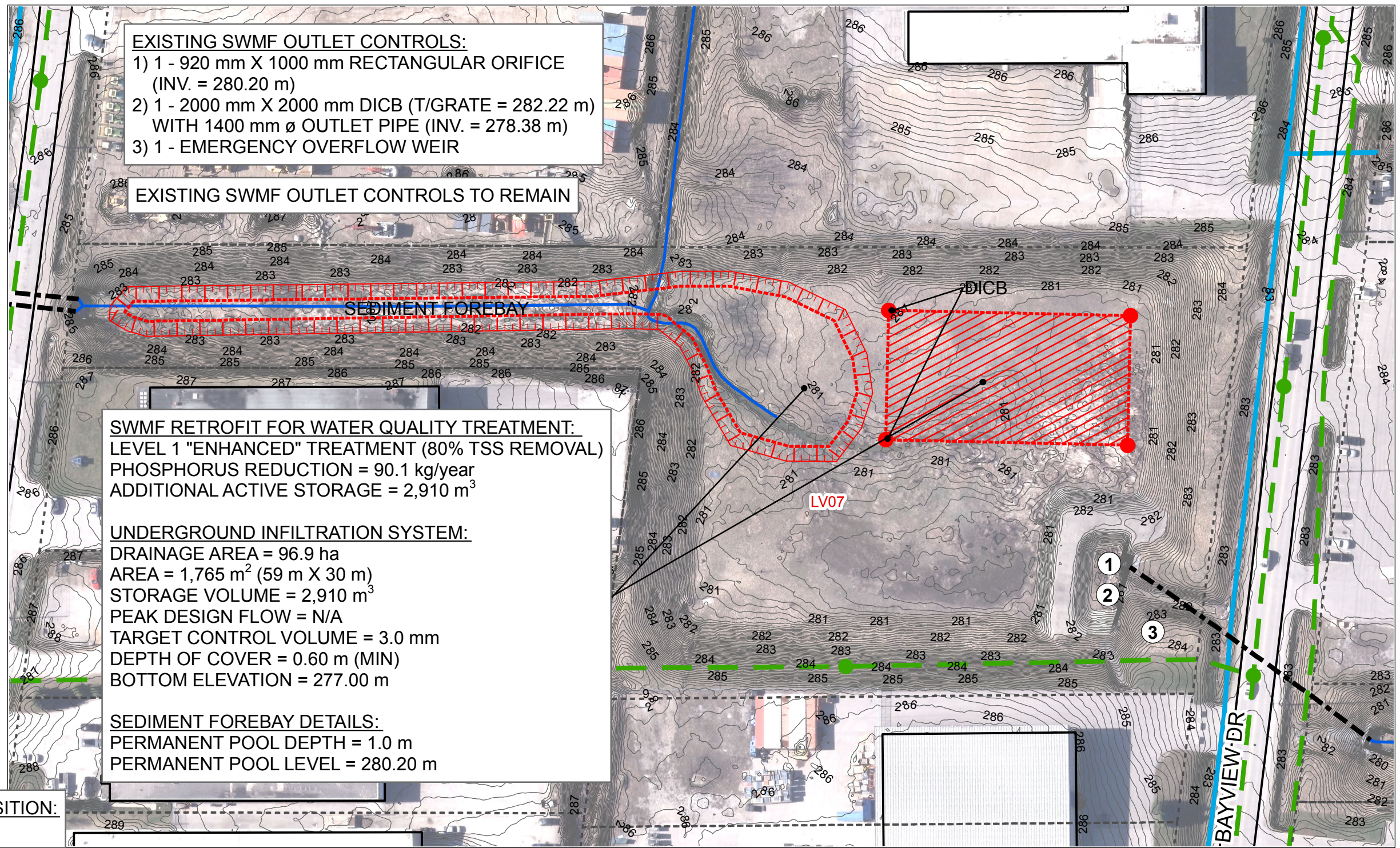


**Appendix N:
Final Preferred Solutions
Conceptual Designs – Lovers
Creek Watershed**



EXISTING SWMF OUTLET CONTROLS:
1) 1 - 920 mm X 1000 mm RECTANGULAR ORIFICE
(INV. = 280.20 m)
2) 1 - 2000 mm X 2000 mm DICB (T/GRATE = 282.22 m)
WITH 1400 mm Ø OUTLET PIPE (INV. = 278.38 m)
3) 1 - EMERGENCY OVERFLOW WEIR

EXISTING SWMF OUTLET CONTROLS TO REMAIN

SWMF RETROFIT FOR WATER QUALITY TREATMENT:
LEVEL 1 "ENHANCED" TREATMENT (80% TSS REMOVAL)
PHOSPHORUS REDUCTION = 90.1 kg/year
ADDITIONAL ACTIVE STORAGE = 2,910 m³

UNDERGROUND INFILTRATION SYSTEM:
DRAINAGE AREA = 96.9 ha
AREA = 1,765 m² (59 m X 30 m)
STORAGE VOLUME = 2,910 m³
PEAK DESIGN FLOW = N/A
TARGET CONTROL VOLUME = 3.0 mm
DEPTH OF COVER = 0.60 m (MIN)
BOTTOM ELEVATION = 277.00 m

SEDIMENT FOREBAY DETAILS:
PERMANENT POOL DEPTH = 1.0 m
PERMANENT POOL LEVEL = 280.20 m

PROPERTY ACQUISITION:
NONE



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LEGEND

- | | |
|---------------------------------|------------------------------|
| ● PR STORM MAINTENANCE HOLE | — EX. WATERMAIN |
| — PR. STORM SEWER | ● EX. STORM MAINTENANCE HOLE |
| — EX. SANITARY SEWER | — EX. STORM SEWER |
| ● EX. SANITARY MAINTENANCE HOLE | — EX. WATERCOURSE |
| ▨ PR. LID | ▨ EX. PROPERTY LINE |
| | ▨ PROPERTY ACQUISITION |

DRAINAGE MASTER PLAN
FINAL PREFERRED ALTERNATIVE SOLUTION

PROJECT No. 97
SWMF RETROFIT No. 65 (LV07)
LOVERS CREEK WATERSHED

SCALE = 1:1,000

DATE: MARCH 2019

RAILWAY CROSSING:

DESIGN FLOOD FREQUENCY CRITERIA = 1:100 YEAR

EXISTING: 1200 mm ø CSP CULVERT

CONVEYANCE CAPACITY = 6.7 m³/s (EXISTING FLOWS)

DESIGN FLOOD FREQUENCY = 1:25 YEAR

DEPTH OF OVERTOPPING = 0.35 m (REGULATORY EVENT)

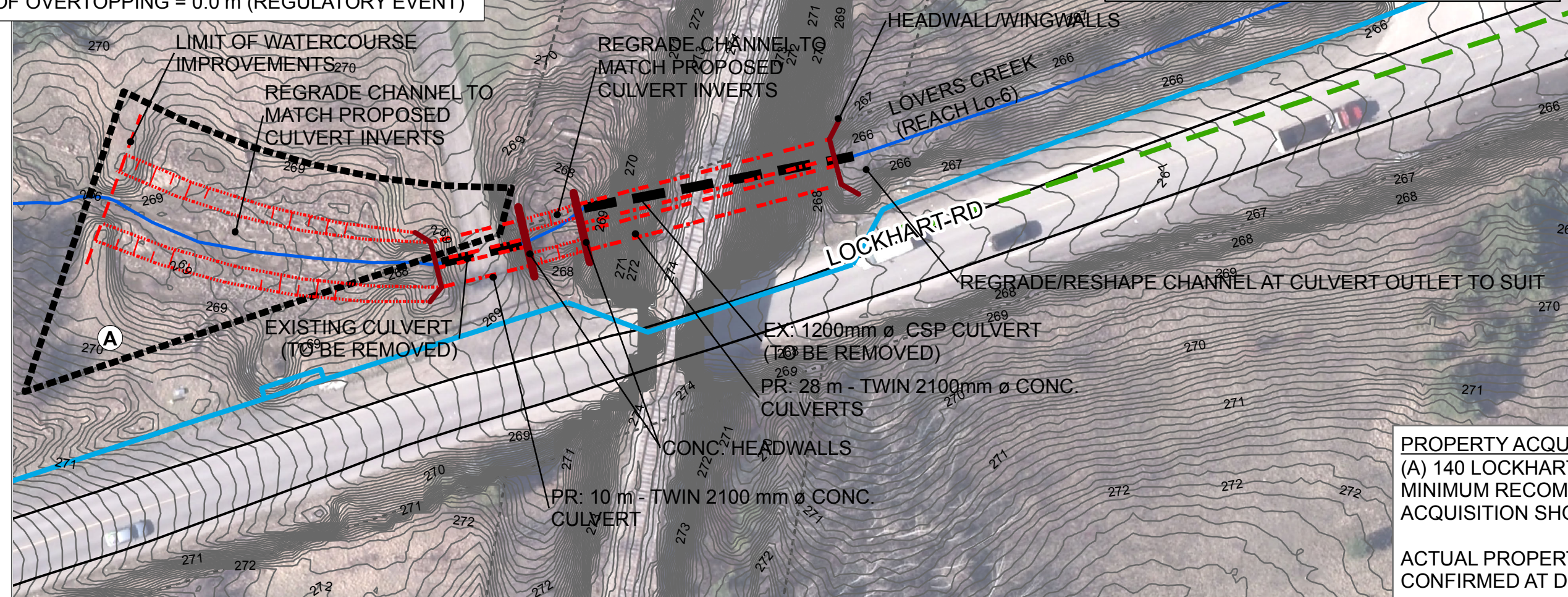
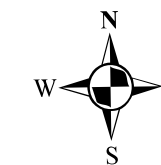
PROPOSED: TWIN 2100 mm ø CONC. CULVERTS

CONVEYANCE CAPACITY = 26.0 m³/s (FUTURE FLOWS)

DESIGN FLOOD FREQUENCY = REGIONAL (HURRICANE HAZEL) STORM

DEPTH OF OVERTOPPING = 0.0 m (REGULATORY EVENT)

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PROPERTY ACQUISITION:

(A) 140 LOCKHART RD. (PORTION OF) MINIMUM RECOMMENDED PROPERTY ACQUISITION SHOWN

ACTUAL PROPERTY ACQUISITION TO BE CONFIRMED AT DETAILED DESIGN

TATHAM
ENGINEERING

Barrie

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LEGEND

--- PR. CULVERT

--- PR. STORM SEWER

● PR STORM MAINTENANCE HOLE

--- EX. STORM SEWER

● EX. STORM MAINTENANCE HOLE

--- WATERCOURSE

--- EX. SANITARY SEWER

● EX. SANITARY MAINTENANCE HOLE

--- EX. WATERMAIN

--- EX. CULVERT

--- EX. PROPERTY LINE

--- PROPERTY ACQUISITION

DRAINAGE MASTER PLAN
FINAL PREFERRED ALTERNATIVE SOLUTION

PROJECT No. 98
CULVERT IMPROVEMENT No. 126
(RAILWAY CROSSING)
LOVERS CREEK WATERSHED

SCALE = 1:500

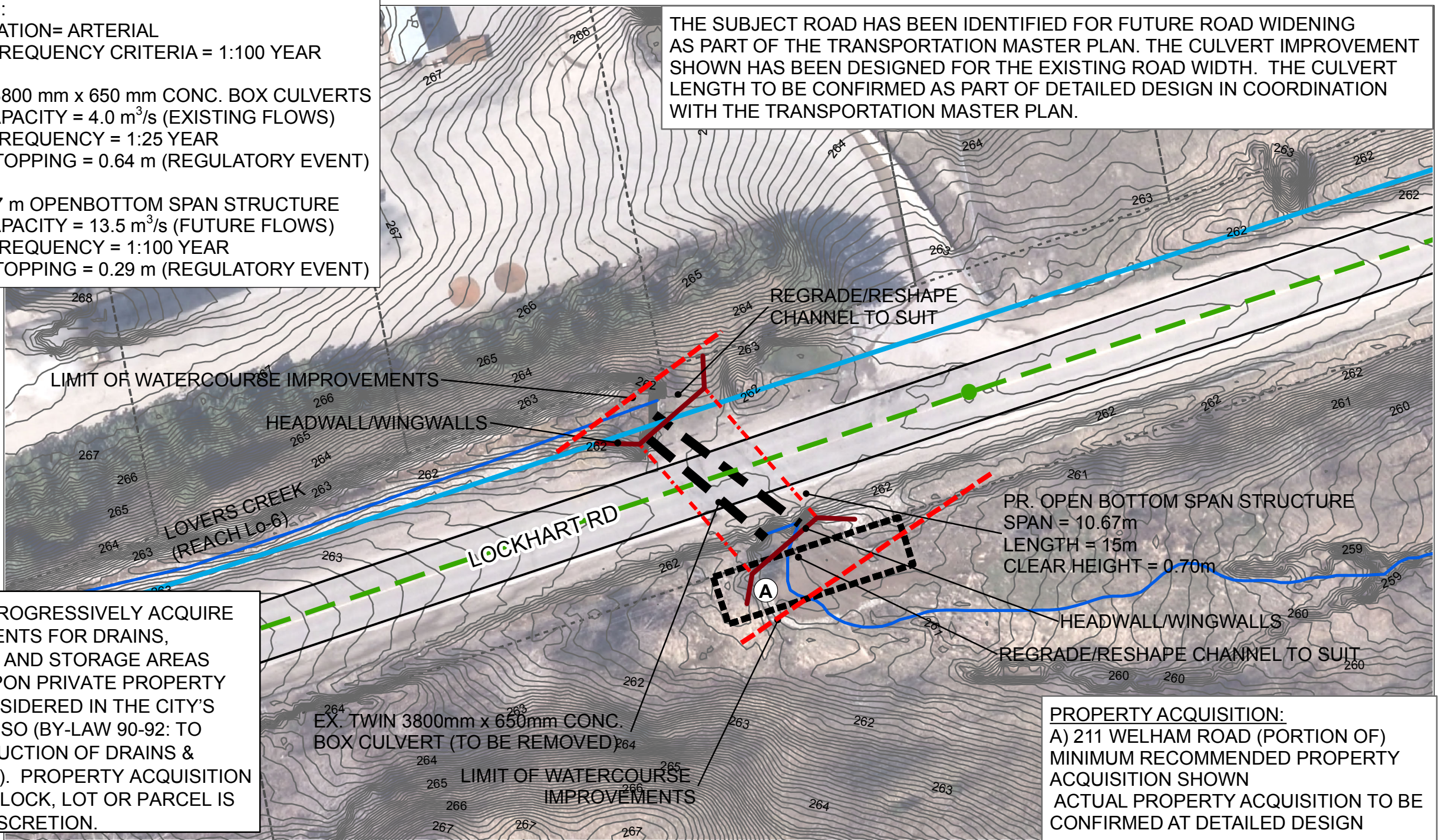
DATE: MARCH 2019

LOCKHART ROAD:
ROAD CLASSIFICATION= ARTERIAL
DESIGN FLOOD FREQUENCY CRITERIA = 1:100 YEAR

EXISTING: TWIN 3800 mm x 650 mm CONC. BOX CULVERTS
CONVEYANCE CAPACITY = 4.0 m³/s (EXISTING FLOWS)
DESIGN FLOOD FREQUENCY = 1:25 YEAR
DEPTH OF OVERTOPPING = 0.64 m (REGULATORY EVENT)

PROPOSED: 10.67 m OPENBOTTOM SPAN STRUCTURE
CONVEYANCE CAPACITY = 13.5 m³/s (FUTURE FLOWS)
DESIGN FLOOD FREQUENCY = 1:100 YEAR
DEPTH OF OVERTOPPING = 0.29 m (REGULATORY EVENT)

THE SUBJECT ROAD HAS BEEN IDENTIFIED FOR FUTURE ROAD WIDENING AS PART OF THE TRANSPORTATION MASTER PLAN. THE CULVERT IMPROVEMENT SHOWN HAS BEEN DESIGNED FOR THE EXISTING ROAD WIDTH. THE CULVERT LENGTH TO BE CONFIRMED AS PART OF DETAILED DESIGN IN COORDINATION WITH THE TRANSPORTATION MASTER PLAN.



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LEGEND

- | | |
|------------------------------|---------------------------------|
| --- PR. CULVERT | --- EX. SANITARY SEWER |
| --- PR. STORM SEWER | ● EX. SANITARY MAINTENANCE HOLE |
| ● PR STORM MAINTENANCE HOLE | --- EX. WATERMAIN |
| --- EX. STORM SEWER | --- EX. CULVERT |
| ● EX. STORM MAINTENANCE HOLE | --- EX. PROPERTY LINE |
| --- WATERCOURSE | --- PROPERTY ACQUISITION |

DRAINAGE MASTER PLAN FINAL PREFERRED ALTERNATIVE SOLUTION

PROJECT No. 99
CULVERT IMPROVEMENT No. 89
(LOCKHART RD.)
LOVERS CREEK WATERSHED
SCALE = 1:500

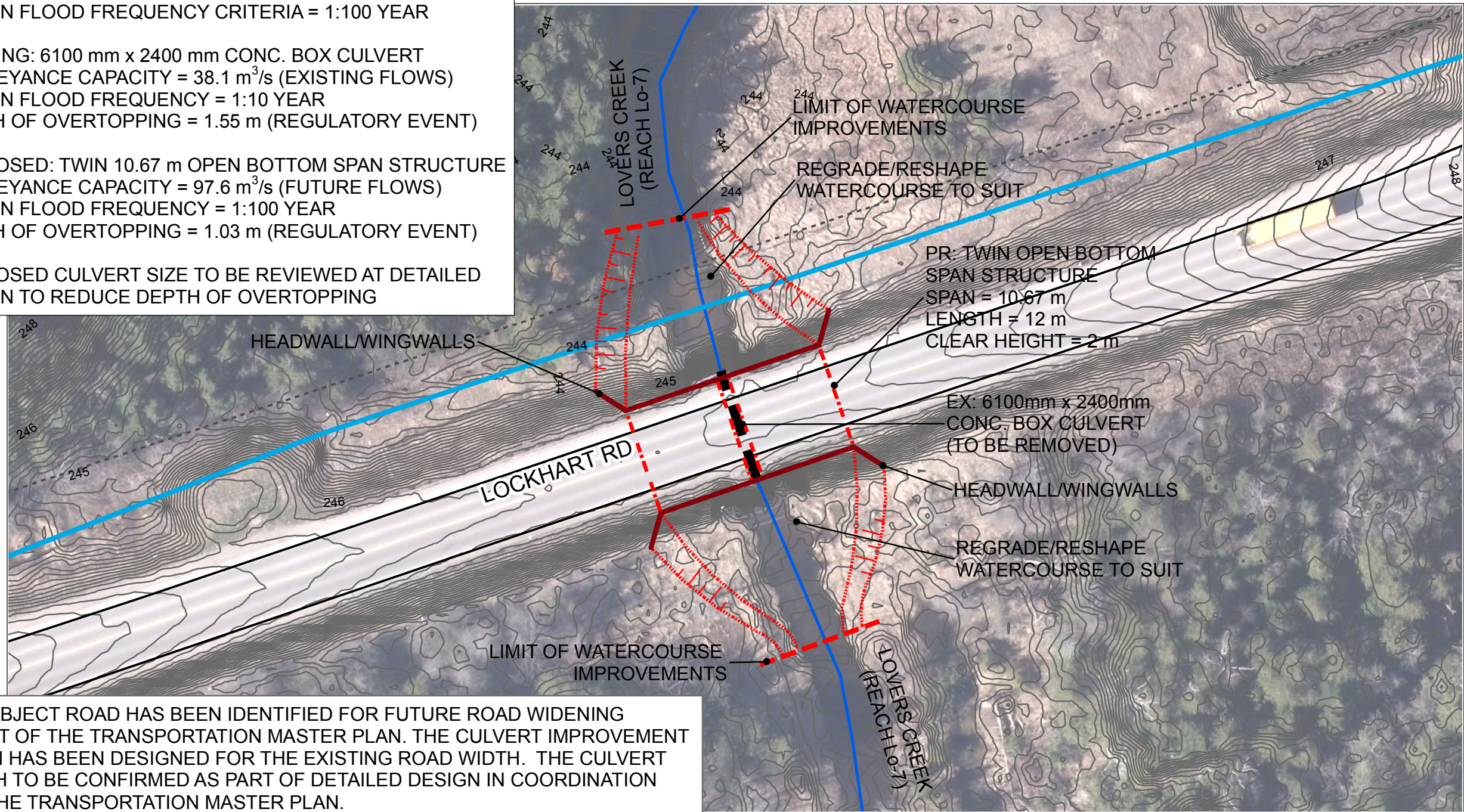
DATE: MARCH 2019

LOCKHART ROAD:
DESIGN FLOOD FREQUENCY CRITERIA = 1:100 YEAR

EXISTING: 6100 mm x 2400 mm CONC. BOX CULVERT
CONVEYANCE CAPACITY = 38.1 m³/s (EXISTING FLOWS)
DESIGN FLOOD FREQUENCY = 1:10 YEAR
DEPTH OF OVERTOPPING = 1.55 m (REGULATORY EVENT)

PROPOSED: TWIN 10.67 m OPEN BOTTOM SPAN STRUCTURE
CONVEYANCE CAPACITY = 97.6 m³/s (FUTURE FLOWS)
DESIGN FLOOD FREQUENCY = 1:100 YEAR
DEPTH OF OVERTOPPING = 1.03 m (REGULATORY EVENT)

PROPOSED CULVERT SIZE TO BE REVIEWED AT DETAILED
DESIGN TO REDUCE DEPTH OF OVERTOPPING



THE SUBJECT ROAD HAS BEEN IDENTIFIED FOR FUTURE ROAD WIDENING AS PART OF THE TRANSPORTATION MASTER PLAN. THE CULVERT IMPROVEMENT SHOWN HAS BEEN DESIGNED FOR THE EXISTING ROAD WIDTH. THE CULVERT LENGTH TO BE CONFIRMED AS PART OF DETAILED DESIGN IN COORDINATION WITH THE TRANSPORTATION MASTER PLAN.

PROPERTY ACQUISITION:
NONE



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LEGEND

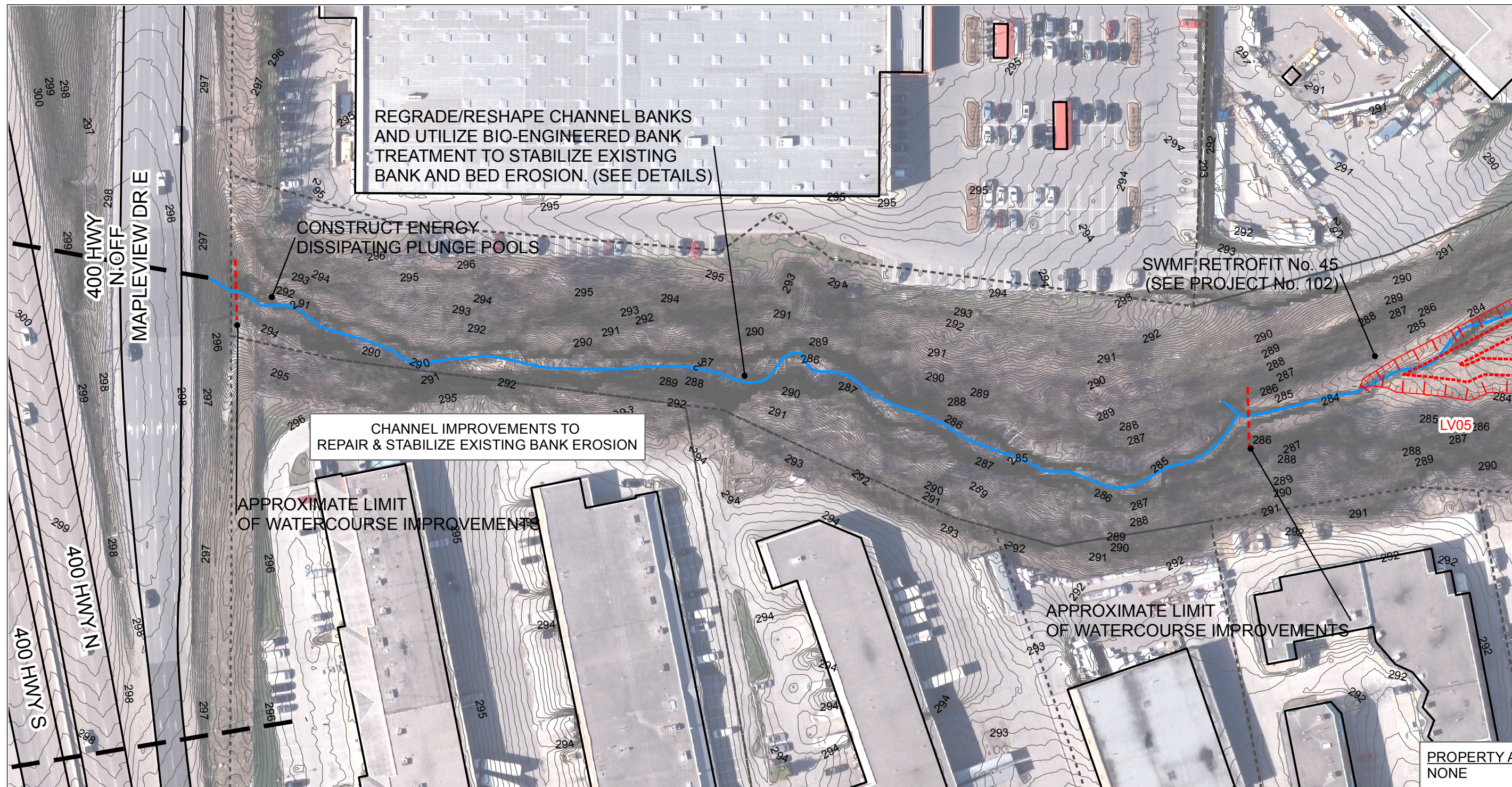
- | | |
|------------------------------|---------------------------------|
| --- PR. CULVERT | --- EX. SANITARY SEWER |
| --- PR. STORM SEWER | ● EX. SANITARY MAINTENANCE HOLE |
| ● PR STORM MAINTENANCE HOLE | --- EX. WATERMAIN |
| --- EX. STORM SEWER | ■ EX. CULVERT |
| ● EX. STORM MAINTENANCE HOLE | --- EX. PROPERTY LINE |
| --- WATERCOURSE | ■ PROPERTY ACQUISITION |

DRAINAGE MASTER PLAN FINAL PREFERRED ALTERNATIVE SOLUTION

PROJECT No. 101
CULVERT IMPROVEMENT No. 91
(LOCKHART RD)
LOVERS CREEK WATERSHED

SCALE = 1:500

DATE: MARCH 2019



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LEGEND

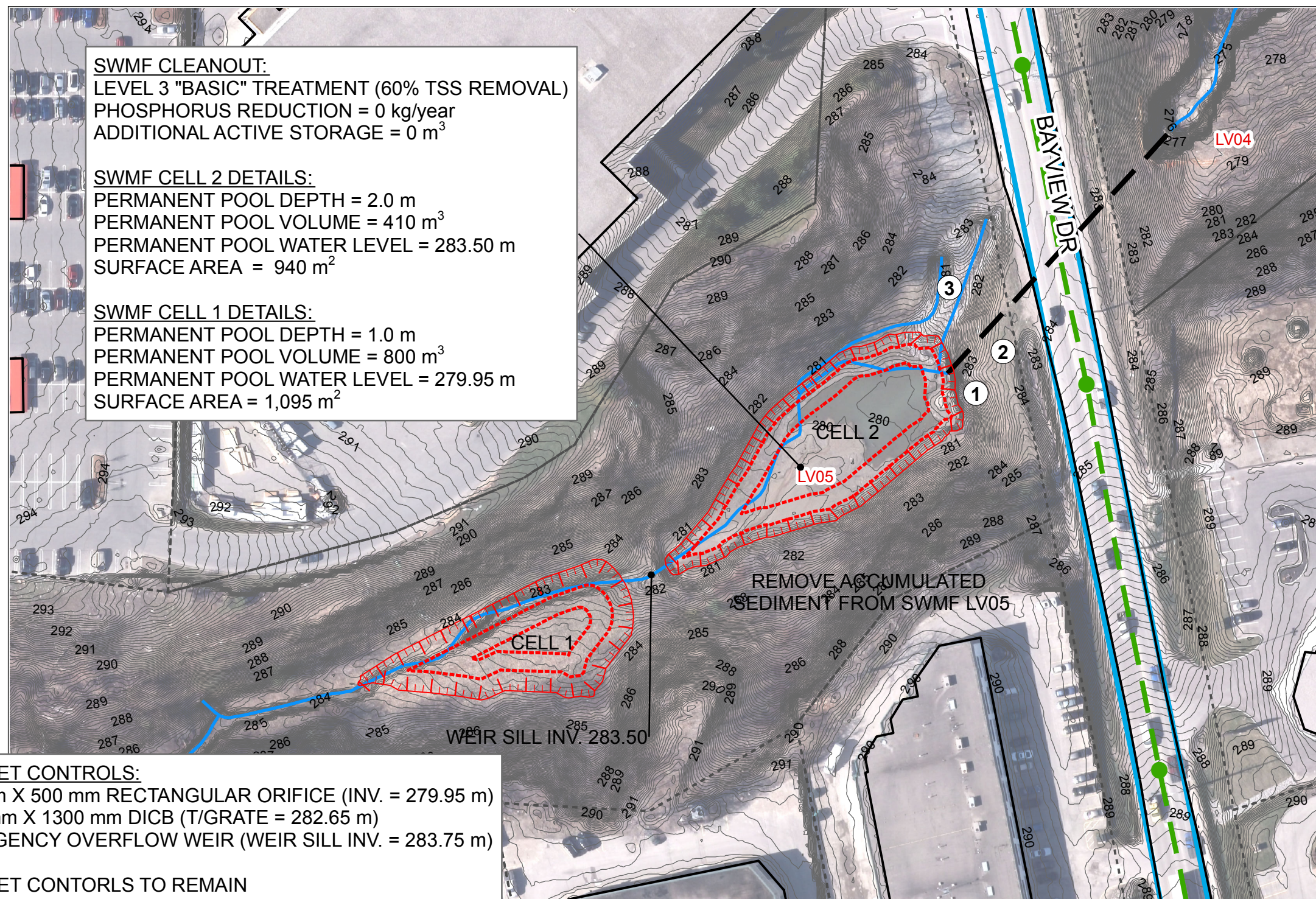
- | | |
|---------------------------------|------------------------------|
| ● PR STORM MAINTENANCE HOLE | — EX. WATERMAIN |
| — PR. STORM SEWER | ● EX. STORM MAINTENANCE HOLE |
| — EX. SANITARY SEWER | — EX. STORM SEWER |
| ● EX. SANITARY MAINTENANCE HOLE | — EX. WATERCOURSE |
| ▨ PR. LID | ▨ EX. PROPERTY LINE |
| | ▨ PROPERTY ACQUISITION |

DRAINAGE MASTER PLAN **FINAL PREFERRED ALTERNATIVE SOLUTION**

PROJECT No. 102
SWMF RETROFIT No. 45 (LV05)
LOVERS CREEK WATERSHED
(SHEET 2 OF 2)

SCALE = 1:1,000

DATE: MARCH 2019



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LEGEND

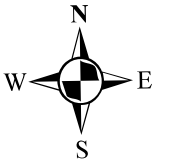
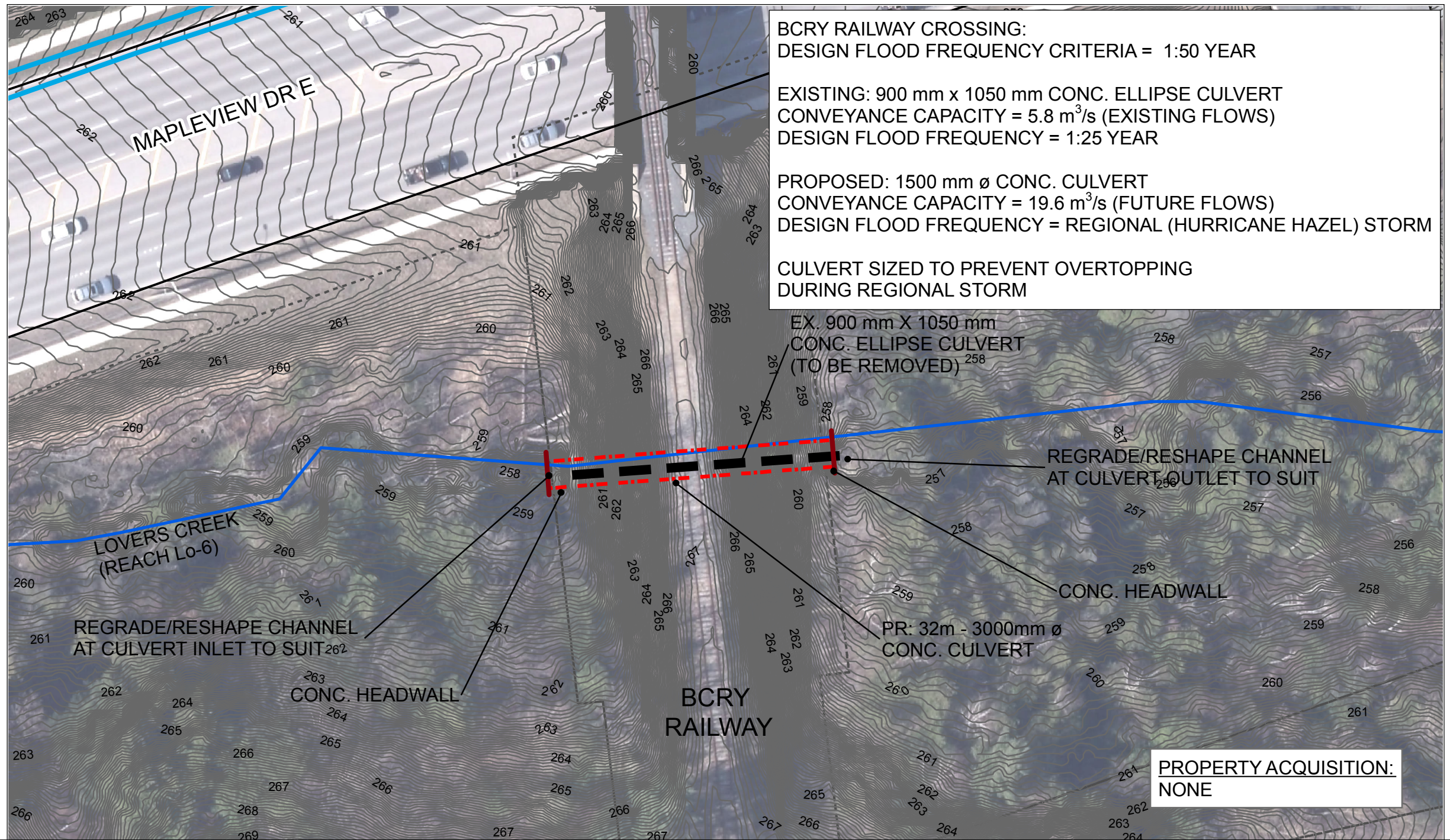
- | | |
|---------------------------------|------------------------------|
| ● PR STORM MAINTENANCE HOLE | — EX. WATERMAIN |
| — PR. STORM SEWER | ● EX. STORM MAINTENANCE HOLE |
| — EX. SANITARY SEWER | — EX. STORM SEWER |
| ● EX. SANITARY MAINTENANCE HOLE | — EX. WATERCOURSE |
| ▨ PR. LID | ▨ EX. PROPERTY LINE |
| | ▨ PROPERTY ACQUISITION |

DRAINAGE MASTER PLAN **FINAL PREFERRED ALTERNATIVE SOLUTION**

PROJECT No. 102
SWMF RETROFIT No. 45 (LV05)
LOVERS CREEK WATERSHED
(SHEET 1 OF 2)

SCALE = 1:1,000

DATE: MARCH 2019



LEGEND

--- PR. CULVERT	--- EX. SANITARY SEWER
--- PR. STORM SEWER	● EX. SANITARY MAINTENANCE HOLE
● PR STORM MAINTENANCE HOLE	--- EX. WATERMAIN
--- EX. STORM SEWER	--- EX. CULVERT
● EX. STORM MAINTENANCE HOLE	--- EX. PROPERTY LINE
--- WATERCOURSE	--- PROPERTY ACQUISITION

DRAINAGE MASTER PLAN **FINAL PREFERRED ALTERNATIVE SOLUTION**

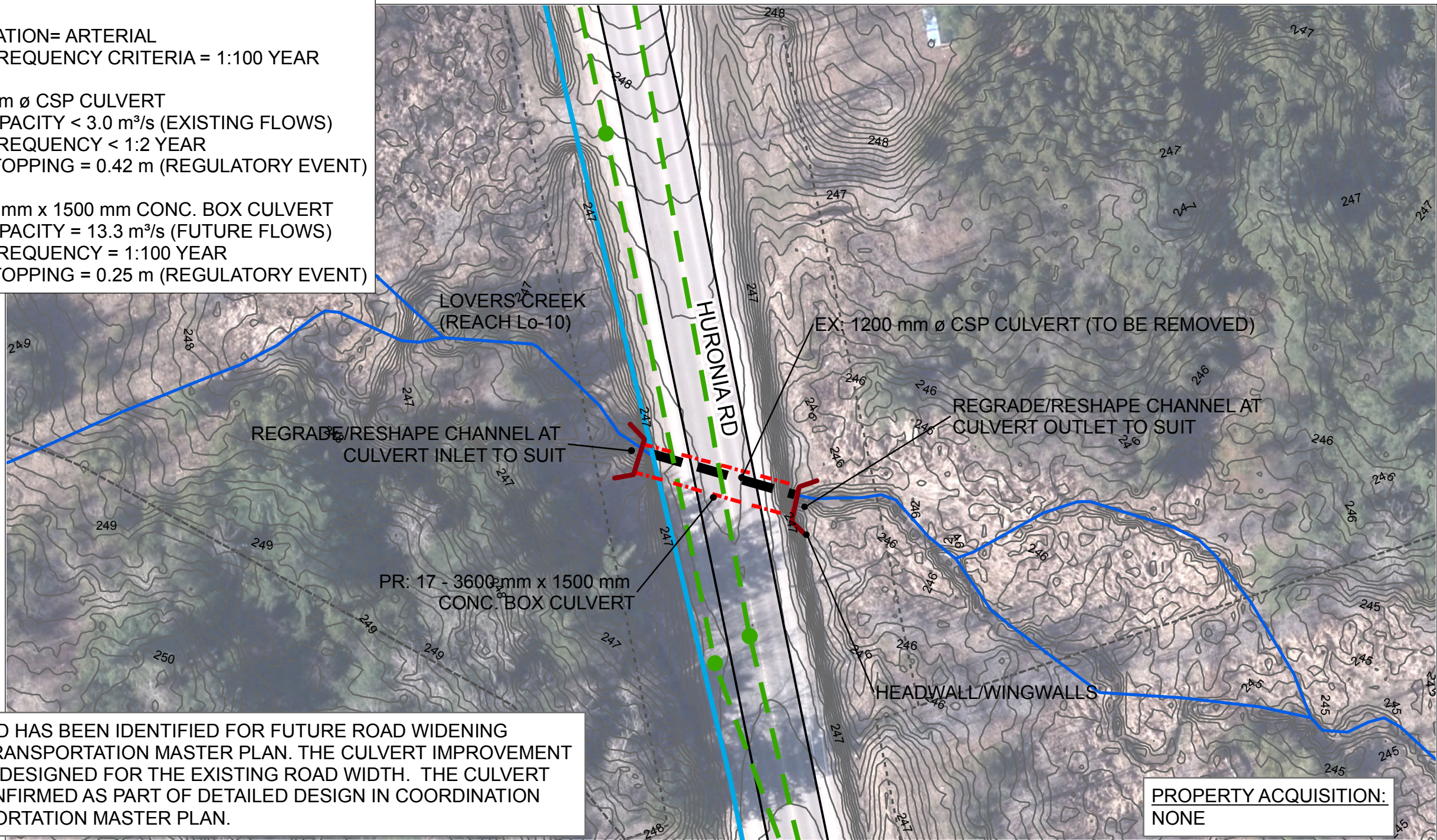
PROJECT No. 105
 CULVERT IMPROVEMENT No. 123
 (RAILWAY CROSSING)
 LOVERS CREEK WATERSHED
 SCALE = 1:500

DATE: MARCH 2019

HURONIA ROAD:
ROAD CLASSIFICATION= ARTERIAL
DESIGN FLOOD FREQUENCY CRITERIA = 1:100 YEAR

EXISTING: 1200 mm ø CSP CULVERT
CONVEYANCE CAPACITY < 3.0 m³/s (EXISTING FLOWS)
DESIGN FLOOD FREQUENCY < 1:2 YEAR
DEPTH OF OVERTOPPING = 0.42 m (REGULATORY EVENT)

PROPOSED: 3600 mm x 1500 mm CONC. BOX CULVERT
CONVEYANCE CAPACITY = 13.3 m³/s (FUTURE FLOWS)
DESIGN FLOOD FREQUENCY = 1:100 YEAR
DEPTH OF OVERTOPPING = 0.25 m (REGULATORY EVENT)



THE SUBJECT ROAD HAS BEEN IDENTIFIED FOR FUTURE ROAD WIDENING AS PART OF THE TRANSPORTATION MASTER PLAN. THE CULVERT IMPROVEMENT SHOWN HAS BEEN DESIGNED FOR THE EXISTING ROAD WIDTH. THE CULVERT LENGTH TO BE CONFIRMED AS PART OF DETAILED DESIGN IN COORDINATION WITH THE TRANSPORTATION MASTER PLAN.



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LEGEND

- | | |
|------------------------------|---------------------------------|
| --- PR. CULVERT | --- EX. SANITARY SEWER |
| --- PR. STORM SEWER | ● EX. SANITARY MAINTENANCE HOLE |
| ● PR STORM MAINTENANCE HOLE | --- EX. WATERMAIN |
| --- EX. STORM SEWER | --- EX. CULVERT |
| ● EX. STORM MAINTENANCE HOLE | --- EX. PROPERTY LINE |
| --- WATERCOURSE | --- PROPERTY ACQUISITION |

DRAINAGE MASTER PLAN
FINAL PREFERRED ALTERNATIVE SOLUTION

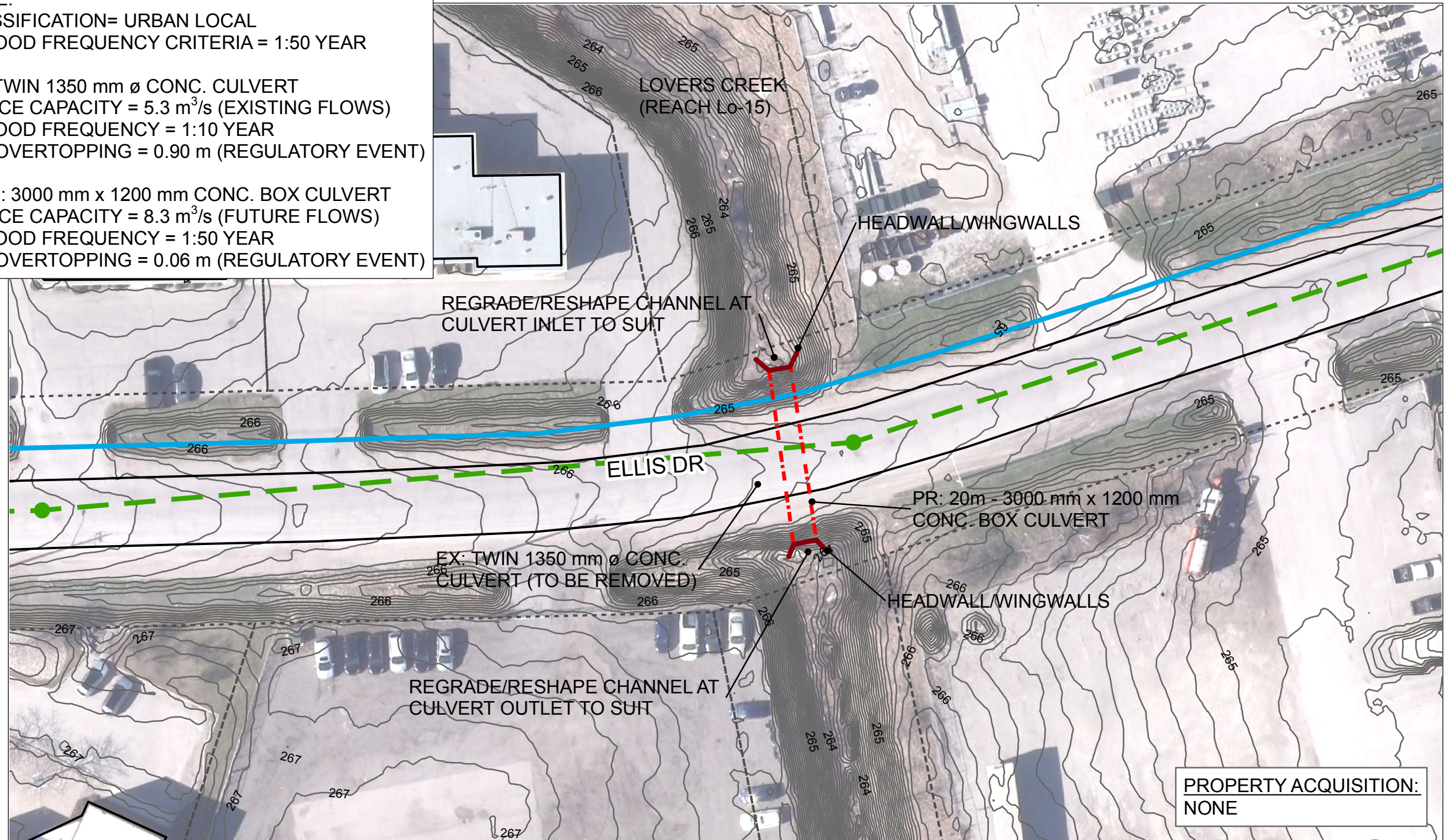
PROJECT No. 107
CULVERT IMPROVEMENT No. 92
(HURONIA RD.)
LOVERS CREEK WATERSHED
SCALE = 1:500

DATE: MARCH 2019

ELLIS DRIVE:
ROAD CLASSIFICATION= URBAN LOCAL
DESIGN FLOOD FREQUENCY CRITERIA = 1:50 YEAR

EXISTING: TWIN 1350 mm Ø CONC. CULVERT
CONVEYANCE CAPACITY = 5.3 m³/s (EXISTING FLOWS)
DESIGN FLOOD FREQUENCY = 1:10 YEAR
DEPTH OF OVERTOPPING = 0.90 m (REGULATORY EVENT)

PROPOSED: 3000 mm x 1200 mm CONC. BOX CULVERT
CONVEYANCE CAPACITY = 8.3 m³/s (FUTURE FLOWS)
DESIGN FLOOD FREQUENCY = 1:50 YEAR
DEPTH OF OVERTOPPING = 0.06 m (REGULATORY EVENT)



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LEGEND

- | | |
|------------------------------|---------------------------------|
| --- PR. CULVERT | --- EX. SANITARY SEWER |
| --- PR. STORM SEWER | ● EX. SANITARY MAINTENANCE HOLE |
| ● PR STORM MAINTENANCE HOLE | --- EX. WATERMAIN |
| --- EX. STORM SEWER | --- EX. CULVERT |
| ● EX. STORM MAINTENANCE HOLE | --- EX. PROPERTY LINE |
| --- WATERCOURSE | --- PROPERTY ACQUISITION |

DRAINAGE MASTER PLAN
FINAL PREFERRED ALTERNATIVE SOLUTION

PROJECT No. 109
CULVERT IMPROVEMENT No. 99
(ELLIS DR.)
LOVERS CREEK WATERSHED
SCALE = 1:500

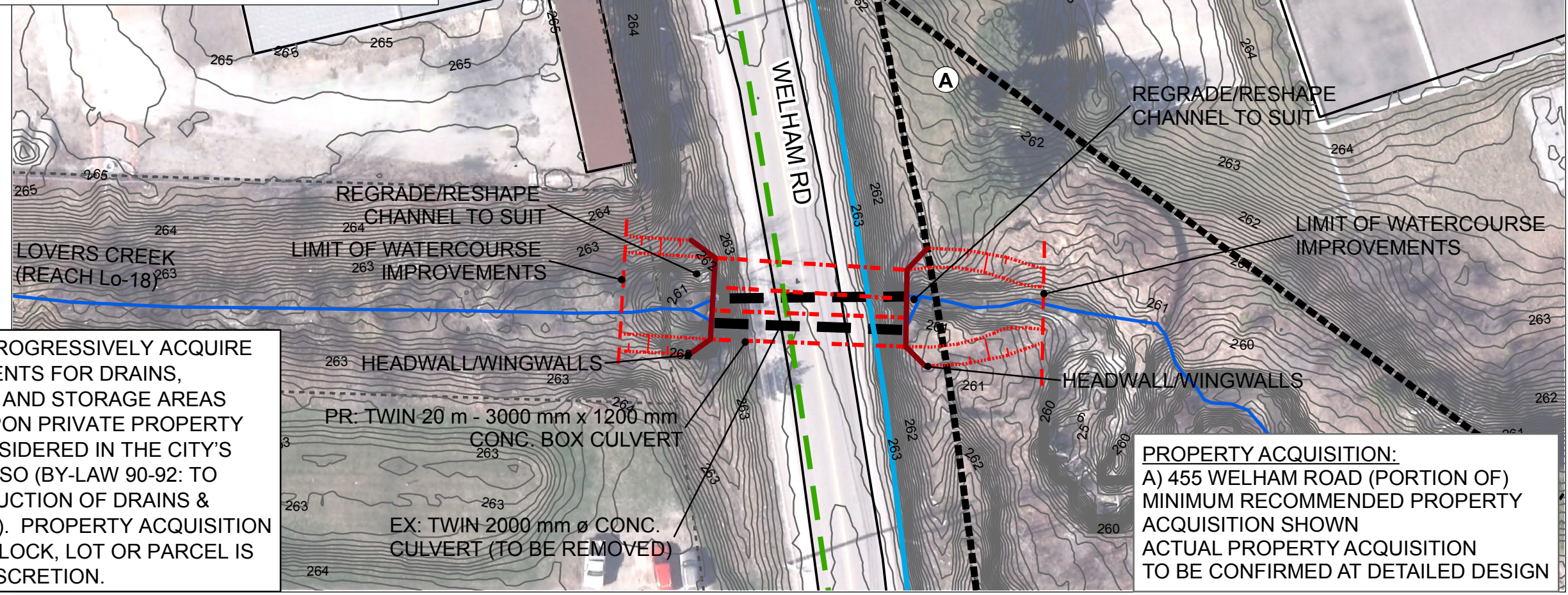
DATE: MARCH 2019

WELHAM ROAD:
ROAD CLASSIFICATION= MINOR COLLECTOR
DESIGN FLOOD FREQUENCY CRITERIA = 1:50 YEAR

EXISTING: TWIN 2000 mm Ø CONC. CULVERTS
CONVEYANCE CAPACITY = 17.7 m³/s (EXISTING FLOWS)
DESIGN FLOOD FREQUENCY = 1:10 YEAR
DEPTH OF OVERTOPPING = 0.25 m (REGULATORY EVENT)

PROPOSED: TWIN 3000 mm x 1200 mm CONC. BOX CULVERTS
CONVEYANCE CAPACITY = 30.9 m³/s (FUTURE FLOWS)
DESIGN FLOOD FREQUENCY = 1:50 YEAR
DEPTH OF OVERTOPPING = 0.08 m (REGULATORY EVENT)

THE SUBJECT ROAD HAS BEEN IDENTIFIED FOR FUTURE ROAD WIDENING AS PART OF THE TRANSPORTATION MASTER PLAN. THE CULVERT IMPROVEMENT SHOWN HAS BEEN DESIGNED FOR THE EXISTING ROAD WIDTH. THE CULVERT LENGTH TO BE CONFIRMED AS PART OF DETAILED DESIGN IN COORDINATION WITH THE TRANSPORTATION MASTER PLAN.



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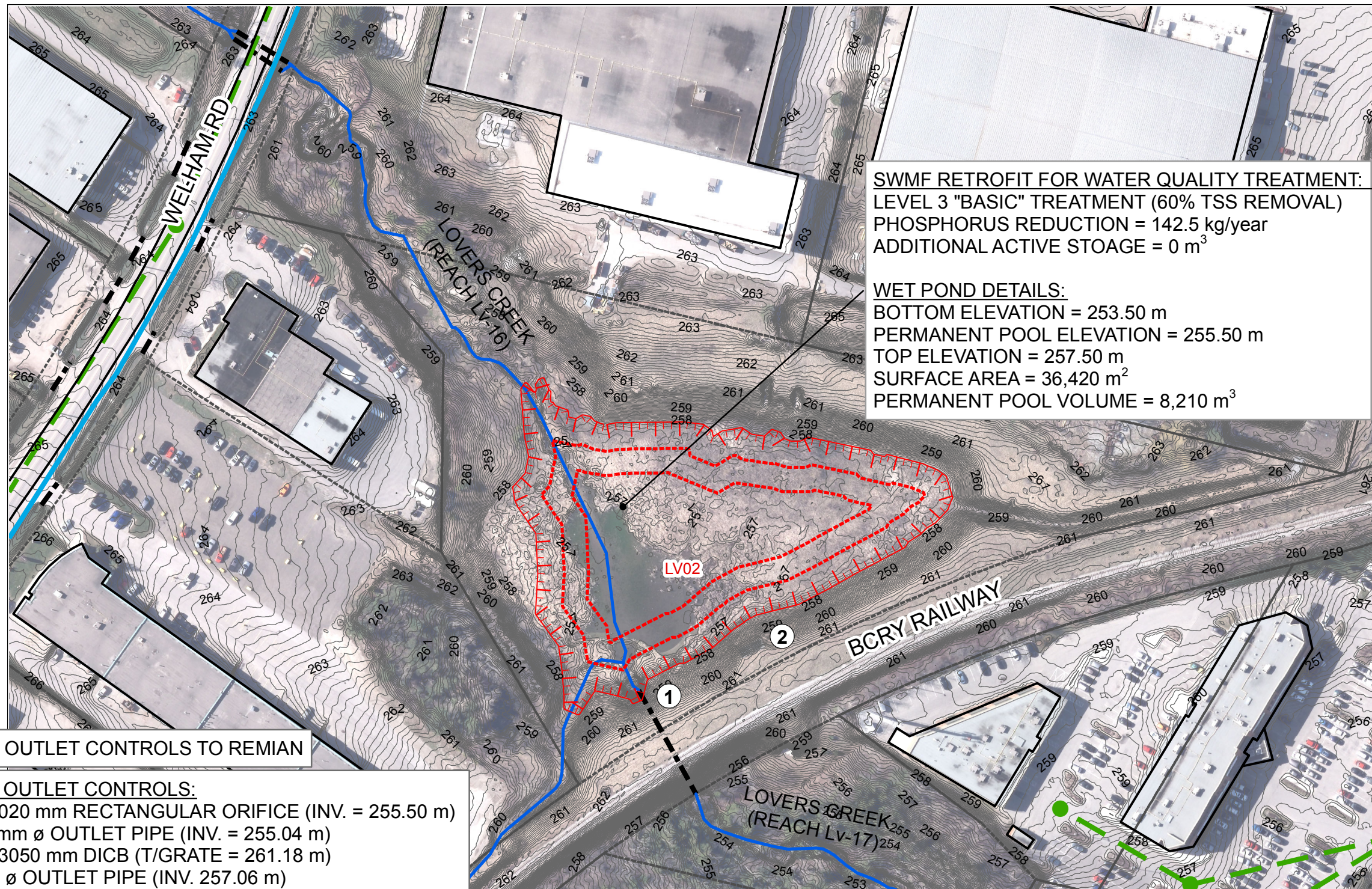
LEGEND

- | | |
|------------------------------|---------------------------------|
| --- PR. CULVERT | --- EX. SANITARY SEWER |
| --- PR. STORM SEWER | ● EX. SANITARY MAINTENANCE HOLE |
| ● PR STORM MAINTENANCE HOLE | --- EX. WATERMAIN |
| --- EX. STORM SEWER | --- EX. CULVERT |
| ● EX. STORM MAINTENANCE HOLE | --- EX. PROPERTY LINE |
| --- WATERCOURSE | --- PROPERTY ACQUISITION |

DRAINAGE MASTER PLAN FINAL PREFERRED ALTERNATIVE SOLUTION

PROJECT No. 110
CULVERT IMPROVEMENT No. 98
(WELHAM RD.)
LOVERS CREEK WATERSHED
SCALE = 1:500

DATE: MARCH 2019



SWMF RETROFIT FOR WATER QUALITY TREATMENT:
LEVEL 3 "BASIC" TREATMENT (60% TSS REMOVAL)
PHOSPHORUS REDUCTION = 142.5 kg/year
ADDITIONAL ACTIVE STOAGE = 0 m³

WET POND DETAILS:
BOTTOM ELEVATION = 253.50 m
PERMANENT POOL ELEVATION = 255.50 m
TOP ELEVATION = 257.50 m
SURFACE AREA = 36,420 m²
PERMANENT POOL VOLUME = 8,210 m³

EXISTING SWMF OUTLET CONTROLS TO REMIAN

EXISTING SWMF OUTLET CONTROLS:

- 1) 1 - 800 mm X 1020 mm RECTANGULAR ORIFICE (INV. = 255.50 m)
WITH 1 - 1500 mm ø OUTLET PIPE (INV. = 255.04 m)
- 2) 2 - 3800 mm X 3050 mm DICB (T/GRATE = 261.18 m)
WITH 2300 mm ø OUTLET PIPE (INV. 257.06 m)

PROPERTY ACQUISITION:
NONE



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LEGEND

- | | | | |
|---|-------------------------------|-------|----------------------------|
| ● | PR STORM MAINTENANCE HOLE | — | EX. WATERMAIN |
| — | PR. STORM SEWER | ● | EX. STORM MAINTENANCE HOLE |
| — | EX. SANITARY SEWER | — | EX. STORM SEWER |
| ● | EX. SANITARY MAINTENANCE HOLE | — | EX. WATERCOURSE |
| ▨ | PR. LID | - - - | EX. PROPERTY LINE |
| | | ▨ | PROPERTY ACQUISITION |

DRAINAGE MASTER PLAN
FINAL PREFERRED ALTERNATIVE SOLUTION

PROJECT No. 111
SWMF RETROFIT No. 30 (LV02)
LOVERS CREEK WATERSHED

SCALE = 1:1,500

DATE: MARCH 2019



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LEGEND

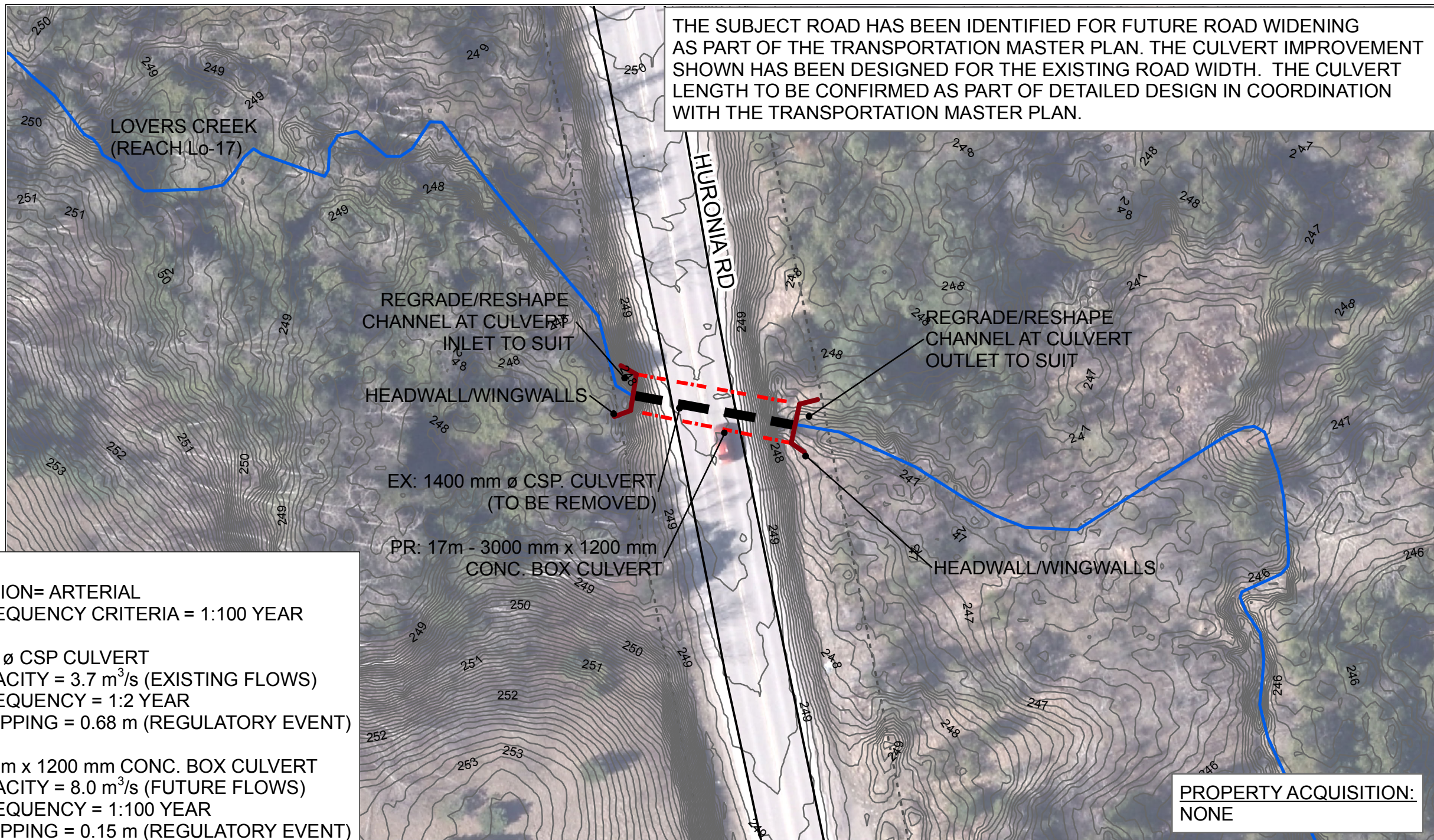
- PR STORM MAINTENANCE HOLE
- PR. STORM SEWER
- EX. SANITARY SEWER
- EX. SANITARY MAINTENANCE HOLE
- ▨ PR. LID
- EX. WATERMAIN
- EX. STORM MAINTENANCE HOLE
- EX. STORM SEWER
- EX. WATERCOURSE
- ▨ EX. PROPERTY LINE
- ▨ PROPERTY ACQUISITION

DRAINAGE MASTER PLAN
FINAL PREFERRED ALTERNATIVE SOLUTION

PROJECT No. 112
 SWMF RETROFIT No. 31 (LV03)
 LOVERS CREEK WATERSHED

SCALE = 1:1,000

DATE: MARCH 2019



HURONIA ROAD:
ROAD CLASSIFICATION= ARTERIAL
DESIGN FLOOD FREQUENCY CRITERIA = 1:100 YEAR

EXISTING: 1400 mm Ø CSP CULVERT
CONVEYANCE CAPACITY = 3.7 m³/s (EXISTING FLOWS)
DESIGN FLOOD FREQUENCY = 1:2 YEAR
DEPTH OF OVERTOPPING = 0.68 m (REGULATORY EVENT)

PROPOSED: 3000 mm x 1200 mm CONC. BOX CULVERT
CONVEYANCE CAPACITY = 8.0 m³/s (FUTURE FLOWS)
DESIGN FLOOD FREQUENCY = 1:100 YEAR
DEPTH OF OVERTOPPING = 0.15 m (REGULATORY EVENT)

TATHAM
ENGINEERING

Barrie

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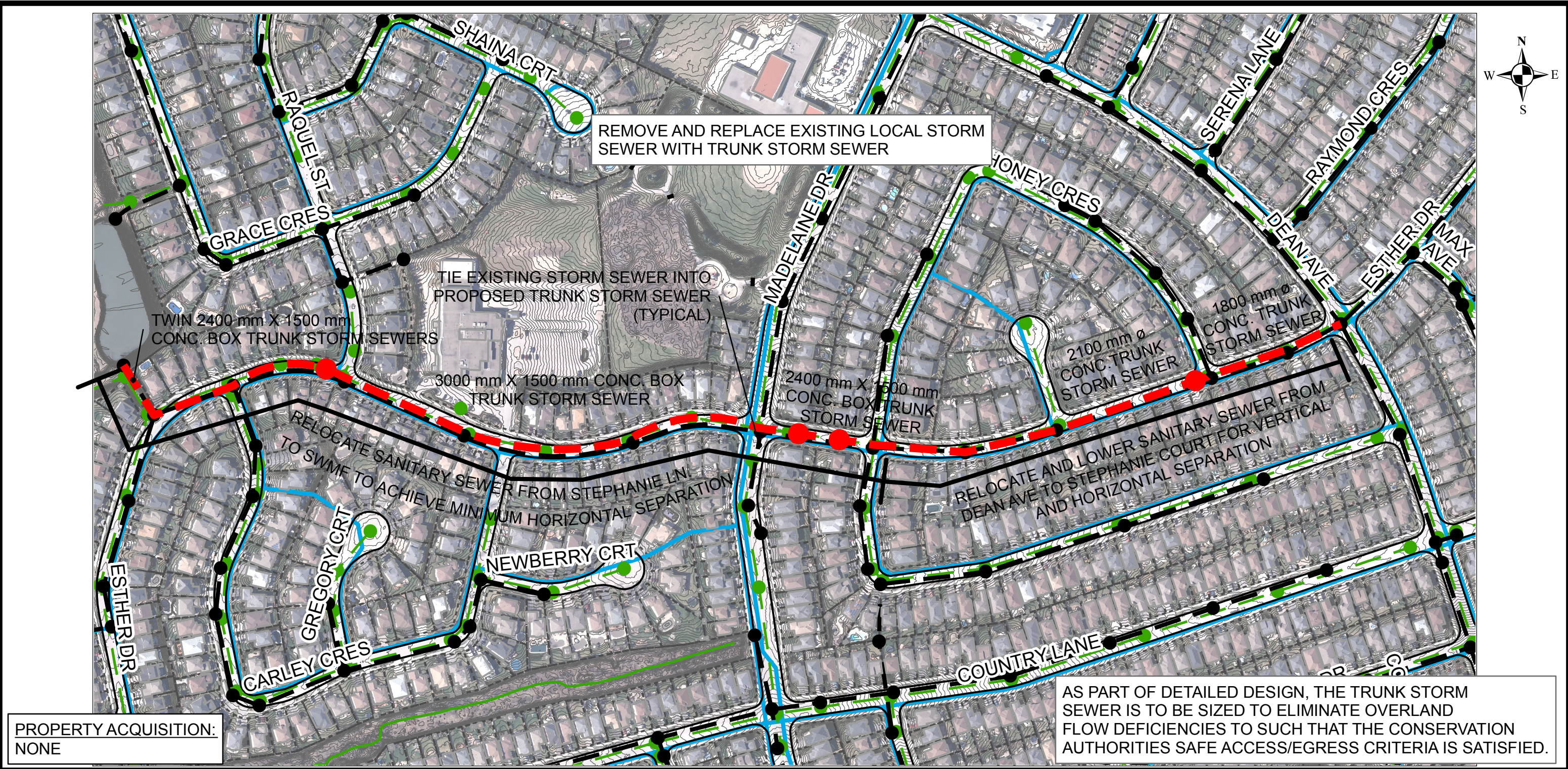
LEGEND



---	PR. CULVERT	---	EX. SANITARY SEWER
---	PR. STORM SEWER	●	EX. SANITARY MAINTENANCE HOLE
●	PR STORM MAINTENANCE HOLE	---	EX. WATERMAIN
---	EX. STORM SEWER	---	EX. CULVERT
●	EX. STORM MAINTENANCE HOLE	---	EX. PROPERTY LINE
---	WATERCOURSE	---	PROPERTY ACQUISITION

DRAINAGE MASTER PLAN FINAL PREFERRED ALTERNATIVE SOLUTION

PROJECT No. 113
CULVERT IMPROVEMENT No. 97
(HURONIA RD.)
LOVERS CREEK WATERSHED
SCALE = 1:500

DATE: MARCH 2019





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LEGEND

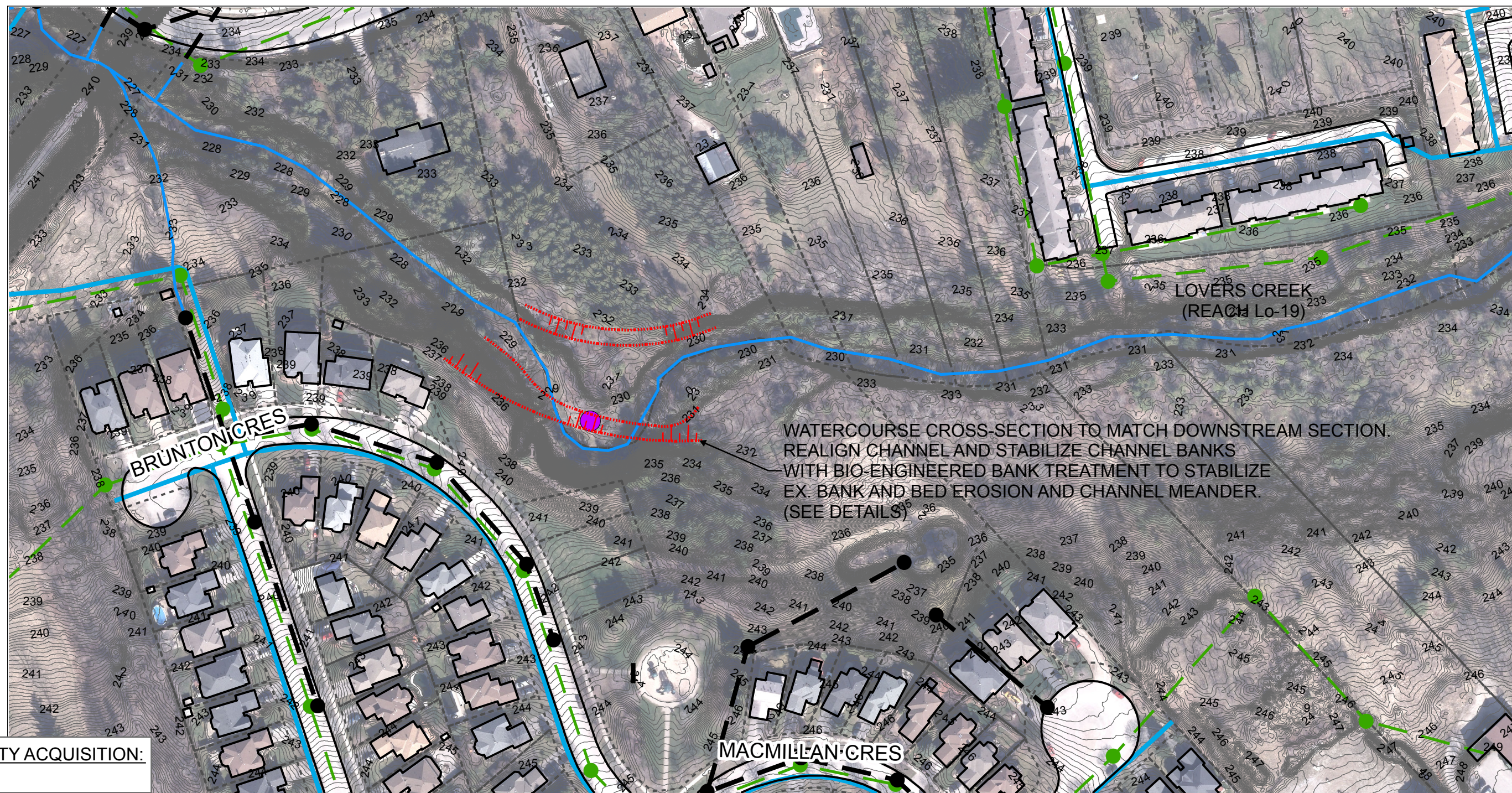
	EX. WATERCOURSE		TRUNK STORM SEWER (PREFERRED ROUTE)
	EX. STORM MAINTENANCE HOLE		EX. SANITARY MAINTENANCE HOLE
	EX. STORM SEWER		EX. SANITARY SEWER
	EX. PROPERTY LINE		EX. WATERMAIN
	PROPERTY ACQUISITION		

DRAINAGE MASTER PLAN
FINAL PREFERRED ALTERNATIVE SOLUTION

PROJECT No. 114
TRUNK STORM SEWER No. 7
LOVERS CREEK WATERSHED

SCALE = 1:3,000

DATE: MARCH 2019



PROPERTY ACQUISITION:
NONE



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LEGEND

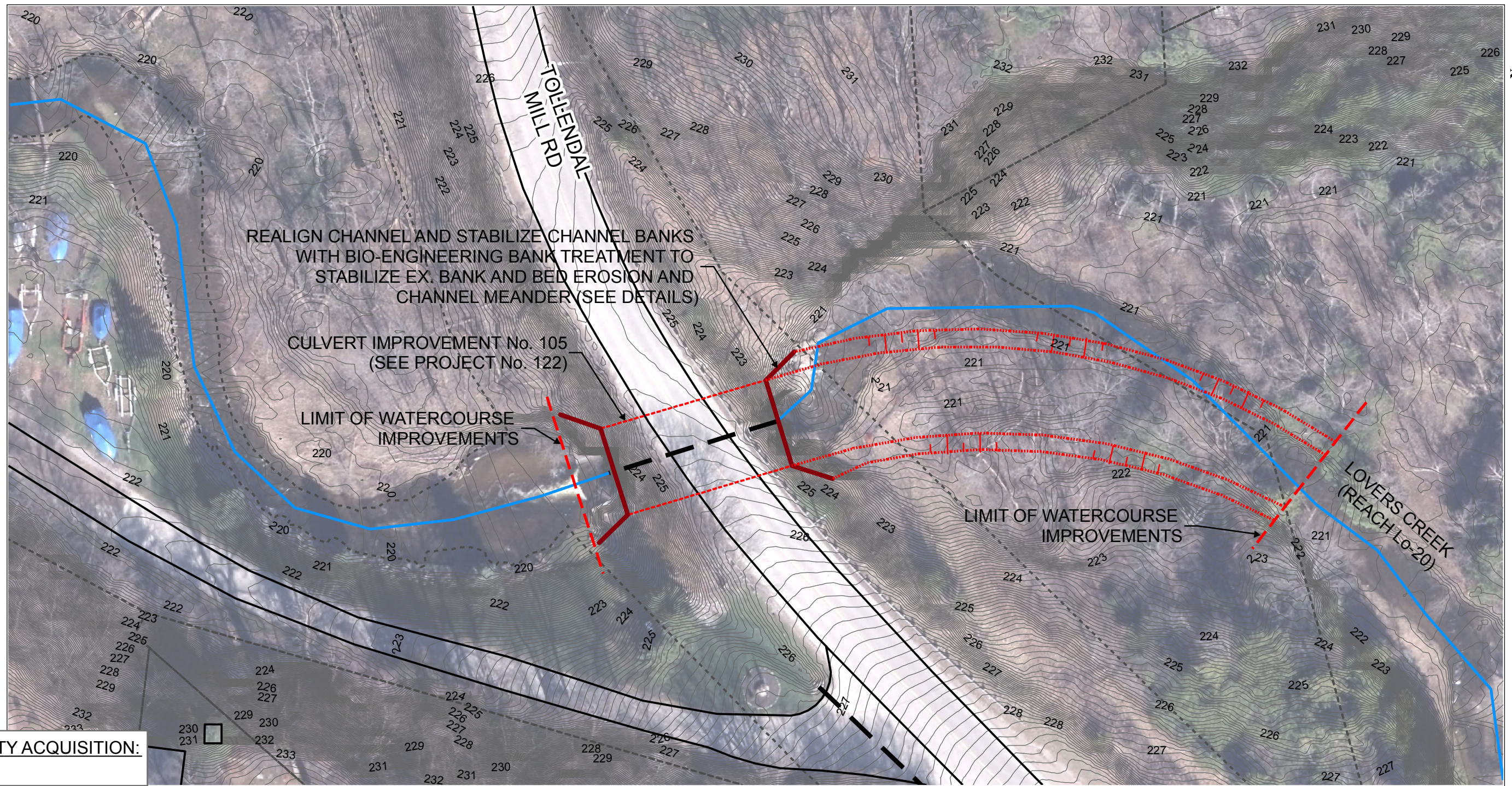
- | | | | |
|--|-------------------------------|--|----------------------------|
| | BANK EROSION | | EX. SANITARY SEWER |
| | BED EROSION/ KNICKPOINT | | EX. WATERCOURSE |
| | INFRASTRUCTURE AT RISK | | EX. WATERMAIN |
| | PR. STORM MAINTENANCE HOLE | | EX. STORM MAINTENANCE HOLE |
| | PR. STORM SEWER | | EX. STORM SEWER |
| | EX. SANITARY MAINTENANCE HOLE | | EX. PROPERTY LINE |
| | | | PROPERTY ACQUISITION |

DRAINAGE MASTER PLAN FINAL PREFERRED ALTERNATIVE SOLUTION

PROJECT No. 120
WATERCOURSE IMPROVEMENT No. 22
LOVERS CREEK WATERSHED

SCALE = 1:1,500

DATE: MARCH 2019



PROPERTY ACQUISITION:
NONE



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LEGEND

- | | | | |
|--|-------------------------------|--|----------------------------|
| | BANK EROSION | | EX. SANITARY SEWER |
| | BED EROSION/ KNICKPOINT | | EX. WATERCOURSE |
| | INFRASTRUCTURE AT RISK | | EX. WATERMAIN |
| | PR. STORM MAINTENANCE HOLE | | EX. STORM MAINTENANCE HOLE |
| | PR. STORM SEWER | | EX. STORM SEWER |
| | EX. SANITARY MAINTENANCE HOLE | | EX. PROPERTY LINE |
| | | | PROPERTY ACQUISITION |

DRAINAGE MASTER PLAN FINAL PREFERRED ALTERNATIVE SOLUTION

PROJECT No. 121
WATERCOURSE IMPROVEMENT No. 23
LOVERS CREEK WATERSHED

SCALE = 1:500

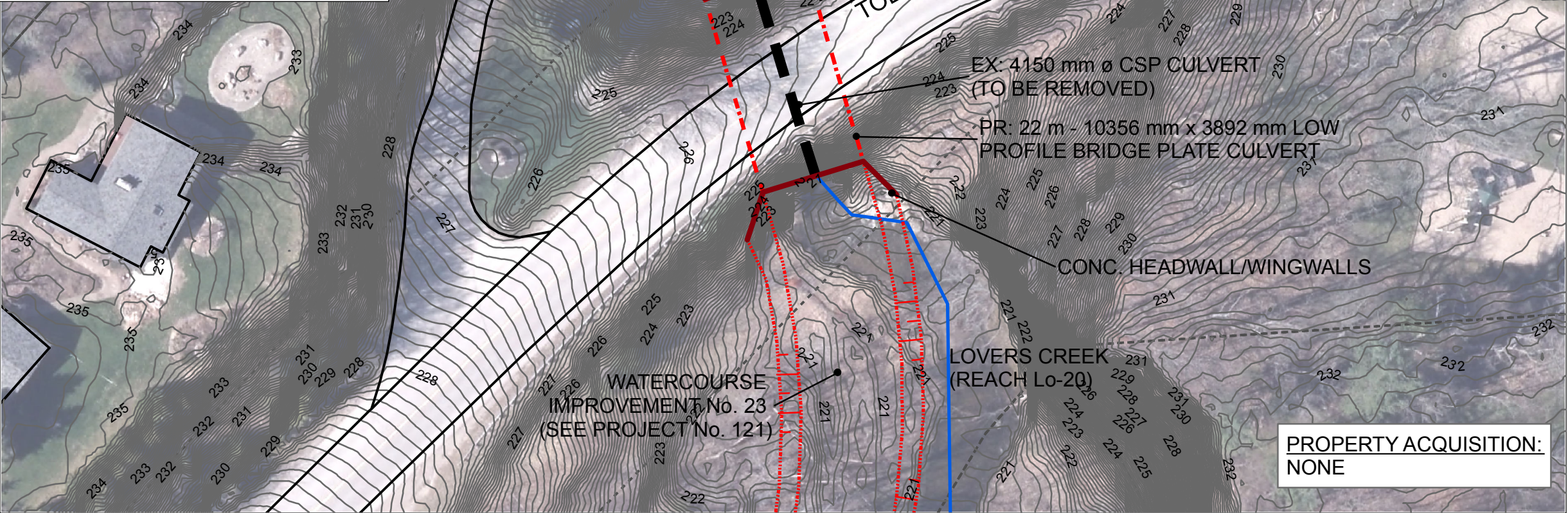
DATE: MARCH 2019

TOLLENDAL MILL ROAD:
ROAD CLASSIFICATION = MINOR COLLECTOR
DESIGN FLOOD FREQUENCY CRITERIA = 1:50 YEAR

EXISTING: 4150 mm ø CSP CULVERT
CONVEYANCE CAPACITY = 34.0 m³/s (EXISTING FLOWS)
DESIGN FLOOD FREQUENCY = 1:5 YEAR
DEPTH OF OVERTOPPING = 2.39 m (REGULATORY EVENT)

PROPOSED: 10356 mm x 3892 mm LOW PROFILE
BRIDGE PLATE CULVERT
CONVEYANCE CAPACITY = 119.3 m³/s (FUTURE FLOWS)
DESIGN FLOOD FREQUENCY = 1:100 YEAR
DEPTH OF OVERTOPPING = 1.97 m (REGULATORY EVENT)

PROPOSED CULVERT SIZE TO BE REVIEWED AT
DETAILED DESIGN TO REDUCE DEPTH OF OVERTOPPING



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LEGEND

- | | |
|------------------------------|---------------------------------|
| --- PR. CULVERT | --- EX. SANITARY SEWER |
| --- PR. STORM SEWER | ● EX. SANITARY MAINTENANCE HOLE |
| ● PR STORM MAINTENANCE HOLE | --- EX. WATERMAIN |
| --- EX. STORM SEWER | ■ EX. CULVERT |
| ● EX. STORM MAINTENANCE HOLE | --- EX. PROPERTY LINE |
| --- WATERCOURSE | ■ PROPERTY ACQUISITION |

DRAINAGE MASTER PLAN
FINAL PREFERRED ALTERNATIVE SOLUTION

PROJECT No. 122
CULVERT IMPROVEMENT No. 105
(TOLLAND MILL RD.)
LOVERS CREEK WATERSHED

SCALE = 1:500

DATE: MARCH 2019