULAR 'A'. SURFACE IS HL3 ASPHALT, 70 mm DEPTH.
- THIS CROSS-SECTION IS APPLICABLE FOR SOILS WITH HIGH INFILTRATION RATE (≥15mm/hr).
- WHERE A MINIMUM HORIZONTAL SEPARATION OF 2.5m BETWEEN WATERMMAIN AND SEWER CAN NOT BE ACHIEVED, THE CROWN OF THE SEWER SHALL BE AT LEAST 0.5m LOWER THAN THE INVERT OF THE WATERMAIN.

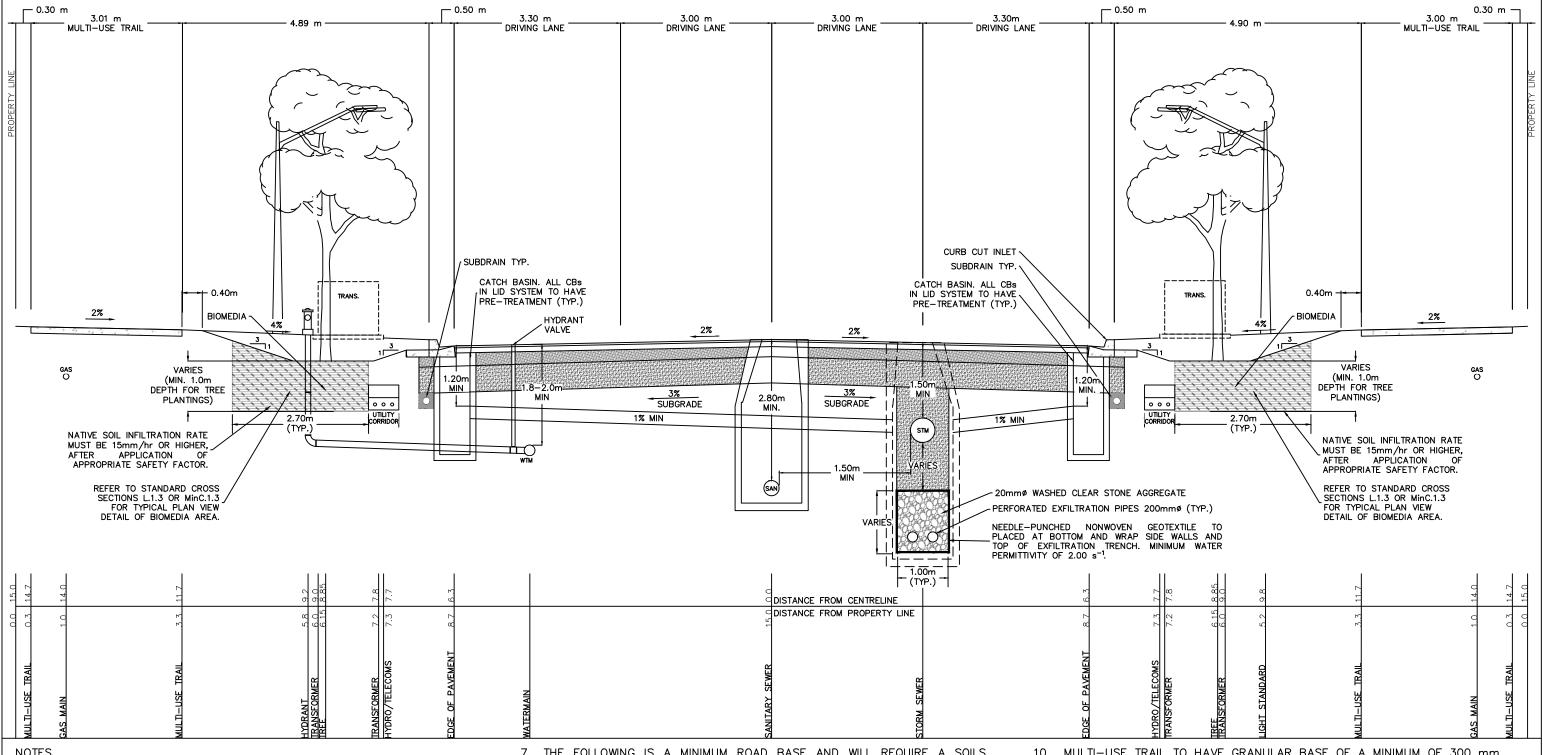
30.0m R.O.W. CITY ARTERIAL, ALTERNATIVE: MULTI-USE TRAILS COMBINED EXFILTRATION TRENCH AND BIOMEDIA AREA





4	GAS MAIN LOCATION	JAN. 2025
3	MANUAL UPDATE	SEP. 2021
2	MANUAL UPDATE	FEB. 2020
NO.	REVISION	DATE

5	SCALE:	1: 75
1	DATE	FFD 0000
d	DATE:	FEB. 2020
\dashv	STANDARD No.:	A.2.1



- UTILITY CORRIDOR (HYDRO & TELECOMMUNICATIONS) SHALL BE 0.6m WIDE.
- 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.
- 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 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 100mm HL4
 - 200mm GRANULAR "A" (NO RAP) 520mm GRANULAR "B"
- 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.
- 10. MULTI-USE TRAIL TO HAVE GRANULAR BASE OF A MINIMUM OF 300 mm GRANULAR 'A'. SURFACE IS HL3 ASPHALT, 70 mm DEPTH.
- THIS CROSS-SECTION IS APPLICABLE FOR SOILS WITH HIGH INFILTRATION RATE (≥15mm/hr).
- WHERE A MINIMUM HORIZONTAL SEPARATION OF 2.5m BETWEEN WATERMMAIN AND SEWER CAN NOT BE ACHIEVED, THE CROWN OF THE SEWER SHALL BE AT LEAST 0.5m LOWER THAN THE INVERT OF THE WATERMAIN.

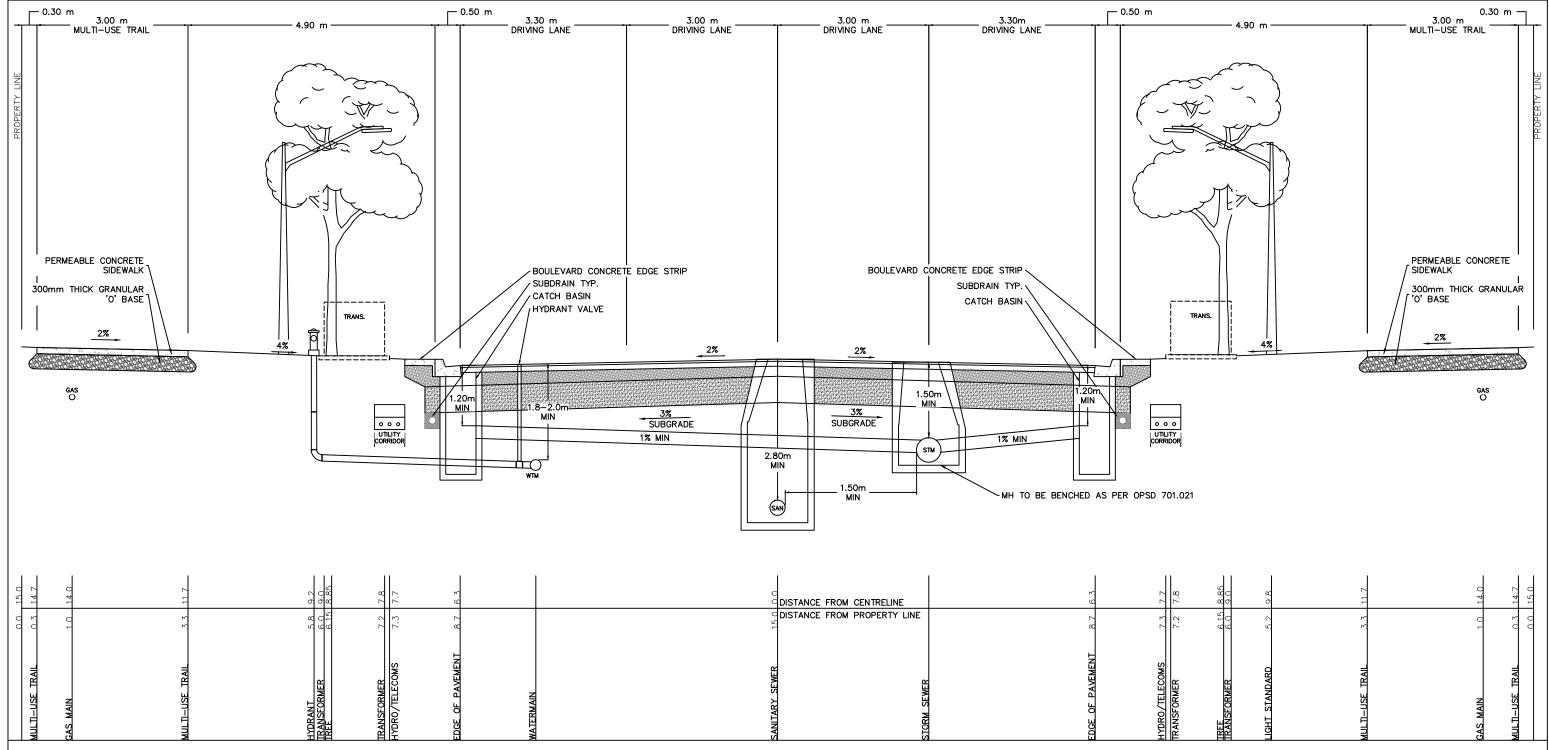
30.0m R.O.W. CITY ARTERIAL, ALTERNATIVE: MULTI-USE TRAILS SEGREGATED EXFILTRATION TRENCH AND BIOMEDIA AREA

The Corporation Of The CITY OF KITCHENER



4	GAS MAIN LOCATION	JAN. 2025
3	MANUAL UPDATE	SEP. 2021
2	MANUAL UPDATE	FEB. 2020
NO.	REVISION	DATE

5	SCALE:	1: 75
1		
╗	DATE:	FEB. 2020
\dashv	STANDARD No.:	A.2.2
- 1		



- 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"
- 3. 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 (≥15mm/hr).
- 12. WHERE A MINIMUM HORIZONTAL SEPARATION OF 2.5m BETWEEN WATERMMAIN AND SEWER CAN NOT BE ACHIEVED, THE CROWN OF THE SEWER SHALL BE AT LEAST 0.5m LOWER THAN THE INVERT OF THE WATERMAIN.

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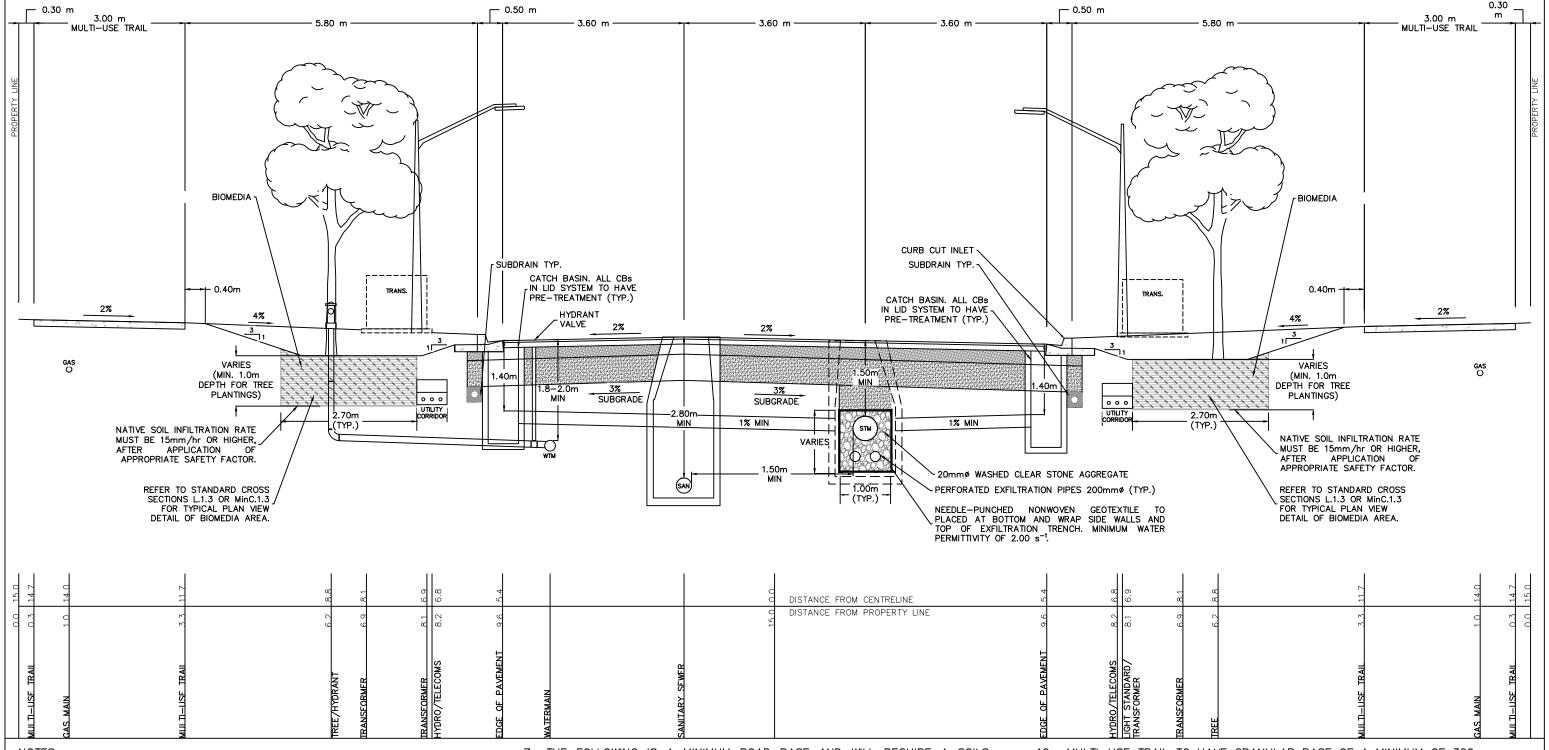
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4	GAS MAIN LOCATION	JAN. 2025
3	MANUAL UPDATE	SEP. 2021
2	MANUAL UPDATE	FEB. 2020
NO.	REVISION	DATE

 SCALE:
 1:75

 DATE:
 FEB. 2020

 STANDARD No.:
 A.2.3

30.0m R.O.W. CITY ARTERIAL, ALTERNATIVE: PERMEABLE MULTI-USE TRAILS



- 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"
- S. 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 (≥15mm/hr).
- 12. WHERE A MINIMUM HORIZONTAL SEPARATION OF 2.5m BETWEEN WATERMMAIN AND SEWER CAN NOT BE ACHIEVED, THE CROWN OF THE SEWER SHALL BE AT LEAST 0.5m LOWER THAN THE INVERT OF THE WATERMAIN.

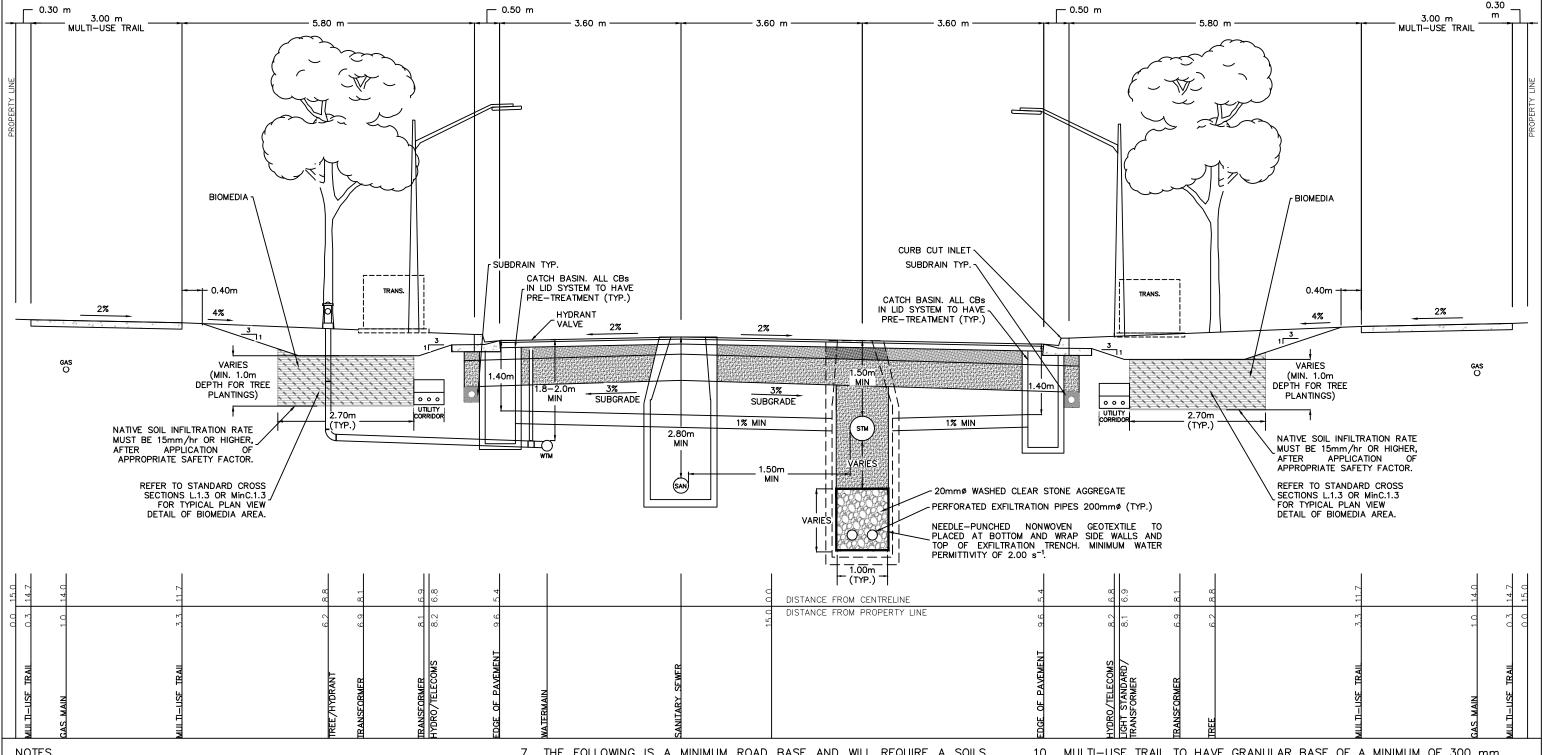
30.0m R.O.W. CITY ARTERIAL, ALTERNATIVE: INDUSTRIAL COMBINED EXFILTRATION TRENCH AND BIOMEDIA AREA ALTERNATIVE FOR SOILS WITH HIGH INFILTRATION RATE

The Corporation Of The CITY OF KITCHENER

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4	GAS MAIN LOCATION	JAN. 2025
3	MANUAL UPDATE	SEP. 2021
2	MANUAL UPDATE	FEB. 2020
NO.	REVISION	DATE

5	SCALE:	1: 75
1	DATE:	FEB. 2020
이		
	STANDARD No.:	A.3.1



- UTILITY CORRIDOR (HYDRO & TELECOMMUNICATIONS) SHALL BE 0.6m WIDE.
- 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.
- 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.
- 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.
- 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.
- THIS CROSS-SECTION IS APPLICABLE FOR SOILS WITH HIGH INFILTRATION RATE (≥15mm/hr).
- WHERE A MINIMUM HORIZONTAL SEPARATION OF 2.5m BETWEEN WATERMMAIN AND SEWER CAN NOT BE ACHIEVED, THE CROWN OF THE SEWER SHALL BE AT LEAST 0.5m LOWER THAN THE INVERT OF THE WATERMAIN.

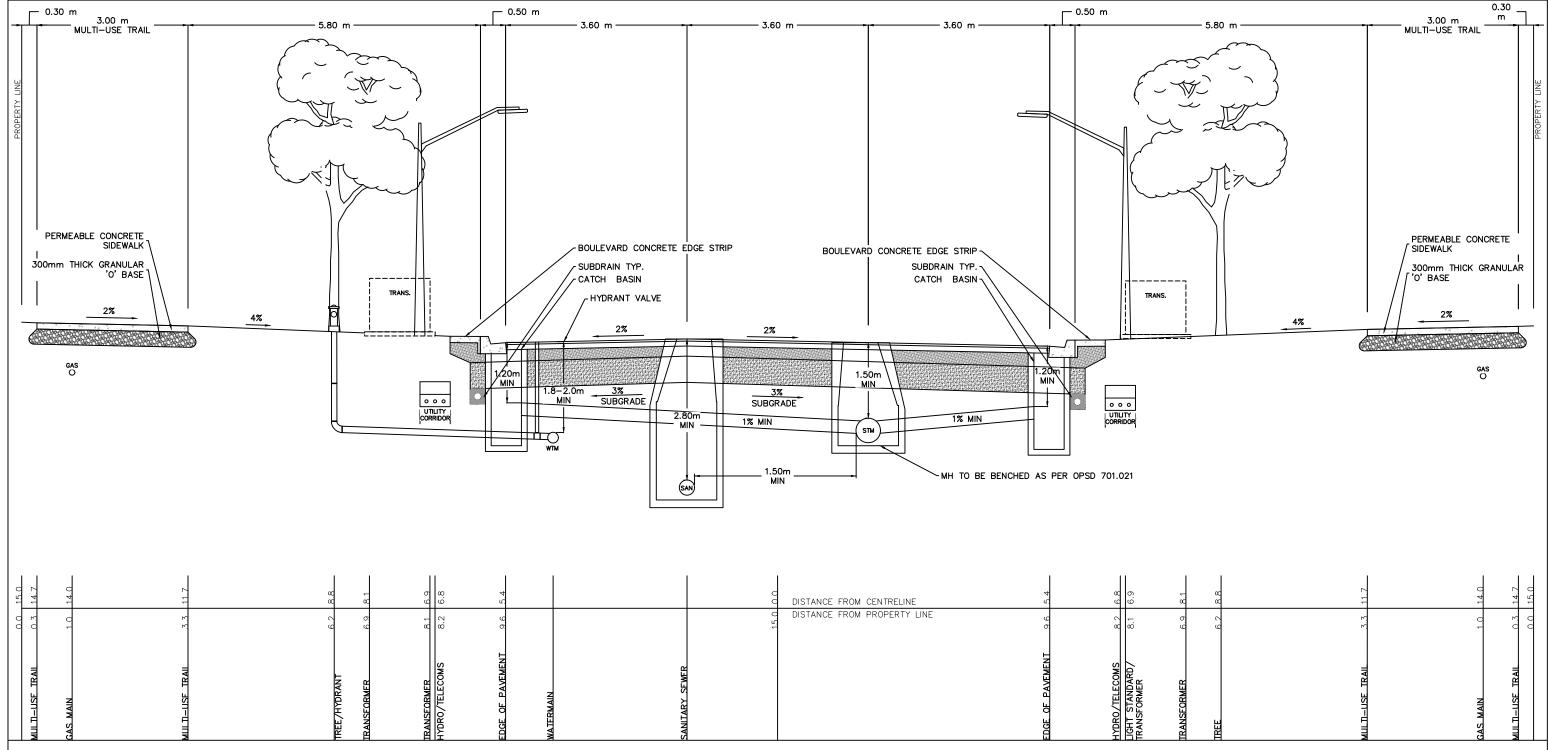
30.0m R.O.W. CITY ARTERIAL, ALTERNATIVE: INDUSTRIAL SEGREGATED EXFILTRATION TRENCH AND BIOMEDIA AREA ALTERNATIVE FOR SOILS WITH HIGH INFILTRATION RATE

The Corporation Of The CITY OF **KITCHENER**

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4	GAS MAIN LOCATION	JAN. 2025
3	MANUAL UPDATE	SEP. 2021
2	MANUAL UPDATE	FEB. 2020
NO.	REVISION	DATE

5	SCALE:	1: 75
21	DATE:	FEB. 2020
0	STANDARD No.:	A.3.2



- UTILITY CORRIDOR (HYDRO & TELECOMMUNICATIONS) SHALL BE 0.6m WIDE.
- 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.
- 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.
- 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"
 - 520mm GRANULAR "B"
- 8. 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.
- 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 (≥15mm/hr).
- WHERE A MINIMUM HORIZONTAL SEPARATION OF 2.5m BETWEEN WATERMMAIN 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, ALTERNATIVE: INDUSTRIAL PERMEABLE SIDEWALK ALTERNATIVE FOR SOILS WITH HIGH INFILTRATION RATES





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3	MANUAL UPDATE	SEP. 2021
2	MANUAL UPDATE	FEB. 2020
NO.	REVISION	DATE

5	SCALE:	1: 75
11 -	DATE:	FEB. 2020
0	STANDARD No.:	A.3.3

