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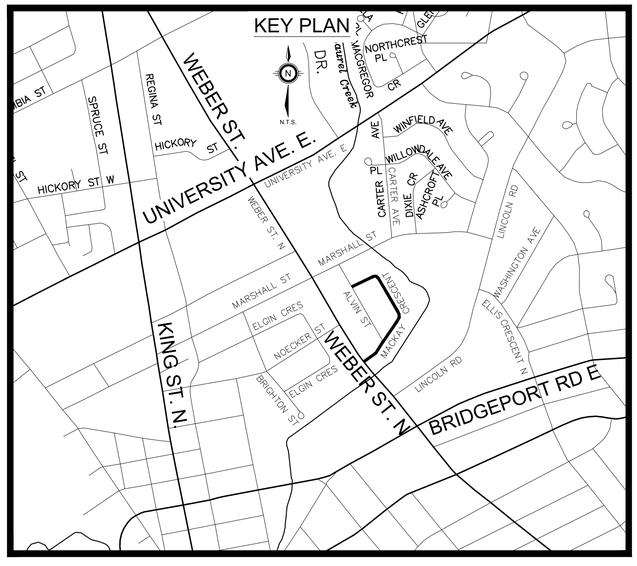
THE CITY OF Waterloo

MACKAY CRESCENT

RECONSTRUCTION

WEBER STREET N. TO ALVIN STREET

ISSUED FOR TENDER
MARCH 2021
CONTRACT # RFT21-08



IBI GROUP
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LAST SAVED BY:NDICK, CLOCATION: Mackay, Access: 9:32A 38 Mar 31/2021 BY:Patrick Dicker Mackay Access 9:32A 38 Mar 31/2021
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DRAWING INDEX

DRAWING No.	DESCRIPTION
--	COVER
1	DRAWING INDEX
2	REMOVALS - STA. 10+000 TO STA. 10+130
3	REMOVALS - STA. 10+130 TO STA. 10+260
4	REMOVALS - STA. 10+260 TO STA. 10+390
5	REMOVALS - STA. 10+390 TO STA. 10+480
6	LAUREL TRAIL REMOVALS - STA. 5+000 TO STA. 5+090
7	PLAN AND PROFILE - STA. 10+000 TO STA. 10+130
8	PLAN AND PROFILE - STA. 10+130 TO STA. 10+260
9	PLAN AND PROFILE - STA. 10+260 TO STA. 10+390
10	PLAN AND PROFILE - STA. 10+390 TO STA. 10+480
11	LAUREL TRAIL PLAN AND PROFILE - STA. 5+000 TO STA. 5+090
12	LAUREL TRAIL PLAN AND PROFILE - STA. 5+000 TO STA. 5+090
13	PAVEMENT ELEVATIONS - STA. 10+000 TO STA. 10+270
14	PAVEMENT ELEVATIONS - STA. 10+270 TO STA. 10+480
15	PAVEMENT MARKINGS STA. 10+000 TO STA. 10+270
16	PAVEMENT MARKINGS STA. 10+027 TO STA. 10+480
17	TYPICAL CROSS SECTIONS AND DETAILS
18	EROSION AND SEDIMENT PLAN
19	STAGING PLAN

INT.	DATE M/D/Y	REVISIONS
J.A.	03/08/21	ISSUED FOR TENDER
J.A.	02/01/21	90% SUBMISSION
J.A.	12/04/20	60% SUBMISSION

THE CITY OF Waterloo

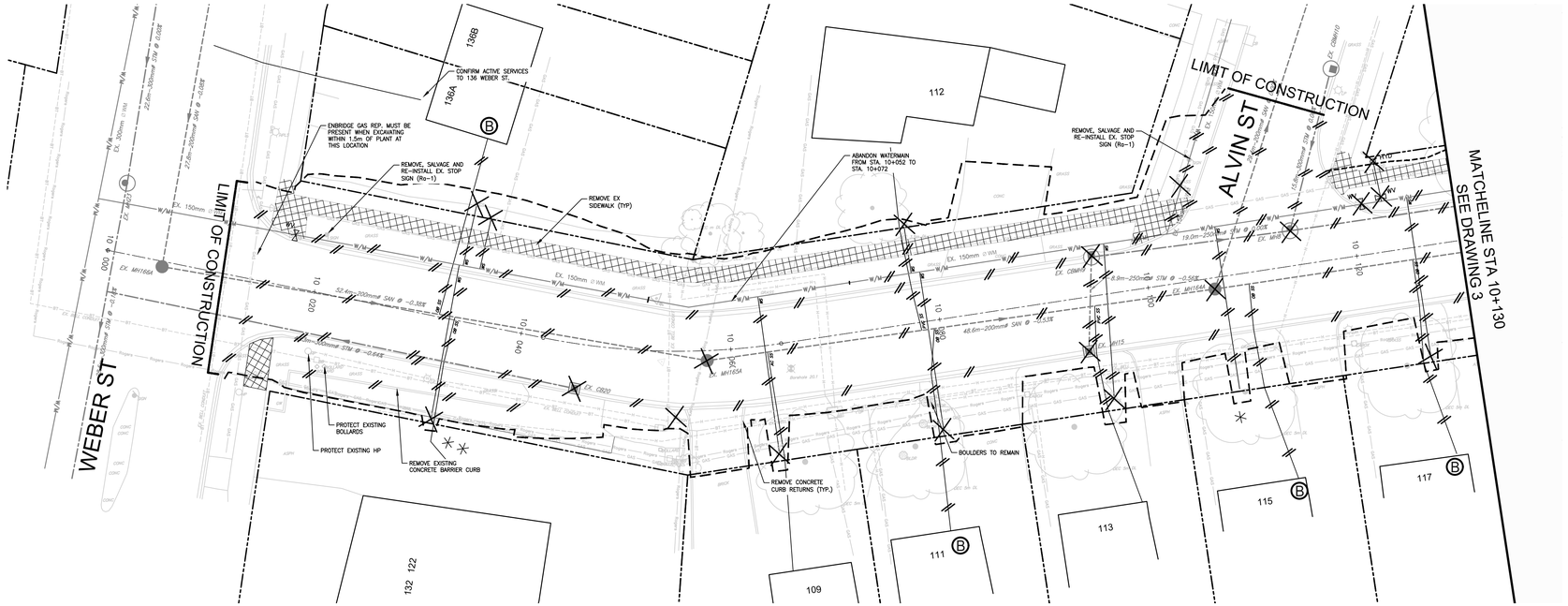
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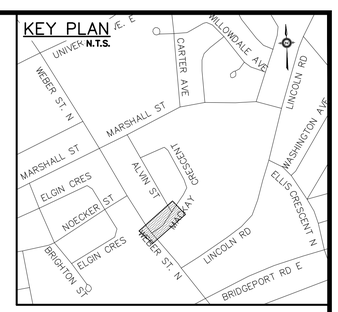
MACKAY CRESCENT
DRAWING INDEX

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SCALE:	HOR N/A VER N/A	DRAWN BY: T.Y.L CHECKED BY: J.A
FIELD BK.	PAGE	DATE
		DRAWING NO. 1

MACKAY CRESCENT



ALL EXISTING SIDEWALKS, CURBS AND SURFACE ASPHALT TO BE REMOVED AND DISPOSED OF OFF-SITE



GENERAL NOTES:

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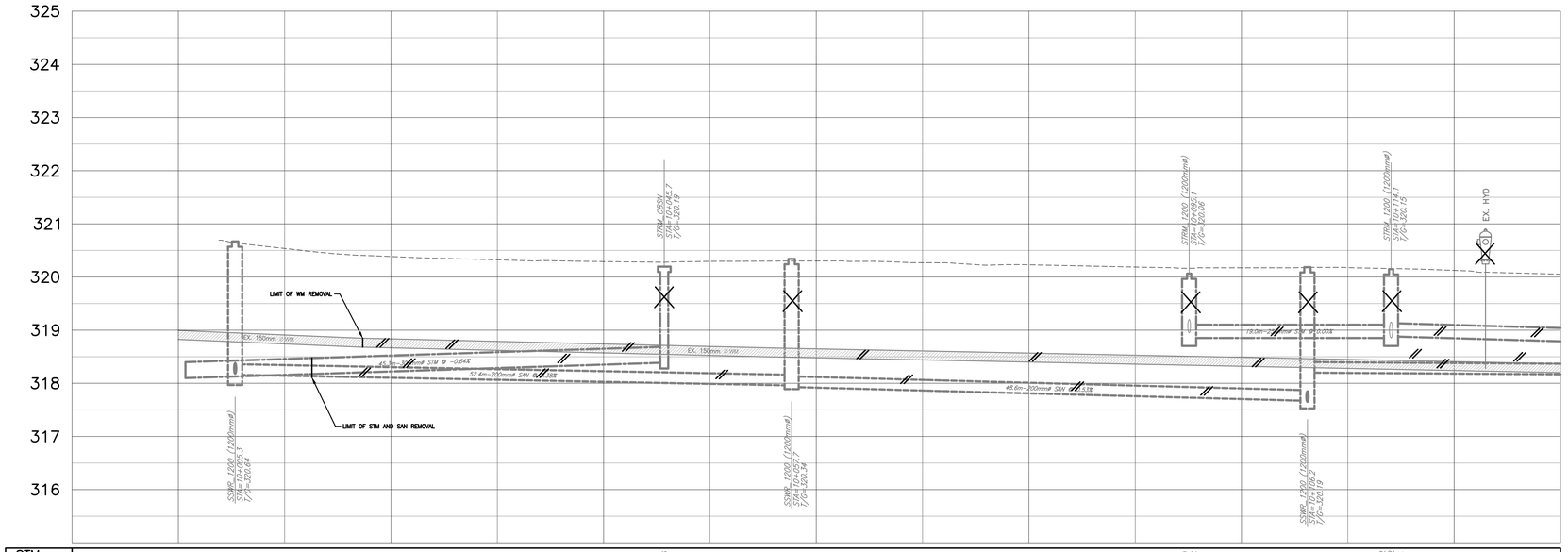
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- PROPERTY LINE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING WATERMAIN
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING CURB STOP VALVE
- BH-4 BOREHOLE
- REMOVALS SYMBOLS
- EXISTING GAS SERVICE
- EXISTING HYDRO
- EXISTING BELL SERVICE
- EXISTING ROGERS
- EXISTING WATER VALVE
- * ASSUME WATER SERVICE LOCATION
- ** ASSUME SANITARY SERVICE LOCATION
- (B) REPLACE THE EXISTING BLACK PIPE TO THE HOUSE
- REMOVAL/GRADING LIMITS

STATION	9+990		10+020	10+040	10+060	10+080	10+100	10+120	10+130
ELEV.			320.58	320.29	320.30	320.23	320.17	320.12	320.05



STM. SEWER INVERTS		45.3m–300mmø STM @ -0.64%		SW318.368			SE318.850 NE318.852	19.0m–250mmø STM @ 0.00%	SW318.852 NW318.852 NE318.882
SAN. SEWER INVERTS	NW318.180 NE318.160	52.4m–200mmø SAN @ 0.38%		SW317.980 NE317.930		48.6m–200mmø SAN @ 0.53%		SW317.670 NW317.650 NE318.200	

BENCHMARKS:
TO BE VERIFIED DURING CONSTRUCTION STAGE DRAWING ISSUANCE

J.A.	03/08/21	ISSUED FOR TENDER
J.A.	02/01/21	90% SUBMISSION
J.A.	12/04/20	60% SUBMISSION
INT.	DATE M/D/Y	REVISIONS

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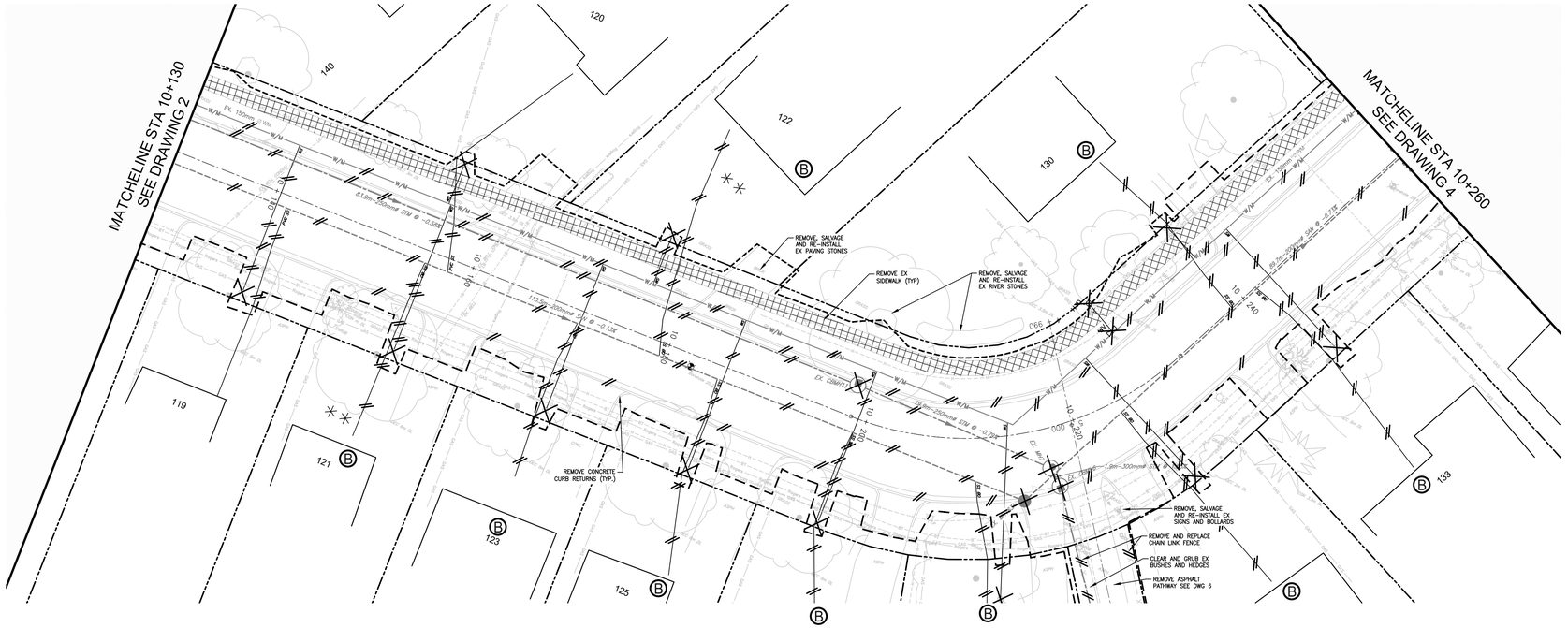
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MACKAY CRESCENT
EXISTING/REMOVALS

STA. (10+000 – 10+130)

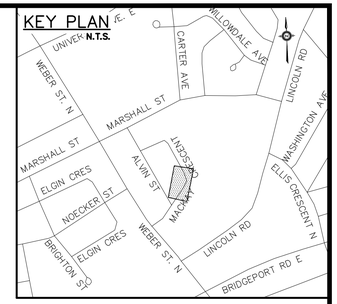
DATE:	DEC 04, 2020	DESIGNED BY:	T.Y.L
SCALE:	HOR 1:250 VER 1:50	DRAWN BY:	T.Y.L
		CHECKED BY:	J.A
FIELD BK.	PAGE / DATE	DRAWING NO.	2

MACKAY CRESCENT



ALL EXISTING SIDEWALKS, CURBS AND SURFACE ASPHALT TO BE REMOVED AND DISPOSED OF OFF-SITE





GENERAL NOTES:

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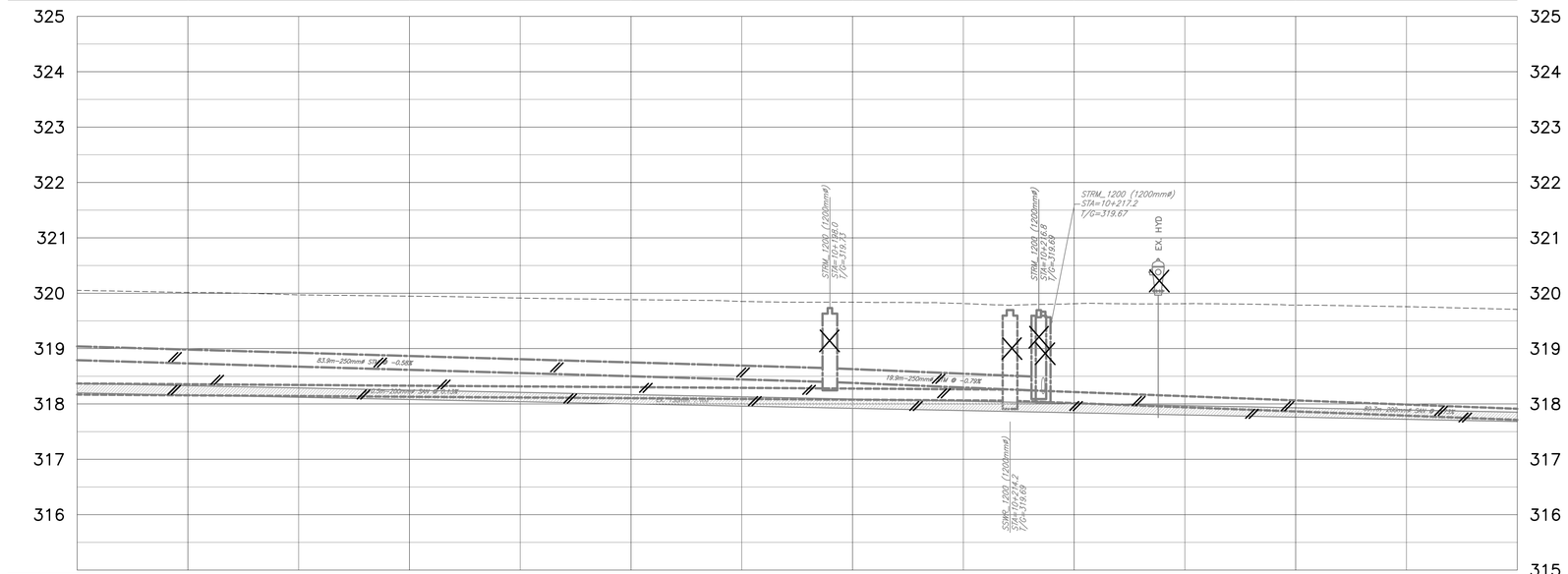
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- PROPERTY LINE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING WATERMAIN
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- CS — EXISTING CURB STOP VALVE
- BH-4 — BOREHOLE
- REMOVALS SYMBOLS
- GAS — EXISTING GAS SERVICE
- EXISTING HYDRO
- BT — EXISTING BELL SERVICE
- Rogers — EXISTING ROGERS
- WV — EXISTING WATER VALVE
- * — ASSUME WATER SERVICE LOCATION
- ** — ASSUME SANITARY SERVICE LOCATION
- (B) — REPLACE THE EXISTING BLACK PIPE TO THE HOUSE
- REMOVAL/GRADING LIMITS

STATION	10+130	10+140	10+160	10+180	10+200	10+220	10+240	10+260
ELEV.	320.05	320.01	319.95	319.88	319.84	319.81	319.79	319.77



STM. SEWER INVERTS	83.9m-250mm# STM @ -0.58%	SW318.396 NE318.396	19.9m-250mm# STM @ -0.79%	SW318.240 ES318.240 SW318.240 ES318.180 W318.210
SAN. SEWER INVERTS	110.5m-200mm# SAN @ 0.13%	SW318.059 NW318.059	89.7m-200mm# SAN @ 0.73%	

BENCHMARKS:
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J.A.	12/04/20	60% SUBMISSION
INT.	DATE M/D/Y	REVISIONS

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PUBLIC WORKS SERVICES

THE CITY OF Waterloo

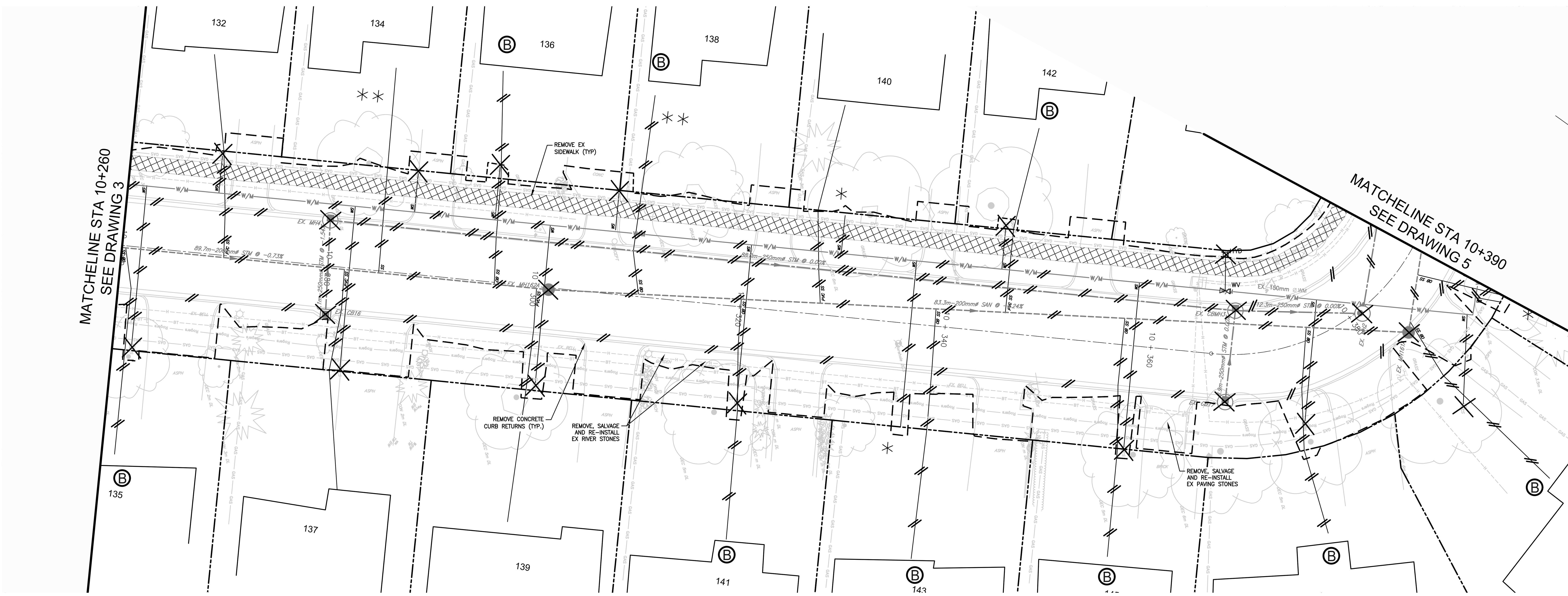
SEAL

MACKAY CRESCENT
EXISTING/REMOVALS

STA. (10+130 – 10+260)

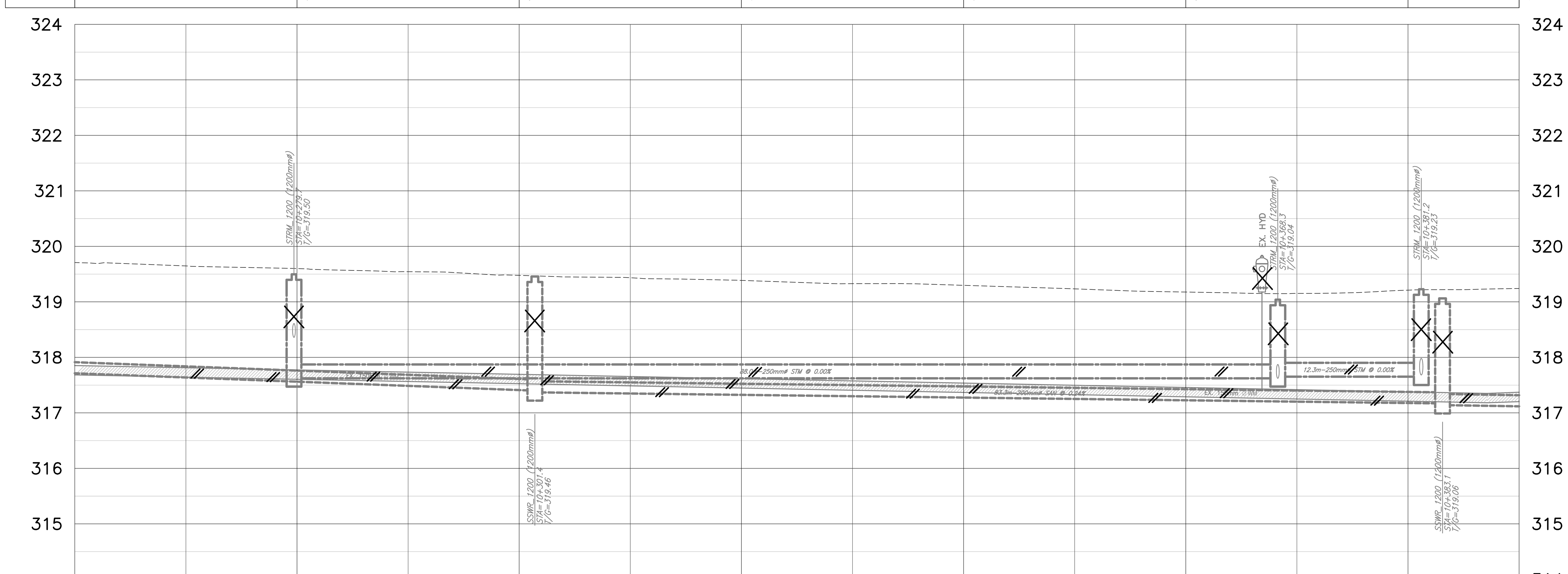
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FIELD BK.	PAGE / DATE	DRAWING NO.	3

MACKAY CRESCENT



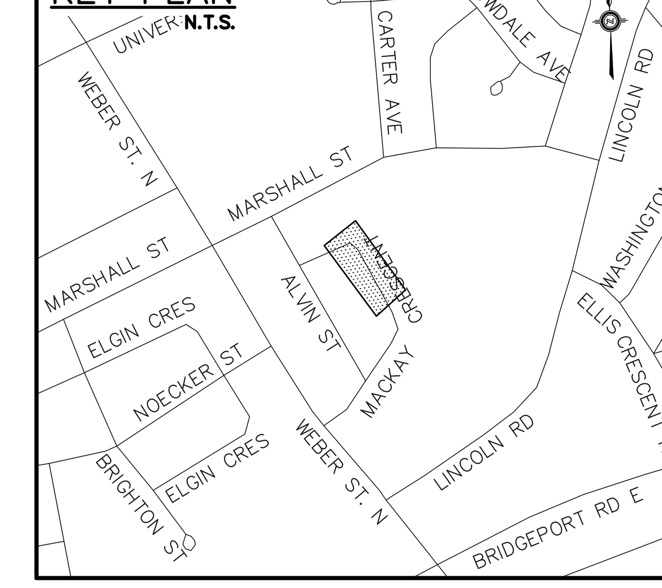
ALL EXISTING SIDEWALKS, CURBS AND SURFACE ASPHALT TO BE REMOVED AND DISPOSED OF OFF–SITE

STATION	10+260	10+280	10+300	10+320	10+340	10+360	10+380	10+390
ELEV.	319.71	319.60	319.48	319.39	319.30	319.18	319.21	319.24



STM. SEWER INVERTS	NE318.360 NW317.622		88.0m–250mmø STM @ 0.00%	SE317.622 NE317.622 NW317.652	12.3m–250mmø STM @ 0.00%	SE317.652 SW317.682
SAN. SEWER INVERTS		SE317.400 NW317.370	83.3m–200mmø SAN @ 0.24%			SE317.170 SW317.140

KEY PLAN
N.T.S.



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J.A.	03/08/21	ISSUED FOR TENDER
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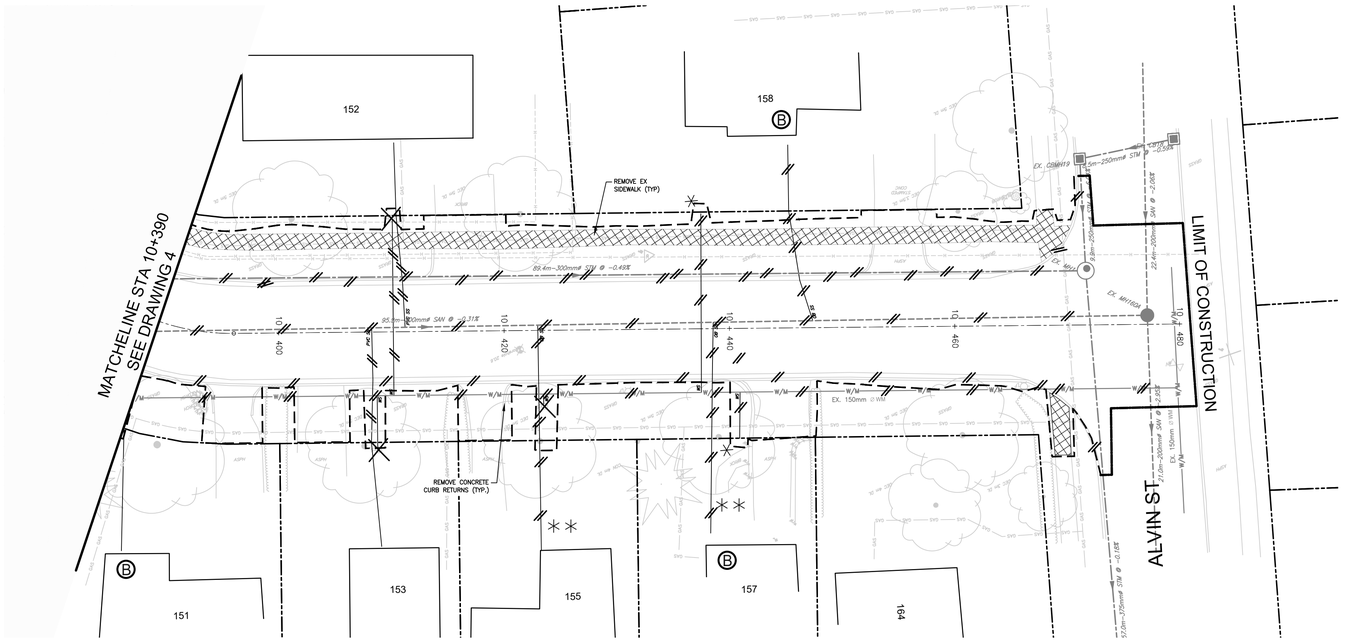
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MACKAY CRESCENT
EXISTING/REMOVALS

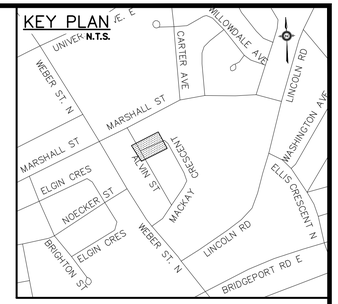
STA. (10+260 – 10+390)

DATE:	DEC 04, 2020	DESIGNED BY:	T.Y.L
SCALE:	HOR 1:250 VER 1:50	DRAWN BY:	T.Y.L
		CHECKED BY:	J.A
FIELD BK. / PAGE / DATE		DRAWING NO.	4

MACKAY CRESCENT



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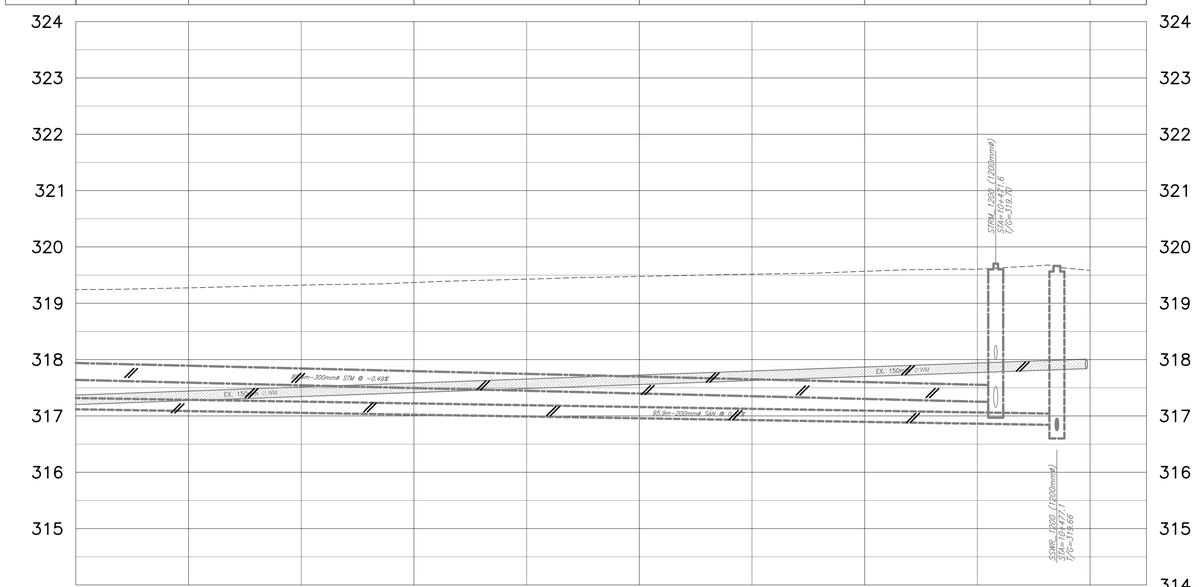
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- REMOVAL/GRADING LIMITS

STATION	10+390	10+400	10+420	10+440	10+460	10+480	10+485
ELEV.	319.24	319.27	319.37	319.48	319.57		



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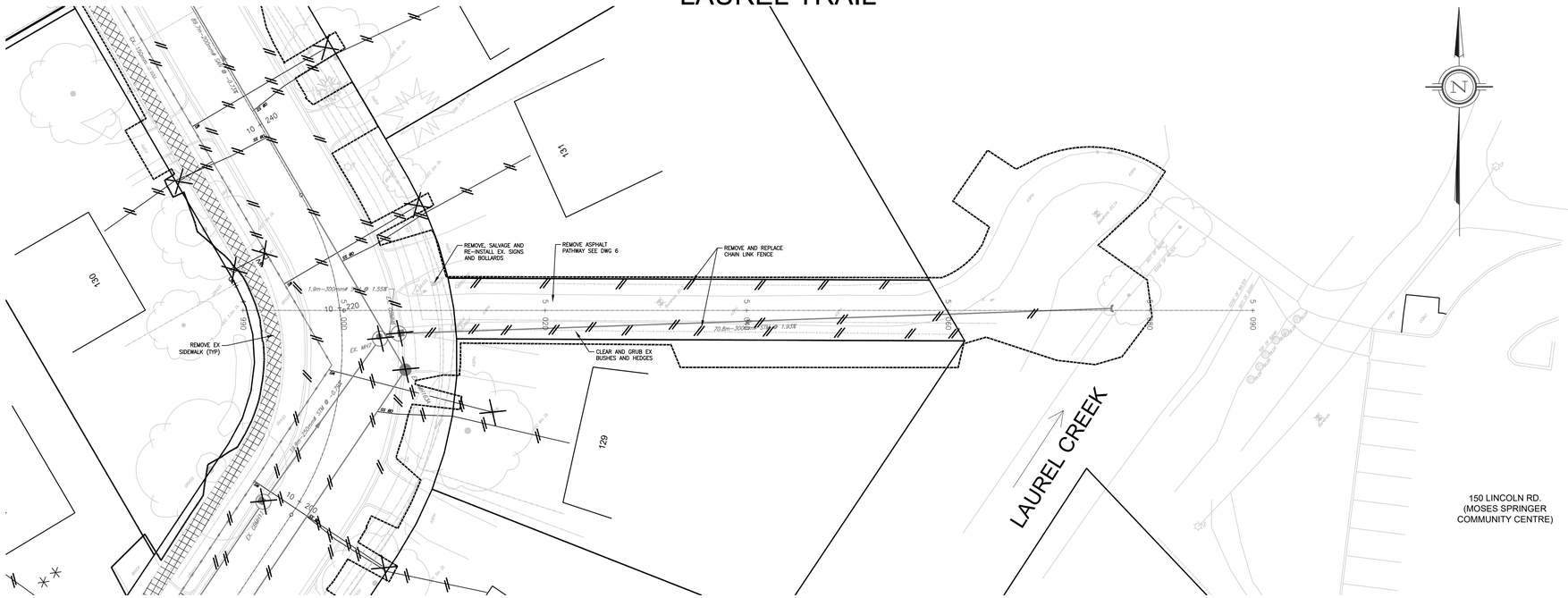
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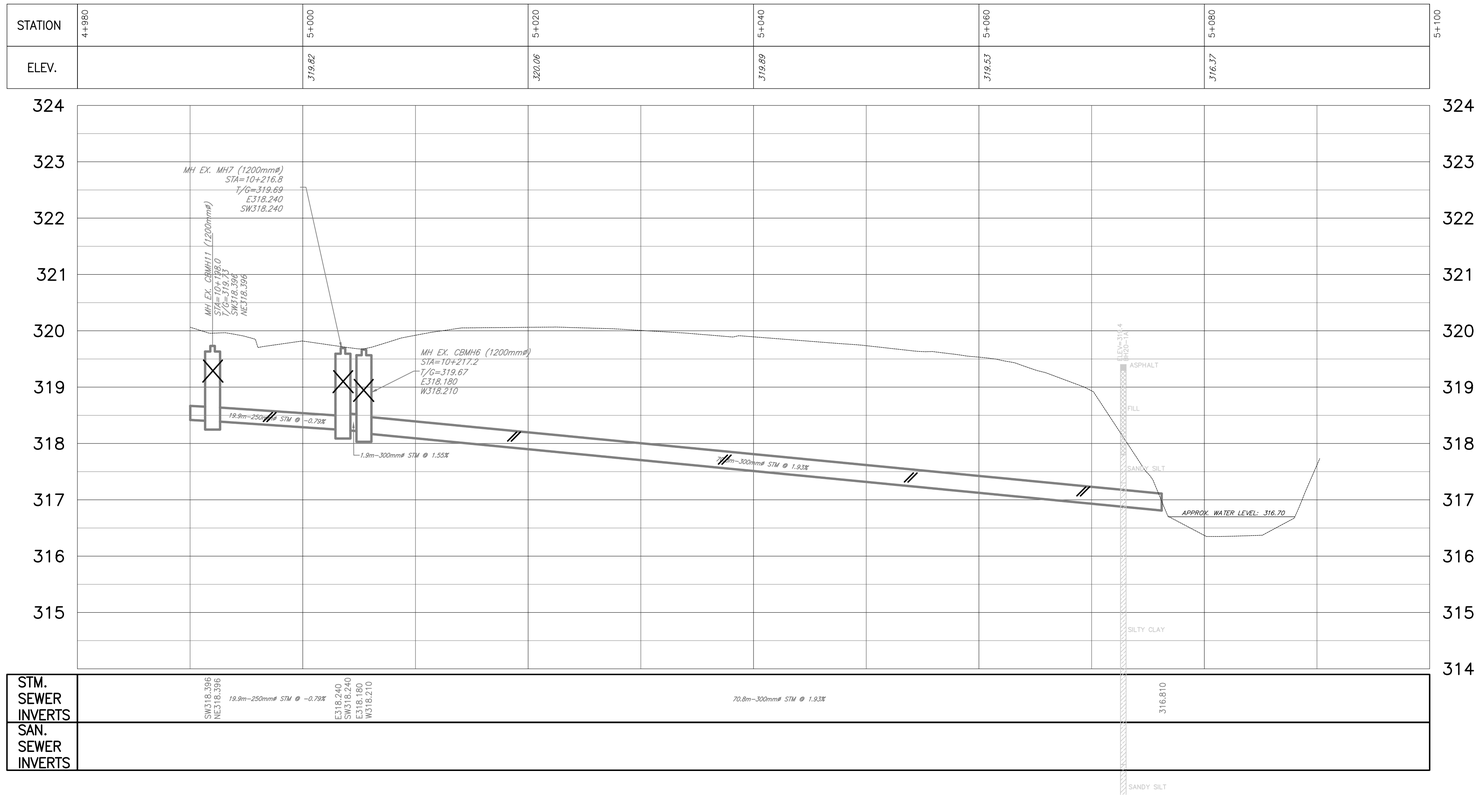
MACKAY CRESCENT
EXISTING/REMOVALS

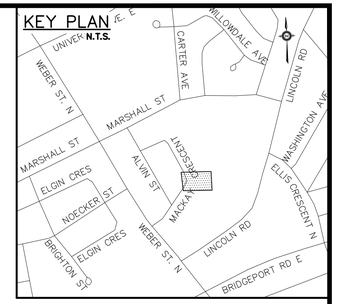
STA. (10+390 – 10+480)

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SCALE:	HOR 1:250 VER 1:50	DRAWN BY:	T.Y.L
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FIELD BK.	PAGE / DATE	DRAWING NO.	5

LAUREL TRAIL







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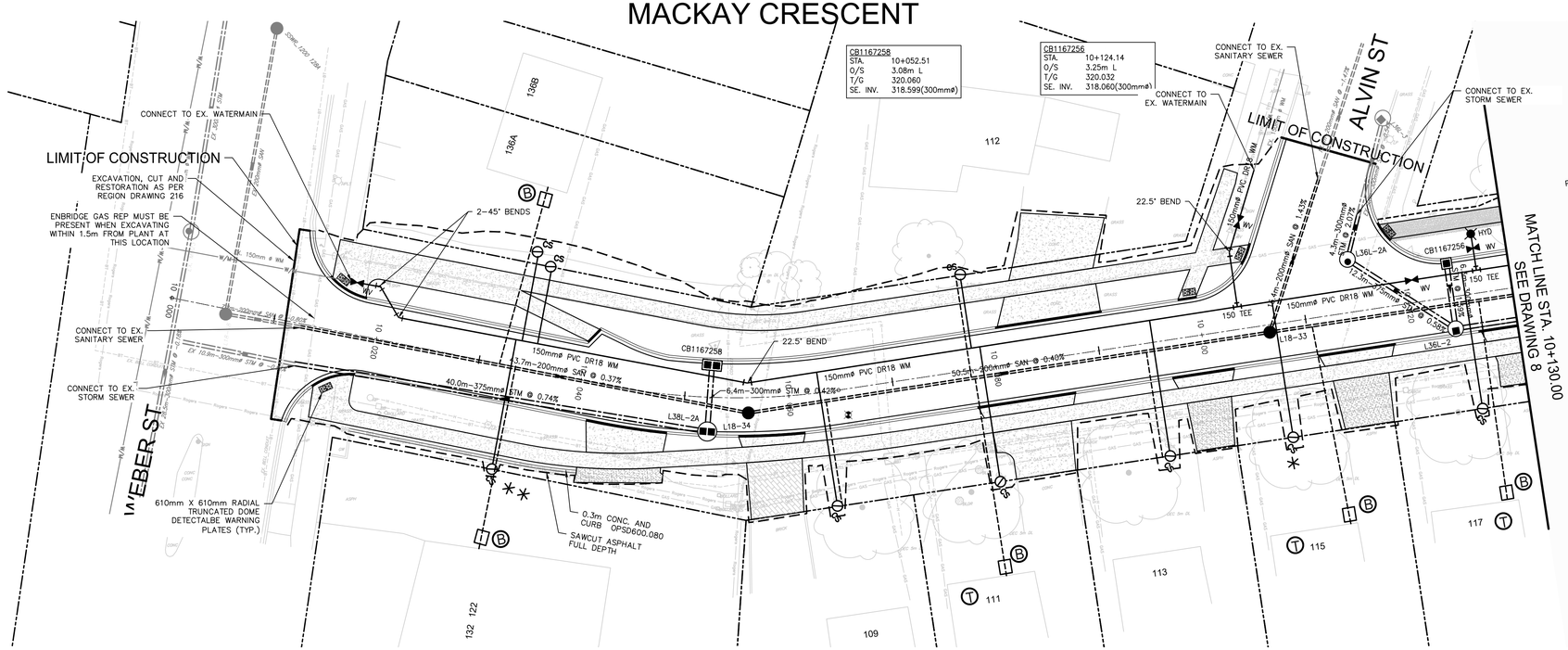
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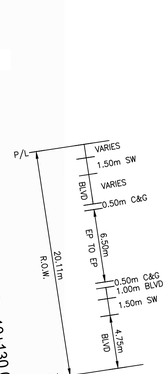
LAUREL TRAIL
EXISTING/REMOVAL

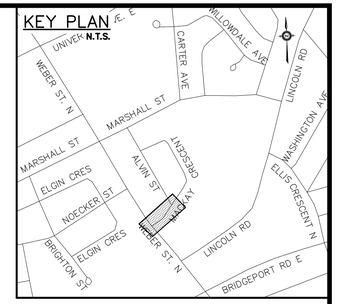
STA. (5+000 – 5+090)

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FIELD BK.	PAGE / DATE	DRAWING NO.	6

MACKAY CRESCENT







GENERAL NOTES:

THE POSITION OF POLE LINE, CONDUITS, WATER MAINS, SEWERS AND OTHER UTILITIES. FEATURES AND STRUCTURES ARE NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND WHERE SHOWN, THE ACCURACY OF THE POSITIONS IS NOT GUARANTEED. BEFORE STARTING CONSTRUCTION, THE CONTRACTOR SHALL INFORM HIM/HER SELF OF THE EXACT LOCATION OF SUCH UTILITIES AND STRUCTURES.

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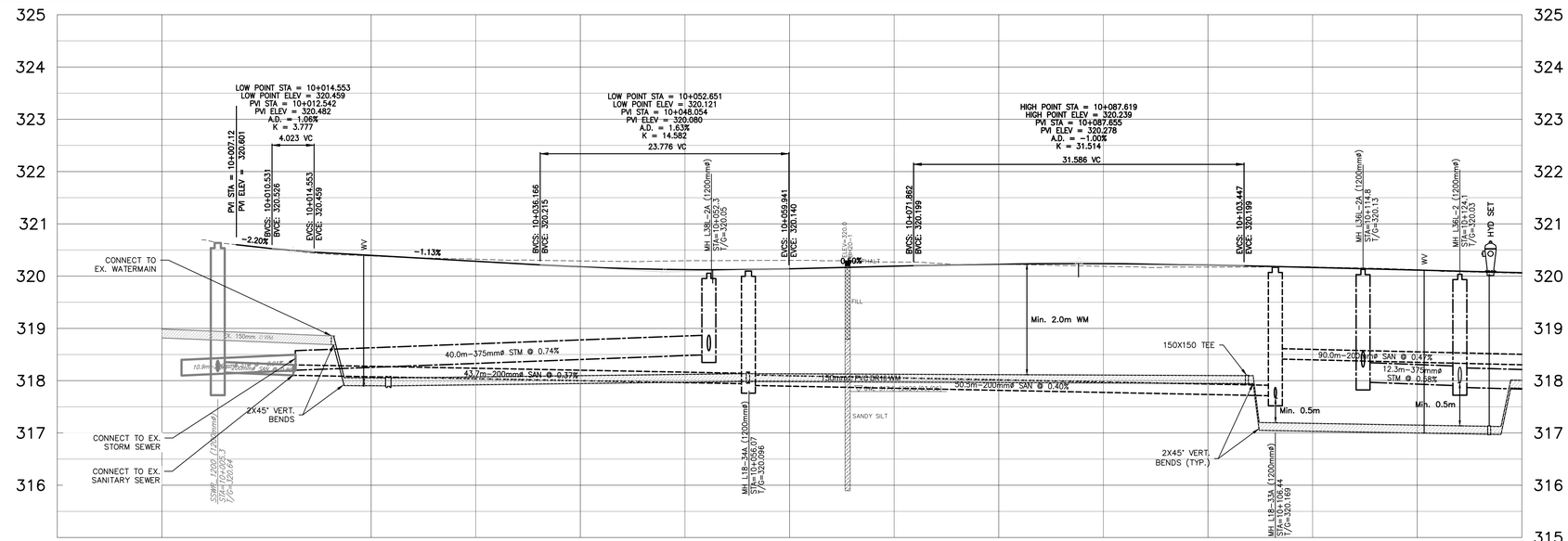
ALL WORK REPORTED IN ACCORDANCE WITH THE LATEST RELEVANT SECTIONS OF THE OPSD's, OPSS's, ONTARIO BUILDING CODE AND THE REQUIREMENTS OF THE CITY OF WATERLOO AND REGION OF WATERLOO

ALL DISTURBED AREAS RESTORED TO ORIGINAL CONDITIONS OR BETTER IN ACCORDANCE WITH CITY OF WATERLOO AND REGION OF WATERLOO DRAWINGS/SPECIFICATIONS.

LEGEND

	PROPERTY LINE		PROPOSED STORM DCBMH, DCB, CB, MH
	EXISTING STORM MH, CBMH, DCBMH, DCB, CB		PROPOSED SANITARY MH
	EXISTING SANITARY MH		PROPOSED STORM SEWER
	EXISTING FIRE HYDRANT		PROPOSED SANITARY SEWER
W/M	EXISTING WATER VALVE		PROPOSED WATERMAIN
	EXISTING SANITARY SEWER		PROPOSED FIRE HYDRANT
	EXISTING STORM SEWER		PROPOSED VALVE BOX
W/M	EXISTING WATERMAIN		PROPOSED W/M TEE
	HYDRO POLE/LIGHT STANDARD		PROPOSED CONCRETE SIDEWALK, APRON AND DRIVEWAY
GAS GAS	EXISTING GAS SERVICE		PROPOSED ASPHALT DRIVEWAY
HY	EXISTING HYDRO		PROPOSED INTERLOCK DRIVEWAY
BT	EXISTING BELL SERVICE		PROPOSED SANITARY AND/OR WATER SERVICES TO BE TUNNELLED TO AVOID CONFLICTS WITH TREES, PLANTING BEDS, ETC.
Rogers	EXISTING ROGERS		
*	ASSUME WATER SERVICE LOCATION	T	
**	ASSUME SANITARY SERVICE LOCATION		
B	REPLACE THE EXISTING BLACK PIPE TO THE HOUSE		

STATION	9+990		10+020	10+040	10+060	10+080	10+100	10+120	10+130
ELEV.			320.397 320.38	320.176 320.29	320.140 320.30	320.229 320.23	320.214 320.17	320.116 320.12	320.065 320.05



STM. SEWER INVERTS		40.0m-375mmø STM @ 0.74%		SW318.497 NW318.572				NW318.260 E317.973	12.3m-375mmø STM @ 0.58% W317.902 NW317.860 NE317.872
SAN. SEWER INVERTS	NW318.18 NE318.16	43.7m-200mmø SAN @ 0.37%		SW317.940 NE317.910		50.5m-200mmø SAN @ 0.40%		SW317.710 NW317.650 NE318.415	90.0m-200mmø SAN @ 0.47%

BENCHMARKS:

TO BE VERIFIED DURING CONSTRUCTION STAGE DRAWING ISSUANCE

INT.	DATE M/D/Y	REVISIONS
J.A.	03/08/21	ISSUED FOR TENDER
J.A.	02/01/21	90% SUBMISSION
J.A.	12/04/20	60% SUBMISSION

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101 - 410 Albert Street
Waterloo ON N2L 3V3 Canada
tel 519 585 2255
ibigroup.com

CITY OF WATERLOO
PUBLIC WORKS SERVICES

THE CITY OF Waterloo

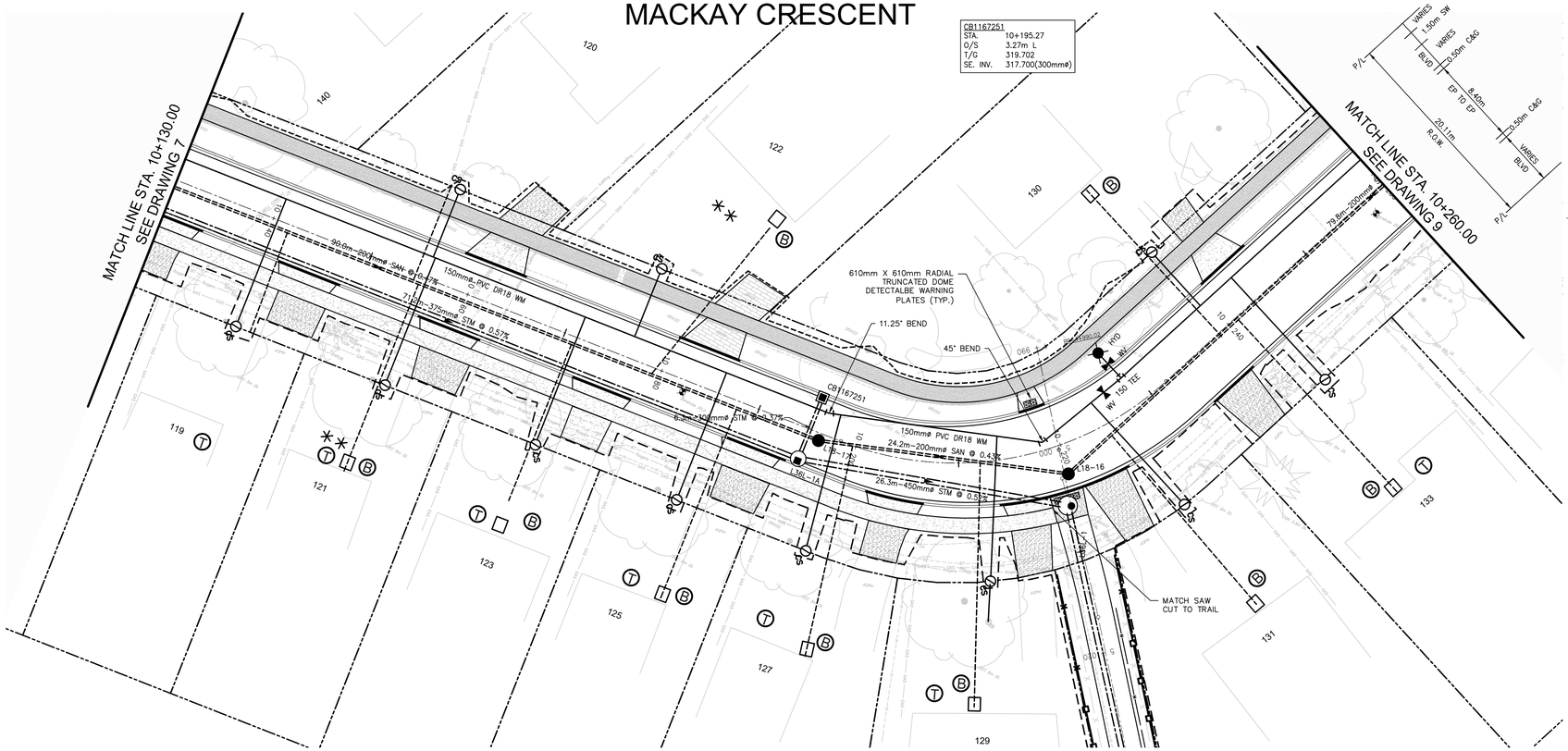
LICENSED PROFESSIONAL ENGINEER
J. C. ARCESE
100203668
2021-03-10
PROVINCE OF ONTARIO
SEAL

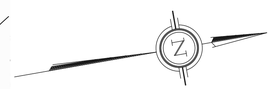
MACKAY CRESCENT RECONSTRUCTION

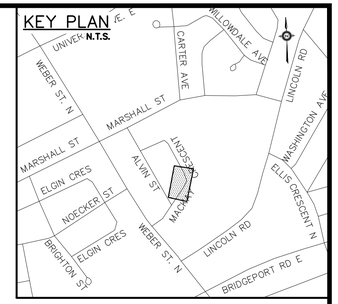
STA. (10+000 – 10+130)

DATE: SEPT. 28, 2020		DESIGNED BY:	T.Y.L
SCALE:	HOR 1: 250 VER 1: 50	DRAWN BY:	T.Y.L
		CHECKED BY:	J.A
FIELD BK.	PAGE	DRAWING NO.	7

MACKAY CRESCENT







GENERAL NOTES:

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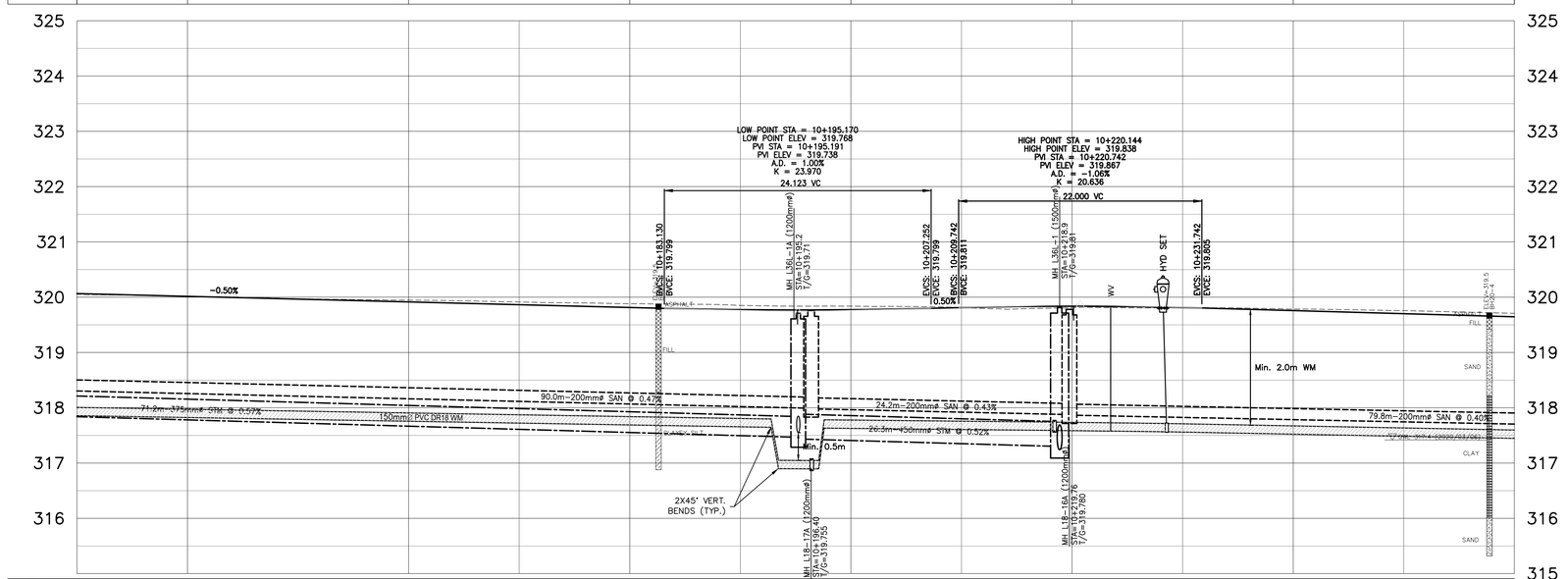
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LEGEND

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EXISTING SANITARY MH	PROPOSED STORM SEWER
EXISTING FIRE HYDRANT	PROPOSED SANITARY SEWER
EXISTING WATER VALVE	PROPOSED WATERMAIN
EXISTING SANITARY SEWER	PROPOSED FIRE HYDRANT
EXISTING STORM SEWER	PROPOSED VALVE BOX
EXISTING WATERMAIN	PROPOSED W/M TEE
HYDRO POLE/LIGHT STANDARD	PROPOSED CONCRETE SIDEWALK, APRON AND DRIVEWAY
EXISTING GAS SERVICE	PROPOSED ASPHALT DRIVEWAY
EXISTING HYDRO	PROPOSED INTERLOCK DRIVEWAY
EXISTING BELL SERVICE	PROPOSED SANITARY AND/OR WATER SERVICES TO BE TUNNELLED TO AVOID CONFLICTS WITH TREES, PLANTING BEDS, ETC.
EXISTING ROGERS	
ASSUME WATER SERVICE LOCATION	
ASSUME SANITARY SERVICE LOCATION	
REPLACE THE EXISTING BLACK PIPE TO THE HOUSE	

STATION	10+130	10+140	10+160	10+180	10+200	10+220	10+240	10+260
ELEV.	320.065 320.05	320.015 320.01	319.915 319.95	319.814 319.88	319.773 319.84	319.838 319.81	319.759 319.79	319.646 319.71



STM. SEWER INVERTS	71.2m–375mmø STM @ 0.57%	SW317.466 NW317.356 N317.436	26.3m–450mmø STM @ 0.52% S317.300 E317.240
SAN. SEWER INVERTS	90.0m–200mmø SAN @ 0.47%	SW317.991 N317.981	24.2m–200mmø SAN @ 0.43% S317.877 NW317.867 — 79.8m–200mmø SAN @ 0.40%

BENCHMARKS:

TO BE VERIFIED DURING CONSTRUCTION STAGE DRAWING ISSUANCE

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J.A.	02/01/21	90% SUBMISSION
J.A.	12/04/20	60% SUBMISSION
INT.	DATE M/D/Y	REVISIONS

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CITY OF WATERLOO
PUBLIC WORKS SERVICES

THE CITY OF Waterloo

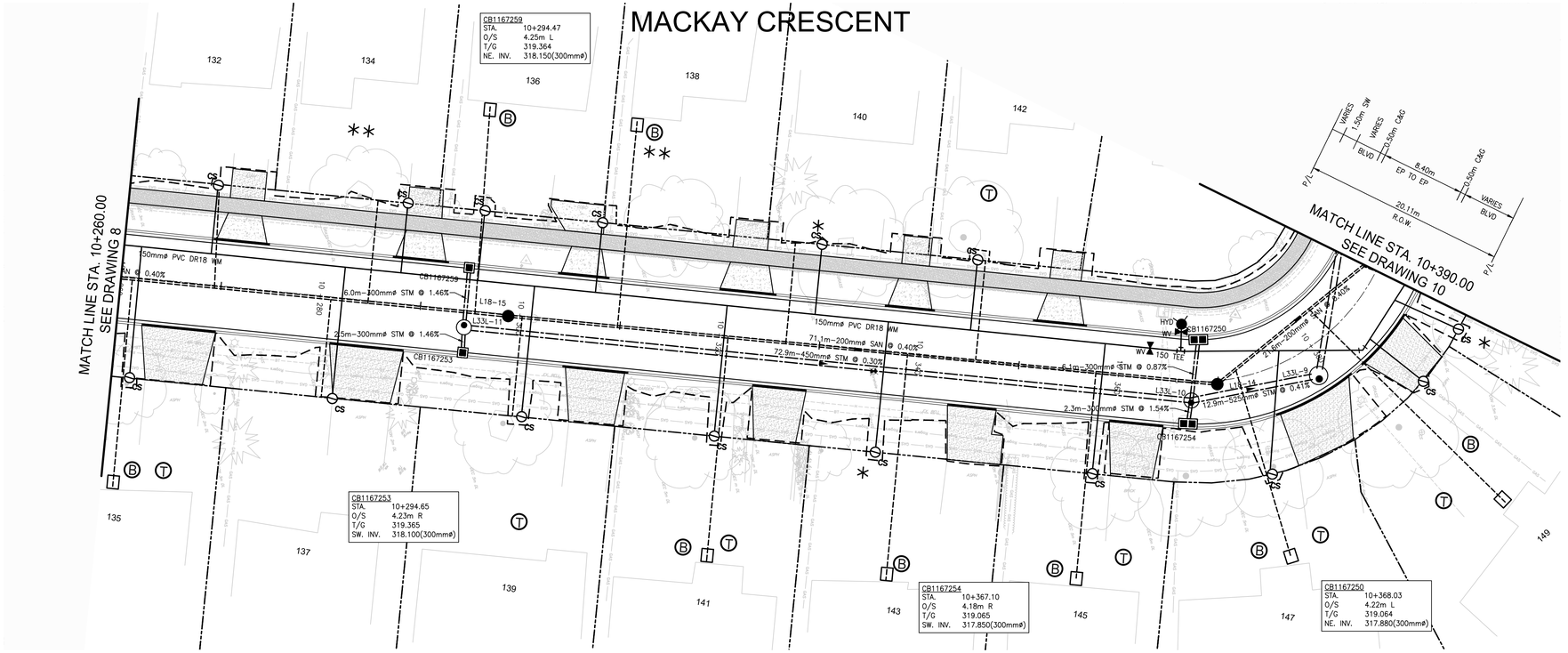
LICENSED PROFESSIONAL ENGINEER
J. C. ARCESE
100203668
2021-03-10
PROVINCE OF ONTARIO
SEAL

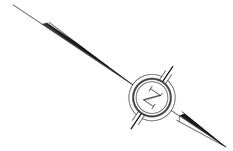
MACKAY CRESCENT RECONSTRUCTION

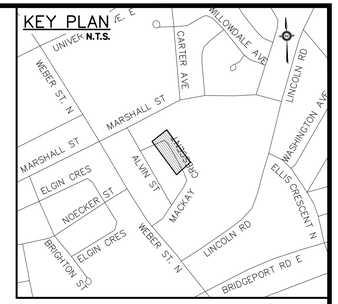
STA. (10+130 – 10+260)

DATE: SEPT. 28, 2020		DESIGNED BY:	T.Y.L
SCALE:	HOR 1:250 VER 1:50	DRAWN BY:	T.Y.L
		CHECKED BY:	J.A
FIELD BK.	PAGE	DRAWING NO.	8

MACKAY CRESCENT







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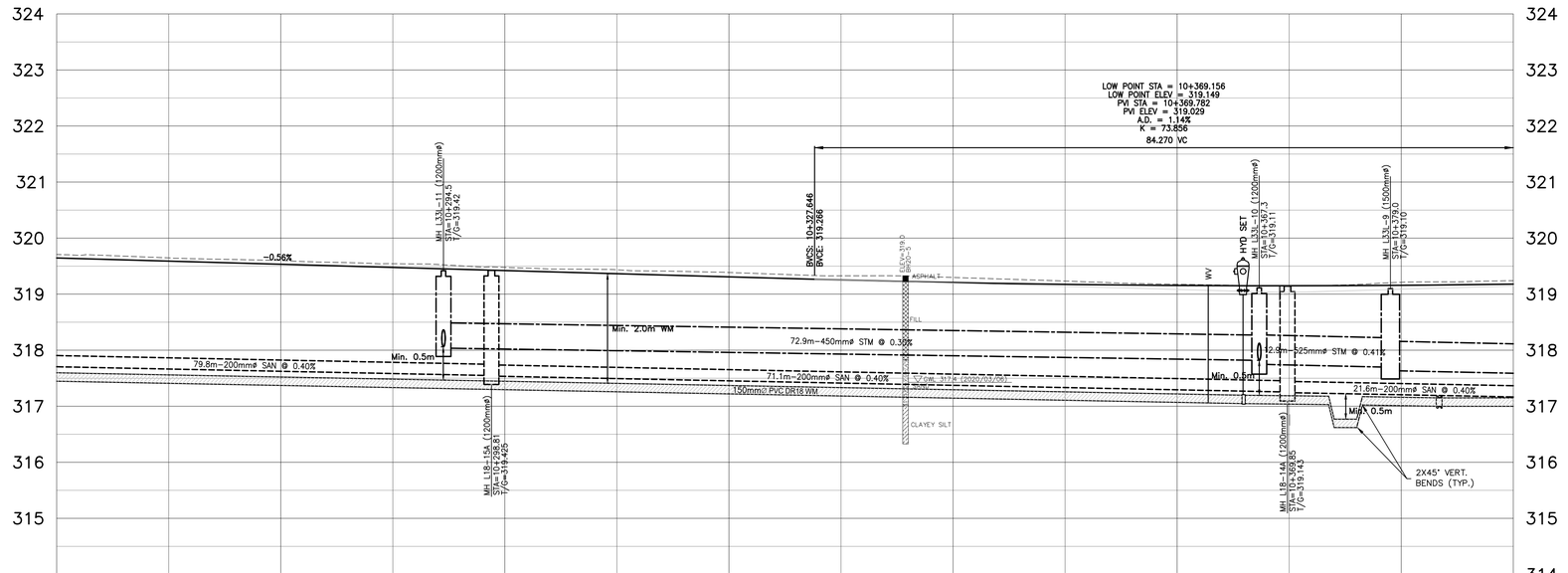
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	EXISTING WATER VALVE		PROPOSED WATERMAIN
	EXISTING SANITARY SEWER		PROPOSED FIRE HYDRANT
	EXISTING STORM SEWER		PROPOSED VALVE BOX
W/M	EXISTING WATERMAIN		PROPOSED W/M TEE
	HYDRO POLE/LIGHT STANDARD		PROPOSED CONCRETE SIDEWALK, APRON AND DRIVEWAY
GAS GAS	EXISTING GAS SERVICE		PROPOSED ASPHALT DRIVEWAY
H	EXISTING HYDRO		PROPOSED INTERLOCK DRIVEWAY
BT	EXISTING BELL SERVICE		PROPOSED SANITARY AND/OR WATER SERVICES TO BE TUNNELLED TO AVOID CONFLICTS WITH TREES, PLANTING BEDS, ETC.
Rogers	EXISTING ROGERS		
*	ASSUME WATER SERVICE LOCATION		
**	ASSUME SANITARY SERVICE LOCATION		
(B)	REPLACE THE EXISTING BLACK PIPE TO THE HOUSE		

STATION	10+260	10+280	10+300	10+320	10+340	10+360	10+380	10+390
ELEV.	319.646 / 319.77	319.534 / 319.60	319.421 / 319.48	319.309 / 319.39	319.207 / 319.30	319.155 / 319.18	319.157 / 319.27	319.179 / 319.24



STM. SEWER INVERTS			NE318.943 SW318.063 NW318.038	72.9m–450mmø STM @ 0.30%		SE317.819 SW317.707 NE317.814 NW317.749	12.9m–525mmø STM @ 0.41%	SE317.698 SW317.636
SAN. SEWER INVERTS	79.8m–200mmø SAN @ 0.40%		SE317.548 NW317.538	71.1m–200mmø SAN @ 0.40%		SE317.254 NW317.244	21.6m–200mmø SAN @ 0.40%	

BENCHMARKS:

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INT.	DATE M/D/Y	REVISIONS

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CITY OF WATERLOO
PUBLIC WORKS SERVICES

THE CITY OF Waterloo

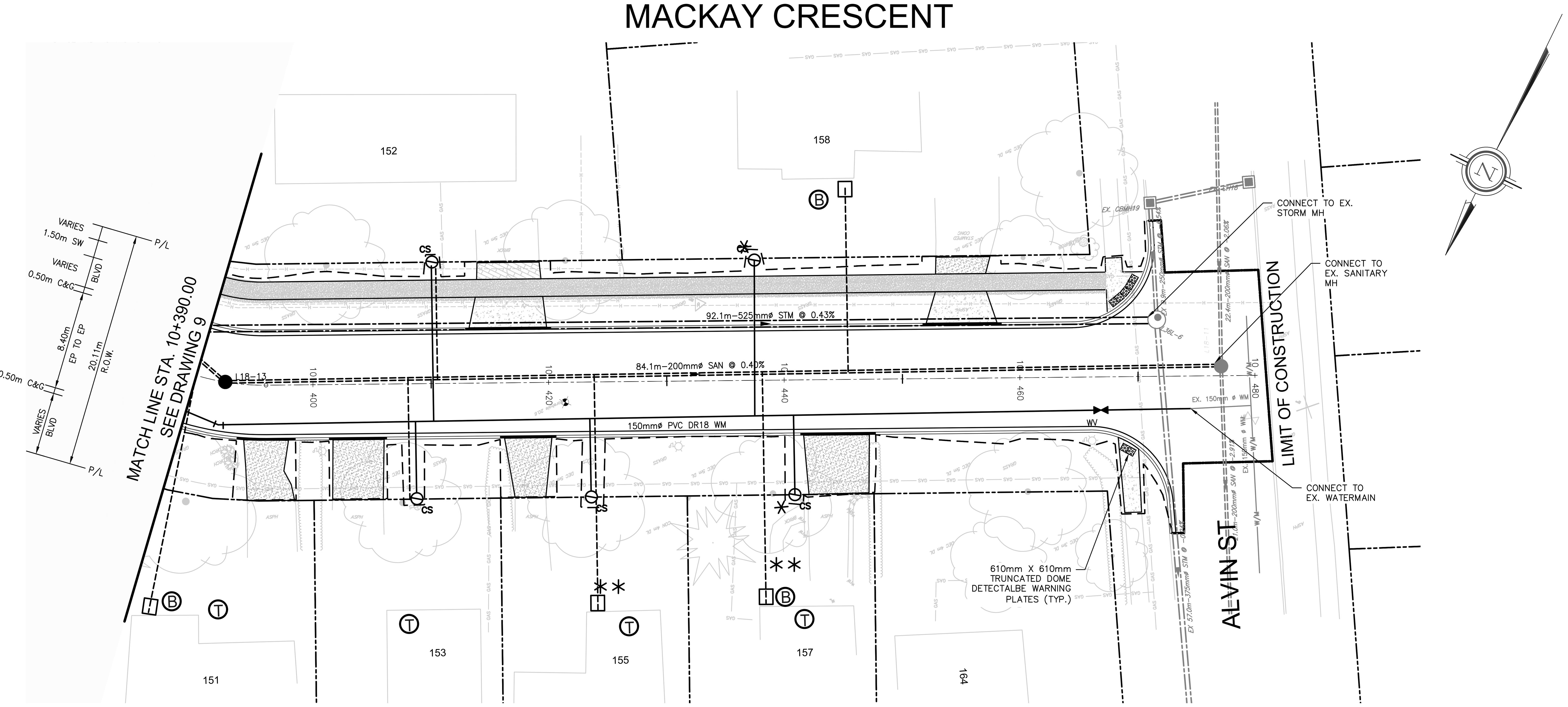
LICENSED PROFESSIONAL ENGINEER
J. C. ARCESE
100203668
2021-03-10
PROVINCE OF ONTARIO
SEAL

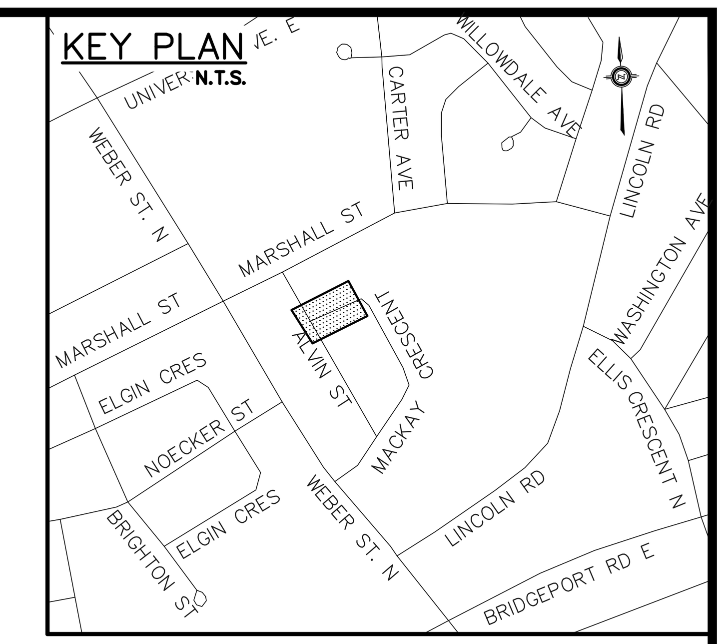
MACKAY CRESCENT RECONSTRUCTION

STA. (10+260 – 10+390)

DATE: SEPT. 28, 2020		DESIGNED BY:	T.Y.L
SCALE:	HOR 1: 250 VER 1: 50	DRAWN BY:	T.Y.L
		CHECKED BY:	J.A
FIELD BK.	PAGE / DATE	DRAWING NO.	9

MACKAY CRESCENT





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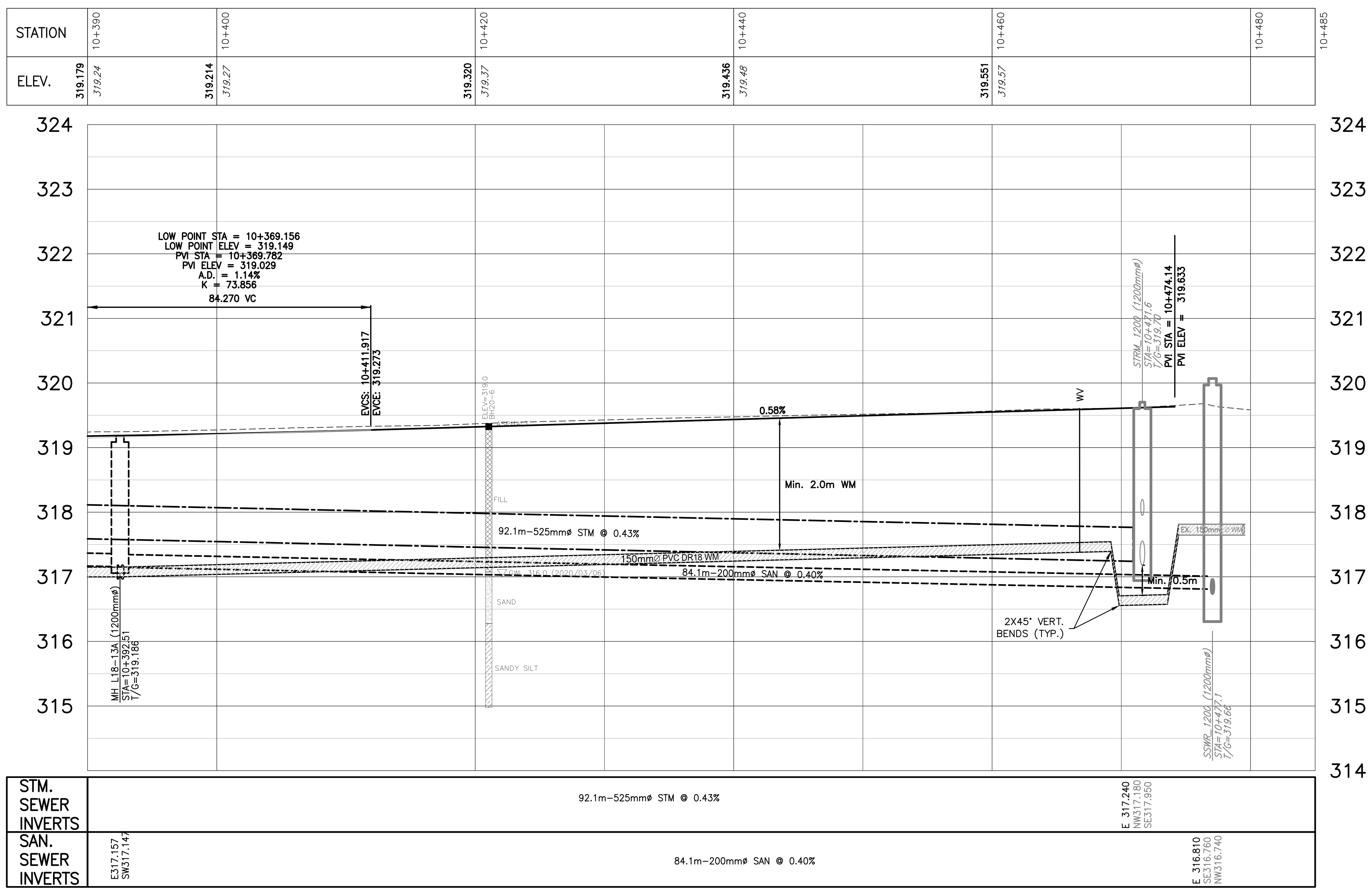
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LEGEND

Symbol	Description	Symbol	Description
	PROPERTY LINE		PROPOSED STORM DCBMH, DCB, CB, MH
	EXISTING STORM MH, CBMH, DCBMH, DCB, CB		PROPOSED SANITARY MH
	EXISTING SANITARY MH		PROPOSED STORM SEWER
	EXISTING FIRE HYDRANT		PROPOSED SANITARY SEWER
	EXISTING WATER VALVE		PROPOSED WATERMAIN
	EXISTING SANITARY SEWER		PROPOSED FIRE HYDRANT
	EXISTING STORM SEWER		PROPOSED VALVE BOX
W/M	EXISTING WATERMAIN		PROPOSED W/M TEE
	HYDRO POLE/LIGHT STANDARD		PROPOSED CONCRETE SIDEWALK, APRON AND DRIVEWAY
GAS GAS	EXISTING GAS SERVICE		PROPOSED ASPHALT DRIVEWAY
H	EXISTING HYDRO		PROPOSED INTERLOCK DRIVEWAY
BT	EXISTING BELL SERVICE		
Rogers	EXISTING ROGERS		
*	ASSUME WATER SERVICE LOCATION	(T)	PROPOSED SANITARY AND/OR WATER SERVICES TO BE TUNNELLED TO AVOID CONFLICTS WITH TREES, PLANTING BEDS, ETC.
**	ASSUME SANITARY SERVICE LOCATION		
(B)	REPLACE THE EXISTING BLACK PIPE TO THE HOUSE		



BENCHMARKS:

TO BE VERIFIED DURING CONSTRUCTION STAGE DRAWING ISSUANCE

INT.	DATE M/D/Y	REVISIONS
J.A.	03/08/21	ISSUED FOR TENDER
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CITY OF WATERLOO
PUBLIC WORKS SERVICES

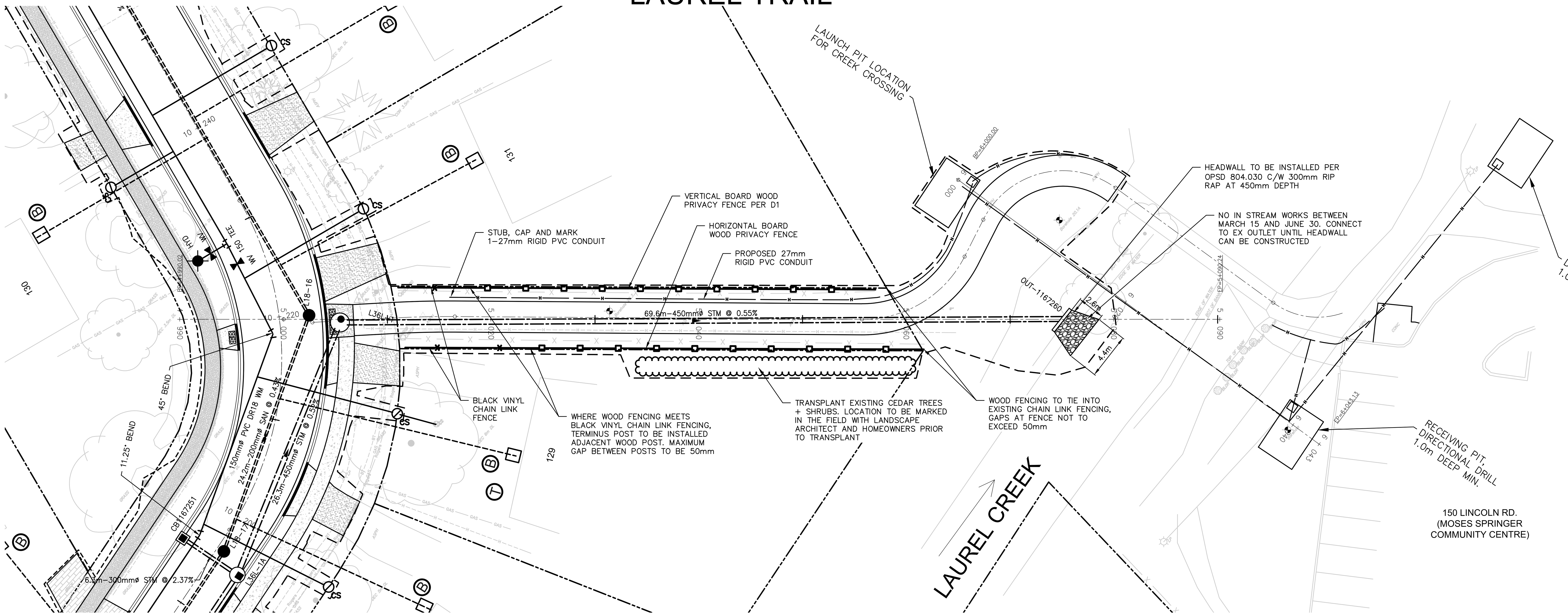
THE CITY OF Waterloo

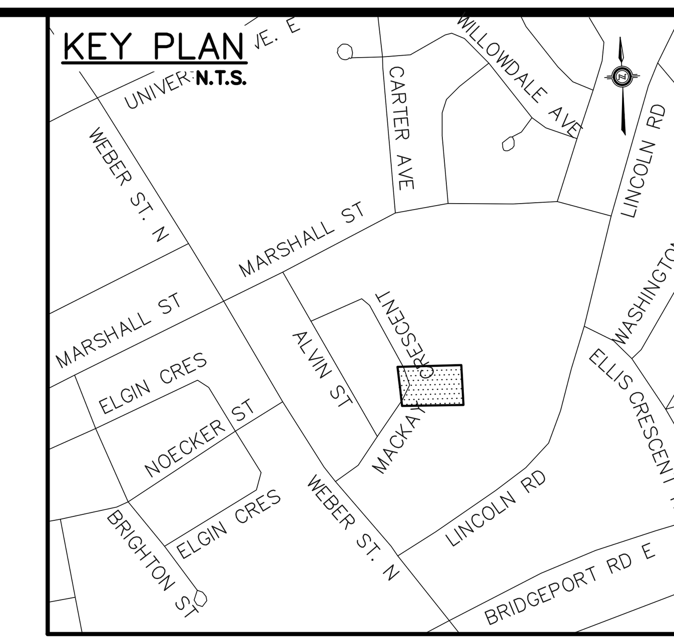
LICENSED PROFESSIONAL ENGINEER
J. C. ARCESE
100203668
2021-03-10
PROVINCE OF ONTARIO
SEAL

MACKAY CRESCENT RECONSTRUCTION

STA. (10+390 – 10+480)

DATE: SEPT. 28, 2020		DESIGNED BY:	T.Y.L
SCALE:	HOR 1:250 VER 1:50	DRAWN BY:	T.Y.L
		CHECKED BY:	J.A
FIELD BK.	PAGE	DATE	DRAWING NO. 10





GENERAL NOTES:

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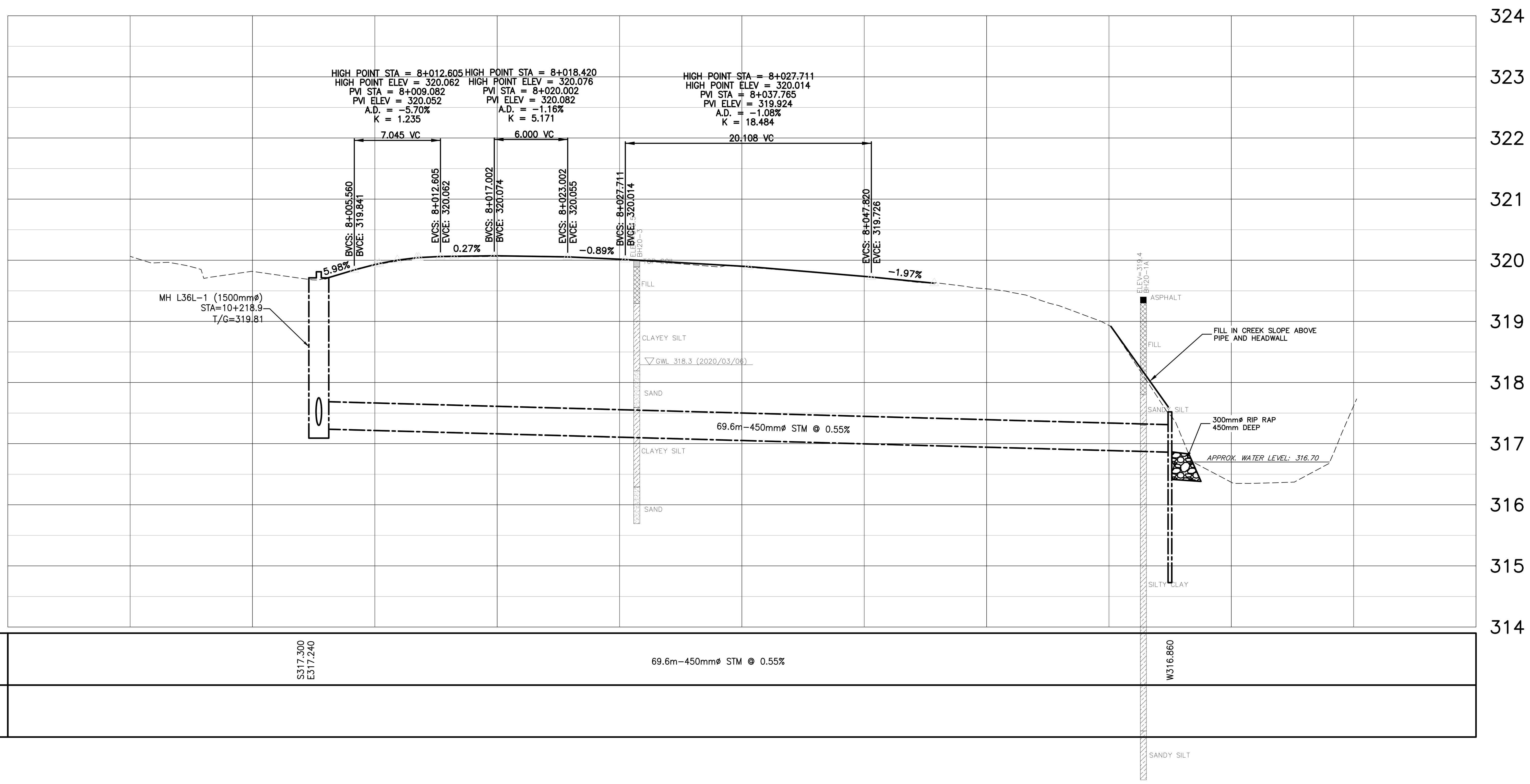
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LEGEND

- PROPERTY LINE
- EXISTING STORM MH, CBMH, DCBMH, DCB, CB
- EXISTING SANITARY MH
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING WATERMAIN
- HYDRO POLE/LIGHT STANDARD
- EXISTING GAS SERVICE
- EXISTING HYDRO
- EXISTING BELL SERVICE
- EXISTING ROGERS
- * ASSUME WATER SERVICE LOCATION
- ** ASSUME SANITARY SERVICE LOCATION
- (B) REPLACE THE EXISTING BLACK PIPE TO THE HOUSE
- PROPOSED STORM DCBMH, DCB, CB, MH
- PROPOSED SANITARY MH
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATERMAIN
- PROPOSED FIRE HYDRANT
- PROPOSED VALVE BOX
- PROPOSED W/M TEE
- PROPOSED CONCRETE SIDEWALK, APRON AND DRIVEWAY
- PROPOSED ASPHALT DRIVEWAY
- PROPOSED INTERLOCK DRIVEWAY
- (T) PROPOSED SANITARY AND/OR WATER SERVICES TO BE TUNNELLED TO AVOID CONFLICTS WITH TREES, PLANTING BEDS, ETC.

NOTE: LIMITS OF FENCING TO BE MARKED IN THE FIELD PRIOR TO INSTALLATION LOCATION TO BE APPROVED BY HOMEOWNERS PRIOR TO INSTALLATION

STATION	4+980	5+000	5+020	5+040	5+060	5+080	5+100
ELEV.	319.817	319.82 / 320.062	320.06 / 319.893	319.89 / 319.532	319.53 / 316.368	316.37	



STM. SEWER INVERTS	S317.300 E317.240	69.6m-450mmø STM @ 0.55%	W316.860
SAN. SEWER INVERTS			

BENCHMARKS:

TO BE VERIFIED DURING CONSTRUCTION STAGE DRAWING ISSUANCE

INT.	DATE M/D/Y	REVISIONS
J.A.	03/08/21	ISSUED FOR TENDER
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J.A.	12/04/20	60% SUBMISSION

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CITY OF WATERLOO
PUBLIC WORKS SERVICES

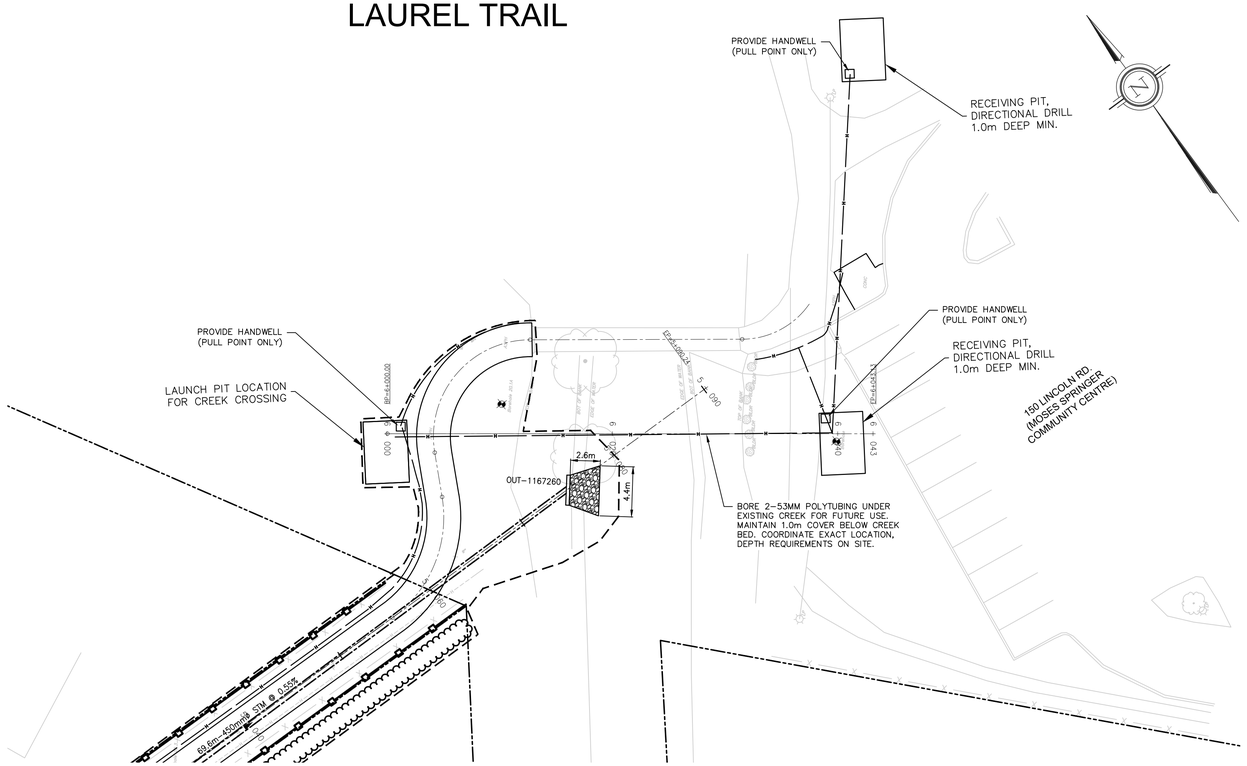
SEAL: LICENSED PROFESSIONAL ENGINEER J. C. ARCESE 100203668 2021-03-10 PROVINCE OF ONTARIO

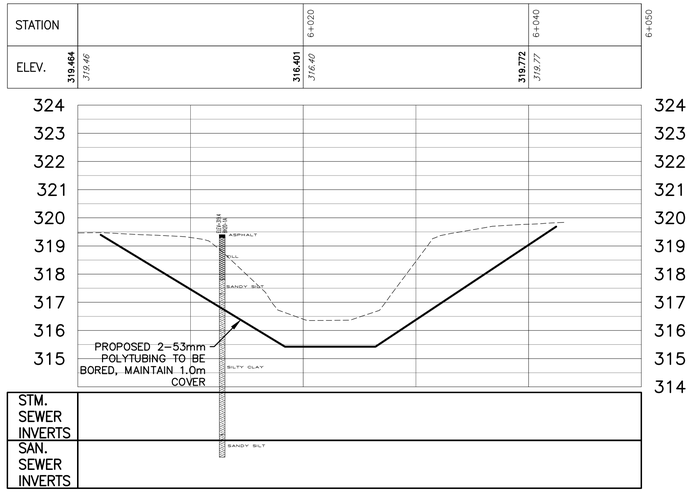
LAUREL TRAIL RECONSTRUCTION

STA. (5+000 – 5+090)

DATE: SEPT. 28, 2020		DESIGNED BY:	T.Y.L
SCALE:	HOR 1:250 VER 1:50	DRAWN BY:	T.Y.L
		CHECKED BY:	J.A
FIELD BK.	PAGE	DATE	DRAWING NO. 11

LAUREL TRAIL





GENERAL NOTES:

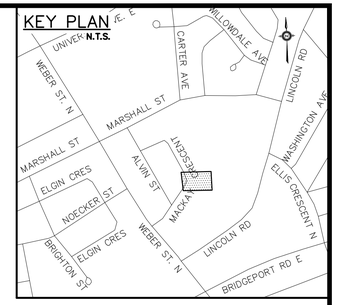
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KEY PLAN N.T.S.



LEGEND

PROPERTY LINE	PROPOSED STORM DCBMH, DCB, CB, MH
EXISTING STORM MH, CBMH, DCBMH, DCB, CB	PROPOSED SANITARY MH
EXISTING SANITARY MH	PROPOSED STORM SEWER
EXISTING FIRE HYDRANT	PROPOSED SANITARY SEWER
EXISTING WATER VALVE	PROPOSED WATERMAIN
EXISTING SANITARY SEWER	PROPOSED FIRE HYDRANT
EXISTING STORM SEWER	PROPOSED VALVE BOX
EXISTING WATERMAIN	PROPOSED W/M TEE
HYDRO POLE/LIGHT STANDARD	PROPOSED CONCRETE SIDEWALK, APRON AND DRIVEWAY
EXISTING GAS SERVICE	PROPOSED ASPHALT DRIVEWAY
EXISTING HYDRO	PROPOSED INTERLOCK DRIVEWAY
EXISTING BELL SERVICE	PROPOSED SANITARY AND/OR WATER SERVICES TO BE TUNNELLED TO AVOID CONFLICTS WITH TREES, PLANTING BEDS, ETC.
EXISTING ROGERS	
* ASSUME WATER SERVICE LOCATION	
** ASSUME SANITARY SERVICE LOCATION	
(B) REPLACE THE EXISTING BLACK PIPE TO THE HOUSE	

BENCHMARKS:
TO BE VERIFIED DURING CONSTRUCTION STAGE DRAWING ISSUANCE

J.A.	03/08/21	ISSUED FOR TENDER
J.A.	02/01/21	90% SUBMISSION
J.A.	12/04/20	60% SUBMISSION
INT.	DATE M/D/Y	REVISIONS

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Waterloo ON N2L 3V3 Canada
tel 519 585 2255
ibigroup.com

CITY OF WATERLOO
PUBLIC WORKS SERVICES

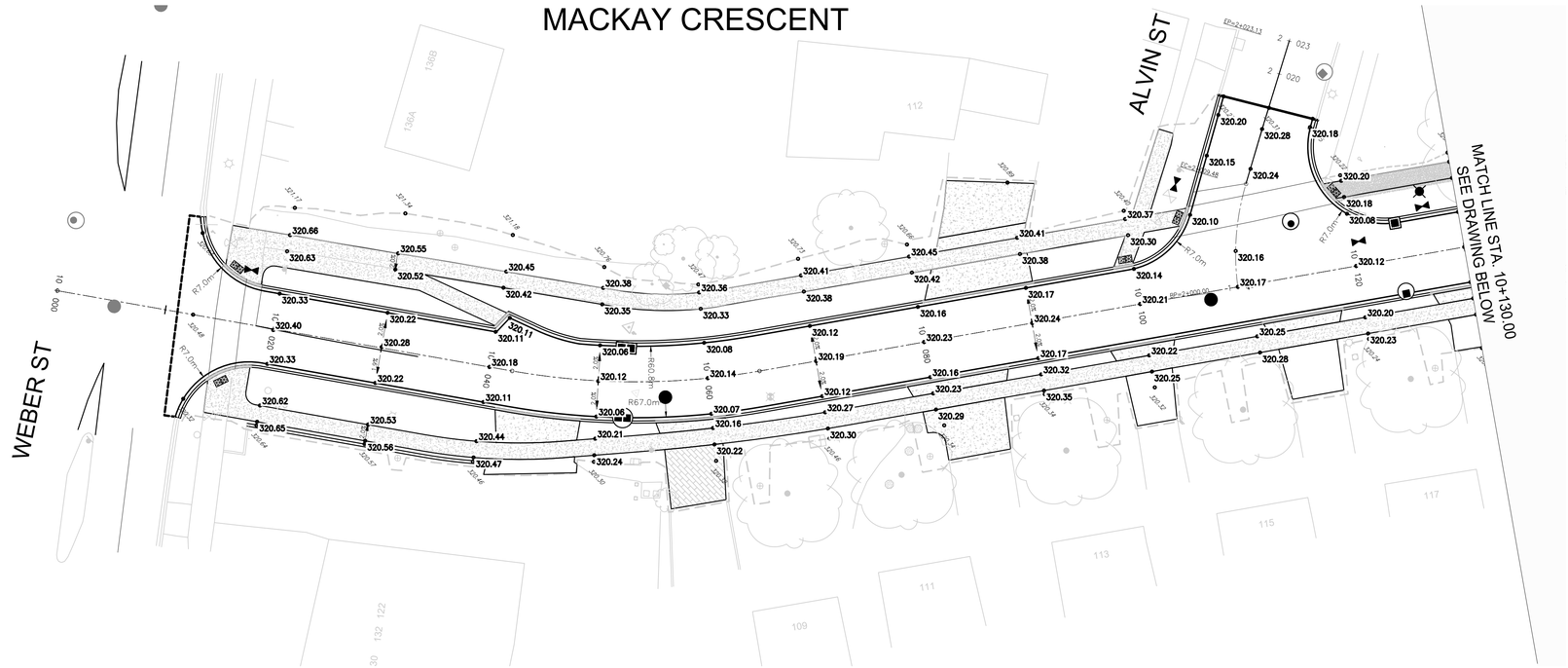
THE CITY OF Waterloo

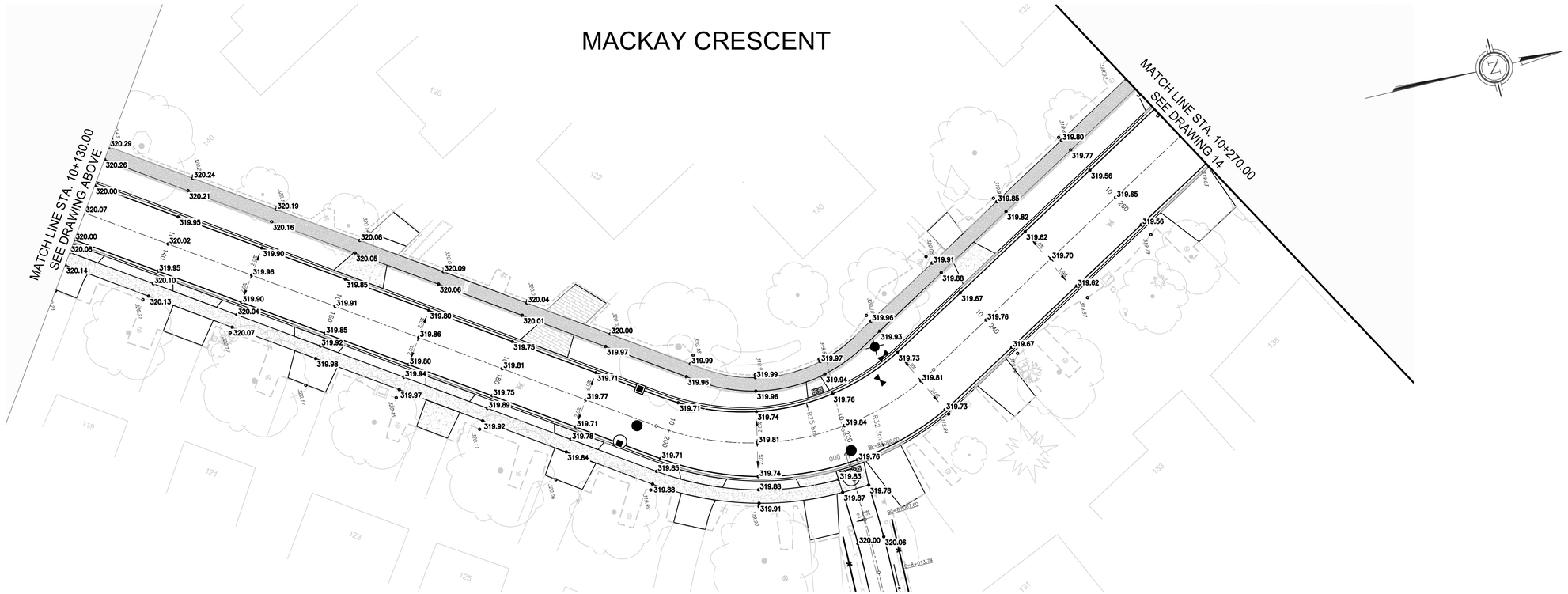
SEAL

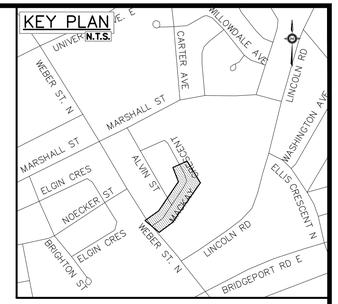
LAUREL TRAIL RECONSTRUCTION

STA. (5+000 – 5+090)

DATE: SEPT. 28, 2020		DESIGNED BY:	T.Y.L
SCALE:	HOR 1:250 VER 1:100	DRAWN BY:	T.Y.L
		CHECKED BY:	J.A
FIELD BK.	PAGE / DATE	DRAWING NO.	12







GENERAL NOTES:

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- EXISTING SANITARY MH
- HYDRO POLE/LIGHT STANDARD
- PROPERTY LINE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING WATERMAIN
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- CS — EXISTING CURB STOP VALVE
- BH-4 — BOREHOLE
- REMOVALS SYMBOLS
- EXISTING GAS SERVICE
- CATV — EXISTING ROGERS DUCT

BENCHMARKS:
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INT.	DATE M/D/Y	REVISIONS

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ibigroup.com

CITY OF WATERLOO
PUBLIC WORKS SERVICES

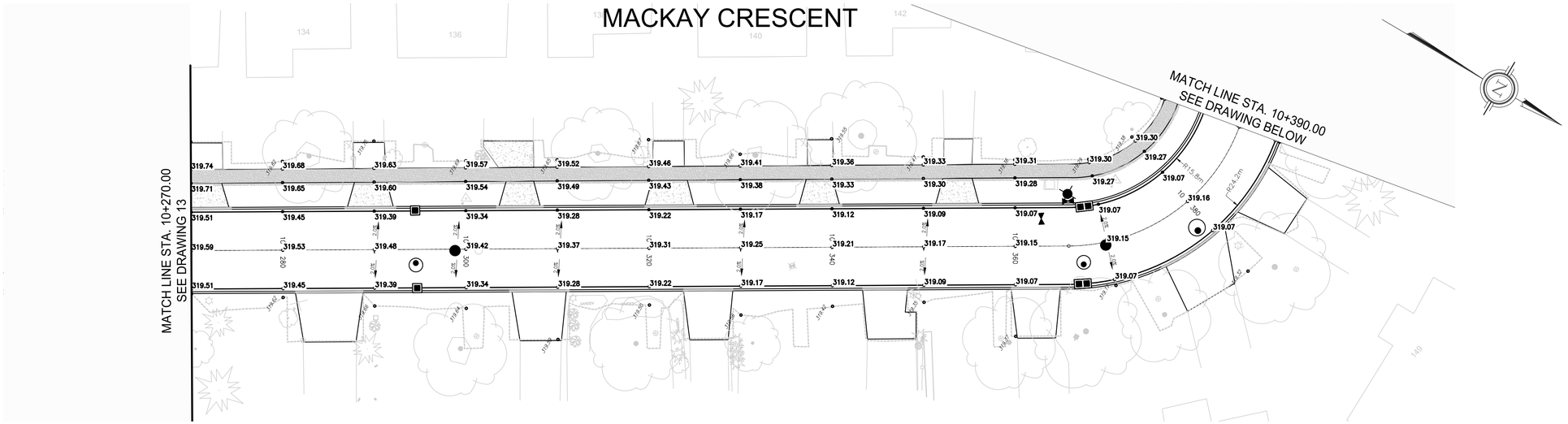
THE CITY OF Waterloo

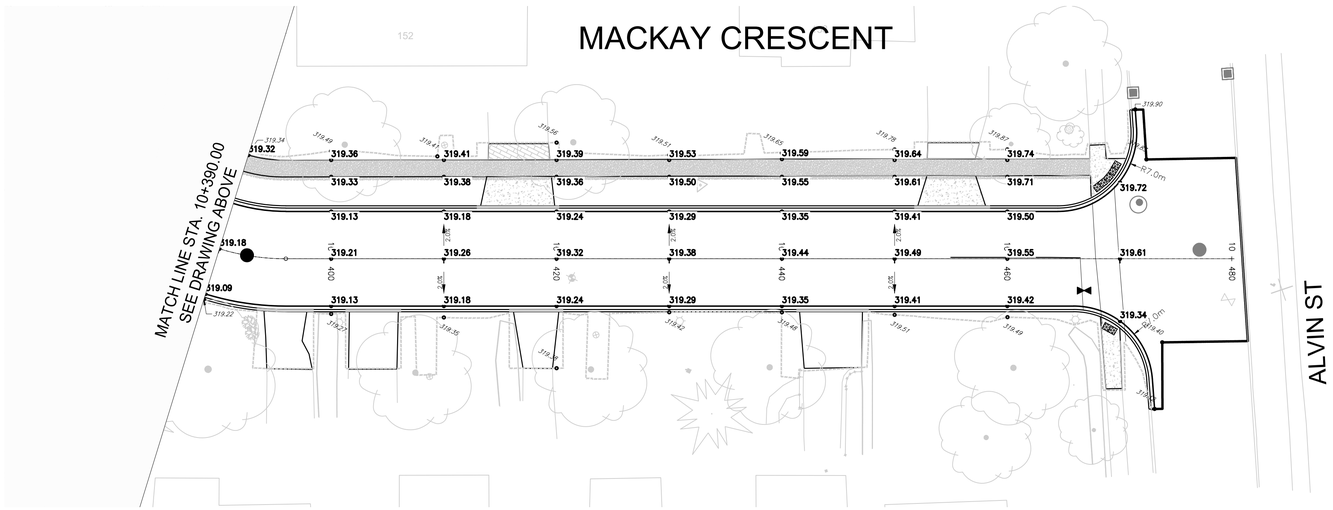
LICENSED PROFESSIONAL ENGINEER
J. C. ARCESE
100203668
2021-03-10
PROVINCE OF ONTARIO
SEAL

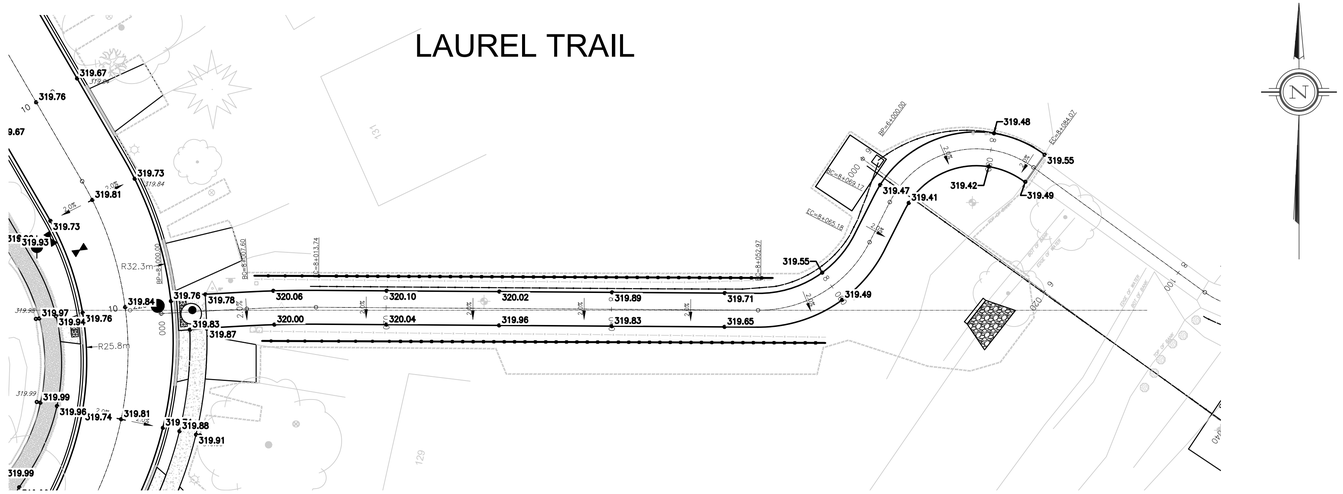
MACKAY CRESCENT PAVEMENT ELEVATIONS

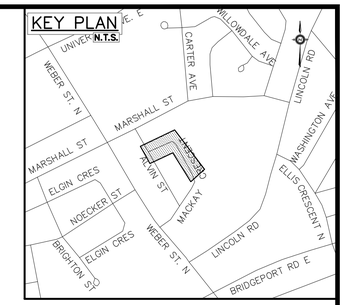
STA. (10+000 – 10+270)

DATE:	JAN 21, 2021	DESIGNED BY:	T.Y.L
SCALE:	HOR 1:250 VER N.T.S	DRAWN BY:	T.Y.L
		CHECKED BY:	J.A
FIELD BK.	PAGE / DATE	DRAWING NO.	13









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CITY OF WATERLOO
PUBLIC WORKS SERVICES

THE CITY OF Waterloo

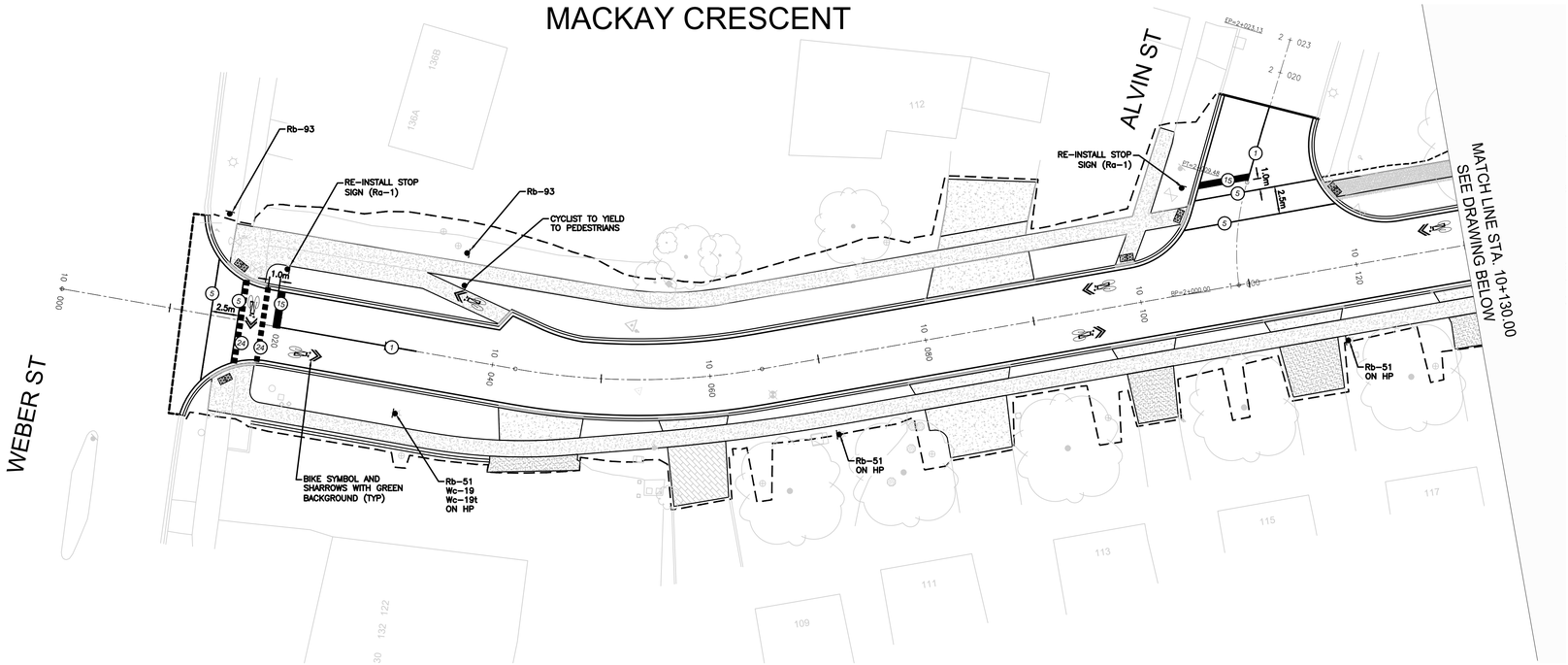
LICENSED PROFESSIONAL ENGINEER
J. C. ARCESE
100203668
2021-03-10
PROVINCE OF ONTARIO
SEAL

MACKAY CRESCENT PAVEMENT ELEVATIONS

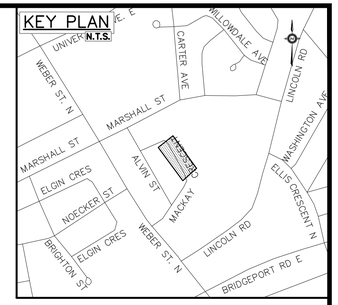
STA. (10+270 – 10+480)

DATE:	JAN 21, 2021	DESIGNED BY:	T.Y.L
SCALE:	HOR 1:250 VER N.T.S	DRAWN BY:	T.Y.L
		CHECKED BY:	J.A
FIELD BK.	PAGE / DATE	DRAWING NO.	14

MACKAY CRESCENT







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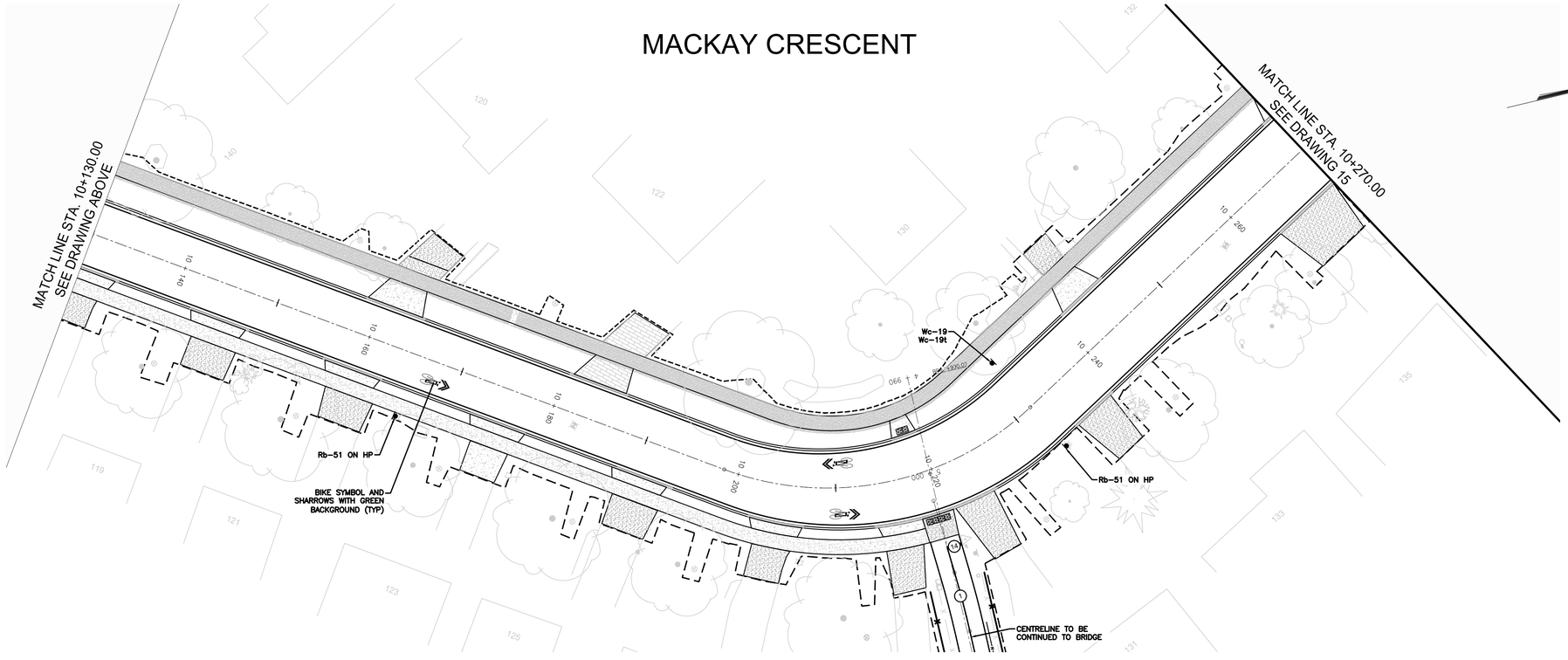
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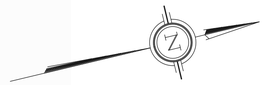
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	PAVEMENT MARKING LEGEND
1	SOLID YELLOW, 10cm
2	SOLID DOUBLE YELLOW, 10cm
3	363 BROKEN YELLOW, 10cm
4	SOLID YELLOW, 20cm
5	SOLID WHITE, 10cm
6	333 BROKEN WHITE, 10cm
7	363 BROKEN WHITE, 10cm
9	SOLID WHITE, 20cm
10	111 BROKEN WHITE, 10cm
11	333 BROKEN WHITE, 20cm
13	333 BROKEN WHITE, 30cm
14	SOLID WHITE, 30cm
15	SOLID WHITE, 60cm
16	111 BROKEN WHITE, 45cm
17	SOLID WHITE, 15cm
18	SOLID WHITE, 45cm
19	111 BROKEN YELLOW, 10cm
20	SOLID WHITE, SYMBOLS AND ARROWS
21	121 BROKEN WHITE 10cm
22	1.8 BROKEN WHITE 10cm
23	WHITE DOT 10cmØ AT 1.8m SPACING
24	ELEPHANTS FEET WHITE 20cm SQUARES AT 20cm SPACING OR 40cm SQUARES AT 40cm SPACING
25	SHARKS TEETH WHITE TRIANGLE 60x90cm AT 30cm SPACING
26	SOLID GREEN

MACKAY CRESCENT





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CITY OF WATERLOO
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THE CITY OF Waterloo

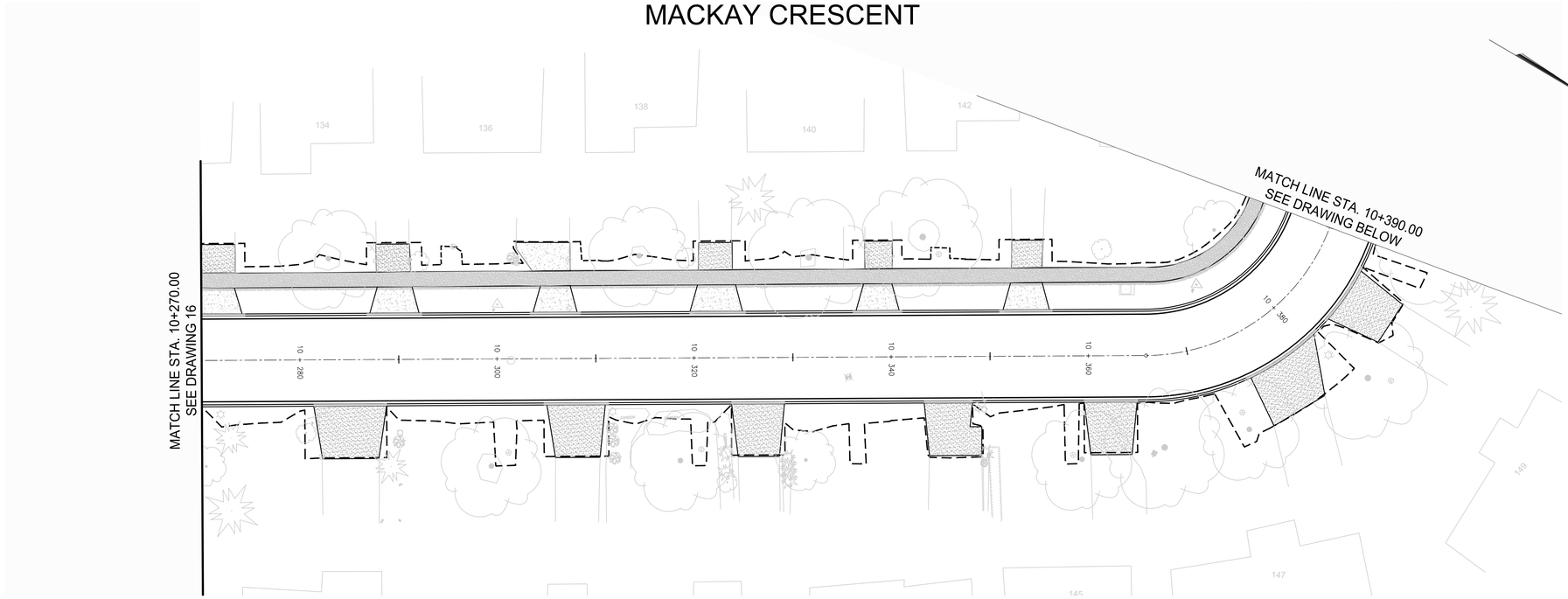
SEAL

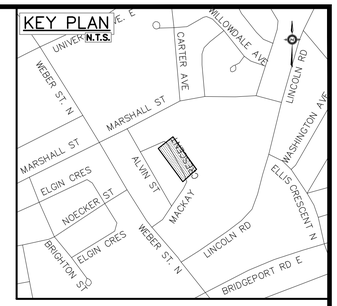
MACKAY CRESCENT
PAVEMENT MARKINGS

STA. (10+000 – 10+270)

DATE:	JAN 21, 2021	DESIGNED BY:	T.Y.L
SCALE:	HOR 1:250 VER N.T.S	DRAWN BY:	T.Y.L
		CHECKED BY:	J.A
FIELD BK.	PAGE / DATE	DRAWING NO.	15

MACKAY CRESCENT





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GENERAL NOTES:

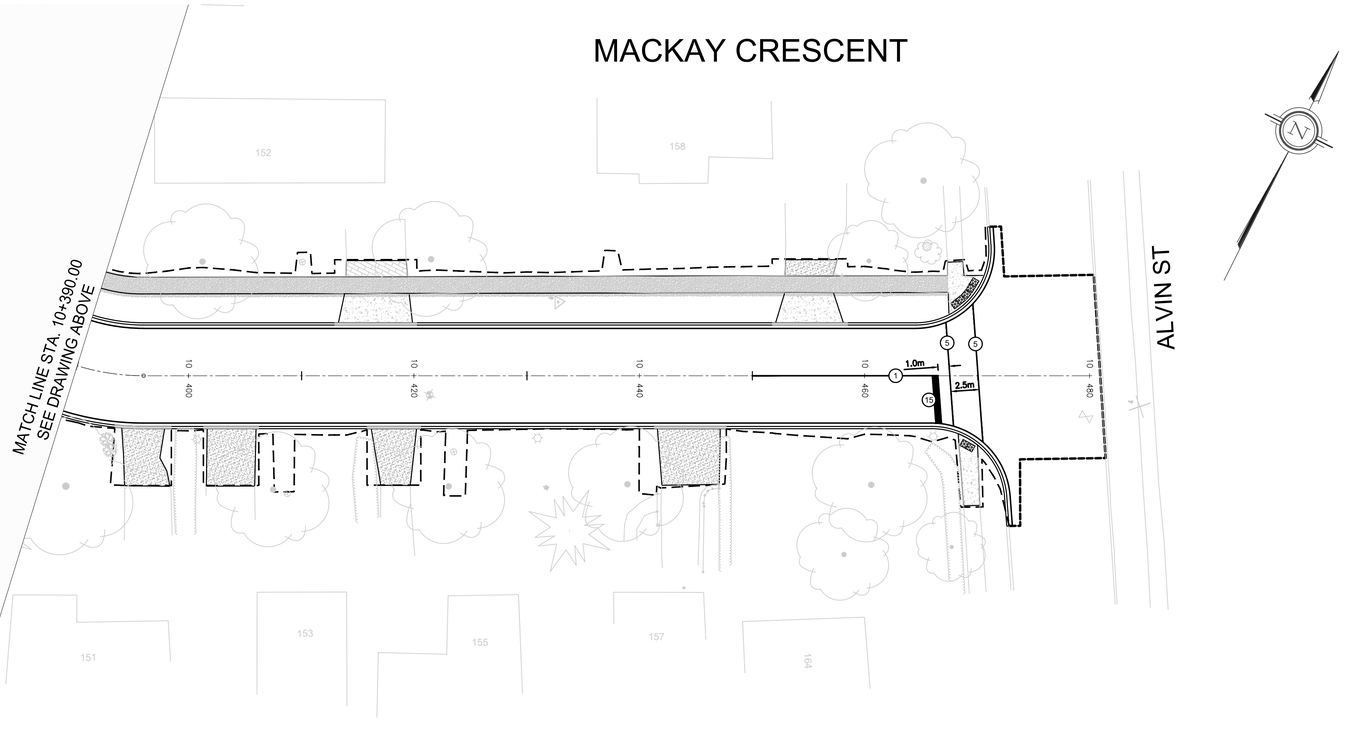
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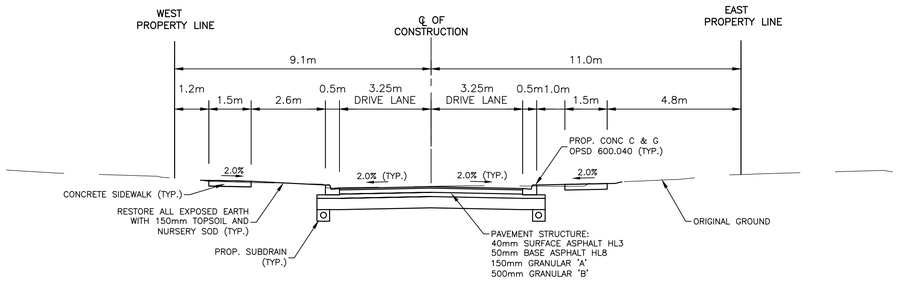
CITY OF WATERLOO
PUBLIC WORKS SERVICES

SEAL

MACKAY CRESCENT
PAVEMENT MARKINGS

STA. (10+270 – 10+480)

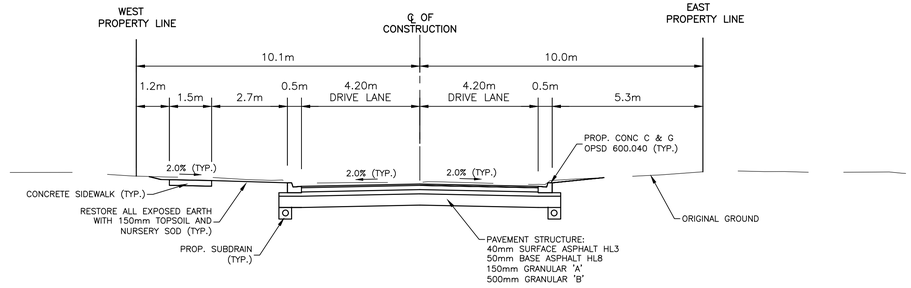
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SCALE:	HOR 1:250 VER N.T.S	DRAWN BY:	T.Y.L
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FIELD BK.	PAGE / DATE	DRAWING NO.	16



TYPICAL SECTION

STA. 10+019 TO STA. 10+198

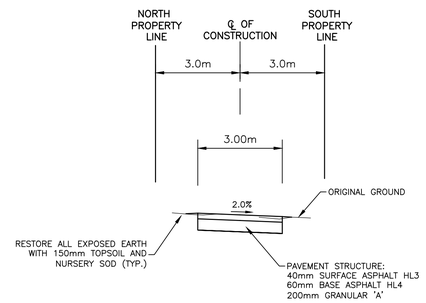
N.T.S.



TYPICAL SECTION

STA. 10+232 TO STA. 10+466

N.T.S.



TYPICAL SECTION

LAUREL TRAIL

N.T.S.

GENERAL NOTES:

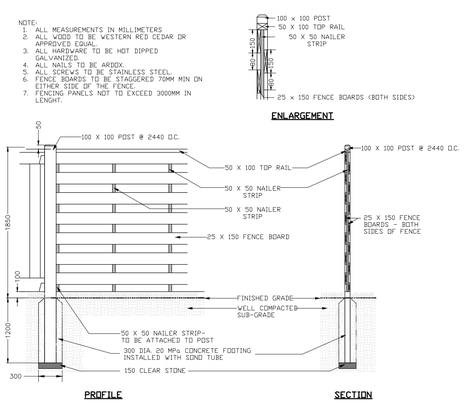
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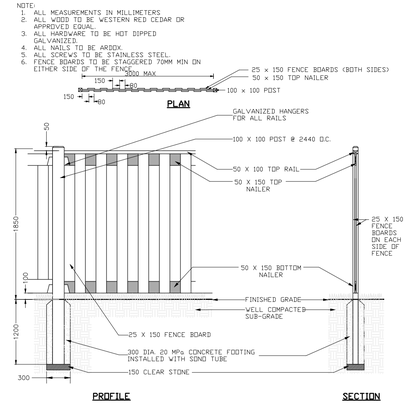
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- EXISTING CURB STOP VALVE
- BH-4 BOREHOLE
- REMOVALS SYMBOLS
- EXISTING GAS SERVICE
- CATV EXISTING ROGERS DUCT



D 1 — 1800mm HEIGHT PRIVACY WOOD FENCE DETAIL–HORIZONTAL BOARDS

N.T.S.



D 2 — 1800mm HEIGHT PRIVACY WOOD FENCE DETAIL–VERTICAL BOARDS

N.T.S.

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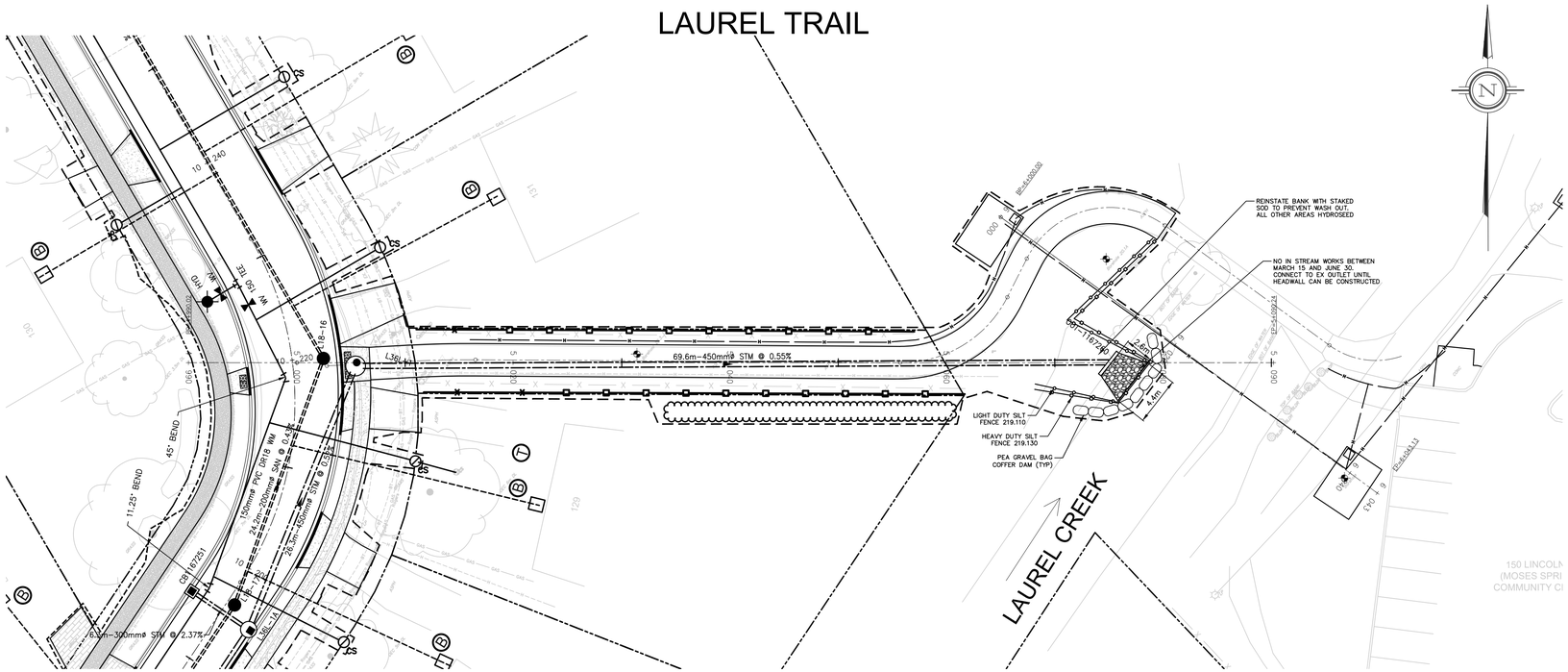
CITY OF WATERLOO
PUBLIC WORKS SERVICES

SEAL

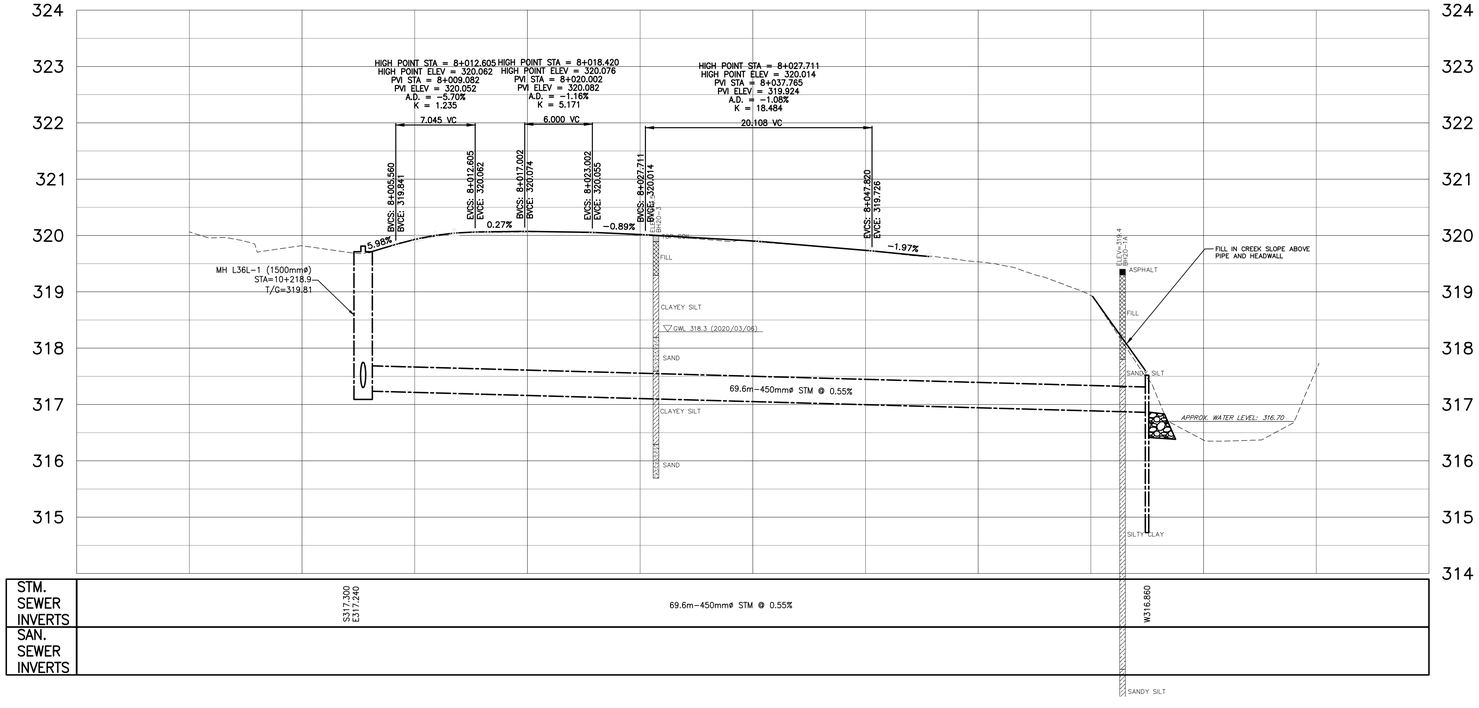
MACKAY CRESCENT DETAILS

DATE: JAN 29, 2021			DESIGNED BY: T.Y.L
SCALE: HOR 1:100 VER			DRAWN BY: T.Y.L
			CHECKED BY: J.A
FIELD BK.	PAGE	DATE	DRAWING NO. 17

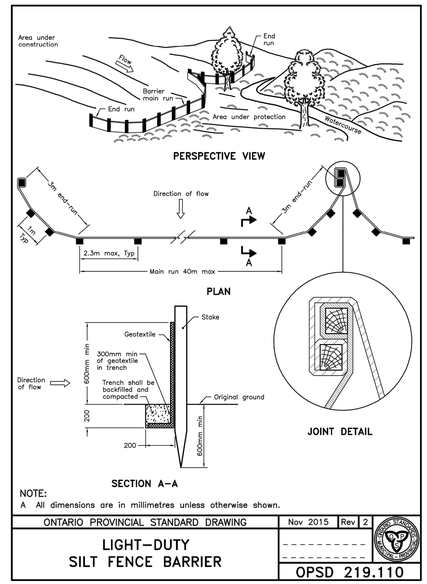
LAUREL TRAIL

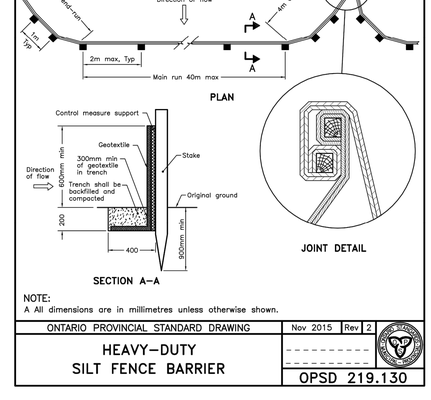


STATION	4+980		5+000		5+020		5+040		5+060		5+080		5+100
ELEV.		**319.817**	*319.82*		**320.062**	*320.06*		**319.893**	*319.89*		**319.532**	*319.53*	
											316.368	*316.37*	



STM. SEWER INVERTS	S317.300 E317.240	69.6m–450mmø STM @ 0.55%	W316.860
SAN. SEWER INVERTS			

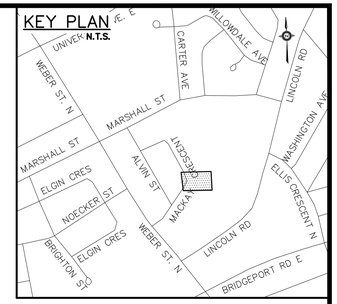




LEGEND

	PROPERTY LINE		PROPOSED STORM DCBMH, DCB, CB, MH
	EXISTING STORM MH, CBMH, DCBMH, DCB, CB		PROPOSED SANITARY MH
	EXISTING SANITARY MH		PROPOSED STORM SEWER
	EXISTING FIRE HYDRANT		PROPOSED SANITARY SEWER
	EXISTING WATER VALVE		PROPOSED WATERMAIN
	EXISTING SANITARY SEWER		PROPOSED FIRE HYDRANT
	EXISTING STORM SEWER		PROPOSED VALVE BOX
W/M	EXISTING WATERMAIN		PROPOSED W/M TEE
	HYDRO POLE/LIGHT STANDARD		PROPOSED CONCRETE APRON
GAS GAS	EXISTING GAS SERVICE		
	EXISTING HYDRO	T	PROPOSED SANITARY AND/OR WATER SERVICES TO BE TUNNELLED TO AVOID CONFLICTS WITH TREES, PLANTING BEDS, ETC.
BT BT	EXISTING BELL SERVICE		
Rogers	EXISTING ROGERS		
*	ASSUME WATER SERVICE LOCATION	B	REPLACE THE EXISTING BLACK PIPE TO THE HOUSE
**	ASSUME SANITARY SERVICE LOCATION		

KEY PLAN N.T.S.



GENERAL NOTES:

THE POSITION OF POLE LINE, CONDUITS, WATER MAINS, SEWERS AND OTHER UTILITIES. FEATURES AND STRUCTURES ARE NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND WHERE SHOWN, THE ACCURACY OF THE POSITIONS IS NOT GUARANTEED. BEFORE STARTING CONSTRUCTION, THE CONTRACTOR SHALL INFORM HIM/HER SELF OF THE EXACT LOCATION OF SUCH UTILITIES AND STRUCTURES.

ALL DIMENSIONS SHALL BE CHECKED BY THE CONTRACTOR AND ANY INCONSISTENCIES REPORTED TO THE PROJECT ENGINEER.

ALL WORK REPORTED IN ACCORDANCE WITH THE LATEST RELEVANT SECTIONS OF THE OPSD's, OPSS's, ONTARIO BUILDING CODE AND THE REQUIREMENTS OF THE CITY OF WATERLOO AND REGION OF WATERLOO

ALL DISTURBED AREAS RESTORED TO ORIGINAL CONDITIONS OR BETTER IN ACCORDANCE WITH CITY OF WATERLOO AND REGION OF WATERLOO DRAWINGS/SPECIFICATIONS.

BENCHMARKS:
TO BE VERIFIED DURING CONSTRUCTION STAGE DRAWING ISSUANCE

J.A.	03/08/21	ISSUED FOR TENDER
J.A.	02/01/21	90% SUBMISSION
J.A.	12/04/20	60% SUBMISSION
INT.	DATE M/D/Y	REVISIONS

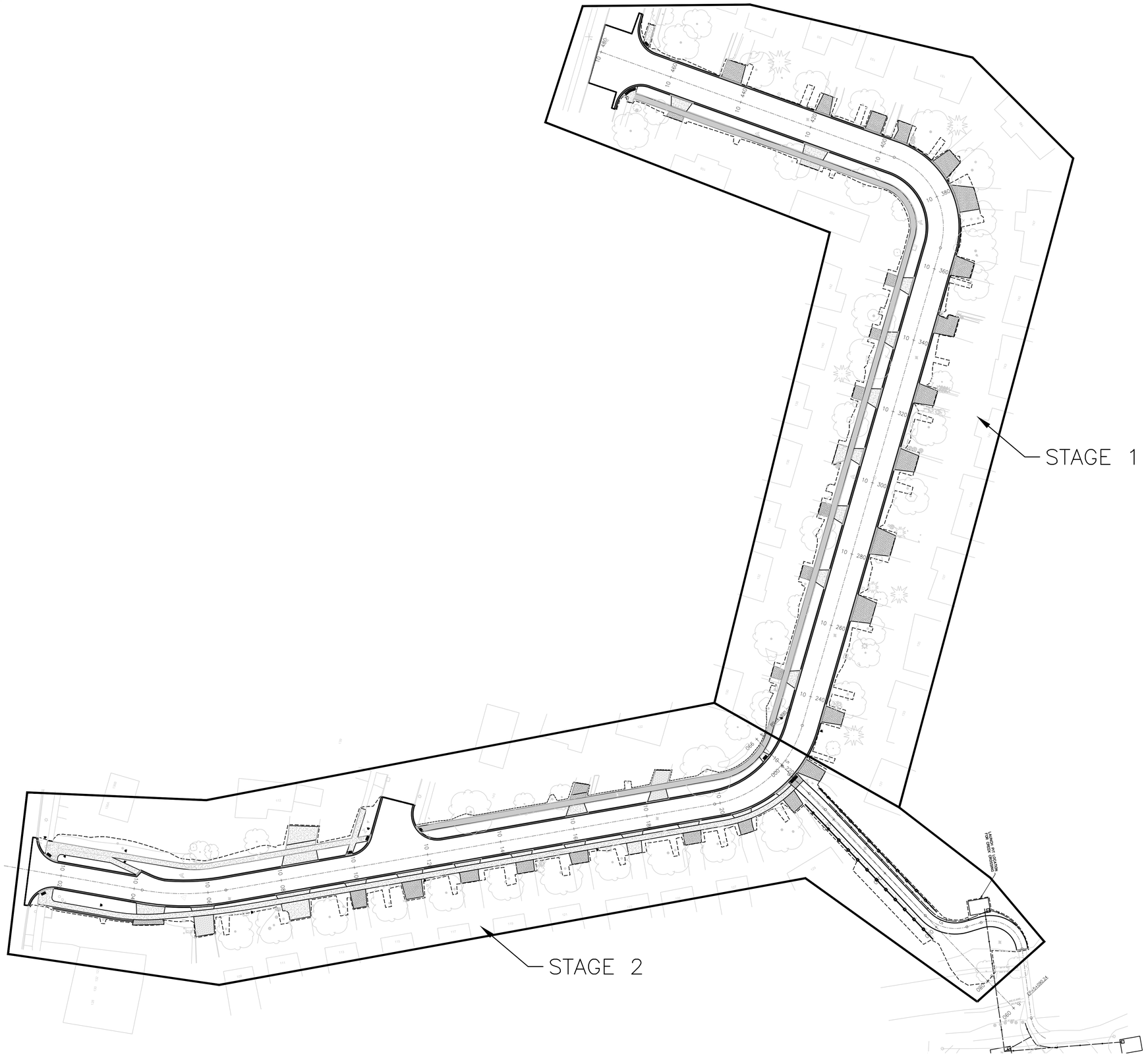
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101 - 410 Albert Street
Waterloo ON N2L 3V3 Canada
tel 519 585 2255
ibigroup.com

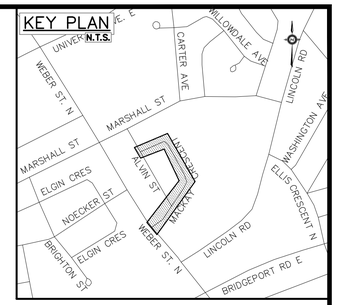
CITY OF WATERLOO
PUBLIC WORKS SERVICES

SEAL

LAUREL TRAIL
EROSION AND SEDIMENT CONTROL PLAN
STA. (5+000 – 5+090)

DATE:	SEPT. 28, 2020	DESIGNED BY:	T.Y.L
SCALE:	HOR 1:250 VER 1:50	DRAWN BY:	T.Y.L
		CHECKED BY:	J.A
FIELD BK.	PAGE / DATE	DRAWING NO.	18





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CITY OF WATERLOO
PUBLIC WORKS SERVICES

SEAL

MACKAY CRESCENT STAGING PLAN

DATE:	JAN 21, 2021	DESIGNED BY:	T.Y.L
SCALE:	HOR 1:500 VER N.T.S	DRAWN BY:	T.Y.L
		CHECKED BY:	J.A
FIELD BK.	PAGE / DATE	DRAWING NO.	19