THE REGIONAL MUNICIPALITY OF NIAGARA
PUBLIC WORKS DEPARTMENT

Niagara Region
PUBLIC WORKS

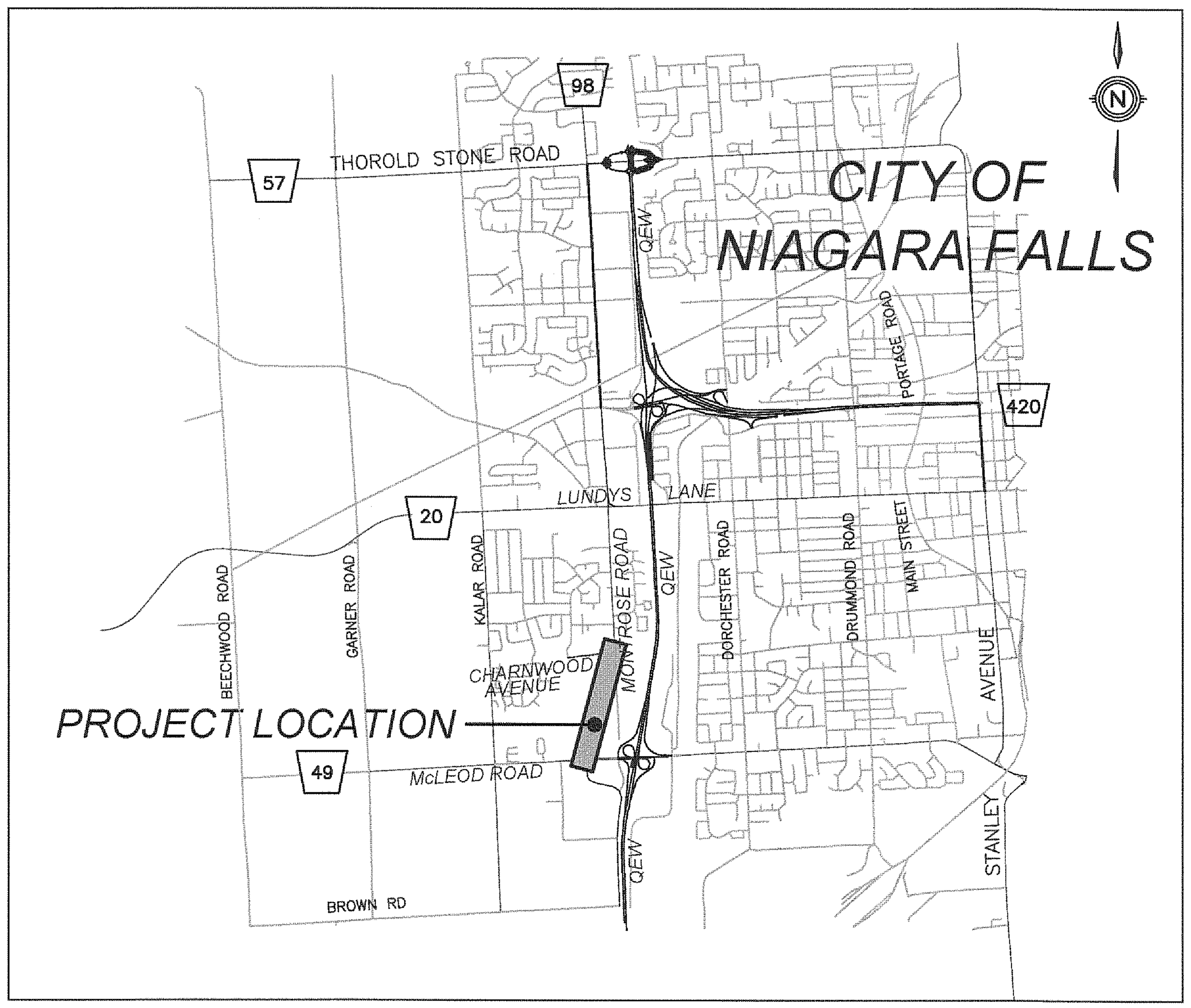
CONTRACT NO. 2019-T-105 (RN19-05)

CATHERINE HABERMEBL
ACTING COMMISSIONER OF PUBLIC WORKS

JAMES BRADLEY
REGIONAL CHAIRMAN

RECONSTRUCTION / WIDENING OF REGIONAL ROAD 98 (MONTROSE ROAD) FROM McLEOD ROAD TO CHARNWOOD AVENUE

IN THE CITY OF NIAGARA FALLS



LOCATION PLAN - (NOT TO SCALE)

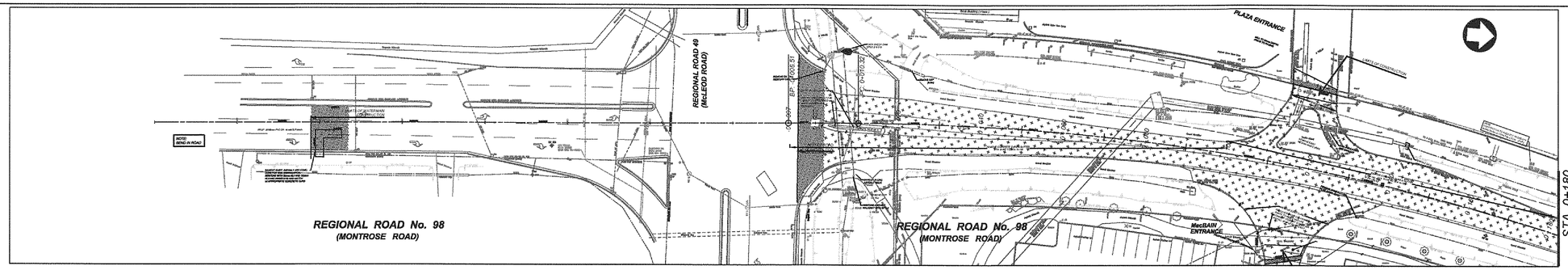
DRAWING INDEX			
COVER PAGE		RAILING DETAIL	RR98-S-02
LEGEND SHEET	RR98-L01	PAVEMENT MARKINGS - MONTROSE ROAD Sta. 0-150 to Sta. 1+061	RR98-PM01
PAVEMENT REMOVAL PLAN	RR98-REM01	ELECTRICAL LAYOUT PLAN - MONTROSE ROAD Sta. 0-010 to Sta. 0+680	EL-01
ALIGNMENT PLAN	RR98-AL01	ELECTRICAL LAYOUT PLAN - MONTROSE ROAD Sta. 0+680 to Sta. 1+060	EL-02
TYPICAL SECTION AND DETAILS	RR98-D01	WIRING DIAGRAM	EL-03
PLAN AND PROFILE - MONTROSE ROAD Sta. 0-050 to Sta. 0-150	RR98-PP01	ELECTRICAL REMOVALS	EL-04
PLAN AND PROFILE - MONTROSE ROAD Sta. 0+050 to Sta. 0+100	RR98-PP02	FIBRE COMMUNICATION DUCT LAYOUT DESIGN	INTER-01
PLAN AND PROFILE - MONTROSE ROAD Sta. 0+100 to Sta. 0+240	RR98-PP03	FIBRE COMMUNICATION DUCT LAYOUT DESIGN	INTER-02
PLAN AND PROFILE - MONTROSE ROAD Sta. 0+240 to Sta. 0+390	RR98-PP04	FIBRE COMMUNICATION DUCT LAYOUT DESIGN	INTER-03
PLAN AND PROFILE - MONTROSE ROAD Sta. 0+390 to Sta. 0+540	RR98-PP05	FIBRE COMMUNICATION DUCT LAYOUT DESIGN	INTER-04
PLAN AND PROFILE - MONTROSE ROAD Sta. 0+530 to Sta. 0+680	RR98-PP06	TRAFFIC SIGNAL DESIGN	TS-1
PLAN AND PROFILE - KINSMEN COURT Sta. 0+000 to Sta. 0+050	RR98-PP07	WIRING SCHEMATIC	TS-2
PLAN AND PROFILE - MONTROSE ROAD Sta. 0+680 to Sta. 0+770	RR-98-PP08	LANDSCAPE PLAN - MONTROSE ROAD Sta. 0-050 to Sta. 0+100	L1
PLAN AND PROFILE - MONTROSE ROAD Sta. 0+770 to Sta. 0+920	RR98-PP09	LANDSCAPE PLAN - MONTROSE ROAD Sta. 0+100 to Sta. 0+240	L2
PLAN AND PROFILE - MONTROSE ROAD Sta. 0+920 to Sta. 1+060	RR98-PP10	LANDSCAPE PLAN - MONTROSE ROAD Sta. 0+240 to Sta. 0+390	L3
PLAN AND PROFILE - MONTROSE ROAD CHARNWOOD AVENUE STORM SEWERS	RR98-PP11	LANDSCAPE PLAN - MONTROSE ROAD Sta. 0+390 to Sta. 0+540	L4
REGIONAL ROAD 98 - CROSS SECTIONS Sta. 0+000 TO Sta. 0+270	RR98-SC-01	LANDSCAPE PLAN - MONTROSE ROAD Sta. 0+540 to Sta. 0+680	L5
REGIONAL ROAD 98 - CROSS SECTIONS Sta. 0+280 TO Sta. 0+580	RR98-SC-02	LANDSCAPE PLAN - MONTROSE ROAD Sta. 0+680 to Sta. 0+820	L6
REGIONAL ROAD 98 - CROSS SECTIONS Sta. 0+600 TO Sta. 0+900	RR98-SC-03	LANDSCAPE PLAN - MONTROSE ROAD Sta. 0+820 to Sta. 0+920	L7
REGIONAL ROAD 98 - CROSS SECTIONS Sta. 0+900 TO Sta. 1+020	RR98-SC-04	LANDSCAPE DETAILS	L8
RETAINING WALL GENERAL ARRANGEMENT AND DETAILS	RR98-S-01		

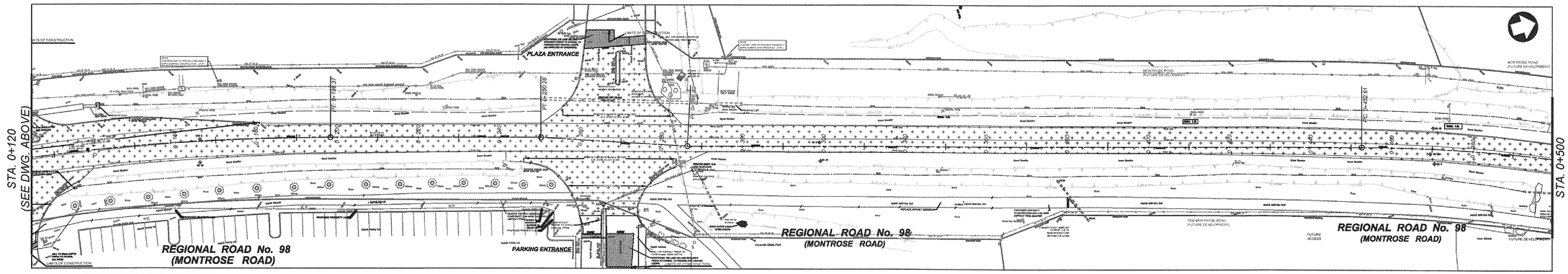
2019-T-105 (RN19-05)

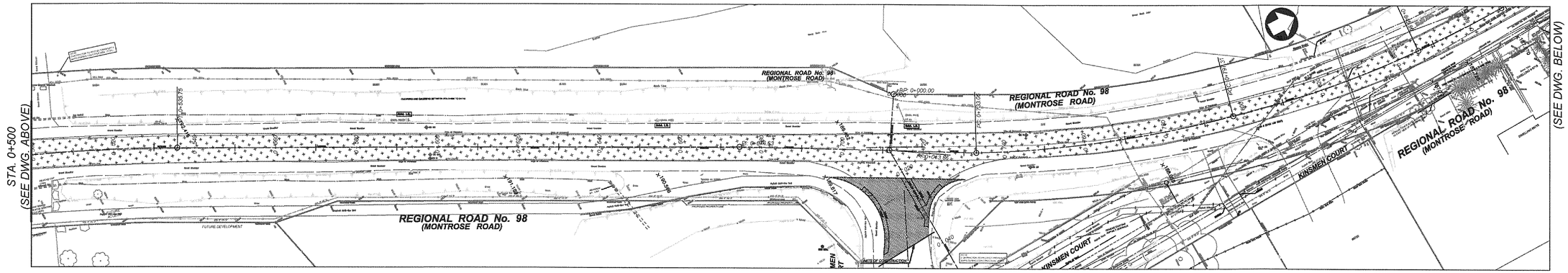
RECONSTRUCTION / ON REGIONAL ROAD 98 (MONTROSE ROAD) BETWEEN McLEOD ROAD AND CHARNWOOD AVENUE IN THE CITY OF NIAGARA FALLS

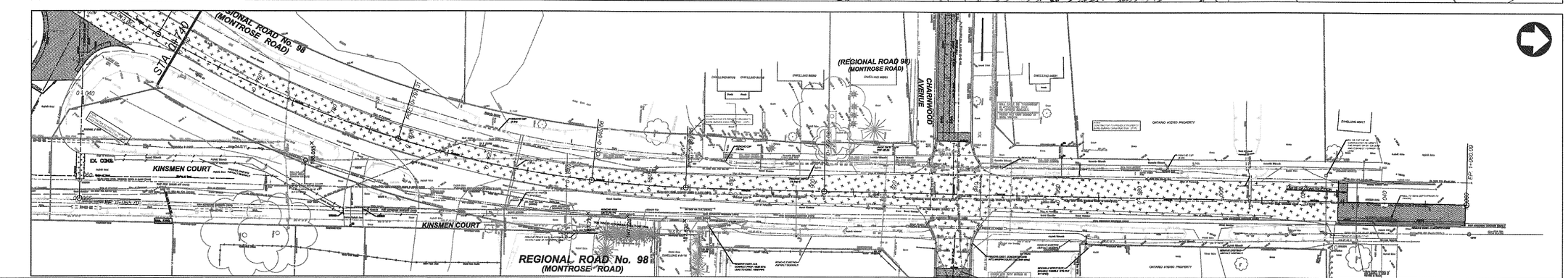
No.	REVISION	DATE	INIT.
H	ISSUED FOR TENDERING	2019/01/09	Y.W.
G	ISSUED FOR TENDERING REVIEW	2018/11/30	Y.W.
F	ISSUED FOR 90% REVIEW	2018/10/22	Y.W.
E	ISSUED FOR UTILITY REVIEW (90%)	2017/04/12	R.B.
D	ISSUED FOR REVIEW	2017/09/21	R.B.
C	ISSUED FOR REVIEW	2017/07/05	R.B.
B	ISSUED FOR UTILITY TEST HOLES	2017/03/24	R.B.
A	ISSUED FOR UTILITY REVIEW	2017/01/06	R.B.

RR98 - AL-01









NO.	REVISION	DATE	INIT.
D	ISSUED FOR TENDERING	2019/01/09	Y.W.
C	ISSUED FOR TENDERING REVIEW	2018/11/30	Y.W.
B	ISSUED FOR 90% REVIEW	2018/10/22	Y.W.
A	ISSUED FOR 60% REVIEW	2017/09/12	R.B.

NOTES / LEGEND

1 THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWER AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

2 PROPERTY LINES WERE PLOTTED USING REGISTERED PLANS AND BARS LOCATED IN THE FIELD. TO VERIFY THE ACCURACY OF THESE PROPERTY LINES, A LEGAL SURVEY SHOULD BE PERFORMED PRIOR TO CONSTRUCTION.

DRAFTING	R.B.
DESIGN	Y.W.
CHECKED BY	N.B.
APPROVED BY	

LICENSED PROFESSIONAL ENGINEER — Y. WENG — 100110138 — 2019/1/14 — PROVINCE OF ONTARIO

Niagara Region — PUBLIC WORKS

PARSONS

RN19-05
ROAD RECONSTRUCTON AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS

ALIGNMENT PLAN

CONSULTANT FILE No.	603119
DATE	2016/10/01
SCALE	HORIZ. 1:500
REF. No.	RR98 - AL-01
DWG No.	RR98 - AL-01
REV.	D

UTM NAD 83 ZONE 17
Vertical Monument description XXXXXXXXXX ELEV: ####
DATUM description XXXXXXXXXX ELEV: ####

CIVIL 3D 2015

DRAWING FILE: J:\GAD\603119\Montrose Rd Improvements\Design\RR98-GAD Deliverables\MONTR_GS_3000 - Sheet Design Plan.dwg PLOTTED: Feb 21, 2019 - 2:38pm PLOTTED BY: pdoddrell

RR98 - REM-01

Northing Easting

Northing Easting

U.T.M. NAD 83 ZONE 17
Vertical Monument description XXXXXXXXXX ELEV. ####
DATUM description XXXXXXXXXX ELEV. ####

CIVIL 3D 2015

REGIONAL ROAD No. 98
(MONTROSE ROAD)

REGIONAL ROAD 49
(McLEOD ROAD)

NOTE:
SEND IN ROAD

BP 0+000.00

PC 0+010.32

REGIONAL ROAD No. 98
(MONTROSE ROAD)

MacBAIN
ENTRANCE

STA. 0+180
(SEE DWG. BELOW)

STA. 0+120
(SEE DWG. ABOVE)

LIMITS OF CONSTRUCTION

PLAZA ENTRANCE

PT 0+158.37

PC 0+255.78

REGIONAL ROAD No. 98
(MONTROSE ROAD)

PARKING ENTRANCE

REGIONAL ROAD No. 98
(MONTROSE ROAD)

PC 0+452.61

REGIONAL ROAD No. 98
(MONTROSE ROAD)

STA. 0+500

STA. 0+500
(SEE DWG. ABOVE)

REGIONAL ROAD No. 98
(MONTROSE ROAD)

BP 0+000.00

REGIONAL ROAD No. 98
(MONTROSE ROAD)

REGIONAL ROAD No. 98
(MONTROSE ROAD)

KINSMEN COURT

REGIONAL ROAD No. 98
(MONTROSE ROAD)

(SEE DWG. BELOW)

(REGIONAL ROAD 98)
(MONTROSE ROAD)

CHARNWOOD
AVENUE

ONTARIO HYDRO PROPERTY

PT 0+450.59

L ROAD No. 98
ROSE ROAD)

CHARNWOOD
AVENUE

REGIONAL ROAD 98)
(MONTROSE ROAD)

NO.	REVISION	DATE	INIT.
D	ISSUED FOR TENDERING	2019/01/09	Y.W.
C	ISSUED FOR TENDERING REVIEW	2018/11/30	Y.W.
B	ISSUED FOR 90% REVIEW	2018/10/22	Y.W.
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DRAFTING	R.B.
DESIGN	Y.W.
CHECKED BY	N.B.
APPROVED BY	

LICENSED PROFESSIONAL ENGINEER
Y. WENG
100110138
PROVINCE OF ONTARIO

Niagara Region
PUBLIC WORKS

PARSONS

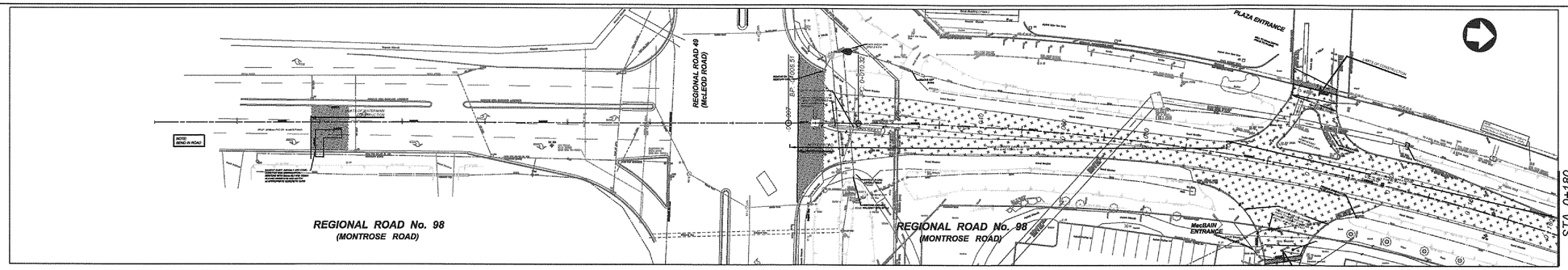
RN19-05
ROAD RECONSTRUCTION AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS

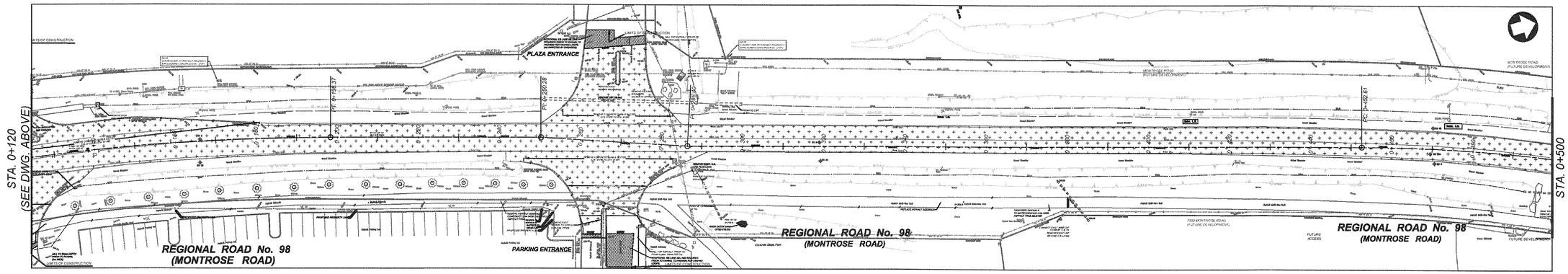
PAVEMENT REMOVAL PLAN

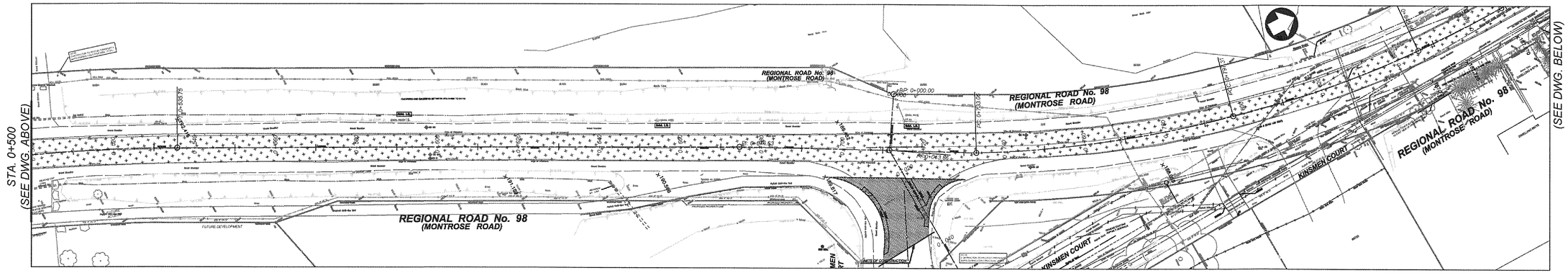
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DATE	2016/10/01
SCALE	HORIZ. 1:500
REF. No.	RR98 - REM-01
DWG No.	RR98 - REM-02
REV.	D

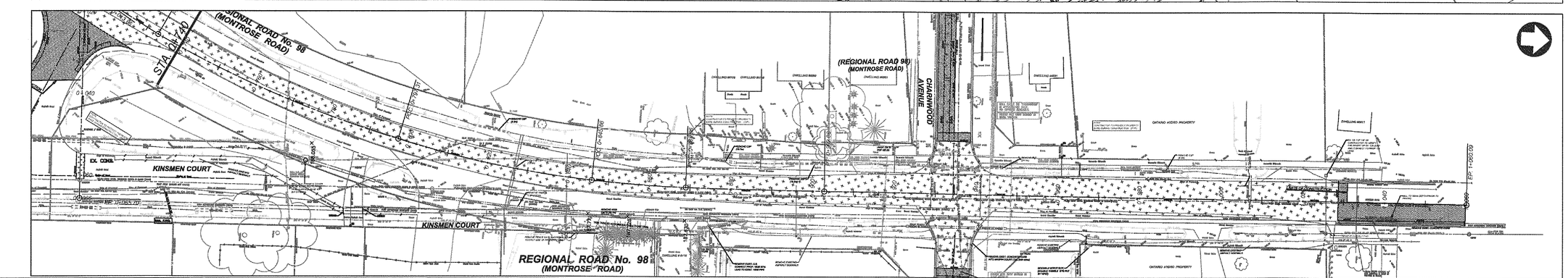
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RR98 - AL-01









NO.	REVISION	DATE	INIT.
D	ISSUED FOR TENDERING	2019/01/09	Y.W.
C	ISSUED FOR TENDERING REVIEW	2018/11/30	Y.W.
B	ISSUED FOR 90% REVIEW	2018/10/22	Y.W.
A	ISSUED FOR 60% REVIEW	2017/09/12	R.B.

NOTES / LEGEND

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DRAFTING	R.B.
DESIGN	Y.W.
CHECKED BY	N.B.
APPROVED BY	

LICENSED PROFESSIONAL ENGINEER — Y. WENG — 100110138 — 2019/1/14 — PROVINCE OF ONTARIO

Niagara Region — PUBLIC WORKS

PARSONS

RN19-05
ROAD RECONSTRUCTON AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS

ALIGNMENT PLAN

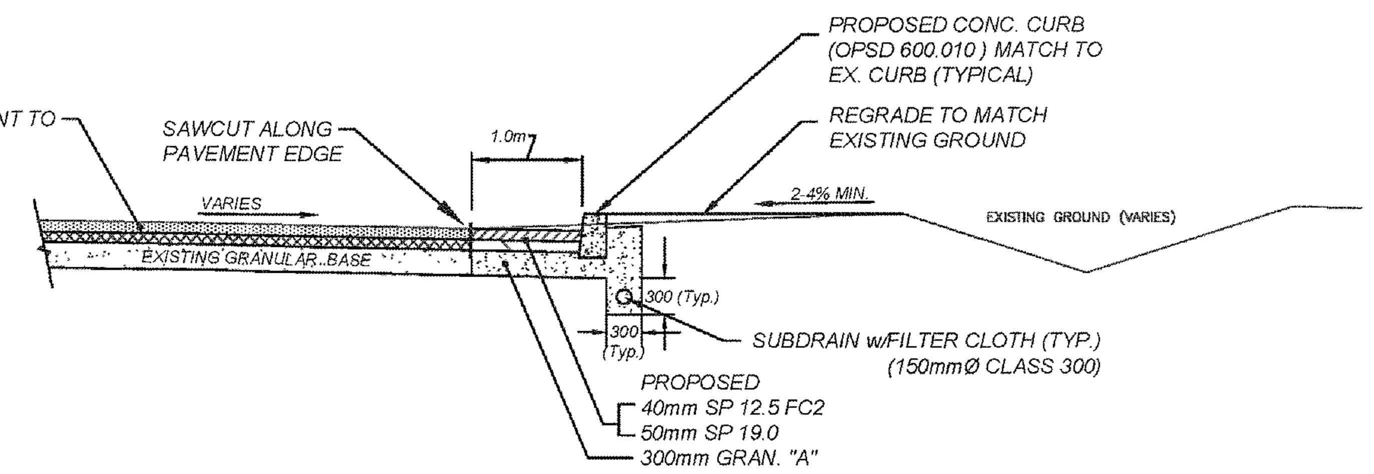
CONSULTANT FILE No.	603119
DATE	2016/10/01
SCALE	HORIZ. 1:500
REF. No.	RR98 - AL-01
DWG No.	RR98 - AL-01
REV.	D

UTM NAD 83 ZONE 17
Vertical Monument description XXXXXXXXXX ELEV: ####
DATUM description XXXXXXXXXX ELEV: ####

CIVIL 3D 2015

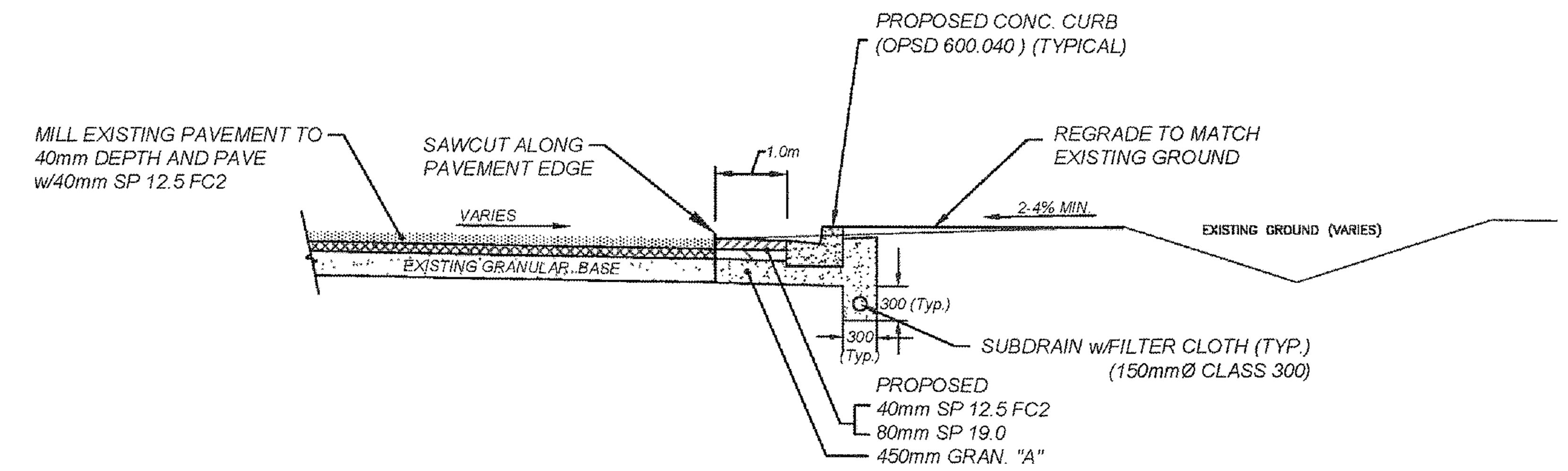
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RR98 - D01

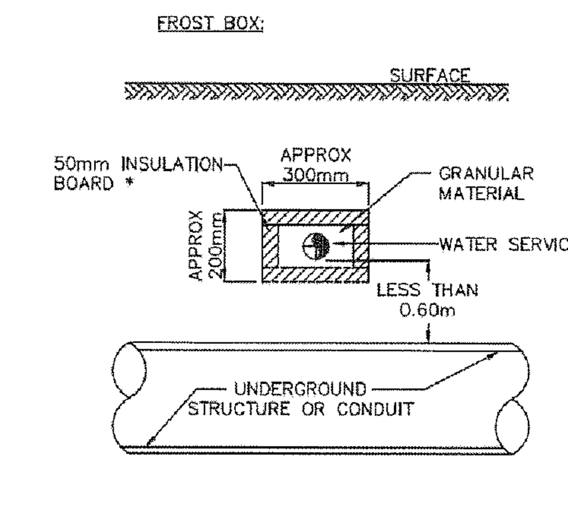


MACBAIN AND LOWES SOUTH ENTRANCE

CHANGES TO COMMERCIAL ENTRANCE WIDENINGS

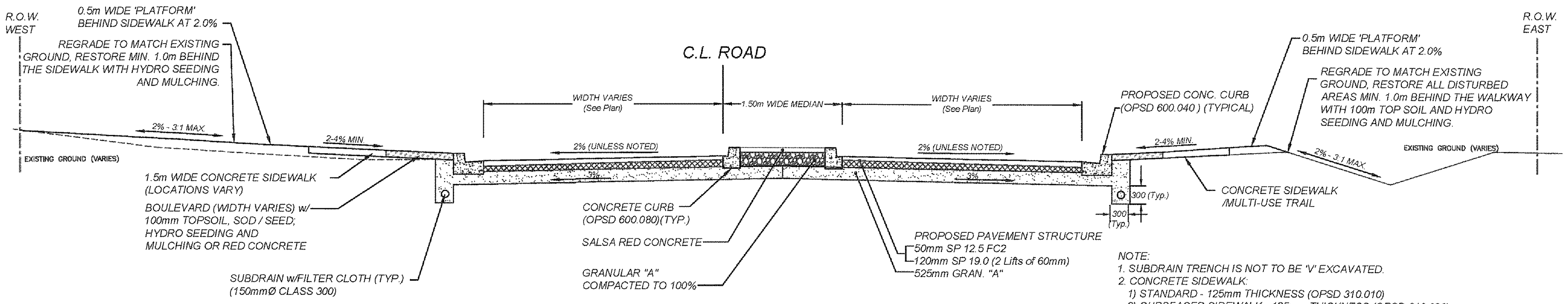


KINSMEN COURT MILLING AND C&G CONSTRUCTION



* INSULATION TO BE STYROFOAM HI 60 OR APPROVED EQUIVALENT.

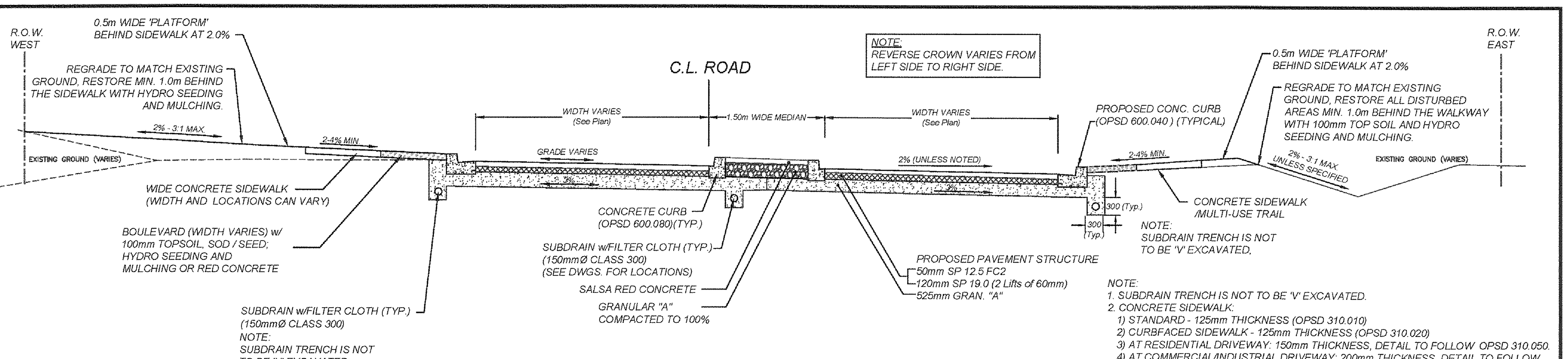
WATERMAIN INSULATION



NOTE:
1. SUBDRAIN TRENCH IS NOT TO BE 'V' EXCAVATED.
2. CONCRETE SIDEWALK:
 1) STANDARD - 125mm THICKNESS (OPSD 310.010)
 2) CURBFACED SIDEWALK - 125mm THICKNESS (OPSD 310.020)
 3) AT RESIDENTIAL DRIVEWAY: 150mm THICKNESS, DETAIL TO FOLLOW OPSD 310.050.
 4) AT COMMERCIAL/INDUSTRIAL DRIVEWAY: 200mm THICKNESS, DETAIL TO FOLLOW OPSD 310.050.
3. RED CONCRETE BOULEVARD TO BE 125mm THICKNESS
4. RED CONCRETE MEDIAN TO BE 125mm THICKNESS
5. MULTI-USE TRAIL TO BE 50mm SP 9.5 + 200mm GRANULAR 'A'

TYPICAL SECTION (NORMAL CROWN)

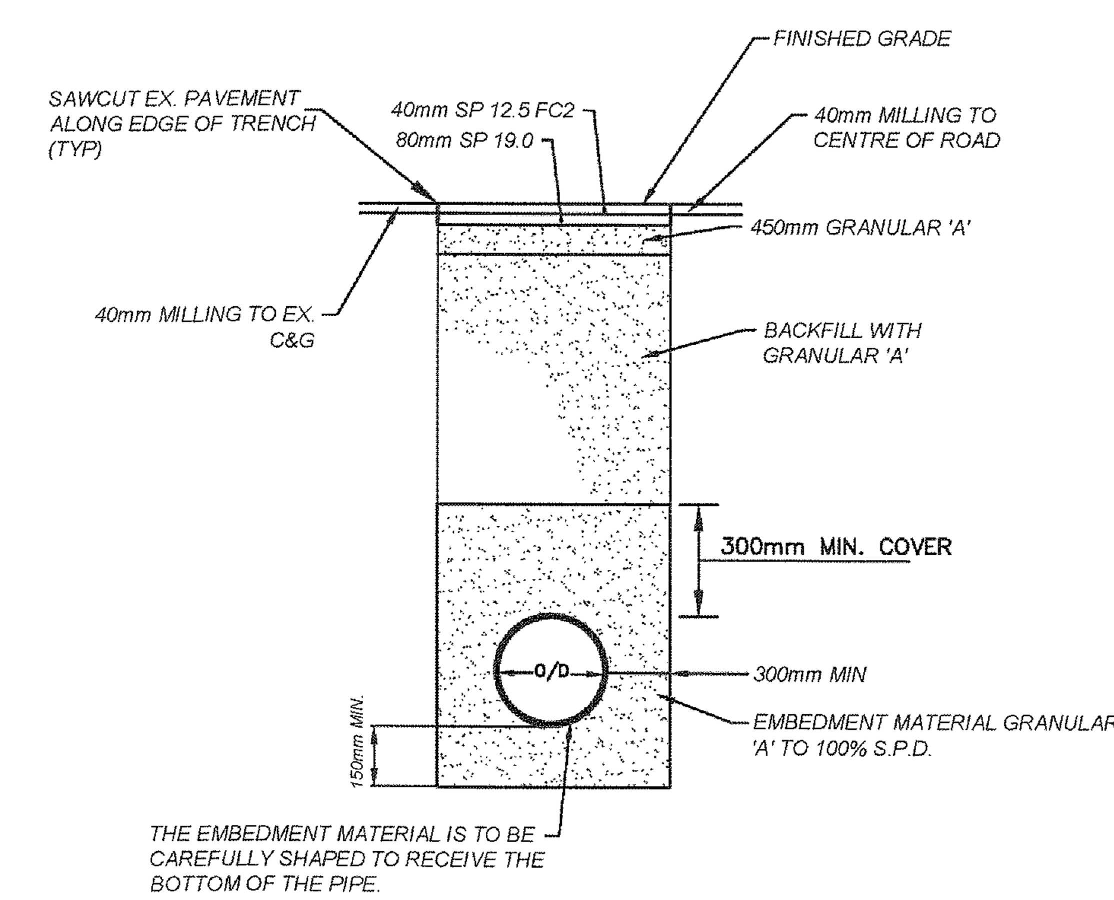
(N.T.S.)



NOTE:
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2. CONCRETE SIDEWALK:
 1) STANDARD - 125mm THICKNESS (OPSD 310.010)
 2) CURBFACED SIDEWALK - 125mm THICKNESS (OPSD 310.020)
 3) AT RESIDENTIAL DRIVEWAY: 150mm THICKNESS, DETAIL TO FOLLOW OPSD 310.050.
 4) AT COMMERCIAL/INDUSTRIAL DRIVEWAY: 200mm THICKNESS, DETAIL TO FOLLOW OPSD 310.050.
3. RED CONCRETE BOULEVARD TO BE 125mm THICKNESS
4. RED CONCRETE MEDIAN TO BE 125mm THICKNESS
5. MULTI-USE TRAIL TO BE 50mm SP 9.5 + 200mm GRANULAR 'A'

TYPICAL SECTION (FOR REVERSE CROWN)

(N.T.S.)



CHARNWOOD AVE/KINSMEN CT STORM SEWER CONSTRUCTION

IMAGES:

X-REFERENCES:

GEOGRAPHIC PROJECTION: U.T.M. NAD 83 ZONE 17
VERTICAL MONUMENT: Vertical Monument description XXXXXXXXX ELEV. ###.###
DATUM: DATUM description XXXXXXXXX ELEV. ###.###

DWG NAME:
FILE FORMAT: Autodesk Land Desktop 2004 BOUNDING COORDINATES UPPER LEFT: Northing Easting BOUNDING COORDINATES UPPER RIGHT: Northing Easting BOUNDING COORDINATES LOWER LEFT: Northing Easting BOUNDING COORDINATES LOWER RIGHT: Northing Easting

APPROVALS

MOE	YYYY/MM/DD
MTO	YYYY/MM/DD
REGION	YYYY/MM/DD
CNR	YYYY/MM/DD
CPR	YYYY/MM/DD

UTILITIES

NRBN	YYYY/MM/DD
CNP	YYYY/MM/DD
LOCAL HYDRO	YYYY/MM/DD
ONTARIO HYDRO	YYYY/MM/DD
GAS	YYYY/MM/DD
BELL	YYYY/MM/DD
CATV	YYYY/MM/DD

NO.	REVISION	DATE	INIT.
D	ISSUED FOR TENDERING	2019/01/09	Y.W.
C	ISSUED FOR 90% REVIEW	2018/10/22	Y.W.
B	ISSUED FOR 60% REVIEW	2017/09/12	Y.W.
A	ISSUED FOR REVIEW	2017/07/05	R.B.

NOTES/LEGEND

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CAD R.B.B.
DESIGN Y.W.
CHECKED BY N.B.
APPROVED BY

LICENSED PROFESSIONAL ENGINEER Y. WENG 100110138 9/1/19 PROVINCE OF ONTARIO

Niagara Region PUBLIC WORKS

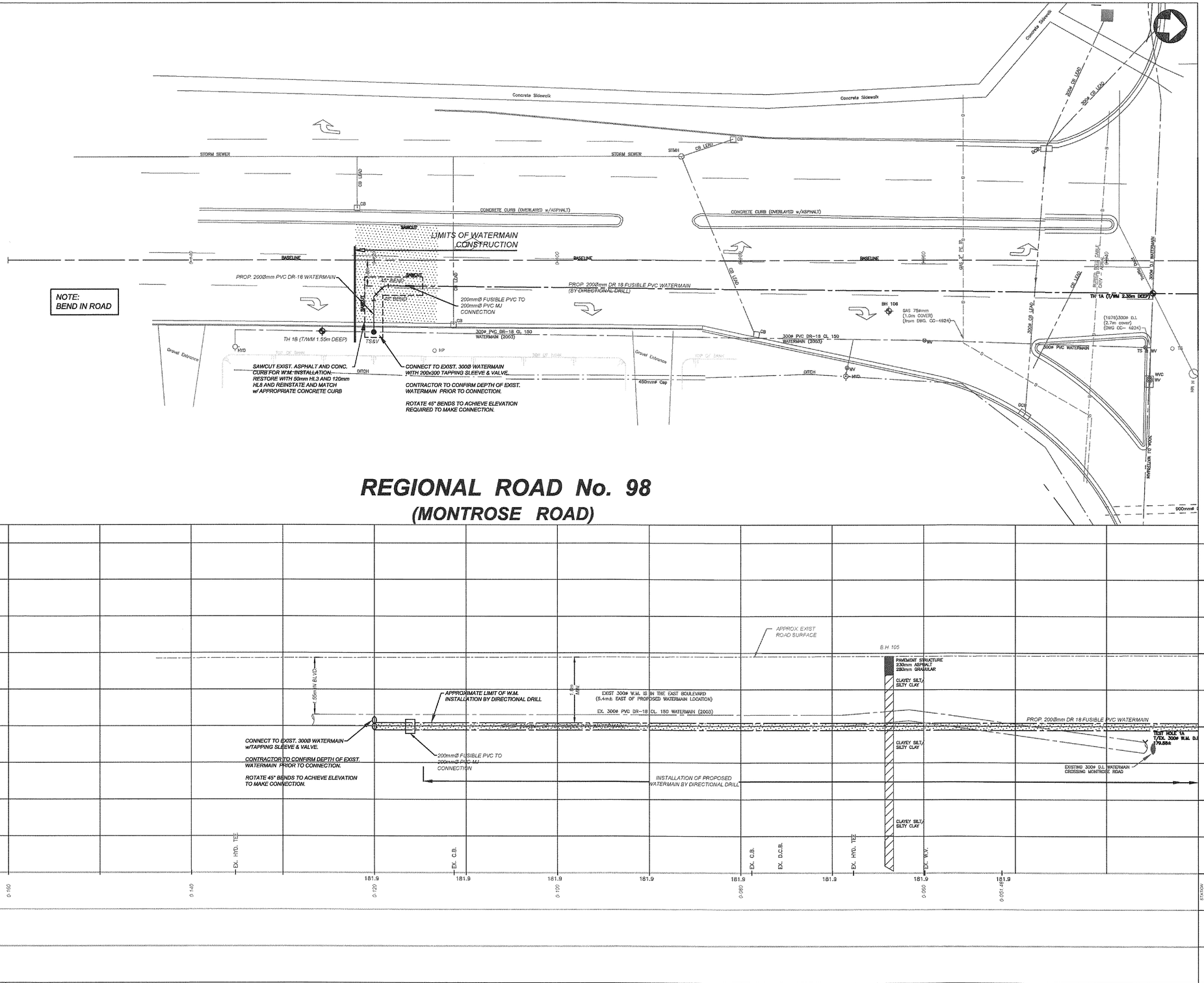
PARSONS

RN19-05
ROAD RECONSTRUCTON AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS
TYPICAL SECTION and DETAILS

CONSULTANT FILE No.	603119
DATE	2016/10/01
SCALE	N.T.S N.T.S.
REF. No.	
DWG No.	RR98 - D01
REV.	D

RR98 - PP-01

REGIONAL ROAD No. 98
(MONTROSE ROAD)



NO.	REVISION	DATE	INIT.
G	ISSUED FOR TENDERING	2019/01/09	Y.W.
F	ISSUED FOR TENDERING REVIEW	2018/11/30	Y.W.
E	ISSUED FOR 90% REVIEW	2018/10/22	Y.W.
D	ISSUED FOR UTILITY REVIEW (90%)	2017/04/12	R.B.
C	ISSUED FOR 70% REVIEW	2017/09/21	Y.W.
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A	ISSUED FOR UTILITY TEST HOLES	2017/04/24	R.B.

NOTES/LEGEND

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CAD	R.B.B.
DESIGN	Y.W.
CHECKED BY	N.B.
APPROVED BY	

BENCH MARK:
MONUMENT No: 90036061
Concrete box culvert under Montrose Road located at the intersection of Montrose Road and McLeod Road 16.2m east from the centre line of Montrose Road, and 23.6m north from the centre line of McLeod Road. Brass Tablet set vertically in the top of the culvert 2.33m south from the north edge of culvert and 1.10m west from the east edge of culvert
ELEVATION: 181.509m

LICENSED PROFESSIONAL ENGINEER Y. WENG 100110138 PROVINCE OF ONTARIO

Niagara Region PUBLIC WORKS

PARSONS

RN19-05
ROAD RECONSTRUCTION AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS
PLAN & PROFILE
FROM STA. 0-050 TO STA. 0-150

CONSULTANT FILE No.	603119
DATE	2016/10/01
SCALE	HORIZ. 1:200 VERT. 1:50
REF. No.	RR98 - PP-01
DWG No.	RR98 - PP-01
REV.	G

X-REFERENCES:

DESIGNING PROJECTION: U.T.M. NAD 83 ZONE 17 XXXXXXXXXX ELEV. ##.###
VERTICAL DATUM: XXXXXXXXXX Model Name: XXXXXXXX
DATUM: DATUM description XXXXXXXXXX ELEV. ##.###
DWG NAME:
FILE FORMAT:Autodesk Civil 3D 2015 BOUNDING COORDINATES UPPER LEFT: Northing Easting BOUNDING COORDINATES LOWER RIGHT:Northing Easting

ABBREVIATIONS

MDE	YYY.NN/YY
MDW	YYY.NN/YY
REGION	YYY.NN/YY
CPR	YYY.NN/YY

UTILITIES

BELL	YYY.NN/YY
ENBRIDGE HYDRO	YYY.NN/YY
ENBRIDGE GAS	YYY.NN/YY
ESP	YYY.NN/YY
HYDRO	YYY.NN/YY
TELUS	YYY.NN/YY

RR98 - PP-02

X-REFERENCES:

GEOGRAPHIC PROJECTION: U.T.M. NAD 83 ZONE 17
VERTICAL CONTROL: CGVD28 (HTv2.0)
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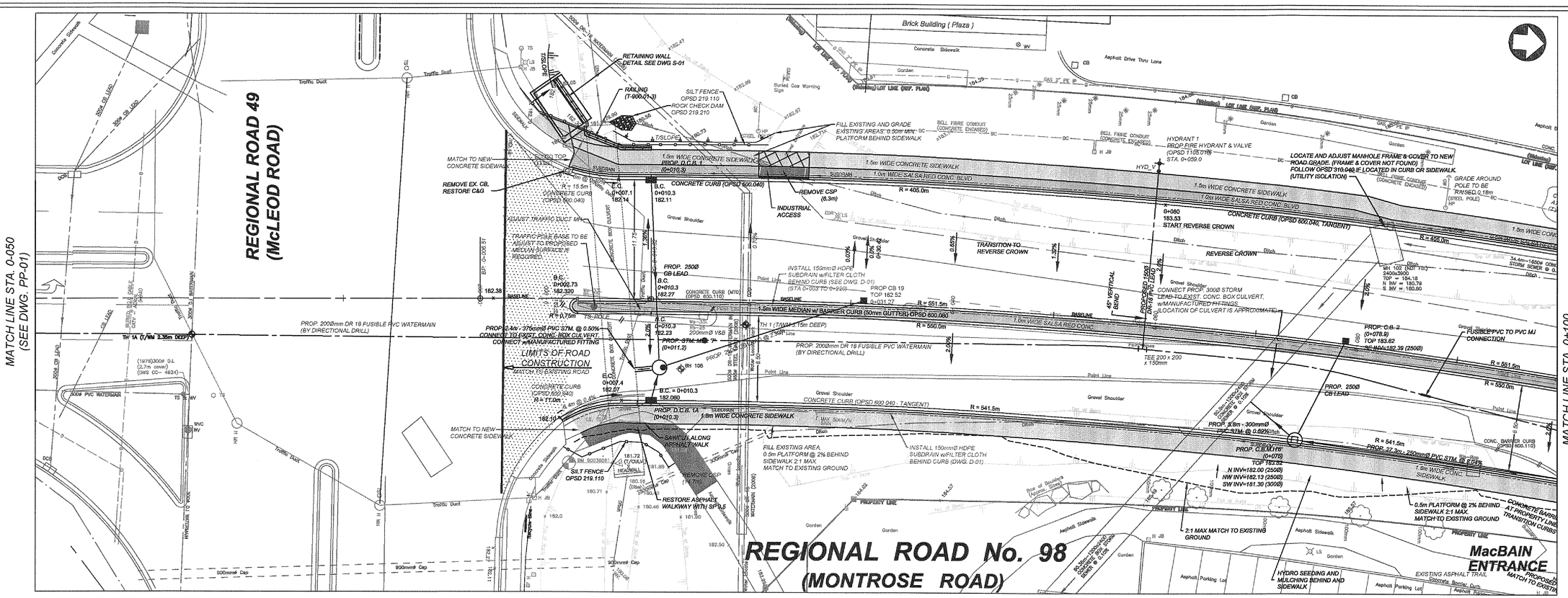
DWG NAME:
FILE FORMAT: Autodesk Civil 3D 2015

ABBREVIATIONS:

WVC	YYY/MM/DD	WVC	YYY/MM/DD
MH	YYY/MM/DD	MH	YYY/MM/DD
REGION	YYY/MM/DD	REGION	YYY/MM/DD
CPR	YYY/MM/DD	CPR	YYY/MM/DD

UTILITIES:

BELL	YYY/MM/DD	BELL	YYY/MM/DD
HYDRO	YYY/MM/DD	HYDRO	YYY/MM/DD
OPTIMUM	YYY/MM/DD	OPTIMUM	YYY/MM/DD
ENBRIDGE	YYY/MM/DD	ENBRIDGE	YYY/MM/DD
GAS	YYY/MM/DD	GAS	YYY/MM/DD
OTHER	YYY/MM/DD	OTHER	YYY/MM/DD



NO.	REVISION	DATE	INIT.
H	ISSUED FOR TENDERING	2019/01/09	Y.W.
G	ISSUED FOR TENDERING REVIEW	2018/11/30	Y.W.
F	ISSUED FOR 90% REVIEW	2018/10/22	Y.W.
E	ISSUED FOR UTILITY REVIEW (90%)	2017/04/12	R.B.
D	ISSUED FOR 70% REVIEW	2017/09/21	Y.W.
C	ISSUED FOR REVIEW	2017/07/05	R.B.
B	ISSUED FOR UTILITY TEST HOLES	2017/03/24	R.B.
A	ISSUED FOR UTILITY REVIEW	2017/01/07	R.B.

NOTES/LEGEND

1 THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWER AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

CAD	R.B.B.
DESIGN	Y.W.
CHECKED BY	N.B.
APPROVED BY	

BENCH MARK
MONUMENT No: 90036061
Concrete box culvert under Montrose Road located at the intersection of Montrose Road and McLeod Road. 15.2m east from the centre line of Montrose Road, and 23.6m north from the centre line of McLeod Road. Brass Tablet set vertically in the top of the culvert 2.33m south from the north edge of culvert and 1.12m west from the east edge of culvert.
ELEVATION: 181.508m

LICENSED PROFESSIONAL ENGINEER Y. WENG 100110138 PROVINCE OF ONTARIO

Niagara Region PUBLIC WORKS

PARSONS

RN19-05
ROAD RECONSTRUCTION AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS
PLAN & PROFILE
FROM STA. 0-050 TO STA. 0+100

CONSULTANT FILE No.	603119
DATE	2016/10/01
SCALE	HORIZ. 1:200 VERT. 1:50
REF. No.	RR98 - PP-02
DWG No.	RR98 - PP-02
REV.	H

RR98 - PP-03

IMAGES:

X-REFERENCES:

GEOGRAPHIC PROJECTION: U.T.M. NAD 83 ZONE 17
VERTICAL MONUMENT: Vertical Monument description XXXXXXXXXX ELEV. ###.###
DATUM: DATUM description XXXXXXXXXX ELEV. ###.###

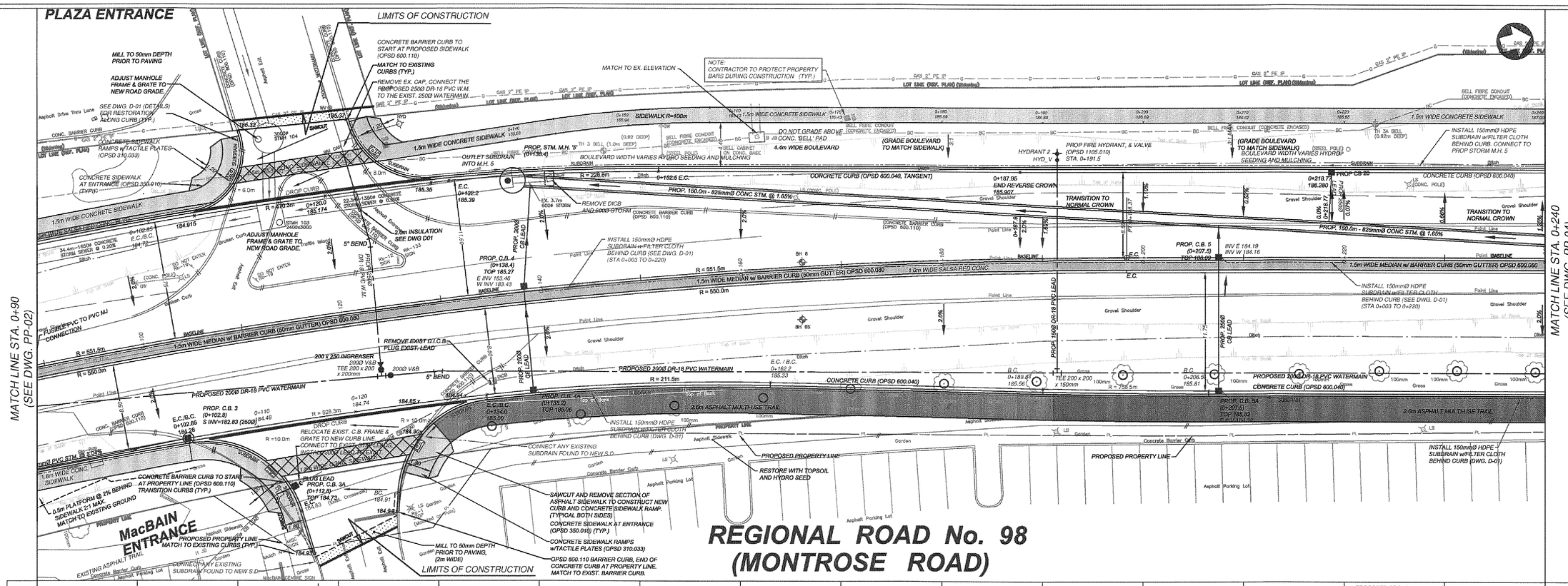
DWG NAME:
FILE: P:\DMS\Autodesk Civil 3D 2015 ... BOUNDING COORDINATES UPPER LEFT: ... BOUNDING COORDINATES LOWER RIGHT: ... Easting

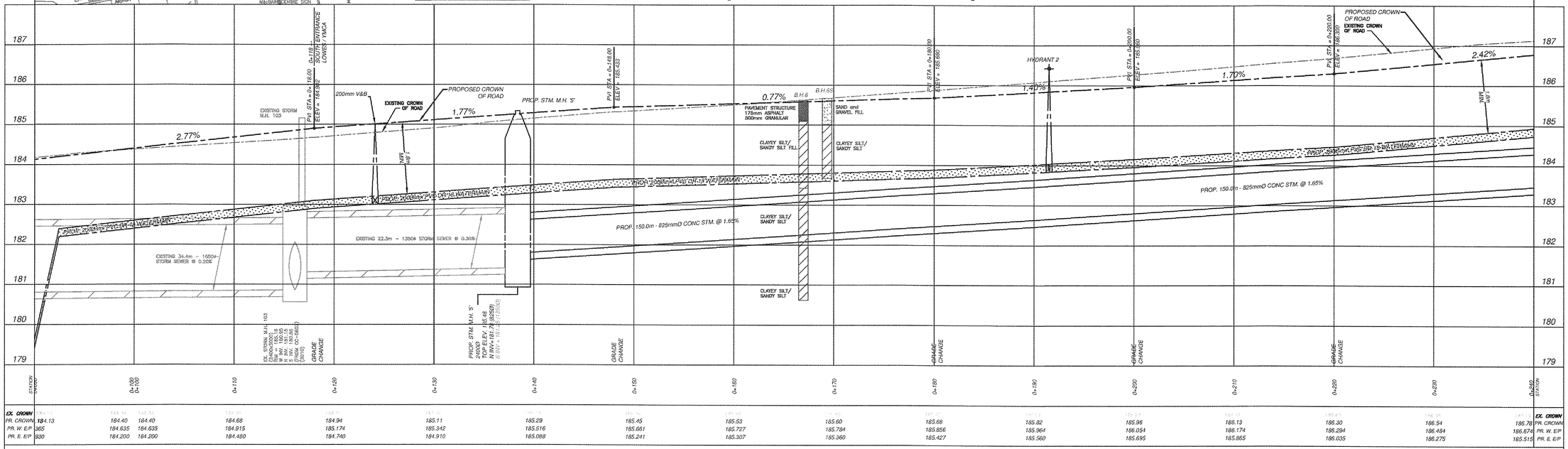
APPROVALS

MOE	YYYY/MM/DD	
MTO	YYYY/MM/DD	
REGION	YYYY/MM/DD	
CITY	YYYY/MM/DD	
CVC	YYYY/MM/DD	

UTILITIES

NRBN	YYYY/MM/DD	
BELL	YYYY/MM/DD	
COGECO	YYYY/MM/DD	
GAS	YYYY/MM/DD	
HYDRO	YYYY/MM/DD	





NO.	REVISION	DATE	INIT.
H	ISSUED FOR TENDERING	2018/01/09	Y.W.
G	ISSUED FOR TENDERING REVIEW	2018/11/30	Y.W.
F	ISSUED FOR 90% REVIEW	2018/10/22	Y.W.
E	ISSUED FOR UTILITY REVIEW (90%)	2017/04/12	R.B.
D	ISSUED FOR 70% REVIEW	2017/09/21	Y.W.
C	ISSUED FOR REVIEW	2017/07/05	R.B.
B	ISSUED FOR UTILITY TEST HOLES	2017/03/24	R.B.
A	ISSUED FOR UTILITY REVIEW	2012/01/06	R.B.

NOTES/LEGEND

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2. EXISTING RED MAPLE TREES BETWEEN STA 0+130 AND 0+255 TO BE SALVAGED AND RELOCATED. SEE SHEET L3.

EXISTING TREES TO BE RELOCATED

CAD	R.B.B.
DESIGN	Y.W.
CHECKED BY	N.B.
APPROVED BY	

BENCH MARK
MONUMENT No: 90036961
Concrete box culvert under Montrose Road located at the intersection of Montrose Road and McLeod Road. 15.2m east from the centre line of Montrose Road, and 25.6m north from the centre line of McLeod Road. Brass Tablet set vertically in the top of the culvert 2.35m south from the north edge of culvert and 1.12m west from the east edge of culvert.
ELEVATION: 181.528m

LICENSED PROFESSIONAL ENGINEER Y. WENG 100110138 9/1/18 PROVINCE OF ONTARIO

Niagara Region PUBLIC WORKS
PARSONS

RN19-05
ROAD RECONSTRUCTION AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS
PLAN & PROFILE
FROM STA. 0+100 TO STA. 0+240

CONSULTANT File No.	603119
DATE	2016/10/01
SCALE	HORIZ. 1:200 VERT. 1:50
REF. No.	RR98 - PP-03
DWG No.	RR98 - PP-03
REV.	H

RR98 - PP-04

IMAGES:

X-REFERENCES:

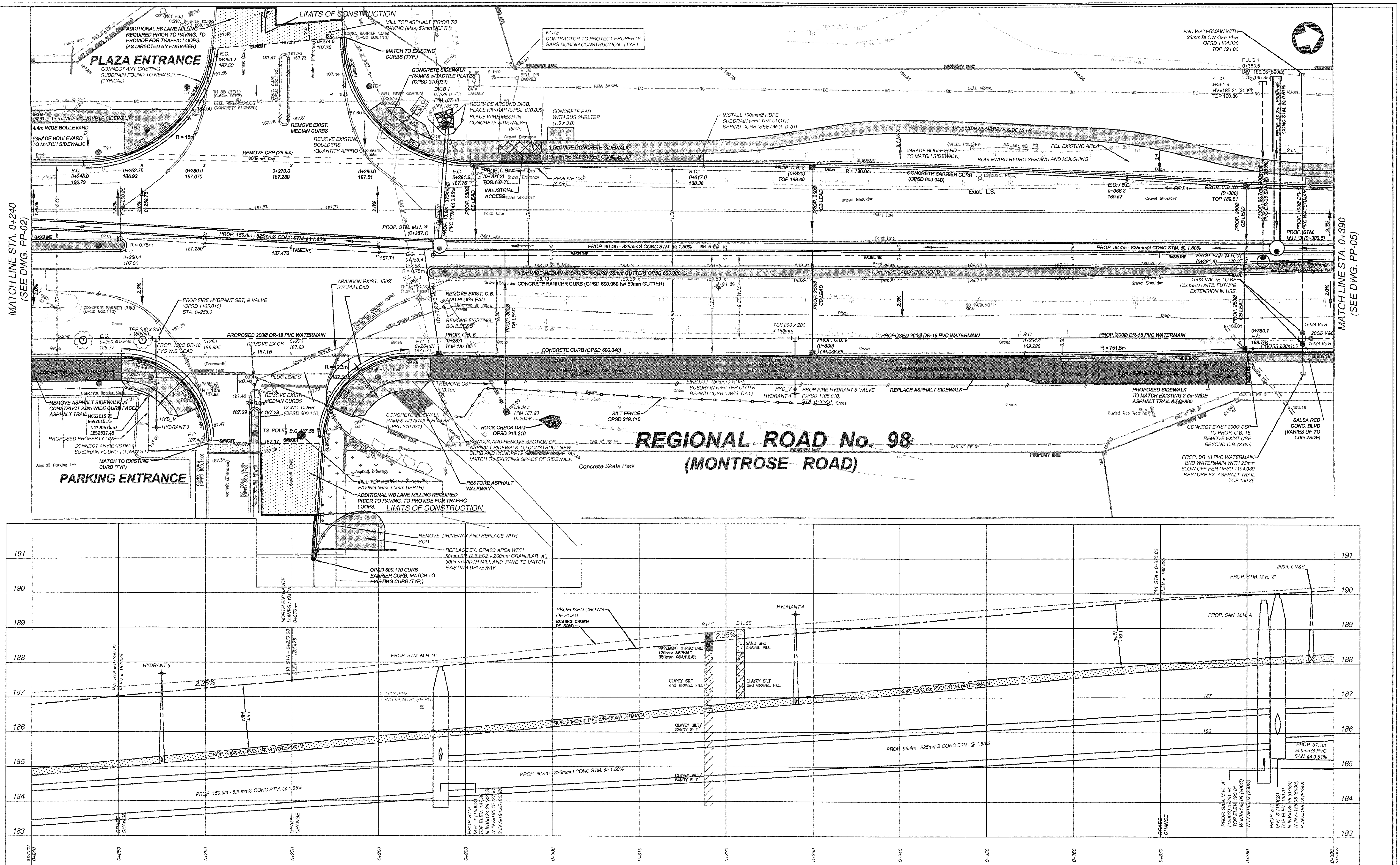
GEOGRAPHIC PROJECTION: U.T.M. NAD 83 ZONE 17
VERTICAL MONUMENT: Vertical Monument description XXXXXXXXXX ELEV. ###.###
DATUM: DATUM description XXXXXXXXXX ELEV. ###.###

DWG NAME:
FILE FORMAT: Autodesk Civil 3D 2015

BOUNDING COORDINATES UPPER LEFT: Northing Easting BOUNDING COORDINATES UPPER RIGHT: Northing Easting BOUNDING COORDINATES LOWER LEFT: Northing Easting BOUNDING COORDINATES LOWER RIGHT: Northing Easting

APPROVALS
MOE YYYY/MM/DD
MTO YYYY/MM/DD
REGION YYYY/MM/DD
CNR YYYY/MM/DD
CPR YYYY/MM/DD

UTILITIES
NRBN YYYY/MM/DD
CNP YYYY/MM/DD
LOCAL HYDRO YYYY/MM/DD
ONTARIO HYDRO YYYY/MM/DD
GAS YYYY/MM/DD
BELL YYYY/MM/DD
CATV YYYY/MM/DD



STATION	0+240	0+250	0+260	0+270	0+280	0+290	0+300	0+310	0+320	0+330	0+340	0+350	0+360	0+370	0+380	0+390
EX. CROWN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PR. CROWN	186.78	187.02	187.25	187.47	187.71	187.94	188.18	188.41	188.65	188.88	189.12	189.35	189.59	189.82	189.97	190.12
PR. W. E/P	186.674	186.864	187.070	187.280	187.511	187.735	187.975	188.205	188.445	188.677	188.934	189.159	189.411	189.652	189.813	189.971
PR. E. E/P	185.515	186.755	186.995	187.227	187.478	187.715	187.955	188.185	188.425	188.655	188.895	189.125	189.366	189.598	189.753	189.904

NO.	REVISION	DATE	INIT.
H	ISSUED FOR TENDERING	2019/01/09	Y.W.
G	ISSUED FOR TENDERING REVIEW	2018/11/30	Y.W.
F	ISSUED FOR 90% REVIEW	2018/10/22	Y.W.
E	ISSUED FOR UTILITY REVIEW (90%)	2017/04/12	R.B.
D	ISSUED FOR 70% REVIEW	2017/09/21	Y.W.
C	ISSUED FOR REVIEW	2017/07/05	R.B.
B	ISSUED FOR UTILITY TEST HOLES	2017/03/24	R.B.
A	ISSUED FOR UTILITY REVIEW	2017/01/08	R.B.

NOTES/LEGEND

1 THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWER AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

◯ EXISTING TREES TO BE RELOCATED

CAD R.B.B.
DESIGN Y.W.
CHECKED BY N.B.
APPROVED BY

BENCH MARK
MONUMENT No: 90036061
Concrete box culvert under Montrose Road located at the intersection of Montrose Road and McLeod Road. 15.2m east from the centre line of Montrose Road, and 23.6m north from the centre line of McLeod Road. Brass Tablet set vertically in the top of the culvert 2.35m south from the north edge of culvert and 1.12m west from the east edge of culvert.
ELEVATION: 181.508m

LICENSED PROFESSIONAL ENGINEER Y. WENG 100110138 9/1/19 PROVINCE OF ONTARIO

Niagara Region PUBLIC WORKS

PARSONS

RN19-05
ROAD RECONSTRUCTION AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS
PLAN & PROFILE
FROM STA. 0+240 TO STA. 0+390

CONSULTANT FILE No. 603119
DATE 2016/10/01
SCALE HORIZ. 1:200 VERT. 1:50
REF. No. RR98 - PP-04
DWG No. RR98 - PP-04
REV. H

RR98 - PP-05

MATCH LINE STA. 0+390 (SEE DWG. PP-04)

MONTROSE ROAD (FUTURE DEVELOPMENT)

INSTALL 150mmØ HDPE SUBDRAIN w/FILTER CLOTH BEHIND CURB (SEE DWG. D-01)

PROP FIRE HYDRANT & VALVE (OPSD 1105.010) STA. 0+103.0

HYDRANT 5

HYD_V

1.5m WIDE CONCRETE SIDEWALK

1.0m WIDE SALSA RED CONC. BLVD

SUBDRAIN

R = 730.0m

START TRANS. 0+398.2 190.086

Exist. L.S.

E.C. 0+414.96 190.412

CONCRETE CURB (OPSD 600.040)

0+432.2 190.74

TRANSITION TO REVERSE CROWN

B.C. 0+452.6 191.24

PROP. STM. M.H. '2' (0+444.5)

PROP. 61.0m - 675mmØ CONC. STM. @ 1.02%

PROP. 61.0m - 675mmØ CONC STM. @ 1.02%

PROP. 61.1m - 250mmØ PVC DR-35 SAN. @ 0.81%

PROP. SAN. M.H. 'B' (0+443.0)

PROP. 150.0m - 450mmØ CONC STM. @ 0.45%

BASELINE

BH 104

BH 4

PROP. 1500 DR-18 PVC W.S. LEAD

PROP. 13.3m - 200mmØ PVC DR-35 SAN. @ 1.80%

PROP. 15.3m - 600mmØ CONC STM. @ 4.55%

PROP. 3000 CB LEAD

Wo-4L Curve Sign

TEE 200 x 200 x 150mm

PROPOSED 200Ø DR-18 PVC WATERMAIN

CONCRETE CURB (OPSD 600.040)

B.C. 0+458.2 191.080

11 1/4° BEND

TEE 200 x 200 x 150mm

PROP. 250Ø PVC DR-35 SAN. @ 2.0%

PROPOSED 300Ø DR-18 PVC WATERMAIN

R = 389.5m

1500Ø V&B

1500 VALVE TO BE CLOSED UNTIL FUTURE EXTENSION IN USE.

REMOVE EXIST. BOULDERS

REMOVE CSP (14m)

11 1/4° BEND

PROP. D.C.B. 4 (0+455) TOP 191.00 W INV=190.34 (300Ø)

BOULEVARD TO BE SODDED FROM 0+400 TO 0+500

INSTALL 150mmØ HDPE SUBDRAIN w/FILTER CLOTH BEHIND CURB (DWG. D-01)

GRADE BOULEVARD TO MATCH WALKWAY

(GRADE BOULEVARD TO MATCH TRAIL)

Asphalt Multi-Use Trail

MAINTAIN EX. ASPHALT TRAIL

PLUG 6 0+441.1 INV=188.70 (200Ø) TOP 190.81

PLUG 5 0+460.75 INV=188.66 (200Ø) TOP 192.52

PROPERTY LINE

RESTORE EX ASPHALT TRAIL

7000 MONTROSE ROAD (FUTURE DEVELOPMENT)

FUTURE ACCESS

REGIONAL ROAD No. 98 (MONTROSE ROAD)

FUTURE DEVELOPMENT

NOTE: CONTRACTOR TO PROTECT PROPERTY BARS DURING CONSTRUCTION (TYP.)

Gravel Entrance

Concrete Blocks (Approx. Location)

BUSH

INDUSTRIAL ACCESS

CONCRETE CURB (OPSD 600.040) TANGENT)

R = 407.0m

0+522.15 END REVERSE CROWN 192.41

TRANSITION TO NORMAL CROWN

R = 407.0m

REVERSE CROWN

0+466.2 START REVERSE CROWN 191.62

CONNECT TO TRUNK SEWER WITH VERTICAL RISER

PROP. 150.0m - 250mmØ PVC DR-35 SAN. @ 0.50%

PROP. 150.0m - 600mmØ CONC STM. @ 0.49%

MAINTAIN EXIST. ASPHALT MULTI-USE TRAIL

PROP. DR-18 PVC WATERMAIN ENDING WITH 25mm BLOW OFF PER OPSD 1104.030

SAWCUT, RESTORE ASPHALT TRAIL TOP 192.70

BOULEVARD HYDRO SEEDING AND MULCHING

FUTURE ACCESS

PROPERTY LINE

MATCH LINE STA. 0+530 (SEE DWG. PP-06)

0+530 — FUTURE NORTH ENTRANCE (BY OTHERS)

PROP. 1200 DR-18 PVC WATERMAIN

PROP. 250mm PVC DR-35 SAN. LATERAL

PROP. 150.0m - 600mmØ CONC STM. @ 0.49%

PROP. 61.1m - 250mmØ PVC SAN. @ 0.81%

PROP. 61.0m - 675mmØ CONC STM. @ 1.02%

PROP. SAN. M.H. 'B' (1200Ø) 0+443.03 TOP ELEV. 191.90 S INV= 184.75 (250Ø) SE INV= 184.65 (250Ø) NE INV= 184.65 (250Ø)

PROP. STM. M.H. '2' (1200Ø) 0+444.95 NE INV= 185.66 (600Ø) S INV= 185.50 (675Ø) E INV= 185.60 (600Ø)

MH LANDING OPSD 404.020

MH DROP OPSD 1003.010

GRADE CHANGE

END OF BOREHOLE

PAVEMENT STRUCTURE 225mm ASPHALT 300mm GRANULAR

PAVEMENT STRUCTURE 260mm ASPHALT 470mm GRANULAR

CLAYEY SILT and GRAVEL FILL

CLAYEY SILT and SANDY SILT FILL

CLAYEY SILT/ SANDY SILT

SAND and GRAVEL FILL

PROPOSED CROWN OF ROAD

EXISTING CROWN OF ROAD

PVI STA = 0+470.00 ELEV = 191.371

BVCS= 0+509.03 BVCE 192.13

BVC

EVC

1.45%

2.43%

1.42%

STATION	0+390	0+400	0+410	0+420	0+430	0+440	0+450	0+460	0+470	0+480	0+490	0+500	0+510	0+520	0+530
EX. CROWN	190.12	190.26	190.41	190.55	190.70	190.84	191.09	191.33	191.57	191.71	191.86	192.00	192.14	192.26	192.32
PR. CROWN	189.971	190.124	190.318	190.500	190.691	190.872	191.164	191.444	191.710	191.840	192.000	192.140	192.280	192.400	192.428
PR. E. E/P	189.904	190.046	190.196	190.336	190.488	190.627	190.878	191.120	191.360	191.500	191.650	191.790	191.930	192.050	192.110

NO.	REVISION	DATE	INIT.
H	ISSUED FOR TENDERING	2019/01/09	Y.W.
G	ISSUED FOR TENDERING REVIEW	2018/11/30	Y.W.
F	ISSUED FOR 90% REVIEW	2018/10/22	Y.W.
E	ISSUED FOR UTILITY REVIEW (90%)	2017/04/12	R.B.
D	ISSUED FOR 70% REVIEW	2017/09/21	Y.W.
C	ISSUED FOR REVIEW	2017/07/05	R.B.
B	ISSUED FOR UTILITY TEST HOLES	2017/03/24	R.B.
A	ISSUED FOR UTILITY REVIEW	2017/01/08	R.B.

NOTES/LEGEND

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◯ EXISTING TREES TO BE RELOCATED

CAD R.B.B.

DESIGN Y.W.

CHECKED BY N.B.

APPROVED BY

BENCH MARK

MONUMENT No: 90030061

Concrete box culvert under Montrose Road located at the intersection of Montrose Road and McLeod Road. 15.2m east from the centre line of Montrose Road, and 23.6m north from the centre line of McLeod Road. Brass Tablet set vertically in the top of the culvert 2.55m south from the north edge of culvert and 1.12m west from the east edge of culvert.

ELEVATION: 181.508m

LICENSED PROFESSIONAL ENGINEER Y. WENG 100110133 9/1/19 PROVINCE OF ONTARIO

Niagara Region PUBLIC WORKS

PARSONS

RN19-05
ROAD RECONSTRUCTION AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS
PLAN & PROFILE
FROM STA. 0+390 TO STA. 0+540

CONSULTANT FILE No. 603119

DATE 2016/10/01

SCALE HORIZ. 1:200 VERT. 1:50

REF. No. RR98 - PP-05

DWG No. RR98 - PP-05

REV. H

X-REFERENCES:

GEOGRAPHIC PROJECTION: U.T.M. NAD 83 ZONE 17 VERTICAL DATUM: CGVD28 DATUM description: XXXXXXXXXX ELEV. ####
DATUM: DATUM description XXXXXXXXXX ELEV. ####

DWG NAME: PLE FORMAT:Autodesk Civil 3D 2015 BOUNDING COORDINATES UPPER LEFT: Northing Easting BOUNDING COORDINATES LOWER RIGHT:Northing Easting BOUNDING COORDINATES LOWER LEFT: Northing Easting

APPROVALS

MOE	YYYY/MM/DD	
REGION	YYYY/MM/DD	
MCR	YYYY/MM/DD	
CPR	YYYY/MM/DD	

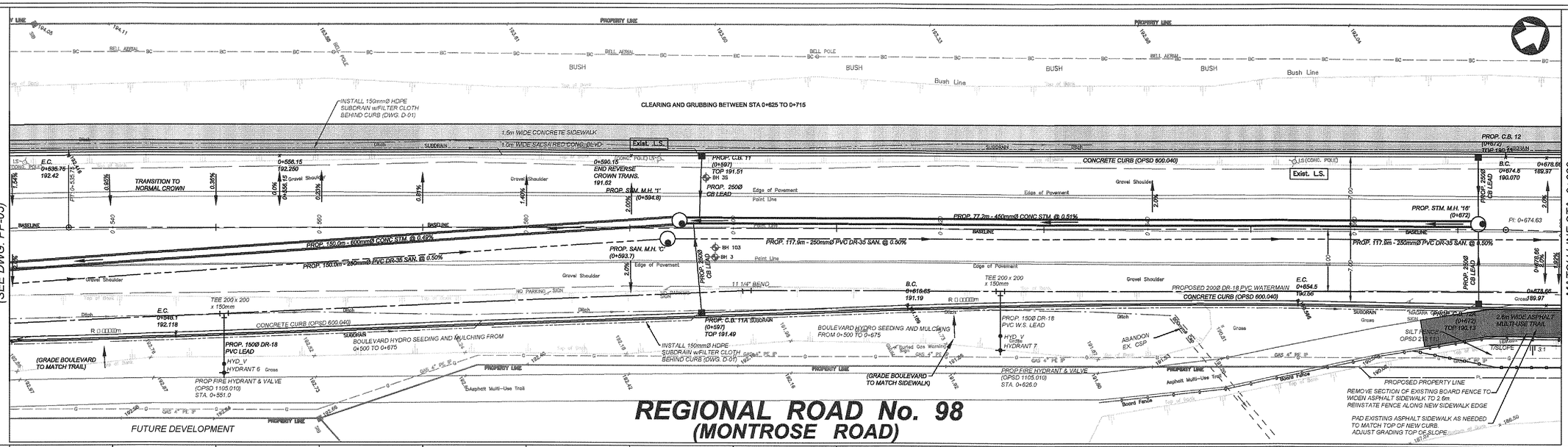
UTILITIES

NRBN	YYYY/MM/DD	
BELL	YYYY/MM/DD	
HYDRO	YYYY/MM/DD	
DSW	YYYY/MM/DD	
ENBRG	YYYY/MM/DD	
GAS	YYYY/MM/DD	

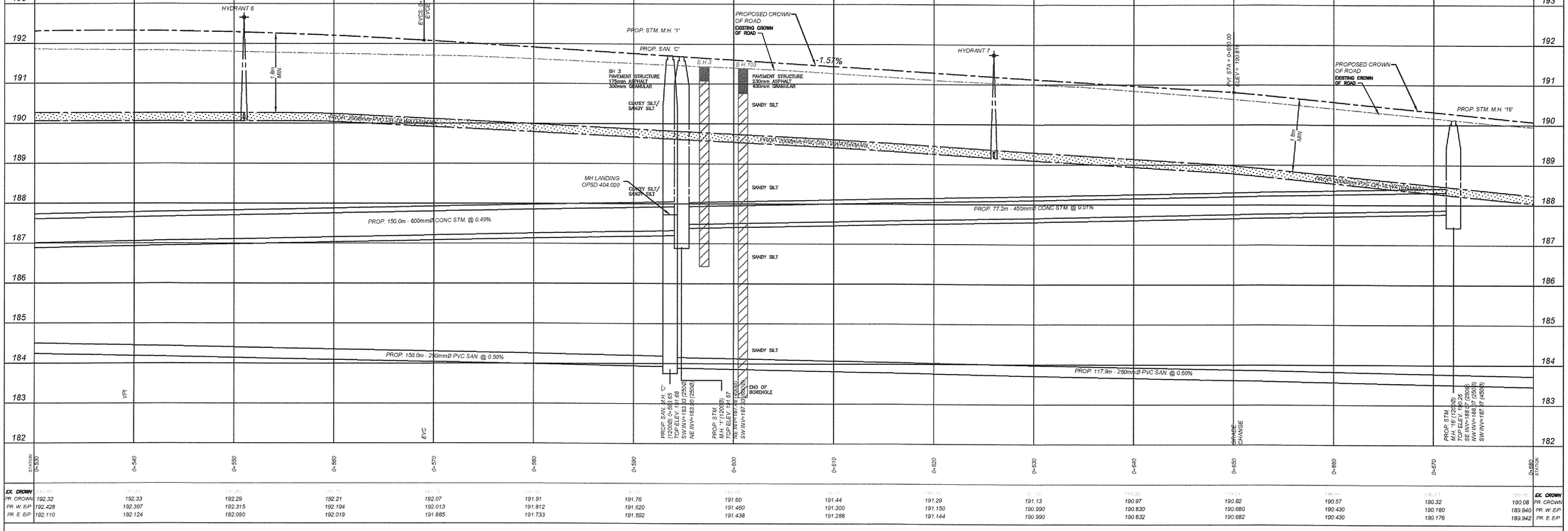
RR98 - PP-06

MATCH LINE STA. 0+530 (SEE DWG. PP-05)

MATCH LINE STA. 0+680 (SEE DWG. PP-07)



REGIONAL ROAD No. 98 (MONTROSE ROAD)



STATION	0+530	0+540	0+550	0+560	0+570	0+580	0+590	0+600	0+610	0+620	0+630	0+640	0+650	0+660	0+670	0+680
EX. CROWN	192.32	192.33	192.29	192.21	192.07	191.91	191.76	191.60	191.44	191.29	191.13	190.97	190.82	190.57	190.32	190.08
PR. W. E/P	192.428	192.397	192.315	192.194	192.013	191.812	191.620	191.460	191.300	191.150	190.990	190.830	190.680	190.430	190.180	189.940
PR. E. E/P	192.110	192.124	192.090	192.019	191.885	191.733	191.592	191.438	191.288	191.144	190.990	190.832	190.682	190.430	190.176	189.942

NO.	REVISION	DATE	INIT.
H	ISSUED FOR TENDERING	2019/01/09	Y.W.
G	ISSUED FOR TENDERING REVIEW	2018/11/30	Y.W.
F	ISSUED FOR 60% REVIEW	2018/10/22	Y.W.
E	ISSUED FOR UTILITY REVIEW (90%)	2017/04/12	R.B.
D	ISSUED FOR 70% REVIEW	2017/06/21	Y.W.
C	ISSUED FOR REVIEW	2017/07/05	R.B.
B	ISSUED FOR UTILITY TEST HOLES	2017/03/24	R.B.
A	ISSUED FOR UTILITY REVIEW	2017/01/06	R.B.

NOTES/LEGEND

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CAD R.B.B.
DESIGN Y.W.
CHECKED BY N.B.
APPROVED BY

BENCH MARK
MONUMENT No. 90036061
Concrete box culvert under Montrose Road located at the intersection of Montrose Road and McLeod Road. 15.2m east from the centre line of Montrose Road, and 23.6m north from the centre line of McLeod Road. Brass Tablet set vertically in the top of the culvert 2.39m south from the north edge of culvert and 1.12m west from the east edge of culvert.
ELEVATION: 181.508m

LICENSED PROFESSIONAL ENGINEER Y. WENG 100110138 9/1/19 PROVINCE OF ONTARIO

Niagara Region PUBLIC WORKS

PARSONS

RN19-05
ROAD RECONSTRUCTION AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS
PLAN & PROFILE
FROM STA. 0+530 TO STA. 0+680

CONSULTANT FILE No.	603119
DATE	2016/10/01
SCALE	HORIZ. 1:200 VERT. 1:50
REF. No.	RR98 - PP-06
DWG No.	RR98 - PP-06
REV.	H

X-REFERENCES

GEOGRAPHIC PROJECTION: U.T.M. NAD 83 ZONE 17
VERTICAL MONUMENT: Vertical Monument description XXXXXXXXXX ELEV. ####
DATUM: DATUM description XXXXXXXXXX ELEV. ####
DWG NAME:
FILE FORMAT: Autodesk Civil 3D 2015

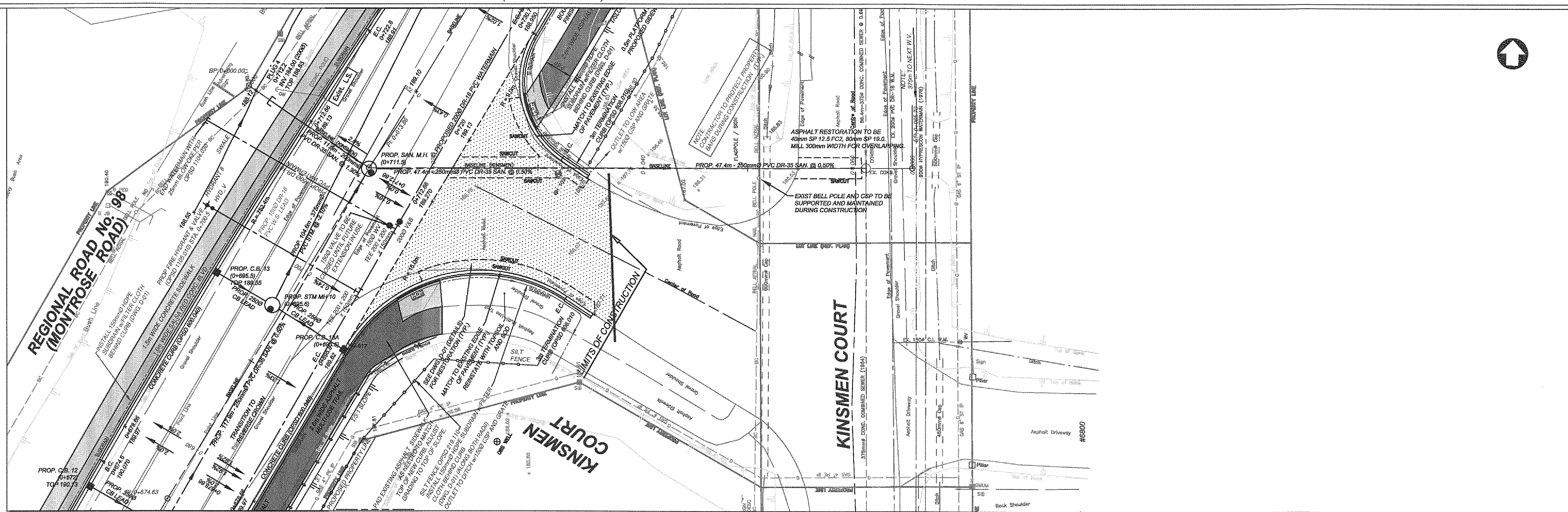
ABBREVIATIONS
MDE YYYY/MM/DD
REVISION YYYY/MM/DD
DRAWN YYYY/MM/DD
CHK YYYY/MM/DD

UTILITIES
BELL YYYY/MM/DD
ENBRIDGE YYYY/MM/DD
HYDRO ONE YYYY/MM/DD
NPEI YYYY/MM/DD
NRWD YYYY/MM/DD

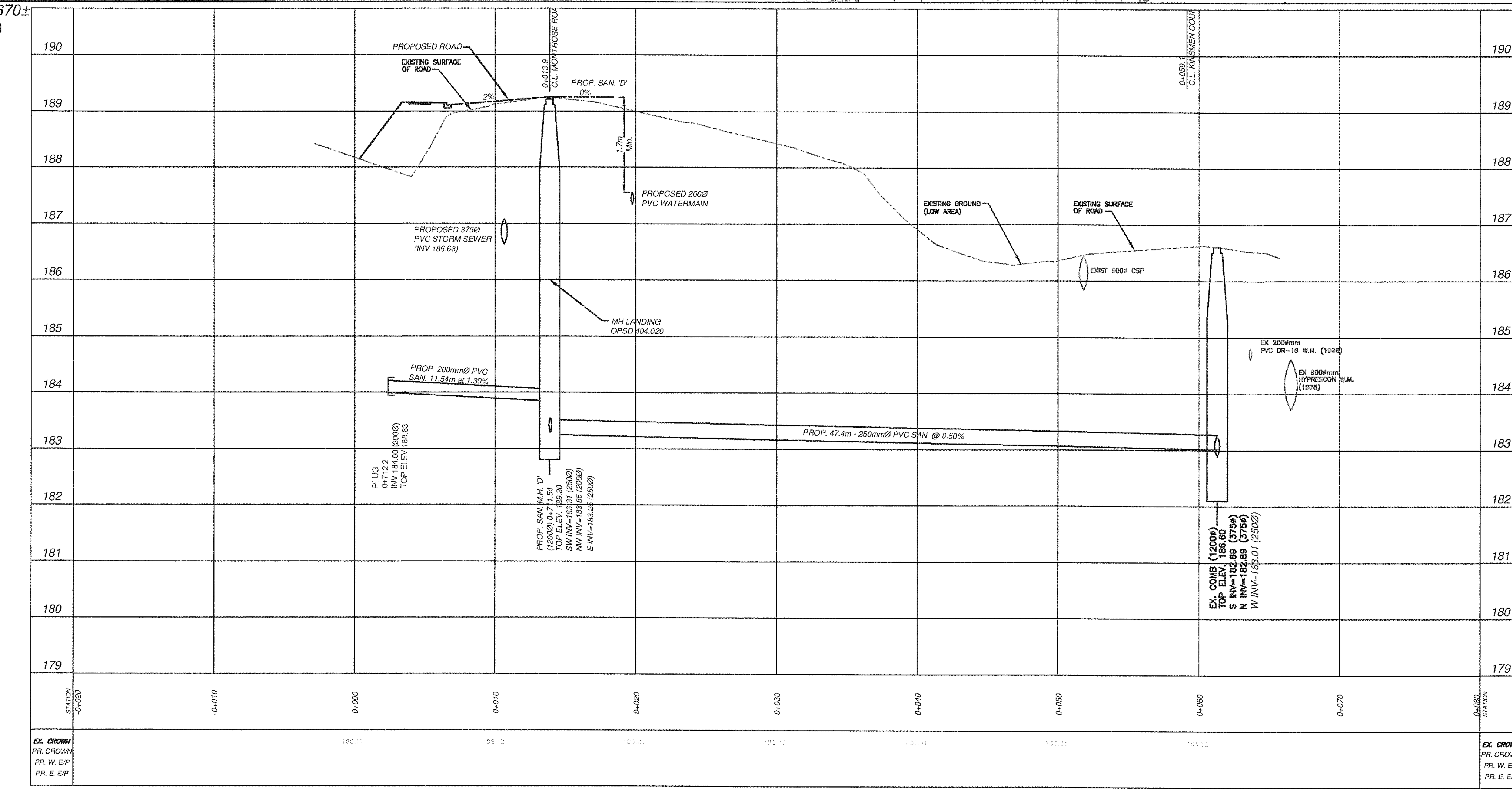
BOUNDING COORDINATES UPPER LEFT: Northing Easting BOUNDING COORDINATES LOWER RIGHT: Northing Easting

RR98 - PP-07

MATCH LINE STA. 0+730± (SEE DWG. PP-08)



MATCH LINE STA. 0+670± (SEE DWG. PP-06)



NO.	REVISION	DATE	INIT.
H	ISSUED FOR TENDERING	2019/01/09	Y.W.
G	ISSUED FOR TENDERING REVIEW	2018/11/30	Y.W.
F	ISSUED FOR 90% REVIEW	2018/10/22	Y.W.
E	ISSUED FOR UTILITY REVIEW (90%)	2017/04/12	R.B.
D	ISSUED FOR 70% REVIEW	2017/09/21	Y.W.
C	ISSUED FOR REVIEW	2017/07/05	R.B.
B	ISSUED FOR UTILITY TEST HOLES	2017/03/24	R.B.
A	ISSUED FOR UTILITY REVIEW	2017/01/06	R.B.

NOTES/LEGEND

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CAD R.B.B.
DESIGN Y.W.
CHECKED BY N.B.
APPROVED BY

BENCH MARK
MONUMENT No: 90036061
Concrete box culvert under Montrose Road located at the intersection of Montrose Road and McLeod Road. 15.2m east from the centre line of Montrose Road, and 23.6m north from the centre line of McLeod Road. Brass Tablet set vertically in the top of the culvert 2.35m south from the north edge of culvert and 1.12m west from the east edge of culvert.
ELEVATION: 181.508m

LICENSED PROFESSIONAL ENGINEER Y. WENG 100110138 9/1/19 PROVINCE OF ONTARIO

Niagara Region PUBLIC WORKS

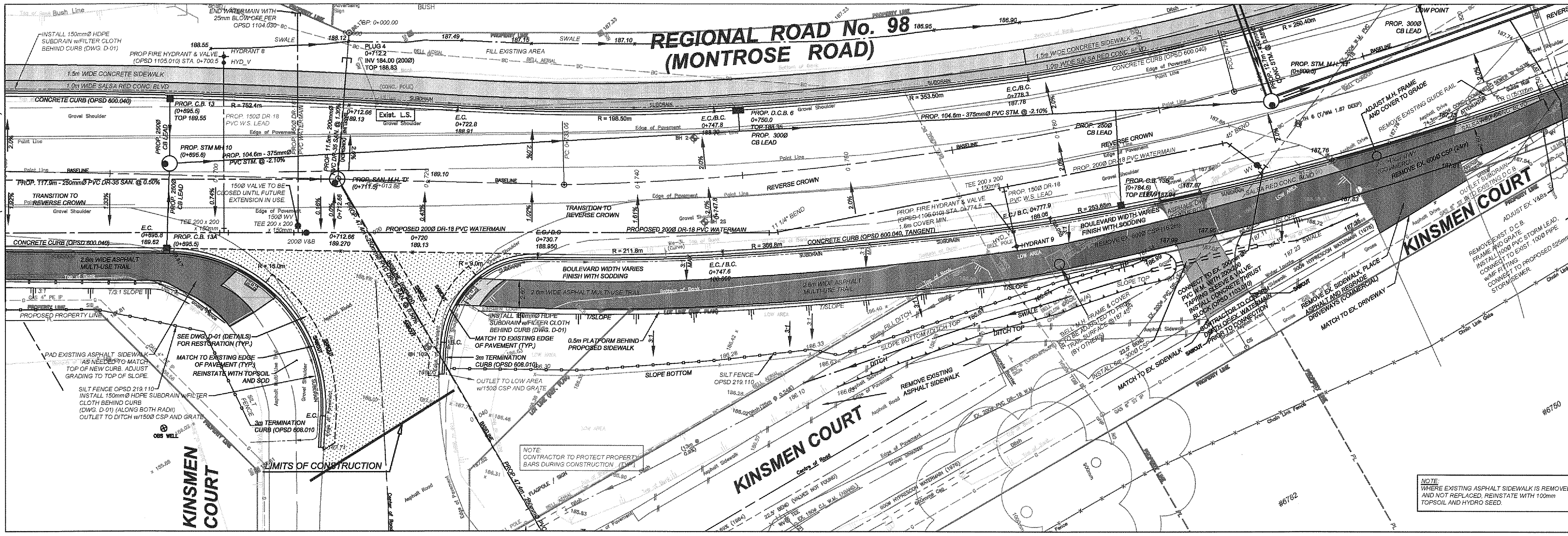
PARSONS

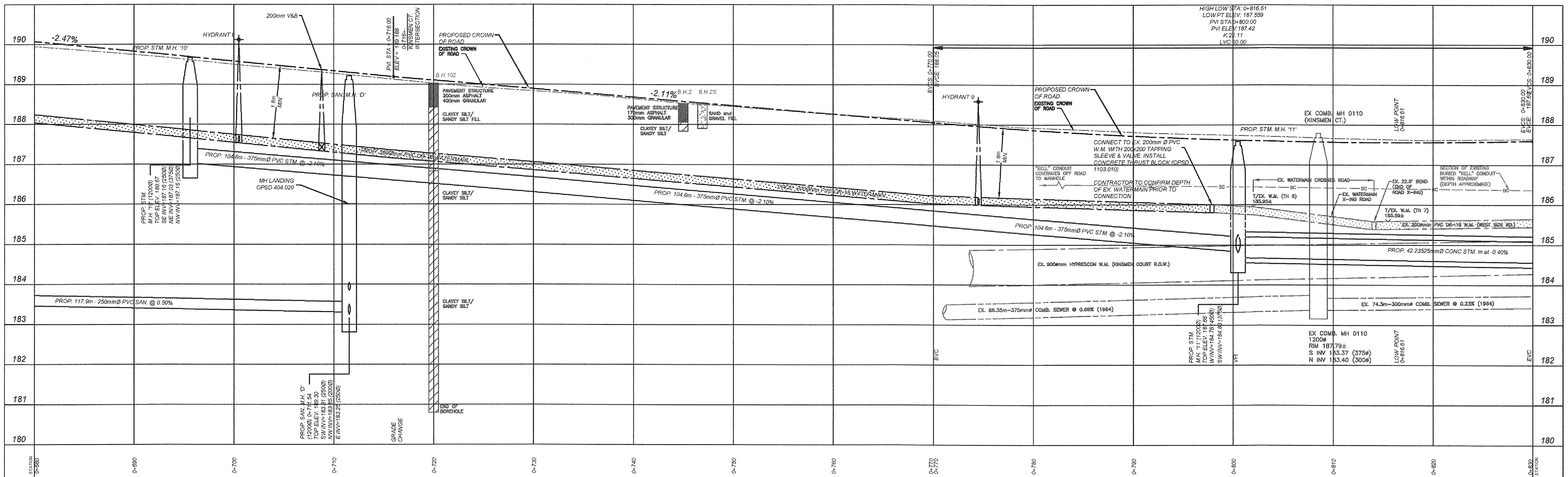
RN19-05
ROAD RECONSTRUCTION AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS
PLAN & PROFILE
KINSMEN COURT (FROM STA. 0+000 TO STA. 0+050)

CONSULTANT FILE No. 603119
DATE 2016/10/01
SCALE HORIZ. 1:200 VERT. 1:50
REF. No. RR98 - PP-07
DWG No. RR98 - PP-07
REV. H

UTILITIES: NRBN, CNP, LOCAL HYDRO, ONTARIO HYDRO, GAS, BELL, CATV — YYYY/MM/DD
APPROVALS: MOE YYYY/MM/DD, MTO YYYY/MM/DD, REGION YYYY/MM/DD, CNR YYYY/MM/DD, CPR YYYY/MM/DD
GEOGRAPHIC PROJECTION: U.T.M. NAD 83 ZONE 17
VERTICAL MONUMENT: Vertical Monument description XXXXXXXXXX ELEV. ###.###
DATUM: DATUM description XXXXXXXXXX ELEV. ###.###
DWG NAME:
FILE FORMAT: Autodesk Civil 3D 2015
BOUNDING COORDINATES UPPER LEFT: Northing Easting BOUNDING COORDINATES UPPER RIGHT: Northing Easting BOUNDING COORDINATES LOWER LEFT: Northing Easting BOUNDING COORDINATES LOWER RIGHT: Northing Easting
X-REFERENCES:
IMAGES:

RR98 - PP-08





STATION	0+680	0+690	0+700	0+710	0+720	0+730	0+740	0+750	0+760	0+770	0+770	0+780	0+790	0+800	0+810	0+820	0+830
EX. CROWN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PR. CROWN	190.08	189.83	189.58	189.34	189.10	188.89	188.68	188.47	188.26	188.05	188.05	187.86	187.72	187.62	187.57	187.56	187.60
PR. W. E/P	189.940	189.690	189.440	189.198	188.956	188.758	188.551	188.346	188.140	187.937	187.937	187.754	187.618	187.520	187.470	187.460	187.500
PR. E. E/P	189.942	189.737	189.529	189.329	189.195	188.958	188.787	188.611	188.406	188.202	188.202	188.019	187.884	187.784	187.736	187.726	187.765

IMAGES:

X-REFERENCES:

GEOGRAPHIC PROJECTION: U.T.M. NAD 83 ZONE 17
VERTICAL MONUMENT: Vertical Monument description XXXXXXXXXX ELEV. ###.###
DATUM: DATUM description XXXXXXXXXX ELEV. ###.###

DWG NAME:
FILE FORMAT: Autodesk Civil 3D 2015

BOUNDING COORDINATES UPPER LEFT: Northing Easting BOUNDING COORDINATES UPPER RIGHT: Northing Easting BOUNDING COORDINATES LOWER LEFT: Northing Easting BOUNDING COORDINATES LOWER RIGHT: Northing Easting

APPROVALS
MOE YYYY/MM/DD
MTO YYYY/MM/DD
REGION YYYY/MM/DD
CNR YYYY/MM/DD
CPR YYYY/MM/DD

UTILITIES
NRBN YYYY/MM/DD
CNP YYYY/MM/DD
LOCAL HYDRO YYYY/MM/DD
ONTARIO HYDRO YYYY/MM/DD
GAS YYYY/MM/DD
BELL YYYY/MM/DD
CATV YYYY/MM/DD

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E	ISSUED FOR UTILITY REVIEW (90%)	2017/04/12	R.B.
D	ISSUED FOR 70% REVIEW	2017/09/21	Y.W.
C	ISSUED FOR REVIEW	2017/07/05	R.B.
B	ISSUED FOR UTILITY TEST HOLES	2017/03/24	R.B.
A	ISSUED FOR UTILITY REVIEW	2017/01/08	R.B.

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CAD R.B.B.
DESIGN Y.W.
CHECKED BY N.B.
APPROVED BY

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ELEVATION: 181.508m

LICENSED PROFESSIONAL ENGINEER
Y. WENG
100110138
9/1/19
PROVINCE OF ONTARIO

Niagara Region PUBLIC WORKS

PARSONS

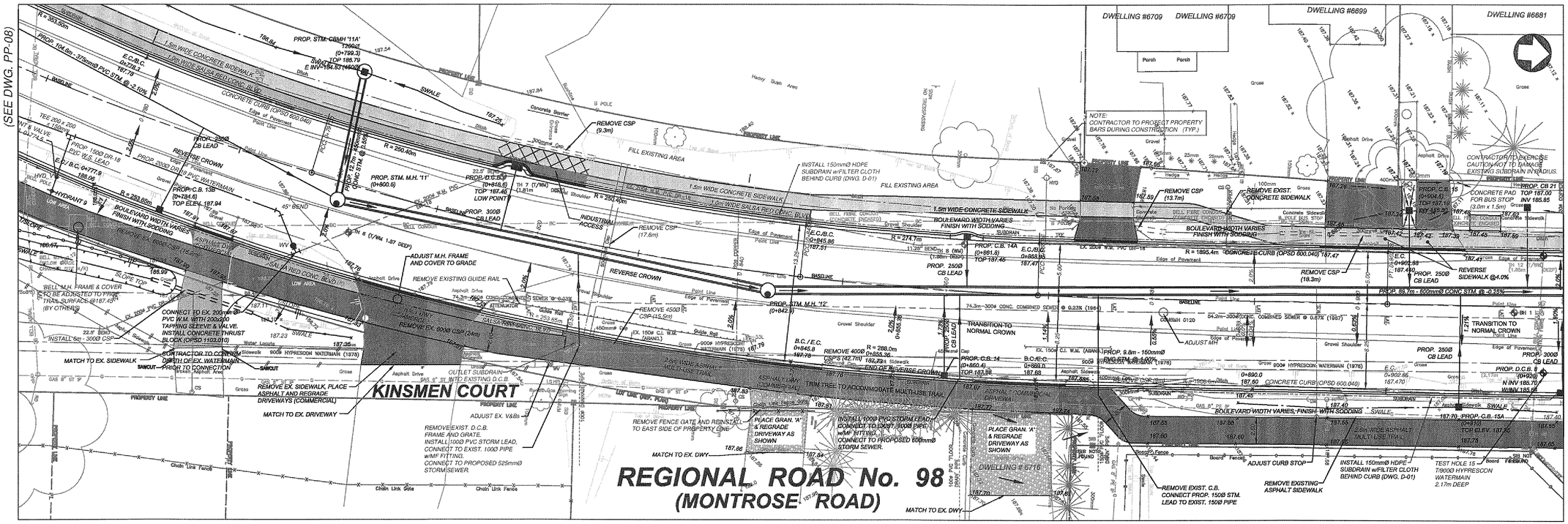
RN19-05
ROAD RECONSTRUCTION AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS
PLAN & PROFILE
FROM STA. 0+680 TO STA. 0+770

CONSULTANT FILE No. 603119
DATE 2016/10/01
SCALE HORIZ. 1:200 VERT. 1:50
REF. No. RR98 - PP-08
DWG No. RR98 - PP-08
REV. H

RR98 - PP-09

MATCH LINE STA. 0+770 (SEE DWG. PP-08)

MATCH LINE STA. 0+920 (SEE DWG. PP-10)



NO.	REVISION	DATE	INIT.
H	ISSUED FOR TENDERING	2019/01/09	Y.W.
G	ISSUED FOR TENDERING REVIEW	2018/11/30	Y.W.
F	ISSUED FOR 90% REVIEW	2018/10/22	Y.W.
E	ISSUED FOR UTILITY REVIEW (90%)	20017/06/12	R.B.
D	ISSUED FOR 70% REVIEW	2017/09/21	Y.W.
C	ISSUED FOR REVIEW	2017/07/05	R.B.
B	ISSUED FOR UTILITY TEST HOLES	2017/03/24	R.B.
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CAD	R.B.B.
DESIGN	Y.W.
CHECKED BY	N.B.
APPROVED BY	

BENCH MARK

MONUMENT No: 90036051

Concrete box culvert under Montrose Road located at the intersection of Montrose Road and McLeod Road. 15.2m east from the centre line of Montrose Road, and 23.6m north from the centre line of McLeod Road. Brass Tablet set vertically in the top of the culvert 2.35m south from the north edge of culvert and 1.12m west from the east edge of culvert.

ELEVATION: 181.50m

LICENSED PROFESSIONAL ENGINEER Y. WENG 100110139 PROVINCE OF ONTARIO 9/1/19

Niagara Region PUBLIC WORKS

PARSONS

RN19-05
ROAD RECONSTRUCTION AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS
PLAN & PROFILE
FROM STA. 0+770 TO STA. 0+920

CONSULTANT FILE No.	603119
DATE	2016/10/01
SCALE	HORIZ. 1:200 VERT. 1:50
REF. No.	RR98 - PP-09
DWG No.	RR98 - PP-09
REV.	H

X-REFERENCES

GEOGRAPHIC PROJECTION: UTM NAD 83 ZONE 17 BOUNDING COORDINATES UPPER LEFT: Northing Easting BOUNDING COORDINATES LOWER RIGHT: Northing Easting
VERTICAL DATUM: CGVD28 (HTDP) ######.### ######.### ELEV. ####
DATUM: DATUM description ######.### ######.### ELEV. ####
DWG NAME:
FILE FORMAT: Autodesk Civil 3D 2015

ASSIGNS:
MDE YYY/MM/DD
RESDM YYY/MM/DD
CPR YYY/MM/DD

UTILITIES:
BELL
ENBRIDGE HYDRO
ENBRIDGE GAS
HYDRO ONE
NIAGARA REGION
ROGERS

RR98 - PP-10

MATCH LINE STA. 0+153
(SEE DWG. PP-11)

MATCH LINE STA. 0+920
(SEE DWG. PP-09)

CHARNWOOD AVENUE

MARPIN COURT

DWELLING #6661

DWELLING #6611

DWELLING #6610

ONTARIO HYDRO PROPERTY

ONTARIO HYDRO PROPERTY

BELL CABLE ON "CHARNWOOD" IS APPROXIMATE ONLY. NO OFFSETS AVAILABLE.

HYDRO AND CATV BURIED IN SAME TRENCH

HYDRO AND CATV BURIED IN SAME TRENCH

NOTE: CONTRACTOR TO PROTECT PROPERTY BARS DURING CONSTRUCTION (TYP.)

CONTRACTOR TO EXERCISE CAUTION NOT TO DAMAGE EXISTING SUBDRAIN IN RADIUS.

CONCRETE SIDEWALK RAMPS w/TACTILE PLATES (OPSD 310.033)

PROP. CB19 (0+930.55) 187.26

PROP. C.B. 19 (0+938.3) 187.26

MATCH TO EXISTING CURBS (TYP.) CONNECT ANY EXISTING SUBDRAIN FOUND TO NEW S.D. (TYPICAL)

REMOVE EXISTING CURBS (Typical both sides)

PROP. 250ø CB LEAD

REMOVE EXIST. CONCRETE SIDEWALK

REMOVE CSP (24.1m)

REMOVE CSP (6.5m)

PLACE WIRE MESH IN CONCRETE SIDEWALK (12m2)

1200ø CBMH TOP 187.60 EX. INV W 186.77 INV N 186.75

CONNECT TO EXIST. CONCRETE SIDEWALK

PROP. 18.7m 250mmø PVC

EX. CB TOP 187.69 CONTRACTOR TO VERIFY THE INVERT OF EX. CB LEAD AND CONNECT TO PROP. CB LEAD.

MATCH TO EXISTING CONCRETE ROLLOVER CURB.

MILL TO 50mm DEPTH PRIOR TO PAVING

REMOVE EXIST. CONCRETE CURB

MATCH TO EXISTING CONCRETE CURB. (ROLLOVER CURB, TYP.)

1.8m WIDE CONCRETE SIDEWALK

1.0m WIDE CONCRETE SIDEWALK

1.0m WIDE SALSA RED CONC BLVD

RED CONC BLVD

CONCRETE CURB (OPSD 600.040)

1.5m WIDE CONCRETE SIDEWALK

1.5m WIDE CONCRETE SIDEWALK

1.5m WIDE CONCRETE SIDEWALK

12.0m TRANSITION

R = 8.0m

R = 8.0m

R = 8.0m

R = 10.0m

R = 11.5m

R = 8.8m

LIMITS OF CONSTRUCTION

START TAPER 1+010 187.860

PLUG

INSTALL 150mmØ HDPE SUBDRAIN w/FILTER CLOTH BEHIND CURB (DWG. D-01)

EXIST CSP (END BURIED)

TEST HOLE 16 T/900Ø HYPRESCON WM 2.44m DEEP

E.C. 1+010.6 187.83

TH 16 (HWM HPC)

E.C. 187.83

CONCRETE CURB (OPSD 600.040)

CONNECT TO EX. CULVERT TOP 187.62 INV 186.30

PROP. CB22 0+976.55

PROP. CB23 N INV 186.02 S INV 185.99

PROP. 28.0m PVC 250Ø CB LEAD @ 1.0%

B.C. 0+961.3 187.521

B.C. 0+920.66 187.32

E.C. 0+948.7 187.450

E.C. 0+946.35 187.510

REMOVE PE CULVERT (24.5m)

PROP. 29.0m PVC 250Ø CB LEAD @ 1.0%

REMOVE EXISTING ASPHALT SIDEWALK

ENSURE THAT THE PROPOSED CONCRETE SIDEWALK AVOIDS HYDRO POLE AND GUY WIRE

SIDEWALK STRUT GUY, (DOUBLE THIMBLE EYE NUT BY 'NPEI')

2.0m WIDE CONCRETE SIDEWALK AT RADIUS

REMOVE EXIST. CONCRETE CURB INTO MARPIN COURT (Typ. both sides)

ENSURE THAT EXIST. SUBDRAINS ARE RECONNECTED TO RELOCATED C.B. (Typical both sides)

IF TOP ASPHALT HAS BEEN PLACED ON 'MARPIN COURT', MILL TO 40mm DEPTH PRIOR TO PAVING ON MONTROSE ROAD, (2m WIDE)

RELOCATE EXIST. C.B'S ON MARPIN CT. TO NEW OURBS, RECONECT w/200Ø STM. LEADS (Typical both sides)

MATCH TO EXISTING CURBS (Typical both sides)

PROP. C.B. 17 (0+929.7) TOP 187.47

PROP. C.B. 18 (0+939.6) TOP 187.50

B.C. 0+938.7 187.51

PLACE WIRE MESH IN CONCRETE SIDEWALK (7m2)

REMOVE EXISTING ASPHALT SIDEWALK

MAINTAIN EXIST. D.I.C.B. REGRADE AREA. ENSURE T/SLOPE IS 0.5m MIN. FROM S/WALK

OUTLET NEW SUBDRAIN TO DICB STRUCTURE

MATCH TO EXISTING SIDEWALK

REMOVE ASPHALT PAD

HYDRO SEEDING AND MULCHING

FILL EXISTING AREA

FILL EXISTING AREA

BOULEVARD (WIDTH VARIES), FINISH WITH SOD

BOULEVARD WIDTH VARIES, FINISH WITH

LIMITS OF CONSTRUCTION

NEW SUBDIVISION

REGIONAL ROAD No. 98
(MONTROSE ROAD)

STATION	0+920	0+930	0+940	0+950	0+960	0+970	0+980	0+990	1+000	1+010	1+020	1+030	1+040	1+050	1+060	1+070
EX. CROWN	187.62	187.63	187.56	187.57	187.62	187.68	187.73	187.79	187.85	187.90	187.95	188.02	188.062	188.04	188.04	
PR. CROWN	187.47	187.51	187.57	187.62	187.68	187.73	187.79	187.85	187.90	187.96	188.02	188.062				
PR. W. E/P	187.370	187.410	187.470	187.520	187.580	187.630	187.690	187.750	187.800	187.860	187.924	187.969				
PR. E. E/P	187.321	187.345	187.406	187.456	187.516	187.567	187.631	187.696	187.756	187.826	187.900	187.949				

PROP. STM. M.H. '13' 0+930.55 TOP ELEV. 187.26 S INV IN 184.21 (150Ø) W INV IN 184.1 (675Ø) EX. COMB. MH 0125 RIM 186.582 S INV 183.782 (300Ø) E INV 183.782 (250Ø) W INV 183.982 (250Ø)

EX COMB. MH 0130 1200Ø RIM 187.824 S INV 183.893 (300Ø) N INV 183.893 (300Ø)

EX. COMB. MH 0140 1200Ø RIM 188.122± S INV 184.135 (300Ø) N INV 184.145 (300Ø)

PROPOSED CROWN OF ROAD / EXISTING CROWN OF ROAD

MATCH TO EXISTING ROAD GRADE

MATCH EXISTING GRADE

GRADE CHANGE LOW POINT

PVI STA = 1+028.17 ELEV = 188.062

PVI STA = 0+922.32 ELEV = 187.455

0.58%

EX 200x200x150mm TEE FOR 150Ø PVC DR-18 W.M. ON CHARNWOOD AVE.

GAS MAIN 1.5 PE IP (X-ING CHARNWOOD AVE.)

CATV CONDUIT

BELL FIBRE UPRO - CONC. ENCASED (X-ING CHARNWOOD AVE.)

EX. 200mm PVC DR-18 W.M. (WEST SIDE RD.)

EX. 900mm HYPRESCON W.M. (EAST SIDE RD.)

PROP. 69.7m - 600mmØ CONC STM. @ 0.25%

EX. 21.5m-300mm# COMB. SEWER @ 0.81% (1984)

EX. 79.4m-300mm# COMB. SEWER @ 0.33% (1964)

EX. 70.7m-300mm# COMB. SEWER @ 0.25% (1984)

189	188	187	186	185	184	183	182	181									

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F	ISSUED FOR 90% REVIEW	2018/10/22	Y.W.
E	ISSUED FOR UTILITY REVIEW (90%)	2017/04/12	R.B.
D	ISSUED FOR 70% REVIEW	2017/09/21	Y.W.
C	ISSUED FOR REVIEW	2017/07/05	R.B.
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DESIGN	Y.W.
CHECKED BY	N.B.
APPROVED BY	

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LICENSED PROFESSIONAL ENGINEER Y. WENG 100110138 PROVINCE OF ONTARIO 9/1/19

Niagara Region PUBLIC WORKS

PARSONS

RN19-05
ROAD RECONSTRUCTION AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS
PLAN & PROFILE
FROM STA. 0+920 TO STA. 1+060

CONSULTANT FILE No.	603119
DATE	2016/10/01
SCALE	HORIZ. 1:200 VERT. 1:50
REF. No.	RR98 - PP-10
DWG No.	RR98 - PP-10
REV.	H

X-REFERENCES:

GEOGRAPHIC PROJECTION: UTM, NAD 83, ZONE 17
VERTICAL MONUMENT (Vertical Main Monument): XXXXXXXXXX ELEV. #####
DATUM: DATUM description: XXXXXXXXXX ELEV. #####

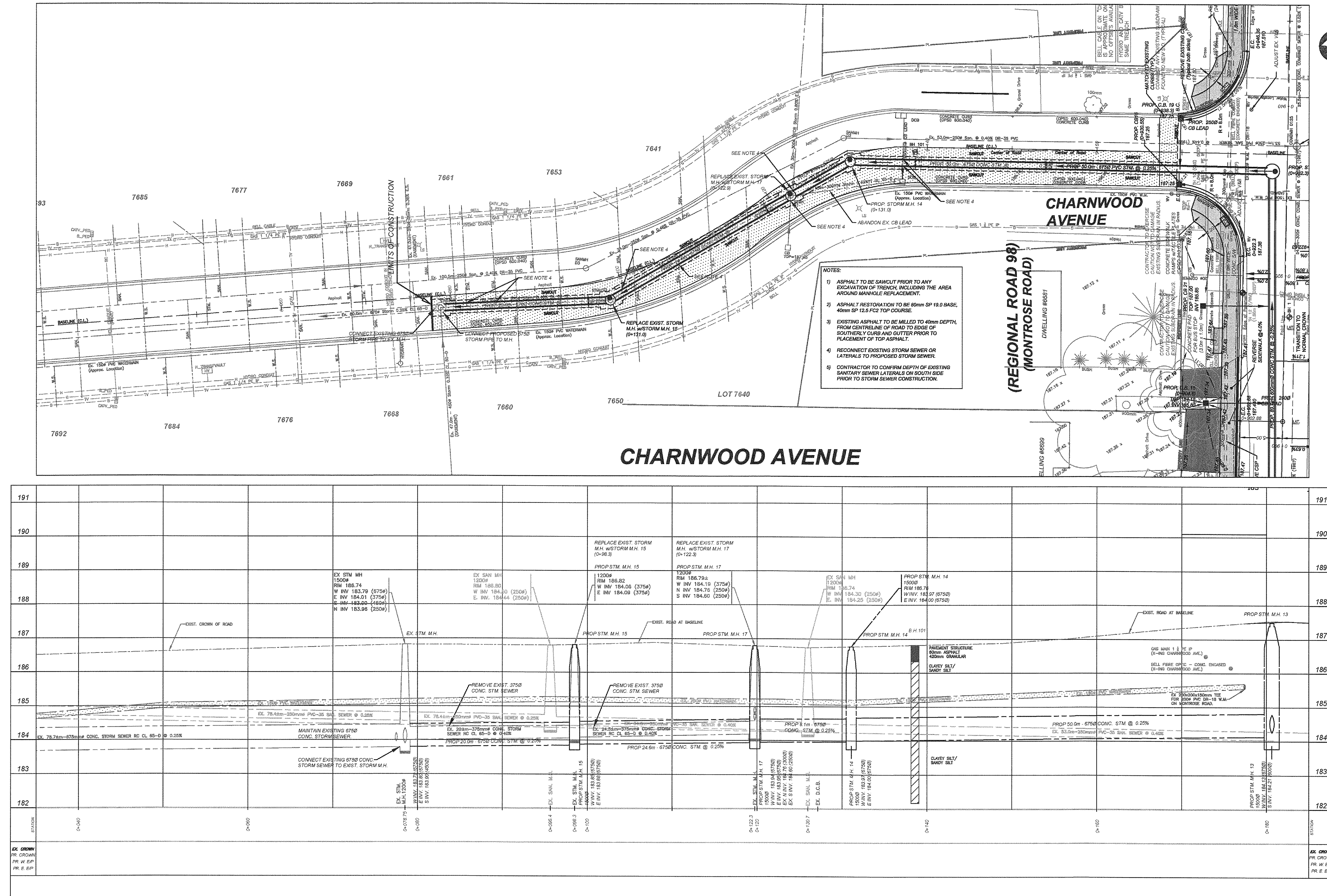
DWG NAME:
FILE FORMAT/Autodesk Land Desktop 2004 BOUNDING COORDINATES UPPER LEFT: Northing Easting BOUNDING COORDINATES LOWER RIGHT: Northing Easting

APPROVALS

MOE	YYY/MM/DD	
REGION	YYY/MM/DD	
MTO	YYY/MM/DD	
MUNICIPALITY	YYY/MM/DD	
OTHER	YYY/MM/DD	
OTHER	YYY/MM/DD	

UTILITIES

HYDRO	YYY/MM/DD
BELL	YYY/MM/DD
UNION HYDRO	YYY/MM/DD
GAS	YYY/MM/DD
CATV	YYY/MM/DD



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DESIGN Y.W.
CHECKED BY N.B.
APPROVED BY

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LICENSED PROFESSIONAL ENGINEER Y. WENG 100110138 9/1/19 PROVINCE OF ONTARIO

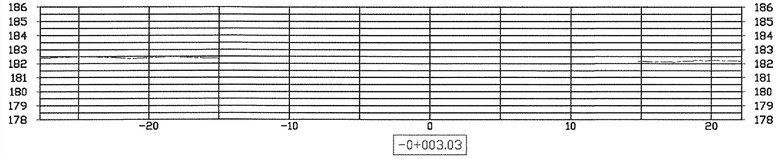
Niagara Region PUBLIC WORKS
PARSONS

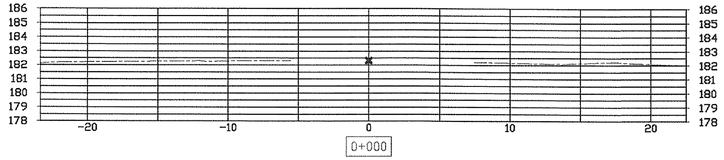
RN19-05
ROAD RECONSTRUCTION AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS
PLAN & PROFILE
CHARNWOOD AVENUE STORM SEWERS

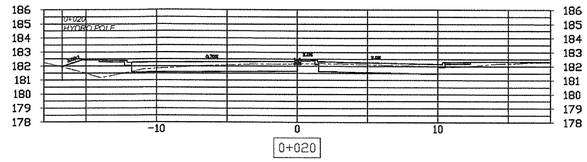
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DATE 2016/10/01
SCALE HORIZ. 1:200 VERT. 1:50
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DWG No. RR98 - PP-11
REV. H

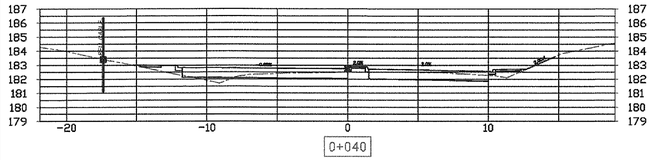
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VERTICAL MONUMENT: Vertical Monument description XXXXXXXXXX ELEV. ###.###
DATUM: DATUM description XXXXXXXXXX ELEV. ###.###
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X-REFERENCES:
IMAGES:
APPROVALS: MOE YYYY/MM/DD MTO YYYY/MM/DD REGION YYYY/MM/DD CNR YYYY/MM/DD CPR YYYY/MM/DD
UTILITIES: NRBN CNP LOCAL HYDRO ONTARIO HYDRO GAS BELL CATV YYYY/MM/DD

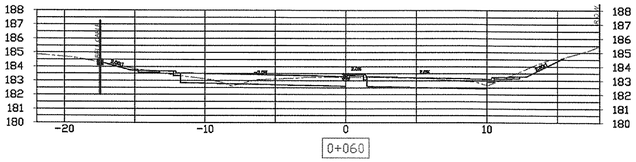
RR98 - SC-01

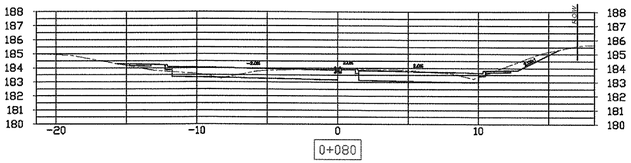


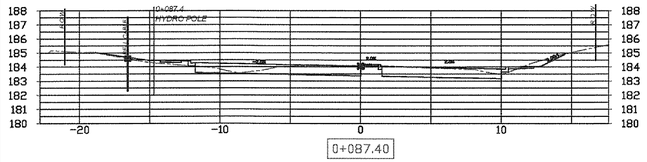


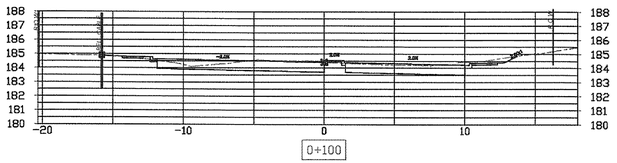


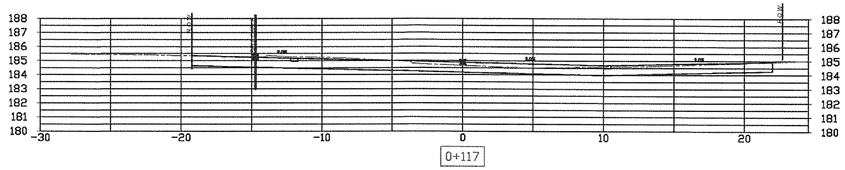


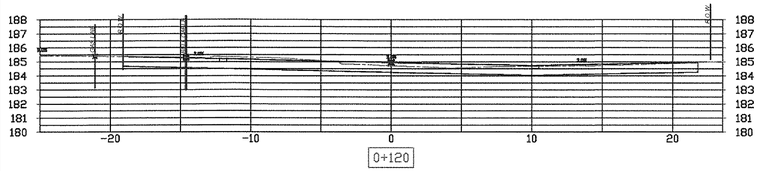


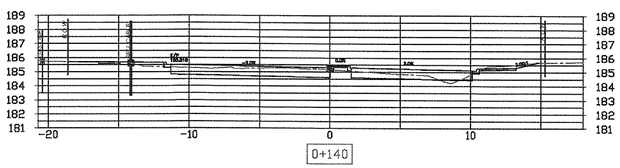


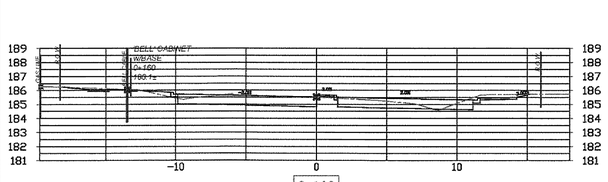


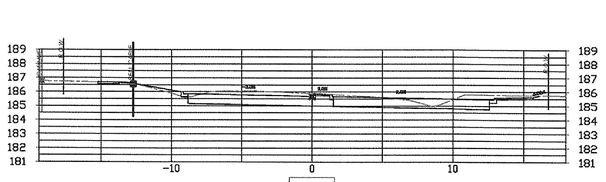


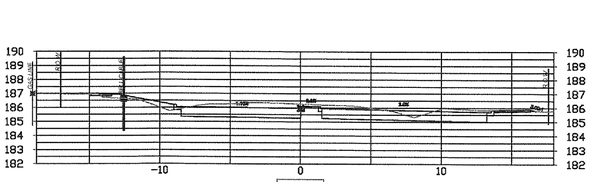


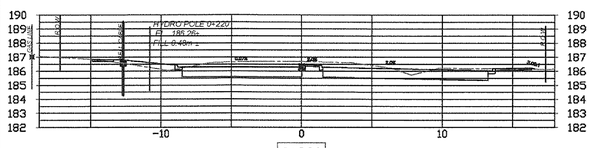


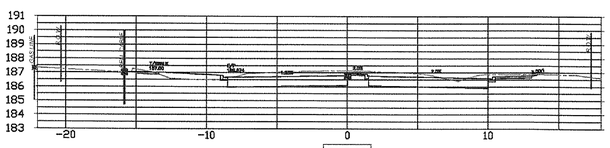


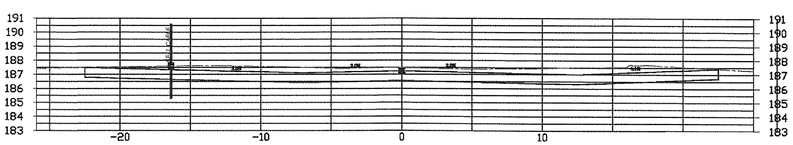


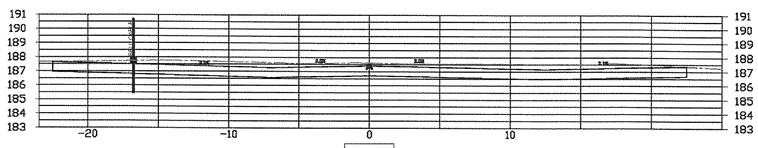












X-REFERENCES:

GEOGRAPHIC PROJECTION: U.T.M. NAD 83 ZONE 17
VERTICAL MONUMENT: Vertical Monument description XXXXXXXXXX ELEV. ####
DATUM: DATUM description XXXXXXXXXX ELEV. ####

DWG NAME:
FILE FORMAT:Autodesk Land Desktop 2004 BOUNDING COORDINATES UPPER LEFT: Northing Easting BOUNDING COORDINATES UPPER RIGHT:Northing Easting BOUNDING COORDINATES LOWER LEFT: Northing Easting BOUNDING COORDINATES LOWER RIGHT:Northing Easting

AS-BUILTS

MDE	YYYY/MM/DD	
METRO	YYYY/MM/DD	
BRIDGE	YYYY/MM/DD	
CONT.	YYYY/MM/DD	
MTO	YYYY/MM/DD	

UTILITIES

BOMEN	YYYY/MM/DD
BELL	YYYY/MM/DD
LOCAL HYDRO	YYYY/MM/DD
GAS	YYYY/MM/DD
SHAW	YYYY/MM/DD
CATV	YYYY/MM/DD

NO.	REVISION	DATE	INIT.
D	ISSUED FOR TENDERING	2018/01/09	Y.W.
C	ISSUED FOR TENDERING REVIEW	2018/11/30	Y.W.
B	ISSUED FOR 60% DESIGN REVIEW	2018/10/23	Y.W.
A	ISSUED FOR 60% REVIEW	2018/08/22	R.B.

NOTES/LEGEND

1 THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWER AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

CAD	R.B.B.
DESIGN	Y.W.
CHECKED BY	N.B.
APPROVED BY	

BENCH MARK:
MONUMENT No: 90036061
Concrete box culvert under Montrose Road located at the intersection of Montrose Road and Mill, and Road 15.2m east from the centre line of Montrose Road, and 23.6m north from the centre line of McLeod Road
Brass Tablet set vertically in the top of the culvert 2.20m south from the north edge of culvert and 1.12m west from the east edge of culvert.
ELEVATION 191.508m

LICENSED PROFESSIONAL ENGINEER
Y. WENG
100110138
6/1/19
PROVINCE OF ONTARIO

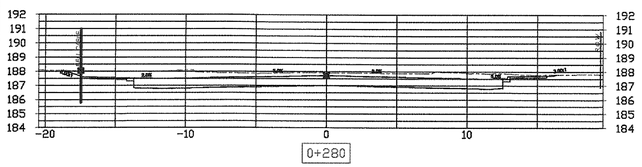
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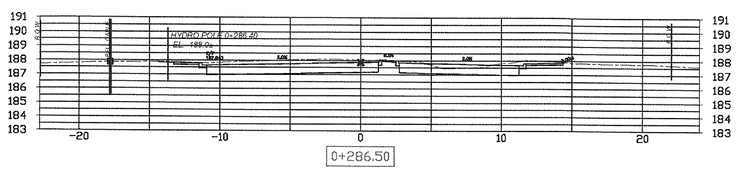
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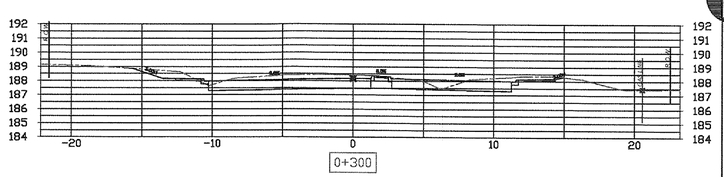
RN 19-05
ROAD RECONSTRUCTION AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS
CROSS SECTIONS
FROM STA. 0+000 TO STA. 0+267

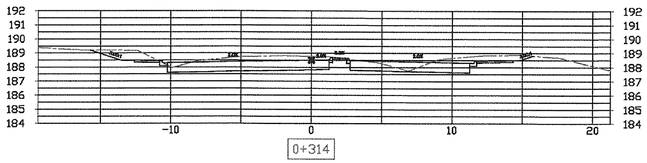
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REV.	D

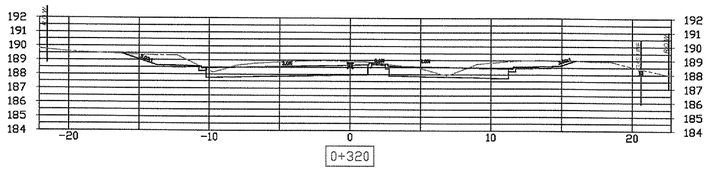
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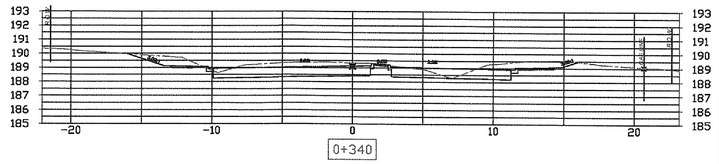


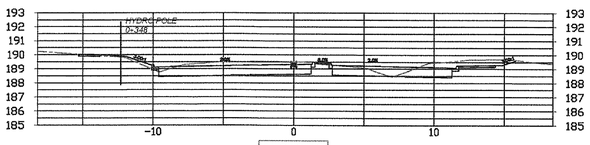


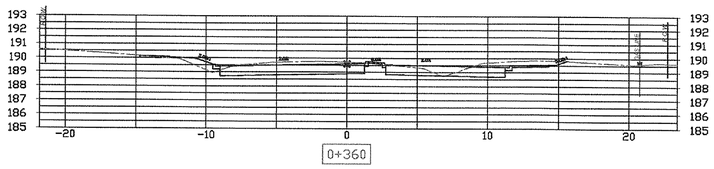


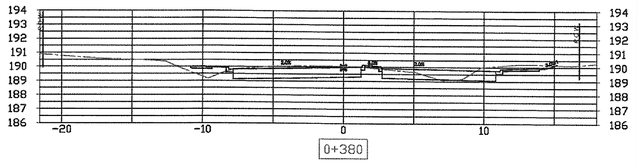


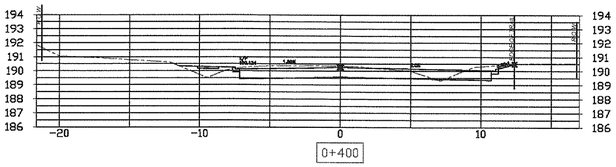


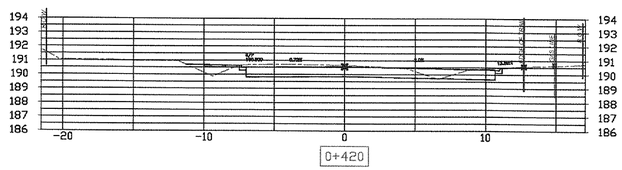


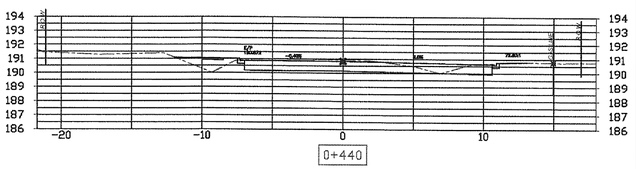


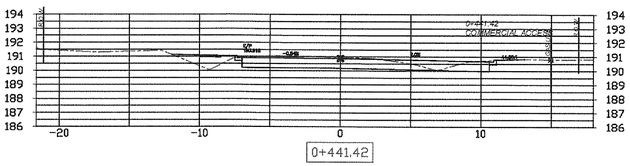


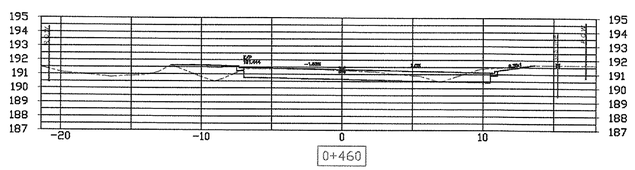


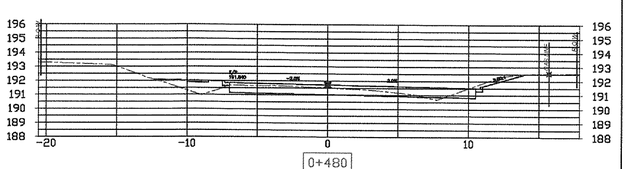


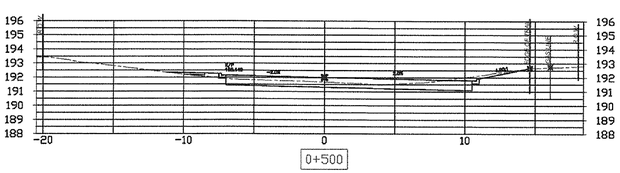


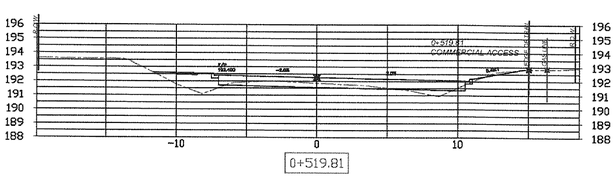


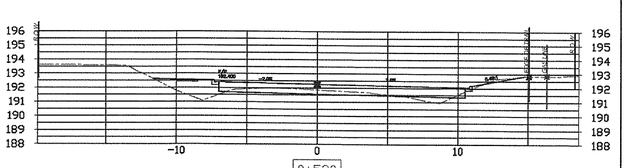


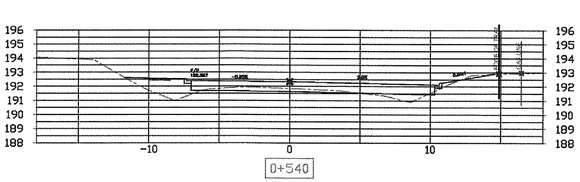


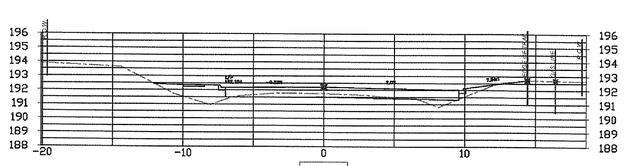


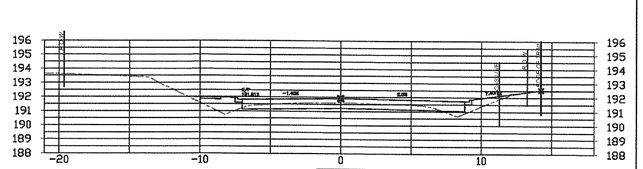












X-REFERENCES:

GEOGRAPHIC PROJECTION: UTM, NAD 83 ZONE 17
VERTICAL MONUMENT: VertDcd Monument description XXXXXXXXXX ELEV. #####
DATUM: DATUM description XXXXXXXXXX ELEV. #####

DWG NAME:
FILE FORMAT: Autodesk Land Desktop 2004 BEARING COORDINATES: UPPER: LEFT: Northing Easting BOUNDING COORDINATES: LOWER: LEFT: Northing Easting BOUNDING COORDINATES: UPPER: RIGHT: Northing Easting

ASSIGNALS:

MDE	YYY/MM/DD
MDE	YYY/MM/DD
MDE	YYY/MM/DD
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MDE	YYY/MM/DD
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MDE	YYY/MM/DD
MDE	YYY/MM/DD

UTILITIES:

HYDRO	YYY/MM/DD
BELL	YYY/MM/DD
ROGERS	YYY/MM/DD
GAS	YYY/MM/DD
CITY	YYY/MM/DD

NO.	REVISION	DATE	INIT.
D	ISSUED FOR TENDERING	2018/01/09	Y.W.
C	ISSUED FOR TENDERING REVIEW	2018/11/30	Y.W.
B	ISSUED FOR 90% DESIGN REVIEW	2018/10/23	Y.W.
A	ISSUED FOR 90% REVIEW	2018/09/22	R.B.

NOTES/LEGEND

1 THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWER AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

CAD	R.B.B.
DESIGN	Y.W.
CHECKED BY	N.B.
APPROVED BY	

BENCH MARK
MONUMENT No: 90036061
Concrete box culvert under Montrose Road located at the intersection of Montrose Road and McLeod Road 15.2m east from the centre line of Montrose Road, and 23.6m north from the centre line of McLeod Road. Brass Tablet set vertically in the top of the culvert 2.35m south from the north edge of culvert and 1.12m west from the east edge of culvert.
ELEVATION: 191.508m

LICENSED PROFESSIONAL ENGINEER
Y. WENG
100110138
9/1/19
PROVINCE OF ONTARIO

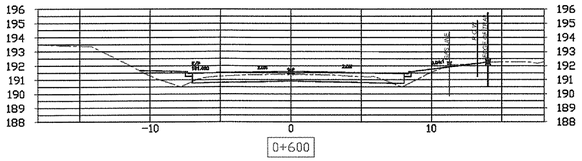
Niagara Region PUBLIC WORKS

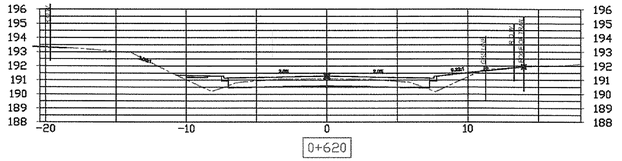
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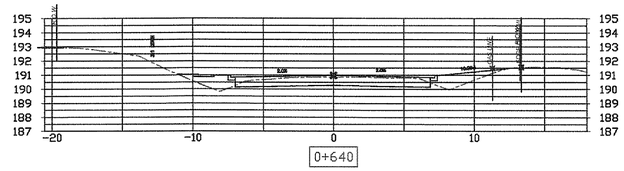
RN 19-05
ROAD RECONSTRUCTION AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS
CROSS SECTIONS
FROM STA. 0+280 TO STA. 0+580

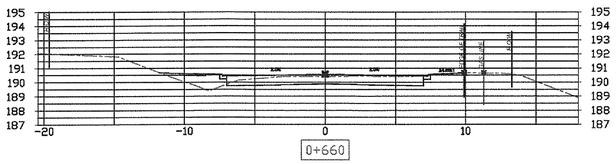
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REV.	D

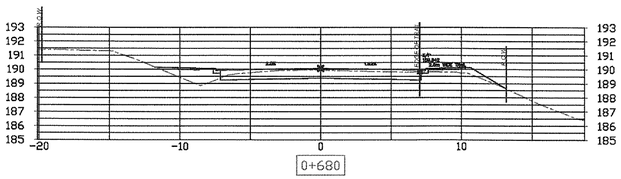
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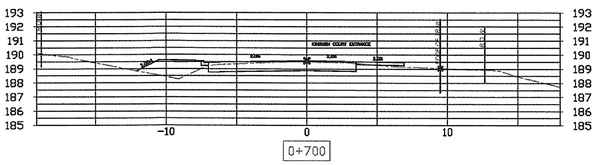


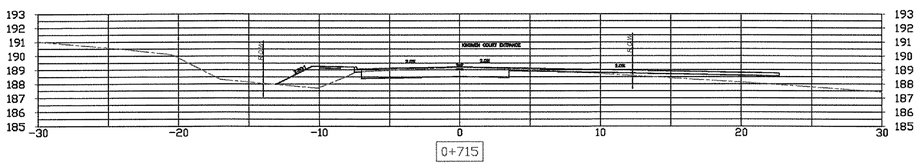


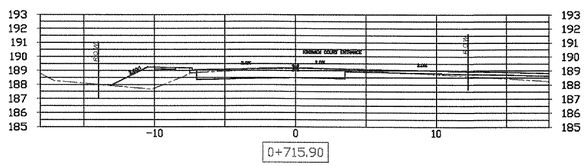


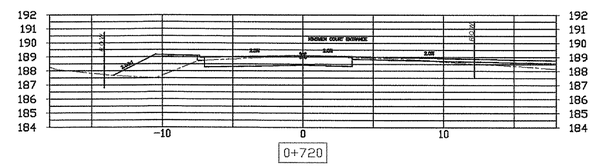


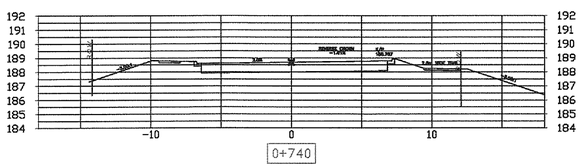


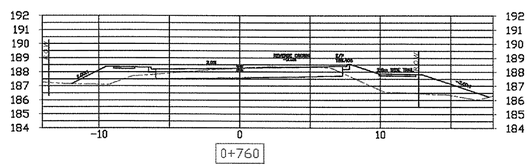


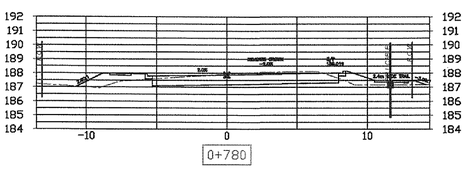


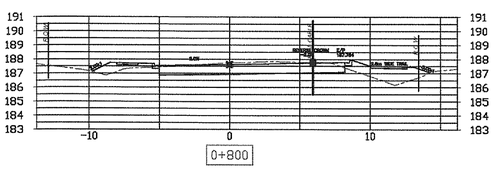


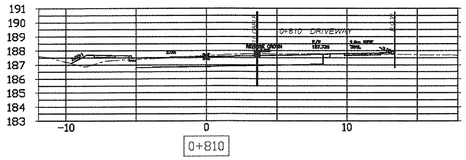


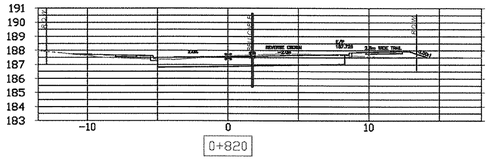


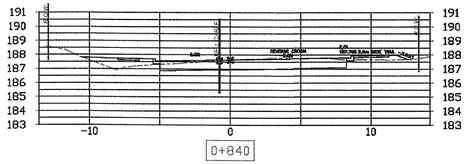


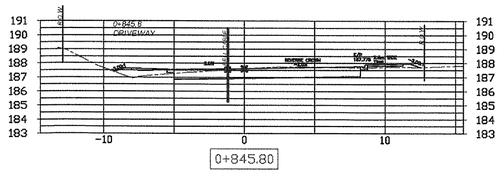


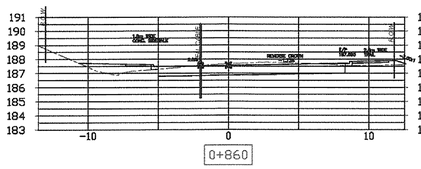


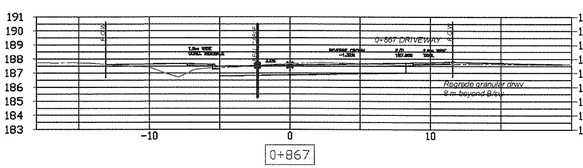


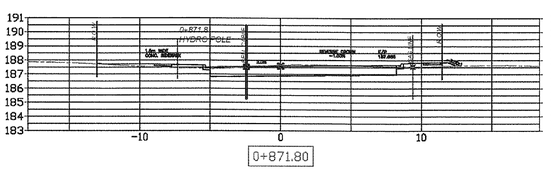


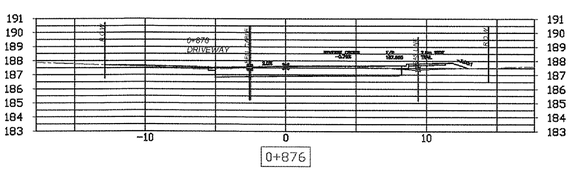


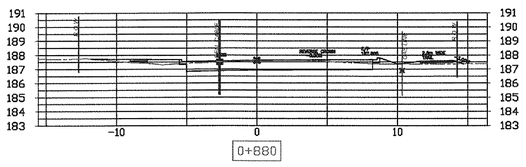


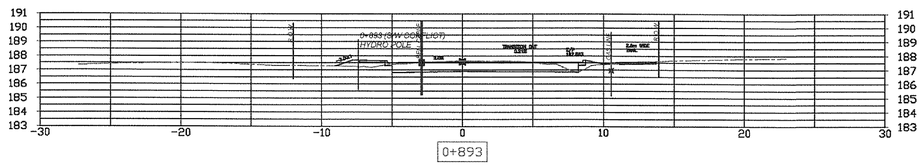


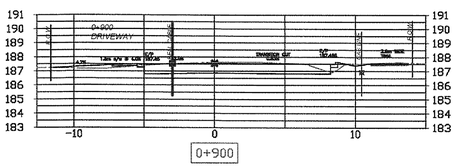












NO.	REVISION	DATE	INIT.
D	ISSUED FOR TENDERING	2019/01/09	Y.W.
C	ISSUED FOR TENDERING REVIEW	2018/11/30	Y.W.
B	ISSUED FOR 90% DESIGN REVIEW	2018/10/23	Y.W.
A	ISSUED FOR 90% REVIEW	2018/08/22	R.B.

NOTES/LEGEND

1 THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWER AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

CAD	R.B.B.
DESIGN	Y.W.
CHECKED BY	N.B.
APPROVED BY	

BENCH MARK

MONUMENT No: 90036061

Concrete box culvert under Montrose Road located at the intersection of Montrose Road and McLeod Road. 15.2m east from the centre line of Montrose Road, and 23.6m north from the centre line of McLeod Road. Brass Tablet set vertically in the top of the culvert 2.35m south from the north edge of culvert and 1.10m west from the east edge of culvert.

ELEVATION: 191.508m

LICENSED PROFESSIONAL ENGINEER Y. WENG 100110138 9/1/19 PROVINCE OF ONTARIO

Niagara Region PUBLIC WORKS

PARSONS

RN 19-05
ROAD RECONSTRUCTION AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS
CROSS SECTIONS
FROM STA. 0+600 TO STA. 0+900

CONSULTANT FILE No.	603119
DATE	2016/10/01
SCALE	HORIZ. 1:200 VERT. 1:50
REF. No.	
DWG No.	RR98 - SC-03
REV.	D

UTILITIES
NRBH
BELL HYDRO
BELL HYDRO REV
CBC
CBC REV

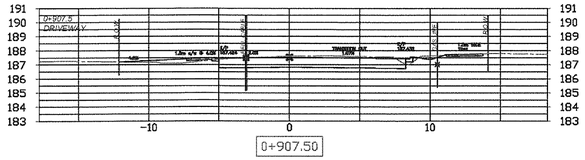
ABBREVIATIONS
MTC
RESTORATION
RESTORATION REV
CPR

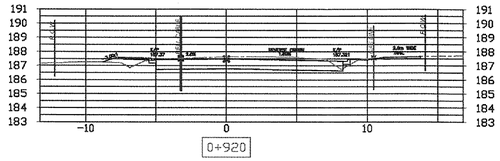
DWG NAME:
FILE FORMAT:Autodesk Land Desktop 2004 BOUNDING COORDINATES UPPER LEFT: Northing Easting BOUNDING COORDINATES LOWER LEFT: Northing Easting BOUNDING COORDINATES LOWER RIGHT:Northing Easting

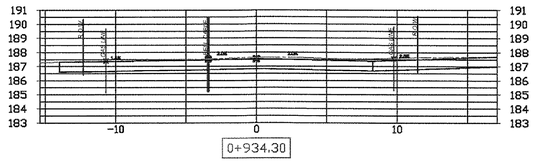
DETAIL: DATUM description: XXXXXXXXXX ELEV: ####
VERTICAL DATUM: CGVD28 (Adjustment) XXXXXXXXXX ELEV: ####
HORIZONTAL PROJECTION: UTM NAD 83 ZONE 17

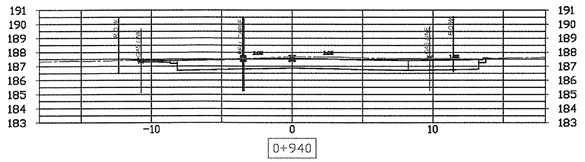
SEE KEY PLAN

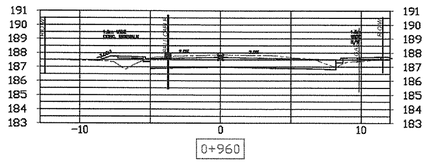
RR98 - SC-01

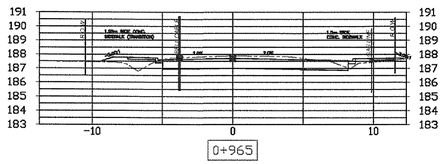


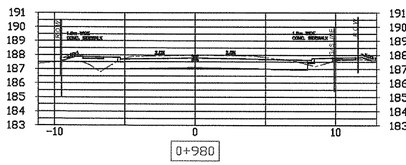


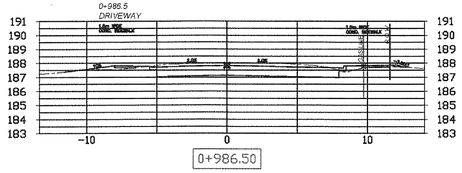


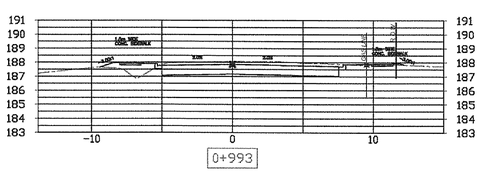


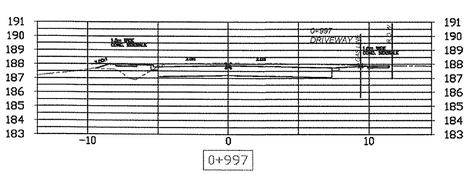


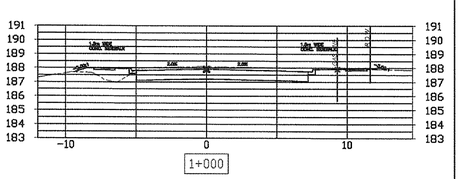


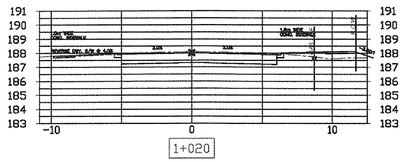












X-REFERENCES:

GEOGRAPHIC PROJECTION: UTM, NAD 83 ZONE 17
VERTICAL MONUMENTATION used Monument description XXXXXXXXXX ELEV. ####
DATUM: DATUM description XXXXXXXXXX ELEV. ####

DWG NAME:
FILE FORMAT:Autodesk Land Desktop 2004 BOUNDING COORDINATES UPPER LEFT: Northing Easting BOUNDING COORDINATES LOWER LEFT: Northing Easting BOUNDING COORDINATES LOWER RIGHT:Northing Easting

AS-BUILTS

MTO	YYYY/MM/DD	
REGION	YYYY/MM/DD	
MUNICIPAL	YYYY/MM/DD	
OTHER	YYYY/MM/DD	

UTILITIES

NRBN	YYYY/MM/DD
BELL	YYYY/MM/DD
NIAGARA HYDRO	YYYY/MM/DD
ENBRIDGE	YYYY/MM/DD
OTHER	YYYY/MM/DD

NO.	REVISION	DATE	INIT.
D	ISSUED FOR TENDERING	2019/01/09	Y.W.
C	ISSUED FOR TENDERING REVIEW	2018/11/30	Y.W.
B	ISSUED FOR 90% DESIGN REVIEW	2018/10/23	Y.W.
A	ISSUED FOR 90% REVIEW	2018/06/22	R.B.

NOTES/LEGEND

1. THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWER AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

CAD	R.B.B.
DESIGN	Y.W.
CHECKED BY	N.B.
APPROVED BY	

BENCH MARK:
MONUMENT No: 90036061
Concrete box culvert under Montrose Road located at the intersection of Montrose Road and 65Lead Road 15.2m east from the centre line of Montrose Road, and 23.6m north from the centre line of McLeod Road
Brass Tablet set vertically in the top of the culvert 2.35m south from the north edge of culvert and 1.12m west from the east edge of culvert.
ELEVATION: 191.508m

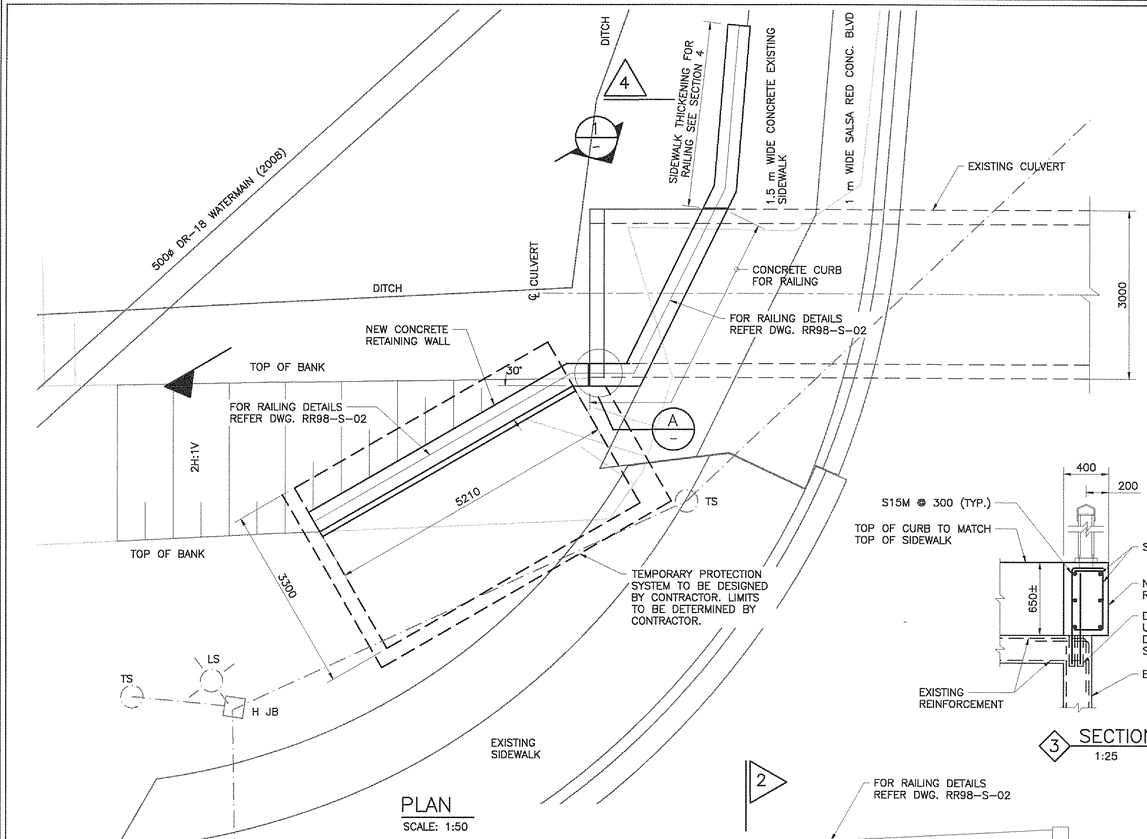
LICENSED PROFESSIONAL ENGINEER
Y. WENG
100110138
PROVINCE OF ONTARIO
9/1/19

Niagara Region PUBLIC WORKS

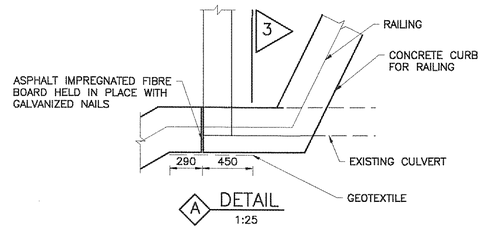
PARSONS

RN 19-05
ROAD RECONSTRUCTION AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS
CROSS SECTIONS
FROM STA. 0+900 TO STA. 1+020

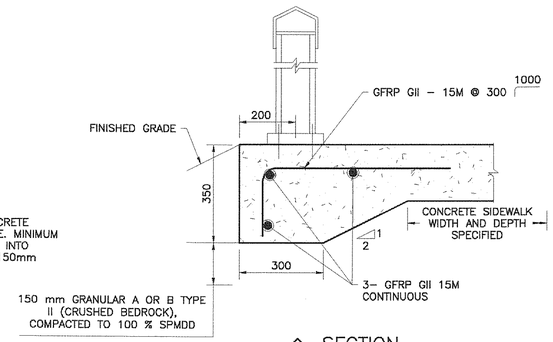
CONSULTANT FILE No.	603119
DATE	2016/10/01
SCALE	HORIZ. 1:200 VERT. 1:50
REF. No.	
DWG No.	RR98 - SC-04
REV.	D



3 SECTION
1:25



A DETAIL
1:25



4 SECTION
1:10

GENERAL NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
2. THE DESIGN CODE: CANADIAN HIGHWAY BRIDGE DESIGN (CHBDC) CAN/CSA S6-14.

CLASS OF CONCRETE

CLASS OF CONCRETE ——— 30 MPa
MASS CONCRETE ——— 20 MPa

CLEAR COVER TO REINFORCING STEEL

BOTTOM OF BOTTOM SLAB 100 ± 25.
REMAINDER 70 ± 20 UNLESS OTHERWISE NOTED.

REINFORCING STEEL

1. REINFORCING STEEL SHALL BE GRADE 400W UNLESS OTHERWISE SPECIFIED.
2. UNLESS SHOWN OTHERWISE, TENSION LAP SPLICES NOT INDICATED ON THE CONTRACT DRAWINGS SHALL BE CLASS 'B'.
3. BAR HOOKS SHALL HAVE STANDARD HOOK DIMENSIONS USING MINIMUM BEND DIAMETERS, WHILE STIRRUPS AND TIES SHALL HAVE MINIMUM HOOK DIMENSIONS. ALL HOOKS SHALL BE IN ACCORDANCE WITH THE STRUCTURAL MANUAL SS12-1 AND BA 12-2.

FOUNDATION

BEARING CAPACITIES
SLS = 100 kPa.
ULS = 150 kPa.

CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS ON SITE AGAINST THE PROPOSED WORK AND REPORT ANY DISCREPANCIES TO THE CONTRACT ADMINISTRATOR BEFORE THE START OF CONSTRUCTION.
2. TEMPORARY ROADWAY PROTECTION SHALL BE DESIGNED TO PERFORMANCE LEVEL 2 CRITERIA AS PER OPSS 539.
3. SUPPORT FOR REINFORCING STEEL SHALL BE AS PER OPSD-3329.101 AND OPSD 3329.100 ON FORMED SURFACES. ON NON-FORMED SURFACES, CONCRETE BLOCK (MIN. 20 Mpa) SHALL BE USED.
4. THE FINAL 0.5m OF EXCAVATION TO BE COMPLETED UNDER GEOTECHNICAL QVE SUPERVISION, AND FOOTING TO BE CONSTRUCTED ON COMPETENT SOIL AFTER INSPECTION.

APPLICIABLE STANDARD DRAWINGS:

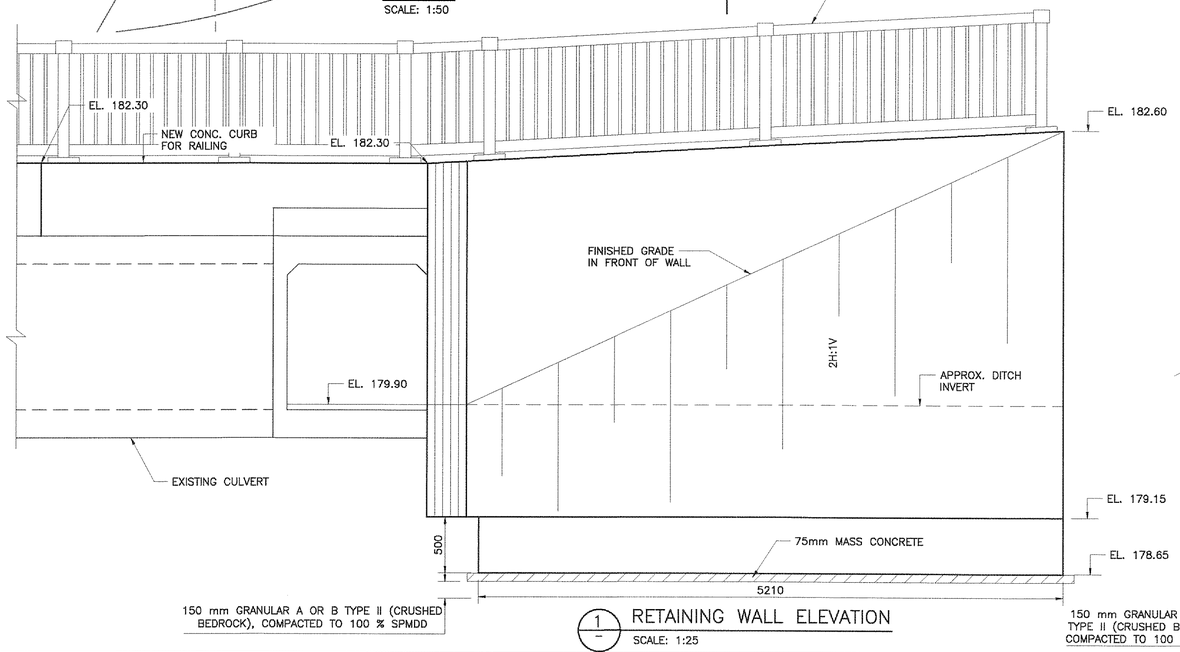
OPSD 3121.150	WALLS, RETAINING WALLS, BACKFILL MIN. GRANULAR REQUIREMENT
OPSD 3190.100	WALLS, RETAINING AND ABUTMENT WALL DRAIN

LIST OF DRAWINGS

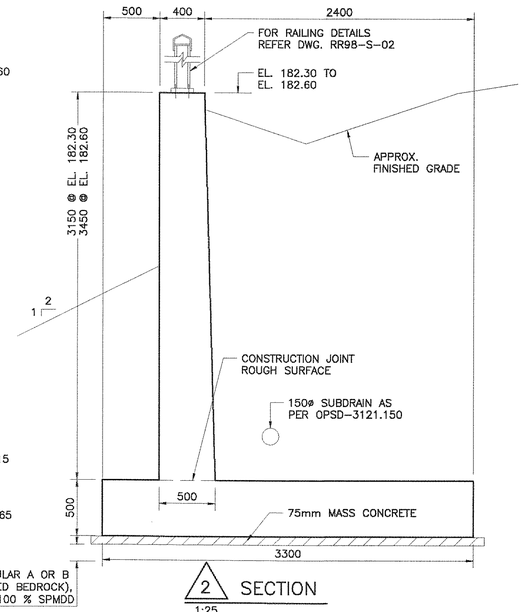
1. RETAINING WALL GENERAL ARRANGEMENT AND DETAILS

LIST OF ABBREVIATIONS

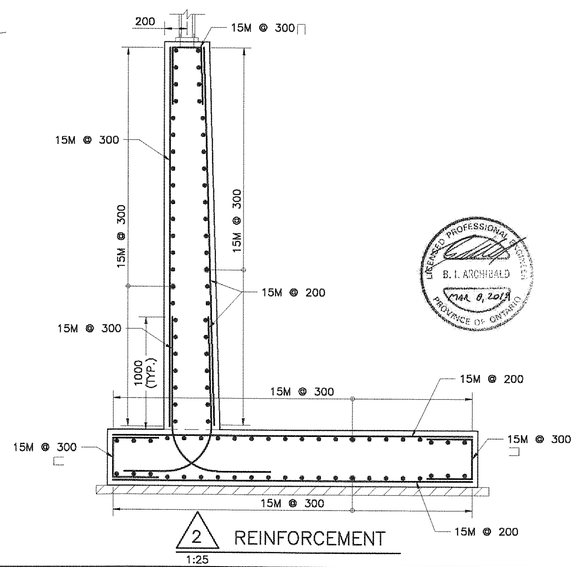
APPROX	– DENOTES APPROXIMATE
E.L.	– DENOTES ELEVATION
EXIST.	– DENOTES EXISTING
TYP.	– TYPICAL



1 RETAINING WALL ELEVATION
SCALE: 1:25



2 SECTION
1:25



2 REINFORCEMENT
1:25

NO.	REVISION	DATE	INIT.
A	ISSUED FOR TENDER	2019/02/20	B.A

CAD M.F.A
DESIGN M.F.A
CHECKED BY N.P
APPROVED BY B.A

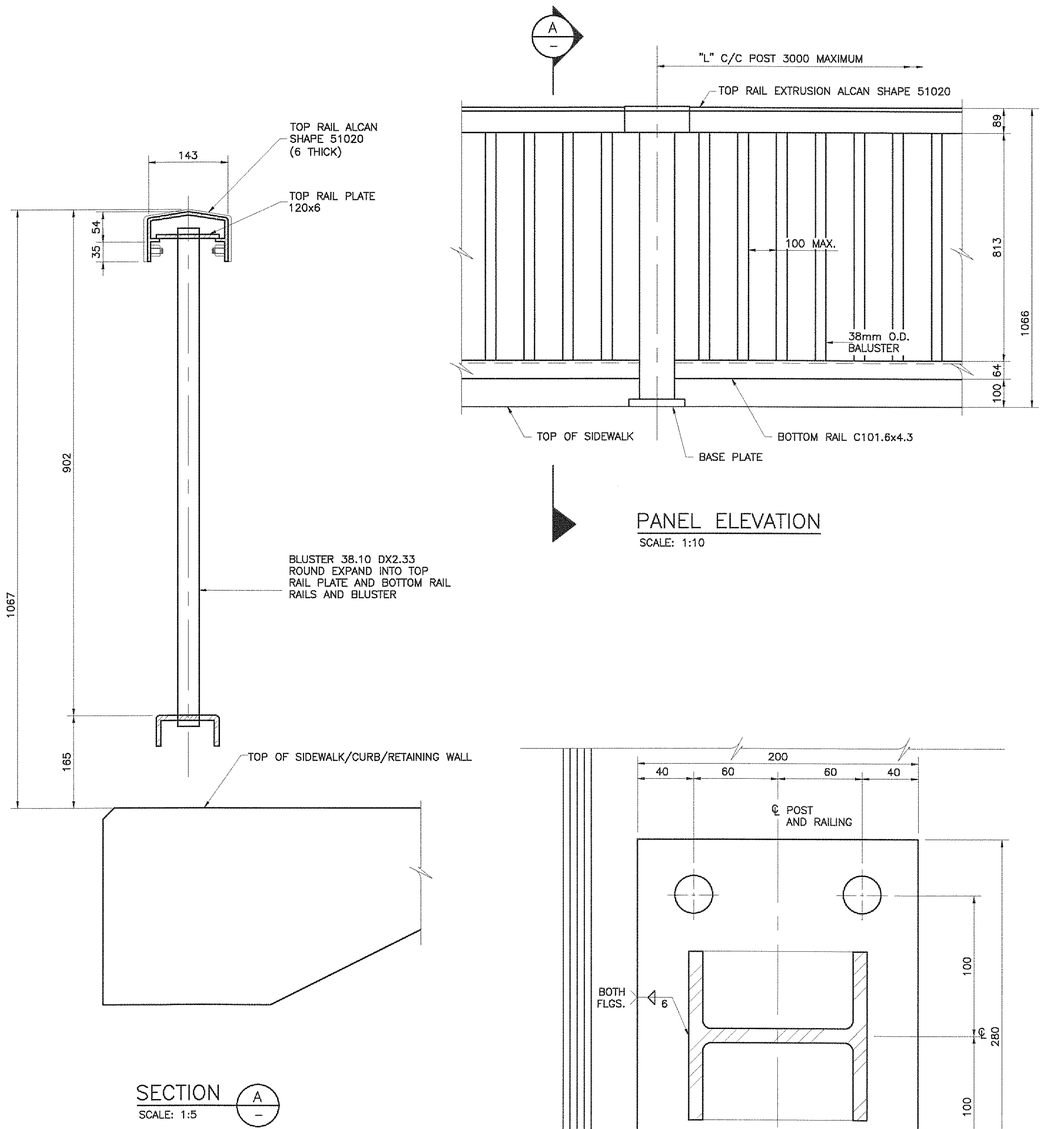
BENCH MARK
MONUMENT No: 90036061
Concrete box culvert under Montrose Road located at the intersection of Montrose Road and McLeod Road. 16.2m east from the centre line of Montrose Road, and 23.6m north from the centre line of McLeod Road. Brass Tablet set vertically in the top of the culvert 2.85m south from the north edge of culvert and 1.12m west from the east edge of culvert.
ELEVATION: 181.508m

LICENSED PROFESSIONAL ENGINEER
N.PAPASOTIRIOU
100194982
March 5, 2019
PROVINCE OF ONTARIO

Niagara Region PUBLIC WORKS
PARSONS

RN19-05
ROAD RECONSTRUCTION AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS
RETAINING WALL GENERAL ARRANGEMENT AND DETAILS

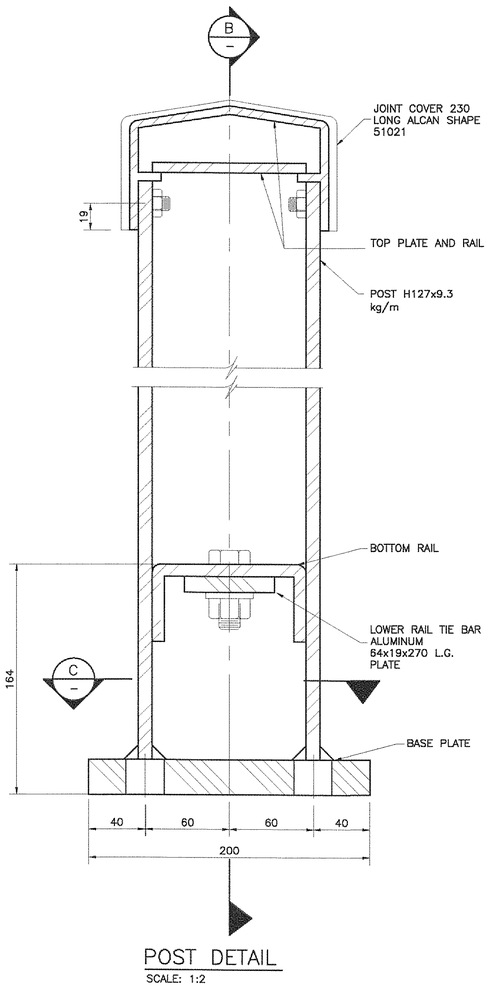
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DATE 2019/02/20
SCALE AS SHOWN
REF. No.
DWG No. RR98 - S - 01
REV.



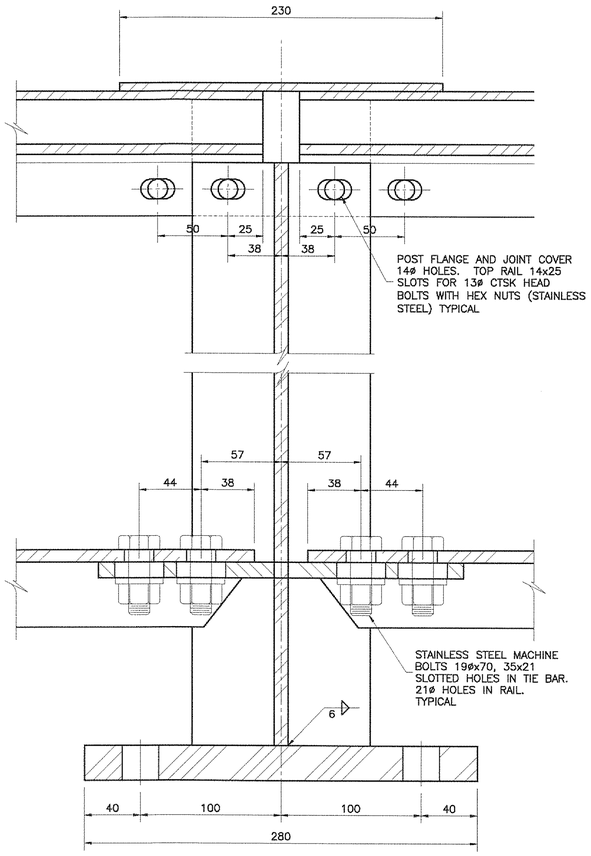
SECTION A
SCALE: 1:5

PANEL ELEVATION
SCALE: 1:10

SECTION C
SCALE: 1:2



POST DETAIL
SCALE: 1:2



SECTION B
SCALE: 1:2

NOTES:

1. AN APPROVED PREFABRICATED ANCHORAGE ASSEMBLY SHALL BE USED.
2. PAINT BOTTOM OF BASE PLATE WITH ASPHALTIC MASTIC.
3. POST AND BALUSTERS TO BE VERTICAL. TOP AND BOTTOM RAILS TO BE PARALLEL TO TOP OF CONCRETE.

MATERIAL	USE	SPECIFICATION
ALUMINUM – EXTRUDED SHAPES	POST AND RAILS	6351–T6 OR 6061–T6
ALUMINUM – TUBING	BALUSTERS	6351–T6 OR 6061–T6
ALUMINUM – SHEET AND PLATE	TOP BASE AND TIE PLATES	6351–T6 OR 6061–T6
STAINLESS STEEL TYPE 304	BOLTS AND SET SCREWS	A.S.T.M. F593
	NUTS AND WASHERS	A.S.T.M. F594

LICENSED PROFESSIONAL ENGINEER
B. I. ARCHIBALD
MAR. 8, 2019
PROVINCE OF ONTARIO

NO.	REVISION	DATE	INIT.
A	ISSUED FOR TENDER	2019/03/07	BA

CAD M.F.A
DESIGN M.F.A
CHECKED BY N.P
APPROVED BY B.A

BENCH MARK
MONUMENT No: 900356061
Concrete box culvert under Montrose Road located at the intersection of Montrose Road and McLeod Road. 15.2m east from the centre line of Montrose Road, and 23.6m north from the centre line of McLeod Road. Brass Tablet set vertically in the top of the culvert 2.35m south from the north edge of culvert and 1.12m west from the east edge of culvert.
ELEVATION: 181.508m

LICENSED PROFESSIONAL ENGINEER
N.PAPASOTIRIOU
100194982
March 8, 2019
PROVINCE OF ONTARIO

Niagara Region PUBLIC WORKS
PARSONS

RN19-05
ROAD RECONSTRUCTION AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS
RAILING DETAIL

CONSULTANT FILE No. 603119
DATE 2019/03/07
SCALE AS SHOWN
REF. No.
DWG No. RR98 - S - 02
REV.

RR98 - PM-01

1	SOLID YELLOW,10cm
2	SOLID DOUBLE YELLOW,10cm
3	333 BROKEN YELLOW,10cm
3A	363 BROKEN YELLOW,10cm
4	SOLID YELLOW,20cm
5	SOLID WHITE,10cm
6	333 BROKEN WHITE,10cm
7	363 BROKEN WHITE,10cm
8	393 BROKEN WHITE,10cm
9	SOLID WHITE,20cm
10	111 BROKEN WHITE,20cm
11	333 BROKEN WHITE,20cm
12	333 BROKEN WHITE,30cm
13	SOLID WHITE,30cm
14	SOLID WHITE,45cm
15	SOLID WHITE,60cm
20	SYMBOLS
][	LIMITS OF MARKINGS

NOTES:
1. 333, 363, 393, Denotes Pavement Marking Spacing (ie. 3 m line, 3 m gap, 3 m line)
2. Use ① to Denote PAVEMENT MARKING
3. Use ⓣ to Denote PAVEMENT MARKING, TEMPORARY
4. Use ⚠ to Denote PAVEMENT MARKING, TEMPORARY--REMOVABLE
5. Use ⓓ to Denote PAVEMENT MARKING, DURABLE

MINISTRY OF TRANSPORTATION ONTARIO DRAWING | Date 1994 04 01 | Rev

LEGEND
PAVEMENT MARKINGS

Issue Date
MP
Issued By
MTOD – 101.070

STA. 0+120 (SEE DWG. ABOVE)

STA. 0+180 (SEE DWG. BELOW)

STA. 0+500 (SEE DWG. ABOVE)

STA. 0+500 (SEE DWG. BELOW)

STA. 0+500 (SEE DWG. ABOVE)

(SEE DWG. BELOW)

CHARNWOOD AVE

MATCH TO EXISTING PAVEMENT MARKINGS (TYPICAL)

Northing Easting

Northing Easting

Northing Easting

CIVIL 3D 2015

UTM, NAD 83 ZONE 17
Vertical Datum description XXXXXXXXXX ELEV: ##.###
DATUM description XXXXXXXXXX ELEV: ##.###

NO.	REVISION	DATE	INIT.
D	ISSUED FOR TENDERING	2019/01/09	Y.W.
C	ISSUED FOR TENDERING REVIEW	2018/11/30	Y.W.
B	ISSUED FOR 90% REVIEW	2018/10/22	Y.W.
A	ISSUED FOR 60% REVIEW	2017/09/12	Y.W.

NOTES/LEGEND
1 THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWER AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.
2 PROPERTY LINES WERE PLOTTED USING REGISTERED PLANS AND BARS LOCATED IN THE FIELD. TO VERIFY THE ACCURACY OF THESE PROPERTY LINES, A LEGAL SURVEY SHOULD BE PERFORMED PRIOR TO CONSTRUCTION.

DRAFTING R.B./R.C.
DESIGN Y.W.
CHECKED BY N.B.
APPROVED BY

LICENSED PROFESSIONAL ENGINEER Y. WENG 100110138 PROVINCE OF ONTARIO

Niagara Region PUBLIC WORKS

PARSONS

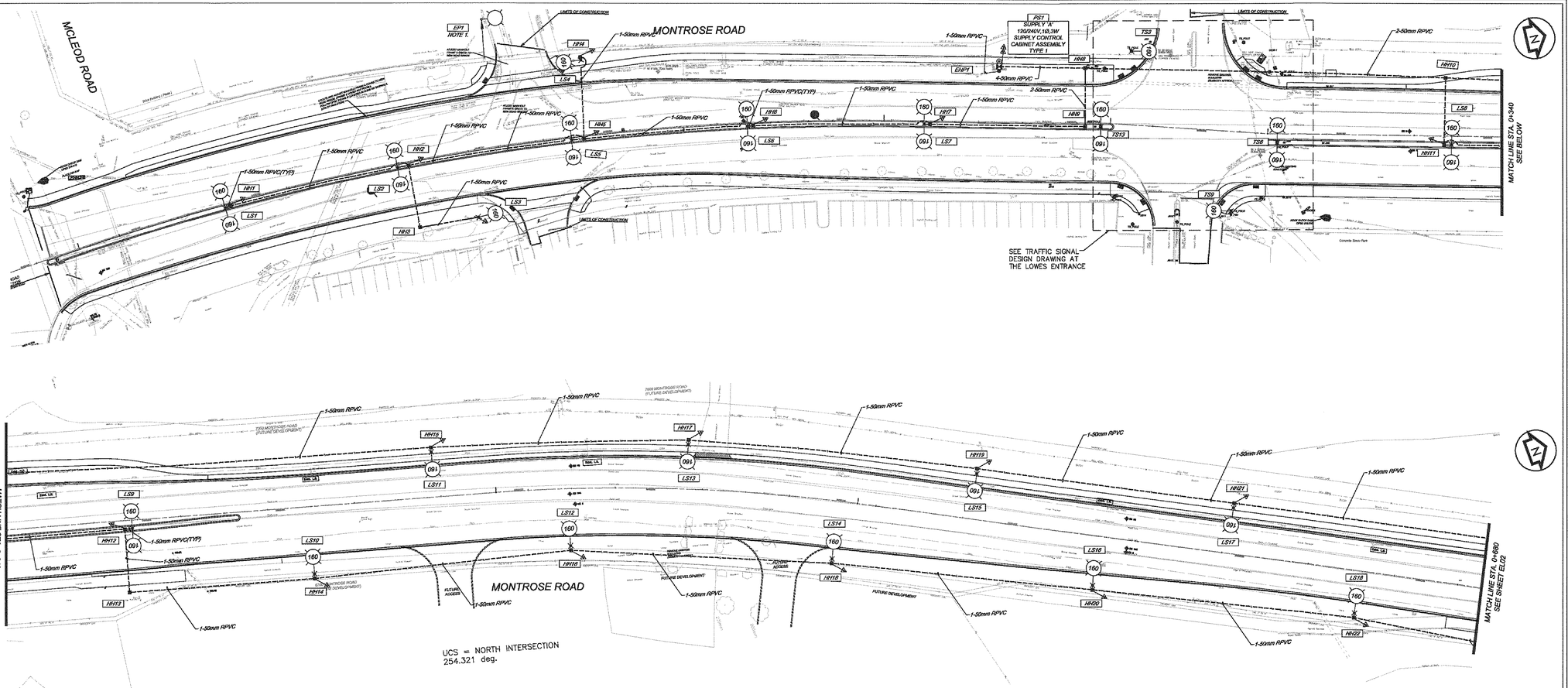
RN19-05
ROAD RECONSTRUCTION AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS

PAVEMENT MARKINGS AND SIGNING PLAN

CONSULTANT FILE No. 603119
DATE 2018/10/01
SCALE HORIZ. 1:500
REF. No. RR98 - PM-01
DWG No. RR98 - PM-01
REV. D

C:\USERS\YWENG\DESKTOP\RR98 - Detail Design Finishing PLOTTED: Feb 21, 2019 - 2:21pm PLOTTED BY: ywenG

RR98 - EL-02



POLES			
No.	LOCATION	DESCRIPTION	REMARKS
EHP1	MONTROSE ROAD	EXISTING NPEI CONCRETE POLE, DIRECT BURIED	–
LS1	MONTROSE ROAD	10.5m SECTIONAL STEEL POLE, BASE MOUNTED	2–160W LED ON 2.4m ARMS
LS2	MONTROSE ROAD	10.5m SECTIONAL STEEL POLE, BASE MOUNTED	2–160W LED ON 2.4m ARMS
LS3	MONTROSE ROAD	10.5m SECTIONAL STEEL POLE, BASE MOUNTED	160W LED ON 2.4m ARMS
LS4	MONTROSE ROAD	10.5m SECTIONAL STEEL POLE, BASE MOUNTED	160W LED ON 2.4m ARM
LS5	MONTROSE ROAD	10.5m SECTIONAL STEEL POLE, BASE MOUNTED	2–160W LED ON 2.4m ARMS
LS6	MONTROSE ROAD	10.5m SECTIONAL STEEL POLE, BASE MOUNTED	2–160W LED ON 2.4m ARMS
LS7	MONTROSE ROAD	10.5m SECTIONAL STEEL POLE, BASE MOUNTED	2–160W LED ON 2.4m ARMS
LS8	MONTROSE ROAD	10.5m SECTIONAL STEEL POLE, BASE MOUNTED	2–160W LED ON 2.4m ARMS
LS9	MONTROSE ROAD	10.5m SECTIONAL STEEL POLE, BASE MOUNTED	2–160W LED ON 2.4m ARMS
LS10	MONTROSE ROAD	10.5m SECTIONAL STEEL POLE, BASE MOUNTED	160W LED ON 2.4m ARM
LS11	MONTROSE ROAD	10.5m SECTIONAL STEEL POLE, BASE MOUNTED	160W LED ON 2.4m ARM
LS12	MONTROSE ROAD	10.5m SECTIONAL STEEL POLE, BASE MOUNTED	160W LED ON 2.4m ARM

POLES			
No.	LOCATION	DESCRIPTION	REMARKS
LS13	MONTROSE ROAD	10.5m SECTIONAL STEEL POLE, BASE MOUNTED	160W LED ON 2.4m ARM
LS14	MONTROSE ROAD	10.5m SECTIONAL STEEL POLE, BASE MOUNTED	160W LED ON 2.4m ARM
LS15	MONTROSE ROAD	10.5m SECTIONAL STEEL POLE, BASE MOUNTED	160W LED ON 2.4m ARM
LS16	MONTROSE ROAD	10.5m SECTIONAL STEEL POLE, BASE MOUNTED	160W LED ON 2.4m ARM
LS17	MONTROSE ROAD	10.5m SECTIONAL STEEL POLE, BASE MOUNTED	160W LED ON 2.4m ARM
LS18	MONTROSE ROAD	10.5m SECTIONAL STEEL POLE, BASE MOUNTED	160W LED ON 2.4m ARM
TS3	MONTROSE ROAD	SEE TRAFFIC SIGNAL DRAWINGS	160W LED ON 2.4m ARM
TS6	MONTROSE ROAD	SEE TRAFFIC SIGNAL DRAWINGS	2–160W LED ON 2.4m ARMS
TS9	MONTROSE ROAD	SEE TRAFFIC SIGNAL DRAWINGS	160W LED ON 2.4m ARM
TS13	MONTROSE ROAD	SEE TRAFFIC SIGNAL DRAWINGS	2–160W LED ON 2.4m ARMS
PS1	MONTROSE ROAD	SEE TRAFFIC SIGNAL DRAWINGS	SUPPLY 'A'

ELECTRICAL STRUCTURES		
No.	LOCATION	DESCRIPTION
HH1	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm
HH2	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm
HH3	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm
HH4	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm
HH5	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm
HH6	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm
HH7	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm
HH8	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm
HH9	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm
HH10	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm
HH11	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm
HH12	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm
HH13	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm
HH14	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm

ELECTRICAL STRUCTURES		
No.	LOCATION	DESCRIPTION
HH15	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm
HH16	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm
HH17	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm
HH18	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm
HH19	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm
HH20	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm
HH21	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm
HH22	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm

LEGEND

- NEW POLE
- LS1 / 160 — NEW LUMINAIRE
- PS1 — NEW POWER SUPPLY WITH METER BASE
- HH1 — NEW HANDHOLE
- TSJB1 — NEW HANDHOLE (TRAFFIC SIGNALS)
- NEW GROUND ROD
- M — METERED SERVICE

NOTES/LEGEND
THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWER AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.
A. ALL CONNECTIONS ARE TO BE MADE IN POLE HANDHOLES. UNDERGROUND CONNECTIONS WILL NOT BE PERMITTED.
B. ALL DUCTS SHALL BE RIGID PVC TYPE CSA 22.2 No. 211.2–06 UNLESS OTHERWISE INDICATED.
C. TO RELATE EQUIPMENT SHOWN SCHEMATICALLY TO THE PHYSICAL INSTALLATION, REFER TO LAYOUT DRAWINGS.
D. AERIAL SPAN AND LUMINAIRE ON NPEI POLES SHALL BE INSTALLED 300mm BELOW NEUTRAL CONDUCTOR.
1. RELOCATE EXISTING POLE AND LUMINAIRE.
2. TIE INTO TRAFFIC SIGNAL STREET LIGHTING CIRCUIT.

NO.	REVISION	DATE	INIT.
0	ISSUED FOR TENDER	2018/02/19	
A	ISSUED FOR REVIEW	2018/11/29	

DRAFTING P.B.
DESIGN P.C.
CHECKED BY R.G.
APPROVED BY R.G.

LICENSED PROFESSIONAL ENGINEER — R.M.GULATI — 100128334 — PROVINCE OF ONTARIO

Niagara Region PUBLIC WORKS

PARSONS

RN 19-05
ROAD RECONSTRUCTON AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS

ELECTRICAL LAYOUT PLAN

CONSULTANT FILE No. 603119
DATE 2018/11/29
SCALE HORIZ. 1:500
REF. No.
DWG No. EL-01
REV. A

X-REFERENCES:

GEOGRAPHIC PROJECTION: U.T.M. NAD 83 ZONE 17 XXXXXXXXX ELEV. ####
VERTICAL DATUM: XXXXXXXXX HORIZONTAL DATUM: XXXXXXXXX
DATUM: DATUM description XXXXXXXXX ELEV. ####

DWG NAME: RSE INFRASTRUCTURE, SD 2015 BENCHMARK COORDINATES UPPER LEFT: Northing Easting BENCHMARK COORDINATES LOWER RIGHT: Northing Easting

ASSEMBLY: MCE XXX/MM/DD; DESIGN XXX/MM/DD; DRAFTING XXX/MM/DD; CHECK XXX/MM/DD

UTILITIES: WATER XXX/MM/DD; GAS XXX/MM/DD; HYDRO XXX/MM/DD; TELEPHONE XXX/MM/DD; CABLE XXX/MM/DD; OTHER XXX/MM/DD

RR98 - EL-02

IMAGES:

X-REFERENCES:

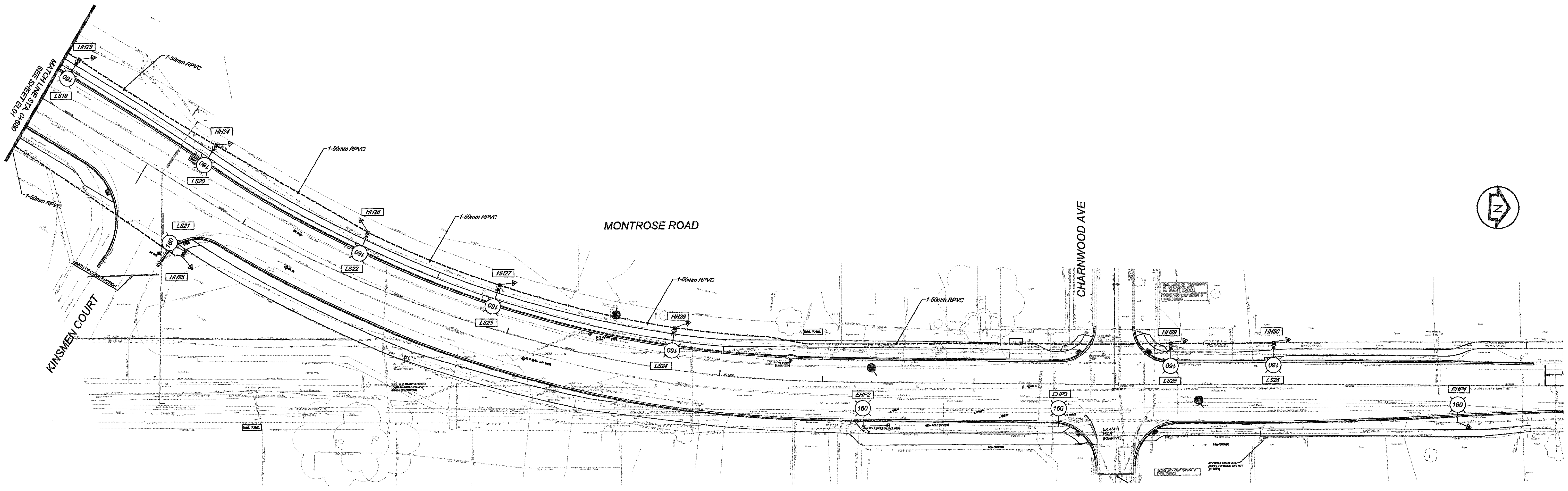
GEOGRAPHIC PROJECTION: U.T.M. NAD 83 ZONE 17
VERTICAL MONUMENT: Vertical Monument description XXXXXXXXXX ELEV. ###.###
DATUM: DATUM description XXXXXXXXXX ELEV. ###.###

DWG NAME:
FILE FORMAT: CIVIL 3D 2015

BOUNDING COORDINATES UPPER LEFT: Northing Easting BOUNDING COORDINATES UPPER RIGHT: Northing Easting BOUNDING COORDINATES LOWER LEFT: Northing Easting BOUNDING COORDINATES LOWER RIGHT: Northing Easting

APPROVALS
MOE YYYY/MM/DD
MTO YYYY/MM/DD
REGION YYYY/MM/DD
CNR YYYY/MM/DD
CPR YYYY/MM/DD

UTILITIES
NRBN YYYY/MM/DD
CNP YYYY/MM/DD
LOCAL HYDRO YYYY/MM/DD
ONTARIO HYDRO YYYY/MM/DD
GAS YYYY/MM/DD
BELL YYYY/MM/DD
CATV YYYY/MM/DD



POLES			
No.	LOCATION	DESCRIPTION	REMARKS
LS19	MONTROSE ROAD	10.5m SECTIONAL STEEL POLE, BASE MOUNTED	160W LED ON 2.4m ARM
LS20	MONTROSE ROAD	10.5m SECTIONAL STEEL POLE, BASE MOUNTED	160W LED ON 2.4m ARM
LS21	MONTROSE ROAD	10.5m SECTIONAL STEEL POLE, BASE MOUNTED	160W LED ON 2.4m ARM
LS22	MONTROSE ROAD	10.5m SECTIONAL STEEL POLE, BASE MOUNTED	160W LED ON 2.4m ARM
LS23	MONTROSE ROAD	10.5m SECTIONAL STEEL POLE, BASE MOUNTED	160W LED ON 2.4m ARM
LS24	MONTROSE ROAD	10.5m SECTIONAL STEEL POLE, BASE MOUNTED	160W LED ON 2.4m ARM
LS25	MONTROSE ROAD	10.5m SECTIONAL STEEL POLE, BASE MOUNTED	160W LED ON 2.4m ARM
LS26	MONTROSE ROAD	10.5m SECTIONAL STEEL POLE, BASE MOUNTED	160W LED ON 2.4m ARM
EHP2	MONTROSE ROAD	EXISTING NPEI WOOD POLE, DIRECT BURIED	160W LED ON 2.4m ARM
EHP3	MONTROSE ROAD	EXISTING NPEI WOOD POLE, DIRECT BURIED	160W LED ON EX. 2.4m ARM
EHP4	MONTROSE ROAD	EXISTING NPEI CONCRETE POLE, DIRECT BURIED	160W LED ON EX. 2.4m ARM

ELECTRICAL STRUCTURES		
No.	LOCATION	DESCRIPTION
HH23	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm
HH24	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm
HH25	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm
HH26	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm
HH27	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm
HH28	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm
HH29	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm
HH30	MONTROSE ROAD	ELECTRICAL HANDHOLE 330 X 600mm

LEGEND

		NEW POLE
LS1	160	NEW LUMINAIRE
PS1	M	NEW POWER SUPPLY WITH METER BASE
HH1		NEW HANDHOLE
TSJB1		NEW HANDHOLE (TRAFFIC SIGNALS)
		GROUND ROD
	M	METERED SERVICE

NO.	REVISION	DATE	INIT.
B	ISSUED FOR TENDER	2019/02/19	
A	ISSUED FOR REVIEW	2018/11/29	

NOTES/LEGEND

THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWER AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

A. ALL CONNECTIONS ARE TO BE MADE IN POLE HANDHOLES. UNDERGROUND CONNECTIONS WILL NOT BE PERMITTED.
B. ALL DUCTS SHALL BE RIGID PVC TYPE CSA 22.2 No. 211.2-06 UNLESS OTHERWISE INDICATED.
C. TO RELATE EQUIPMENT SHOWN SCHEMATICALLY TO THE PHYSICAL INSTALLATION, REFER TO LAYOUT DRAWINGS.
D. AERIAL SPAN AND LUMINAIRE ON NPEI POLES SHALL BE INSTALLED 300mm BELOW NEUTRAL CONDUCTOR.

DRAFTING P.B.
DESIGN P.G.
CHECKED BY R.G.
APPROVED BY R.G.

LICENSED PROFESSIONAL ENGINEER
R.M.GULATI
100128334
PROVINCE OF ONTARIO

Niagara Region
PUBLIC WORKS

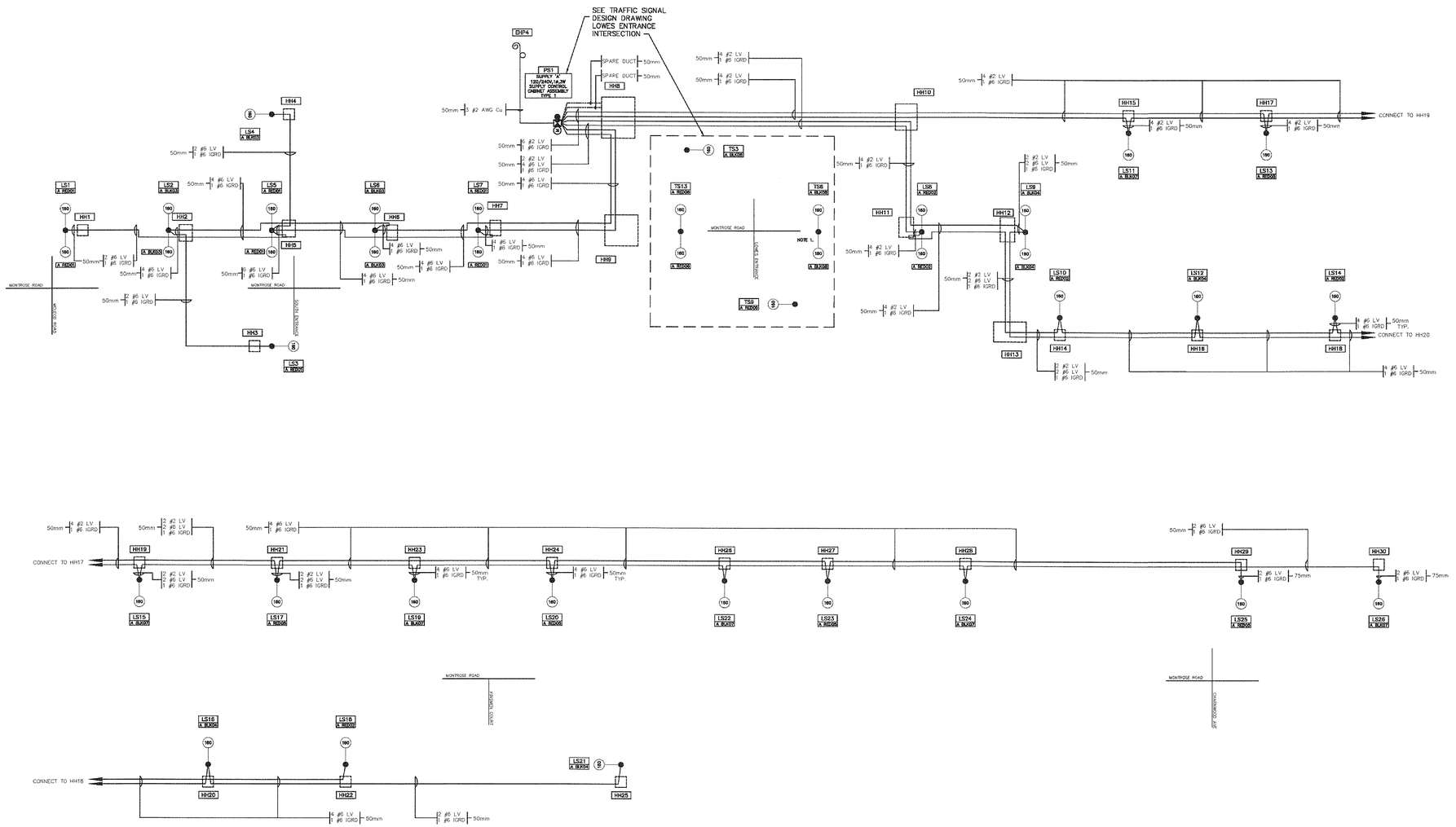
PARSONS

RN 19-05
ROAD RECONSTRUCTON AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS

ELECTRICAL LAYOUT PLAN

CONSULTANT FILE No. 603119
DATE 2018/11/29
SCALE HORIZ. 1:500
REF. No.
DWG No. EL-02
REV. A

RR98 - EL-02



LOADING SUPPLY 'A'

WATTS	LUMINAIRES / WATTAGE	CCT	BREAKER AMP	BREAKER AMP	CCT	LUMINAIRES / WATTAGE	WATTS
1120	LUMINAIRES 7 X 160W	A RED 01	30A	30A	A RED 02	LUMINAIRES 5 X 160W	800
800	LUMINAIRES 5 X 160W	A BLK 03	30A	30A	A BLK 04	LUMINAIRES 5 X 160W	800
800	LUMINAIRES 5 X 160W	A RED 05	30A	30A	A RED 06	LUMINAIRES 3 X 160W	480
960	LUMINAIRES 6 X 160W	A BLK 07	30A	30A	A BLK 08	LUMINAIRES 3 X 160W	480
						TOTAL RED	3200W
						BLACK	3040W
							6240W

LEGEND

- NEW POLE
- LS1 (160) NEW LUMINAIRE
- PS1 (M) NEW POWER SUPPLY WITH METER BASE
- HH1 NEW HANDHOLE
- TSJB1 NEW HANDHOLE (TRAFFIC SIGNALS)
- GROUND ROD
- (M) METERED SERVICE

NO.	REVISION	DATE	INIT.
B	ISSUED FOR TENDER	2018/02/19	
A	ISSUED FOR REVIEW	2018/11/29	

NOTES/LEGEND

THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWER AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

A. ALL CONNECTIONS ARE TO BE MADE IN POLE HANDHOLES. UNDERGROUND CONNECTIONS WILL NOT BE PERMITTED.

B. ALL DUCTS SHALL BE RIGID PVC TYPE CSA 22.2 No. 211.2-06 UNLESS OTHERWISE INDICATED.

C. TO RELATE EQUIPMENT SHOWN SCHEMATICALLY TO THE PHYSICAL INSTALLATION, REFER TO LAYOUT DRAWINGS.

1. TIE INTO TRAFFIC SIGNAL STREET LIGHTING CIRCUIT.

DRAFTING	P.B.
DESIGN	P.G.
CHECKED BY	R.G.
APPROVED BY	R.G.

LICENSED PROFESSIONAL ENGINEER R.M.GUILATI 100128334 PROVINCE OF ONTARIO

Niagara Region PUBLIC WORKS

PARSONS

RN 19-05
ROAD RECONSTRUCTON AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS

WIRING DIAGRAM

CONSULTANT FILE No.	603119
DATE	2018/11/29
SCALE	HORIZ. 1:500
REF. No.	
DWG No.	EL-03
REV.	A

X-REFERENCES:

BENCHMARK DESCRIPTION: U.I.M. NAD 83 ZONE 17
VERTICAL MONUMENT/Hydrant #: XXXXXXXXX ELEV. ####
DATUM: DATUM description XXXXXXXXX ELEV. ####

PIPE LANG
FILE FORMAT:CIVIL 3D 2015

BOUNDING COORDINATES UPPER LEFT: Northing Easting BOUNDING COORDINATES LOWER LEFT: Northing Easting BOUNDING COORDINATES UPPER RIGHT:Northing Easting

ABBREVIATIONS:

MCE	XXXXXXXXXX
MTO	XXXXXXXXXX
MUNI	XXXXXXXXXX
MSIG	XXXXXXXXXX

UTILITIES

NRWA	XXXXXXXXXX
LOCAL PROD.	XXXXXXXXXX
BELL	XXXXXXXXXX
CABLE TV	XXXXXXXXXX

RR98 - EL-02

MACKS

MCLEOD ROAD

MONTROSE ROAD

MATCHLINE STA. 0+340
SEE BELOW

MONTROSE ROAD

MATCHLINE STA. 0+480
SEE PLAN ABOVE

MATCHLINE STA. 0+480
SEE SHEET EL2

MATCHLINE STA. 0+480
SEE PLAN ABOVE

KINSMEN COURT

MONTROSE ROAD

CHARNWOOD AVE

REMOVAL LEGEND

1. REMOVE AND DISPOSE OF POLE, LUMINAIRE AND ARM
2. REMOVE AND DISPOSE OF ELECTRICAL HANDHOLES
3. REMOVE AND DISPOSE OF 50mm RPVC RISER AND ALL ASSOCIATED HARDWARE
4. REMOVE AND SALVAGE POLE AND LUMINAIRE
5. REMOVE AND SALVAGE OF LUMINAIRE AND ARM
6. REMOVE AND SALVAGE OF LUMINAIRE
7. REMOVE AND DISPOSE OF POWER SUPPLY EQUIPMENT
8. REMOVE AND DISPOSE OF CONCRETE BASE

NO.	REVISION	DATE	INIT.
B	ISSUED FOR TENDER	2018/02/19	
A	ISSUED FOR REVIEW	2018/11/29	

NOTES/LEGEND

THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWER AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

A. ALL CONNECTIONS ARE TO BE MADE IN POLE HANDHOLES. UNDERGROUND CONNECTIONS WILL NOT BE PERMITTED.

B. ALL DUCTS SHALL BE RIGID PVC TYPE CSA 22.2 No. 211.2-06 UNLESS OTHERWISE INDICATED.

C. TO RELATE EQUIPMENT SHOWN SCHEMATICALLY TO THE PHYSICAL INSTALLATION, REFER TO LAYOUT DRAWINGS.

DRAFTING P.B.
DESIGN P.C.
CHECKED BY R.G.
APPROVED BY R.G.

LICENSED PROFESSIONAL ENGINEER
R.M.GULATI
100128334
PROVINCE OF ONTARIO

Niagara Region
PUBLIC WORKS

PARSONS

RN 19-05
ROAD RECONSTRUCTON AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS

ELECTRICAL REMOVALS

CONSULTANT FILE No. 603119
DATE 2018/11/29
SCALE HORIZ. 1:500
REF. No.
DWG No. EL-04
REV. A

X-REFERENCES:

GEOGRAPHIC PROJECTION: U.T.M. NAD 83 ZONE 17
CENTRAL LONGITUDE: ##°##'##" W CENTRAL LATITUDE: ##°##'##" N
DATUM: DATUM description XXXXXXXXX ELEV. ####

DWG NAME:
FILE FORMAT/DIGITAL 3D 2016

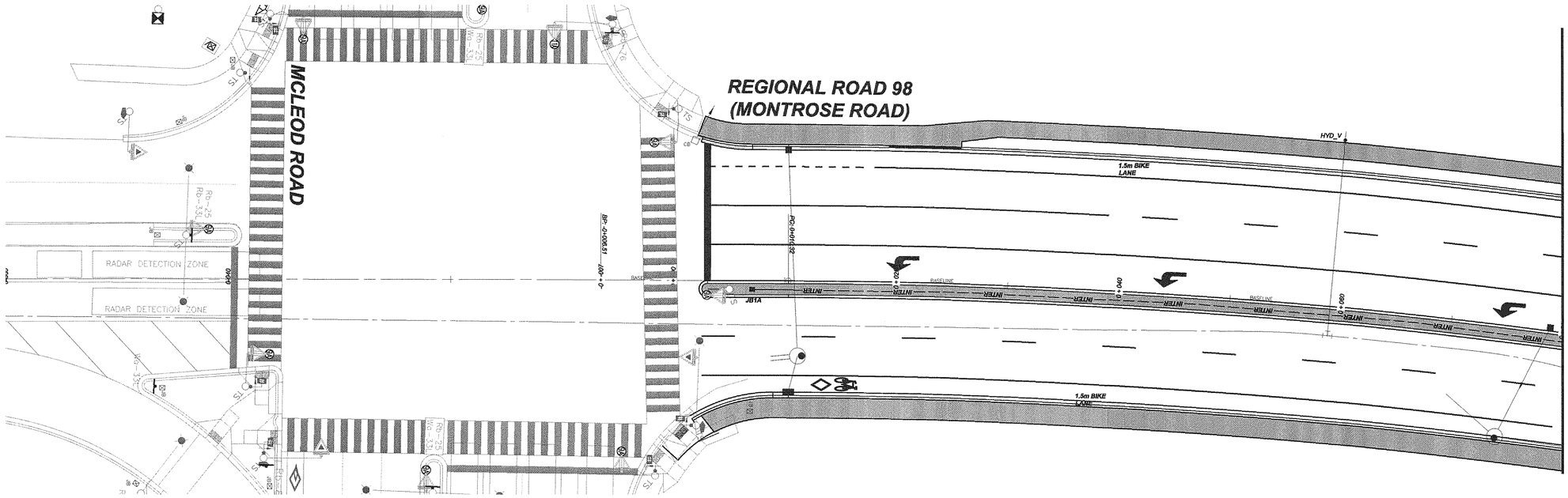
BEARING COORDINATES: UPPER LEFT: Northing Easting BEARING COORDINATES: LOWER RIGHT: Northing Easting

ASSEMBLY:
MCE YYY/AA/BB/CC
MCE YYY/AA/BB/CC
MCE YYY/AA/BB/CC
MCE YYY/AA/BB/CC

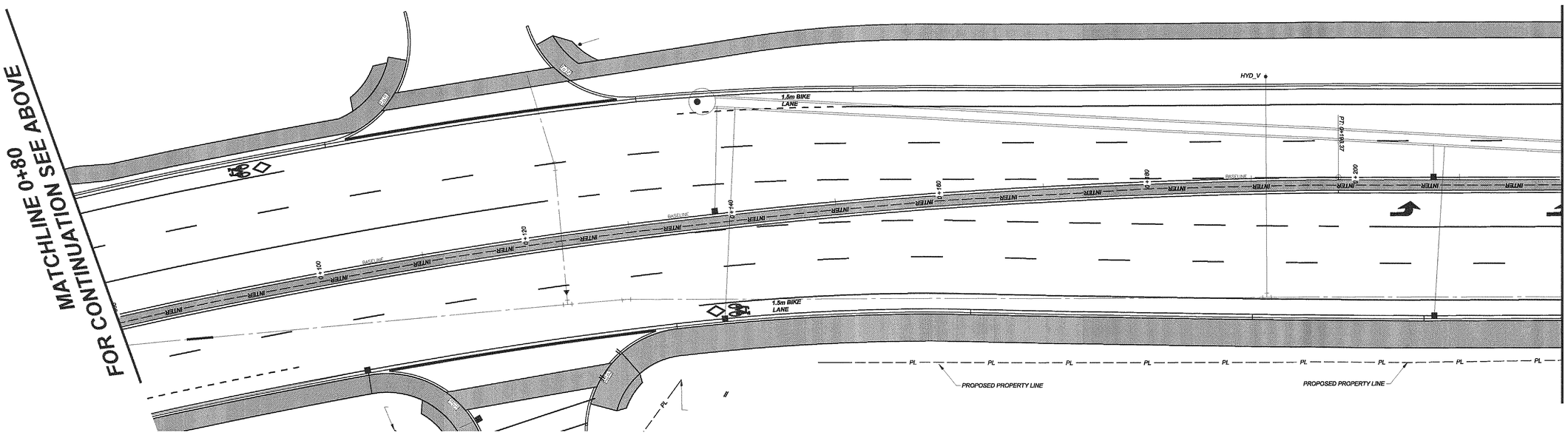
UTILITIES
BELL YYY/AA/BB/CC
ROGERS YYY/AA/BB/CC
HYDRO YYY/AA/BB/CC
GAS YYY/AA/BB/CC
OTHER YYY/AA/BB/CC

ELECTRICAL MAINTENANCE HOLES & MANHOLES

LOCATION (QUADRANT)	POLE OR STRUCT. No.	SIZE (mm)	COMMENTS
@ MCLEOD INTERSECTION	JB1A	330 x 600	CONCRETE POLYMER



REGIONAL ROAD 98 (MONTROSE ROAD)



NO.	REVISION	DATE	INIT.
2	REQUEST FOR TENDER	2018 10 30	N.R.L
1	90% DESIGN REVIEW	2018 03 06	N.R.L

NOTES/LEGEND

1 THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWER AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

2 PROPERTY LINES WERE PLOTTED USING REGISTERED PLANS AND BARS LOCATED IN THE FIELD. TO VERIFY THE ACCURACY OF THESE PROPERTY LINES, A LEGAL SURVEY SHOULD BE PERFORMED PRIOR TO CONSTRUCTION.

DRAFTING	N.R.L
DESIGN	N.R.L
CHECKED BY	TC
APPROVED BY	NR, AS

Niagara Region
PUBLIC WORKS

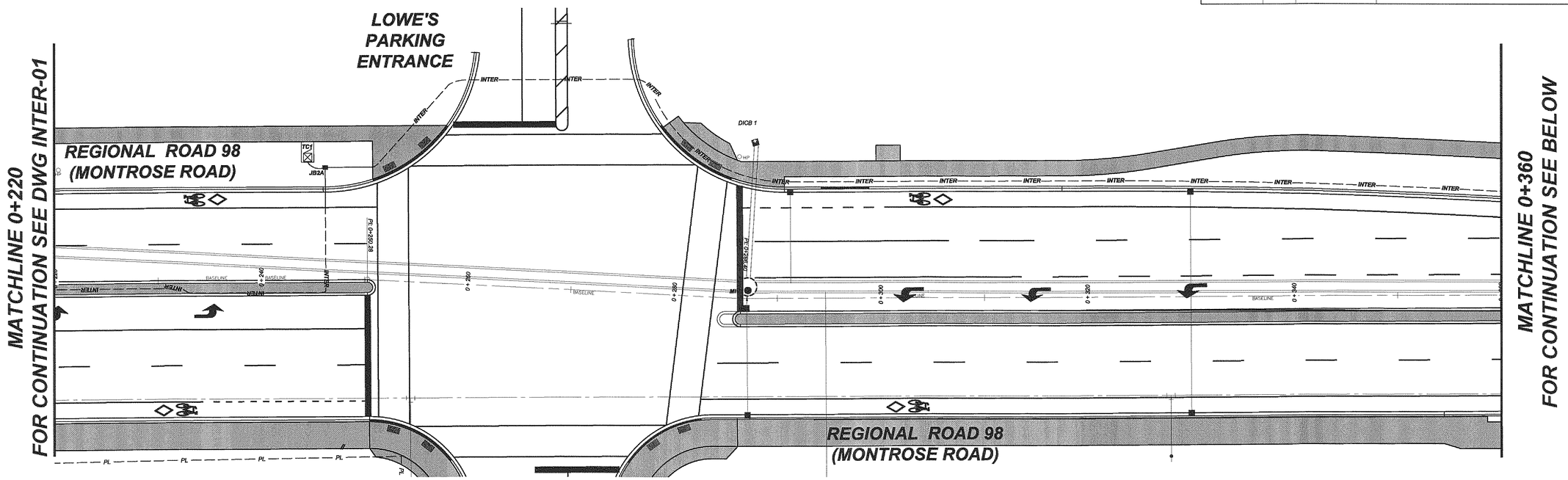
REGIONAL RD 98 (MONTROSE RD) BTWN MCLEOD RD and CHARNWOOD AVE

RR 98 (MONTROSE ROAD) at
YMCA / LOWE'S ENTRANCE
CITY OF NIAGARA FALLS
FIBRE COMMUNICATION DUCT LAYOUT DESIGN

CONSULTANT FILE No.	#
DATE	2018-01-17
SCALE	Hor : 1:200 m
REF. No.	#
DWG No.	INTER-01
REV	2

DRAWING FILE: L:\Engineering\Regional Road 98 (Niagara Falls)\E1527 Montrose Road between McLeod and Charnwood\Drawings\dwg\098MCB_DESIGN.dwg PLOTTED: Oct 30, 2018 - 4:27pm PLOTTED BY: CHATZIS

ELECTRICAL MAINTENANCE HOLES & MANHOLES			
LOCATION (QUADRANT)	POLE OR STRUCT. No.	SIZE (mm)	COMMENTS
@ MCBAIN ENTRANCE	JB2A	330 x 600	CONCRETE POLYMER



NO.	REVISION	DATE	INIT.
2	REQUEST FOR TENDER	2018 10 30	N.R.L
1	90% DESIGN REVIEW	2018 03 06	N.R.L

NOTES/LEGEND

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DESIGN	N.R.L
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APPROVED BY	NR, AS

Niagara Region
PUBLIC WORKS

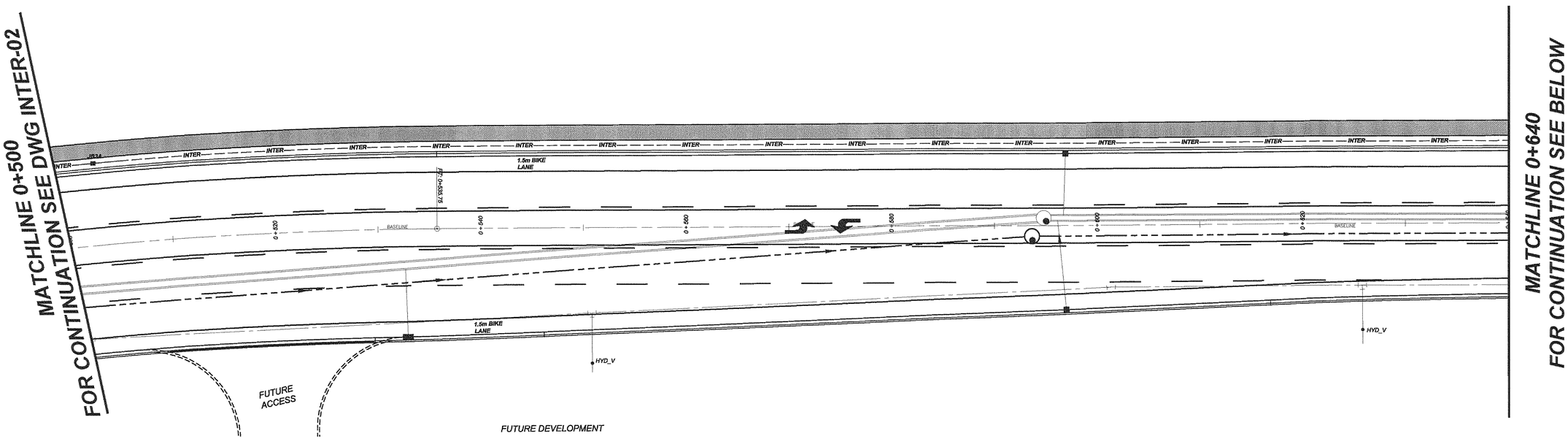
REGIONAL RD 98 (MONTROSE RD) BTWN MCLEOD RD and CHARNWOOD AVE

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CITY OF NIAGARA FALLS
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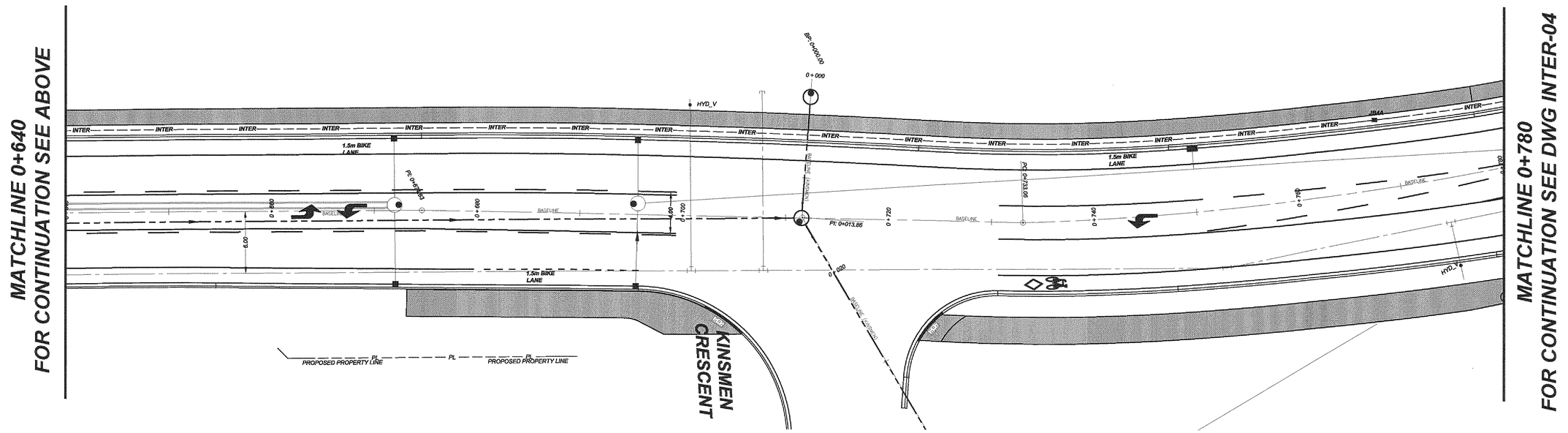
CONSULTANT FILE No.	#
DATE	2018-01-17
SCALE	Hor : 1:200 m
REF. No.	#
DWG No.	INTER-02
REV.	2

DRAWING FILE: L:\Engineering\Regional Road 98 (Niagara Falls)\E1527 Montrose Road between McLeod and Charnwood\Drawings\dwg\098MCB_DESIGN.dwg PLOTTED: Oct 30, 2018 - 4:27pm PLOTTED BY: CHATZIS

ELECTRICAL MAINTENANCE HOLES & MANHOLES			
LOCATION	POLE OR STRUCT. No.	SIZE (mm)	COMMENTS
@ STN 0+503	JB3A	330 x 600	CONCRETE POLYMER
@ STN 0+778	JB4A	330 x 600	CONCRETE POLYMER



REGIONAL ROAD 98 (MONTROSE ROAD)



NO.	REVISION	DATE	INIT.
2	REQUEST FOR TENDER	2018 10 30	N.R.L
1	90% DESIGN REVIEW	2018 03 06	N.R.L

NOTES/LEGEND

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DRAFTING	N.R.L
DESIGN	N.R.L
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Niagara Region PUBLIC WORKS

REGIONAL RD 98 (MONTROSE RD) BTWN MCLEOD RD and CHARNWOOD AVE

RR 98 (MONTROSE ROAD) at YMCA / LOWE'S ENTRANCE

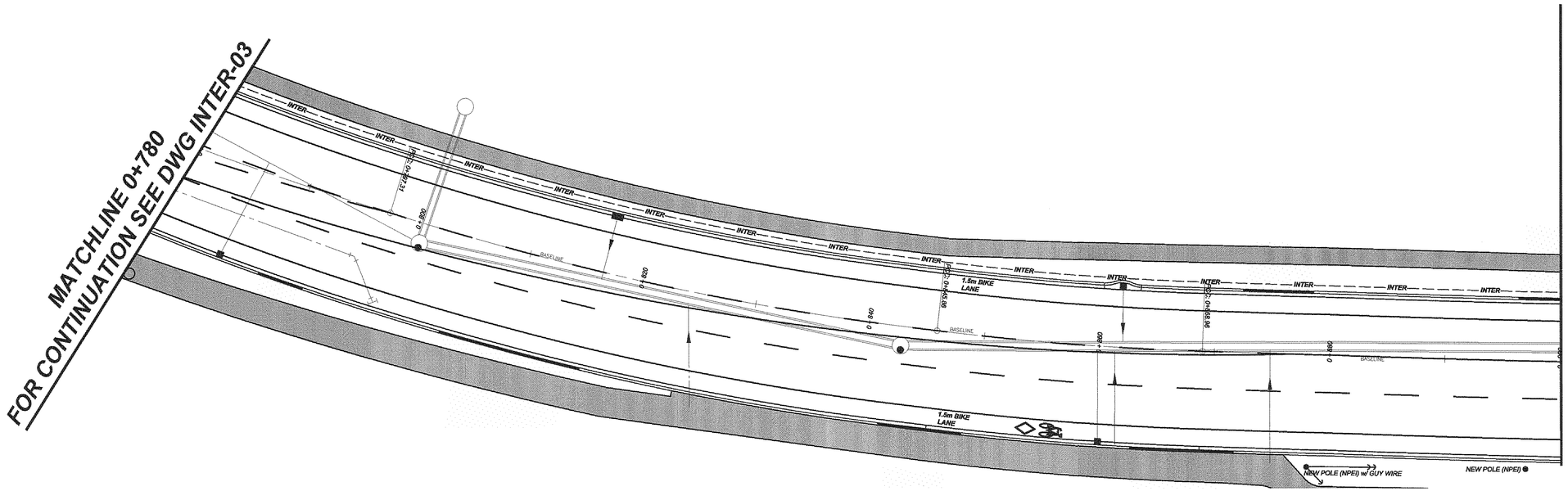
CITY OF NIAGARA FALLS

FIBRE COMMUNICATION DUCT LAYOUT DESIGN

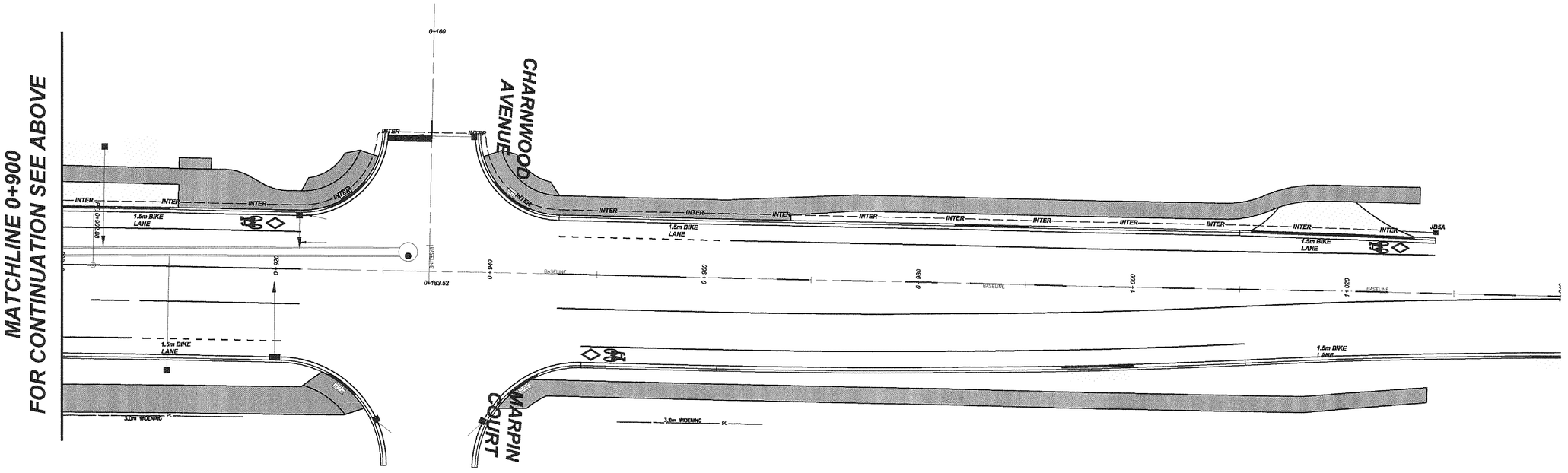
CONSULTANT FILE No.	#
DATE	2018-01-17
SCALE	Hor : 1:200 m
REF. No.	#
DWG No.	INTER-03
REV.	2

DRAWING FILE: L:\Engineering\Regional Road 98 (Niagara Falls)\E1527 Montrose Road between McLeod and Charnwood\Drawings\dwg\09BMCB_DESIGN.dwg PLOTTED: Oct 30, 2018 – 4:27pm PLOTTED BY: CHATZIS

ELECTRICAL MAINTENANCE HOLES & MANHOLES			
LOCATION	POLE OR STRUCT. No.	SIZE (mm)	COMMENTS
@ STN 1+028	JB5A	330 x 600	CONCRETE POLYMER



REGIONAL ROAD 98 (MONTROSE ROAD)



NO.	REVISION	DATE	INIT.
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NOTES/LEGEND

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PUBLIC WORKS

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CONSULTANT FILE No. #	
DATE	2018-01-17
SCALE	Hor : 1:200 m
REF. No.	#
DWG No.	INTER-04
REV.	2

DRAWING FILE: L:\Engineering\Regional Road 98 (Niagara Falls)\E1527 Montrose Road - between McLeod and Charnwood\Drawings\dwg\098MCB_DESIGN.dwg PLOTTED: Oct 30, 2018 - 4:27pm PLOTTED BY: CHATZIS

POLE & ELECTRICAL STRUCTURES

LOCATION (QUADRANT)	POLE OR STRUCT. No.	POLE HEIGHT	POLE BASE TYPE	COMMENTS
SW	TS1	6.30m	6	SIGNAL HEAD AND PRE-EMPTION
SW	TS2	4.00m	1	PED HEADS AND PUSH BUTTONS
SW	TS3	6.30m	6	SIGNAL HEAD
NW	TS4	10.50m	6	SIGNAL HEAD AND LUMINAIRE
NW	TS5	4.00m	1	PED HEADS AND PUSH BUTTONS
NORTH ISLAND	TS6	10.50m	6	SIGNAL HEAD AND LUMINAIRES
NE	TS7	6.30m	6	SIGNAL HEAD
NE	TS8	4.00m	1	PED HEADS & PUSH BUTTONS
NE	TS9	6.30m	6	SIGNAL HEAD
SE	TS10	10.50m	6	SIGNAL HEAD AND LUMINAIRE
SE	TS11	4.00m	1	PED HEADS AND PUSH BUTTONS
SE	TS12	6.30m	6	SIGNAL HEAD
SOUTH ISLAND	TS13	10.50m	6	SIGNAL HEAD AND LUMINAIRES
SW	PS1	DIRECT BURIED	-	POWER DISTRIBUTION CABINET AND METER

ELECTRICAL MAINTENANCE HOLES & MANHOLES

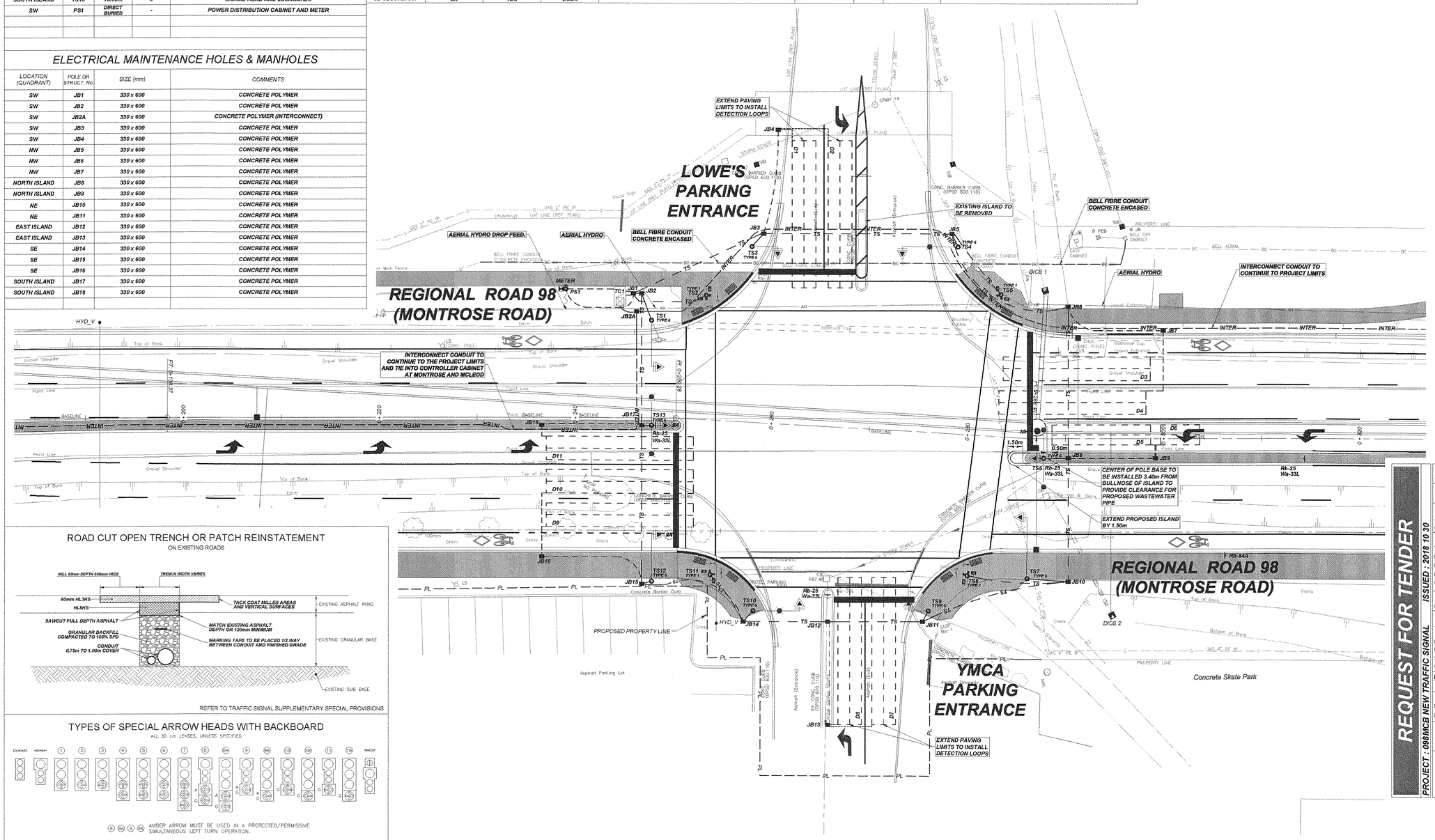
LOCATION (QUADRANT)	POLE OR STRUCT. No.	SIZE (mm)	COMMENTS
SW	JB1	330 x 600	CONCRETE POLYMER
SW	JB2	330 x 600	CONCRETE POLYMER
SW	JB2A	330 x 600	CONCRETE POLYMER (INTERCONNECT)
SW	JB3	330 x 600	CONCRETE POLYMER
SW	JB4	330 x 600	CONCRETE POLYMER
NW	JB5	330 x 600	CONCRETE POLYMER
NW	JB6	330 x 600	CONCRETE POLYMER
NW	JB7	330 x 600	CONCRETE POLYMER
NORTH ISLAND	JB8	330 x 600	CONCRETE POLYMER
NORTH ISLAND	JB9	330 x 600	CONCRETE POLYMER
NE	JB10	330 x 600	CONCRETE POLYMER
NE	JB11	330 x 600	CONCRETE POLYMER
EAST ISLAND	JB12	330 x 600	CONCRETE POLYMER
EAST ISLAND	JB13	330 x 600	CONCRETE POLYMER
SE	JB14	330 x 600	CONCRETE POLYMER
SE	JB15	330 x 600	CONCRETE POLYMER
SE	JB16	330 x 600	CONCRETE POLYMER
SOUTH ISLAND	JB17	330 x 600	CONCRETE POLYMER
SOUTH ISLAND	JB18	330 x 600	CONCRETE POLYMER

TYPE AND LOCATION OF TRAFFIC SIGNAL HEADS

LOCATION	TYPE	BACKBOARD	SIGNAL MOUNTING HEIGHT	COMMENTS
SB PRIMARY	HWY	YES	5.00m	
WB SECONDARY	HWY	YES	5.00m	
WB PRIMARY	HWY	YES	5.00m	
NB SECONDARY	HWY	YES	5.00m	
NB PRIMARY	HWY	YES	5.00m	
EB SECONDARY	HWY	YES	5.00m	
EB PRIMARY	HWY	YES	5.00m	
SB AUXILIARY	9A	YES	5.00m	
SB SECONDARY	9A	YES	5.00m	

TYPE AND LOCATION OF DETECTION

LOCATION	No.	TYPE	COMMENTS
LOWE'S PARKING ENTRANCE	D1	DUPLEX	EB THRU / RT LANE
LOWE'S PARKING ENTRANCE	D2	DUPLEX	EB LT LANE
RR 98 (MONTROSE RD)	D3	DUPLEX	SB RT LANE
RR 98 (MONTROSE RD)	D4	DUPLEX	SB THRU LANE
RR 98 (MONTROSE RD)	D5	DUPLEX	SB LT LANE
RR 98 (MONTROSE RD)	D6	DUPLEX	SB LT LANE ADVANCE
YMCA PARKING ENTRANCE	D7	DUPLEX	WB THRU / RT LANE
YMCA PARKING ENTRANCE	D8	DUPLEX	WB LT LANE
RR 98 (MONTROSE RD)	D9	DUPLEX	NB THRU / RT LANE
RR 98 (MONTROSE RD)	D10	DUPLEX	NB THRU LANE
RR 98 (MONTROSE RD)	D11	DUPLEX	NB LT LANE



ROAD CUT OPEN TRENCH OR PATCH REINSTATEMENT

ON EXISTING ROADS

REFER TO TRAFFIC SIGNAL SUPPLEMENTARY SPECIAL PROVISIONS

TYPES OF SPECIAL ARROW HEADS WITH BACKBOARD

ALL 30 cm LENSES, UNLESS SPECIFIED

8 8A 9 9A AMBER ARROW MUST BE USED IN A PROTECTED/PERMISSIVE SIMULTANEOUS LEFT TURN OPERATION.

LEGEND

TRAFFIC SIGNAL BLOCKS

- HIGHWAY SIGNAL HEAD (30 cm. Red) WITH BACKBOARD AND MAST ARM
- HIGHWAY SIGNAL HEAD (30 cm. Red) WITH BACKBOARD AND OVERHEAD CABLE
- HIGHWAY SIGNAL HEAD WITH BACKBOARD AND MAST ARM (ALL 30 cm. LENSES)
- SPECIAL HEAD WITH ARROW INDICATION AND BACKBOARD (Example shows Type 2 Head)
- HIGHWAY SIGNAL HEAD WITH BACKBOARD AND MAST ARM (ALL 30 cm. LENSES) (Example shows Type 2 Head)
- SPECIAL HEAD WITH BACKBOARD AND ONE OR MORE PROGRAMMABLE LENSES (Example shows Type 2 Head)
- STANDARD SIGNAL HEAD WITH BACKBOARD AND MAST ARM (ALL 20 cm. LENSES)
- STANDARD SIGNAL HEAD WITH MAST ARM, WITHOUT BACKBOARD
- PEDESTRIAN SIGNAL HEAD
- COUNTDOWN PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- AUDIBLE PEDESTRIAN PUSH BUTTON
- VEHICLE PASSAGE LOOP DETECTOR
- VEHICLE LOOP / VIDEO DETECTION AREA
- DUPLEX LOOP DETECTOR
- DIAMOND LOOP DETECTOR
- EMERGENCY VEHICLE PRE-EMPTION DETECTOR
- MICRO-WAVE DETECTOR
- MAGNETIC VEHICLE DETECTOR
- TRAFFIC CONTROLLER
- Rb-25 TRAFFIC SIGN (Example shows Rb-25 Sign)
- TRAFFIC SIGN WITH FLASHING BEACON
- ILLUMINATED TRAFFIC SIGN
- VIDEO DETECTION CAMERA
- TILT/PAN/ZOOM VIDEO CAMERA
- MULTI-LEG DETECTION CAMERA
- LUMINAIRE
- POWER DISTRIBUTION CABINET / DISCONNECT
- RADIO INTERCONNECT
- HYDRO METER
- TACTILE WARNING SURFACE

TRAFFIC SIGNAL LINETYPES

- TRAFFIC SIGNAL CONDUITS (1-100mm AND 1-50mm) — TS —
- TRAFFIC SIGNAL CONDUIT (1-50mm)
- TRAFFIC SIGNAL AERIAL WIRE
- TRAFFIC LOOP DETECTION CABLE

REQUEST FOR TENDER

PROJECT : 098MCB NEW TRAFFIC SIGNAL ISSUED : 2018 10 30

INTERSECTION HARDWARE CHECKLIST

CHECK ☑ ALL THAT APPLY

CONTROL

☑ FULLY ACTUATED ☐ SEMI ACTUATED ☐ FIXED TIME

PEDESTRIANS	N. LEG	S. LEG	E. LEG	W. LEG
AUDIBLE PEDESTRIAN HEADS	☑	☑	☑	☑
COUNTDOWN HEADS	☑	☑	☑	☑

DETECTION	NB	SB	EB	WB
VIDEO	☐	☐	☐	☐
RADAR	☐	☐	☐	☐
LOOPS	☑	☑	☑	☑
LONG DISTANCE LOOPS	☐	☐	☐	☐
OTHER: _____	☐	☐	☐	☐

COMMUNICATION

RADIO ☐ FIBRE ☑ COPPER ☐ NONE ☐

PHASING

TWO PHASE ☐

	NB	SB	EB	WB
PROTECTED/PERMISSIVE LT	☐	☐	☐	☐
FULLY PROTECTED LT	☐	☑	☐	☐
SPLIT PHASE	☐	☐	☐	☐
OTHER: _____	☐	☐	☐	☐

BACKUP POWER SUPPLY

YES ☑ NO ☐

PRE-EMPTION

NONE ☐ RAIL ☐ BRIDGE ☐

EMERGENCY VEHICLE ☑

RETURN DATE

SIGNATURE

ADAM SEMARK — NICK ROSATO

098MCB

NO.	REVISION	DATE	INIT.
5	REQUEST FOR TENDER	2018 10 30	TC
4	90% DESIGN REVIEW – REISSUE (2)	2018 10 17	TC
3	90% DESIGN REVIEW – REISSUE	2018 10 04	TC
2	90% DESIGN REVIEW	2018 08 28	TC
1	60% DESIGN REVIEW	2018 01 08	TC

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2. PROPERTY LINES WERE PLOTTED USING REGISTERED PLANS AND BARS LOCATED IN THE FIELD. TO VERIFY THE ACCURACY OF THESE PROPERTY LINES, A LEGAL SURVEY SHOULD BE PERFORMED PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL CONTACT THE REGION'S TRAFFIC OPERATIONS MANAGER FOLLOWING THE TRAFFIC SIGNAL PLANT LAYOUT. PROPERTY AND UTILITY LOCATIONS MUST ALSO BE IDENTIFIED. THE FINAL LOCATIONS FOR ALL TRAFFIC SIGNAL PLANT INCLUDING BUT NOT LIMITED TO DUCTS, POLE BASES, JUNCTION BOXES, CONTROLLER BASE AND LOOPS WILL BE VERIFIED IN THE FIELD BY THE NIAGARA REGION TRAFFIC SIGNAL SUPERVISOR OR DESIGNATE PRIOR TO INSTALLATION. A TRAFFIC SIGNAL INSPECTOR FROM THE REGION MUST BE ON SITE AT ALL TIMES (OR WHERE DETERMINED BY THE REGION'S TRAFFIC OPERATIONS MANAGER AS NECESSARY) WHEN TRAFFIC SIGNAL WORK IS BEING UNDERTAKEN.
4. ALL MATERIALS SHALL BE AS PER NIAGARA REGION TRAFFIC SIGNAL STANDARDS MANUAL (CONTRACTORS SHALL VERIFY ALL MATERIALS WITH REGION'S SIGNAL SUPERVISOR PRIOR TO COMMENCING CONSTRUCTION).
5. ALL CONDUIT FROM JUNCTION BOXES TO JUNCTION BOXES AND FROM JUNCTION BOXES TO TRAFFIC SIGNAL POLES SHALL INCLUDE 1-100mm DUCT AND 1-50mm DUCT UNLESS OTHERWISE SPECIFIED.
6. WHERE APPROVED FINAL POLE BASE LOCATION DIFFER FROM THIS PLAN, INSTALL SIGNAL MAST ARM OF APPROPRIATE LENGTH TO MAINTAIN POSITION OF SIGNAL HEAD AT DESIGNED LOCATION.
7. ALL TRAFFIC SIGNAL ELECTRICAL CONNECTIONS, BOTH TEMPORARY AND FINAL ARE TO BE COORDINATED WITH AND PERFORMED BY NIAGARA REGION FORCES.

DRAFTING	TC
DESIGN	TC
CHECKED BY	AS, NR
APPROVED BY	NR

Niagara Region PUBLIC WORKS

REGIONAL RD 98 (MONTROSE RD) BTWN MCLEOD RD and CHARNWOOD AVE

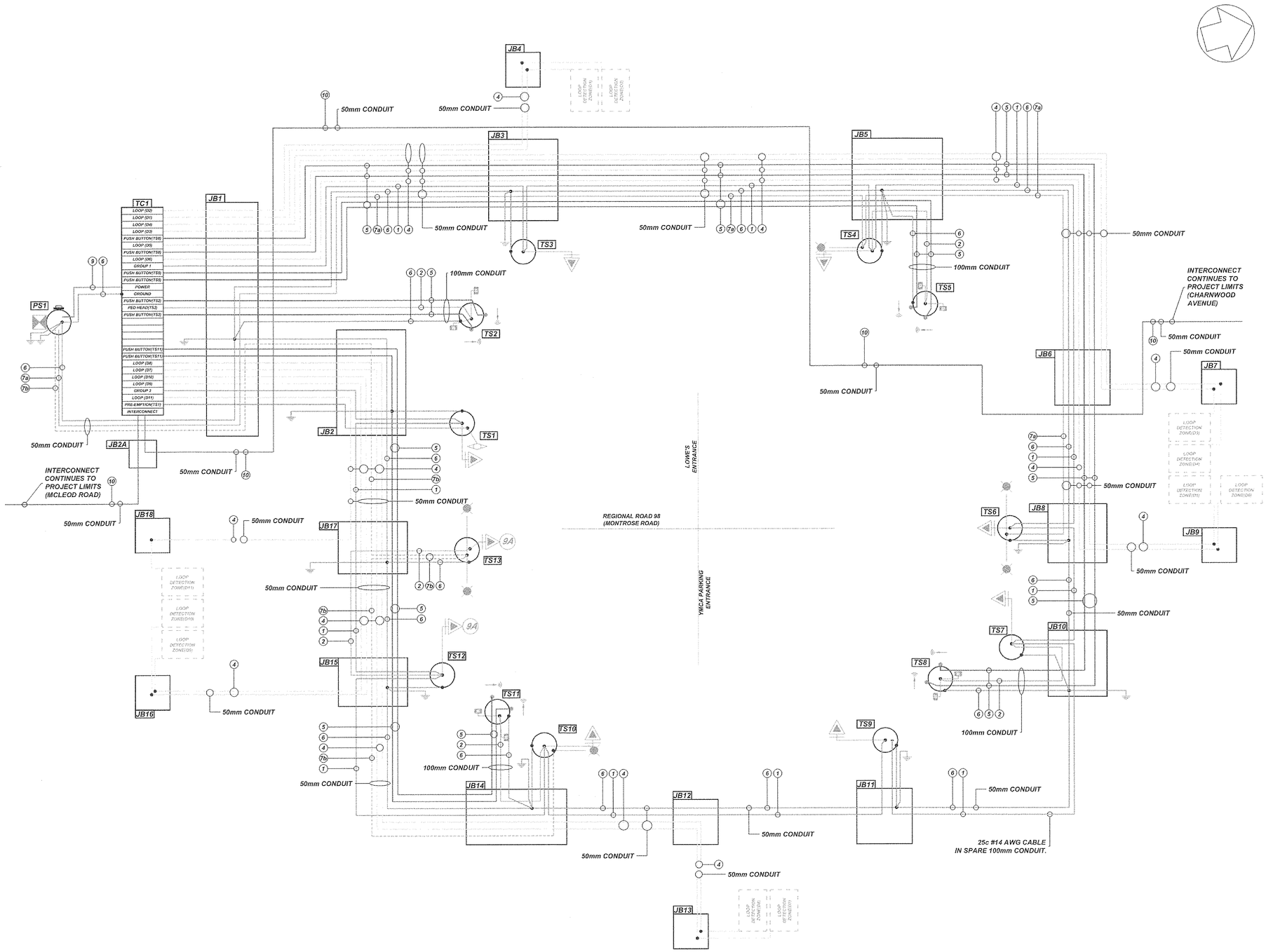
RR 98 (MONTROSE ROAD) at YMCA / LOWE'S ENTRANCE

CITY OF NIAGARA FALLS

TRAFFIC SIGNAL DESIGN

CONSULTANT FILE No.	–
DATE	JANUARY 2018
SCALE	Hor : 1:200 m
REF. No.	RN ___-___
DWG No.	TS01
REV.	5

DRAWING FILE: L:\Engineering\Regional Road 98 (Niagara Falls)\E1527 Montrose Road between McLeod and Charnwood\Drawings\dwg\098MCB_DESIGN.dwg PLOTTED: Oct 30, 2018 - 4:18pm PLOTTED BY: CHATZIS



LEGEND

- (1) TRAFFIC SIGNAL CABLE – 7Sc #14 AWG.
- (2) TRAFFIC SIGNAL CABLE – 7c #14 AWG.
- (3) TRAFFIC SIGNAL CABLE – 4c #14 AWG.
- (4) LOOP CABLE – 2c – (BLACK/WHITE) GENERAL CABLE OR EQUIVALENT. – SHIELDED COMMUNICATION AND CONTROL CABLE, 1 TWISTED PAIR, BELDFOIL(R) SHIELD, 600w RATING
- (5) PUSH BUTTON CABLE – 2c – (BLACK/RED) GENERAL CABLE OR EQUIVALENT. – SHIELDED COMMUNICATION AND CONTROL CABLE, 1 TWISTED PAIR, BELDFOIL(R) SHIELD, 600w RATING
- (6) INSULATED BOND WIRE – 1c – #6 AWG. (GREEN) CU RWU-90 XLPE
- (7a) ROADWAY LIGHTING WIRE (UNDERGROUND) – 2c – #6 AWG. (BLACK/WHITE) CU RWU-90 XLPE
- (7b) ROADWAY LIGHTING WIRE (UNDERGROUND) – 2c – #6 AWG. (RED/WHITE) CU RWU-90 XLPE
- (8) RECEPTACLE WIRE – 2c – #4 AWG. (BLACK/WHITE) CU RWU-90 XLPE
- (9) ROADWAY LIGHTING WIRE (RISER) – #12/2 (BLACK & WHITE) CU NMWU-90
- (10) TRAFFIC CONTROLLER POWER – 2c – #8 (BLACK/WHITE) CU RWU-90 XLPE & 1c – #6 (GREEN) CU RWU-90 XLPE
- (11) COMMUNICATIONS (INTERCONNECT) – FIBRE OPTIC & 1c – #12 (WHITE) TRACER WIRE
- (12) VEHICLE PRE-EMPTION DETECTOR – COAXIAL
- (13) 2M59 CSA 12AWG (TRACER CABLE)
- (14) RADAR DETECTOR CABLE
- (15) CAT 5 RADIO COMMUNICATION ANTENNA CABLE

- SUPPLY A – 120/240v
- GROUND ROD
- CONNECTION POINT
- LUMINAIRE
- TRAFFIC SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTRIAN SIGNAL HEAD
- VEHICLE DETECTION LOOP
- HYDRO METER
- VEHICLE PRE-EMPTION DETECTOR

GENERAL NOTES

A. ALL CABLES TO BE PLACED IN 1-100mm RIGID PVC UNLESS OTHERWISE SPECIFIED.

B. ALL TRAFFIC SIGNAL HEAD RISER CABLE SHALL BE AS PER THE FOLLOWING:
- 3 SECTION HEADS – (3) 4 CONDUCTOR #14 AWG. TRAFFIC SIGNAL CABLE (SUPPLIED BY REGION)
- 4 SECTION HEADS – (2) 7 CONDUCTOR #14 AWG. TRAFFIC SIGNAL CABLE (SUPPLIED BY REGION)

C. ALL ROADWAY LIGHTING RISER WIRE SHALL BE (9) #12/2 CU NMWU-90.

D. ALL PEDESTRIAN SIGNAL RISER CABLE TO BE (3) 4 CONDUCTOR #14 AWG. TRAFFIC SIGNAL CABLE (SUPPLIED BY REGION)

E. ALL END OF RUN CONDUCTOR TO BE TERMINATED WITH INSULATING MARRETT CONNECTORS, TAPED, AND BEND UPWARDS.

F. A SUFFICIENT AMOUNT OF CABLE IS TO BE SPOOLED AT CONNECTION POINTS TO MAKE ALL CONNECTIONS AND PROVIDE DRIP LOOPS.

G. THE ENDS OF EACH CABLE SHALL BE UNIQUELY IDENTIFIED WITH COLORED ELECTRICAL TAPE. REFER TO NRS 2710 FOR CABLE COLOR ID CHART.

SUPPLY CONTROL CABINET ASSEMBLY 120/240v - 1 PHASE, 3 WIRE — PP1 — NRS 2441, TYPE 3S, 60A

CIRCUIT NO.	DESCRIPTION	LOCATION	BREAKER AMPS	WATTAGE	QUANT.	CIRCUIT LOAD (W)
1	TRAFFIC SIGNALS	24hr LOAD	40	520w	1ea	520
2a	LED LUMINAIRES	INTERSECTION	15	169w	3ea	507
2b	LED LUMINAIRES	INTERSECTION	15	169w	3ea	507
				TOTAL WATTS		1534

098MCB

NO.	REVISION	DATE	INIT.
2	REQUEST FOR TENDER	2018 10 30	N.R.L
1	90% DESIGN REVIEW	2018 10 17	N.R.L

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1. THE PROVISION OF POLE LINES, CONDUIT, WATERMAINS, SEWER AND SEWER SERVICES AND ENERGIZED UTILITIES AND STRUCTURES TO SUCH NECESSARIES SHOWN ON THE CONTRACT DRAWINGS ARE WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE COMPLETING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND CONDUITS AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.
2. WHEREVER LINES WERE PLOTTED USING MEGATERIES PLANS AND MAPS LOCATED IN THE FIELD TO VERIFY THE ACCURACY OF THESE PROPERTY LINES, A LEGAL SURVEY SHOULD BE PERFORMED PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL CONTACT THE REGIONAL TRAFFIC OPERATIONS MANAGER FOLLOWING THE 30-DAY SIGNAL PLANT LAYOUT. PROPERTY AND UTILITY LOCATORS MUST ALSO BE NOTIFIED. THE FINAL LOCATIONS FOR ALL TRAFFIC SIGNAL PLANT INCLUDING BUT NOT LIMITED TO CONDUIT, POLE ANCHOR, JUNCTION BOXES, CONTROLLER BASE AND LOOPS WILL BE VERIFIED IN THE FIELD BY THE NIAGARA REGION TRAFFIC SIGNAL SUPERVISOR OR DESIGNATE PRIOR TO INSTALLATION. A TRAFFIC SIGNAL INSPECTOR FROM THE REGION MUST BE ON SITE AT ALL TIMES FOR WORK DETERMINED BY THE REGIONAL TRAFFIC OPERATIONAL MANAGER AS NECESSARY WHEN TRAFFIC SIGNAL WORK IS BEING UNDERTAKEN.
4. ALL MATERIALS SHALL BE AS PER NIAGARA REGION TRAFFIC SIGNAL STANDARDS MANUAL DISTRIBUTIONS. SIGNAL SHOP WILL ALL MATERIALS WITH REGIONAL SIGNAL SUPERVISOR PRIOR TO CONSTRUCTION CONSOLIDATIONS.
5. ALL DUCTS FROM JUNCTION BOXES TO JUNCTION BOXES AND FROM JUNCTION BOXES TO TRAFFIC SIGNAL POLES SHALL INCLUDE 1-100mm CONDUIT AND 1-50mm CONDUIT UNLESS OTHERWISE SPECIFIED.
6. WHERE APPROVED FINAL POLE BASE LOCATION DIFFER FROM THE FINAL INSTALL SIGNAL, MAST ARM OR APPROPRIATE, LENGTH TO MAINTAIN POSITION OF SIGNAL HEAD AT DESIGNED LOCATION.
7. ALL TRAFFIC SIGNAL ELECTRICAL CONNECTIONS, INTERCONNECT AND FIBRE, ARE TO BE UNDERTAKEN BY AND PERFORMED BY NIAGARA REGION STAFF.

DRAFTING	N.R.L
DESIGN	N.R.L
CHECKED BY	TC
APPROVED BY	AS

Niagara Region PUBLIC WORKS

REGIONAL RD 98 (MONTROSE RD) BTWN MCLEOD RD and CHARNWOOD AVE
RR 98 (MONTROSE ROAD) at
YMCA / LOWE'S ENTRANCE
CITY OF NIAGARA FALLS
WIRING SCHEMATIC

CONSULTANT FILE No.	–
DATE	2018-01-17
SCALE	NTS
REF. No.	RN –.–
DWG. No.	TS02
REV.	2

DRAWING FILE: J:\Engineering\Regional Road 98 (Niagara Falls)\5527 Montrose Rd 98 - between McLeod and Charnwood\Drawings\Layout\MCB_SCHEMATIC.dwg PLOTTED: Oct 30, 2018 - 4:26pm PLOTTED BY: CHAITTS

RR98 - PP-01

IMAGES:

X-REFERENCES:

GEOGRAPHIC PROJECTION: U.T.M. NAD 83 ZONE 17
VERTICAL MONUMENT: Vertical Monument description XXXXXXXXXX ELEV. ####
DATUM: DATUM Description XXXXXXXXXX ELEV. ####

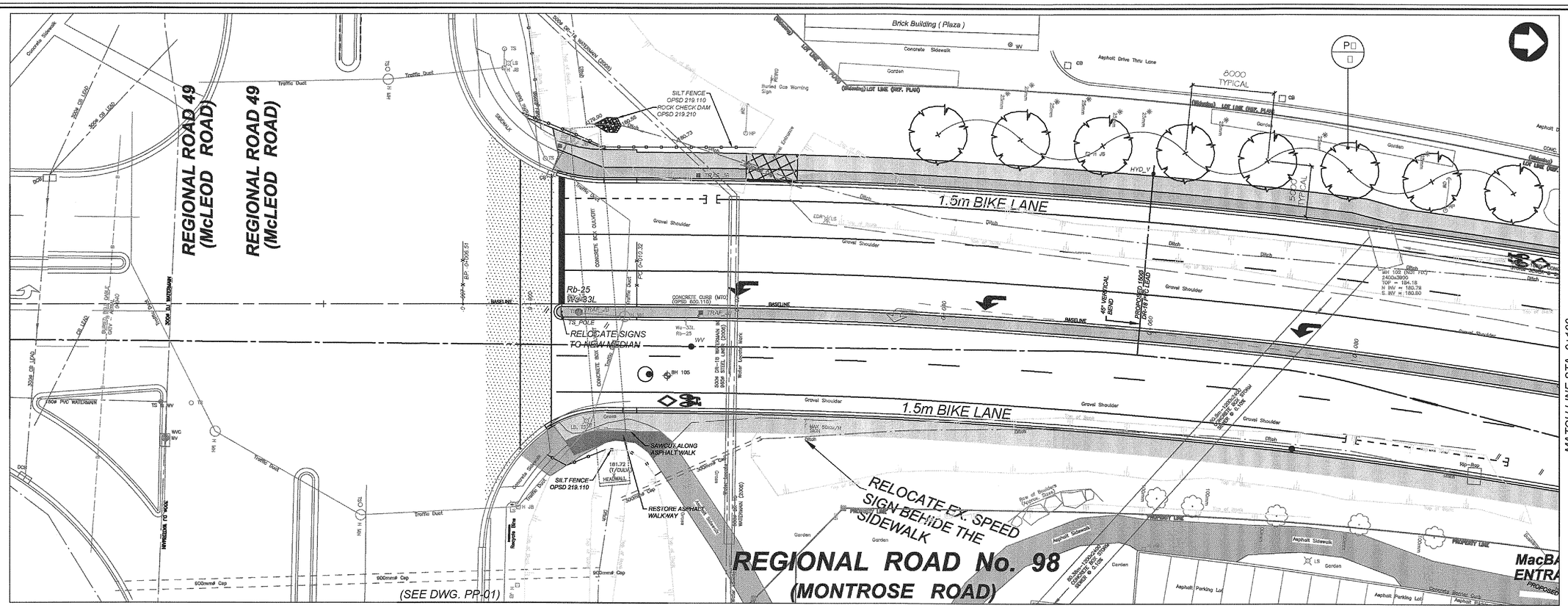
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FILE FORMAT: Autodesk Civil 3D 2015 BOUNDING COORDINATES UPPER LEFT: Northing Easting BOUNDING COORDINATES LOWER RIGHT: Northing Easting

APPROVALS

MDE	YYYY/MM/DD	
RESP.	YYYY/MM/DD	
DESIGN	YYYY/MM/DD	
CHK	YYYY/MM/DD	

UTILITIES

BELL	YYYY/MM/DD
CNTV	YYYY/MM/DD
HYDRO	YYYY/MM/DD
LOCAL	YYYY/MM/DD
NRBN	YYYY/MM/DD



NO.	REVISION	DATE	INIT.

NOTES/LEGEND

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CAD	T.F.G.
DESIGN	J.S.M.
CHECKED BY	
APPROVED BY	

BENCH MARK:
MONUMENT No: 90036061
Concrete box culvert under Montrose Road located at the intersection of Montrose Road and McLeod Road. 16.2m east from the centre line of Montrose Road, and 23.6m north from the centre line of McLeod Road
Brass Tablet set vertically in the top of the culvert 2.39m south from the north edge of culvert and 1.12m west from the east edge of culvert.
ELEVATION: 181.508m

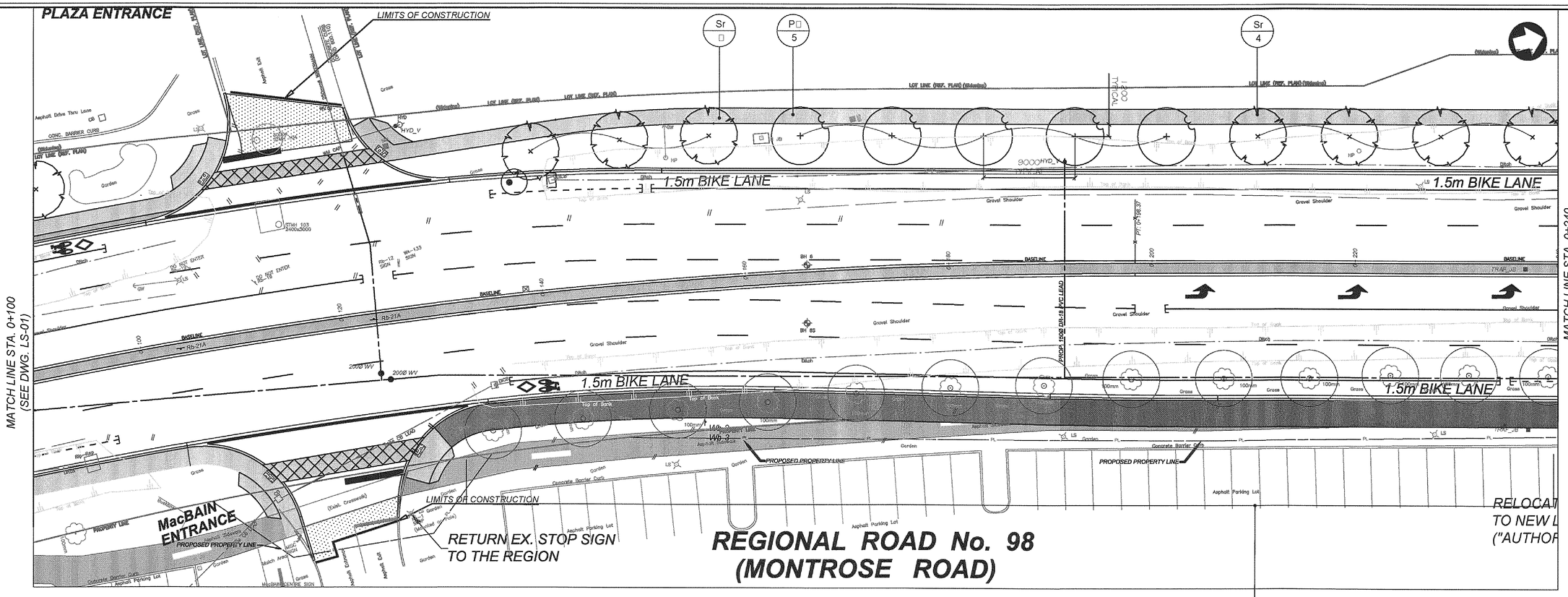
ASSOCIATION OF LANDSCAPE ARCHITECTS ONTARIO — JAMES S. McWILLIAM — OALA MEMBER

JAMES McWILLIAM
LANDSCAPE ARCHITECT

RN19-05
ROAD RECONSTRUCTON AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS
LANDSCAPE PLAN
FROM STA. 0-050 TO STA. 0+100

CONSULTANT FILE No.	
DATE	2017/08/29
SCALE	HORIZ. 1:200 VERT. 1:50
REF. No.	RR98-PP-01
DWG No.	L1
REV.	

RR98 - PP-01



NOTES/LEGEND

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NO.	REVISION	DATE	INIT.

CAD T.F.G.
DESIGN J.S.M.
CHECKED BY
APPROVED BY

BENCH MARK
MONUMENT No: 90036061
Concrete box culvert under Montrose Road located at the intersection of Montrose Road and McLeod Road. 16.2m east from the centre line of Montrose Road, and 23.6m north from the centre line of McLeod Road. Brass Tablet set vertically in the top of the culvert 2.39m south from the north edge of culvert and 1.12m west from the east edge of culvert.
ELEVATION: 181.929m

ASSOCIATION OF LANDSCAPE ARCHITECTS ONTARIO — JAMES S. McWILLIAM — OALA MEMBER

JAMES McWILLIAM
LANDSCAPE ARCHITECT

RN19-05
ROAD RECONSTRUCTON AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS
LANDSCAPE PLAN
FROM STA. 0+100 TO STA. 0+240

CONSULTANT FILE No.	
DATE	2017/08/29
SCALE	HORIZ. 1:200 VERT. 1:50
REF. No.	RR98-PP-01
DWG No.	L2
REV.	

UTILITIES
BEREN YYY/MM/DD
BELL YYY/MM/DD
CANWEL YYY/MM/DD
HYDRO YYY/MM/DD
BELL YYY/MM/DD
GSW YYY/MM/DD

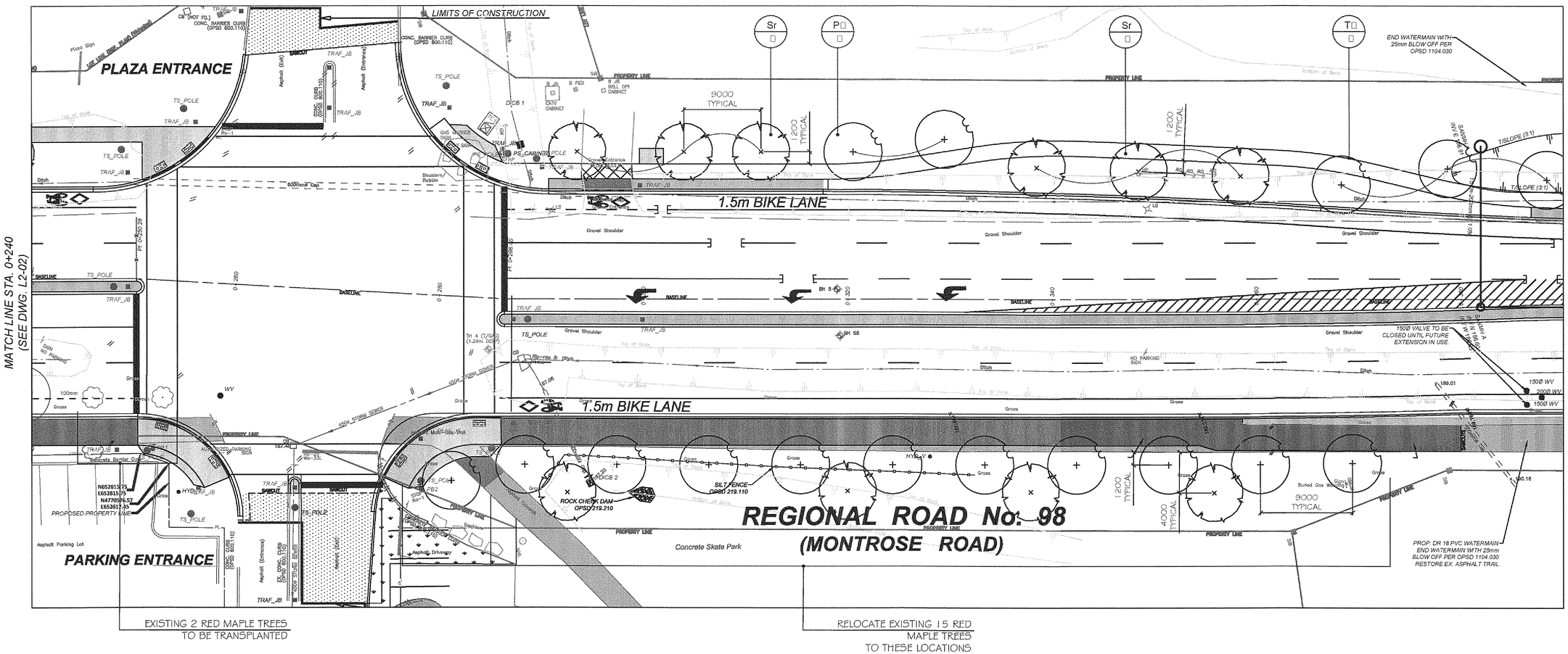
ABBREVIATIONS
MOE YYY/MM/DD
MTO YYY/MM/DD
REGION YYY/MM/DD
MUNI YYY/MM/DD
CVC YYY/MM/DD

DWG NAME:
FILE FORMAT:Autodesk Civil 3D 2015 BOUNDING COORDINATES UPPER LEFT: Northing Easting BOUNDING COORDINATES UPPER RIGHT:Northing Easting

GEOGRAPHIC PROJECTION: U.T.M. NAD 83 ZONE 17
VERTICAL MONUMENT:Vertical Monument description XXCCCCCCCCC ELEV. ####
DATUM: DATUM description XXXXXXXXXX ELEV. ####

X-REFERENCES:

RR98 - PP-01



X-REFERENCES:

GEOGRAPHIC PROJECTION: U.T.M. NAD 83 ZONE 17
VERTICAL MONUMENT: Vertical Monument description XXXXXXXXXX ELEV. ####
DATUM: DATUM description XXXXXXXXXX ELEV. ####

DWG NAME:
FILE FORMAT: Autodesk Civil 3D 2015

BOUNDING COORDINATES UPPER LEFT: Northing Easting BOUNDING COORDINATES LOWER RIGHT: Northing Easting BOUNDING COORDINATES LOWER LEFT: Northing Easting BOUNDING COORDINATES UPPER RIGHT: Northing Easting

AS-BUILTS:
MADE YYYY/MM/DD
RED'N YYYY/MM/DD
RED'N YYYY/MM/DD
CHK YYYY/MM/DD
CO YYYY/MM/DD

UTILITIES
NRBN YYYY/MM/DD
HYDRO YYYY/MM/DD
LOCAL TYPE YYYY/MM/DD
GAS YYYY/MM/DD
BELL YYYY/MM/DD
CATV YYYY/MM/DD

NO.	REVISION	DATE	INIT.

NOTES/LEGEND

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CAD	T.F.G.
DESIGN	J.S.M.
CHECKED BY	
APPROVED BY	

BENCH MARK:
MONUMENT No: 9003695!
Concrete box culvert under Montrose Road located at the intersection of Montrose Road and McLeod Road 16.2m east from the centre line of Montrose Road, and 23.9m north from the centre line of McLeod Road
Brass Tablet set vertically in the top of the curve 2.30m south from the north edge of culvert and 1.12m west from the east edge of culvert
ELEVATION: 181.508m

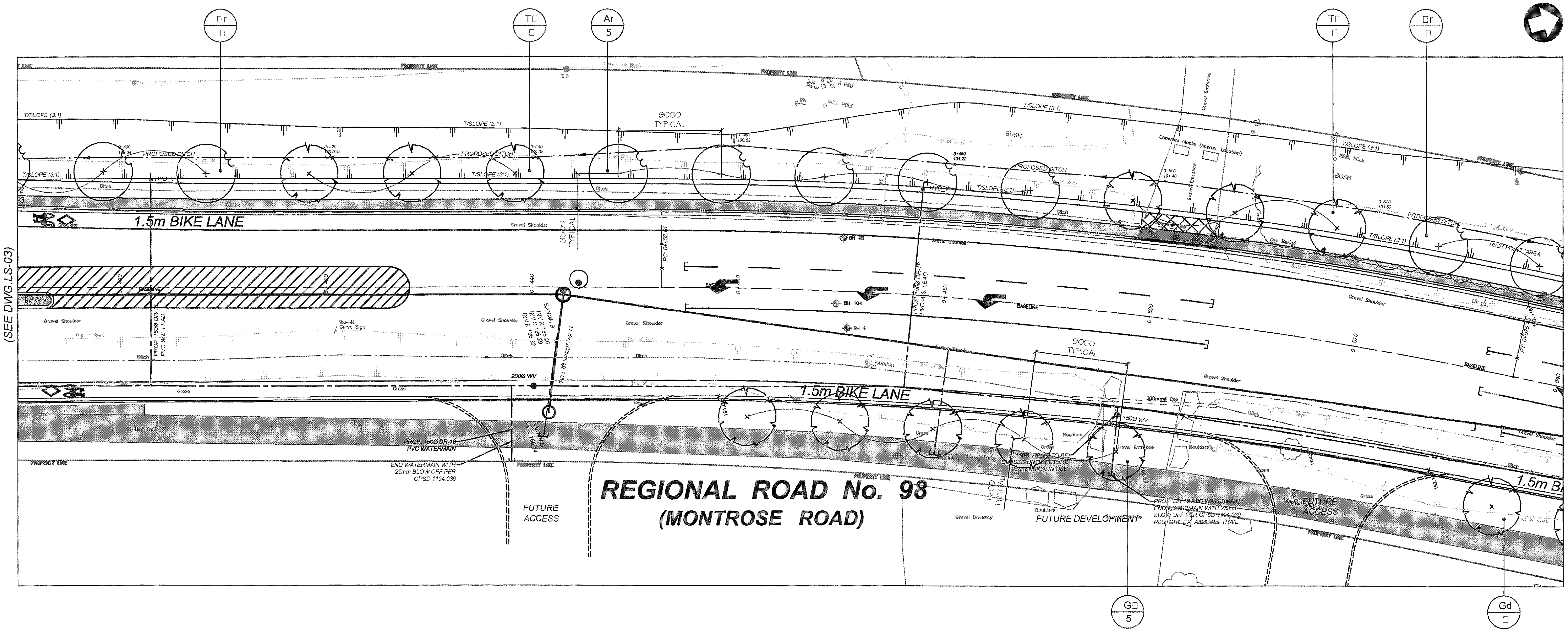
ASSOCIATION OF LANDSCAPE ARCHITECTS ONTARIO — JAMES S. McWILLIAM — OALA MEMBER

JAMES McWILLIAM
LANDSCAPE ARCHITECT

RN19-05
ROAD RECONSTRUCTON AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS
LANDSCAPE PLAN
FROM STA. 0+240 TO STA. 0+390

CONSULTANT FILE No.	
DATE	2017/08/29
SCALE	HORIZ. 1:200 VERT. 1:50
REF. No.	RR98-PP-01
DWG No.	L3
REV.	

RR98 - PP-01



UTILITIES: NRBN, CNP, LOCAL HYDRO, ONTARIO HYDRO, GAS, BELL, CATV — YYYY/MM/DD

APPROVALS: MOE, MTO, REGION, CNR, CPR — YYYY/MM/DD

GEOGRAPHIC PROJECTION: U.T.M. NAD 83 ZONE 17
VERTICAL MONUMENT: Vertical Monument description XXXXXXXXXX ELEV. ###.###
DATUM: DATUM description XXXXXXXXXX ELEV. ###.###

DWG NAME:
FILE FORMAT: Autodesk Civil 3D 2015

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X-REFERENCES:

IMAGES:

NO.	REVISION	DATE	INIT.

NOTES/LEGEND

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CAD: T.F.G.
DESIGN: J.S.M.
CHECKED BY:
APPROVED BY:

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MONUMENT No: 90036061
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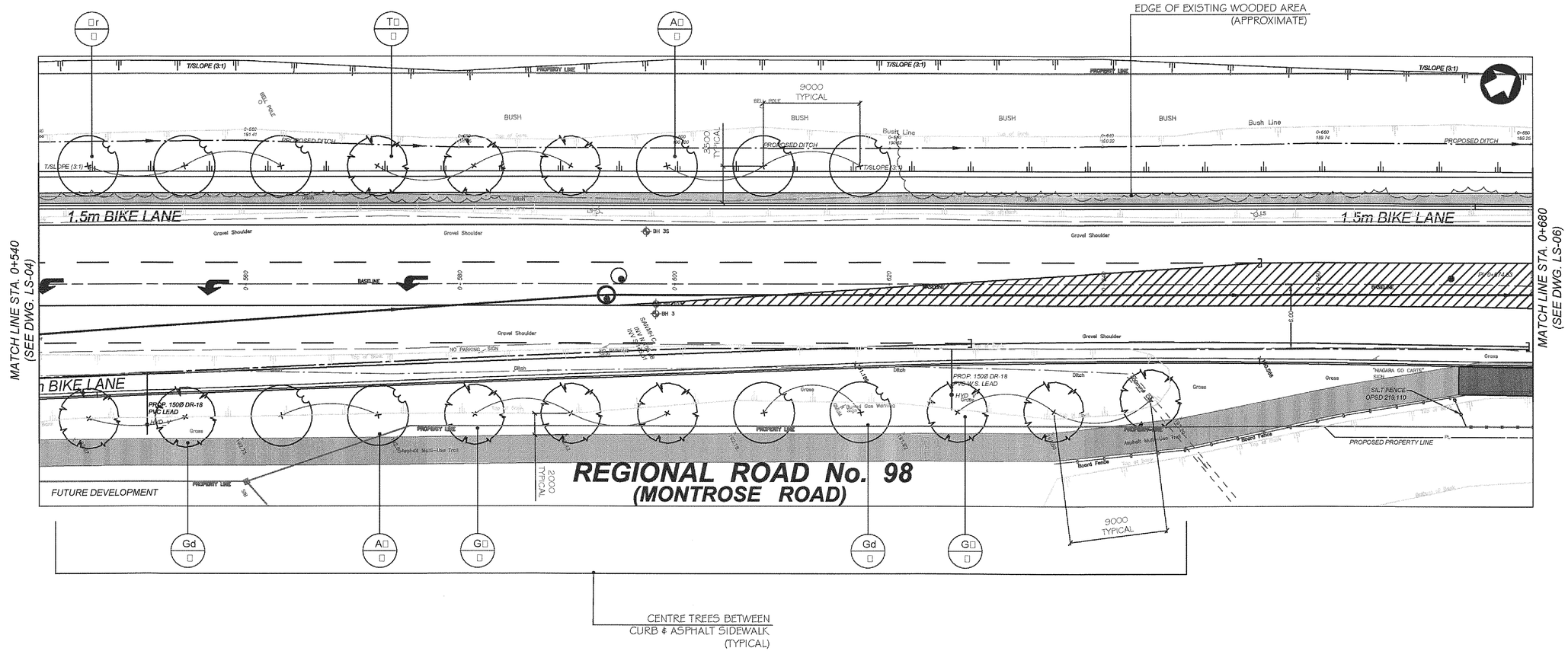
ONTARIO ASSOCIATION OF LANDSCAPE ARCHITECTS — JAMES S. McWILLIAM — OALA MEMBER

JAMES McWILLIAM
LANDSCAPE ARCHITECT

RN19-05
ROAD RECONSTRUCTON AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS
LANDSCAPE PLAN
FROM STA. 0+390 TO STA. 0+540

CONSULTANT FILE No.	
DATE	2017/08/29
SCALE	HORIZ. 1:200 VERT. 1:50
REF. No.	RR98-PP-01
DWG No.	L4
REV.	

RR98 - PP-01



X-REFERENCES:

GEOGRAPHIC PROJECTION: UTM NAD 83 ZONE 17
VERTICAL MONUMENT: Vertical Monument description, XXXXXXXXXX ELEV. ####
DATUM: DATUM description XXXXXXXXXX ELEV. ####

DWG NAME:
FILE FORMAT:Autodesk Civil 3D 2015 BOUNDING COORDINATES UPPER LEFT: Northing Easting BOUNDING COORDINATES LOWER RIGHT:Northing Easting BOUNDING COORDINATES LOWER LEFT: Northing Easting BOUNDING COORDINATES UPPER RIGHT:Northing Easting

ADDENDUMS

MCE	YYYY/MM/DD
MTO	YYYY/MM/DD
MEDIAN	YYYY/MM/DD
MMAH	YYYY/MM/DD
OPCC	YYYY/MM/DD

UTILITIES

BRUCE	YYYY/MM/DD
ENBRIDGE	YYYY/MM/DD
HYDRO ONE	YYYY/MM/DD
NIAGARA HYDRO	YYYY/MM/DD
BELL	YYYY/MM/DD
CNTV	YYYY/MM/DD

NO.	REVISION	DATE	INIT.

NOTES/LEGEND

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CAD	T.F.G.
DESIGN	J.S.M.
CHECKED BY	
APPROVED BY	

BENCH MARK

MONUMENT No: 90036061

Concrete box culvert under Montrose Road located at the intersection of Montrose Road and McLeod Road 16.2m east from the centre line of Montrose Road, and 23.6m north from the centre line of McLeod Road Brass Tablet set vertically in the top of the culvert 2.30m south from the north edge of culvert and 1.12m west from the east edge of culvert.

ELEVATION: 181.508m

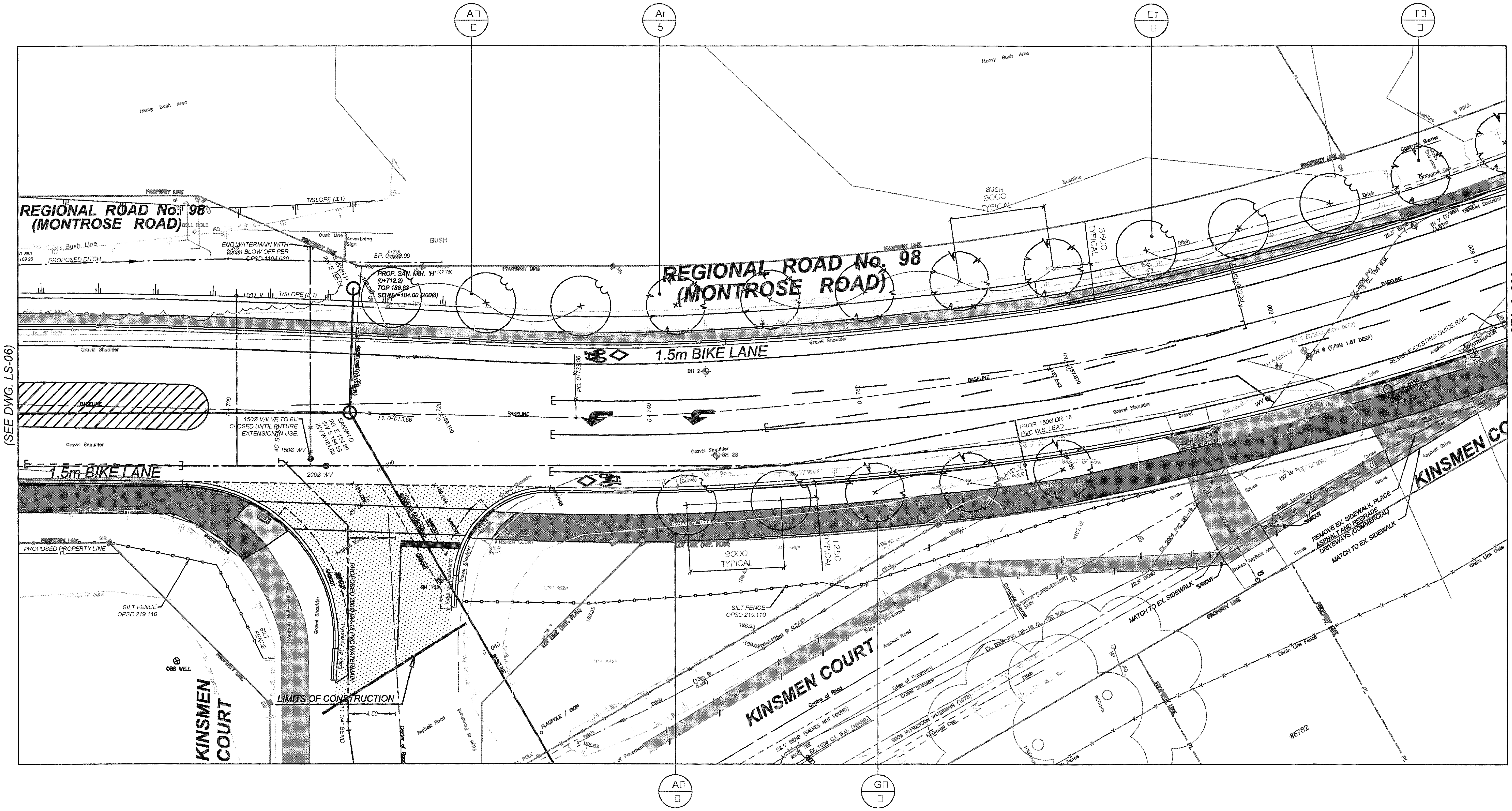
ASSOCIATION OF LANDSCAPE ARCHITECTS ONTARIO — GREG S. McMILLAN — OALA MEMBER

JAMES McWILLIAM
LANDSCAPE ARCHITECT

RN19-05
ROAD RECONSTRUCTON AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS
LANDSCAPE PLAN
FROM STA. 0+540 TO STA. 0+680

CONSULTANT FILE No.	
DATE	2017/08/29
SCALE	HORIZ. 1:200 VERT. 1:50
REF. No.	RR98-PP-01
DWG No.	L5
REV.	

RR98 - PP-01



X-REFERENCES:

IMAGES:

GEOGRAPHIC PROJECTION: U.T.M. NAD 83 ZONE 17
VERTICAL MONUMENT: Vertical Monument description XXXXXXXXXX ELEV. ###.###
DATUM: DATUM description XXXXXXXXXX ELEV. ###.###

DWG NAME:
FILE FORMAT: Autodesk Civil 3D 2015

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APPROVALS

MOE	YYYY/MM/DD
MTO	YYYY/MM/DD
REGION	YYYY/MM/DD
CNR	YYYY/MM/DD
CPR	YYYY/MM/DD

UTILITIES

NRBN	YYYY/MM/DD
CNP	YYYY/MM/DD
LOCAL HYDRO	YYYY/MM/DD
ONTARIO HYDRO	YYYY/MM/DD
GAS	YYYY/MM/DD
BELL	YYYY/MM/DD
CATV	YYYY/MM/DD

NO.	REVISION	DATE	INIT.

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CAD	T.F.G.
DESIGN	J.S.M.
CHECKED BY	
APPROVED BY	

BENCH MARK

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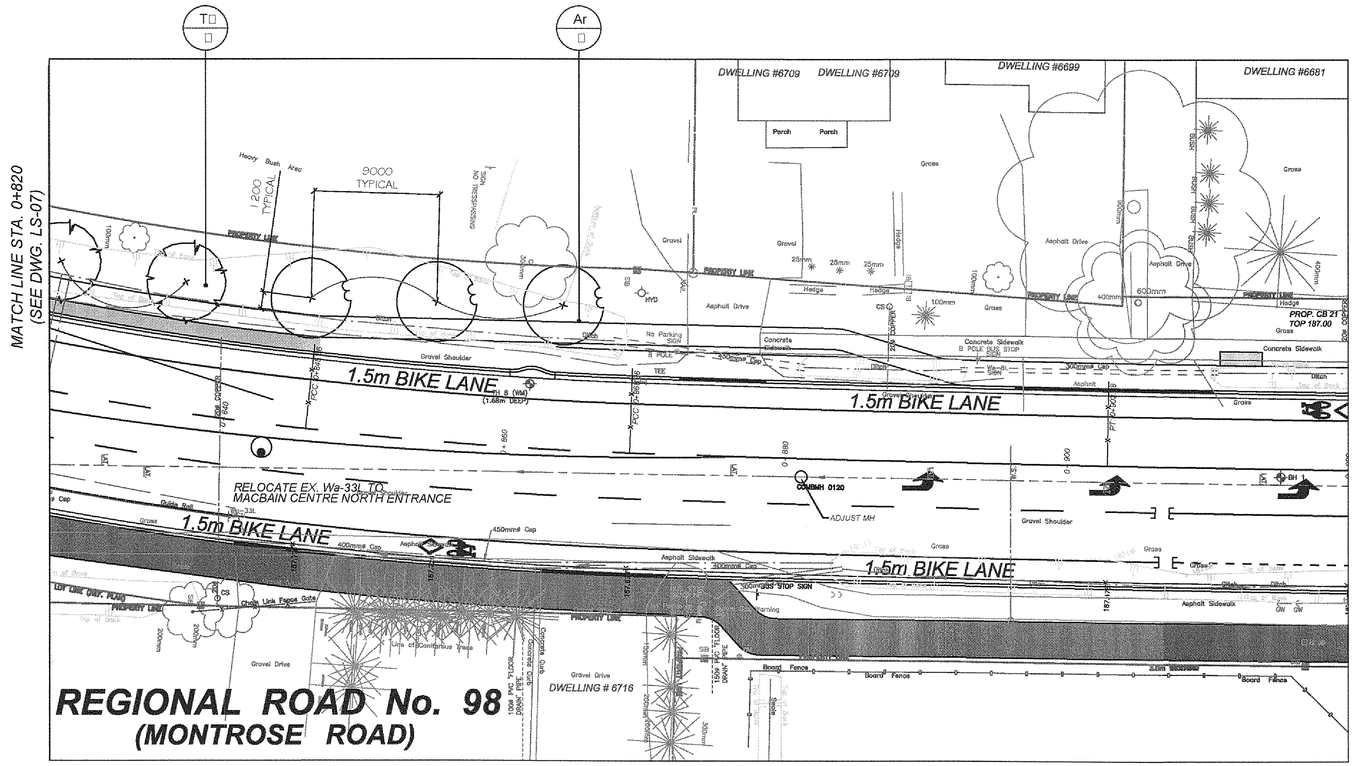
ONTARIO ASSOCIATION OF LANDSCAPE ARCHITECTS
JAMES S. McWILLIAM
OALA
MEMBER

JAMES McWILLIAM
LANDSCAPE ARCHITECT

RN19-05
ROAD RECONSTRUCTON AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS
LANDSCAPE PLAN
FROM STA. 0+680 TO STA. 0+820

CONSULTANT FILE No.	
DATE	2017/08/29
SCALE	HORIZ. 1:200 VERT. 1:50
REF. No.	RR98-PP-01
DWG No.	L6
REV.	

RR98 - PP-01



X-REFERENCES:

GEOGRAPHIC PROJECTION: U.T.M. NAD 83 ZONE 17
VERTICAL DATUM/DEPTH: Vertical Monument Description XXXXXXXXXX ELEV. ####
DATUM: NAD83 Ellipsoid: XXXXXXXX ELEV. ####

DWG NAME:
FILE FORMAT: AutoCad Civil 3D 2015 BOUNDING COORDINATES UPPER LEFT: Northing Easting BOUNDING COORDINATES UPPER RIGHT: Northing Easting BOUNDING COORDINATES LOWER LEFT: Northing Easting BOUNDING COORDINATES LOWER RIGHT: Northing Easting

ASSIGNMENTS:

MCE	YYY/MM/DD	
MEMBER	YYY/MM/DD	
DESIGN	YYY/MM/DD	
CPR	YYY/MM/DD	

UTILITIES:

BELL	YYY/MM/DD	
ENBRIDGE	YYY/MM/DD	
HYDRO ONE	YYY/MM/DD	
NIAGARA HYDRO	YYY/MM/DD	
ROGERS	YYY/MM/DD	
TELUS	YYY/MM/DD	
BCIN	YYY/MM/DD	
2058	YYY/MM/DD	

NO.	REVISION	DATE	INIT.

NOTES/LEGEND

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CAD	T.F.G.
DESIGN	J.S.M.
CHECKED BY	
APPROVED BY	

BENCH MARK
MONUMENT No: 90036061
Concrete box culvert under Montrose Road located at the intersection of Montrose Road and McLeod Road. 15.2m east from the centre line of Montrose Road, and 23.6m north from the centre line of McLeod Road. Grass Talbot set vertically in the top of the culvert 2.35m south from the north edge of culvert and 1.12m west from the east edge of culvert.
ELEVATION: 181.508m

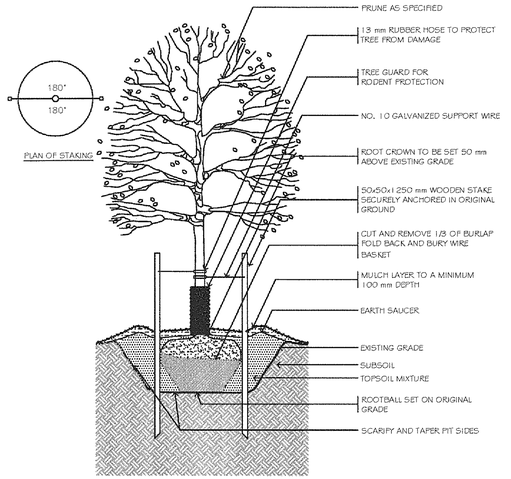
ASSOCIATION OF LANDSCAPE ARCHITECTS ONTARIO — JAMES S. McWILLIAM — OALA MEMBER

JAMES McWILLIAM LANDSCAPE ARCHITECT

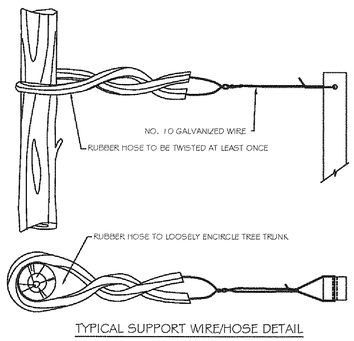
RN19-05
ROAD RECONSTRUCTON AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS
LANDSCAPE PLAN
FROM STA. 0+820 TO STA. 0+920

CONSULTANT FILE No.	
DATE	2017/08/29
SCALE	HORIZ. 1:200 VERT. 1:50
REF. No.	RR98-PP-01
DWG No.	L7
REV.	

RR98 - PP-01



D1 TYPICAL DECIDUOUS TREE PLANTING DETAIL SCALE: NONE
TREES OVER 45mm CALIPER



TYPICAL SUPPORT WIRE/HOSE DETAIL

D2 TYPICAL SUPPORT WIRE/HOSE DETAIL SCALE: NONE

LANDSCAPE CONSTRUCTION NOTES:

1. Drawings may be scaled for approximate layout only. All layout to be staked by the Contractor and approved by the Contract Administrator prior to installation.
2. Plant material to be approved at source by Contract Administrator, prior to shipment to the site.
3. Plantings locations may be adjusted (as directed by landscape architect) depending on post construction site conditions.
4. Contractor is to provide a plan, for trees identified for relocation, for approval by Region. This plan is to identify how and where transplanted trees are to be stored if the trees need to be stored between removal and replanting. All tree transplanting is to be carried out with the appropriately sized tree spade. The transplanted trees are to be included in the same maintenance and warranty agreement as the balance of trees planted along the road corridor.
5. Contractor shall be responsible for coordinating with utility companies the stake out of all utility locations. All utilities to be staked in the field prior to planting stake out.
6. Plant material collected from non-nursery source will not be accepted.
7. The Contract Administrator reserves the right to reject any plant materials that have not been inspected and approved.
8. The Contract Administrator can refuse to accept any plant material at the site that exhibit transportation/installation damage, poor growth habit, or disease. Plant material rejected by the Contract Administrator will be promptly removed from the site and replaced with material of acceptable quality at no additional cost to the project.
9. Shredded bark mulch to be spread uniformly around base of trees. Use only shredded pine or cedar bark mulch. Provide sample for approval prior to installation.
10. The Contractor is to identify with the Contract Administrator any maintenance requirements necessary for warranty purposes. All plantings to have a one-year warranty period to commence once all plantings have been installed and approved by Contract Administrator.

Montrose Road - Plant List

W.B = Wire Basket

Key	Botanical Name	Common Name	Size	Qty	Condition
		Deciduous Trees			
As	Acer saccharum	Sugar Maple	60mm cal.	8	W.B.
Ar	Acer rubrum	Red Maple	60mm cal.	13	W.B.
Al	Ginkgo biloba	Maidenhair Tree	60mm cal.	2	W.B.
Gd	Gymnocladis dioicus	Kentucky Coffee Tree	60mm cal.	5	W.B.
Gt	Gleditsia triacanthos 'Shademaster'	Shademaster Honeylocust	60mm cal.	11	W.B.
Pc	Pyrus callaryana 'Bradford'	Bradford Ornamental Pear	60mm cal.	15	W.B.
Qr	Quercus rubra	Red Oak	60mm cal.	13	W.B.
Sr	Syringa reticulata	Tree Lilac	60mm cal.	13	W.B.
Ta	Tilia american	Basswood	60mm cal.	15	W.B.

X-REFERENCES:

GEOGRAPHIC PROJECTION: UTM, NAD 83 ZONE 17
VERTICAL MONUMENT: Vertical Monument description XXXXXXXXX ELEV. ####
DATUM: DATUM description 7000000XX ELEV. ####
DWG NAME:
FILE FORMAT: Autodesk Civil 3D 2015 BOUNDING COORDINATES UPPER LEFT: Northing Easting BOUNDING COORDINATES LOWER RIGHT: Northing Easting BOUNDING COORDINATES LOWER LEFT: Northing Easting BOUNDING COORDINATES UPPER RIGHT: Northing Easting

ADDENDUMS

MDE	YYYY/MM/DD
REVISION	YYYY/MM/DD
REVISION	YYYY/MM/DD
WORK	YYYY/MM/DD
CO	YYYY/MM/DD

UTILITIES

BELL	YYYY/MM/DD
ENBRIDGE	YYYY/MM/DD
HYDRO ONE	YYYY/MM/DD
NIAGARA HYDRO	YYYY/MM/DD
ROGERS	YYYY/MM/DD
TELUS	YYYY/MM/DD
OTHER	YYYY/MM/DD

NO.	REVISION	DATE	INIT.

NOTES/LEGEND

1 THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWER AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

CAD	T.F.G.
DESIGN	J.S.M.
CHECKED BY	
APPROVED BY	

BENCH MARK
MONUMENT No: 90036061
Concrete box culvert under Montrose Road located at the intersection of Montrose Road and McLeod Road 16.2m east from the centre line of Montrose Road, and 23.6m north from the centre line of McLeod Road. Brass Tablet set vertically in top slip of the culvert 2.35m south from the north edge of culvert and 1.12m west from the east edge of culvert.
ELEVATION: 181.508m

ASSOCIATION OF LANDSCAPE ARCHITECTS ONTARIO — JAMES S. McWILLIAM — OALA MEMBER

JAMES McWILLIAM
LANDSCAPE ARCHITECT

RN19-05
ROAD RECONSTRUCTON AND WIDENING
REGIONAL ROAD 98 (MONTROSE ROAD)
NIAGARA FALLS
LANDSCAPE DETAILS

CONSULTANT FILE No.
DATE 2017/08/29
SCALE HORIZ. 1:200 VERT. 1:50
REF. No. RR98-PP-01
DWG No. L8
REV.