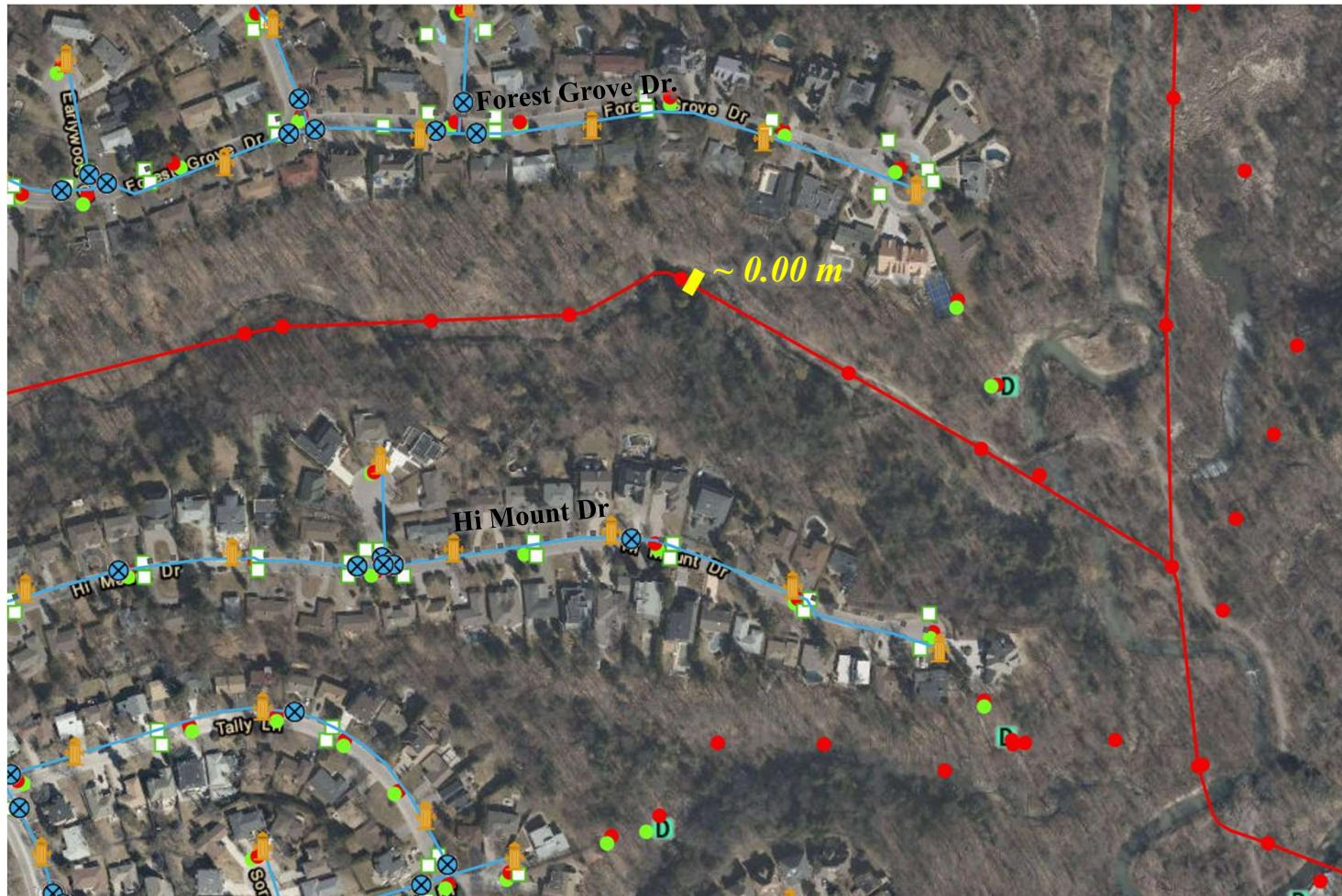

Appendix J

Summary Sheets for Sanitary Sewer Lateral Risk Sites

Sanitary Sewer Lateral Risk #1



Asset Characteristics

Reach: N1
Asset ID: SL4033582
Diameter: 675 mm
Material: Concrete
Construction Year: 1960

Lateral Risk Assessment

Horizontal Offset: 0.00 m
Radius of Curvature (R_c): 40.14 m
Width (w): 5.61 m
 $R_c / w = 7.16$
Bank Protection Works: None
Condition of Bank Protection Works: N/A

Additional Comments

Downstream migration of the meander bend and channel widening has exposed the manhole casing and poses risk to sewer

—●— Storm Sewer Line
—●— Sanitary Sewer Line

—○— Watermain
—■— Storm Sewer Outfall

Sanitary Sewer Lateral Risk #2



Asset Characteristics

Reach: N1

Asset ID: SL4032404

Diameter: 675 mm

Material: Concrete

Construction Year: 1960

Lateral Risk Assessment

Horizontal Offset: 0.25 m

Radius of Curvature (R_c): 13.7 m

Width (w): 5.61 m

$$R_c / w = 2.44$$

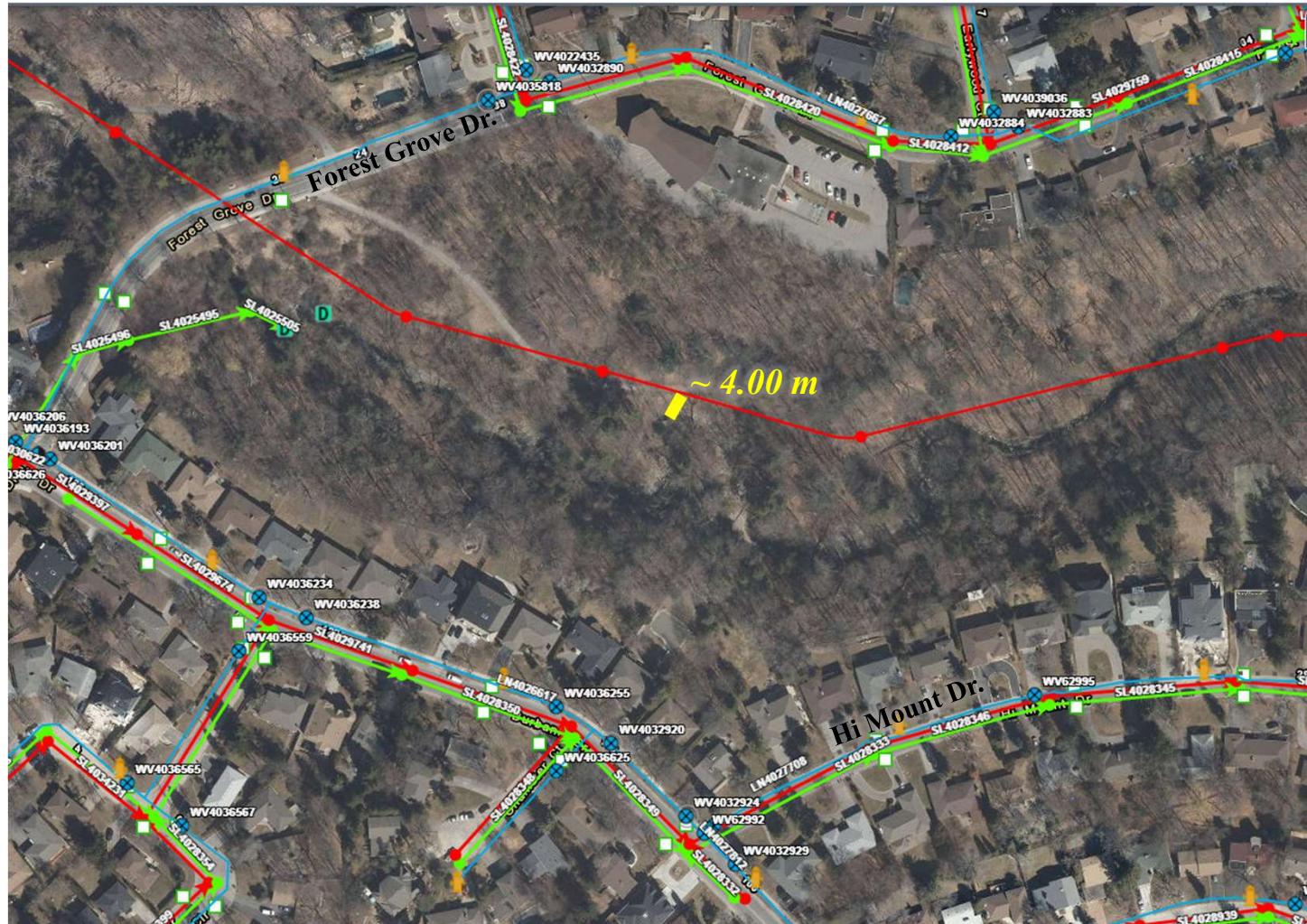
Bank Protection Works: Gabion Baskets

Condition of Bank Protection Works: Fair

Additional Comments

Sanitary Sewer adjacent to the creek at meander apex.

Sanitary Sewer Lateral Risk #3



● Storm Sewer Line
● Sanitary Sewer Line

○ Watermain
■ Storm Sewer Outfall

Asset Characteristics

Reach: N1

Asset ID: SL4033583

Diameter: 675 mm

Material: Concrete

Construction Year: 1960

Lateral Risk Assessment

Horizontal Offset: 4.00

Radius of Curvature (R_c): 10.90

Width (w): 5.61

$R_c / w = 1.94$

Bank Protection Works: Concrete Block Wall

Condition of Bank Protection Works:

Additional Comments

Sanitary sewer adjacent to the creek at the meander apex.

Sanitary Sewer Lateral Risk #4



Asset Characteristics

Reach: N1

Asset ID: SL4033584

Diameter: 675 mm

Material: Unknown

Construction Year: 1960

Lateral Risk Assessment

Horizontal Offset: 10.5 m

Radius of Curvature (R_c): 21.17 m

Width (w): 5.61 m

$R_c / w = 4.84$

Bank Protection Works: None

Condition of Bank Protection

Works: N/A

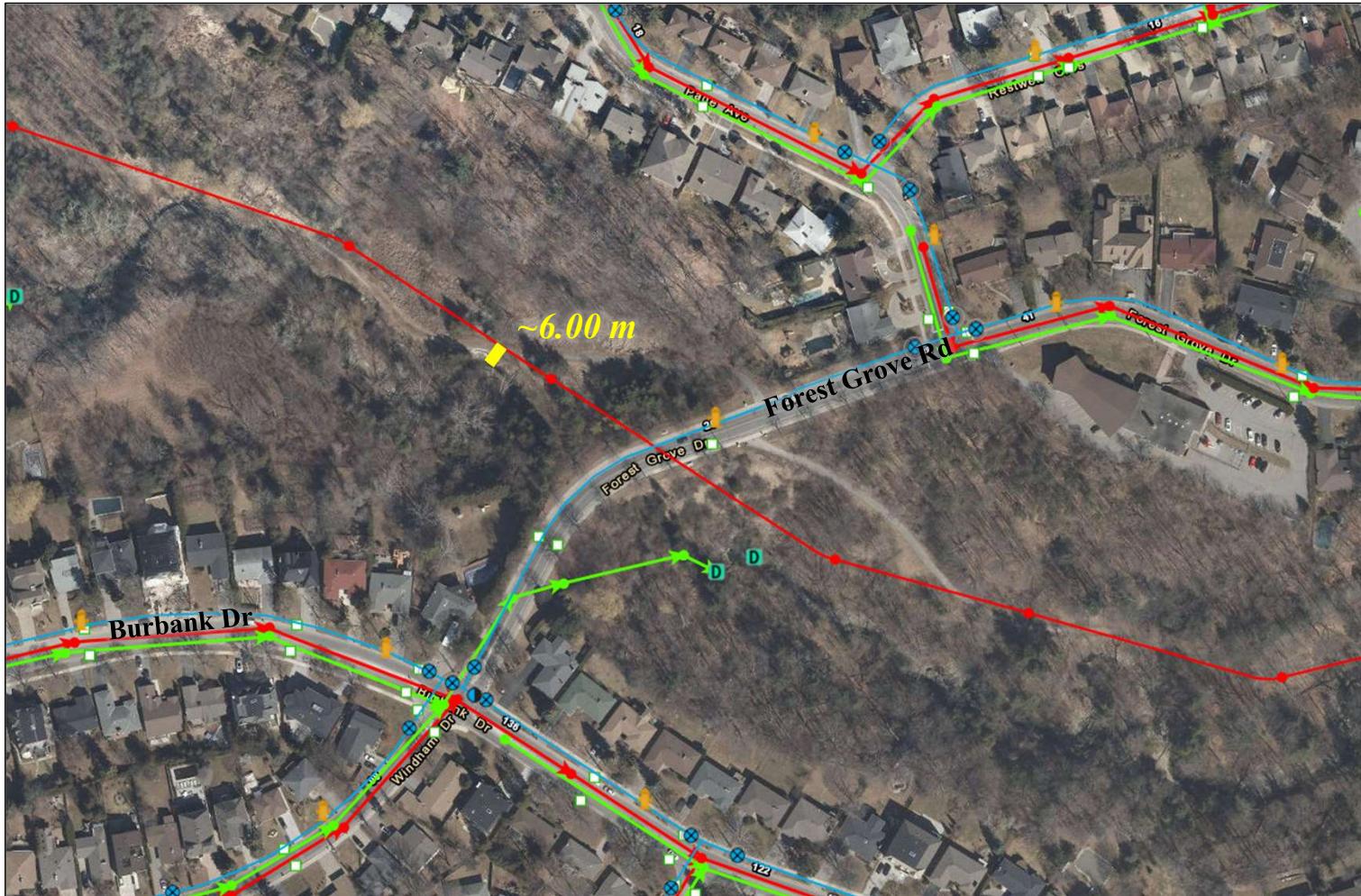
Additional Comments

Sewer parallel to Newtonbrook Creek in the valley slope downstream of Forest Grove Dr. Two storm sewer outfalls here, both are priority sites.

—●— Storm Sewer Line
—●— Sanitary Sewer Line

—○— Watermain
■ Storm Sewer Outfall

Sanitary Sewer Lateral Risk #5



—●— Storm Sewer Line
—●— Sanitary Sewer Line

○— Watermain
■— Storm Sewer Outfall

Asset Characteristics

Reach: N2

Asset ID: SL4034031

Diameter: 675 mm

Material: Unknown

Construction Year: 1960

Lateral Risk Assessment

Horizontal Offset: 6.00 m

Radius of Curvature (R_c): 10.15m

Width (w): 7.98 m

$R_c / w = 1.27$

Bank Protection Works: None

Condition of Bank Protection

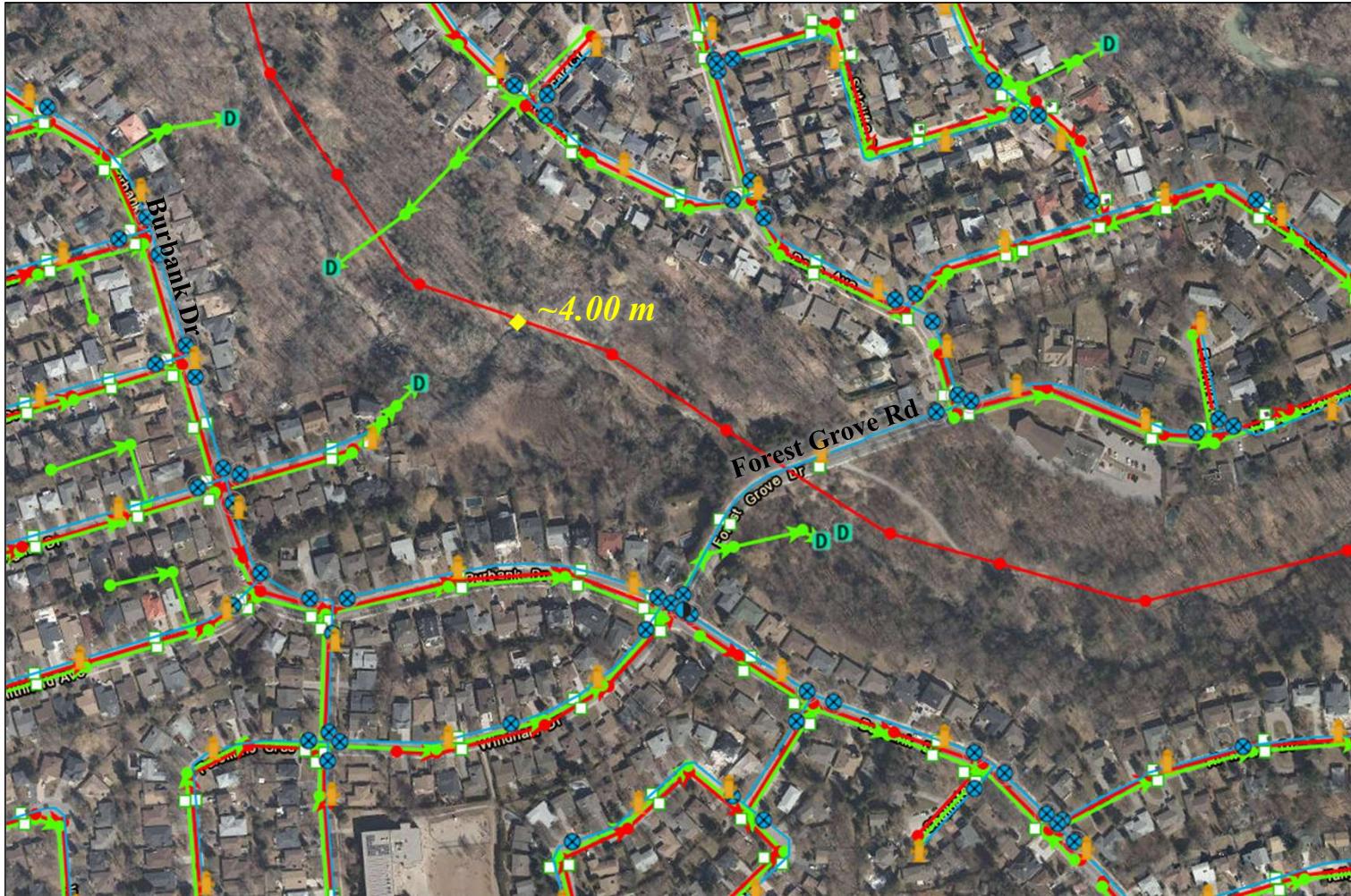
Works: N/A

Additional Comments

Upstream of Forest Grove Rd.

Active erosion is narrowing pedestrian trail.

Sanitary Sewer Lateral Risk #6



Asset Characteristics

Reach: N2

Asset ID: SL4033585

Diameter: 675 mm

Material: Reinforced Concrete

Construction Year: 1960

Lateral Risk Assessment

Horizontal Offset: 4.00 m

Radius of Curvature (R_c): 18.23

Width (w): 7.98 m

$R_c / w = 2.28$

Bank Protection Works: None

Condition of Bank Protection

Works: N/A

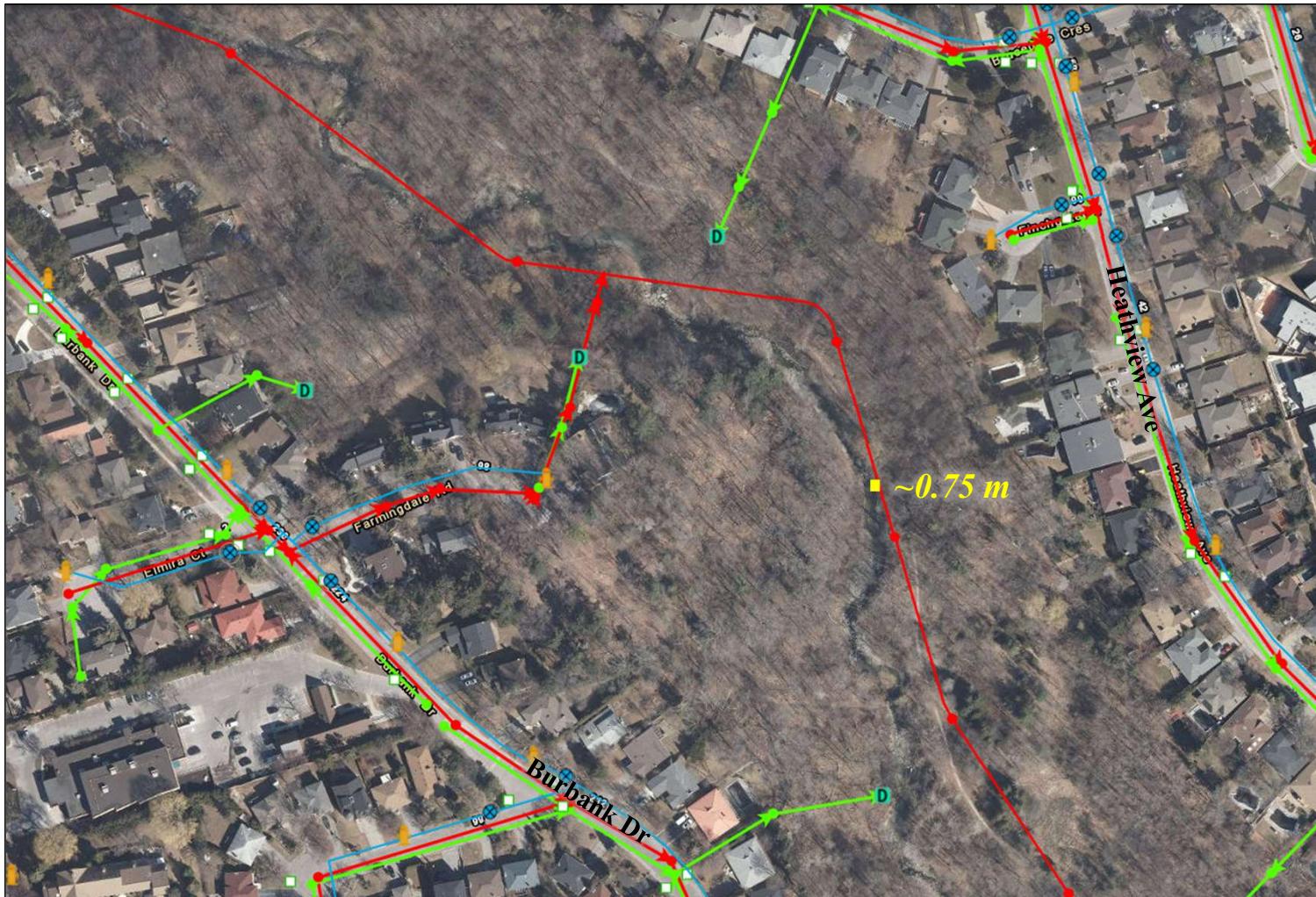
Additional Comments

Active erosion into adjacent pedestrian trail with bare soil

—●— Storm Sewer Line
—●— Sanitary Sewer Line

—○— Watermain
■ Storm Sewer Outfall

Sanitary Sewer Lateral Risk #7



—●— Storm Sewer Line
—●— Sanitary Sewer Line

○— Watermain
■— Storm Sewer Outfall

Asset Characteristics

Reach: N2

Asset ID: SL4032401

Diameter: 675 mm

Material: Reinforced Concrete

Construction Year: 1960

Lateral Risk Assessment

Horizontal Offset: 0.75 m

Radius of Curvature (R_c): 77.09 m

Width (w): 7.98 m

$R_c / w = 9.66$

Bank Protection Works: None

Condition of Bank Protection

Works: N/A

Additional Comments

Area of active bank erosion and channel widening

Sanitary Sewer Lateral Risk #8



Asset Characteristics

Reach: N2

Asset ID: SL4031857

Diameter: 675 mm

Material: Concrete

Construction Year: 1960

Lateral Risk Assessment

Horizontal Offset: 5.00 m

Radius of Curvature (R_c): 11.96 m

Width (w): 7.98

$R_c / w = 1.50$

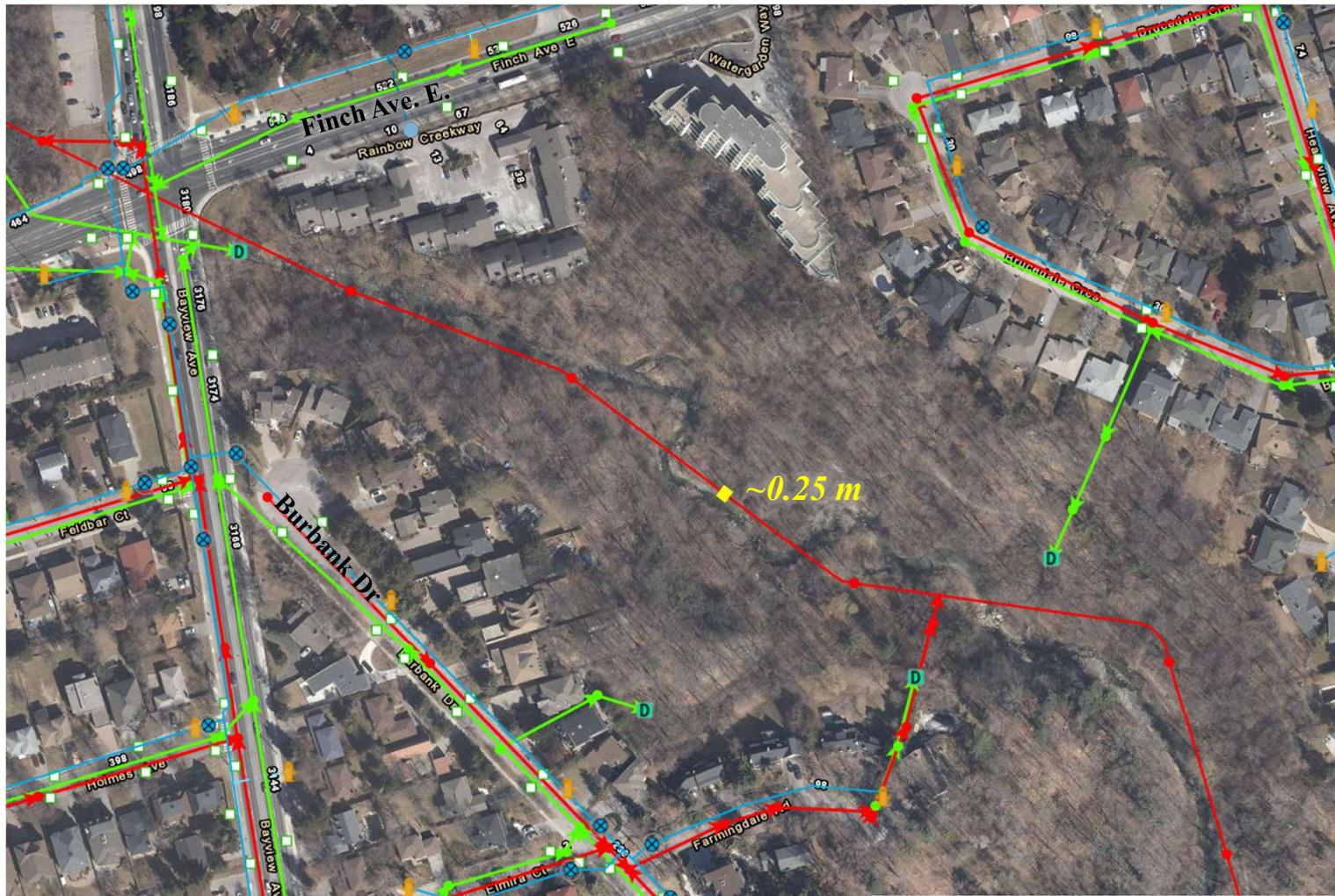
Bank Protection Works: Gabion Baskets

Condition of Bank Protection Works:

Additional Comments

Sewer parallel to Newtonbrook Creek. The closest point of contact is at a section protected by gabion baskets, the bottom baskets have emptied.

Sanitary Sewer Lateral Risk #9



Asset Characteristics

Reach: N2

Asset ID: SL4031887

Diameter: 675 mm

Material: Reinforced Concrete

Construction Year: 1960

Lateral Risk Assessment

Horizontal Offset: 0.25 m

Radius of Curvature (R_c): 30.88

Width (w): 7.98 m

$R_c / w = 3.87$

Bank Protection Works: Rip-Rap

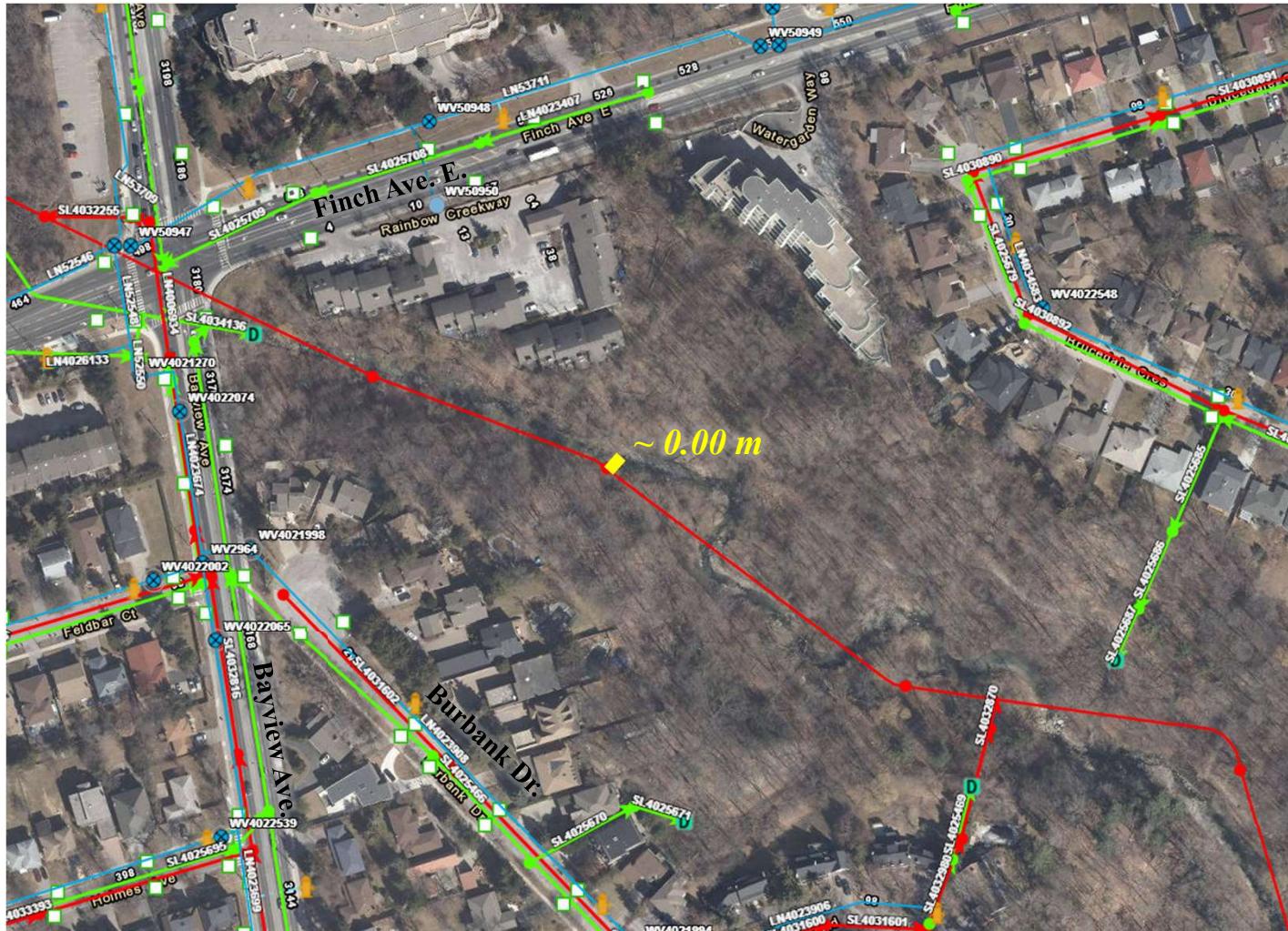
Condition of Bank Protection

Works: N/A

Additional Comments

Area of active scour with exposed concrete encasements upstream and downstream

Sanitary Sewer Lateral Risk #10



● Storm Sewer Line
● Sanitary Sewer Line

○ Watermain
■ Storm Sewer Outfall

Asset Characteristics

Reach: N2

Asset ID: SL4031888

Diameter: 675 mm

Material: Concrete

Construction Year: 1960

Lateral Risk Assessment

Horizontal Offset: 0.00 m

Radius of Curvature (R_c): 15.47 m

Width (w): 7.98 m

$R_c / w = 1.94$

Bank Protection Works: None

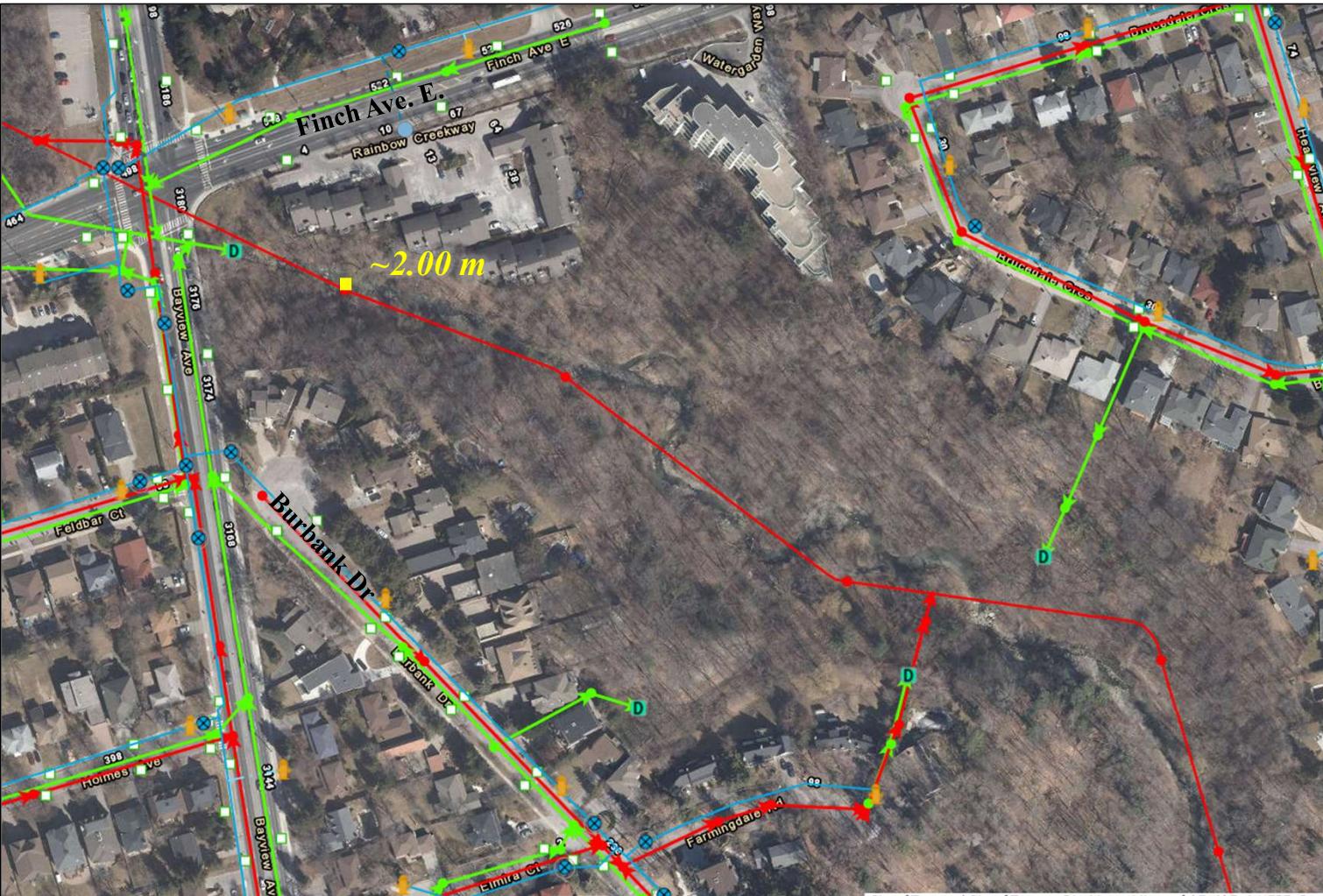
Condition of Bank Protection

Works: N/A

Additional Comments

Sewer parallel to Newtonbrook Creek. Substrate rip rap is still intact, banks are unprotected and currently eroding. The offset from risk is minimal.

Sanitary Sewer Lateral Risk #11



—●— Storm Sewer Line
—●— Sanitary Sewer Line

—○— Watermain
■ Storm Sewer Outfall

Asset Characteristics

Reach: N2

Asset ID: SL4033483

Diameter: 675 mm

Material: Reinforced Concrete

Construction Year: 1960

Lateral Risk Assessment

Horizontal Offset: 2.00 m

Radius of Curvature (R_c): 31.31

Width (w): 7.98 m

$R_c / w = 3.92$

Bank Protection Works:

Armourstone wall

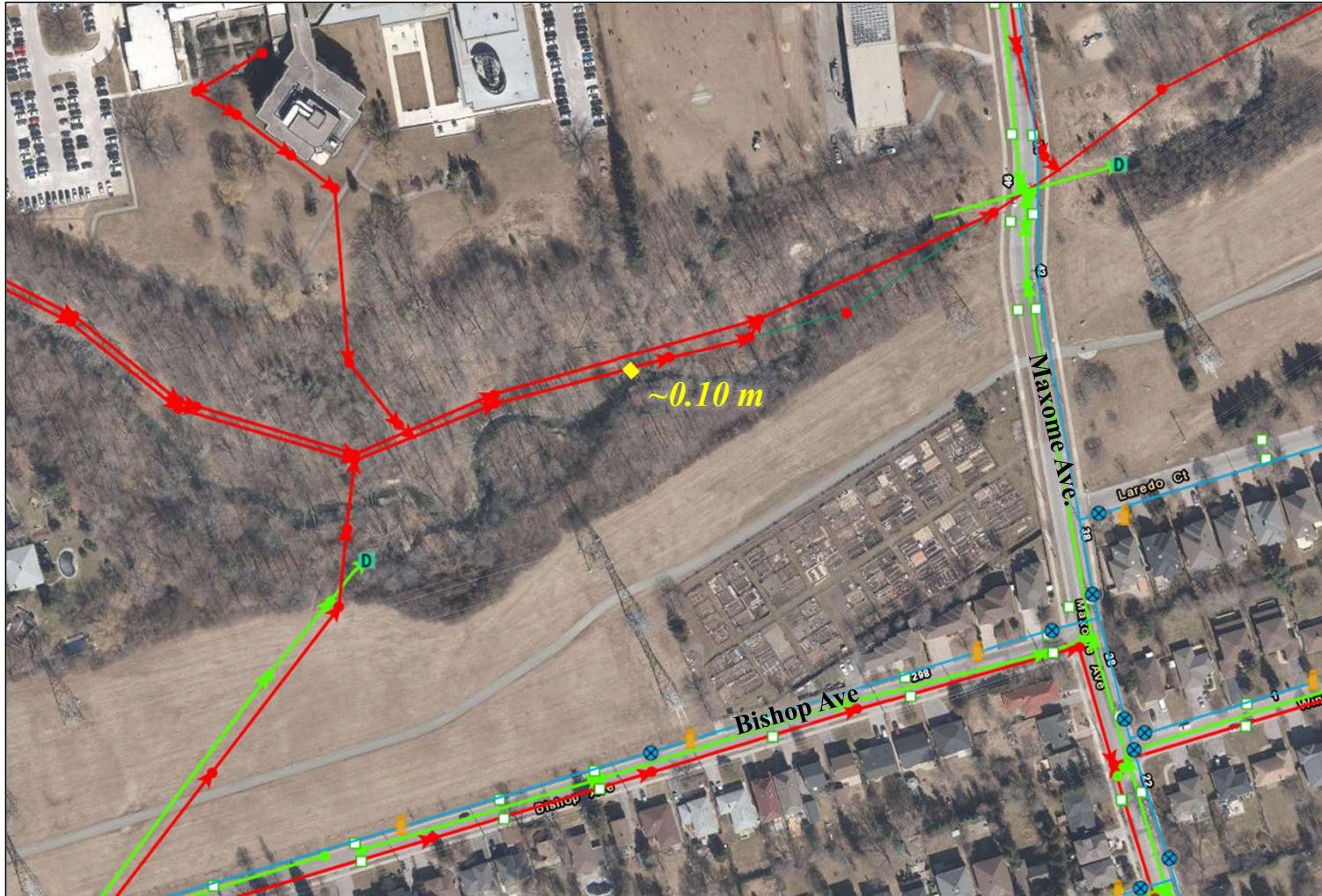
Condition of Bank Protection

Works: Fair

Additional Comments

Armourstone wall is outflanking and falling over, with risk to manhole

Sanitary Sewer Lateral Risk #12



Asset Characteristics

Reach: N4

Asset ID: SL4032958

Diameter: 675 mm

Material: Concrete

Construction Year: 1960

Lateral Risk Assessment

Horizontal Offset: 0.10 m

Radius of Curvature (R_c): 21.59 m

Width (w): 7.50

$R_c / w = 2.88$

Bank Protection Works: None

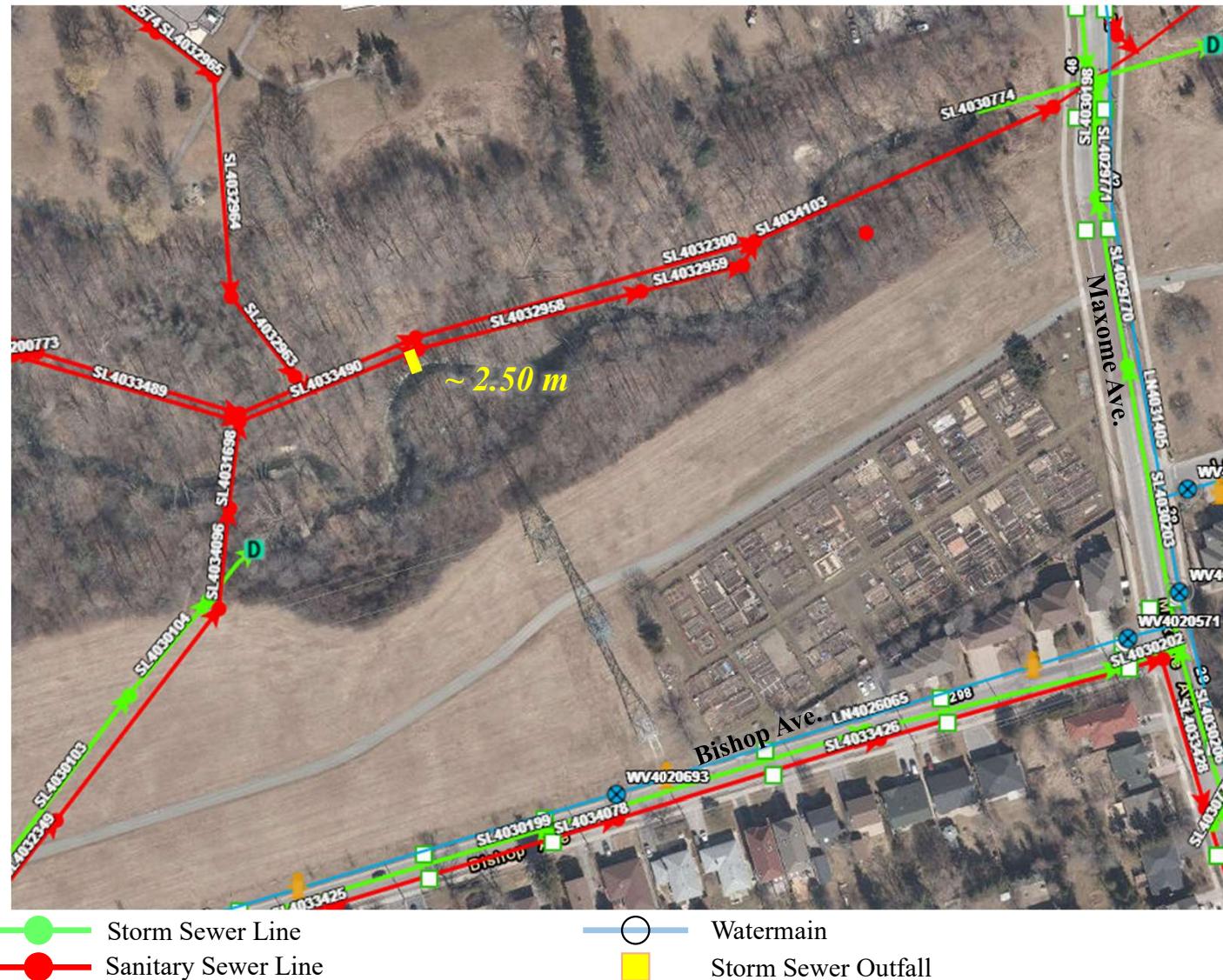
Condition of Bank Protection

Works: N/A

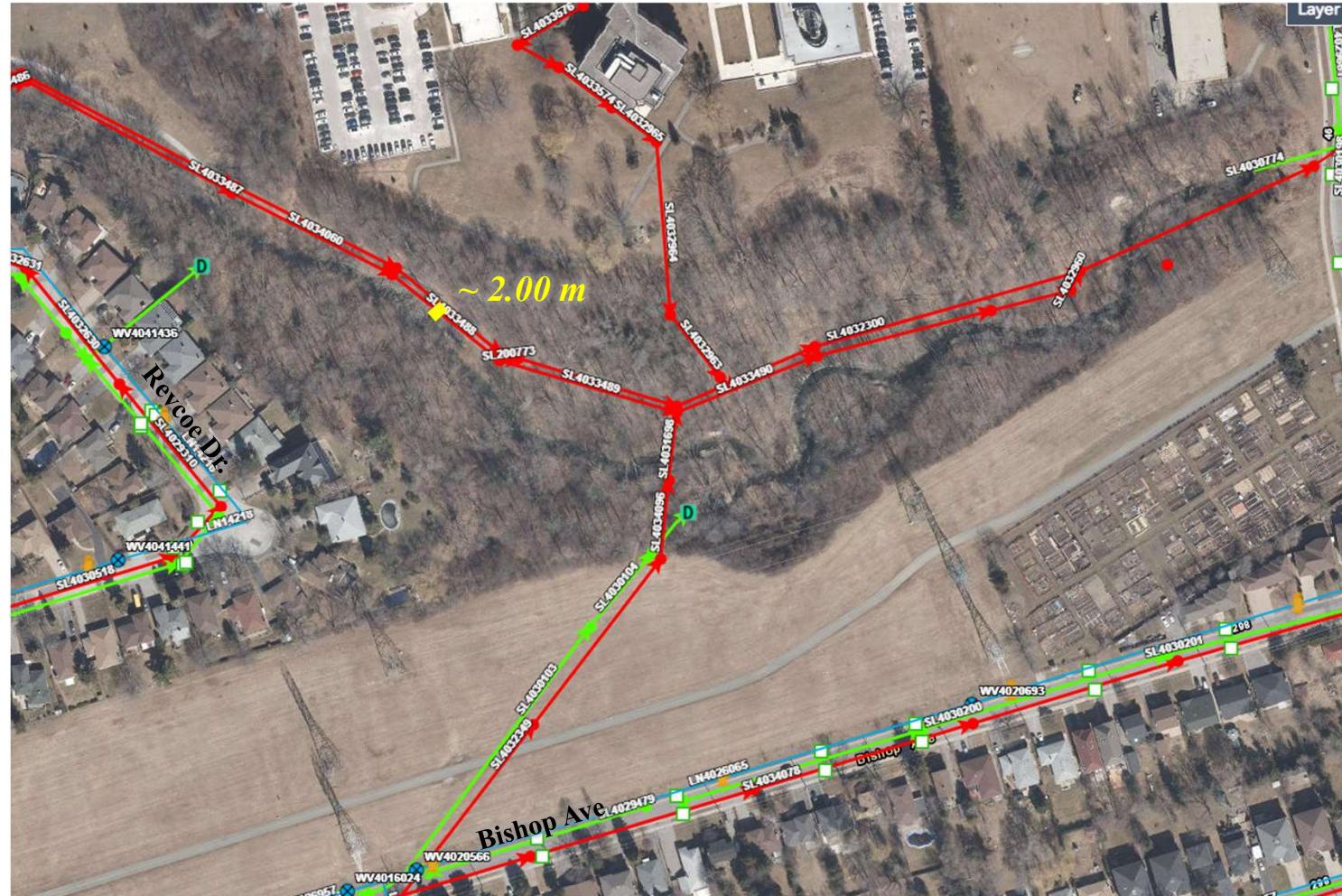
Additional Comments

Area of active bank erosion and channel widening

Sanitary Sewer Lateral Risk #13



Sanitary Sewer Lateral Risk #14



Asset Characteristics

Reach: N4

Asset ID: SL4033488

Diameter: 675 mm

Material: Concrete

Construction Year: 1960

Lateral Risk Assessment

Horizontal Offset: 2.00 m

Radius of Curvature

Width (w): 7

$R_c / w = 2.13$

Baskets

Baskets

Condition of Bank Protection

Works: N/A

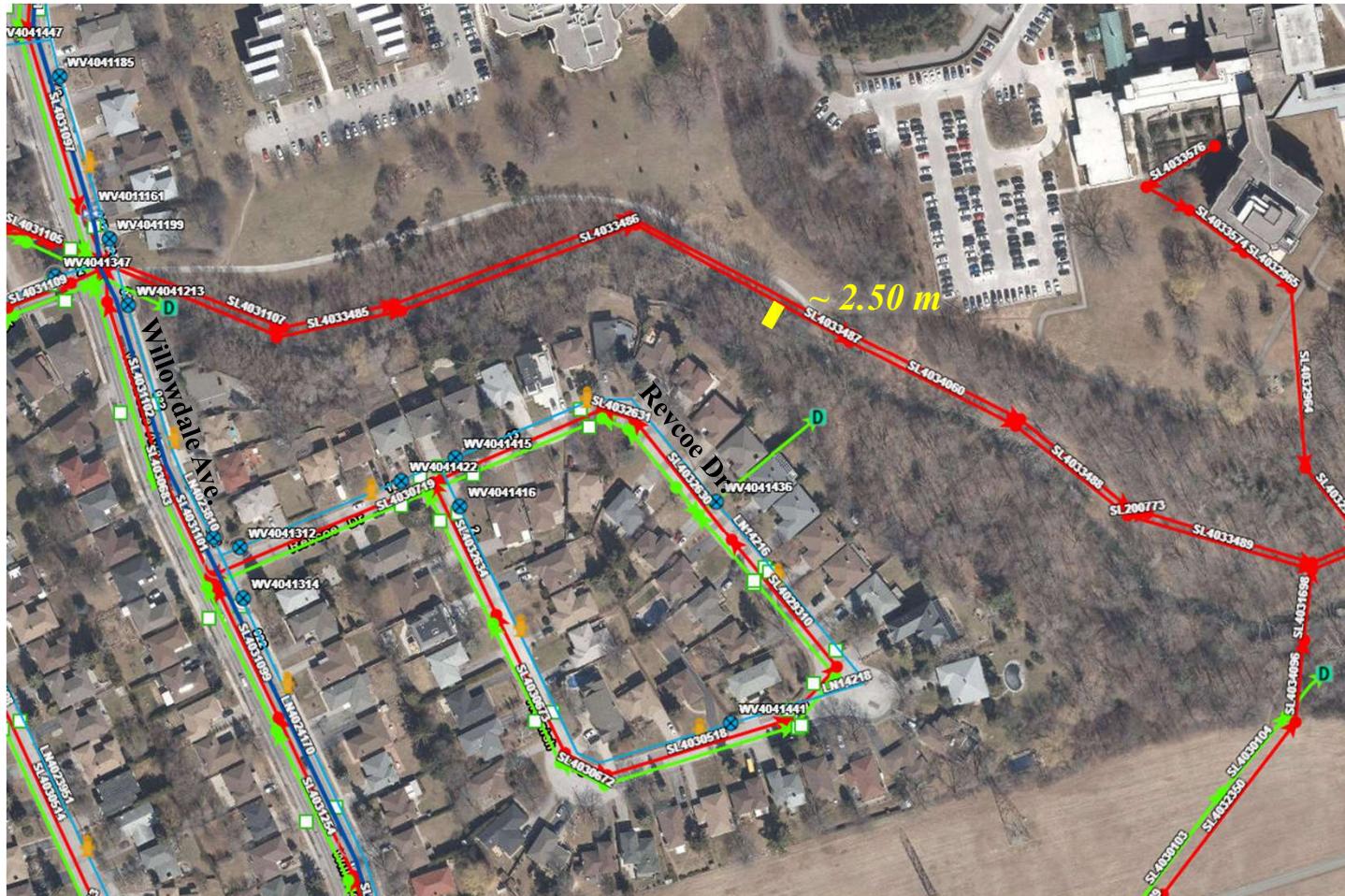
Additional Comments

Sewer parallel to Newtonbrook Creek with failed gabion baskets. The emptied baskets have some rip rap protection, basket wire has rusted through.

- Storm Sewer Line
- Sanitary Sewer Line

The legend consists of two entries. The first entry shows a blue horizontal line with a black circle at the center, labeled 'Watermain'. The second entry shows a blue horizontal line with a yellow square at the center, labeled 'Storm Sewer Outfall'.

Sanitary Sewer Lateral Risk #15



- Storm Sewer Line
- Sanitary Sewer Line

The legend consists of two entries. The first entry shows a blue horizontal line with a black circle in the center, labeled 'Watermain'. The second entry shows a yellow square labeled 'Storm Sewer Outfall'.

Asset Characteristics

Reach: N4

Asset ID: SL4033487

Diameter: 675 mm

Material: Unknown

Lateral Risk Assessment

Horizontal Offset: 2.50 m

Radius of Curvature (R_c): 97.85 m

Width (w): 7.50 m

$$R_c / w = 13.05$$

Bank Pro

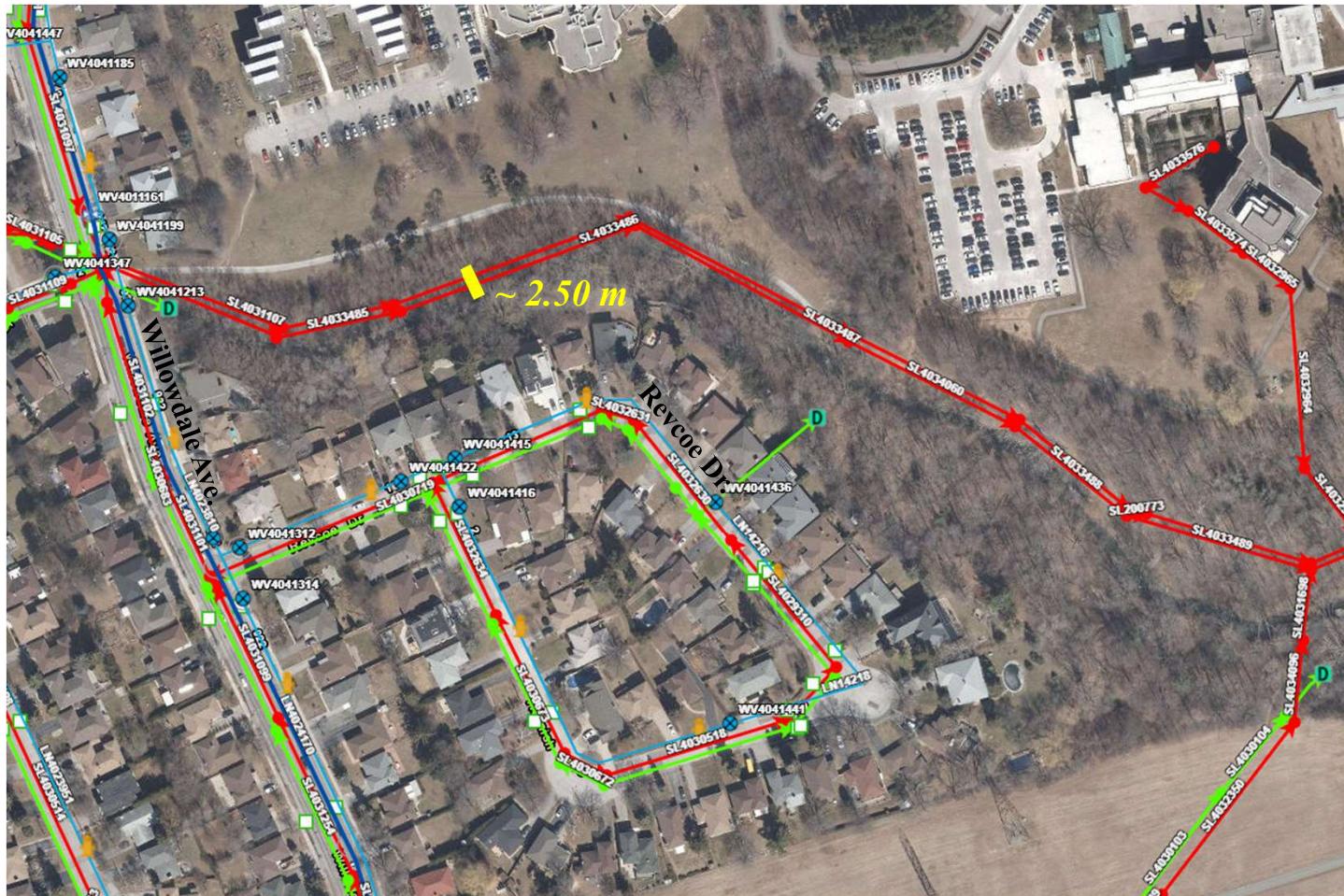
Baskets

Condition

Additional Comments

Sewer parallel to Newtonbrook Creek with failed gabion baskets. The emptied baskets have some rip rap protection, basket wire has rusted through.

Sanitary Sewer Lateral Risk #16



- Storm Sewer Line
- Sanitary Sewer Line

The legend consists of two entries. The first entry shows a blue horizontal line with a black circle in the center, labeled 'Watermain'. The second entry shows a yellow square labeled 'Storm Sewer Outfall'.

Asset Characteristics

Reach: N4

Asset ID: SL4033486

Diameter: 675

Material: Unknown

Construction Year: 1960

Lateral Risk Assessment

Horizontal Offset: 2.50 m

Radius of Curvature (R_c): 97.85 m

Width (w): 7.50 m

$$R_c/w = 13.05$$

Bank Protection Works: Rip Rap

Condition of Bank Protection

Additional Comments

Sewer parallel to Newtonbrook Creek. While offset is minimal, asset has ~ 0.7 m of cover and degradation rate controls TTC

Sanitary Sewer Lateral Risk #17



Asset Characteristics

Reach: BR1
Asset ID: SL4053177
Diameter: 300 mm
Material: Asbestos Cement
Construction Year: 1977

Lateral Risk Assessment

Horizontal Offset: 12.00 m
Radius of Curvature (R_c): 13.64
Width (w): 2.74 m
 $R_c / w = 4.98$
Bank Protection Works: None
Condition of Bank Protection Works: N/A

Additional Comments

Entire valley corridor is area of active bank and slope erosion.



Sanitary Sewer Lateral Risk #18



Asset Characteristics

Reach: BR1

Asset ID: SL4051741

Diameter: 300 mm

Material: Asbestos Cement

Construction Year: 1977

Lateral Risk Assessment

Horizontal Offset: 3.00 m

Radius of Curvature (R_c): 20.22 m

Width (w): 2.74 m

$$R_c/w = 7.38$$

Bank Protection Works:

Armourstone

Condition of Bank Protection Works:

Additional Comments

Sewer parallel to Blue Ridge Creek with Armourstone and boulder bank protection.

Sanitary Sewer Lateral Risk #19



Asset Characteristics

Reach: BR1

Asset ID:

MH4825114957

SL4030369

Diameter: 300 mm

Material: Asbestos Cement

Construction Year: 1977

Lateral Risk Assessment

Horizontal Offset: 3.50 m

Radius of Curvature (R_c): 35.66 m

Width (w): 2.74 m

$R_c / w = 13.01$

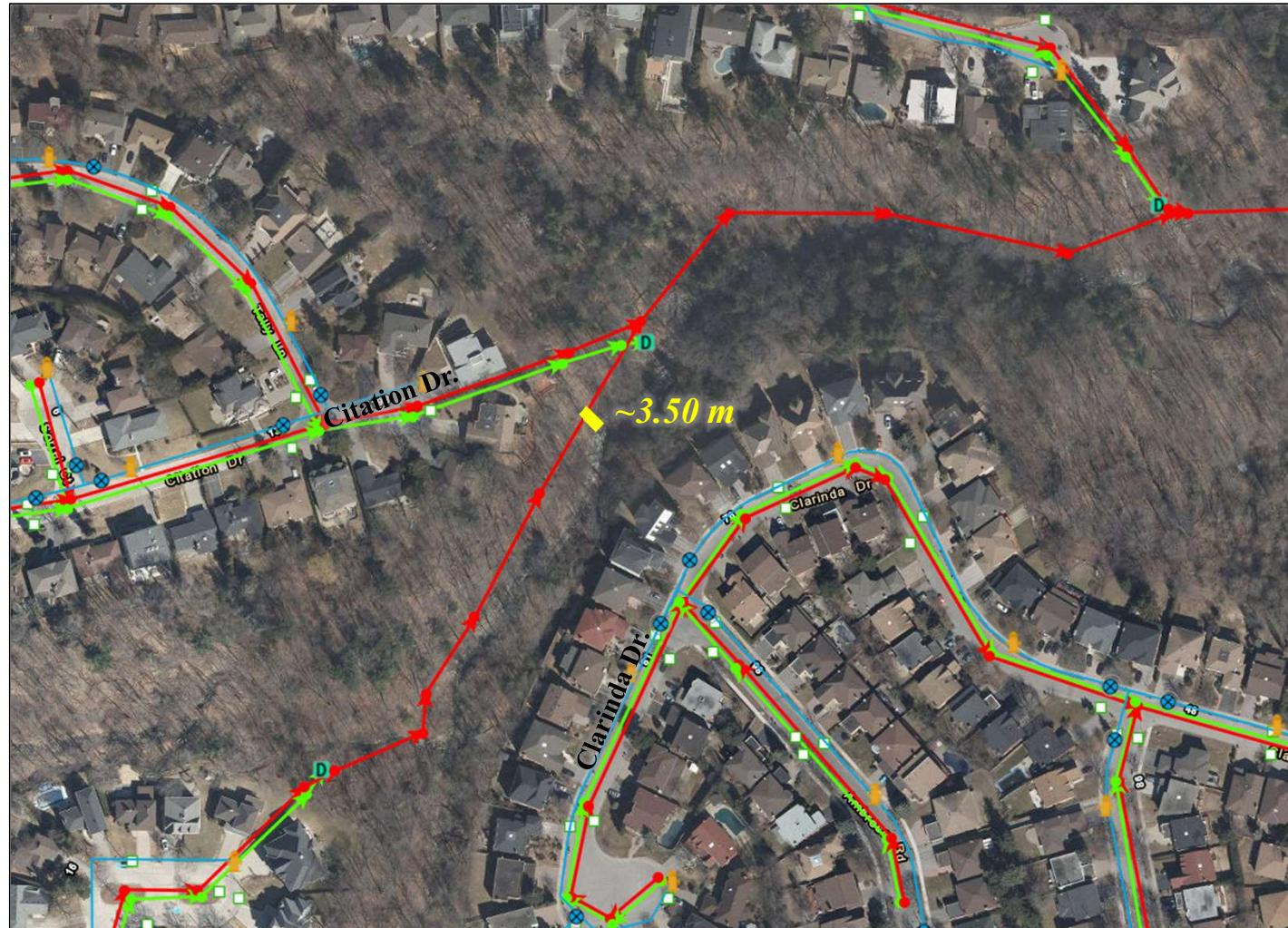
Bank Protection Works: None

Condition of Bank Protection Works: N/A

Additional Comments

Sewer parallel to Blue Ridge Creek. The closest point of contact is at an unarmoured eroding bank.

Sanitary Sewer Lateral Risk #20



—●— Storm Sewer Line
—●— Sanitary Sewer Line

—○— Watermain
■ Storm Sewer Outfall

Asset Characteristics

Reach: BR1

Asset ID: SL4030487

Diameter: 300 mm

Material: Asbestos Cement

Construction Year: 1977

Lateral Risk Assessment

Horizontal Offset: 3.5 m

Radius of Curvature (R_c): 15.61 m

Width (w): 2.74 m

$R_c / w = 5.70$

Bank Protection Works: None

Condition of Bank Protection

Works: N/A

Additional Comments

Entire valley corridor is area of active bank and slope erosion.

Sanitary Sewer Lateral Risk #21



Asset Characteristics

Reach: BR1

Asset ID: SL4030294

Diameter: 300 mm

Material: Asbestos Cement

Construction Year: 1977

Lateral Risk Assessment

Horizontal Offset: 6.00 m

Radius of Curvature (R_c): 14.72 m

Width (w): 2.74 m

$R_c / w = 5.37$

Bank Protection Works:

Armourstone

Condition of Bank Protection Works:

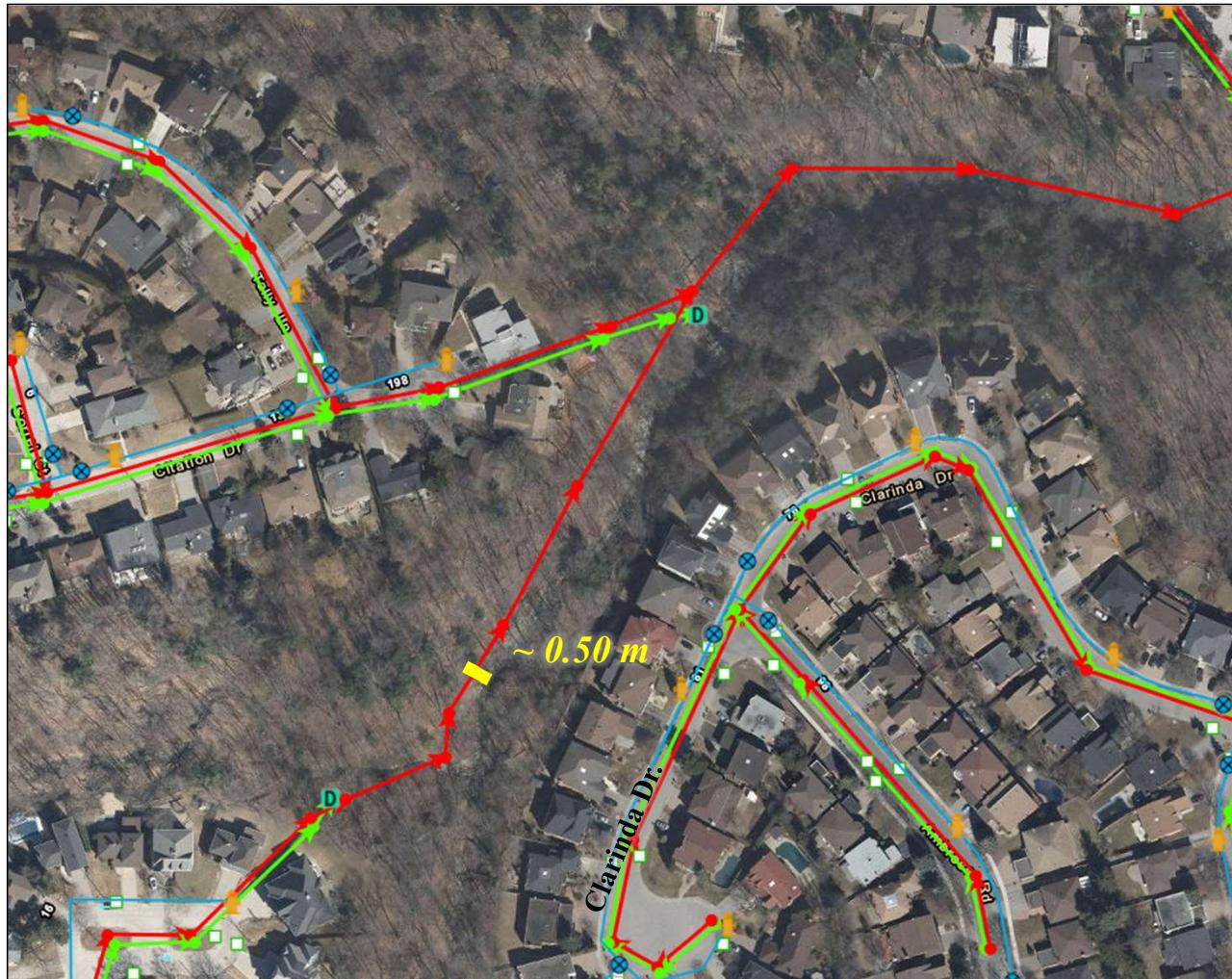
Additional Comments

Sewer parallel to Blue Ridge Creek with Armourstone bank protection.

—●— Storm Sewer Line
—●— Sanitary Sewer Line

—○— Watermain
■ Storm Sewer Outfall

Sanitary Sewer Lateral Risk #22



Asset Characteristics

Reach: BR1

Asset ID: SL4030293

Diameter: 300 mm

Material: Asbestos Cement

Construction Year: 1977

Lateral Risk Assessment

Horizontal Offset: 0.50 m

Radius of Curvature (R_c): 12.29 m

Width (w): 2.74 m

$R_c / w = 4.49$

Bank Protection Works: None

Condition of Bank Protection

Works: N/A

Additional Comments

Entire valley corridor is area of active bank and slope erosion.

—●— Storm Sewer Line
—●— Sanitary Sewer Line

—○— Watermain
■ Storm Sewer Outfall