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

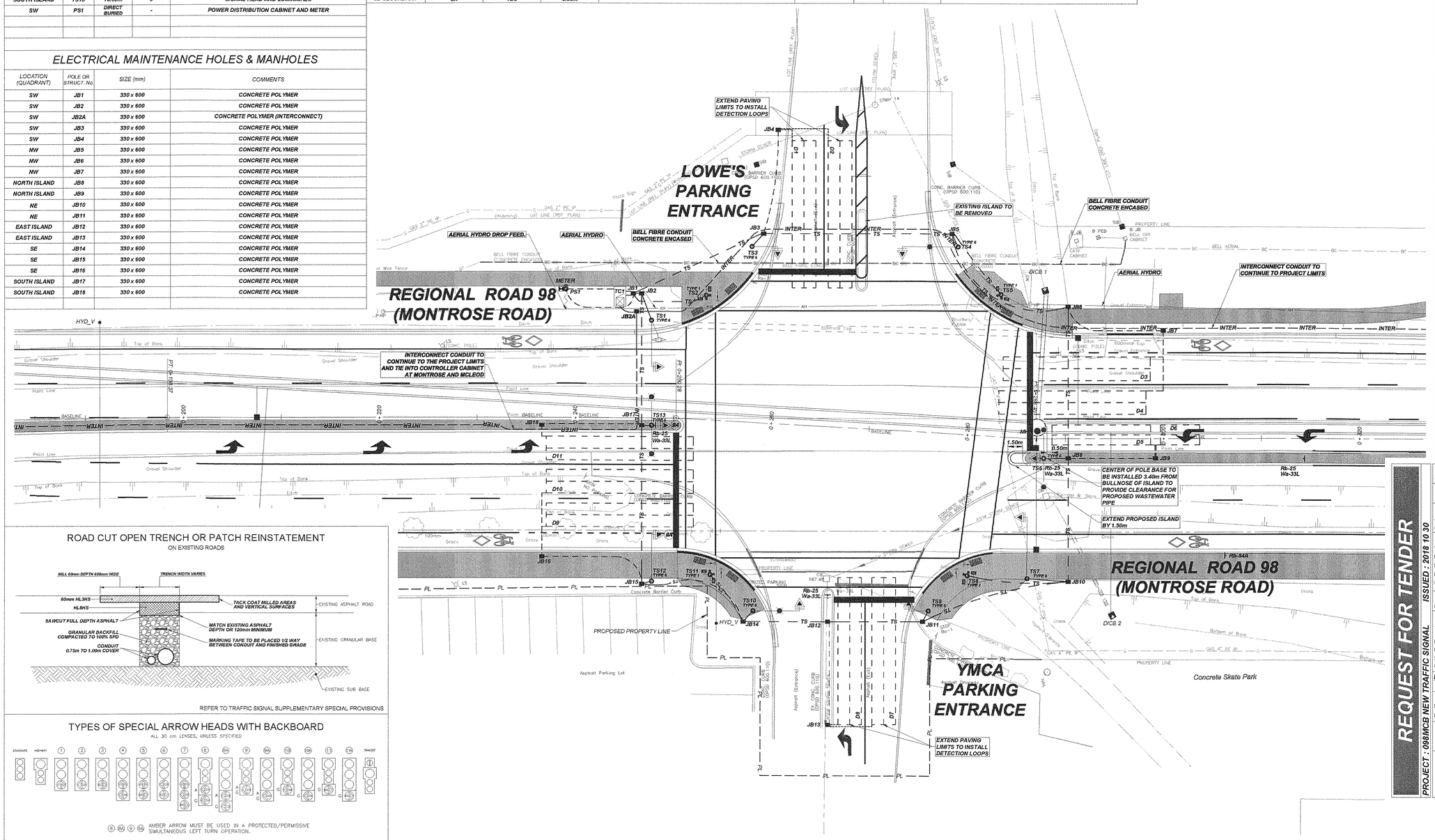
LOCATION (QUADRANT)	POLE OR STRUCT. No.	SIZE (mm)	COMMENTS
SW	JB1	330 x 600	CONCRETE POLYMER
SW	JB2	330 x 600	CONCRETE POLYMER
SW	JB2A	330 x 600	CONCRETE POLYMER (INTERCONNECT)
SW	JB3	330 x 600	CONCRETE POLYMER
SW	JB4	330 x 600	CONCRETE POLYMER
NW	JB5	330 x 600	CONCRETE POLYMER
NW	JB6	330 x 600	CONCRETE 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

NOTES:

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.
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