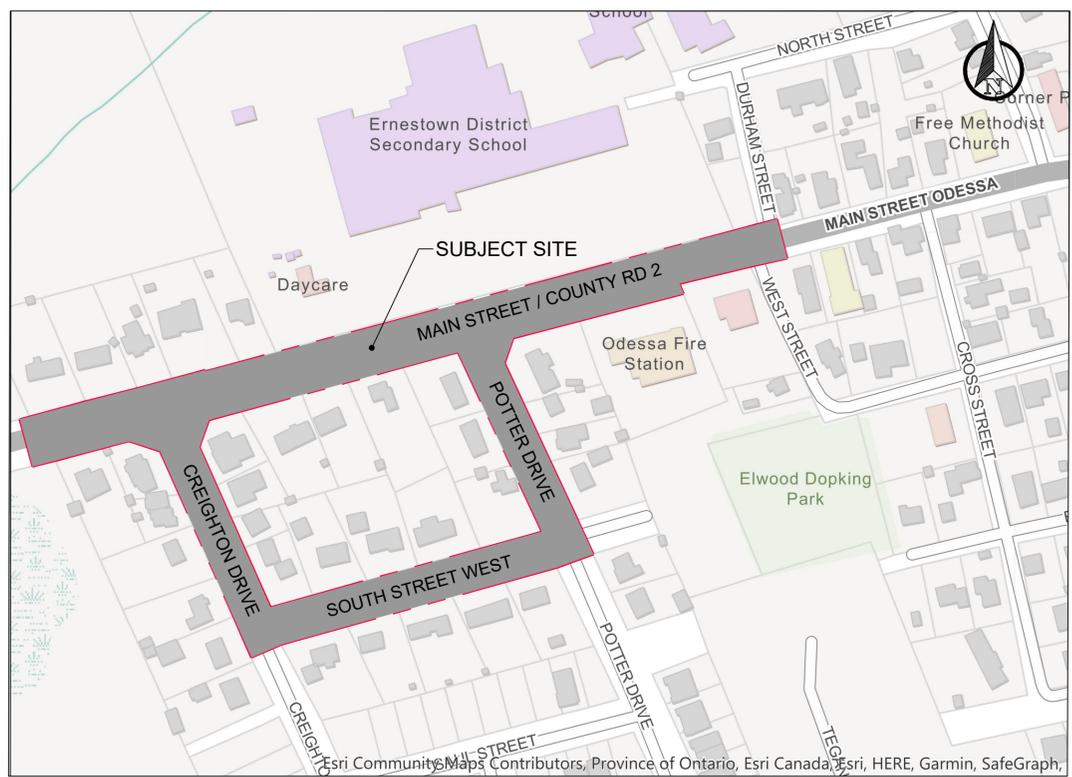


# POTTER DRIVE, CREIGHTON DRIVE, SOUTH AND MAIN STREETS RECONSTRUCTION LOYALIST TOWNSHIP



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POTTER DRIVE, CREIGHTON DRIVE, SOUTH  
AND MAIN STREETS RECONSTRUCTION  
LOYALIST TOWNSHIP

- ENVIRONMENTAL**
- While undertaking clearing, demolition, excavation or construction the Owner and their contractors shall be vigilant for the potential presence of underground fuel tanks, potentially contaminated soils or groundwater, buried wastes or abandoned water wells. If any of the above are encountered or suspected, the Owner shall ensure that:
    - Loyalist Township shall be advised if contaminants or wastes have been discovered or suspected;
    - Any soil or groundwater contamination encountered is remediated to applicable standards as defined in O. Reg. 153/04 or as revised;
    - Any wastes generated by site clean-ups are managed in accordance with applicable laws and standards;
    - Any abandoned fuel tanks encountered are decommissioned in accordance with applicable laws and standards;
    - Any unused water wells (drilled or dug) are properly abandoned in accordance with applicable laws and standards;
    - Any soil or groundwater contamination encountered is remediated to applicable standards as defined in O. Reg. 153/04 or as revised;
    - If it appears likely that contamination extends beyond the boundaries of the subject property, the Owner notifies the local office of the Ministry of the Environment and the Loyalist Township's Engineering Division;
    - Construction wastes are not to be buried within the property that is the subject of this Agreement, and
    - That the Owner and their contractors report all spills to the Ministry of the Environment's Spills Action Centre (1-800-268-0900) and to the Municipality (613-386-7351, ext. 116) forthwith.

- ROADWORKS**
- Road subgrade (including fill sections) to be constructed in accordance with current Loyalist Township Site Plan Design and Development Guidelines and Technical Standards, Ontario Provincial Standard Specifications, and the Geotechnical Investigation.
  - Granular depths as per cross sections.
  - Main Street (County Road 2) asphalt to be SP19 base and SP12.5 surface.
  - Hot mix asphalt to depth as per cross section. For Main Street (County Road 2) Hot Mix, Hot Laid Asphaltic Concrete as per OPSS 1151. Superpave Mix designs shall contain a minimum of 4.8% performance grade asphalt (PGAC) for SP19 and 5.6% PGAC for SP12.5 with a performance grade of PG58H-34. Normal crossfall on all roads to be 2%. Wear course asphalt shall not be placed in the same calendar year as the binder course or before the completion of a closed circuit T.V. inspection of both the storm and sanitary sewer systems.
  - Curb radii to be 12.0m to front of curb unless noted otherwise.
  - Concrete Curb and Gutter shall be semi-mountable type OPSS 600.020 and 600.060. Install curb at catchbasin in OPSS 610.010. Where specified barrier curb as per OPSS 600.040 or OPSS 600.011 on Main Street.
  - All materials for sidewalks shall conform to O.P.S.S. 1002, concrete is to conform to O.P.S.S. 1350 and are to be constructed as per O.P.S.S. 351. Sidewalks are to be a minimum of 1500 mm wide, 125 mm thick with 125 mm compacted Granular A bedding. Sidewalk thickness shall be increased to 200mm for all entrances other than urban residential. Sidewalk design shall be as per O.P.S.S. 310.010 and 310.050. Sidewalk ramps at intersections or road crossings shall be installed in accordance with OPSS 310.030.
  - Concrete shall be 32 Mpa minimum 28 day strength, 19mm coarse aggregate nominal maximum size, 0.0% to 8.0% air content, normal portland type cement as per OPSS 1301, 0.45 maximum water/cement ratio, 75mm maximum slump, white pigmented curing compound as per OPSS 1315. Concrete materials and production as per OPSS 350, 351, 352 and 353, 1301, 1302 and 1350.
  - Boulevard slope shall be a minimum of 2% and a maximum of 8% within the ROW. Boulevards to be finished with 100 mm of topsoil and nursery soil unless noted otherwise. Ditchbank design shall be as per O.P.S.S. 310.010 and 310.050.
  - Road catchbasins in areas that do not have subdrains - to have a drainage interception surround and weep holes as per detail provided.
  - All storm and sanitary structures shall be adjusted to grade by use of Stratworks Expanded Polystyrene Adjustment Units or approved equivalent as per OPSS 704.012 and in accordance with OPSS 1854. Adjustment units and adhesives are to be installed as per manufacturers specifications. Appropriate angled forms are to be utilized to match surface grades.
  - Maintenance holes must contain ladder rungs within 450mm from the top.
  - All signage including those requiring relocation by the works shall be installed in accordance with the Ontario Traffic Manual.
  - Dead end barricades to be as per OPSS 912.532 with W48 sign. Concrete barricades may be substituted for steel beam guide rails.

- GENERAL NOTES**
- All works to be installed and tested in accordance with current Loyalist Township Development Guidelines & Technical Standards, manufacturer requirements and Ontario Provincial Standard (OPS) Specifications and Drawings unless specified otherwise. Where applicable, OPS municipal Specifications as amended shall be utilized including OPSS MUNI 100 unless specified otherwise.

- Traffic control to be as per Ontario Traffic Manual Book 7.
- Soils are to be managed and reused in accordance with O. Reg. 406/19. The Contractor shall use suitable soil generated from excavation activities as fill onsite before moving it from the project area, ensure that temporary stockpiles are located and protected appropriately unsuitable materials, deleterious materials, asphalt, concrete, pipes, etc. or excess soil shall be tested to determine the Regulation 347 waste class and removed from the project area and safely transported by a licensed hauler and disposed offsite to a licensed receiver in accordance with OPSS 180.
- Hydro poles may require temporary support due to proximity to services. The use of a trench box may be required due to the proximity of services to hydro poles.
- Areas in the municipal R.O.W. damaged due to tracked equipment or construction traffic are to be reinstated with 100mm topsoil and soil to no extra cost.

- SEWERS**
- Pipe bedding and cover shall conform to OPSS 802 series. Bedding and cover shall be Granular "A".
  - All pipe and fittings supplied shall carry CSA certification to the appropriate CSA standard sewer grade. The following pipe shall be used for sewers:
    - Sanitary sewer pipe materials as per:
      - Reinforced concrete pipe per OPSS 1820 according to CSA A257.2 Class 65-D with rubber gaskets or;
      - Type PSM polyvinyl chloride (PVC) pipe with elastomeric gasket per OPSS 1841 and CSA B182.2 M1990. Profile type pipe such as those meeting CSA 182.4 and CSA 182.6 shall not be used for sanitary sewer applications.
      - Sanitary Mains to be DR 35 pipe
      - Sanitary Laterals to be DR 28 pipe
    - Storm sewer pipe materials as per:
      - Reinforced concrete pipe per OPSS 1820 according to CSA A257.2 Class 65-D with rubber gaskets or;
      - Type PSM polyvinyl chloride (PVC) pipe with elastomeric gasket per OPSS 1841 and CSA B182.2 M1990. (i) Main - DR 35 pipe (ii) Storm Laterals - DR 35 pipe
      - Profile Polyvinyl Chloride (PVC) pipe with elastomeric gasketed bell and spigot type joints meeting CSA 182.4 and having a minimum stiffness of 320 kPa may be used for storm sewer applications.
      - ADS N-12 STWT sizes 100mm to 750mm corrugated dual-wall High Density Polyethylene (HDPE) pipe with elastomeric gasketed bell and spigot type joints meeting CSA 182.8 and OPSS 1940, and having a minimum stiffness of 320 kPa.
  - Sewers shall be tested for deflection as per OPSS 410. Sewers shall be flushed immediately prior to the closed circuit TV inspection.
  - Where a clearance between pipe or conduit crossings of 300mm or less cannot be avoided, there shall be concrete encasement or non-shrink backfill of the crossing extending one metre in each direction on each pipe.
  - Sanitary sewer manhole frame and cover to OPSS 401.01 Type 'A' unless otherwise noted.
  - Storm sewer manhole frame and cover to OPSS 401.01 Type 'B' unless otherwise noted. Catchbasin leads to be 300 mm unless noted otherwise.
  - Catchbasins to OPSS 705.010 with frame and cover to OPSS 400.010 (rear yard catchbasin OPSS 400.020) with 600 mm sump unless otherwise noted. Install Geotextile fabric under all catchbasin grates until construction phase is complete.
  - All manhole and catchbasin grate elevations are approximate and are subject to adjustment in the field.
  - Sanitary sewer are not to be used for dewatering purposes.
  - All sanitary sewer structure joints shall be sealed by a waterproof membrane such as Blueskin or approved equivalent, a minimum of 300mm on center of the joint allowing 150mm either side of all joints.

- SEWER SERVICES**
- Water and sewer services and foundation drains may be laid in the same trench subject to the provisions of Ontario Building Code.
  - The horizontal separation between each service shall be 0.5m. All other utility services shall be separated 2.5m from water and sewer services measured from edge of structure. Building sewers from the building line to the main shall be laid at a minimum of 2% from the building line to the main sewer. The first 40 building sanitary services connected to 200mm main shall be set above the spring line of the sewer main with a proper "Y" fittings and with long radius bends. Building sewers connected to larger mains may be by a tee connection with the side of the tee rotated at between 22 1/2 degrees and 45 degrees above horizontal.
  - Sanitary laterals shall be 125mm PVC SDR 28, green in colour.
  - Sanitary laterals to have a minimum 2.1m of cover at property line and a maximum 2.5m cover at the property line unless noted otherwise.
  - All laterals shall be run perpendicular into the property line or aimed towards the house. If sweeps are required to line up the service they should be located on the municipal side of the service.
  - Sanitary laterals are to extend 1.5 metres beyond the property line. The bell end is to remain on the last piece of pipe leading up to the property line and shall be 4m in length.

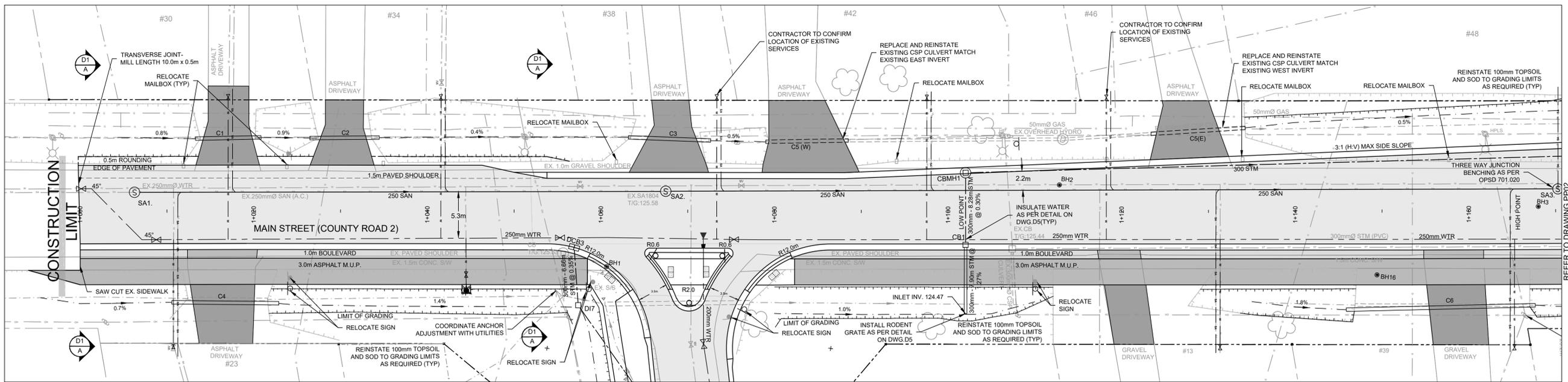
- WATER**
- Watermain**
    - Watermains shall be C900 DR18 Class 235 pipe, Molecularly Oriented Polyvinyl Chloride (PVC) pipe to be as per AWWA C909. Ductile watermain pipe not permitted, ductile fittings permitted. Other pipe materials may be accepted by the Township at the sole discretion of the Engineering Manager based on the acceptance of technical specification for that material.
    - Watermains shall be restrained as per OPSS 441 and the pipe manufacturer requirements at a minimum.
      - Pipe and joint restraint shall comply with OPSS 1103.010/1103.020 or as set out herein. Assume a soil bearing strength of 100 - 199 kPa unless otherwise instructed in writing by the Engineer.
      - Thrust blocks shall be installed as per OPSS 1103.010 and 1103.020. All hydrant, bends, tees, and dead ends require concrete thrust blocks.
      - Mechanical joint restraints may be used in place of thrust blocks subject to the prior approval of the Engineer.
      - All dead ends, bends, valves, fittings, hydrants, and reductions shall have mechanical restraints.
      - The number of joints requiring mechanical thrust restraint shall be set by the Engineer.
    - All joint restraint devices for PVC shall carry a water working pressure rating equivalent to the full rated pressure of the PVC pipe on which they will be installed, with a minimum factor of safety of 2:1 in any nominal pipe size. In addition, they shall meet or exceed the requirements of Uni-B-13-94 or ASTM F1674. Restraint devices shall be manufactured of high strength ductile iron, ASTM A 536, Grade 65-45-12. Bolts and connecting hardware shall be of high strength low alloy material in accordance with ANSI/AWWA C111A/21.11.
  - Watermains shall not be used as an electrical ground in new buildings.
  - All non-metallic watermains and water services shall require tracer wire. Tracer wire shall be strapped to the watermain every 3 meters and 2 meters along services. When connecting tracer wires Dycron WaterProof Direct Bury connector shall be utilized or an approved equivalent.

- Fire hydrants**
  - Hydrant locate station to be Flush Mounted Bingham and Taylor P200 NFG Test Station. Test Station is to be set flush with top of concrete shock collar.
  - Leads shall be a minimum of 150mm in diameter.
  - Hydrants shall be McQuay 67 or Mueller Century Model.
  - Hydrants to be left-hand open (counter clockwise).
  - Hydrant valves shall open in the same direction and be the same type as the mainline valves.
  - Hydrants are to be supplied by the manufacturer as yellow.
  - Hydrants shall have a 150 mm barrel with two 63 mm hose connections and one 100 mm Storz pumper port.

- Hydrant flange to be installed 100 to 150mm above finished grade and shock collar.
  - Hydrants shall have a 1m x 1m x 150mm shock collar cast in concrete.
  - A minimum of 2 metres clearance shall be provided around hydrants from trees, pedestals, light standards, etc.
- Water Services**
- Water services shall be PEX cross linked higher pressure (polyethylene pipe must be labeled CAN/CSA-B1371) and a minimum working pressure of 160 PSI @ 23°C and must be installed according to the Ontario Plumbing Code and Loyalist Township Standards. Minimum pipe size is 25mm O.D.
  - Main stops shall be the same size as the service pipe and shall have an AWWA tapered thread inlet and a compression joint outlet, 300 psi ball style valve. Main stops shall be Mueller Canada B2500N, Ford Meter FB1000-NL or Cambridge Brass 301NL. All curb stops shall be the same size as the service pipe and shall be compression joint inlet and outlet, no lead, 300 psi ball style valve. Curb stops shall be Mueller B-25209 series, Cambridge Brass 202 series or Ford B44 series. Self-draining (stop and drain) type curb & main stops are not permitted. All PEX water services shall be installed in accordance with Township W-16 standard and include a concrete support and electrical grounding lugs on both sides for the connection of the tracer wire. All materials shall be AWWA C900 and NSF 61 compliant.
    - Bedding material shall be granular 'A' and at a minimum, be compacted to 150mm above the water service.
    - Curb stops shall be placed 300mm beyond property line
    - Water services to be without joints between main and property line regardless of length. There shall be no buried joints except at the streetline and at the service set.
    - Anode to be installed as per W-16 on each service.

- LEGEND**
- PROPOSED ASPHALT
  - PROPOSED MUP ASPHALT
  - PROPOSED DRIVEWAY
  - REINSTATEMENT
  - PROPOSED CONCRETE
  - EXISTING STORM MANHOLE
  - EXISTING SANITARY MANHOLE
  - EXISTING HYDRANT
  - EXISTING WATER VALVE
  - EXISTING WATERMAIN
  - EXISTING SANITARY SEWER
  - EXISTING OVERHEAD SEWER
  - EXISTING OVERHEAD HYDRO
  - EXISTING GAS
  - EXISTING UNDERGROUND BELL
  - EXISTING SWALE C/L
  - PROPOSED SWALE C/L
  - PROPOSED STORM SEWER
  - PROPOSED WATERMAIN
  - PROPOSED SANITARY SEWER
  - BENCHMARK
  - CATCH BASIN
  - DOUBLE CATCH BASIN
  - DITCH INLET CATCH BASIN
  - STOP SIGN / AS NOTED
  - STREET SIGN
  - EXISTING VEGETATION
  - VEGETATION REMOVAL
  - STRAW BALE
  - EXISTING ELEVATION
  - PROPOSED ELEVATION





**LEGEND**

- PROPOSED ASPHALT
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- EXISTING SWALE C/L
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- EXISTING ELEVATION
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**PRELIMINARY  
NOT FOR  
CONSTRUCTION**

**SANITARY MAINTENANCE HOLE SCHEDULE**

STRUCTURE	STATION	STRUCTURE OP/SD	GRATE OP/SD	T/G	INLET	OUTLET
SA1	+1+06.29	701.010	401.010 'A'	125.93	122.77 (E)	
SA2	+1+067.48	701.010	401.010 'A'	125.62	122.59 (W)	122.57 (E)
SA3	+1+170.28	701.010	401.010 'A'	125.73	122.31 (W)	122.29 (E) 122.32 (N)

**CATCH BASIN SCHEDULE**

STRUCTURE	STATION	STRUCTURE OP/SD	GRATE OP/SD	T/G	INLET	OUTLET
CB1	+1+102.02	705.010	400.030	125.42	124.30 (S)	124.28 (N)
CBMH1	+1+102.02	701.010	400.030	125.40	124.26 (S)	124.24 (E)
DCB3	+4+015.74	705.010	400.030	125.64		123.42 (S)

**DITCH INLET SCHEDULE**

STRUCTURE	STATION	STRUCTURE OP/SD	GRATE OP/SD	T/G	INLET	OUTLET
D17	+4+022.36	705.030	403.010	124.38	123.40 (N)	123.39 (SE)

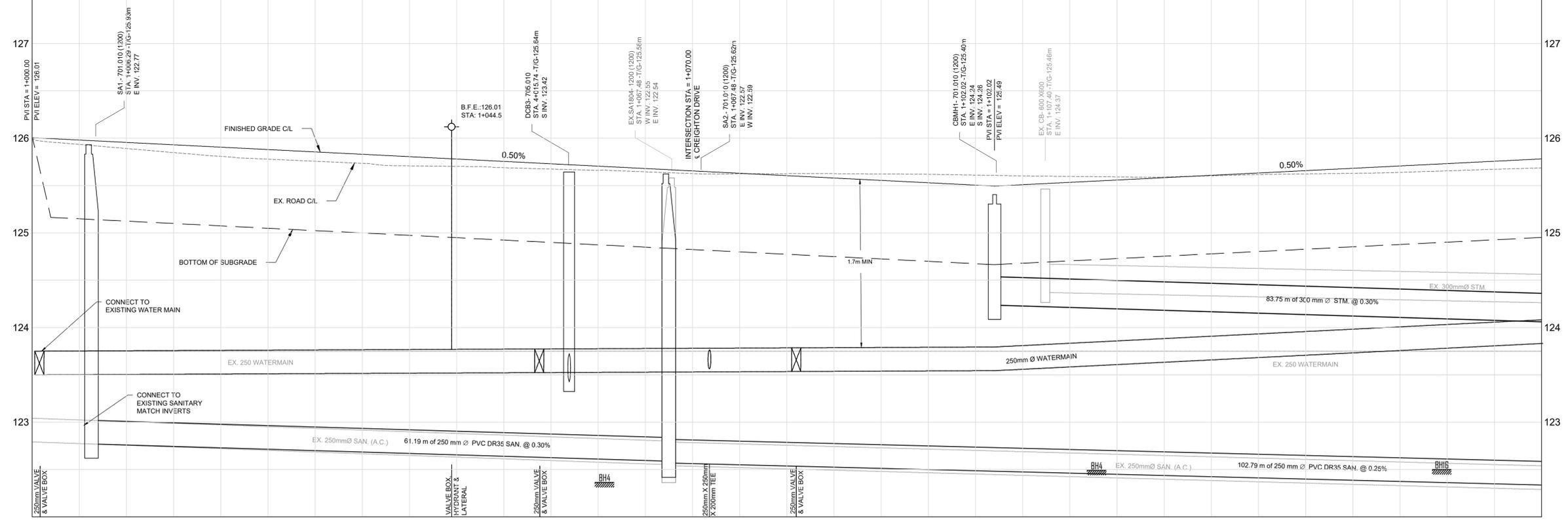
**CULVERT TABLE**

CULVERT ID	SIZE (mm)	LENGTH (m)	SLOPE	UPSTREAM INV.(m)	DOWNSTREAM INV.(m)
C1	400	7.6	0.26%	124.98	124.96
C2	400	8.0	1.25%	125.00	124.90
C3	400	9.5	0.21%	124.80	124.78

**CULVERT TABLE**

CULVERT ID	SIZE (mm)	LENGTH (m)	SLOPE	UPSTREAM INV.(m)	DOWNSTREAM INV.(m)
C4	400	12.3	2.03%	125.08	124.83
C5(E)	400	10.8	0.50%	124.40	124.35
C5(W)	400	9.5	0.50%	124.74	124.69
C6	400	21.8	0.28%	124.67	124.61

MAIN STREET (HIGHWAY 2) PROFILE



STATION	1+010	1+020	1+030	1+040	1+050	1+060	1+070	1+080	1+090	1+100	1+110	1+120	1+130	1+140	1+150	1+160
EX./PROP. CIL ELEV.	125.80 125.96	125.81 125.91	125.76 125.86	125.71 125.80	125.69 125.75	125.66 125.70	125.63 125.65	125.63 125.60	125.62 125.55	125.61 125.50	125.60 125.53	125.59 125.56	125.62 125.63	125.63 125.66	125.63 125.73	125.69 125.76
PROP. TOP OF WATERMAIN	123.75	123.76	123.76	123.77	123.77	123.78	123.78	123.78	123.79	123.79	123.83	123.86	123.83	123.86	124.03	124.08
PROP. STORM INVERTS										8.28m-300mm Ø STM @ 0.30% 124.28 124.26						
PROP. SANITARY INVERTS	122.77				61.19m-250mm Ø SAN @ 0.30%		122.59 122.57				102.79m-250mm Ø SAN @ 0.25%					122.31 123.98

Benchmark

- BM1 - TOP OF HYDRANT NUT IN FRONT OF CIVIC 122 / 120 SAUL STREET. ELEVATION 126.092
- BM2 - TOP OF HYDRANT NUT IN FRONT OF CIVIC 17 / 19 POTTER DRIVE. ELEVATION 125.259

RI	ISSUED FOR TENDER	MAR. 20, 2024
No.	Revision/Issue	Date



1329 Gardiners Road, Suite 210  
Kingston, ON, Canada K7P 0L8  
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1.888.884.9392 fax.

Client  
**LOYALIST TOWNSHIP**

Project  
**POTTER DRIVE, CREIGHTON DRIVE, SOUTH AND MAIN STREETS RECONSTRUCTION**

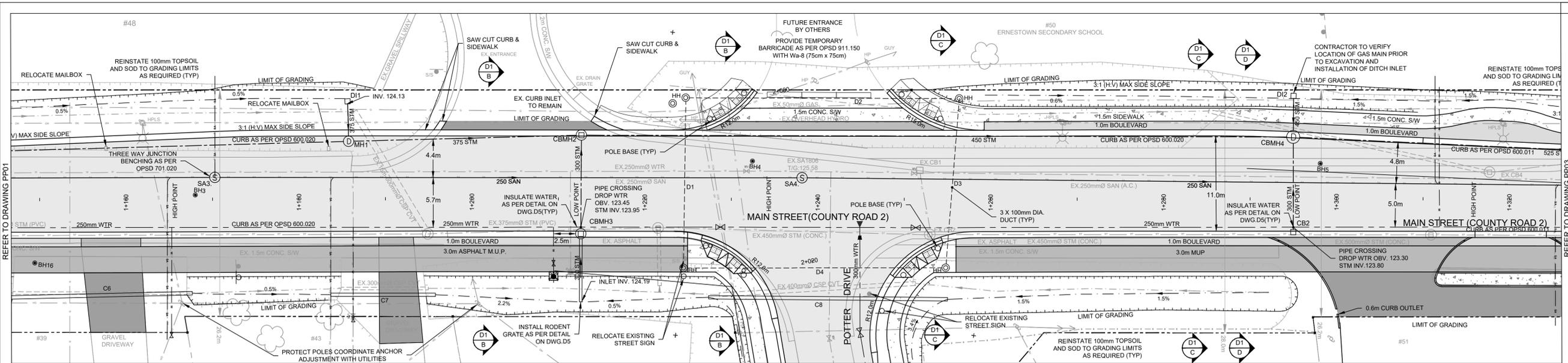
Drawing  
**MAIN STREET (HIGHWAY 2)  
PLAN AND PROFILE  
1+000.00 TO 1+160.00**

Drawn by: CSD	Checked by: JH	Project No.
Designed by: KMN	Approved by: KMN	Drawing No.

Date:  
DECEMBER 2023

Scale: 1" = 10'-0"

**PP01**



**LEGEND**

- PROPOSED ASPHALT
- PROPOSED MUP ASPHALT
- PROPOSED DRIVEWAY
- PROPOSED CONCRETE
- EXISTING STORM MANHOLE
- EXISTING SANITARY MANHOLE
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- PROPOSED SWALE C/L
- PROPOSED STORM SEWER
- PROPOSED WATERMAIN
- PROPOSED SANITARY SEWER
- BENCHMARK
- CATCH BASIN
- DOUBLE CATCH BASIN
- DITCH INLET CATCH BASIN
- STOP SIGN / AS NOTED
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- EXISTING VEGETATION
- VEGETATION REMOVAL
- STRAW BALE
- EXISTING ELEVATION
- PROPOSED ELEVATION

**SANITARY MAINTENANCE HOLE SCHEDULE**

STRUCTURE	STATION	STRUCTURE OPD	GRATE OPD	T/G	INLET	OUTLET
SA3	1+170.28	701.010	401.010 'A'	125.73	122.31 (W)	122.29 (E) 122.32 (N)
SA4	1+238.20	701.010	401.010 'A'	125.61	122.12 (W)	122.10 (E)

**STORM MAINTENANCE HOLE SCHEDULE**

STRUCTURE	STATION	STRUCTURE OPD	GRATE OPD	T/G	INLET	OUTLET
MH1	1+185.76	701.010	401.010 'B'	125.38	123.98 (W) 124.12 (N)	123.91 (E)

**CATCH BASIN SCHEDULE**

STRUCTURE	STATION	STRUCTURE OPD	GRATE OPD	T/G	INLET	OUTLET
CBM2	1+212.64	701.010	400.030	125.42	123.92 (S) 123.84 (W)	123.76 (E)
CBM3	1+212.61	701.010	400.030	125.49	123.95 (S)	123.95 (N)

**CATCH BASIN SCHEDULE**

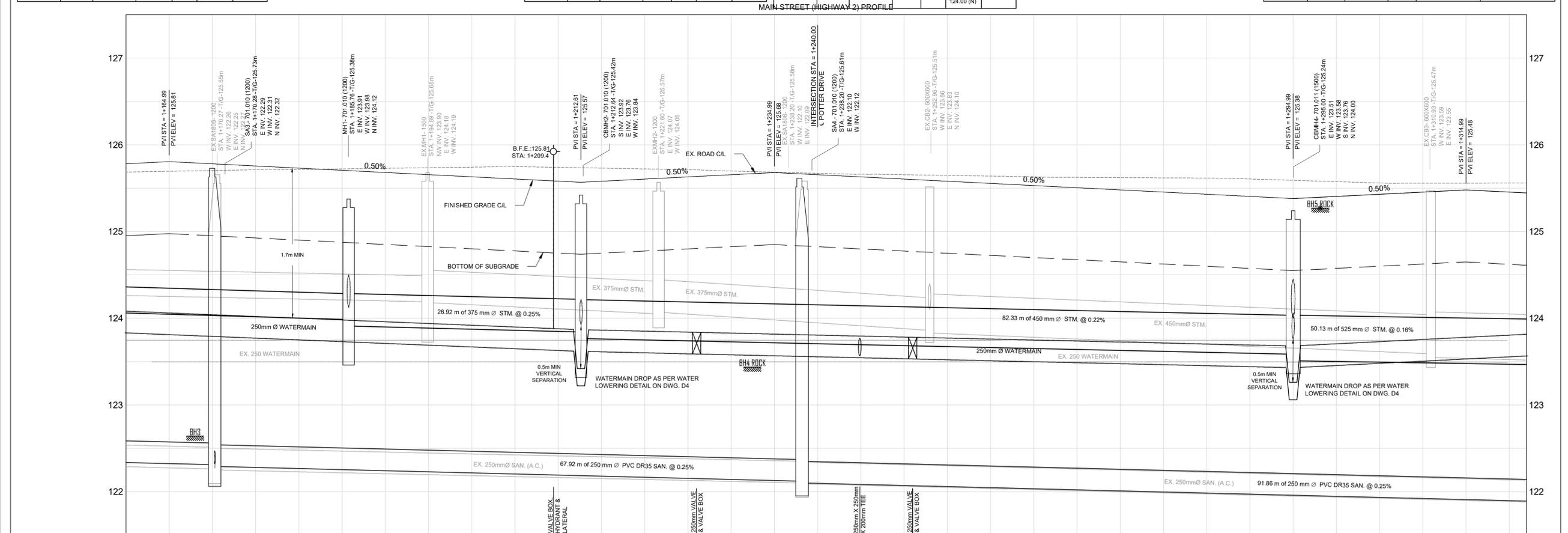
STRUCTURE	STATION	STRUCTURE OPD	GRATE OPD	T/G	INLET	OUTLET
CB2	1+295.00	705.010	400.030	125.30		123.80 (N)
CBM4	1+295.00	701.011	400.030	125.24	123.58 (W) 123.76 (S) 124.00 (N)	123.51 (E)

**DITCH INLET SCHEDULE**

STRUCTURE	STATION	STRUCTURE OPD	GRATE OPD	T/G	INLET	OUTLET
DI1	1+185.64	705.030	403.010	124.67		124.13 (S)

**CULVERT TABLE**

CULVERT ID	SIZE (mm)	LENGTH (m)	SLOPE	UPSTREAM INV.(m)	DOWNSTREAM INV.(m)
C6	400	21.8	0.28%	124.67	124.61
C7	400	12.1	0.25%	124.41	124.38
C8	400	27.6	0.90%	124.50	124.25



STATION	1+170	1+180	1+190	1+200	1+210	1+220	1+230	1+240	1+250	1+260	1+270	1+280	1+290	1+300	1+310	1+320+322
EX./PROP. CIL ELEV.	125.70 125.78	125.72 125.73	125.73 125.68	125.74 125.63	125.74 125.58	125.72 125.60	125.70 125.65	125.67 125.65	125.66 125.60	125.64 125.55	125.62 125.50	125.62 125.45	125.61 125.40	125.58 125.40	125.56 125.45	125.56 125.44
PROP. TOP OF WATERMAIN	124.04	124.00	123.96	123.92	123.88	123.85	123.83	123.81	123.78	123.76	123.74	123.71	123.69	123.70	123.75	123.74
PROP. STORM INVERTS	124.24	83.75m-300mm STM @ 0.30%	123.98 123.91	26.92m-375mm STM @ 0.25%	123.84 123.76	123.85	123.83	123.81	123.78	123.76	123.74	123.71	123.69	123.58 123.51	50.13m-525mm STM @ 0.16%	123.43
PROP. SANITARY INVERTS	122.57 122.31 122.29	102.79m-250mm SAN @ 0.25%	123.92	67.92m-250mm SAN @ 0.25%	123.84 123.76	123.85	123.83	123.81	123.78	123.76	123.74	123.71	123.69	91.86m-250mm SAN @ 0.25%	123.43	123.44

**PRELIMINARY NOT FOR CONSTRUCTION**

- Benchmark
- BM1 - TOP OF HYDRANT NUT IN FRONT OF CIVIC 122 / 120 SAUL STREET. ELEVATION 126.092
  - BM2 - TOP OF HYDRANT NUT IN FRONT OF CIVIC 17 / 19 POTTER DRIVE. ELEVATION 125.259

Rev	Issued For	Revision/Issue	Date
01	ISSUED FOR TENDER		MAR. 20, 2024



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1.888.884.9392 fax.

Client: **LOYALIST TOWNSHIP**

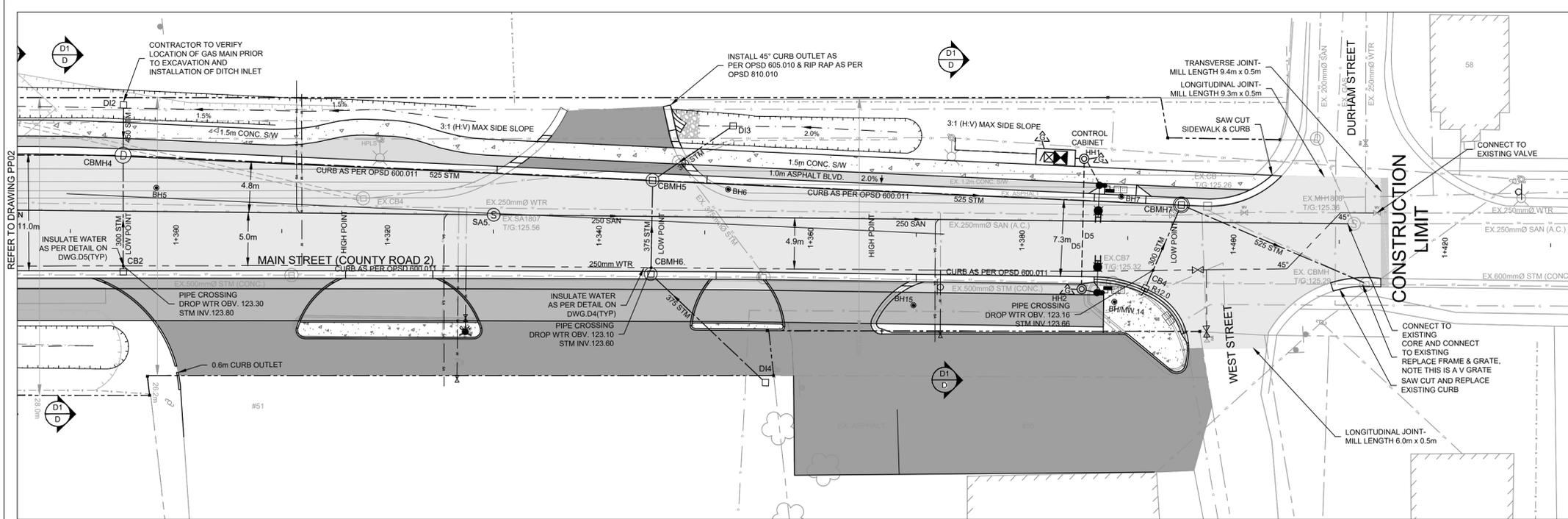
Project: **POTTER DRIVE, CREIGHTON DRIVE, SOUTH AND MAIN STREETS RECONSTRUCTION**

Drawing: **MAIN STREET (HIGHWAY 2) PLAN AND PROFILE 1+160.00 TO 1+320.00**

Drawn by: CSD	Checked by: JH	Project No.:
Designed by: KMN	Approved by: KMN	Drawing No.:
Date: DECEMBER 2023		

Scale: 1" = 10'

**PP02**



STRUCTURE	STATION	STRUCTURE OPSD	GRATE OPSD	T/G	INLET	OUTLET
SA5	1+330.05	701.010	401.010 'A'	125.37	121.87 (W)	121.85 (E)

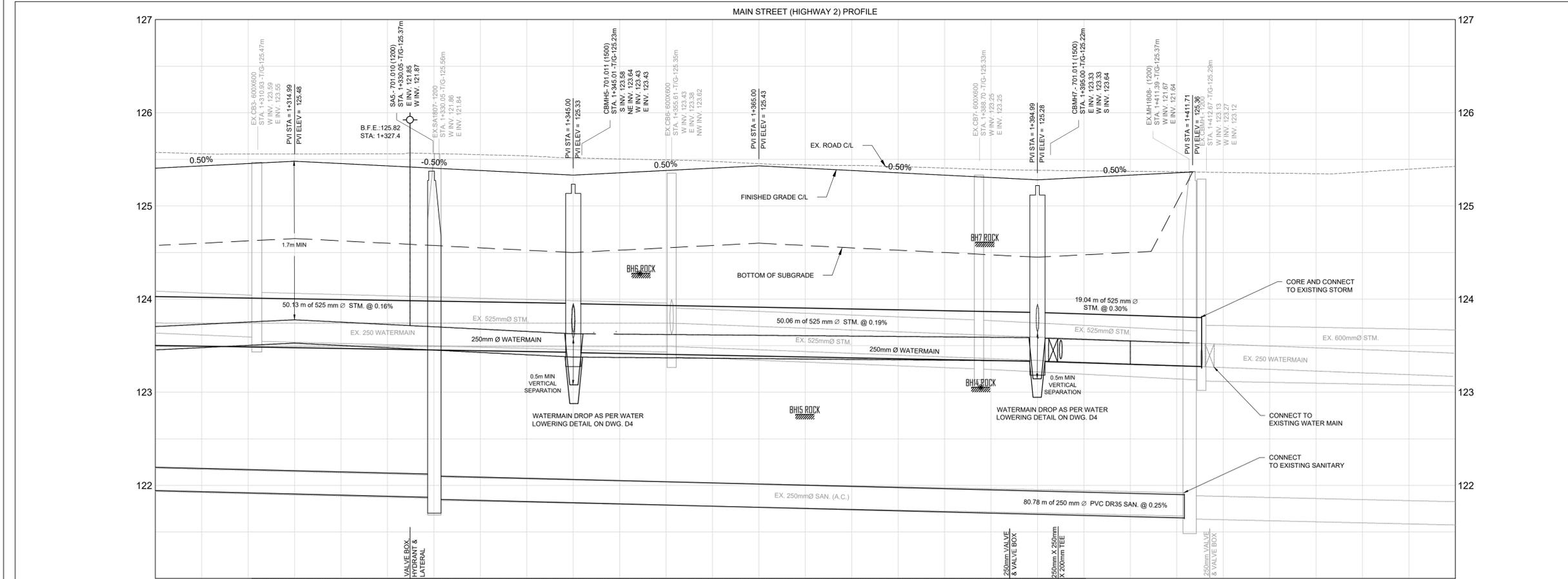
STRUCTURE	STATION	STRUCTURE OPSD	GRATE OPSD	T/G	INLET	OUTLET
CBMH4	1+295.00	701.011	401.010 'B'	125.24	123.58 (W) 123.76 (S) 124.00 (N)	123.51 (E)
CBMH5	1+345.01	701.011	401.010 'B'	125.23	123.58 (S) 123.64 (NE) 123.43 (W)	123.43 (E)
CBMH7	1+395.00	701.011	401.010 'B'	125.22	123.33 (W) 123.64 (S)	123.33 (E)

STRUCTURE	STATION	STRUCTURE OPSD	GRATE OPSD	T/G	INLET	OUTLET
CB2	1+295.00	705.010	400.030	125.30		123.80 (N)
CB4	1+391.76	705.010	400.030	125.17		123.67 (N)

STRUCTURE	STATION	STRUCTURE OPSD	GRATE OPSD	T/G	INLET	OUTLET
DI3	1+352.55	705.030	403.010	125.08		124.04 (SW)
DI4	1+355.91	705.030	403.010	125.21		123.66 (NW)

- LEGEND**
- PROPOSED ASPHALT
  - PROPOSED MUP ASPHALT
  - PROPOSED DRIVEWAY
  - PROPOSED CONCRETE
  - EXISTING STORM MANHOLE
  - EXISTING SANITARY MANHOLE
  - EXISTING HYDRANT
  - EXISTING WATER VALVE
  - EXISTING WATERMAIN
  - EXISTING SANITARY SEWER
  - EXISTING STORM SEWER
  - EXISTING OVERHEAD HYDRO
  - EXISTING GAS
  - EXISTING UNDERGROUND BELL
  - EXISTING SWALE C/L
  - PROPOSED SWALE C/L
  - PROPOSED STORM SEWER
  - PROPOSED WATERMAIN
  - PROPOSED SANITARY SEWER
  - BENCHMARK
  - CATCH BASIN
  - DOUBLE CATCH BASIN
  - DITCH INLET CATCH BASIN
  - STOP SIGN / AS NOTED
  - STREET SIGN
  - EXISTING VEGETATION
  - VEGETATION REMOVAL
  - STRAW BALE
  - EXISTING ELEVATION
  - PROPOSED ELEVATION

**PRELIMINARY  
NOT FOR  
CONSTRUCTION**



STATION	1+310	1+320	1+330	1+340	1+350	1+360	1+370	1+380	1+390	1+400	1+410	1+420	1+430	1+440
EX. PROP. CL. ELEV.	125.56 125.45	125.56 125.45	125.56 125.40	125.54 125.35	125.50 125.36	125.48 125.41	125.44 125.41	125.42 125.36	125.39 125.31	125.38 125.31	125.37 125.36	125.35	125.36	125.42
PROP. TOP OF WATERMAIN	123.75	123.75	123.70	123.65	123.62	123.62	123.61	123.60	123.59	123.57	123.53			
PROP. STORM INVERTS	123.51	50.13m-525mm ∅ STM @ 0.16%		123.43 123.43			50.06m-525mm ∅ STM @ 0.19%		123.33 123.33	19.04m-525mm ∅ STM @ 0.30%		123.28		
PROP. SANITARY INVERTS	122.10	91.86m-250mm ∅ SAN @ 0.25%		121.87 121.65			80.78m-250mm ∅ SAN @ 0.25%				121.65			

- Benchmark
- BM1 - TOP OF HYDRANT NUT IN FRONT OF CIVIC 122 / 120 SAUL STREET. ELEVATION 126.092
  - BM2 - TOP OF HYDRANT NUT IN FRONT OF CIVIC 17 / 19 POTTER DRIVE. ELEVATION 125.259

Revised For	Revision/Issue	Date
ISSUED FOR TENDER		MAR. 20, 2024



1329 Gardiners Road, Suite 210  
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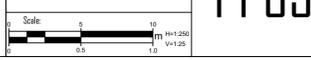
Client: **LOYALIST TOWNSHIP**

Project: **POTTER DRIVE, CREIGHTON DRIVE, SOUTH AND MAIN STREETS RECONSTRUCTION**

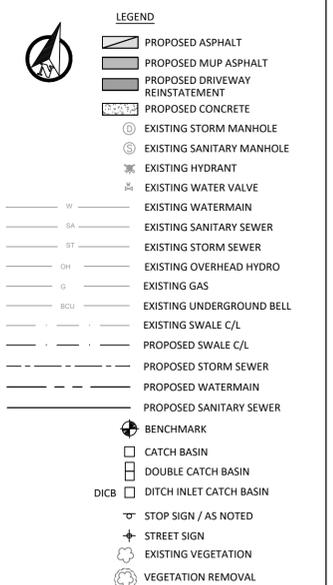
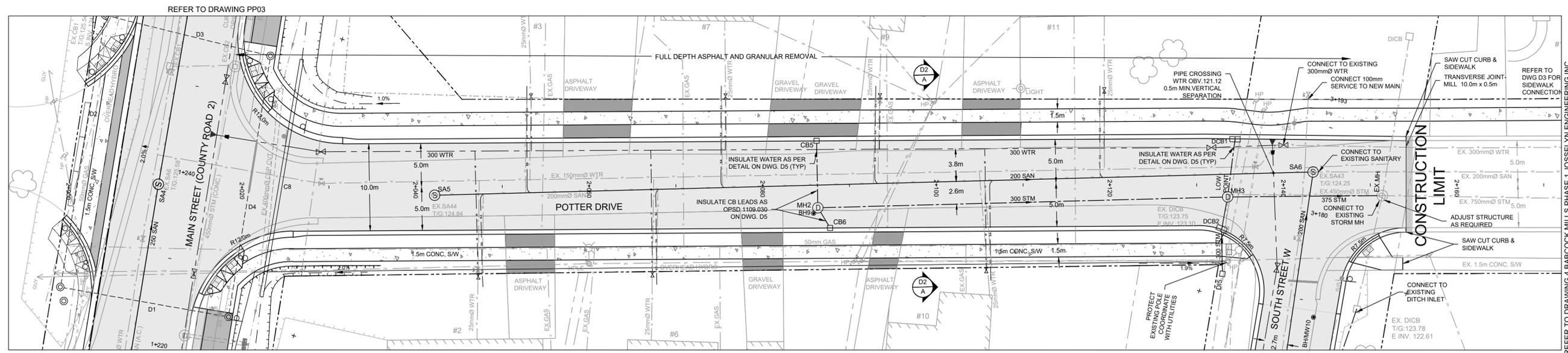
Drawing: **MAIN STREET (HIGHWAY 2) PLAN AND PROFILE 1+300.00 TO 1+440.00**

Drawn by: CSD	Checked by: JH	Project No.
Designed by: KMN	Approved by: KMN	Drawing No.

Date: DECEMBER 2023



**PP03**



REFER TO DRAWING 4 BABCOCK MILLS PHASE 1 JOSSELYN ENGINEERING INC.

REFER TO DRAWING PP02 (left) and REFER TO DRAWING PP05 (right)

STRUCTURE	STATION	STRUCTURE OPSD	GRATE OPSD	T/G	INLET	OUTLET
SA5	2+042.19	701.010	401.010 'A'	124.76	121.60 (W) 121.60 (NW)	122.02 (SE)
SA6	2+143.42	701.010	401.010 'A'	124.25		121.58 (SE)

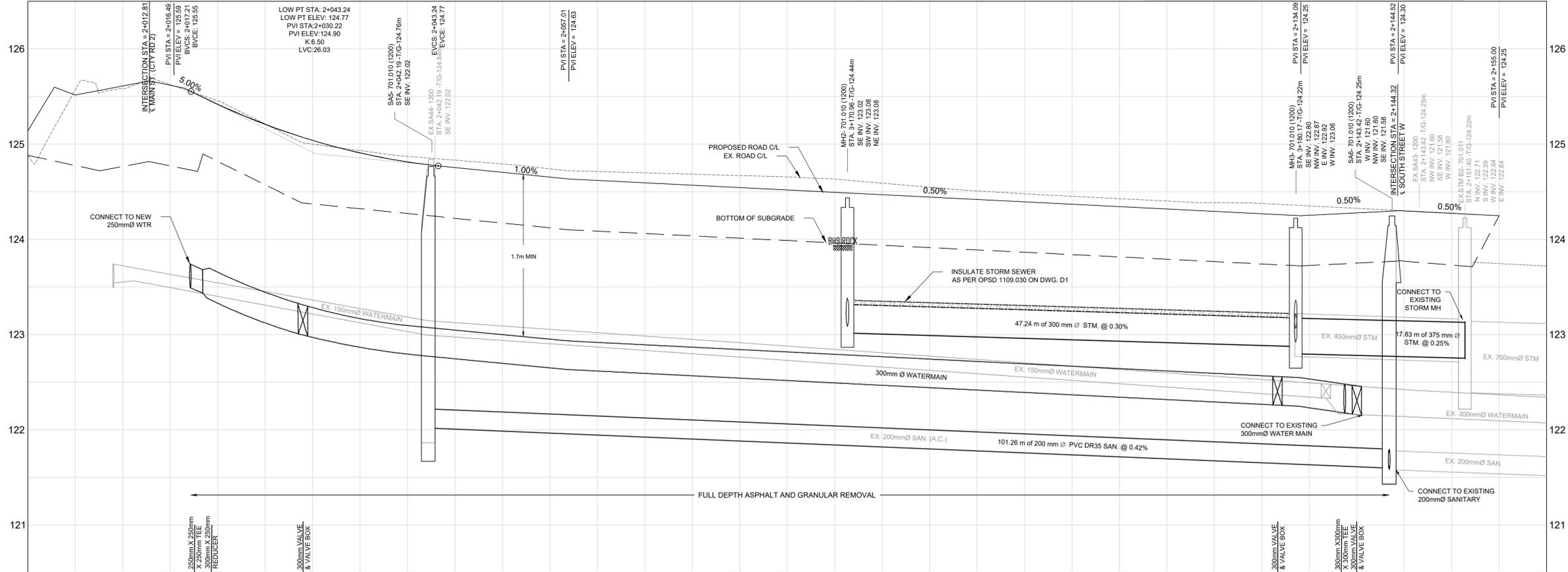
STRUCTURE	STATION	STRUCTURE OPSD	GRATE OPSD	T/G	INLET	OUTLET
MH2	3+170.96	701.010	401.010 'B'	124.44	123.06 (SW) 123.08 (NE)	123.02 (SE)
MH3	3+180.17	701.010	401.010 'B'	124.22	122.87 (NW) 122.92 (E) 123.06 (W)	122.80 (SE)

STRUCTURE	STATION	STRUCTURE OPSD	GRATE OPSD	T/G	INLET	OUTLET
CB5	3+178.52	705.010	403.010 3:1N	124.39		123.29 (SW)
CB6	3+168.92	705.010	403.010 3:1N	124.38		123.13 (NE)
DCB1	3+186.84	705.020	403.010 3:1N	124.14		122.94 (W)
DCB2	3+176.45	705.020	403.010 3:1N	124.15	123.12 (SW)	123.10 (E)

STRUCTURE	STATION	STRUCTURE OPSD	GRATE OPSD	T/G	INLET	OUTLET
DI5	3+171.36	705.030	403.010 HOR	124.00		123.14 (NE)

CULVERT ID	SIZE (mm)	LENGTH (m)	SLOPE	UPSTREAM INV. (m)	DOWNSTREAM INV. (m)
C8	400	27.6	0.90%	124.50	124.25

POTTER DRIVE PROFILE



STATION	2+10	2+20	2+30	2+40	2+50	2+60	2+70	2+80	2+90	2+100	2+110	2+120	2+130	2+140	2+150	2+160
EX./PROP. CIL ELEV.	125.58		125.46	125.04	124.79	124.71	124.68	124.66	124.59	124.51	124.45	124.40	124.38	124.33	124.27	
PROP. TOP OF WATERMAIN		123.62	123.42	123.21	123.00	122.82	122.87	122.82	122.77	122.72	122.67	122.62	122.57	122.46	122.27	
PROP. STORM INVERTS									123.02		47.24m-300mm Ø STM @ 0.30%		122.87	122.80	17.83m-375mm Ø STM @ 0.25%	122.75
PROP. SANITARY INVERTS										101.26m-200mm Ø SAN @ 0.42%				121.60	121.58	

PRELIMINARY NOT FOR CONSTRUCTION

Benchmark	Description	Elevation
BM1	TOP OF HYDRANT NUT IN FRONT OF CIVIC 122 / 120 SAUL STREET.	126.092
BM2	TOP OF HYDRANT NUT IN FRONT OF CIVIC 17 / 19 POTTER DRIVE.	125.259

RI	ISSUED FOR TENDER	DATE
	MAR 20 2024	

No.	Revision/Issue	Date



1329 Gardiners Road, Suite 210  
Kingston, ON, Canada K7P 0L8  
613.634.9009 tel.  
1.888.884.9392 fax.

Client: LOYALIST TOWNSHIP

Project: POTTER DRIVE, CREIGHTON DRIVE, SOUTH AND MAIN STREETS RECONSTRUCTION

Drawing: POTTER DRIVE PLAN AND PROFILE 2+000.00 TO 2+160.00

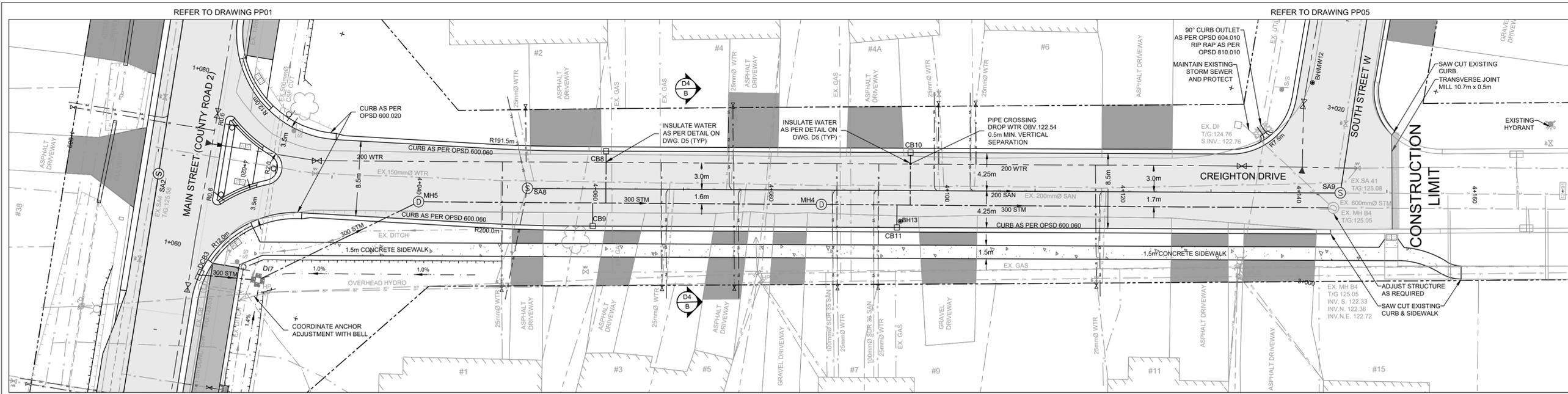
Drawn by: CSD	Checked by: JH	Project No.:
Designed by: KMN	Approved by: KMN	Drawing No.:

Date: DECEMBER 2023

Scale: 1" = 10'

PP04





REFER TO DRAWING #1 JOSSELYN ENGINEERING INC.

**LEGEND**

- PROPOSED ASPHALT
- PROPOSED MUP ASPHALT
- PROPOSED DRIVEWAY REINSTATEMENT
- PROPOSED CONCRETE
- EXISTING STORM MANHOLE
- EXISTING SANITARY MANHOLE
- EXISTING HYDRANT
- EXISTING WATER VALVE
- EXISTING WATER MAIN
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING OVERHEAD HYDRO
- EXISTING GAS
- EXISTING UNDERGROUND BELL
- EXISTING SWALE C/L
- PROPOSED SWALE C/L
- PROPOSED STORM SEWER
- PROPOSED WATERMAIN
- PROPOSED SANITARY SEWER
- BENCHMARK
- CATCH BASIN
- DOUBLE CATCH BASIN
- DITCH INLET CATCH BASIN
- STOP SIGN / AS NOTED
- STREET SIGN
- EXISTING VEGETATION
- VEGETATION REMOVAL
- STRAW BALE
- EXISTING ELEVATION
- PROPOSED ELEVATION

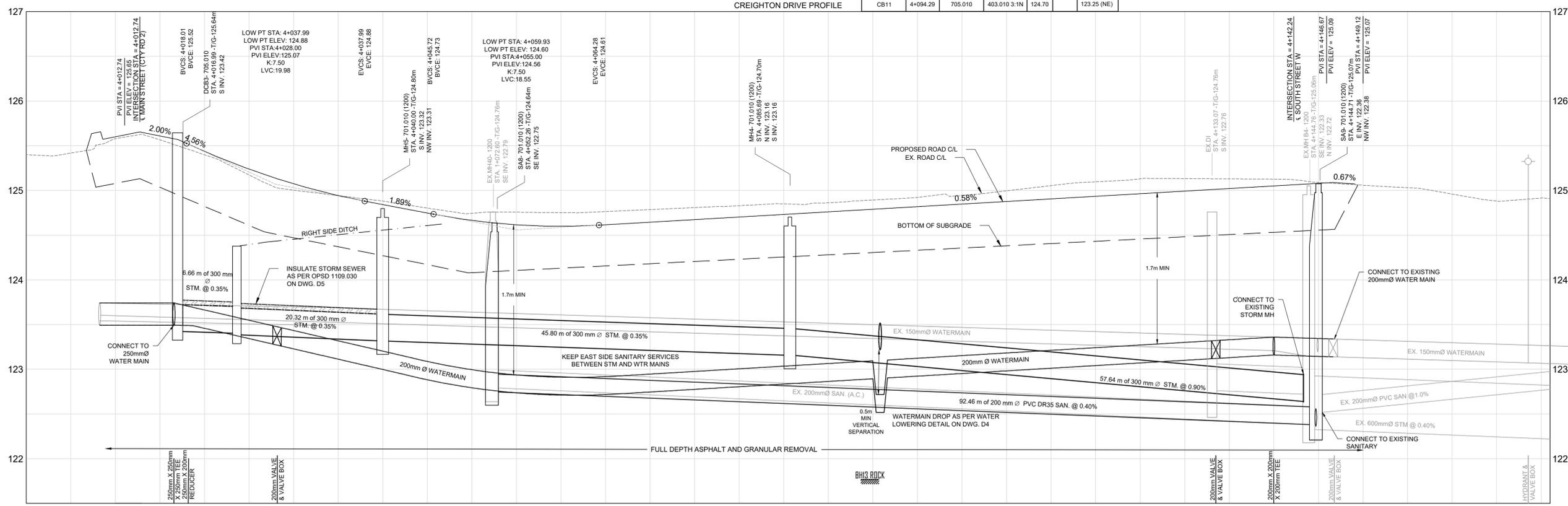
REFER TO DRAWING PP01

SANITARY MAINTENANCE HOLE SCHEDULE						
STRUCTURE	STATION	STRUCTURE OPSD	GRATE OPSD	T/G	INLET	OUTLET
SA8	4+052.26	701.010	401.010 'A'	124.64		122.75 (SE)
SA9	4+144.71	701.010	401.010 'X'	125.07	122.38 (NW)	122.36 (E)

STORM MAINTENANCE HOLE SCHEDULE						
STRUCTURE	STATION	STRUCTURE OPSD	GRATE OPSD	T/G	INLET	OUTLET
MH4	4+085.69	701.010	401.010 'B'	124.70	123.16 (N)	123.16 (S)
MH5	4+040.00	701.010	401.010 'E'	124.80	123.31 (NW)	123.32 (S)

CATCH BASIN SCHEDULE						DITCH INLET SCHEDULE							
STRUCTURE	STATION	STRUCTURE OPSD	GRATE OPSD	T/G	INLET	OUTLET	STRUCTURE	STATION	STRUCTURE OPSD	GRATE OPSD	T/G	INLET	OUTLET
CB8	4+061.19	705.010	403.010 3.1N	124.52		123.32 (SW)	DI7	4+023.63	705.030	3.1 W	124.38	123.40 (N)	123.39 (SE)
CB9	4+059.70	705.010	403.010 3.1N	124.51		123.01 (NE)	EX.DI	4+133.07	705.040	3.1 W	124.76		122.76 (S)
CB10	4+095.82	705.010	403.010 3.1N	124.71		123.21 (W)							
CB11	4+094.29	705.010	403.010 3.1N	124.70		123.25 (NE)							

CREIGHTON DRIVE PROFILE



STATION	4+000	4+010	4+020	4+030	4+040	4+050	4+060	4+070	4+080	4+090	4+100	4+110	4+120	4+130	4+140	4+150	4+160	4+170	4+171		
EX. PROP. CL. ELEV.	125.40	125.58	125.40	125.44	125.00	125.07	124.88	124.84	124.74	124.86	124.76	124.86	124.76	124.86	124.76	124.86	124.76	124.86	124.91	124.91	
PROP. TOP OF WATERMAIN		123.74		123.66		123.43		123.32		123.00		122.75		122.36		122.36		122.36		122.36	122.36
PROP. STORM INVERTS		6.66m-300mm Ø STM @ 0.35% 123.42								45.80m-300mm Ø STM @ 0.35%											
PROP. SANITARY INVERTS						20.32m-300mm Ø STM @ 0.35% 123.38															

PRELIMINARY NOT FOR CONSTRUCTION

Benchmark  
 BM1 - TOP OF HYDRANT NUT IN FRONT OF CIVIC 122 / 120 SAUL STREET. ELEVATION 126.092  
 BM2 - TOP OF HYDRANT NUT IN FRONT OF CIVIC 17 / 19 POTTER DRIVE. ELEVATION 125.259

RI	ISSUED FOR TENDER	DATE
		MAR. 20. 2024

No.	Revision/Issue	Date



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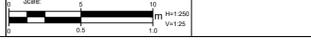
Client:  
**LOYALIST TOWNSHIP**

Project:  
**POTTER DRIVE, CREIGHTON DRIVE, SOUTH AND MAIN STREETS RECONSTRUCTION**

Drawing:  
**CREIGHTON DRIVE PLAN AND PROFILE 4+000.00 TO 4+171.00**

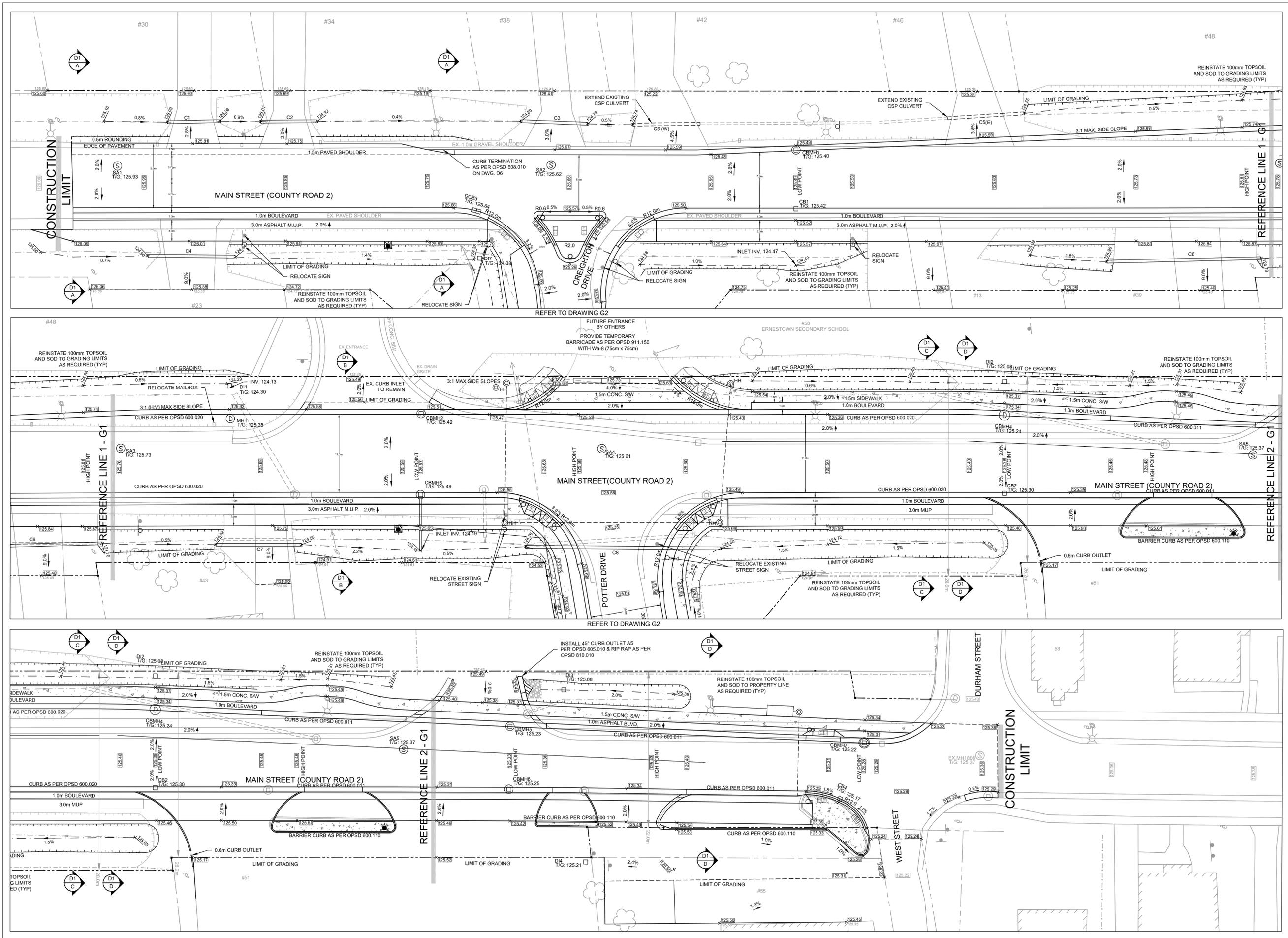
Drawn by: CSD	Checked by: JH	Project No.:
Designed by: KMN	Approved by: KMN	Drawing No.:

Date:  
 DECEMBER 2023



PP06





- LEGEND**
- PROPOSED ASPHALT
  - PROPOSED MUP ASPHALT
  - PROPOSED DRIVEWAY
  - REINSTATEMENT
  - PROPOSED CONCRETE
  - EXISTING STORM MANHOLE
  - EXISTING SANITARY MANHOLE
  - EXISTING HYDRANT
  - EXISTING WATER VALVE
  - EXISTING WATERMAIN
  - EXISTING SANITARY SEWER
  - EXISTING STORM SEWER
  - EXISTING OVERHEAD HYDRO
  - EXISTING GAS
  - EXISTING UNDERGROUND BELL
  - EXISTING SWALE C/L
  - PROPOSED SWALE C/L
  - PROPOSED STORM SEWER
  - PROPOSED WATERMAIN
  - PROPOSED SANITARY SEWER
  - BENCHMARK
  - CATCH BASIN
  - DOUBLE CATCH BASIN
  - DITCH INLET CATCH BASIN
  - STOP SIGN / AS NOTED
  - STREET SIGN
  - EXISTING VEGETATION
  - VEGETATION REMOVAL
  - STRAW BALE
  - EXISTING ELEVATION
  - PROPOSED ELEVATION

**PRELIMINARY  
NOT FOR  
CONSTRUCTION**

Benchmark

- BM1 - TOP OF HYDRANT NUT IN FRONT OF CIVIC 122 / 120 SAUL STREET. ELEVATION 126.092
- BM2 - TOP OF HYDRANT NUT IN FRONT OF CIVIC 17 / 19 POTTER DRIVE. ELEVATION 125.259

RI	ISSUED FOR TENDER	MAR. 20, 2024
No.	Revision/Issue	Date



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613.634.9009 tel.  
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Client  
**LOYALIST TOWNSHIP**

Project  
**POTTER DRIVE, CREIGHTON DRIVE, SOUTH AND MAIN STREETS RECONSTRUCTION**

Drawing  
**GRADING PLAN I**

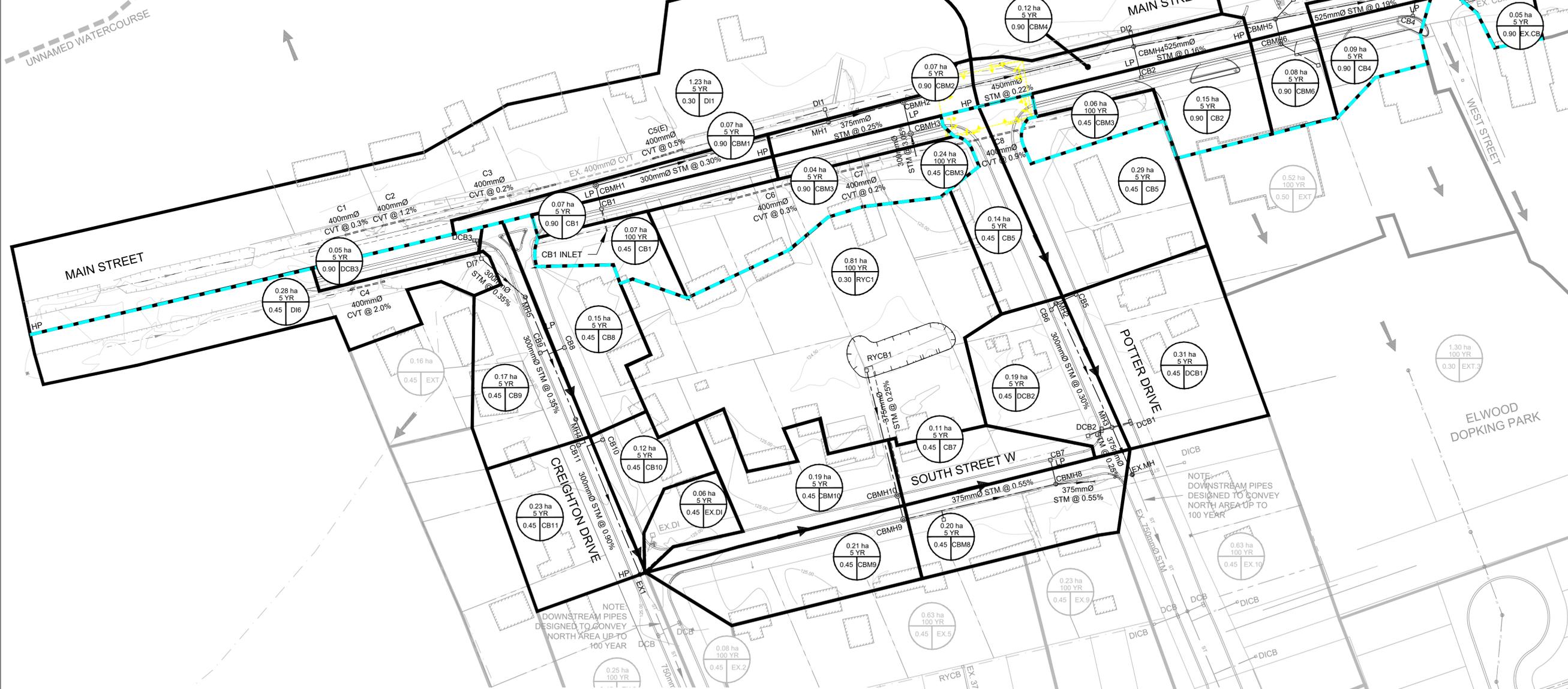
Drawn by: ESD	Checked by: JH	Project No.:
Designed by: KMN	Approved by: KMN	Drawing No.:
Date: DECEMBER 2023		

**G1**

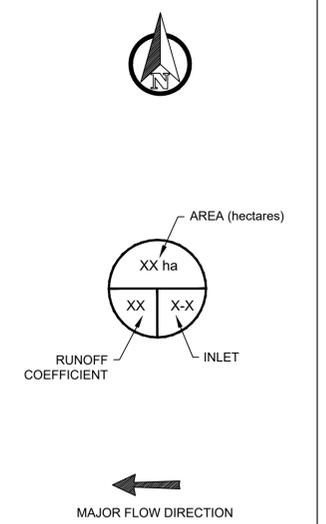


LOCATION		DRAINAGE AREA = 3.44 ha										STORM SEWER DESIGN CALCULATIONS										DESIGN FREQUENCY 5 100 Kingston West ID#									
Street	INLET	FROM MH#	TO MH#	R = 0.30 ha	Res. R = 0.45 ha	Res. R = 0.60 ha	Res. R = 0.90 ha	RUNOFF		Time of Conc. min	Intensity I 5 yr mm/hr	Intensity I 100 yr mm/hr	Peak Flow Q L/s	PIPE SELECTION		Nominal Diameter D mm	Pipe Length m	Grade S	Full Capacity L/s	Full V m/s	Time of Flow min	Capacity Used Q/Qf	Actual Velocity m/s	Normal Depth mm							
								Indiv. 2.78AC ha	Accum. 2.78AC ha					Required Pipe Diameter D m	Nominal Diameter D mm																
Main Street	CB1	CB1	CBMH1		0.07			0.07	0.18	0.18	15.00	66	116	22	0.214	300	8.3	0.30%	53	0.75	0.18	0.41	0.71	133							
Main Street	CBM1	CBMH1	MH1					0.07	0.18	0.35	15.18	65	116	33	0.251	300	83.8	0.30%	53	0.75	1.86	0.62	0.79	171							
Main Street	D11	MH1	CBMH2	1.23					1.03	1.38	21.21	94	94	82	0.366	375	26.9	0.25%	88	0.79	0.57	0.93	0.90	287							
Main Street	CBM3	CBMH3	CBMH2		0.30			0.04	0.10	0.10	15.00	66	116	50	0.294	300	11.2	0.30%	53	0.75	0.25	0.95	0.85	232							
Main Street	CBM2, D12	CBMH2	CBMH4					0.07	0.18	1.65	21.78	53	92	130	0.445	450	82.3	0.22%	134	0.84	1.63	0.97	0.96	357							
Main Street	CBM4, CB2	CBMH4	CBMH5			0.27	0.68	2.33			23.41	50	88	158	0.515	525	61.0	0.15%	167	0.77	1.32	0.95	0.88	407							
Main Street	CBM5, CBM6	CBMH5	CBMH7		0.29	0.08	0.68	3.01			24.73	49	85	186	0.518	525	39.2	0.20%	192	0.89	0.74	0.97	1.01	415							
Main Street	CB4, CBM7, EX	CBMH7	EXCBM7		0.28	0.14	0.82	3.63			25.46	48	83	222	0.513	525	19.0	0.30%	236	1.09	0.29	0.94	1.24	404							

CHANNEL AND CULVERT DESIGN SHEET										Min. Tc = 15 min										Kingston West ID#									
ID	Tributary Drainage Area (ha)	Watershed Length (m)	Watershed Slope (Sw) %	C	Storm Event (Year)	Rational Method Design Flow			Culvert			Channel																	
						Indiv. 2.78AC	Total Tc (min.)	I (mm/hr)	Peak Flow (l/s)	ID	Material	Nominal Diameter (mm)	Manning's Design n	Grade S	Full Capacity (l/s)	Normal Depth (mm)	Channel Grade S	Manning's Design n	Side Slope z:1	Base Width (m)	Channel Depth (mm)	Velocity (m/s)	Normal Depth (mm)						
C1 & C2	Part of D11	0.42	125	0.50	0.30	100	0.35	15.00	150.0	116.0	41	C1 & C2	HDPE	1	400	0.014	0.30%	105	0.38	170	0.50%	0.035	3	0.3	500	0.39	140		
C3 & C5	Part of D11	0.50	30	0.50	0.30	100	0.42	1.28	16.28	110.8	46	C3 & C5	CSP	1	400	0.014	0.50%	137	0.34	160	0.50%	0.035	3	0.3	500	0.41	150		
D1	Part of D11	1.23	120	0.50	0.30	100	1.03	4.93	21.21	93.7	96	D1									0.50%	0.035	3	0.3	500	0.49	210		
C4	Part of D15	0.21	110	0.50	0.45	100	0.26	15.00	150.0	116.0	30	C4	HDPE	1	400	0.014	2.00%	273	0.11	90	0.90%	0.035	3	0.3	500	0.36	120		
C6 & C7	Part of D12	0.24	75	1.50	0.45	100	0.30	15.00	150.0	116.0	35	C6 & C7	HDPE	1	400	0.014	0.20%	86	0.40	178	1.50%	0.035	3	0.3	500	0.56	100		
C8	Part of D12	0.06	40	1.50	0.45	100	0.08	15.00	150.0	116.0	9	C8	HDPE	1	400	0.014	1.00%	193	0.05	57	1.50%	0.035	3	0.3	500	0.39	50		



LOCATION		DRAINAGE AREA = 29.24 ha										STORM SEWER DESIGN CALCULATIONS										DESIGN FREQUENCY 5 100 Kingston West ID#									
Street	INLET	FROM MH#	TO MH#	R = 0.30 ha	Res. R = 0.45 ha	Res. R = 0.50 ha	Res. R = 0.90 ha	RUNOFF		Time of Conc. min	Intensity I 5 yr mm/hr	Intensity I 100 yr mm/hr	Peak Flow Q L/s	PIPE SELECTION		Nominal Diameter D mm	Pipe Length m	Grade S	Full Capacity L/s	Full V m/s	Time of Flow min	Capacity Used Q/Qf	Actual Velocity m/s	Normal Depth mm							
								Indiv. 2.78AC ha	Accum. 2.78AC ha					Required Pipe Diameter D m	Nominal Diameter D mm																
South Street W	RYC1	RYCB1	CBMH10	0.810				0.675	15.00	66	116	78	0.359	375	44.8	0.25%	88	0.79	0.94	0.89	0.90	276									
South Street W	CBM10	CBMH10	CBMH9	0.190				0.238	0.238	0.675	15.94	64	112	91	0.367	375	8.5	0.30%	96	0.87	0.16	0.94	0.99	290							
South Street W	CBM9	CBMH9	CBMH8	0.210				0.263	0.500	0.675	16.10	63	111	107	0.348	375	54.4	0.55%	130	1.18	0.77	0.82	1.31	258							
South Street W	CBM6, CB7	EXDCB	EXMH	0.310				0.388	0.888	0.675	16.87	62	108	128	0.375	375	13.4	0.55%	130	1.18	0.19	0.98	1.34	302							
South Street W		EXDCB	EXMH					0.675	0.888	0.675	17.06	61	108	127	0.372	375	13.4	0.55%	130	1.18	0.19	0.98	1.34	299							
Potter Drive	CB5, CB6	MH2	MH3	0.430				0.538	0.538	15.00	66	116	35	0.258	300	47.3	0.30%	53	0.75	1.05	0.67	0.80	179								
Potter Drive	DCB1, DCB2	MH3	EXMH	0.500				0.625	1.163	16.05	63	112	74	0.351	375	17.8	0.25%	88	0.79	0.37	0.84	0.89	262								
Creighton Drive	DCB3	DCB3	D15		0.050			0.125	0.125	15.00	66	116	8	0.145	300	6.7	0.35%	57	0.81	0.14	0.14	0.57	76								
Creighton Drive	D15	D15	MH4	0.280				0.35	0.48	15.00	65	116	31	0.239	300	20.3	0.35%	57	0.81	0.42	0.54	0.82	157								
Creighton Drive	CB8, CB9	MH4	MH3	0.320				0.40	0.88	15.56	65	114	56	0.299	300	45.8	0.35%	57	0.81	0.94	0.99	0.92	242								
Creighton Drive	CB10, CB11, EX DI	MH3	EX1	0.410				0.51	1.39	16.50	62	110	87	0.294	300	57.6	0.90%	92	1.30	0.74	0.94	1.48	232								



1329 Gardiners Road, Suite 210  
Kingston, ON, Canada K7P 0L8  
613.634.9009 tel.  
1.888.884.5392 fax.

Client: LOYALIST TOWNSHIP

Project: POTTER DRIVE, CREIGHTON DRIVE, SOUTH AND MAIN STREETS RECONSTRUCTION

Drawing: PROPOSED CATCHMENT AREAS

Drawn by: PB	Checked by: JH	Project No.
Designed by: KMN	Approved by: KMN	Drawing No.
Date: DECEMBER 2023		Scale: 1/50

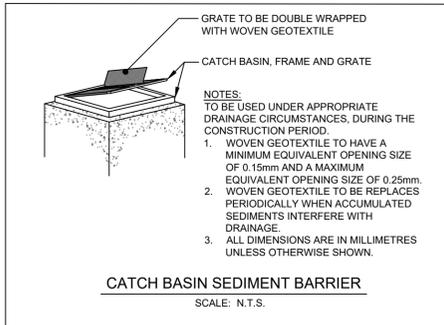
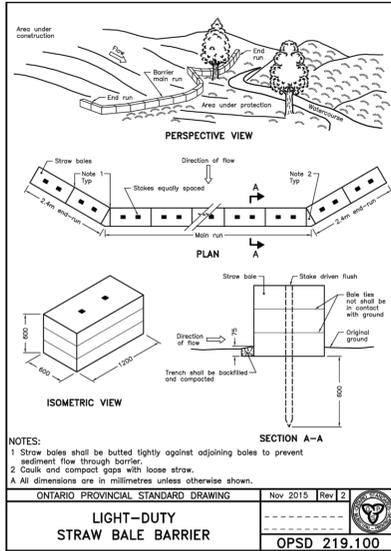
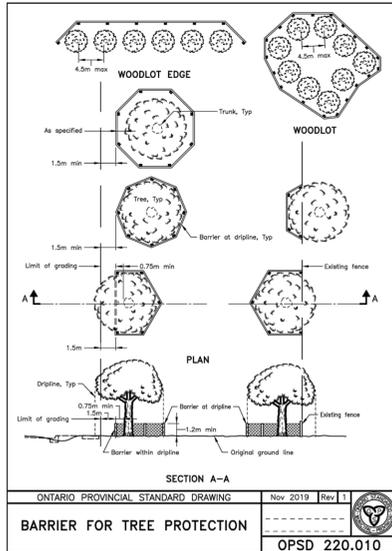


**SEDIMENT AND EROSION CONTROL NOTES**

- All erosion and sediment controls shall be installed prior to construction and monitored and maintained by the Contractor throughout the construction process, until all disturbed areas have been revegetated, then the temporary sediment and erosion control measures must be removed once the site has been stabilized and or the site works are complete.
- All erosion and sediment control measures shall be inspected after each rainfall to the satisfaction of Loyalist Township and the Catewaqui Region Conservation Authority.
- Any disturbed area not scheduled for further construction within forty-five (45) days will be provided with a suitable temporary mulch and seed cover within seven (7) days of completion of that particular phase of construction.
- Regardless of site specific items detailed on the plans, the Contractor shall install erosion control measures to suit the proposed work methods controlling sediment runoff from discharging offsite prior to any disturbance.
- Following construction, disturbed areas, as well as proposed grassed and vegetated surfaces, shall be reinstated as soon as practical.
- The placement of surplus fill to be placed and/or temporarily stored in accordance with O Reg. 149/06 where applicable. Temporary fill sites within the Plan of Subdivision will require the approval of Loyalist Township. Fill locations, side slopes, elevations as per the Approved Drawings. Restoration to be completed during the final phase of construction.
- All roads used to access the subdivision shall be kept clean to the satisfaction of the Director of Engineering Services.
- Temporary sediment fabric and stone filter at the catch basin inlet grates for sediment control as per detail on dwg. ER.

**MAINTENANCE**

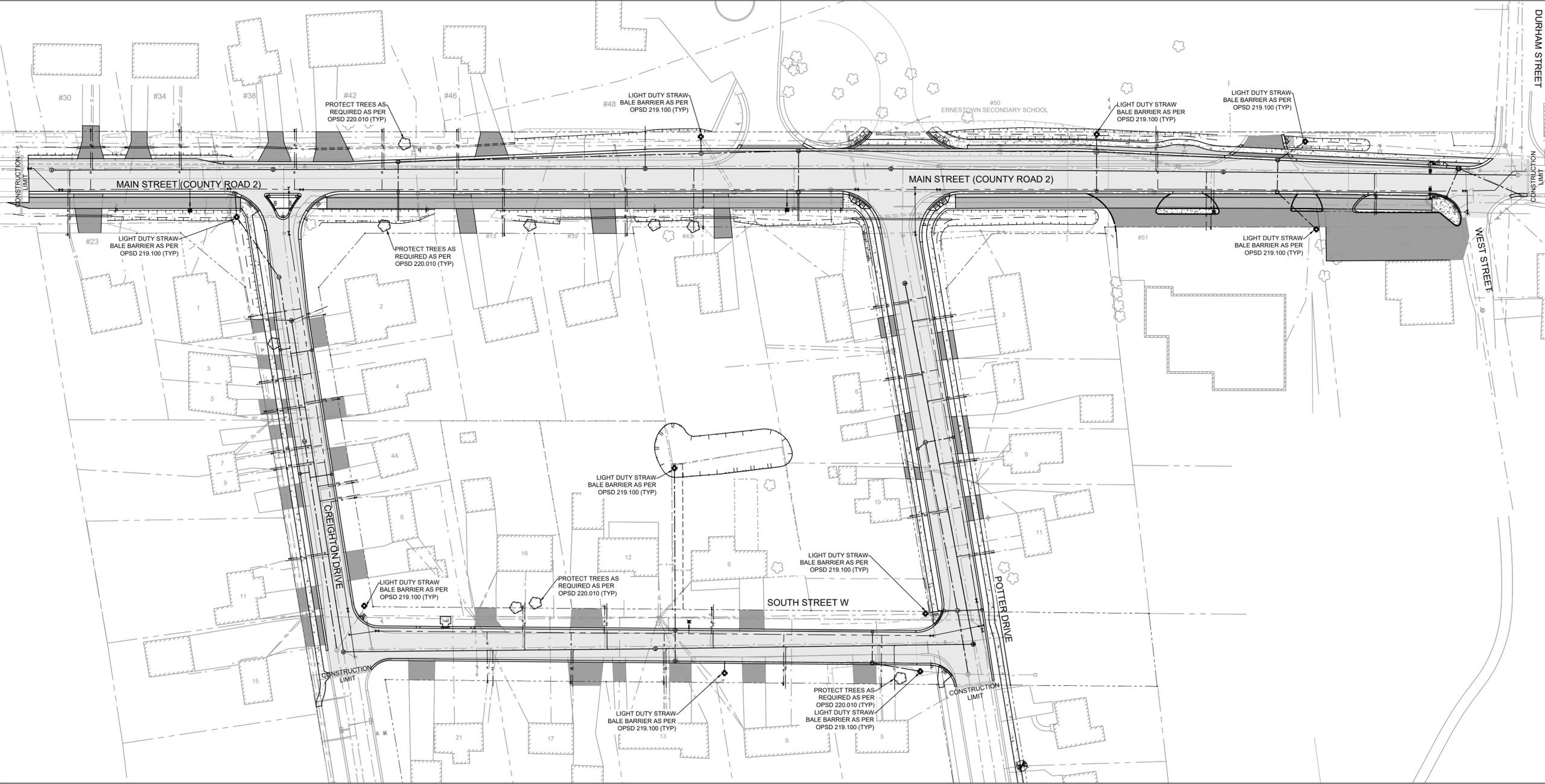
- Roadside ditches should be inspected twice annually by Loyalist Township to remove trash and debris, mow grass to the heights of 75mm min, inspect ground cover of 80%min and remediate any erosion.
- During construction, inspections of sediment and erosion control measures should be conducted weekly or after every storm rainfall event in excess of 25mm. All sediment control measures will be maintained to ensure their performance.



**LEGEND**

[Symbol]	PROPOSED ASPHALT
[Symbol]	PROPOSED MUP ASPHALT
[Symbol]	PROPOSED DRIVEWAY REINSTATEMENT
[Symbol]	PROPOSED CONCRETE
[Symbol]	EXISTING STORM MANHOLE
[Symbol]	EXISTING SANITARY MANHOLE
[Symbol]	EXISTING HYDRANT
[Symbol]	EXISTING WATER VALVE
[Symbol]	EXISTING WATERMAIN
[Symbol]	EXISTING SANITARY SEWER
[Symbol]	EXISTING STORM SEWER
[Symbol]	EXISTING OVERHEAD HYDRO
[Symbol]	EXISTING GAS
[Symbol]	EXISTING UNDERGROUND BELL
[Symbol]	EXISTING SWALE C/L
[Symbol]	PROPOSED SWALE C/L
[Symbol]	PROPOSED STORM SEWER
[Symbol]	PROPOSED WATERMAIN
[Symbol]	PROPOSED SANITARY SEWER
[Symbol]	BENCHMARK
[Symbol]	CATCH BASIN
[Symbol]	DOUBLE CATCH BASIN
[Symbol]	DITCH INLET CATCH BASIN
[Symbol]	STOP SIGN / AS NOTED
[Symbol]	STREET SIGN
[Symbol]	EXISTING VEGETATION
[Symbol]	VEGETATION REMOVAL
[Symbol]	STRAW BALE
[Symbol]	EXISTING ELEVATION
[Symbol]	PROPOSED ELEVATION

**PRELIMINARY NOT FOR CONSTRUCTION**



- Benchmark**
- BM1 - TOP OF HYDRANT NUT IN FRONT OF CIVIC 122 / 120 SAUL STREET. ELEVATION 126.092
  - BM2 - TOP OF HYDRANT NUT IN FRONT OF CIVIC 17 / 19 POTTER DRIVE. ELEVATION 125.259

RI	ISSUED FOR TENDER	MAR. 20, 2024
No.	Revision/Issue	Date



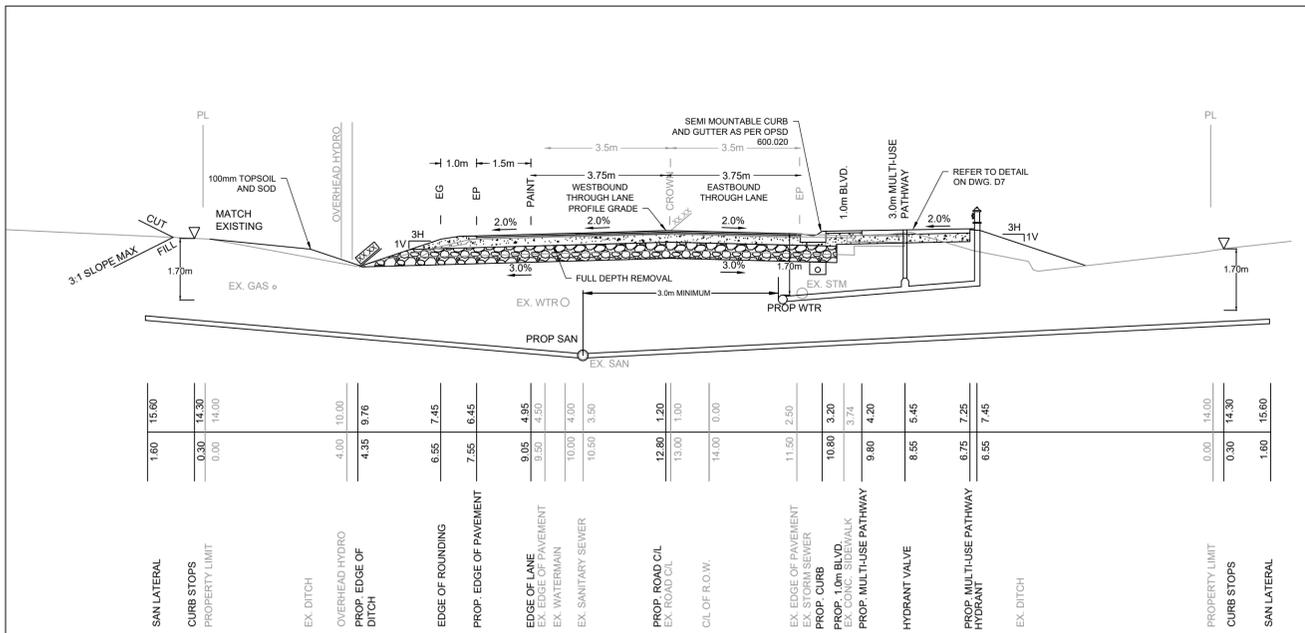
1329 Gardiners Road, Suite 210  
Kingston, ON, Canada K7P 0L8  
613.634.9009 tel.  
1.888.884.9392 fax.

Client:  
**LOYALIST TOWNSHIP**

Project:  
**POTTER DRIVE, CREIGHTON DRIVE, SOUTH AND MAIN STREETS RECONSTRUCTION**

Drawing:  
**SEDIMENT AND EROSION CONTROL AND TREE PRESERVATION PLAN**

Drawn by: ESD	Checked by: JH	Project No.
Designed by: KMN	Approved by: KMN	Drawing No.
Date: DECEMBER 2023	<b>ER</b>	
Scale: 1:600		



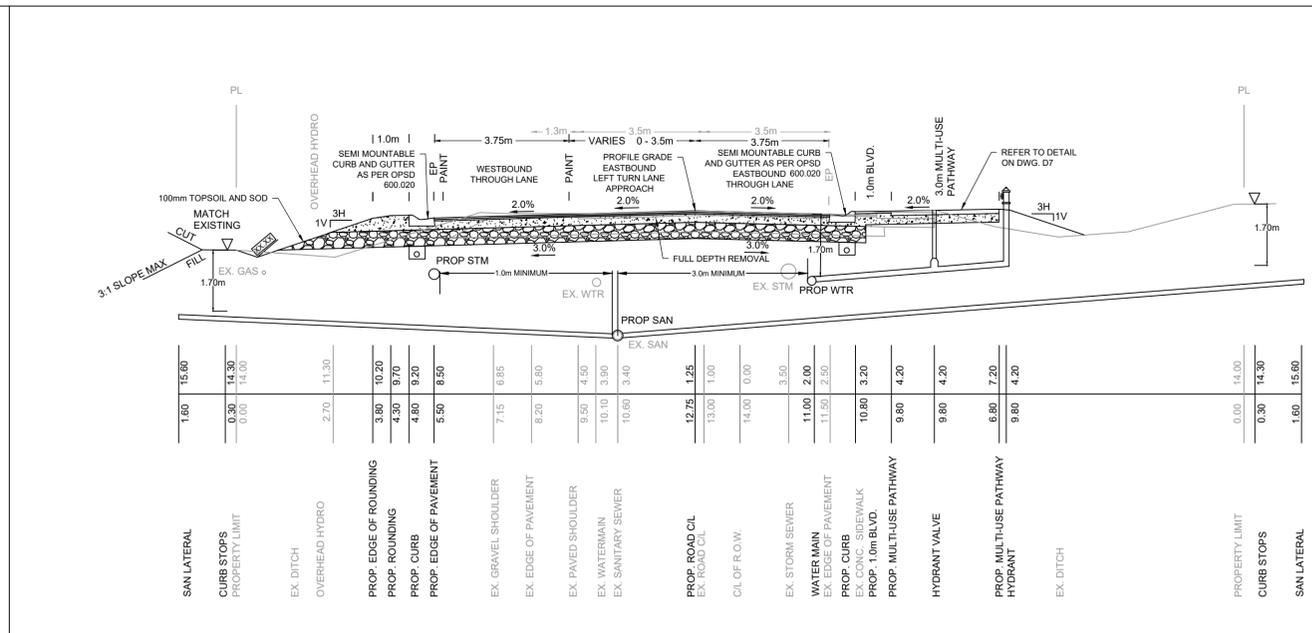
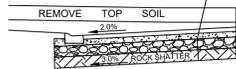
D1 MAIN STREET (HIGHWAY 2)  
A STATION 1+000.0 TO 1+053.8

NOTES:

- THE CONTRACTOR IS TO CHECK, VERIFY AND BE RESPONSIBLE FOR ALL UNDERGROUND SERVICES, STRUCTURES AND UTILITIES. ALL EXISTING UNDERGROUND STRUCTURES AND PIPES, CONDUITS, ETC. TO BE EXPOSED PRIOR TO ANY CONSTRUCTION AND ANY POTENTIAL CONFLICTS TO BE REPORTED TO THE ENGINEER.
- ALL DIMENSIONS ARE IN METRES OR MILLIMETRES UNLESS OTHERWISE SHOWN.
- ALL THICKNESS DIMENSIONS REPRESENT CONSOLIDATED THICKNESS.
- BOULEVARDS ON TO BE SODDED ON 100mm OF TOPSOIL BASE.
- WHERE VERTICAL FACES ARE ENCOUNTERED (I.E. CURBS, PAVING JOINTS), THEY SHALL BE TACK COATED PRIOR TO HOT MIX PAVING WITH SS-1 OR SS-1H EMULSIFIED ASPHALT, DILUTED WITH AN EQUAL VOLUME OF WATER APPLIED AT A RATE OF 0.35 KG/M<sup>2</sup>.
- MAINTAIN A MINIMUM 3.0m HORIZONTAL SEPARATION BETWEEN WATERMAIN AND SEWERS, 1.5m SEPARATION BETWEEN SANITARY AND STORM SEWERS.
- CONSTRUCTION TO BE IN ACCORDANCE WITH SOILS REPORT BY MALROZ ENGINEERING DATED JANUARY 2024.
- SUBGRADE CONSTRUCTION TO BE COMPACTED TO 98% S.P.M.D.D. GRANULAR COURSES TO BE 98% S.P.M.D.D.
- SIGNS TO BE 1200mm BEHIND E/P. REFER TO D6 FOR SIGN DETAILS.
- ASPHALT THICKNESS AT WIDENING
  - MIN. 50mm SP12.5 SURFACE COURSE
  - MIN. 80mm SP19.0 BASE COURSE
  - ASPHALT CEMENT ON MAIN STREET (COUNTY ROAD 2) SHALL BE MSCR GRADE 58H-34
- DRIVEWAYS TO BE REINSTATED WITH 150mm GRANULAR 'A' BASE AND 50mm H.L.3 ASPHALT

ROAD BASE CONSTRUCTION

ROCK SHATTER OR ROCK / FILL SUBGRADE	EARTH SUBGRADE
250mm GRANULAR 'A' MINIMUM 300mm ROCK SHATTER OR ROCK FILL	250mm GRANULAR 'A' 450mm GRANULAR 'B'



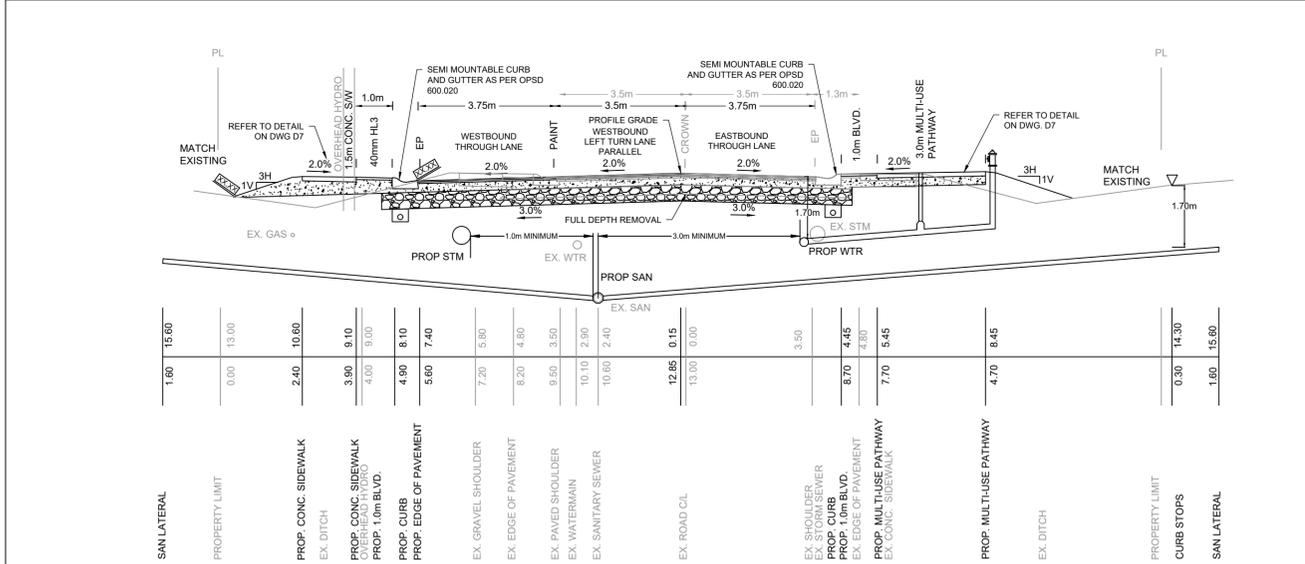
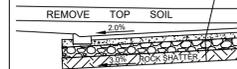
D1 MAIN STREET (HIGHWAY 2)  
B STATION 1+053.0 TO 1+252.0

NOTES:

- THE CONTRACTOR IS TO CHECK, VERIFY AND BE RESPONSIBLE FOR ALL UNDERGROUND SERVICES, STRUCTURES AND UTILITIES. ALL EXISTING UNDERGROUND STRUCTURES AND PIPES, CONDUITS, ETC. TO BE EXPOSED PRIOR TO ANY CONSTRUCTION AND ANY POTENTIAL CONFLICTS TO BE REPORTED TO THE ENGINEER.
- ALL DIMENSIONS ARE IN METRES OR MILLIMETRES UNLESS OTHERWISE SHOWN.
- ALL THICKNESS DIMENSIONS REPRESENT CONSOLIDATED THICKNESS.
- BOULEVARDS ON TO BE SODDED ON 100mm OF TOPSOIL BASE.
- WHERE VERTICAL FACES ARE ENCOUNTERED (I.E. CURBS, PAVING JOINTS), THEY SHALL BE TACK COATED PRIOR TO HOT MIX PAVING WITH SS-1 OR SS-1H EMULSIFIED ASPHALT, DILUTED WITH AN EQUAL VOLUME OF WATER APPLIED AT A RATE OF 0.35 KG/M<sup>2</sup>.
- MAINTAIN A MINIMUM 3.0m HORIZONTAL SEPARATION BETWEEN WATERMAIN AND SEWERS, 1.5m SEPARATION BETWEEN SANITARY AND STORM SEWERS.
- CONSTRUCTION TO BE IN ACCORDANCE WITH SOILS REPORT BY MALROZ ENGINEERING DATED JANUARY 2024.
- SUBGRADE CONSTRUCTION TO BE COMPACTED TO 98% S.P.M.D.D. GRANULAR COURSES TO BE 98% S.P.M.D.D.
- SIGNS TO BE 1200mm BEHIND E/P. REFER TO D6 FOR SIGN DETAILS.
- ASPHALT THICKNESS AT WIDENING
  - MIN. 50mm SP12.5 SURFACE COURSE
  - MIN. 80mm SP19.0 BASE COURSE
  - ASPHALT CEMENT ON MAIN STREET (COUNTY ROAD 2) SHALL BE MSCR GRADE 58H-34
- DRIVEWAYS TO BE REINSTATED WITH 150mm GRANULAR 'A' BASE AND 50mm H.L.3 ASPHALT

ROAD BASE CONSTRUCTION

ROCK SHATTER OR ROCK / FILL SUBGRADE	EARTH SUBGRADE
250mm GRANULAR 'A' MINIMUM 300mm ROCK SHATTER OR ROCK FILL	250mm GRANULAR 'A' 450mm GRANULAR 'B'



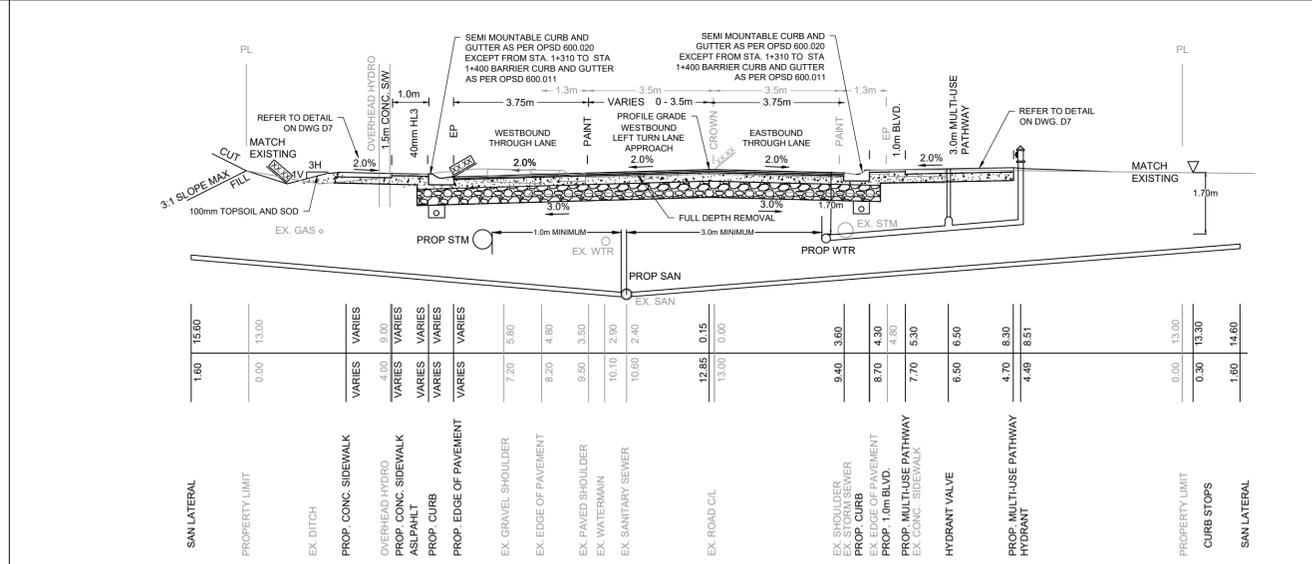
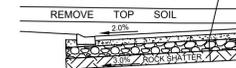
D1 MAIN STREET (HIGHWAY 2)  
C STATION 1+252.0 TO 1+267.0

NOTES:

- THE CONTRACTOR IS TO CHECK, VERIFY AND BE RESPONSIBLE FOR ALL UNDERGROUND SERVICES, STRUCTURES AND UTILITIES. ALL EXISTING UNDERGROUND STRUCTURES AND PIPES, CONDUITS, ETC. TO BE EXPOSED PRIOR TO ANY CONSTRUCTION AND ANY POTENTIAL CONFLICTS TO BE REPORTED TO THE ENGINEER.
- ALL DIMENSIONS ARE IN METRES OR MILLIMETRES UNLESS OTHERWISE SHOWN.
- ALL THICKNESS DIMENSIONS REPRESENT CONSOLIDATED THICKNESS.
- BOULEVARDS ON TO BE SODDED ON 100mm OF TOPSOIL BASE.
- WHERE VERTICAL FACES ARE ENCOUNTERED (I.E. CURBS, PAVING JOINTS), THEY SHALL BE TACK COATED PRIOR TO HOT MIX PAVING WITH SS-1 OR SS-1H EMULSIFIED ASPHALT, DILUTED WITH AN EQUAL VOLUME OF WATER APPLIED AT A RATE OF 0.35 KG/M<sup>2</sup>.
- MAINTAIN A MINIMUM 3.0m HORIZONTAL SEPARATION BETWEEN WATERMAIN AND SEWERS, 1.5m SEPARATION BETWEEN SANITARY AND STORM SEWERS.
- CONSTRUCTION TO BE IN ACCORDANCE WITH SOILS REPORT BY MALROZ ENGINEERING DATED JANUARY 2024.
- SUBGRADE CONSTRUCTION TO BE COMPACTED TO 98% S.P.M.D.D. GRANULAR COURSES TO BE 98% S.P.M.D.D.
- SIGNS TO BE 1200mm BEHIND E/P. REFER TO D6 FOR SIGN DETAILS.
- ASPHALT THICKNESS AT WIDENING
  - MIN. 50mm SP12.5 SURFACE COURSE
  - MIN. 80mm SP19.0 BASE COURSE
  - ASPHALT CEMENT ON MAIN STREET (COUNTY ROAD 2) SHALL BE MSCR GRADE 58H-34
- DRIVEWAYS TO BE REINSTATED WITH 150mm GRANULAR 'A' BASE AND 50mm H.L.3 ASPHALT

ROAD BASE CONSTRUCTION

ROCK SHATTER OR ROCK / FILL SUBGRADE	EARTH SUBGRADE
250mm GRANULAR 'A' MINIMUM 300mm ROCK SHATTER OR ROCK FILL	250mm GRANULAR 'A' 450mm GRANULAR 'B'



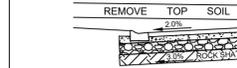
D1 MAIN STREET (HIGHWAY 2)  
D STATION 1+267.0 TO 1+385.0

NOTES:

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- ALL DIMENSIONS ARE IN METRES OR MILLIMETRES UNLESS OTHERWISE SHOWN.
- ALL THICKNESS DIMENSIONS REPRESENT CONSOLIDATED THICKNESS.
- BOULEVARDS ON TO BE SODDED ON 100mm OF TOPSOIL BASE.
- WHERE VERTICAL FACES ARE ENCOUNTERED (I.E. CURBS, PAVING JOINTS), THEY SHALL BE TACK COATED PRIOR TO HOT MIX PAVING WITH SS-1 OR SS-1H EMULSIFIED ASPHALT, DILUTED WITH AN EQUAL VOLUME OF WATER APPLIED AT A RATE OF 0.35 KG/M<sup>2</sup>.
- MAINTAIN A MINIMUM 3.0m HORIZONTAL SEPARATION BETWEEN WATERMAIN AND SEWERS, 1.5m SEPARATION BETWEEN SANITARY AND STORM SEWERS.
- CONSTRUCTION TO BE IN ACCORDANCE WITH SOILS REPORT BY MALROZ ENGINEERING DATED JANUARY 2024.
- SUBGRADE CONSTRUCTION TO BE COMPACTED TO 98% S.P.M.D.D. GRANULAR COURSES TO BE 98% S.P.M.D.D.
- SIGNS TO BE 1200mm BEHIND E/P. REFER TO D6 FOR SIGN DETAILS.
- ASPHALT THICKNESS AT WIDENING
  - MIN. 50mm SP12.5 SURFACE COURSE
  - MIN. 80mm SP19.0 BASE COURSE
  - ASPHALT CEMENT ON MAIN STREET (COUNTY ROAD 2) SHALL BE MSCR GRADE 58H-34
- DRIVEWAYS TO BE REINSTATED WITH 150mm GRANULAR 'A' BASE AND 50mm H.L.3 ASPHALT
- BARRIER CURB AS PER OPSD 600.011 FROM STA. 1+310 TO STA. 1+400 EXCEPT THROUGH ENTRANCES

ROAD BASE CONSTRUCTION

ROCK SHATTER OR ROCK / FILL SUBGRADE	EARTH SUBGRADE
250mm GRANULAR 'A' MINIMUM 300mm ROCK SHATTER OR ROCK FILL	250mm GRANULAR 'A' 450mm GRANULAR 'B'



PRELIMINARY  
NOT FOR  
CONSTRUCTION

Benchmark	BM1 - TOP OF HYDRANT NUT IN FRONT OF CIVIC 122 / 120 SAUL STREET. ELEVATION 126.092
	BM2 - TOP OF HYDRANT NUT IN FRONT OF CIVIC 17 / 19 POTTER DRIVE. ELEVATION 125.259

RI	ISSUED FOR TENDER	MAR. 20, 2024
No.	Revision/Issue	Date



1329 Gardiners Road, Suite 210  
Kingston, ON, Canada K7P 0L8  
613.634.9009 tel.  
1.888.884.9392 fax.

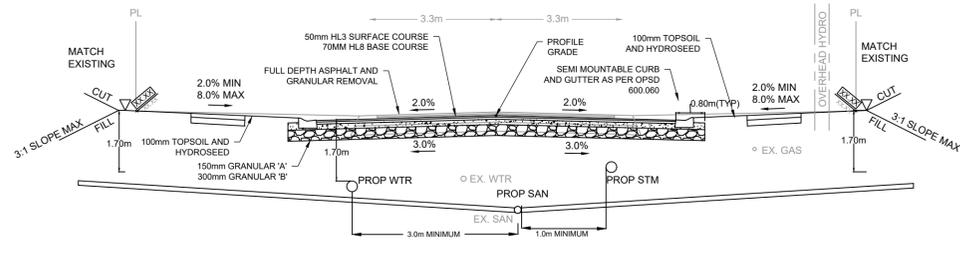
Client:  
LOYALIST TOWNSHIP

Project:  
POTTER DRIVE, CREIGHTON DRIVE, SOUTH  
AND MAIN STREETS RECONSTRUCTION

Drawing:  
DETAILS | TYPICAL CROSS SECTIONS |

Drawn by:	Checked by:	Project No.
ESD	JH	
Designed by:	Approved by:	Drawing No.
KMN	KMN	
Date:	DECEMBER 2023	
Scale:	N.T.S.	

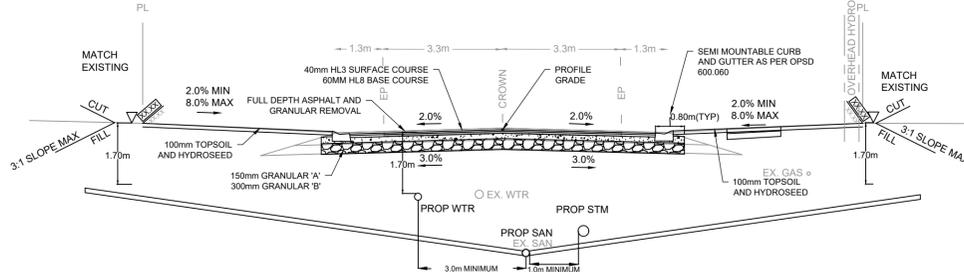
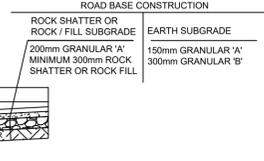
D1



SAN LATERAL	1.60	11.60
CURB STOPS	0.30	10.30
PROPERTY LIMIT	0.00	10.00
PROP. CONC. SIDEWALK	1.50	8.50
PROP. CONC. SIDEWALK	3.00	7.00
PROP. EDGE OF PAVEMENT	4.50	5.50
PROP. EDGE OF PAVEMENT	5.00	5.00
WATERMAIN	6.00	4.00
EX. EDGE OF PAVEMENT	3.30	3.30
EX. WATERMAIN	0.90	0.90
EX. PROPOSED ROAD C/L	10.00	0.00
EX. SANITARY SEWER	0.60	0.60
STORM SEWER	6.80	3.20
EX. EDGE OF PAVEMENT	3.30	3.30
PROP. CURB	5.00	5.00
PROP. CURB	4.50	5.50
LIMIT OF GRANULARS	4.00	6.00
PROP. CONC. SIDEWALK	3.00	7.00
EX. GAS MAIN	2.80	7.20
PROP. CONC. SIDEWALK	1.50	8.50
OVERHEAD HYDRO	1.00	8.00
PROPERTY LIMIT	0.00	10.00
CURB STOPS	0.30	10.30
SAN LATERAL	1.60	11.60

**D3**  
**A** POTTER DRIVE  
STATION 2+017.0 TO 2+152.0

- NOTES:
- THE CONTRACTOR IS TO CHECK, VERIFY AND BE RESPONSIBLE FOR ALL UNDERGROUND SERVICES, STRUCTURES AND UTILITIES. ALL EXISTING UNDERGROUND STRUCTURES AND PIPES, CONDUITS, ETC. TO BE EXPOSED PRIOR TO ANY CONSTRUCTION AND ANY POTENTIAL CONFLICTS TO BE REPORTED TO THE ENGINEER.
  - ALL DIMENSIONS ARE IN METRES OR MILLIMETRES UNLESS OTHERWISE SHOWN.
  - ALL THICKNESS DIMENSIONS REPRESENT CONSOLIDATED THICKNESS.
  - BOULEVARDS ON POTTER DRIVE TO BE SEEDED ON 100mm OF TOPSOIL BASE.
  - CONSTRUCTION TO BE IN ACCORDANCE WITH SOILS REPORT BY MALROZ ENGINEERING DATED JANUARY 2024.
  - SUBGRADE CONSTRUCTION TO BE COMPACTED TO 98% S.P.M.D.D. GRANULAR COURSES TO BE 98% S.P.M.D.D.
  - SIGNS TO BE 1200mm BEHIND E.P. REFER TO D6 FOR SIGN DETAILS TO BE REPORTED TO THE ENGINEER.
  - ASPHALT THICKNESS
    - 50mm HL3 SURFACE COURSE
    - 70mm HL8 BASE COURSE
    - ASPHALT CEMENT TO BE PERFORMANCE GRADE PG 58-28
  - DRIVEWAYS TO BE REINSTATED WITH 150mm GRANULAR 'A' BASE AND 50mm HL3 ASPHALT
  - SIDEWALK AS PER OPSD 310.010



SAN LATERAL	1.60	11.60
CURB STOPS	0.30	10.30
PROPERTY LIMIT	0.00	10.00
EX. GRAVEL SHOULDER	5.20	4.60
PROP. EDGE OF PAVEMENT	5.75	4.25
EX. EDGE OF PAVEMENT	0.60	3.50
WATERMAIN	6.25	3.75
EX. WATERMAIN	9.35	0.65
EX. ROAD C/L	13.00	0.00
EX. SANITARY SEWER	9.35	0.65
STORM SEWER	7.75	2.25
EX. EDGE OF PAVEMENT	6.50	3.50
PROP. EDGE OF PAVEMENT	5.75	4.25
EX. GRAVEL SHOULDER	5.20	4.60
PROP. CONC. SIDEWALK	3.75	6.25
PROP. CONC. SIDEWALK	2.25	7.75
EX. GAS MAIN	1.50	8.50
OVERHEAD HYDRO	0.30	9.70
PROPERTY LIMIT	0.00	10.00
CURB STOPS	0.30	10.30
SAN LATERAL	1.60	11.60

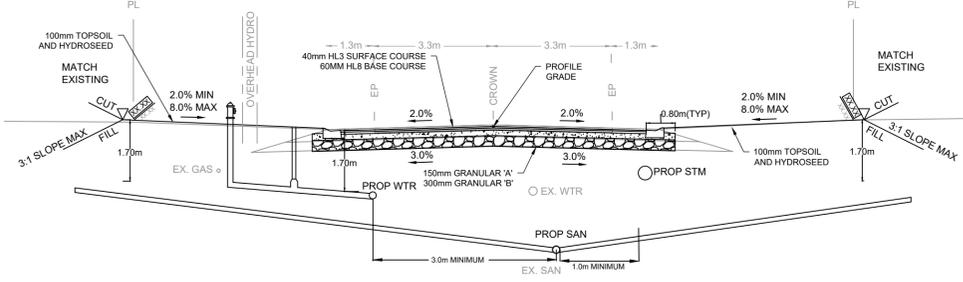
**D3**  
**B** CREIGHTON DRIVE  
4+000.00 TO 4+150.00

- NOTES:
- THE CONTRACTOR IS TO CHECK, VERIFY AND BE RESPONSIBLE FOR ALL UNDERGROUND SERVICES, STRUCTURES AND UTILITIES. ALL EXISTING UNDERGROUND STRUCTURES AND PIPES, CONDUITS, ETC. TO BE EXPOSED PRIOR TO ANY CONSTRUCTION AND ANY POTENTIAL CONFLICTS TO BE REPORTED TO THE ENGINEER.
  - ALL DIMENSIONS ARE IN METRES OR MILLIMETRES UNLESS OTHERWISE SHOWN.
  - ALL THICKNESS DIMENSIONS REPRESENT CONSOLIDATED THICKNESS.
  - BOULEVARDS ON TO BE SEEDED ON 100mm OF TOPSOIL BASE.
  - CONSTRUCTION TO BE IN ACCORDANCE WITH SOILS REPORT BY MALROZ ENGINEERING DATED JANUARY 2024.
  - SUBGRADE CONSTRUCTION TO BE COMPACTED TO 98% S.P.M.D.D. GRANULAR COURSES TO BE 98% S.P.M.D.D.
  - SIGNS TO BE 1200mm BEHIND E.P. REFER TO D6 FOR SIGN DETAILS TO BE REPORTED TO THE ENGINEER.
  - ASPHALT THICKNESS
    - 40mm HL3 SURFACE COURSE
    - 60mm HL8 BASE COURSE
    - ASPHALT CEMENT TO BE PERFORMANCE GRADE PG 58-28
  - DRIVEWAYS TO BE REINSTATED WITH 150mm GRANULAR 'A' BASE AND 50mm HL3 ASPHALT
  - SIDEWALK AS PER OPSD 310.010



PRELIMINARY  
NOT FOR  
CONSTRUCTION

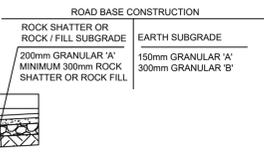
- Benchmark
- BM1 - TOP OF HYDRANT NUT IN FRONT OF CIVIC 122 / 120 SAUL STREET. ELEVATION 126.092
  - BM2 - TOP OF HYDRANT NUT IN FRONT OF CIVIC 17 / 19 POTTER DRIVE. ELEVATION 125.259



SAN LATERAL	1.60	11.60
CURB STOPS	0.30	10.30
PROPERTY LIMIT	0.00	10.00
EX. GAS MAIN	2.40	6.80
OVERHEAD HYDRO	3.20	6.80
EX. GRAVEL SHOULDER	5.20	4.60
PROP. EDGE OF PAVEMENT	5.75	4.25
WATERMAIN	6.65	3.35
EX. EDGE OF PAVEMENT	6.65	3.35
EX. ROAD C/L	10.00	0.00
EX. WATERMAIN	8.90	1.10
EX. SANITARY SEWER	8.25	1.75
EX. SANITARY SEWER	8.25	1.75
EX. EDGE OF PAVEMENT	6.65	3.35
PROP. EDGE OF PAVEMENT	5.75	4.25
EX. GRAVEL SHOULDER	5.20	4.60
PROPERTY LIMIT	0.00	10.00
CURB STOPS	0.30	10.30
SAN LATERAL	1.60	11.60

**D3**  
**C** SOUTH STREET  
3+000.00 TO 3+180.00

- NOTES:
- THE CONTRACTOR IS TO CHECK, VERIFY AND BE RESPONSIBLE FOR ALL UNDERGROUND SERVICES, STRUCTURES AND UTILITIES. ALL EXISTING UNDERGROUND STRUCTURES AND PIPES, CONDUITS, ETC. TO BE EXPOSED PRIOR TO ANY CONSTRUCTION AND ANY POTENTIAL CONFLICTS TO BE REPORTED TO THE ENGINEER.
  - ALL DIMENSIONS ARE IN METRES OR MILLIMETRES UNLESS OTHERWISE SHOWN.
  - ALL THICKNESS DIMENSIONS REPRESENT CONSOLIDATED THICKNESS.
  - BOULEVARDS ON TO BE SEEDED ON 100mm OF TOPSOIL BASE.
  - CONSTRUCTION TO BE IN ACCORDANCE WITH SOILS REPORT BY MALROZ ENGINEERING DATED JANUARY 2024.
  - SUBGRADE CONSTRUCTION TO BE COMPACTED TO 98% S.P.M.D.D. GRANULAR COURSES TO BE 98% S.P.M.D.D.
  - SIGNS TO BE 1200mm BEHIND E.P. REFER TO D6 FOR SIGN DETAILS TO BE REPORTED TO THE ENGINEER.
  - ASPHALT THICKNESS
    - 40mm HL3 SURFACE COURSE
    - 60mm HL8 BASE COURSE
    - ASPHALT CEMENT TO BE PERFORMANCE GRADE PG 58-28
  - DRIVEWAYS TO BE REINSTATED WITH 150mm GRANULAR 'A' BASE AND 50mm HL3 ASPHALT



1329 Gardiners Road, Suite 210  
Kingston, ON, Canada K7P 0L8  
613.634.9009 tel.  
1.888.884.9392 fax.

Client  
**LOYALIST TOWNSHIP**

Project  
**POTTER DRIVE, CREIGHTON DRIVE, SOUTH AND MAIN STREETS RECONSTRUCTION**

Drawing  
**DETAILS 2 TYPICAL SECTIONS II**

Drawn by: ESD	Checked by: JH	Project No.
Designed by: KMN	Approved by: KMN	Drawing No.
Date: DECEMBER 2023	<b>D2</b>	
Scale: N.T.S.		

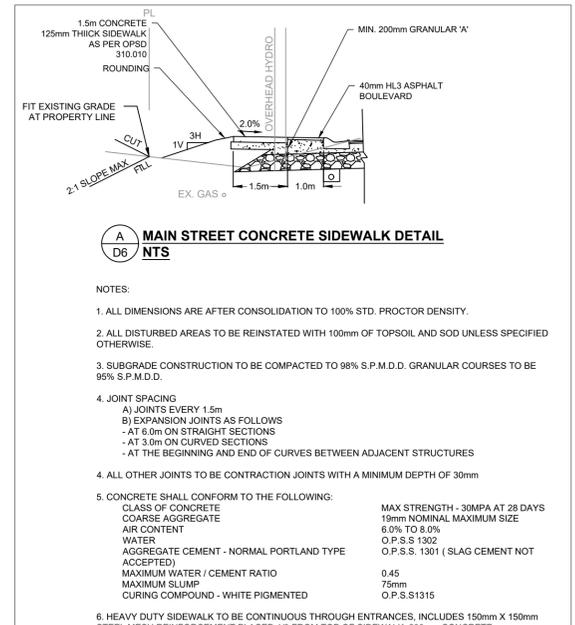
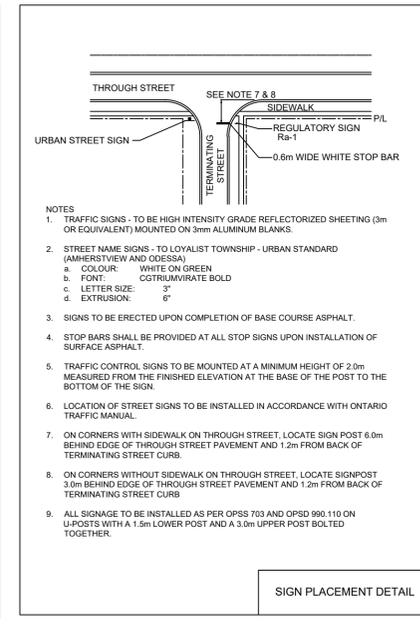
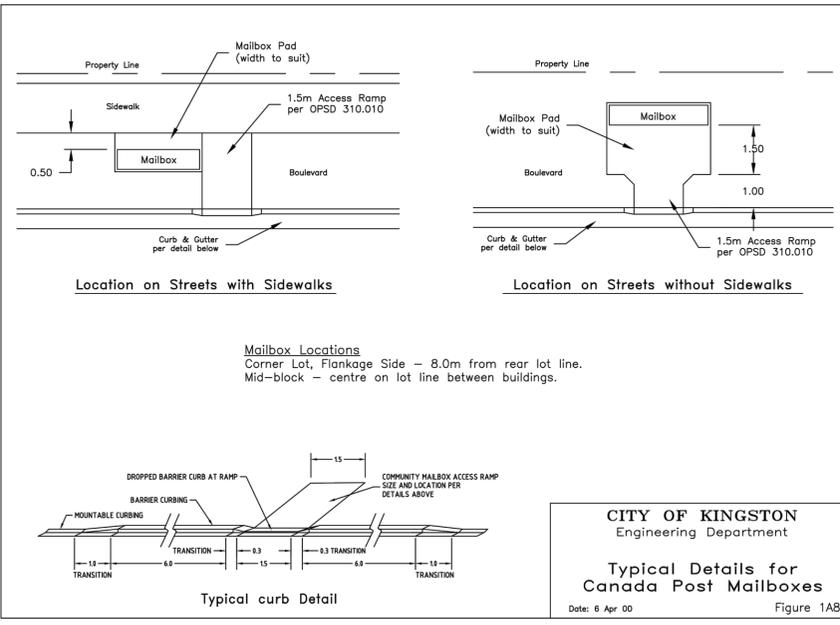
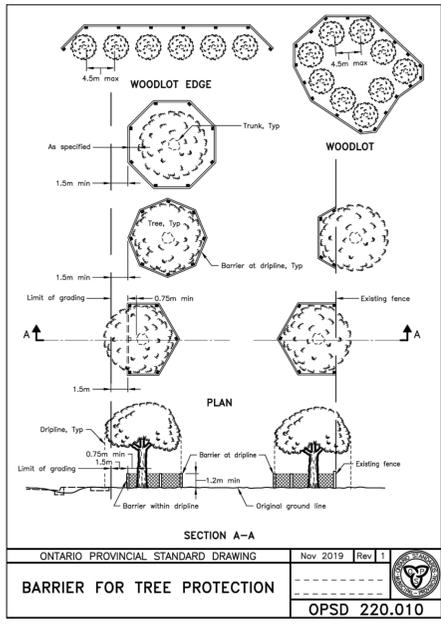
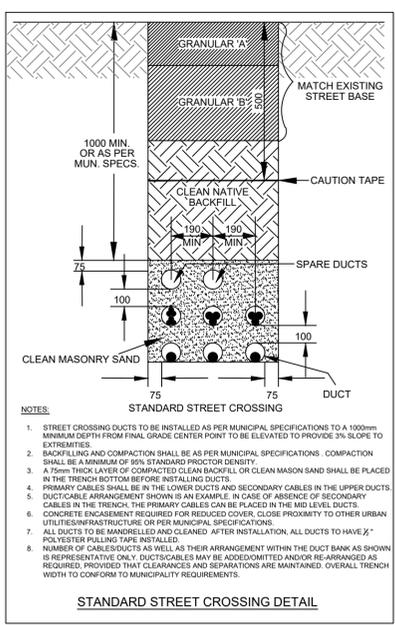
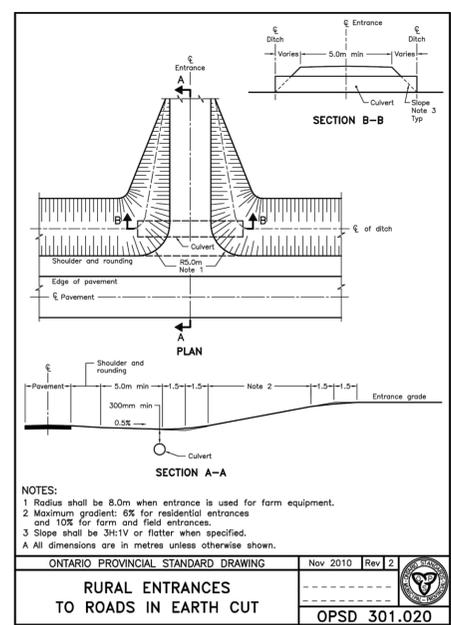
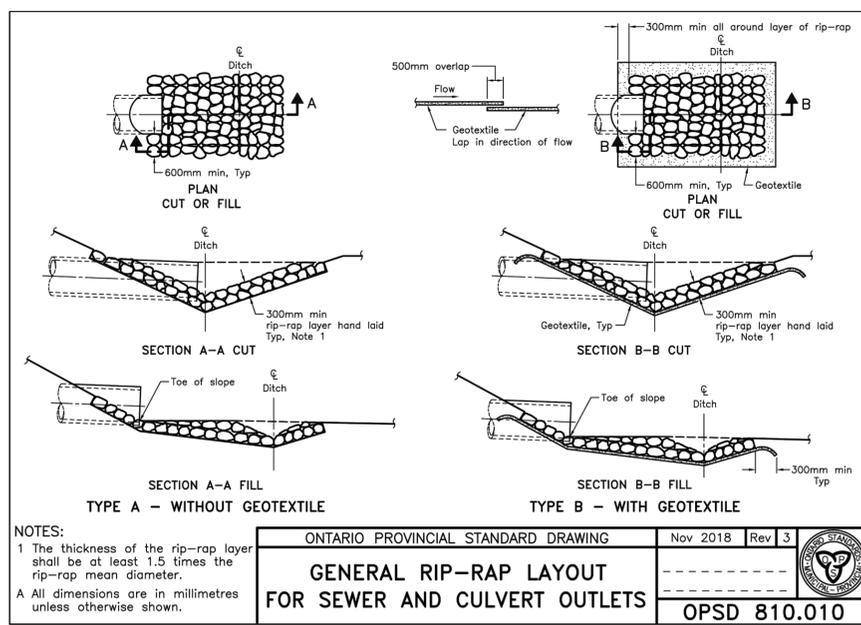
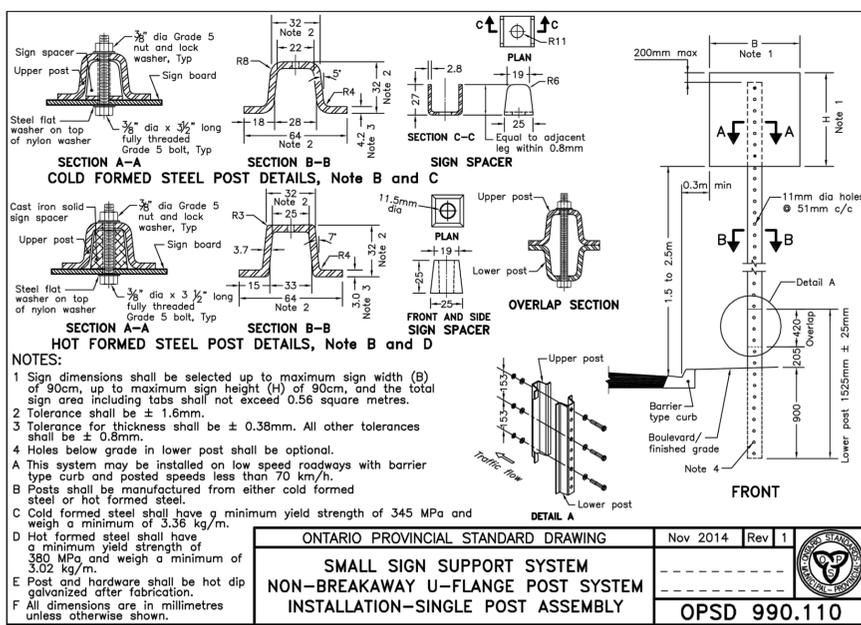






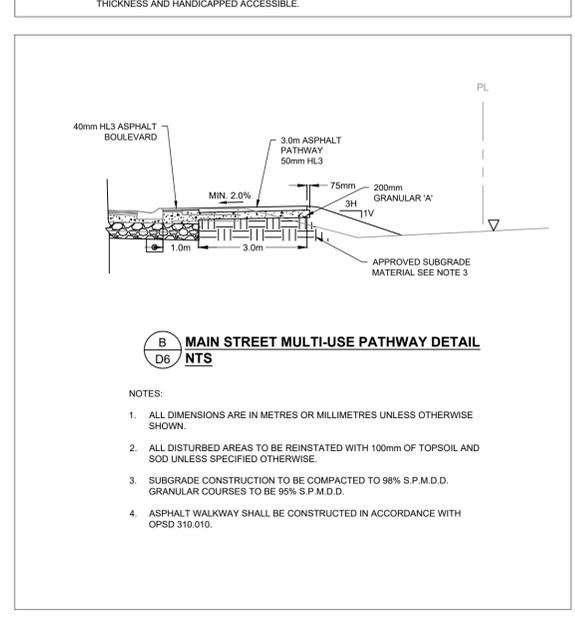
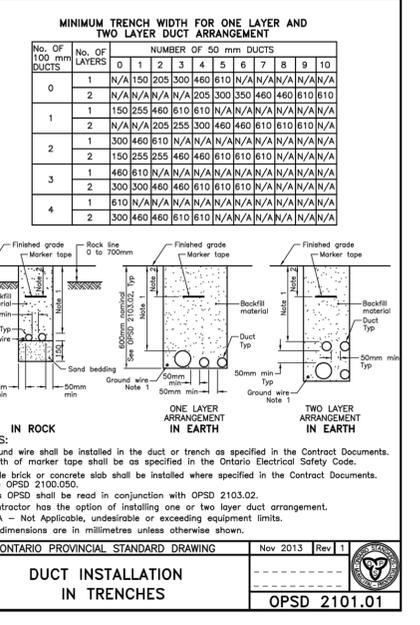
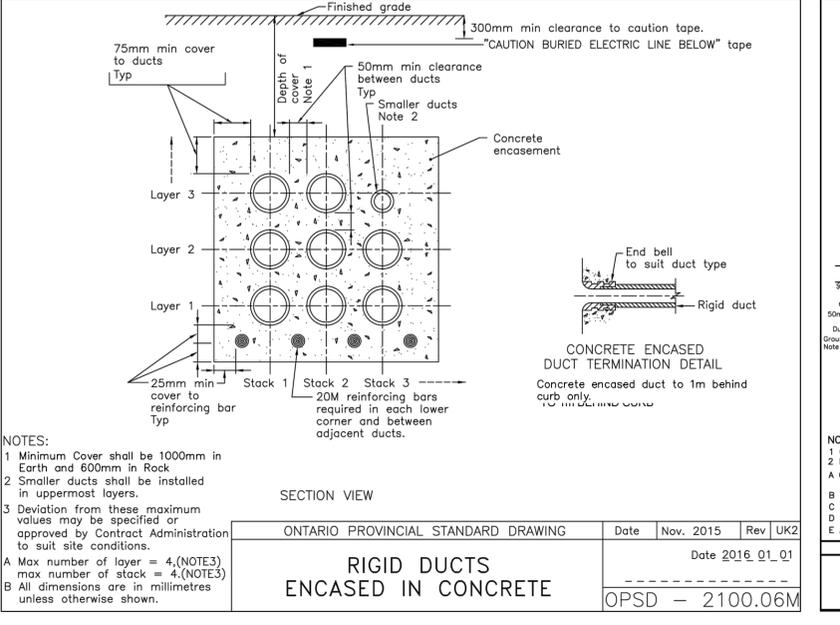
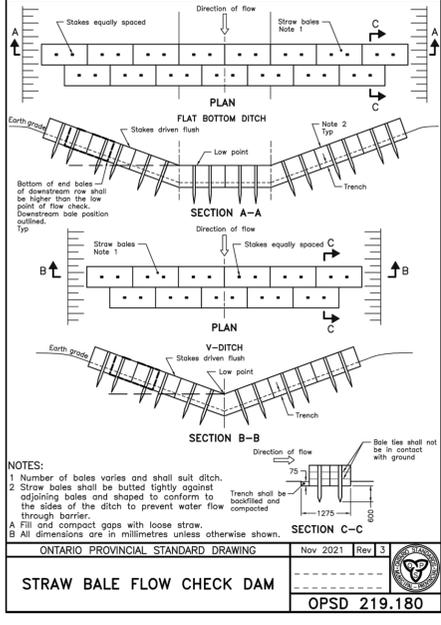






Duct Number	1	2	3	4	5
Traffic Light	2	2	2	2	2
Spare	1	1	1	1	1
Total	3	3	3	3	3

PRELIMINARY  
NOT FOR  
CONSTRUCTION



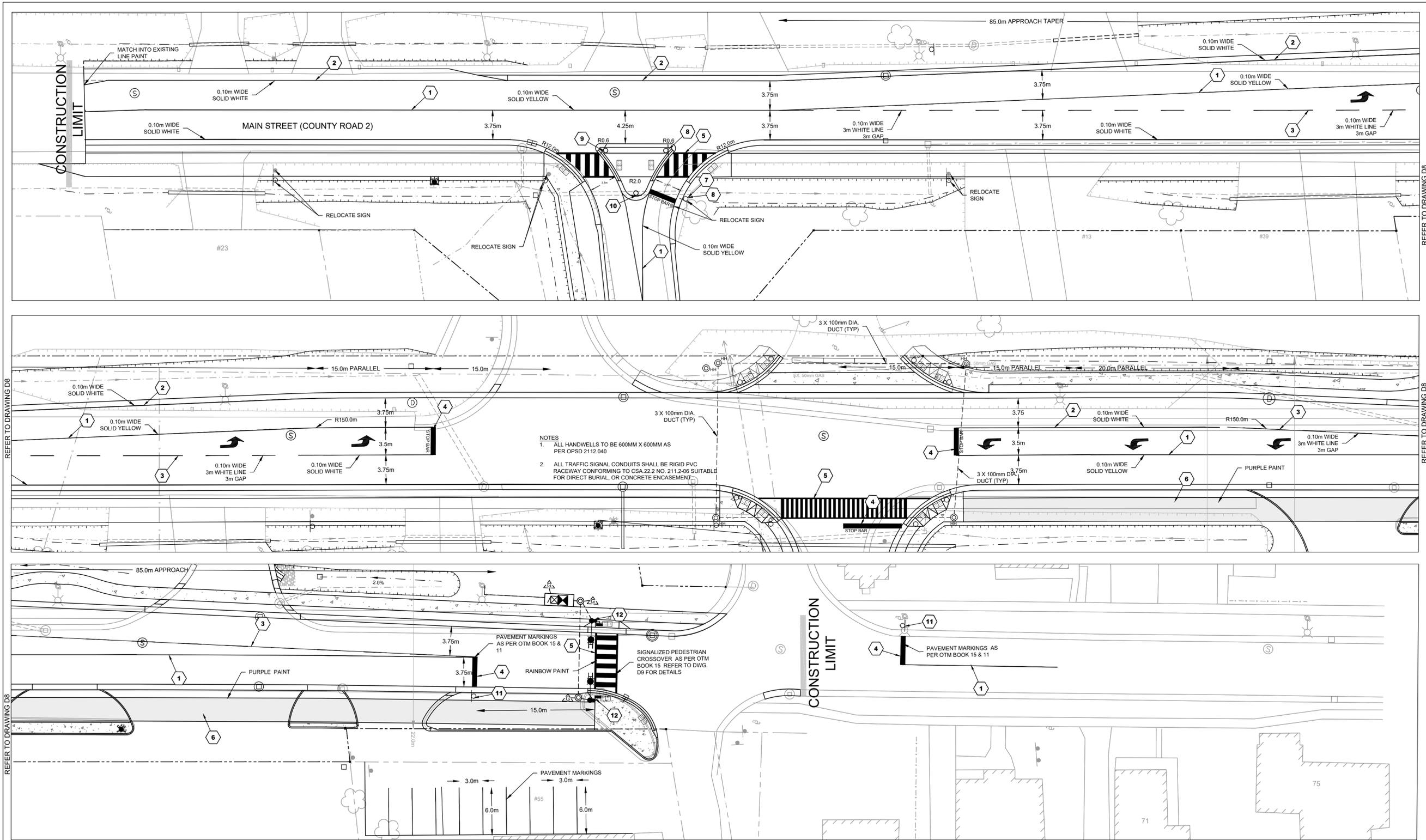
1329 Gardiners Road, Suite 210  
Kingston, ON, Canada K7P 0L8  
613.634.9009 tel.  
1.888.884.9392 fax.

Client: LOYALIST TOWNSHIP

Project: POTTER DRIVE, CREIGHTON DRIVE, SOUTH AND MAIN STREETS RECONSTRUCTION

Drawing: DETAILS 7 MISCELLANEOUS DETAILS

Drawn by: ESD	Checked by: JH	Project No.
Designed by: KMN	Approved by: KMN	Drawing No.
Date: DECEMBER 2023		
Scale: N.T.S.		



- LEGEND**
- PROPOSED LINE PAINTING
  - PROPOSED PURPLE PAINT
  - EXISTING STORM MANHOLE
  - EXISTING SANITARY MANHOLE
  - EXISTING HYDRANT
  - EXISTING WATER VALVE
  - EXISTING WATERMAIN
  - EXISTING SANITARY SEWER
  - EXISTING STORM SEWER
  - EXISTING OVERHEAD HYDRO
  - EXISTING GAS
  - EXISTING UNDERGROUND BELL
  - EXISTING SWALE C/L
  - PROPOSED SWALE C/L
  - PROPOSED STORM SEWER
  - PROPOSED WATERMAIN
  - PROPOSED SANITARY SEWER
  - BENCHMARK
  - CATCH BASIN
  - DOUBLE CATCH BASIN
  - DICB
  - DITCH INLET CATCH BASIN
  - STOP SIGN / AS NOTED
  - STREET SIGN
  - EXISTING VEGETATION
  - VEGETATION REMOVAL
  - STRAW BALE
  - EXISTING ELEVATION
  - PROPOSED ELEVATION

**PRELIMINARY  
NOT FOR  
CONSTRUCTION**

- Benchmark
- BM1 - TOP OF HYDRANT NUT IN FRONT OF CIVIC 122 / 120 SAUL STREET. ELEVATION 126.092
  - BM2 - TOP OF HYDRANT NUT IN FRONT OF CIVIC 17 / 19 POTTER DRIVE. ELEVATION 125.259

RI	ISSUED FOR TENDER	MAR. 20, 2024
No.	Revision/Issue	Date

- Notes:**
- Centerlines, lane lines, edge lines and turning lanes shall be marked using water borne traffic paint conforming to O.P.S.S. 1716 with glass beads conforming to O.P.S.S. 1750.
  - Stop bar lines, crosswalks, and turning arrows shall be marked using durable pavement markings conforming to O.P.S.S. 1713 or 1714 with glass beads conforming to O.P.S.S. 1750.
  - All pavement markings and arrow symbols shall conform to the Ontario Traffic Manual Book 11 Pavement, Hazard and Delineation Markings.
  - Purple Paint to be Durable Liquid Pavement Markings (DLP) and to include epoxy and Methyl Methacrylate (MMA)



**STOP Sign (Ra-1)**  
Ra-1 600 mm x 600 mm  
Font: Highway Gothic C  
Colour: Legend & Border - White Reflective  
Background - Red Reflective



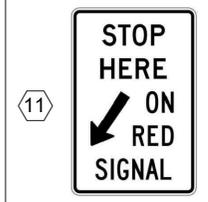
**NO LEFT TURN Sign (Rb-12)**  
Rb-12 600 mm x 600 mm  
Font: N/A  
Colour: Interdictory Symbol - Red Reflective  
Legend & Border - Black Reflective  
Background - White Reflective  
Minimum Sheeting: Type III or IV



**OBJECT MARKER Sign (Wa-33L/R)**  
Wa-33L/R 450 mm x 900 mm  
Font: N/A  
Colour: Legend & Border - Black Reflective  
Background - Yellow Reflective  
Minimum Sheeting: Type III or IV



**KEEP RIGHT Sign (Rb-25R)**  
Rb-25R 600 mm x 750 mm  
Font: N/A  
Colour: Legend & Border - Black Reflective  
Background - White Reflective  
Minimum Sheeting: Type III or IV if sign is not illuminated, Type I if sign is illuminated



**STOP HERE ON RED SIGNAL Sign (Rb-78)**  
Rb-78 600 mm x 900 mm  
Font: Highway Gothic C, D  
Colour: Legend & Border - Black Reflective  
Background - White Reflective



**PEDESTRIAN PUSHBUTTON Symbol Sign (Ra-12)**  
Ra-12 130 mm x 200 mm  
Font: N/A  
Colour: Legend & Border - Black Reflective  
Background - White Reflective

LINE PAINT		SIGNAGE	
TAG	DESCRIPTION	TAG	DESCRIPTION
1	Solid Yellow, 100mm	7	Ra-1 (OTM) 600mm x 600mm Stop sign
2	Solid White, 100mm	8	Rb-12 (OTM) 600mm x 600mm No left turn sign
3	3-3-3 Broken White, 100mm	9	Wa-33L/R (OTM) 450mm x 900mm Object marker sign
4	Solid White Stop Bar, 600mm	10	Rb-25R(OTM) 600mm x 750mm Keep Right sign w/ marker
5	Ladder crosswalk (OTM) (Rainbow line paint @ Signalized Crossing)	11	Rb-78 (OTM) 600mm x 900mm Stop Here on Red Signal
6	Purple Paint	12	Ra-12 (OTM) 130mm x 200mm Pedestrian Pushbutton

Client: **LOYALIST TOWNSHIP**

Project: **POTTER DRIVE, CREIGHTON DRIVE, SOUTH AND MAIN STREETS RECONSTRUCTION**

Drawing: **LINE PAINTING PLAN**

Drawn by: ESD	Checked by: JH	Project No.
Designed by: KMN	Approved by: KMN	Drawing No. <b>D8</b>
Date: DECEMBER 2023	Scale: 1:100 (H=1:250)	

**NOTES**

- General**
- All construction traffic signals infrastructure must meet with current OPS, OPSP, ESA and all other governing authorities.
  - Non frangible bases to be used for traffic signals
  - All ducts to be finished as specified in contract documents
  - There must be ground plates located in all corners of the intersection along the power supply disconnect.
  - All hand holes to be 600mm x 600mm as per OPSP 2112.04
  - Contractor will be responsible for verifying all quantities
  - Pedestrian heads to be countdown type.
  - All traffic signal conduits shall be rigid PVC raceway conforming to CSA C22.2 No. 211.2-06 suitable for direct burial, concrete encasement or surface mounting.
  - Feed to power supply to be coordinated with hydro one.

**Traffic Signal Cables**

- The Contractor shall supply and install sufficient fourteen (14) gauge colour coded traffic signal runner and riser cable, to accommodate all equipment and installation operations specified in this Contract.
- The buried traffic signal cable shall meet the requirements of OPSS 2409.
- All traffic signal cable shall be installed in the underground conduit system in the location shown on the Drawings. Runner cables for vehicle signal heads shall have 19 solid conductors. Runner cables for pedestrian signal heads shall have 12 solid conductors.
- Each riser cable inside the pole, for the traffic signal head(s) and pedestrian head(s), shall be five (5) conductor and four (4) conductor respectively. Riser cables shall have stranded conductors.
- The Contractor shall supply and install sufficient two (2) conductor, #14 AWG, extra low voltage cable, with shielded cover, from the pedestrian pushbutton(s) to the controller, through the underground conduit system.

**Ground Wire**

- The Contractor shall supply and install a continuous #6 AWG TWU green, stranded copper ground wire through the entire main conduit system, including connection to the service. The ground wire shall be connected to all steel poles, the junction boxes on wood poles, the ground lug attached to the cover and frame in the handwells and the proposed ground rods in the handwells, in the location shown on the Drawings. The ground wire is not required outside the main conduit system where there are no low voltage cables in the ducts. All ground wire splices shall be made with Thermi Weld connections or copper compression ground tap figure "C" connectors.
- There shall be a separate continuous #6 AWG TWU green stranded copper ground wire from the controller to the service. The controller shall not be connected to the system ground.
- A continuous #6 AWG TWU green, stranded copper ground wire shall be installed from the ground lug in the pole to the ground rod located adjacent to this pole.
- This item shall include a continuous 20 bare, stranded copper ground wire which shall be installed from the service enclosure to the four ground rods located adjacent to this pole.
- The green/yellow conductor in the traffic signal head and pedestrian signal head riser cable shall be connected to the system ground in a pole handhole and/or a junction box. A green conductor used as ground shall be tagged "ground" in the pole handhole and/or junction box.
- A continuous #12 AWG TWU green, stranded copper ground wire shall be installed from the proposed luminaire fixture to the ground lug in the luminaire pole.

**Ground Rods**

- The Contractor shall supply and install a 20 mm x 3.0 m copper clad ground rod in the location shown on the Drawings. The ground rod shall be driven into the bottom of the concrete handwell and into the ground adjacent to the service pole. The ground rod driven into the ground shall be buried so that the top of the ground rod is 300 mm below the finished grade and it shall be left uncovered until it has been inspected by the Contract Administrator. Connection to the ground rod shall be made with a Thermi Weld connector.

**Push Button Station**

- The Contractor shall supply and install an Accessible Pedestrian Signal Station as manufactured by Polara Engineering Incorporated, Model EN25BNO-PV, complete with mounting hardware.

**10.7m Octagonal Steel Combination Traffic Signal/ Luminaire Pole and Arm**

- The Contractor shall supply and install a Valmont West Coast Engineering, 8535 Series pole or an approved equal, in the location shown on the Drawings. The pole shall be octagonal hot dipped galvanized steel and shall be supplied complete with a pole cap and base plate.

- The Contractor shall supply and install an Emergi-Lite/Powerlite Inc., Catalogue No. TR SMA-81 aluminum single member arm (or an approved equal) complete with all attachments and fittings for mounting on a metal. The mast arm shall be mounted as shown on the Drawings and in accordance with OPSP 2501.02.

- The Contractor shall supply and install a 1.8 metre long elliptical aluminium luminaire mast arm. It shall be Utility Supply Specialists Manufacturing, TER-6-MA, with a minimum wall thickness of 0.188 inches or a SENTINEL Pole & Traffic Equipment Limited, RE-6-4188.

**Concrete Pole Base**

- The Contractor shall construct a 762 mm diameter concrete pole base with anchorage assembly in the locations shown on the Drawings and in accordance with OPSP 220.01.

- The Contractor shall verify the bolt spacing with the pole manufacturer prior to construction of the base.

**Traffic Signal Head (all 300mm lenses) Reflectorized**

- The Contractor shall supply and install a yellow/grey backed, polycarbonate, highway type,

LED traffic signal head with a reflectorized backboard, cowl visors, 300 mm diameter red, amber and green LED signal lamps. All modules shall be labelled "ITE compliant" and labelled as such. The top entry hub shall be plugged with the device made for this purpose complete with a gasket. The bottom entry hub shall be plugged with the device made for this purpose but omitting the gasket.

- The traffic signal head shall be Federal Standard 595a, colour chip 13538 yellow and ASA-70 grey.

- The reflectorized backboard shall be a yellow/grey backed, polycarbonate vehicle signal head backboard. Federal Standard 595a, colour chip 13538 yellow and ASA-70 grey backboards to be flexible poly and shall be provided with knock-out to allow installation with plumbizer. A 75mm reflective sheeting to be applied to the backboard along the perimeter of the front of the backboard in accordance with all manufacturer's recommendations.

- The 75mm reflective sheeting shall be as follows: 3M Diamond grade DG3 Reflective Sheeting Series 4000, product code 4081 (fluorescent yellow).

- A traffic signal head with single point mounting (i.e., cushion hanger or plumbizer) must have stainless steel reinforcement plates. Cushion hanger mounting reinforcement shall be in accordance with the manufacturer's specifications (i.e., inside and outside of the amber section or outside of the red and amber sections).

**Pedestrian Signal Head**

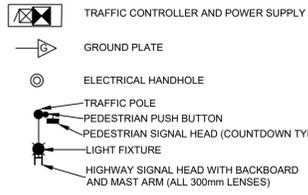
- The Contractor shall supply and install a yellow two section polycarbonate Automatic Signal/Eagle Signal LED countdown pedestrian signal head with a 300 mm square lens complete with cutaway visors and a minimum 260 mm high numeric display, or an approved equal.

- The top lens shall be a GELCore square, bimodal LED pedestrian signal, Model Number D12PAC MS-4 or an approved equal. The bottom lens shall be a GELCore square, LED countdown signal, Model Number D12PAD MS-4 or an approved equal.

- The LED countdown signal display shall be set up to operate during the pedestrian clearance interval.

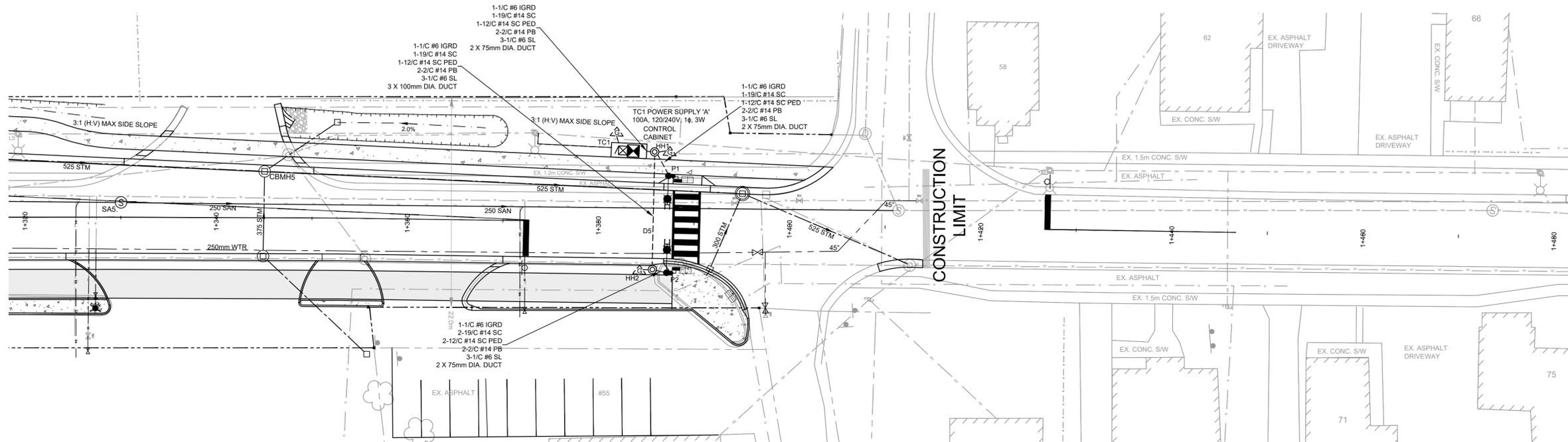
- The LED countdown pedestrian signal head shall be installed in the location shown on the Drawings.

**SIGNALS LEGEND**



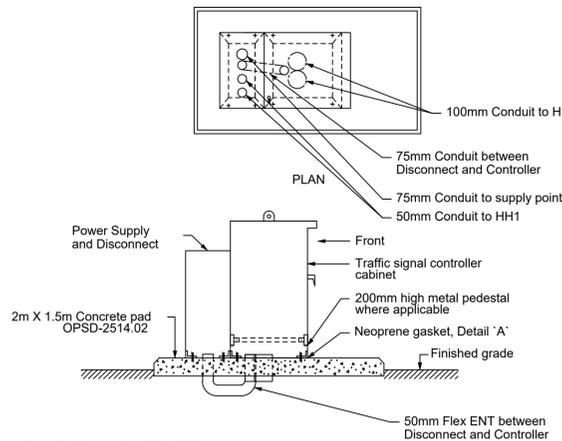
**WIRING REQUIREMENTS**

Traffic signal cable (19/C # 14 SC)  
 Traffic signal heads (5/C # 14 RISER)  
 Pedestrian heads (4/C # 14 RISER)  
 Pedestrian push buttons (2/C # 14 SHIELDED), extra low voltage cross-linked polyethylene cable (OPSS 623)  
 Ground wire (1/C # 6) (OPSS 609)  
 Power (1/C # 6) Low Voltage Single Conductor RWU90  
 Street lighting (1/C # 6) Low Voltage Single Conductor RWU90



**CONTROLLER PAD DETAILS**

THIS DETAIL TO BE USED IN CONJUNCTION WITH OPSP'S



**POWER SUPPLY AND CABINET NOTES**

The Contractor shall supply and install equipment for the power supply on the service pole in the location shown on the Drawings and in accordance with OPSP 2130.011, 2440.010, 2440.030, 2440.04, 2440.050, 2440.060, and 2440.061.

The power supply cabinet assembly shall be Type 1, 120/240 volt, 100A, 1 Phase, complete with:

- 100 Amp main circuit breaker
- 60 Amp traffic signal circuit breaker
- 15 Amp relamp breaker
- 4 - 15 Amp branch breakers

The Contractor shall coordinate the hydro feed cable with the Local Hydro Authority.

The Contractor shall also supply and install the hydro feed cable for the traffic signals from the proposed power supply to the proposed controller through the underground conduit system. The feed cable shall be single conductor, stranded copper, low voltage cable, rated 600 volts. Low voltage cables shall meet the requirements of OPSS 604. The cable shall be sized so as to satisfy the voltage drop requirements of the electrical/electronic equipment and shall not exceed 5%.

The Contractor shall supply and install an 8 phase Econolite cabinet, to Loyalist Township specifications. The Contractor shall install an 8-phase solid state microprocessor-based controller with a 12 position back panel set up to operate on 2, 4, 6, 8 phases and in a semi actuated mode. Phases 1, 3, 5, 7 will not be used for the initial installation. The controller shall provide for pedestrian timing on 2 phases and vehicle timing on 4 phases. The controller shall be programmable to start up in Phase 2 and Phase 6 amber.

Pedestrian signal timing to be configured for Walk Interval (W) of 7 seconds and Flashing Don't Walk Interval (FDW) of 10 seconds for a complete Pedestrian Signal Cycle of 17 seconds.

POLE OR STRUCTURE NO.	LOCATION	OFFSET FROM E/P	DESCRIPTION	BOLT CIRCLE DIA. OF POLE BASE	FOOTING DEPTH	STANDARDS	COMMENTS
P1	MAIN STREET	1.1m	6.1m BASE MOUNTED STEEL POLE	406m	2.60m	OPSP 2200.01, 2210.010, 2215.02, 2215.03, 2220.01, 2501.01, 2501.02, 2505.010	
P2	MAIN STREET	1.1m	10.5m BASE MOUNTED STEEL POLE	406m	2.60m	OPSP 2200.01, 2210.010, 2215.02, 2215.03, 2220.01, 2501.01, 2501.02, 2505.010	INSTALL LED LUMINAIRE ON 2.4m BRACKET
HH1	MAIN STREET	4.0m	600mm x 600mm			OPSP 2112.04, 2117.02, 2123.03	INSTALL GROUND PLATE
HH2	MAIN STREET	1.2m	600mm x 600mm			OPSP 2112.04, 2117.02, 2123.03	INSTALL GROUND PLATE
TC1/PS 'A'	MAIN STREET	3.1m	ECONOLITE TRAFFIC SIGNAL CONTROLLER AND POWER SUPPLY WITH DISCONNECT ON CONCRETE PAD			OPSP 2514.02	INSTALL GROUND PLATE AT PS 'A'

TRAFFIC SIGNAL HEADS			HEAD	ARM LENGTH	MANUFACTURER			TYPES OF SPECIAL ARROW HEADS WITH BACKBOARD										
TYPE	SIZE	BACKBOARD	MOUNTING HT.	POLE OFFSET	HEAD	MATERIAL	LIGHT	ALL 30 cm LENSES, EXCEPT AS NOTED										
PRIMARY	HWY	YES	5.0m	WB 3.0m EB 3.0m	Econolite	Polycarbonate	LED Swarco											
SECONDARY	HWY	YES	5.0m	WB 3.0m EB 3.0m	Econolite	Polycarbonate	LED Swarco	<p>NOTE: FOR SPECIAL ARROW HEADS ⑩ AND ⑪, 20 cm AMBER BALL AND 20 cm GREEN BALL LENSES SHOULD BE USED.</p>										
AUXILIARY																		
SEPARATE LEFT TURN ARROWS	PRIMARY																	
SEPARATE LEFT TURN ARROWS	SECONDARY																	
SEPARATE LEFT TURN ARROWS	PRIMARY																	
SEPARATE LEFT TURN ARROWS	SECONDARY																	

DATE	ANALYST	DESCRIPTION OF REVISIONS	RECOMMENDED BY

**LEGEND**

- PROPOSED ASPHALT
- PROPOSED MUP ASPHALT
- PROPOSED DRIVEWAY REINSTATEMENT
- PROPOSED CONCRETE
- EXISTING STORM MANHOLE
- EXISTING SANITARY MANHOLE
- EXISTING HYDRANT
- EXISTING WATER VALVE
- EXISTING WATERMAIN
- EXISTING SANITARY SEWER
- EXISTING OVER SEWER
- EXISTING OVERHEAD HYDRO
- EXISTING GAS
- EXISTING UNDERGROUND BELL
- EXISTING SWALE C/L
- PROPOSED SWALE C/L
- PROPOSED STORM SEWER
- PROPOSED WATERMAIN
- PROPOSED SANITARY SEWER
- BENCHMARK
- CATCH BASIN
- DOUBLE CATCH BASIN
- DITCH INLET CATCH BASIN
- STOP SIGN / AS NOTED
- STREET SIGN
- EXISTING VEGETATION
- VEGETATION REMOVAL
- STRAW BALE
- EXISTING ELEVATION
- PROPOSED ELEVATION

**PRELIMINARY NOT FOR CONSTRUCTION**

- Benchmark
- BM1 - TOP OF HYDRANT NUT IN FRONT OF CIVIC 122 / 120 SAUL STREET. ELEVATION 126.092
  - BM2 - TOP OF HYDRANT NUT IN FRONT OF CIVIC 17 / 19 POTTER DRIVE. ELEVATION 125.259

RI	ISSUED FOR TENDER	DATE
		MAR. 20, 2024

No.	Revision/Issue	Date



1329 Gardiners Road, Suite 210  
 Kingston, ON, Canada K7P 0L8  
 613.634.9009 tel.  
 1.888.884.9392 fax.

Client:  
**LOYALIST TOWNSHIP**

Project:  
**POTTER DRIVE, CREIGHTON DRIVE, SOUTH AND MAIN STREETS RECONSTRUCTION**

Drawing:  
**PEDESTRIAN TRAFFIC SIGNALS DETAIL**

Drawn by: ESD	Checked by: JH	Project No.:
Designed by: KMN	Approved by: KMN	Drawing No.:
Date: DECEMBER 2023		

Scale: 1" = 10'-0"

**D9**