LIST OF DRAWINGS - PORTER SUBDIVISION WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION - PHASE 2, DORCHESTER, ON.

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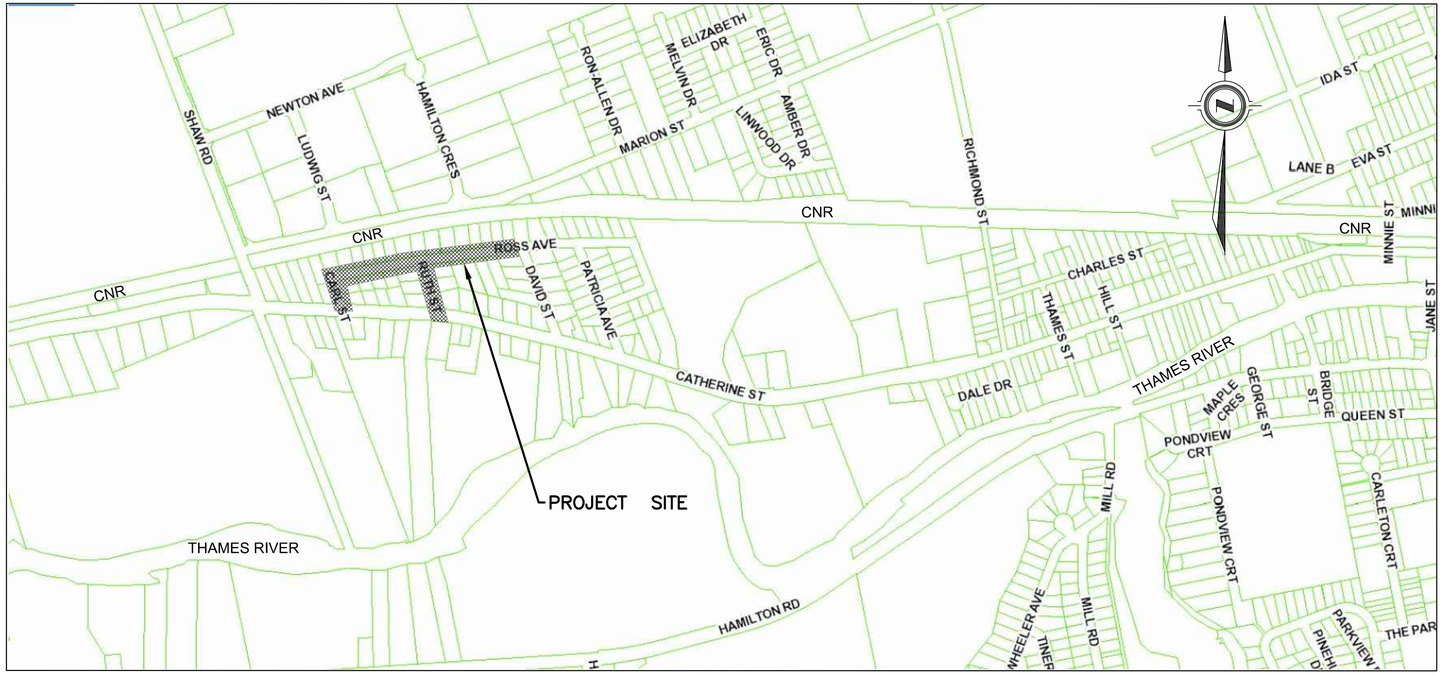

KEY PLAN
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PROJECT LIMITS
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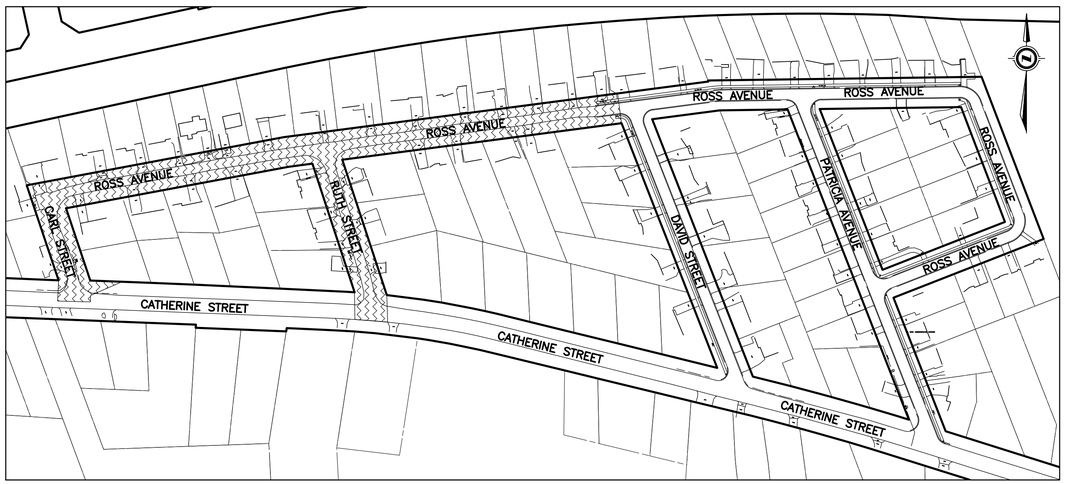

LEGEND

DENOTES PROJECT LIMITS

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REFERENCE TO 'EXISTING CONDITIONS AND REMOVALS' PLAN & PROFILE DRAWINGS

BENCHMARKS:

CONTROL BENCHMARK: 0011910V233 BOLT LOCATED IN WEST FACE OF NORTH HEADWALL TO CONCRETE CULVERT UNDER C.N.R. BOLT SET 15cm SOUTH OF NORTH FACE AND 76cm BELOW TOP.

ELEV.=257.010m

GPS LOCAL BENCHMARKS:

TOP OF SPINDLE OF FIRE HYDRANT LOCATED AT SOUTH–EAST CORNER OF ROSS AVENUE AND PATRICIA AVENUE.

ELEV.=256.246m

TOP OF SPINDLE OF FIRE HYDRANT LOCATE ON NORTH SIDE OF ROSS AVENUE FRONTING M.N. 168.

ELEV.=260.831m

TOP OF SPINDLE OF FIRE HYDRANT LOCATED ON NORTH SIDE OF ROSS AVENUE FRONTING BETWEEN M.N. 208 AND M.N. 204.

ELEV.=262.537m

SITE BENCHMARKS:

BENCHMARK #1 – NAIL SET IN WEST FACE OF HPLS LOCATED OFF SOUTHWEST CORNER OF MN #124 ROSS AVENUE AT 90° BEND.
ELEVATION=256.388m

BENCHMARK #2 – NAIL SET IN EAST FACE OF HPLS BETWEEN MN #187 & 191 PATRICIA AVENUE.
ELEVATION=256.291m

BENCHMARK #3 – SPIKE SET IN NORTH FACE HPLS AT NORTHEAST CORNER OF CATHERINE STREET & PATRICIA AVENUE.
ELEVATION=253.421m

BENCHMARK #4 – SPIKE SET IN NORTH FACE OF HP LOCATED ON SOUTH SIDE OF CATHERINE STREET AT MN#3632 CATHERINE STREET.
ELEVATION=255.505m

BENCHMARK #5 – CUT CROSS SET IN TOP OF SOUTHEAST CORNER OF CONCRETE PAD TO MAILBOX LOCATED ON WEST SIDE OF RUTH STREET AT MN#213
ELEVATION=259.321m

BENCHMARK #6 – TOP OF SOUTHEAST CORNER OF CONCRETE DICB AT MN#3582 CATHERINE STREET.
ELEVATION=258.572m

BENCHMARK #7 – SPIKE SET IN EAST FACE OF HPLS LOCATED NORTHWEST CORNER OF CATHERINE & CARL STREET. MN#3534 CATHERINE STREET.
ELEVATION=261.386m

BENCHMARK #8 – TOP NORTHEAST CORNER OF CONCRETE PORCH TO MN#225 ROSS STREET.
ELEVATION=262.438m

BENCHMARK #9 – TOP SOUTHWEST CORNER OF CONCRETE PORCH TO MN#201 ROSS STREET.
ELEVATION=263.189m

BENCHMARK #10 – SPIKE SET IN SOUTH FACE OF HP LOCATED ON NORTH SIDE ROSS STREET BETWEEN MN#188 & 184.
ELEVATION=261.619m

BENCHMARK #11 – SPIKE SET IN SOUTH FACE OF HPLS LOCATED ON NORTH SIDE ROSS STREET BETWEEN MN#168 & 166 OPPOSITE DAVIS STREET.
ELEVATION=260.301m

BENCHMARK #12 – SPIKE SET IN SOUTH FACE OF HPLS LOCATED ON NORTH SIDE OF ROSS STREET AT MN#148.
ELEVATION=259.857m

BENCHMARK #13 – TOP SOUTHEAST CORNER OF CONCRETE CURB ALONG EAST EDGE OF GRAVEL DRIVEWAY TO MN# 140 ROSS STREET.
ELEVATION=259.381m

NOTE: REFER TO 2 (TWO) BENCHMARKS MINIMUM AT ALL TIMES DURING CONSTRUCTION.

REMOVALS LEGEND:

- DENOTES EXISTING ASPHALT ROADWAY TO BE REMOVED
- DENOTES EXISTING ASPHALT DRIVEWAY TO BE REMOVED
- DENOTES EXISTING SIDEWALK OR CONCRETE PAD TO BE REMOVED
- DENOTES INTERLOC BRICK DRIVEWAY TO BE REMOVED AND STOCKPILED FOR RE–USE
- DENOTES EXISTING GRAVEL DRIVEWAY TO BE REMOVED
- DENOTES EXISTING CONCRETE DRIVEWAY TO BE REMOVED
- DENOTES EXISTING CURB TO BE REMOVED
- DENOTES EXISTING CONCRETE/STONE/BRICK/WOOD RETAINING WALL TO BE REMOVED.

DENOTES EXISTING TREES, SHRUBS, BRUSH, OR GARDEN PLANTINGS TO BE TRIMMED BACK OR REMOVED AND DISPOSED OF OR SALVAGED AND RELOCATED AT DIRECTION OF CONTRACT ADMINISTRATOR.

DENOTES EXISTING TREE TO BE TRIMMED.

NOTE: REFER TO TREE REPORT PREPARED BY CLC TREE SERVICES REPORT #ON–1295A, FOR ALL RECOMMENDATIONS FOR THIS PROJECT.

EXISTING LEGEND:

- EX. STMH — EXISTING STORM MANHOLE
- EX. SANMH — EXISTING SANITARY MANHOLE
- EX. CBMH — EXISTING CATCHBASIN MANHOLE
- EX. CB — EXISTING CATCHBASIN
- EX. 50.0–200 SAN–1.0% — EXISTING SANITARY SEWER
- EX. 50.0–600 ST–0.5% — EXISTING STORM SEWER
- EX. FH — EXISTING HYDRANT
- EX. WV — EXISTING WATER VALVE
- EX. 150ø WM — EXISTING WATERMAIN
- EXISTING FENCE
- EX. TV PED — EXISTING TV PEDESTAL
- EXISTING TV CABLE
- EX. GM — EXISTING GAS METER
- EX. GV — EXISTING GAS VALVE
- EXISTING GAS MAIN
- EX. BP — EXISTING BELL POLE
- EX. B.PED — EXISTING BELL PEDESTAL
- EX. B.MH — EXISTING BELL MANHOLE
- EXISTING BELL CABLE
- EX. HMH — EXISTING HYDRO MANHOLE
- EXISTING HYDRO
- J.B. — EXISTING JUNCTION BOX
- EX. HP/LS — EXISTING HYDRO POLE/LIGHT STANDARD
- EX. HP — EXISTING HYDRO POLE
- EXISTING CONIFEROUS TREE (300 BM DIA./DRIP) — DENOTES TRUNK DIAMETER (mm)/CANOPY DIAMETER (m)
- EXISTING DECIDUOUS TREE (650 14M DIA./DRIP) — DENOTES TRUNK DIAMETER (mm)/CANOPY DIAMETER (m)
- EXISTING HEDGE/TREE CANOPY OUTLINE
- EXISTING SHRUB
- EXISTING TREE STUMP

NOTES:
1: FOR LIMITS OF TREE PRESERVATION FENCING REFER TO SHEETS 24 AND 25. TREES ARE SHOWN TO APPROXIMATE CANOPY SIZE.
2: ALL HP's AND HP/SL's TO BE SUPPORTED AS REQUIRED DURING CONSTRUCTION (TYP.)
3: EXISTING CB's SCHEDULED FOR REMOVAL TO HAVE THEIR RESPECTIVE LEADS REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED. (TYP.)
4: EX. SIDEWALK, ASPHALT AND CURB SCHEDULED FOR REMOVAL AND DISPOSAL TO BE SAWCUT PRIOR TO REMOVAL AND EXCAVATION.
5: ALL PERTINENT STREET SIGNAGE (STOP SIGNS, YIELD SIGNS, STREET NAME, ETC.) TO BE REMOVED. SEE SHEETS 20 AND 21 FOR NEW SIGNAGE SCHEDULE AND LOCATIONS.
6: NO EXISTING TREES, SHRUBS, GARDENS, FENCES, RETAINING WALLS, CURBS OR LANDSCAPE FEATURES TO BE UNNECESSARILY DAMAGED OR REMOVED WITHIN BOULEVARD AREA UNLESS OTHERWISE NOTED.
7: EXISTING WATER SERVICES WITHIN RIGHT OF WAY TO BE REMOVED UP TO CONNECTION POINT BETWEEN NEW AND EXISTING WATER SERVICE. EXISTING WATER SERVICE CAN BE ABANDONED IN PLACE WHERE THE NEW WATER SERVICE IS BEING ROCKETED UNDER SURFACE FEATURES.
8: ANY SUMP OUTLETS FOUND DURING CONSTRUCTION ARE TO BE CONNECTED TO THE NEW STORM SEWER
9: REFER TO SHEETS 29 AND 30 FOR ADDITIONAL MISCELLANEOUS NOTES AND DETAILS.

NOTE: ALL STORM PIPE AND RELATED APPURTENANCES, INCLUDING CB's, DICB's, CULVERTS, ETC., WITHIN LIMITS OF WORKS OR OTHERWISE NOTED, TO BE REMOVED AND DISPOSED OF. ANY STORM SERVICING FROM PRIVATE PROPERTY (SUMP LEADS) TO BE RE–CONNECTED TO NEW STORM SEWER SYSTEM.
ALL WATERMAIN AND RELATED APPURTENANCES, INCLUDING VALVES, TEES, ETC., WITHIN LIMITS OF WORKS OR OTHERWISE NOTED, TO BE REMOVED AND DISPOSED OF. HYDRANTS TO BE REMOVED WITHIN LIMITS OF WORKS ARE TO BE SALVAGED AND RETURNED TO MUNICIPAL WORKS YARD.

REFERENCE TO 'PROPOSED CONSTRUCTION' PLAN & PROFILE DRAWINGS

LEGEND

- DENOTES DROP CURB AT ENTRANCES & RAMPS.
- DENOTES SUPERELEVATED CURB PROFILE
- DENOTES ASPHALT MILLING
- Ⓡ — DENOTES BARRIER FREE SIDEWALK RAMP c/w TACTILE PLATES
- DENOTES TACTILE PLATE
- DENOTES INSULATION
- 56.70 × — DENOTES FINISHED GRADE ADD 200 TO OBTAIN GEODETIC DATUM
- ±55.22 × — DENOTES INTERPOLATED GRADE TO REMAIN OR MATCHED INTO ADD 200 TO OBTAIN GEODETIC DATUM

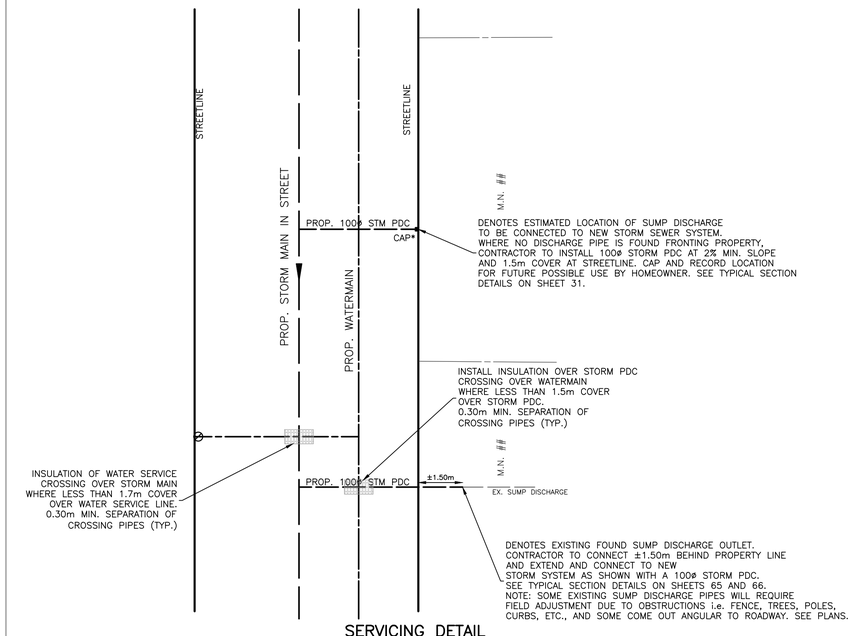
NOTE: ALL PROPOSED STREET CURB TO BE OPSD 600.040 BARRIER CURB. DROP CURB AT DRIVEWAY ENTRANCES AND SIDEWALK RAMPS.
EXISTING DRIVEWAY CURBS/RETAINING WALLS REMOVED TO FACILITATE CONSTRUCTION TO BE RESTORED/REPLACED TO MATCH EXISTING AS REQUIRED OR AS DIRECTED BY CONTRACT ADMINISTRATOR.

NOTES:
1. REFER TO PAVEMENT DATA TABLE ON THIS SHEET AND SHEETS 20, 21, 29, AND 31 FOR A COMPLETE LIST OF PAVEMENT STRUCTURES.
2. ALL SIDEWALK RAMPS TO HAVE TACTILE PLATES AS PER OPSD 310.031, OPSD 310.033 AND OPSD 310.039.
3. ALL STREET CURB TO BE OPSD 600.040 CURB & GUTTER UNLESS OTHERWISE NOTED. DROP CURB AT DRIVEWAY ENTRANCES. INSTALL OPSD 600.110 BARRIER CURB FOR DRIVEWAYS WHERE APPLICABLE.
4. CONTRACTOR SHALL INSTALL AND MAINTAIN SILT SACKS IN ALL CATCHBASINS, LANDSCAPE CATCHBASINS AND CATCHBASIN MANHOLES UNTIL PAVING OCCURS.
5. WATER SERVICE CONNECTIONS SHALL BE 19mm DIAMETER MUNICIPEX, OR BLUE 904, UNLESS OTHERWISE NOTED (TYP.)
6. STORM SEWERS WITH LESS THAN 1.5m COVER AND WATERMAINS WITH LESS THAN 1.7m COVER, TO BE INSULATED AS PER DETAIL W–CS–68 UNTIL MINIMUM COVER IS ACHIEVED (TYP.)
7. MAXIMUM OF 3 MODULOC UNITS SHALL BE USED FOR ADJUSTMENT WHERE REQUIRED. RISERS SHALL BE USED WHERE MORE THAN 3 UNITS OF MODULOC WOULD BE REQUIRED TO ADJUST GRATE/LID ELEVATION TO PROPOSED FINISHED GRADES.
8. NO GRADING SHALL OCCUR BEYOND PROPERTY LINE UNLESS WRITTEN PERMISSION IS PROVIDED BY RESPECTIVE PROPERTY OWNERS (TYP.)
9. ALL GRASS BOULEVARD AREAS TO BE RESTORED WITH 150mm MIN. TOPSOIL AND APPROVED SOD (TYP.)
10. NO EXISTING TREES, SHRUBS, GARDENS, FENCES, RETAINING WALLS, CURBS OR LANDSCAPE FEATURES TO BE UNNECESSARILY DAMAGED OR REMOVED WITHIN BOULEVARD AREA UNLESS OTHERWISE NOTED.
11. FOR LIMITS OF TREE PRESERVATION FENCING REFER TO SHEETS 24 AND 25.
12. EXISTING HYDRO POLES AND STREETLIGHT POLES TO BE SUPPORTED AS REQUIRED DURING CONSTRUCTION (TYP.).
13. SEE SHEET 31 FOR TYPICAL CROSS SECTIONS FOR SERVICING DETAILS.
14. ANY UNNECESSARY DAMAGE OUTSIDE OF LIMITS OF WORKS DUE TO CONSTRUCTION PRACTICES, TO BE RESTORED TO PRE–EXISTING CONDITION, OR BETTER, TO SATISFACTION OF MUNICIPALITY, AT CONTRACTORS EXPENSE.

Pavement Design Table

STREET	SURFACE COURSE HL 3	BINDER COURSE HL 8	GRANULAR BASE 'A'	GRANULAR SUB–BASE 'B'
CARL STREET	40mm	50mm	150mm	300mm
ROSS AVENUE	40mm	50mm	150mm	300mm
RUTH STREET	40mm	50mm	150mm	300mm
CATHERINE STREET	60mm	120mm	150mm	SEE NOTE

NOTE: ALL TRENCH BACKFILL WITHIN INTERSECTION TO COMPRISE GRANULAR 'B' MATERIAL COMPACTED THROUGHOUT TO 98% MSPDD.
ASPHALT TO BE SUPPLIED AND PLACED IN ACCORDANCE WITH OPSS FORMS 310 AND 1150.
FOR GEOTECHNICAL INFORMATION AND RECOMMENDATIONS RESPECTING CONSTRUCTION, REFER TO GEOTECHNICAL REPORT PREPARED BY LDS, PROJECT No. GE–00351, DATED JUNE 12, 2020.



SERVICING DETAIL
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EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS	No.	REVISIONS	DATE	CONSULTANT
DESIGN BY RAB	1	ISSUED FOR TENDER	FEB 28/23	DEVENG
DRAWN BY RAB				
CHECKED BY JS				
F.BK. 1219				
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MUNICIPALITY OF Thames Centre

SCALE

TITLE
PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION – PHASE 2, DORCHESTER, ON

LEGENDS AND GENERAL NOTES

PROJECT No. DEL20–003B
SHEET No. 1
PLAN FILE No.

DEL20–003 P&P B.dwg
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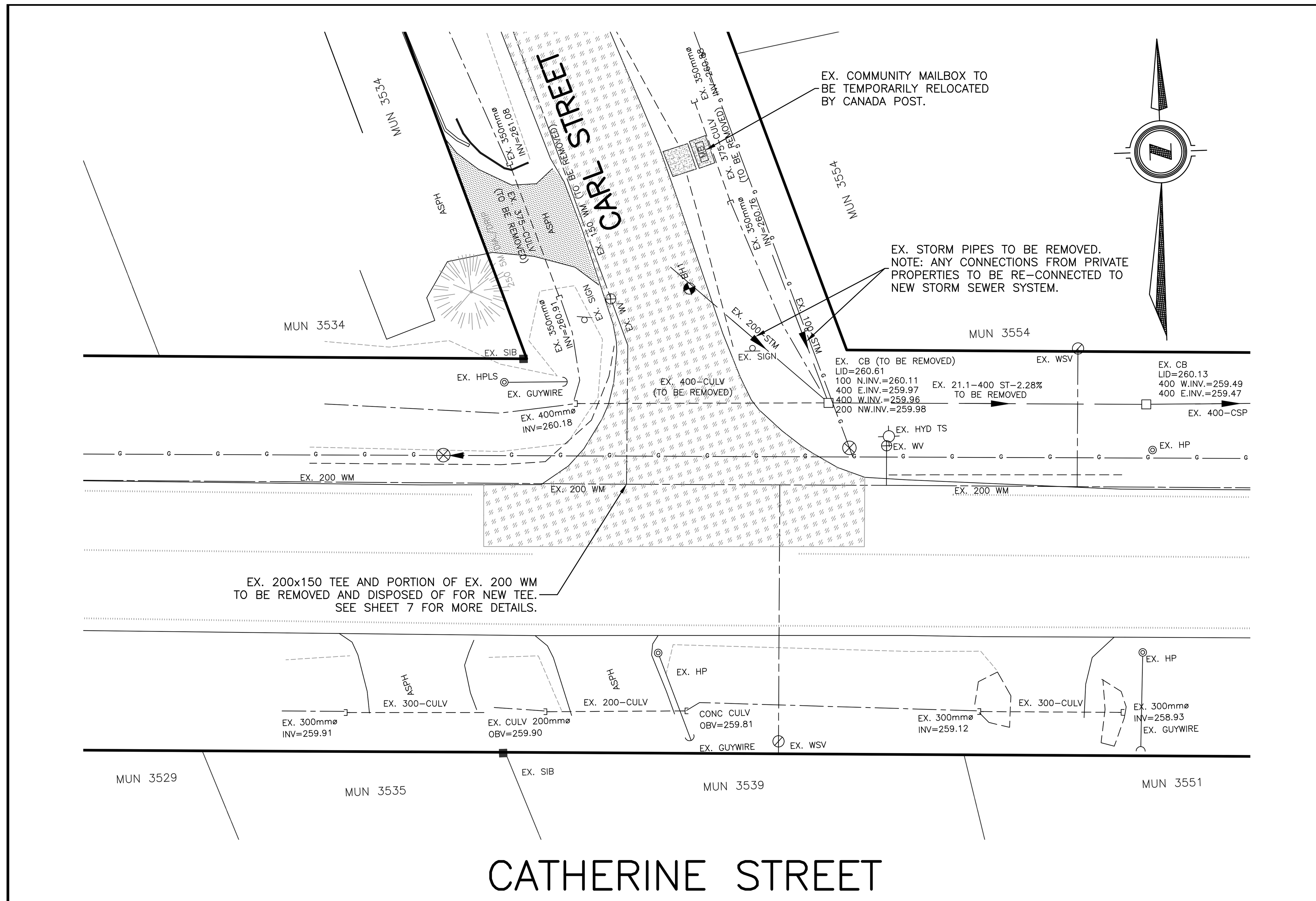

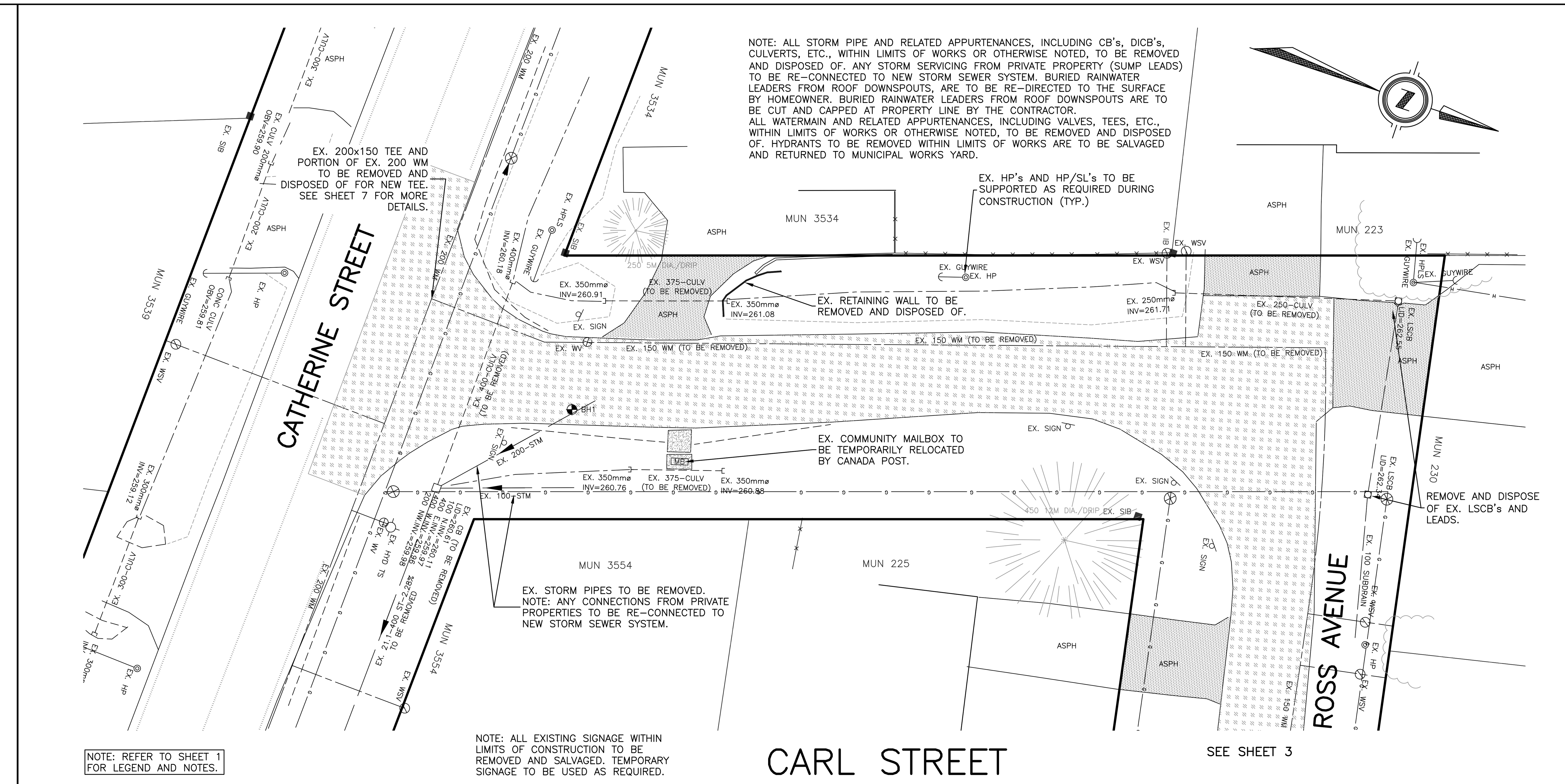

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EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION	DETAILS	No.	REVISIONS	DATE	CONSULTANT
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SCALE
HORIZONTAL - 1:250
2.5 0 5m
VERTICAL - 1:50
0.5 0 1m

TITLE
PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION - PHASE 2, DORCHESTER, ON

EXISTING CONDITIONS & REMOVALS
CARL STREET: FROM INTERSECTION AT CATHERINE STREET TO ROSS AVENUE

PROJECT No. DEL20-003B
SHEET No. 2
PLAN FILE No.

EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS	No.	REVISIONS	DATE	CONSULTANT
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SCALE
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2.5 0 5m
VERTICAL – 1:50
0.5 0 1m

TITLE
PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION – PHASE 2, DORCHESTER, ON

EXISTING CONDITIONS & REMOVALS
ROSS AVENUE: FROM CARL STREET TO 175m EAST OF CARL STREET

PROJECT No. DEL20–003B
SHEET No. 3
PLAN FILE No.

rbartlett Feb.17/23–10:29am DEL20–003 P&P B.dwg

EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION	DETAILS	No.	REVISIONS	DATE	CONSULTANT
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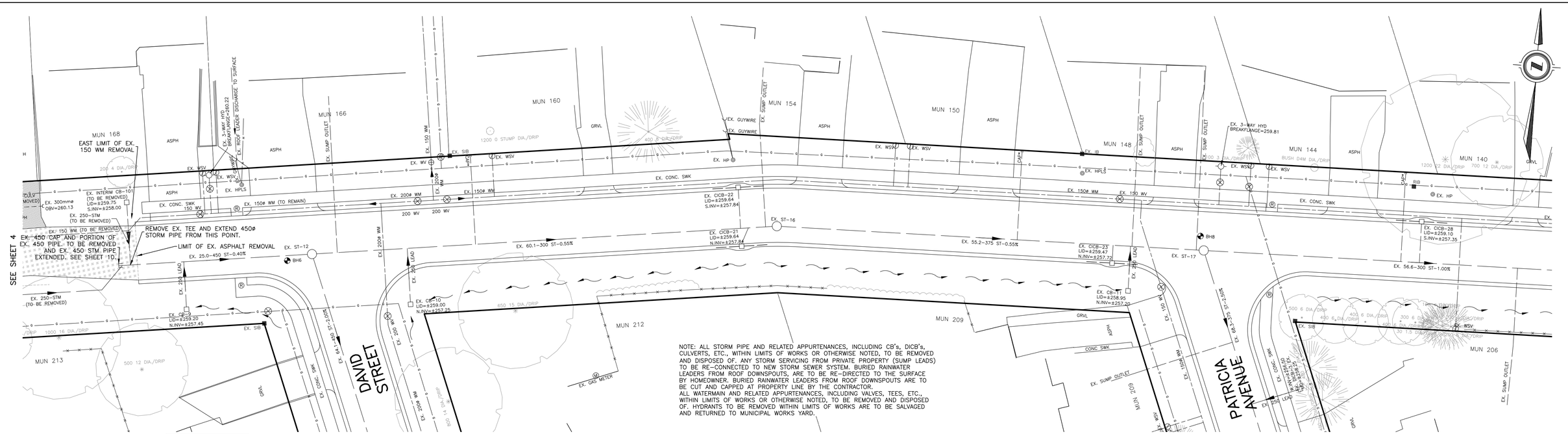
SCALE
HORIZONTAL – 1:250
2.5 0 5m
VERTICAL – 1:50
0.5 0 1m

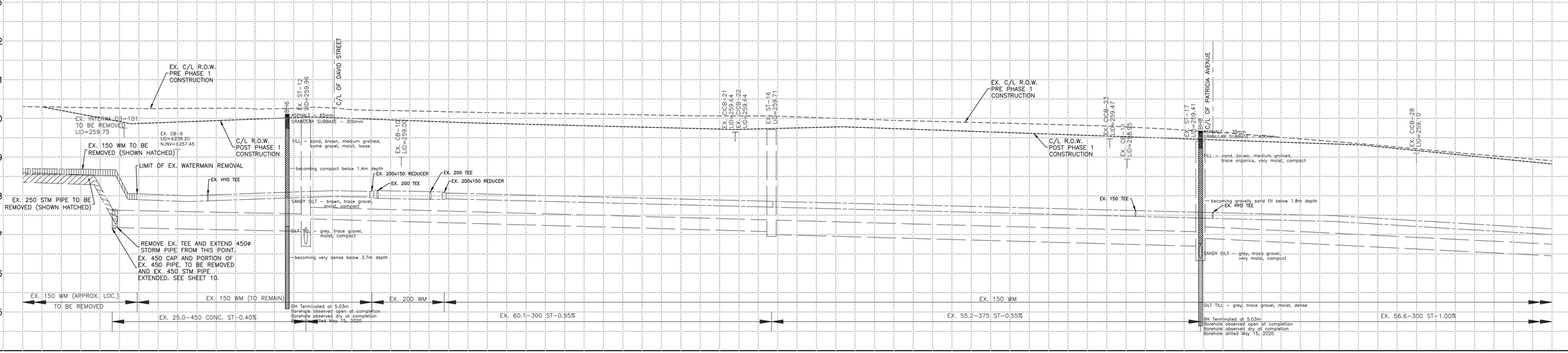
TITLE
PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION – PHASE 2, DORCHESTER, ON

EXISTING CONDITIONS & REMOVALS
ROSS AVENUE: FROM 20m WEST OF RUTH STREET TO 175m EAST OF RUTH STREET

PROJECT No. DEL20–003B
SHEET No. 4
PLAN FILE No.

rbartlett Feb.17/23–10:29am DEL20–003 P&P B.dwg





EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS	No.	REVISIONS	DATE	CONSULTANT
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F.BK. 1219				
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SCALE
HORIZONTAL - 1:250
2.5 0 5m
VERTICAL - 1:50
0.5 0 1m

TITLE
PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION - PHASE 2, DORCHESTER, ON

EXISTING CONDITIONS & REMOVALS
ROSS AVENUE: FROM 40m WEST OF DAVID STREET TO 45m EAST OF PATRICIA AVENUE

PROJECT No. DEL20-003B
SHEET No. 5
PLAN FILE No.

DEL20-003 P&P B.dwg
rbartlett Feb.17/23-10:23am

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					DRAWN BY RAB				
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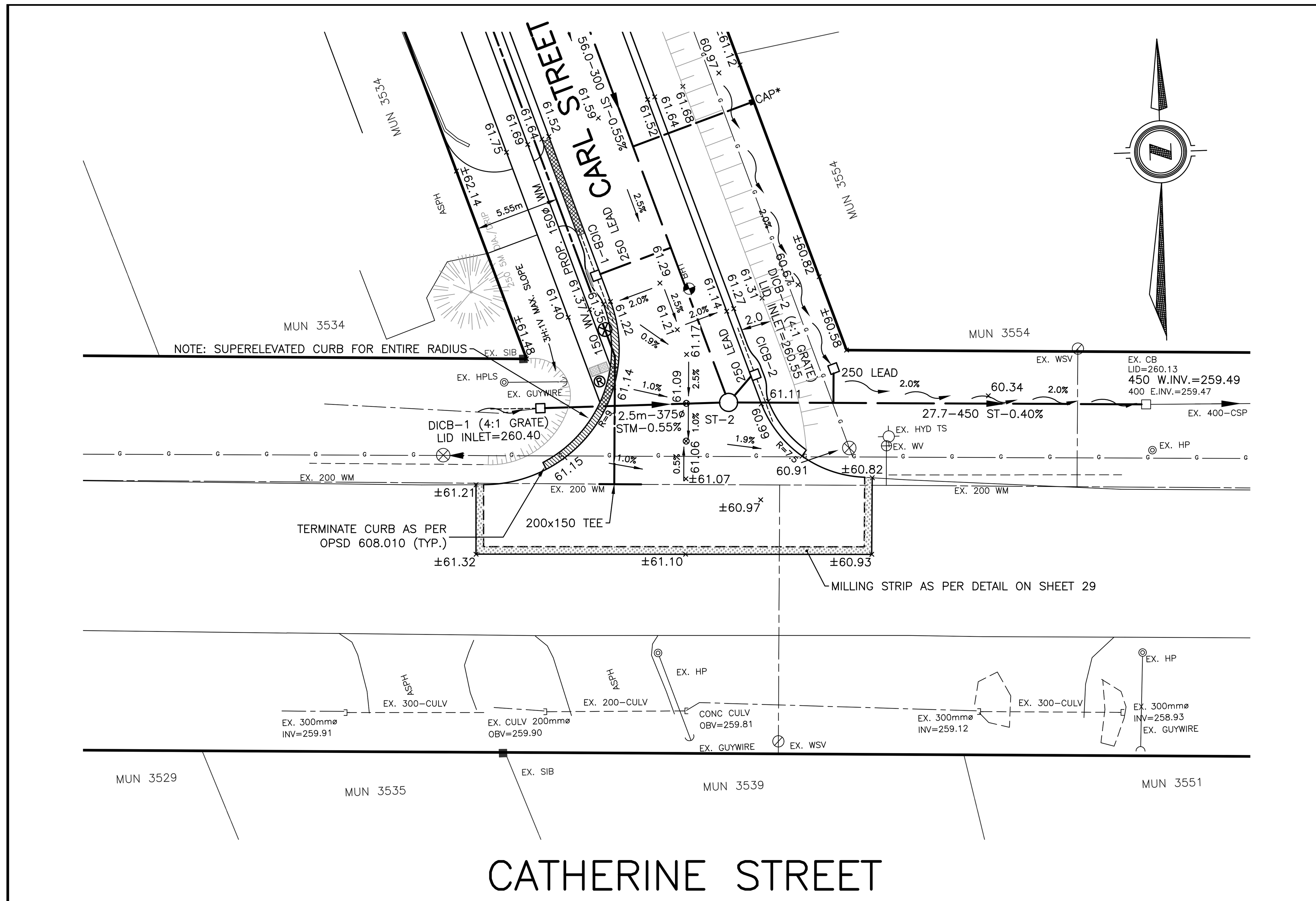
VERTICAL – 1:50

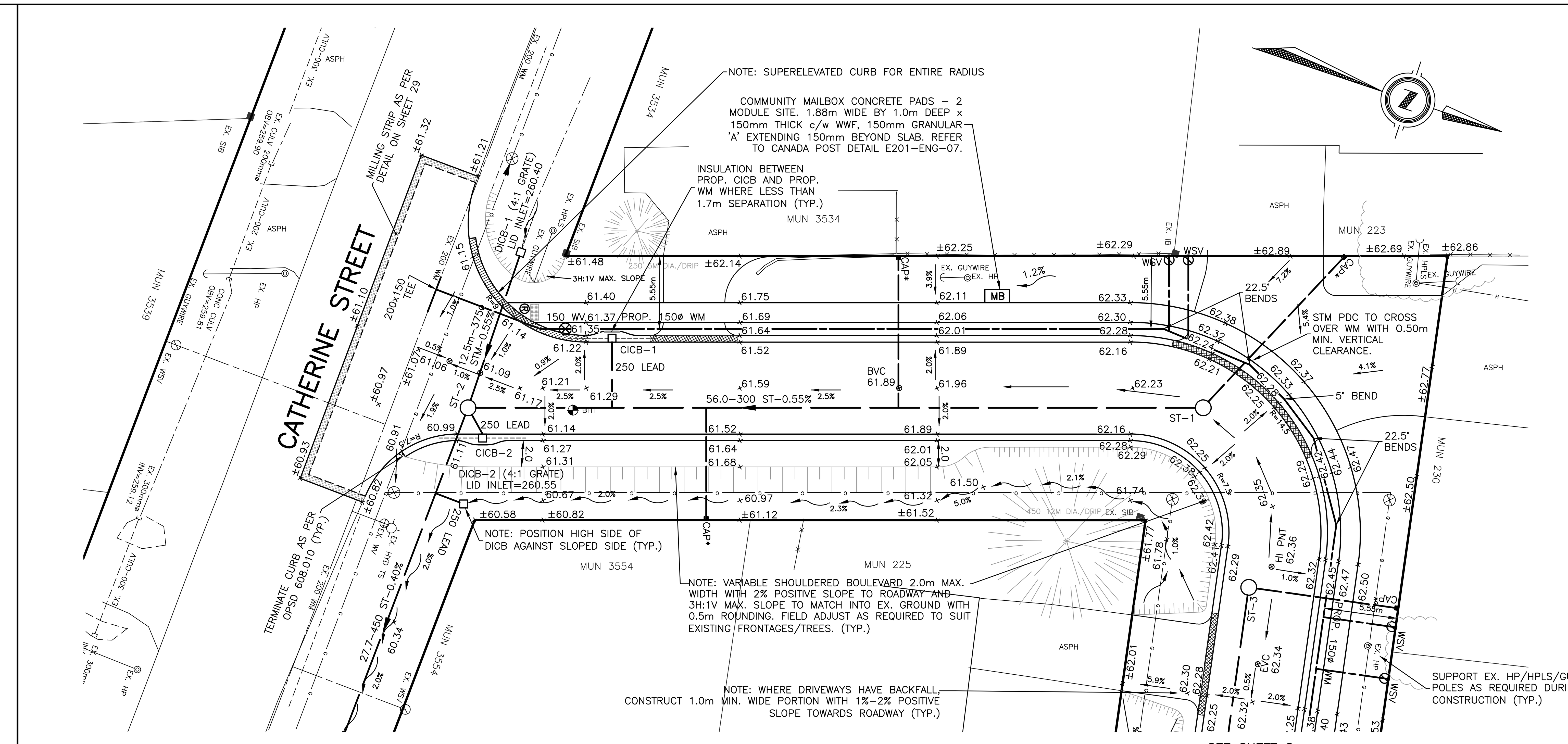
TITLE
PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION – PHASE 2, DORCHESTER, ON

EXISTING CONDITIONS & REMOVALS
RUTH STREET: FROM CATHERINE STREET INTERSECTION TO ROSS AVENUE

PROJECT No. DEL20–003B
SHEET No. 6
PLAN FILE No.

rbartlett Feb.17/23–10:30am DEL20–003 P&P B.dwg





NOTE: REFER TO SHEET 1 FOR LEGEND AND NOTES.

EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION	DETAILS	No.	REVISIONS	DATE	CONSULTANT
					DESIGN BY RAB	1	ISSUED FOR TENDER	FEB 28/23	DEVENG
					DRAWN BY RAB				
					CHECKED BY JS				
					F.BK. 1219				
					FILE: DEL20-003 P&P B.DWG				

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CONSULTING CIVIL ENGINEERS

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J. R. SMITH
100144789
Feb 28/23
PROVINCE OF ONTARIO

MUNICIPALITY OF Thames Centre

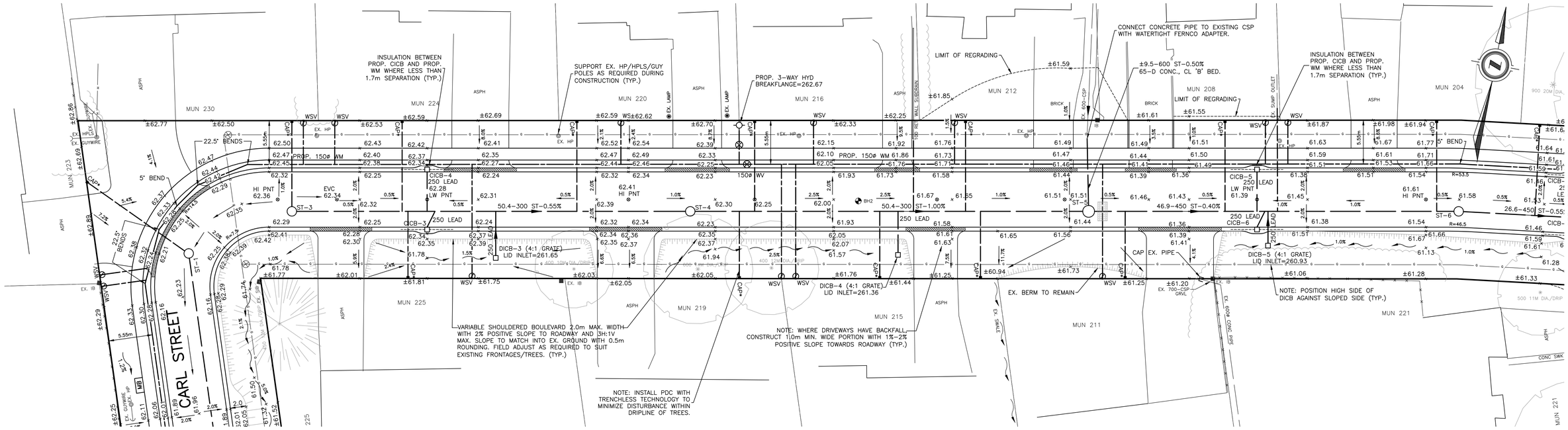
SCALE
HORIZONTAL – 1:250
VERTICAL – 1:50

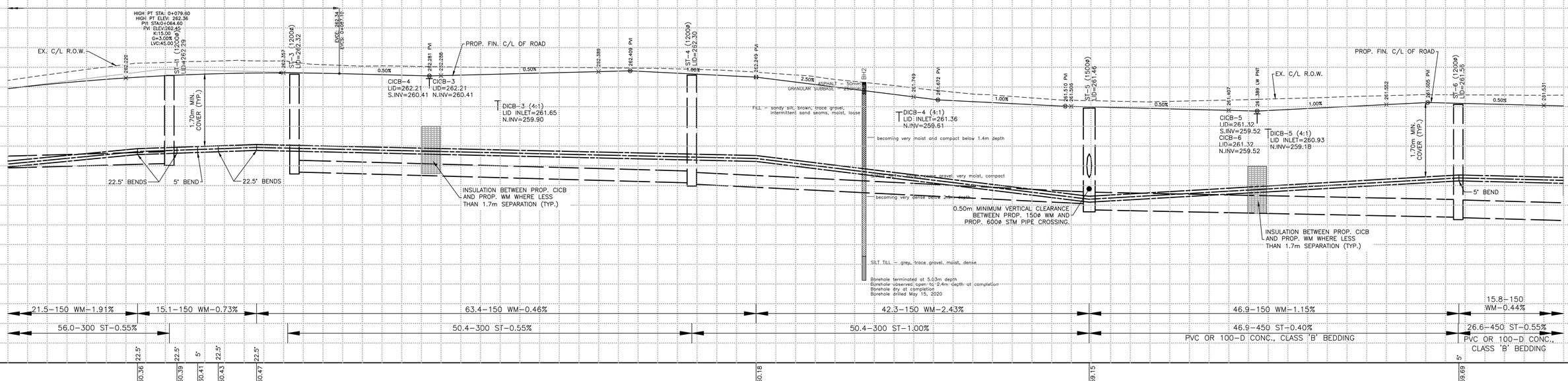
TITLE
PORTER SUBDIVISION WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION – PHASE 2, DORCHESTER, ON

PROPOSED CONSTRUCTION
CARL STREET: FROM INTERSECTION AT CATHERINE STREET TO ROSS AVENUE

PROJECT No. DEL20-003B
SHEET No. 7
PLAN FILE No.

rbartlett Feb.17/23-10:30am DEL20-003 P&P B.dwg





EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS	No.	REVISIONS	DATE	CONSULTANT
DESIGN BY RAB	1	ISSUED FOR TENDER	FEB 28/23	DEVENG
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MUNICIPALITY OF Thames Centre

SCALE
HORIZONTAL - 1:250
2.5 0 5m
VERTICAL - 1:50
0.5 0 1m

TITLE
PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION - PHASE 2, DORCHESTER, ON

PROPOSED CONSTRUCTION
ROSS AVENUE: FROM CARL STREET TO 175m EAST OF CARL STREET

PROJECT No. DEL20-003B
SHEET No. 8
PLAN FILE No.

DEL20-003 P&P B.dwg
rbartlett Feb.17/23-10:30am

EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION	DETAILS	No.	REVISIONS	DATE	CONSULTANT
					DESIGN BY RAB	1	ISSUED FOR TENDER	FEB 28/23	DEVENG
					DRAWN BY RAB				
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					F.BK. 1219				
					FILE: DEL20-003 P&P B.DWG				

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MUNICIPALITY OF Thames Centre

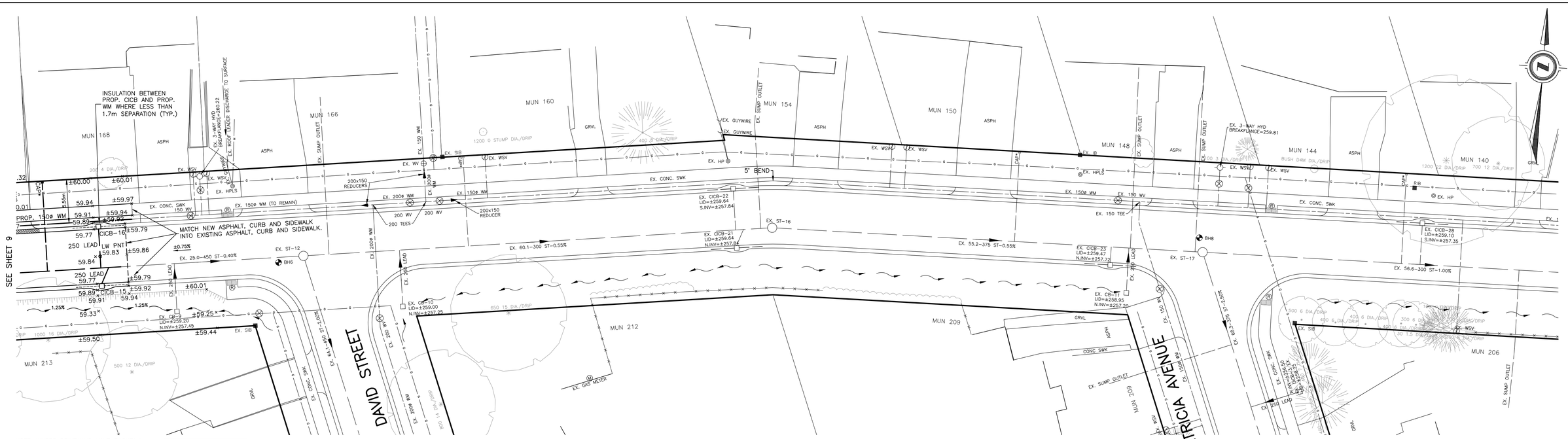
SCALE
HORIZONTAL - 1:250
VERTICAL - 1:50

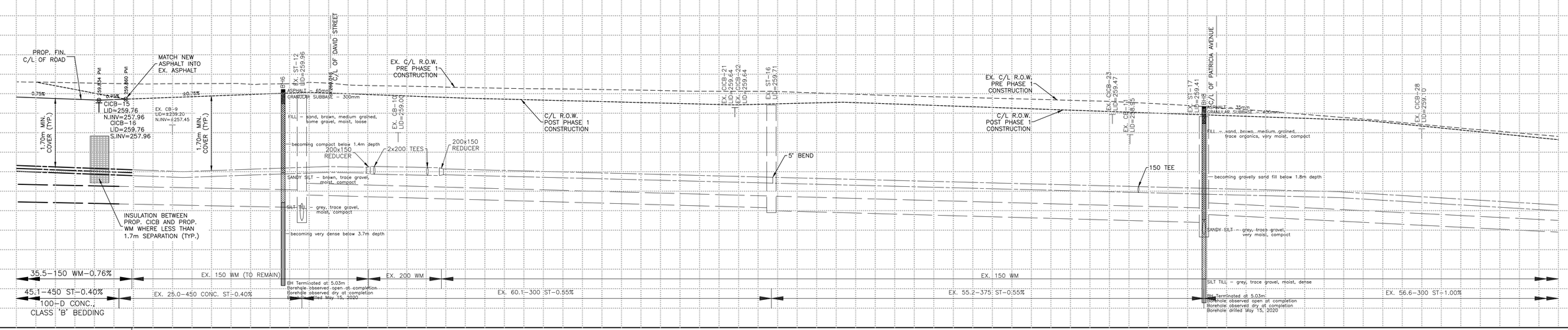
TITLE
PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION - PHASE 2, DORCHESTER, ON

PROPOSED CONSTRUCTION
ROSS AVENUE: FROM 20m WEST OF RUTH STREET TO 175m EAST OF RUTH STREET

PROJECT No. DEL20-003B
SHEET No. 9
PLAN FILE No.

rbartlett Feb.17/23-10:30am DEL20-003 P&P B.dwg





EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS	No.	REVISIONS	DATE	CONSULTANT
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FILE: DEL20-003 P&P B.DWG				

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MUNICIPALITY OF Thames Centre

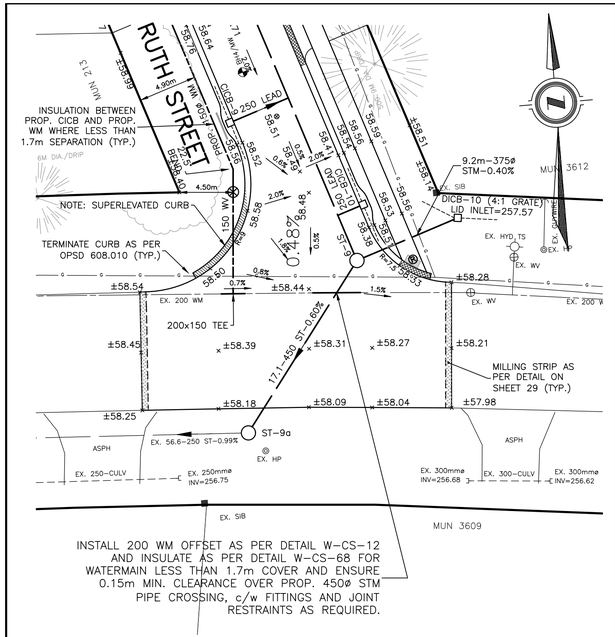
SCALE
HORIZONTAL - 1:250
2.5 0 5m
VERTICAL - 1:50
0.5 0 1m

TITLE
PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION - PHASE 2, DORCHESTER, ON

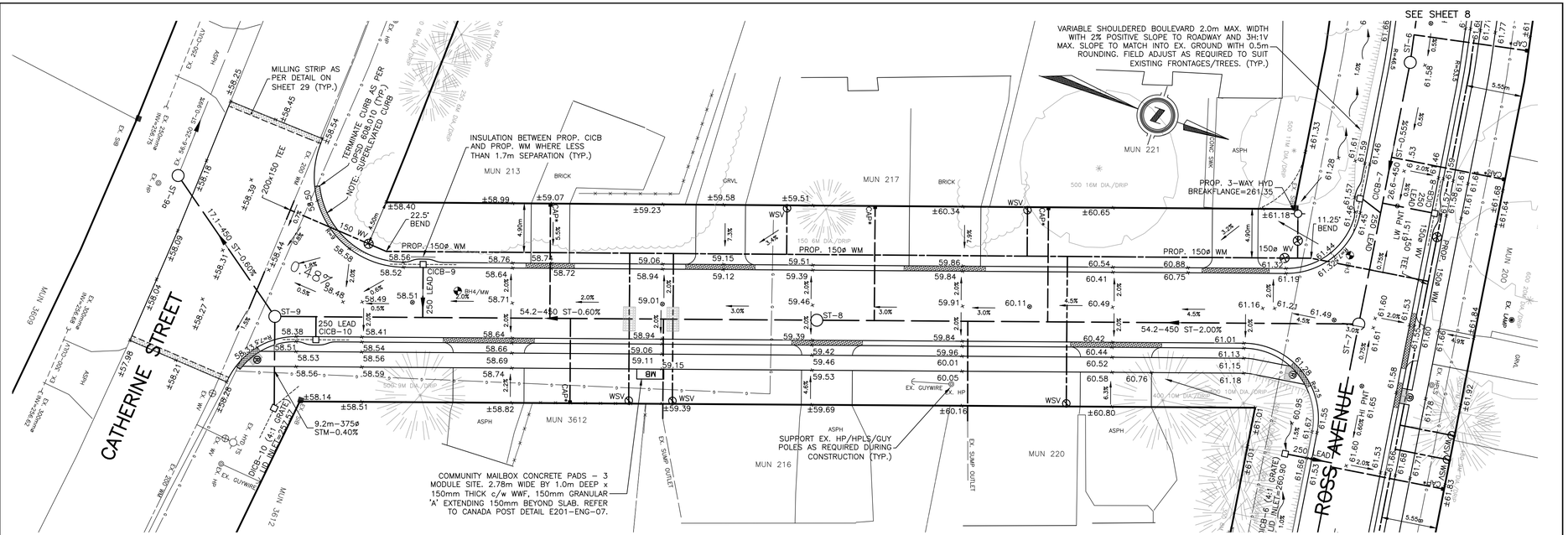
PROPOSED CONSTRUCTION
ROSS AVENUE: FROM 40m WEST OF DAVID STREET TO 45m EAST OF PATRICIA AVENUE

PROJECT No. DEL20-003B
SHEET No. 10
PLAN FILE No.

DEL20-003 P&P B.dwg
rbartlett Feb.17/23-10:30am

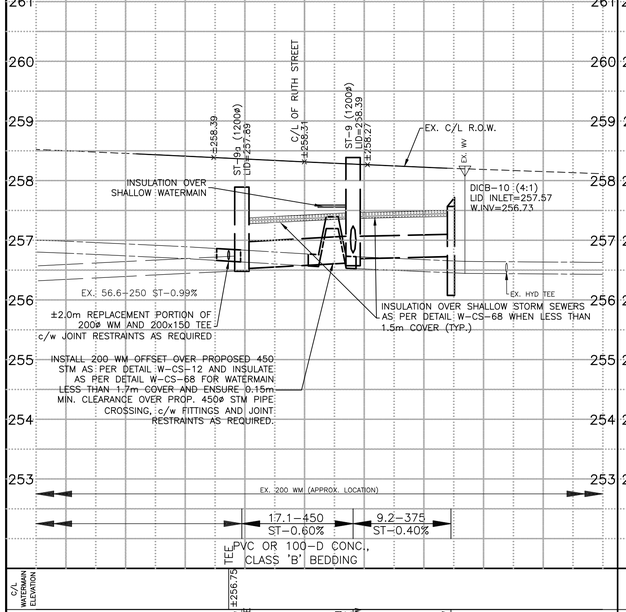


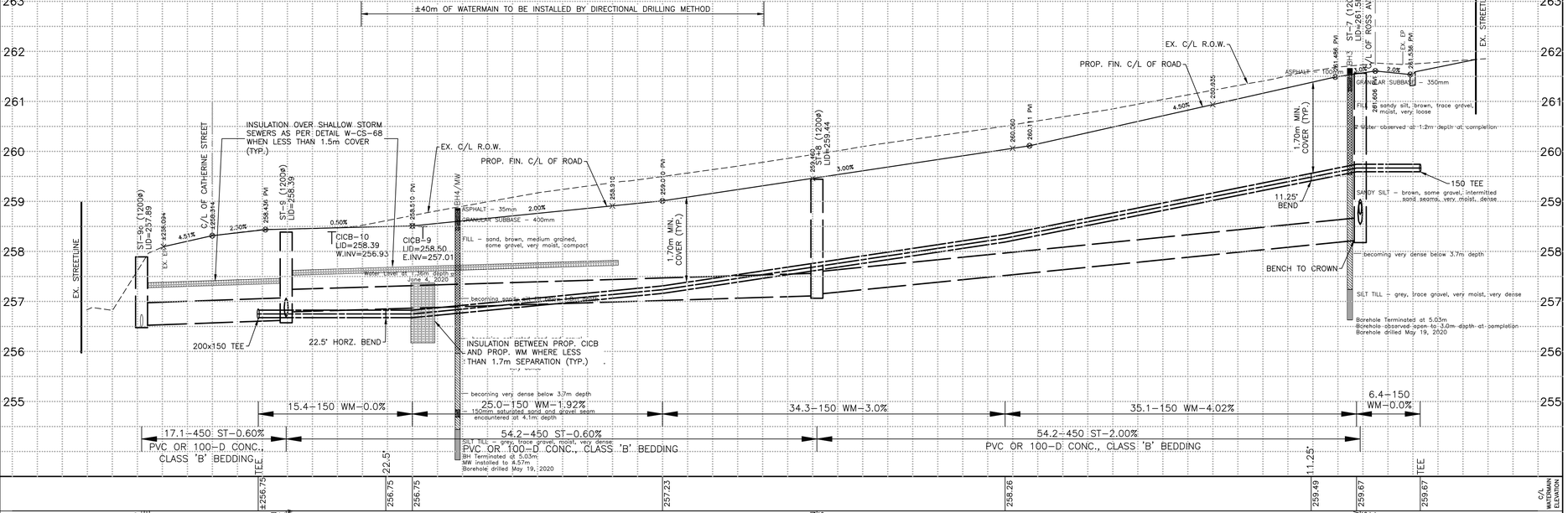
CATHERINE STREET



RUTH STREET

NOTE: REFER TO SHEET 1 FOR LEGEND AND NOTES.





STATION	SANITARY SEWER INVERT	STORM SEWER INVERT	C/L WATERMAIN ELEVATION
0+020.00			
0+005.24		256.49W 256.52NE	256.75
0+000.00			
0+004.08		256.79N 256.69E 256.625W	
0+012.28		256.73W	
0+020.00			
0+015.00		255.49W 256.52NE	256.75
0+007.06			
0+000.00		256.79N 256.69E 256.625W	256.75
0+007.39			
0+015.00			
0+030.00			257.23
0+045.00		257.14N 257.11S	
0+060.00			258.26
0+060.44			
0+075.00			
0+090.00			
0+105.00			259.49
0+114.74		258.54W 258.45S 258.74E	259.67
0+120.00			259.67

EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS	No.	REVISIONS	DATE	CONSULTANT
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F.BK. 1219				
FILE: DEL20–003 P&P B.DWG				

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PROVINCE OF ONTARIO

MUNICIPALITY OF Thames Centre

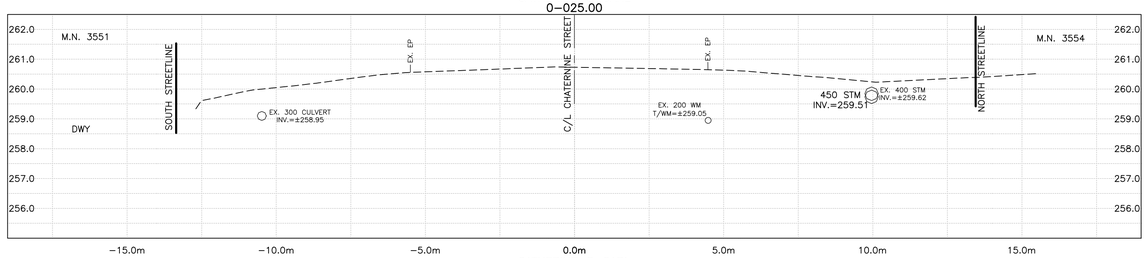
SCALE
HORIZONTAL – 1:250
2.5 0 5m
VERTICAL – 1:50
0.5 0 1m

TITLE
PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION – PHASE 2, DORCHESTER, ON
PROPOSED CONSTRUCTION
RUTH STREET: FROM CATHERINE STREET INTERSECTION TO ROSS AVENUE

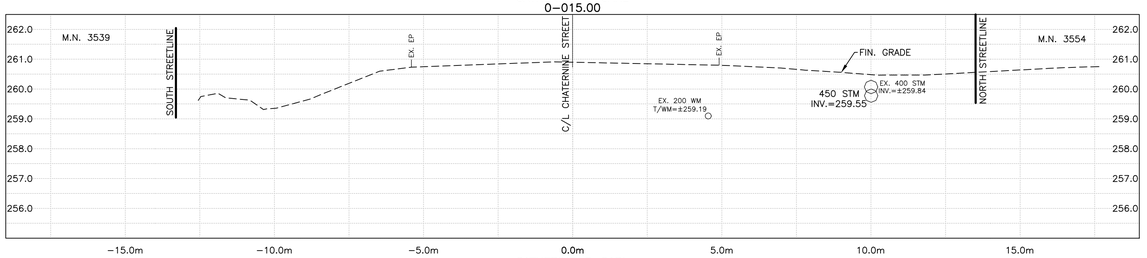
PROJECT No. DEL20–003B
SHEET No. 11
PLAN FILE No.

DEL20–003 P&P B.dwg
rbartlett Feb.17/23–10:31am

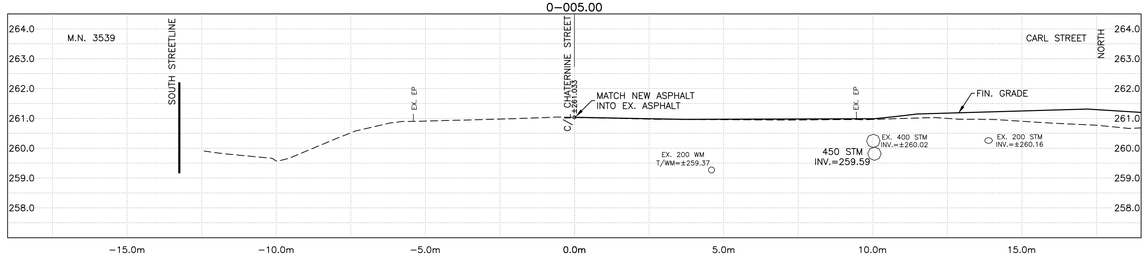
CATHERINE @ CARL
0−025.00



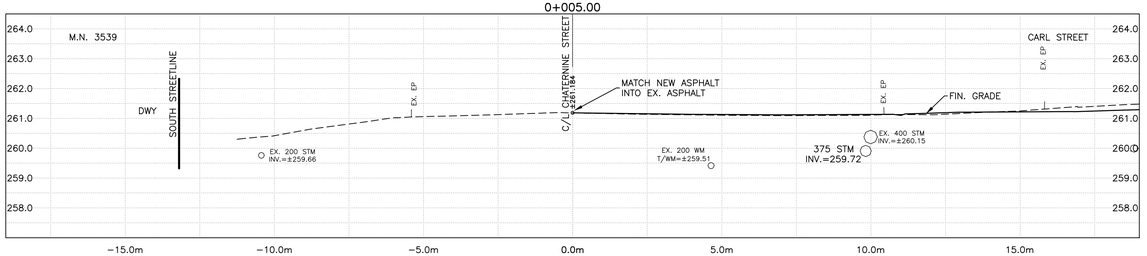
CATHERINE @ CARL
0−015.00



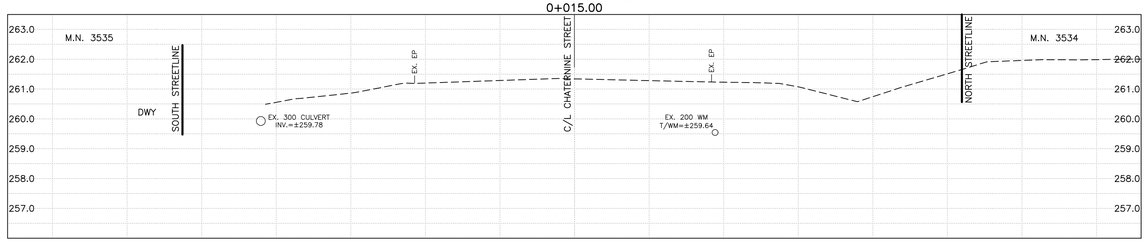
CATHERINE @ CARL
0−005.00



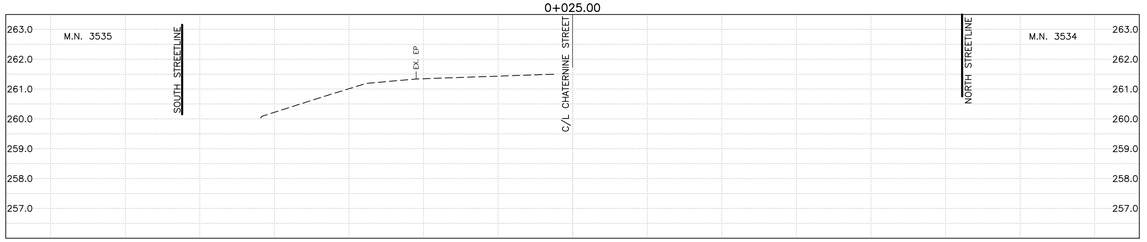
CATHERINE @ CARL
0+005.00



CATHERINE @ CARL
0+015.00



CATHERINE @ CARL
0+025.00



EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS	No.	REVISIONS	DATE	CONSULTANT
DESIGN BY RAB	1	ISSUED FOR TENDER	FEB 28/23	DEVENG
DRAWN BY RAB				
CHECKED BY JS				
F.BK. 1219				
FILE: DEL20−003 SECTIONS B.DWG				

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100144789
Feb 28/23
PROVINCE OF ONTARIO

MUNICIPALITY OF Thames Centre

SCALE

SCALE − 1:100
1 0 2m

TITLE

PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION − PHASE 2, DORCHESTER, ON

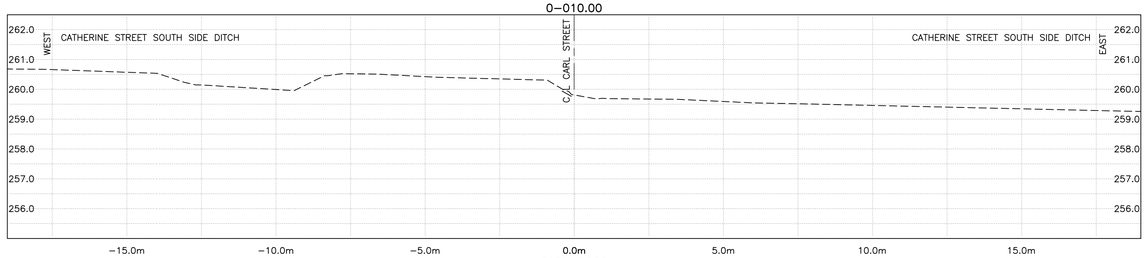
SECTIONS
CATHERINE STREET AT CARL STREET
FROM 0−025 TO 0+025

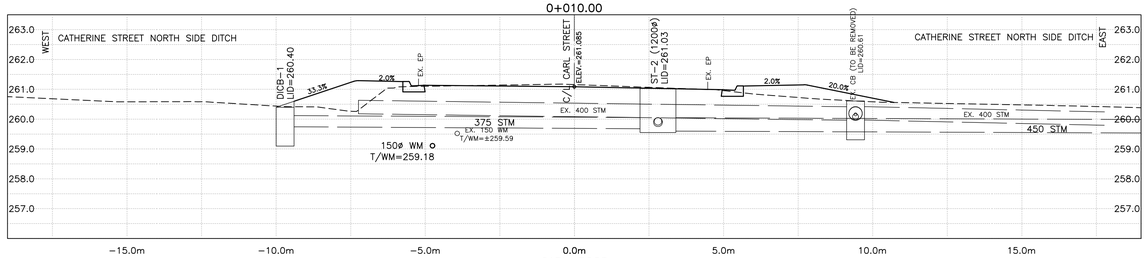
PROJECT No.
DEL20−003B

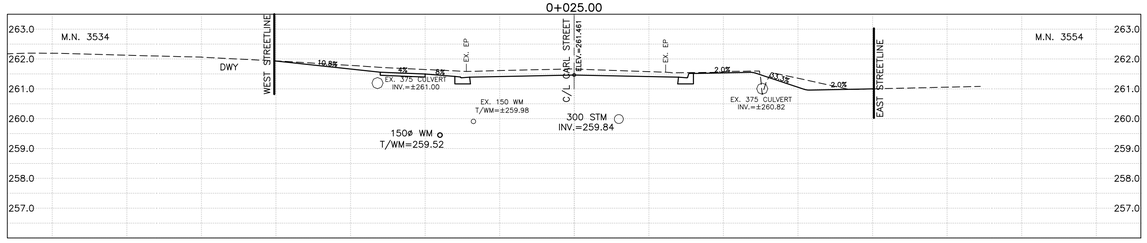
SHEET No.
12

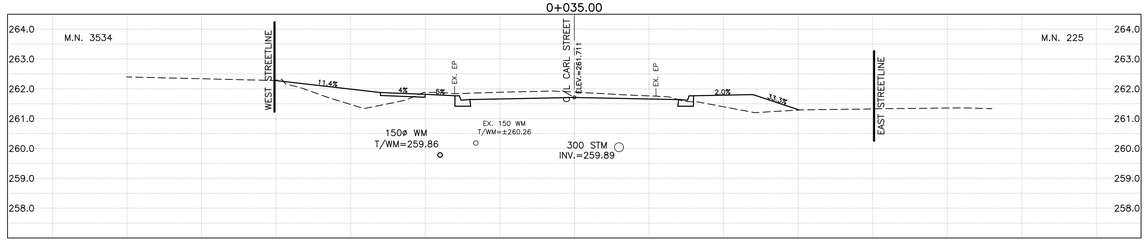
PLAN FILE No.

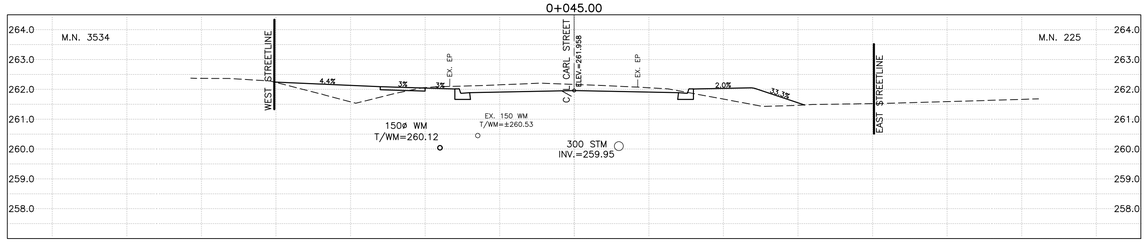
rbortlett Feb.17/23−10:31am DEL20−003 SECTIONS B.dwg

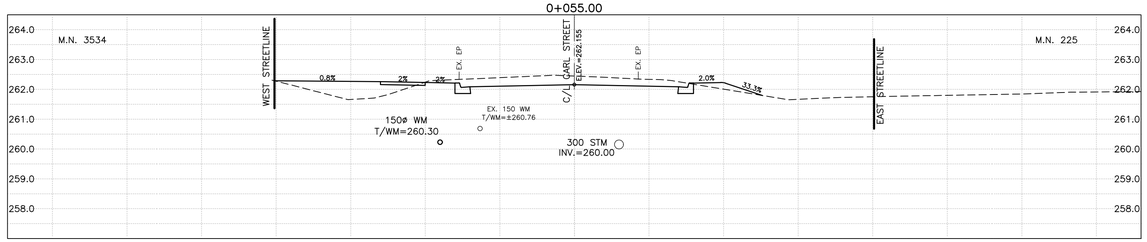


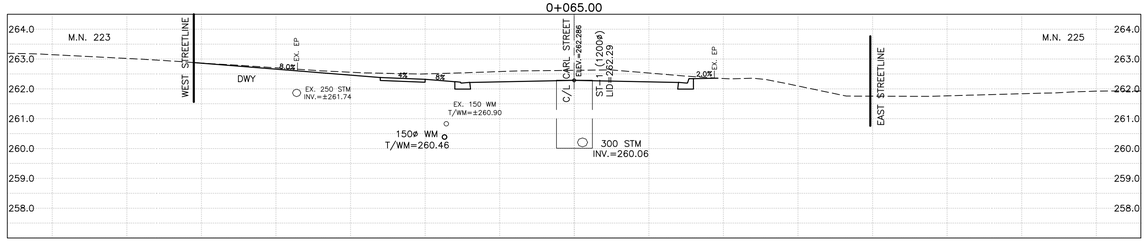


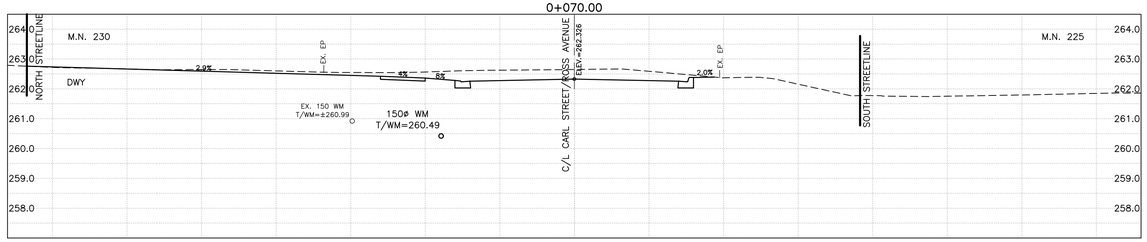


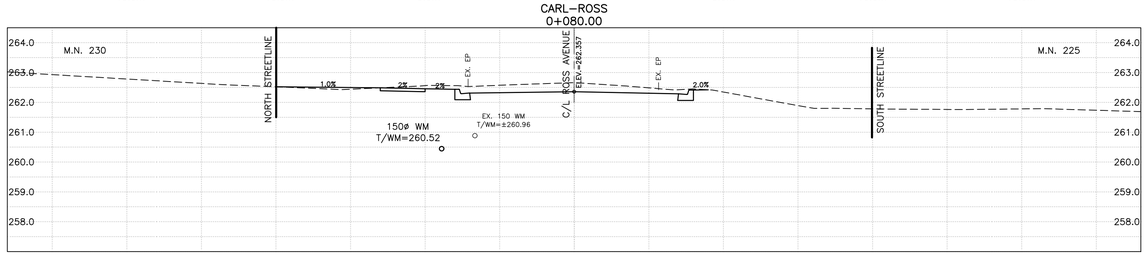


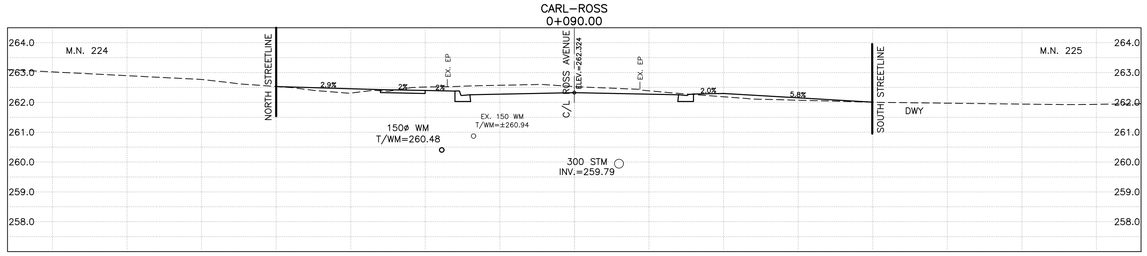












EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS	No.	REVISIONS	DATE	CONSULTANT
DESIGN BY RAB	1	ISSUED FOR TENDER	FEB 28/23	DEVENG
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F.BK. 1219				
FILE: DEL20–003 SECTIONS B.DWG				

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LICENSED PROFESSIONAL ENGINEER
J. R. SMITH
100144789
Feb 28/23
PROVINCE OF ONTARIO

MUNICIPALITY OF Thames Centre

SCALE

SCALE – 1:100
1 0 2m

TITLE

PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION – PHASE 2, DORCHESTER, ON

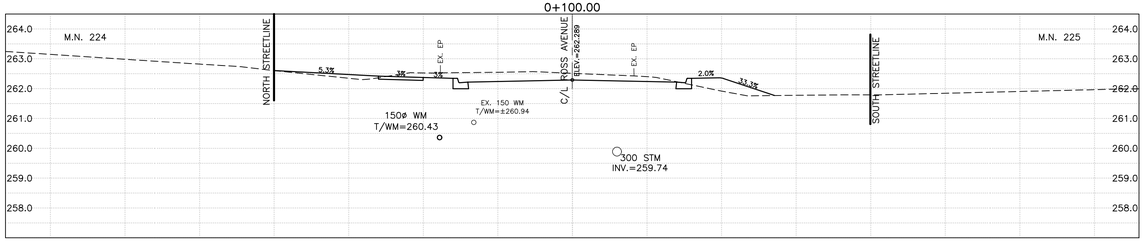
SECTIONS
CARL STREET AND ROSS AVENUE
FROM 0–010 TO 0+090

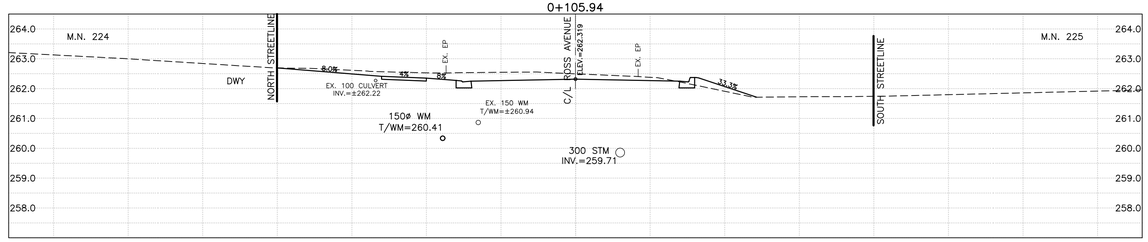
PROJECT No. DEL20–003B

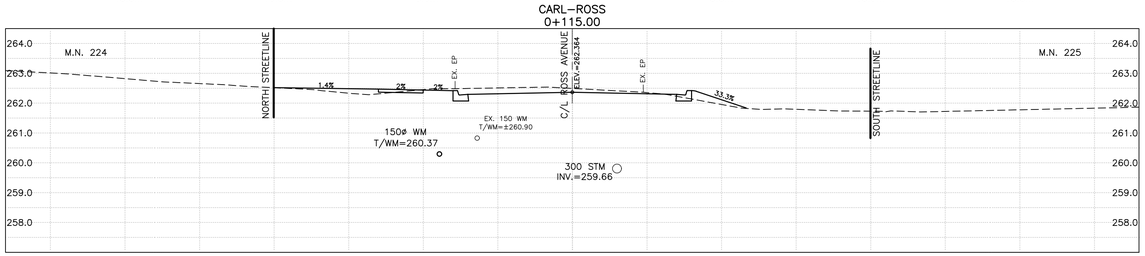
SHEET No. 13

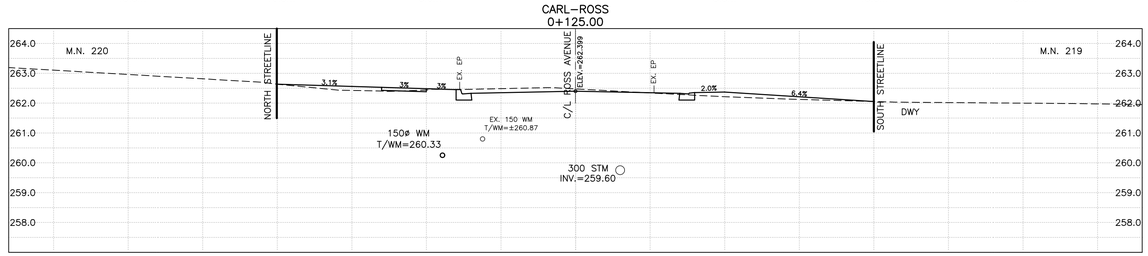
PLAN FILE No.

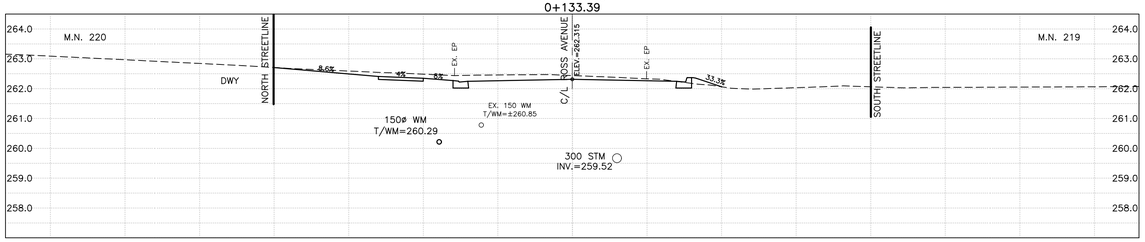
rportett Feb.17/23–10:31am DEL20–003 SECTIONS B.dwg

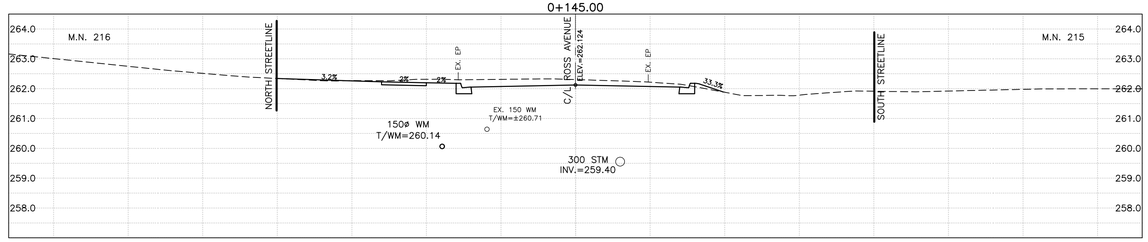


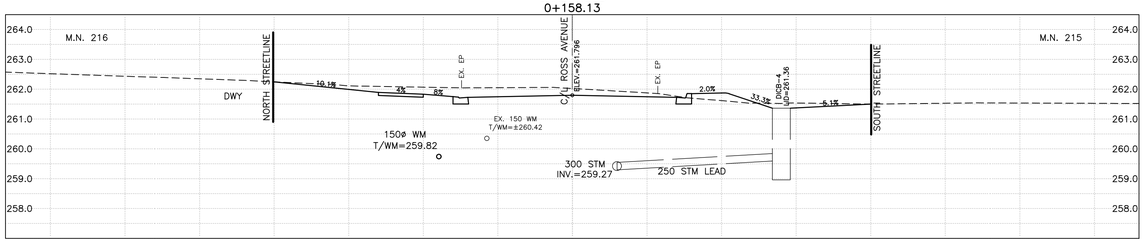


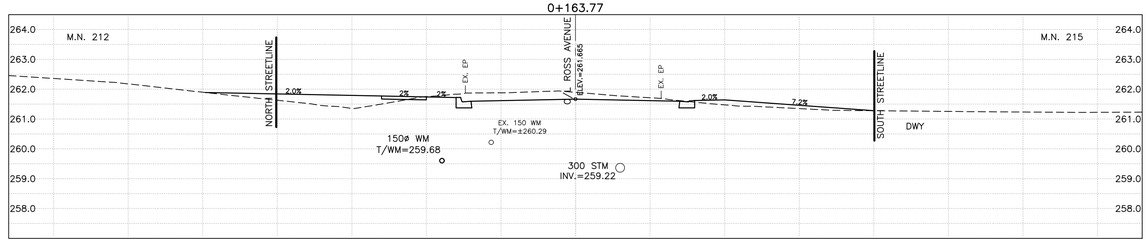


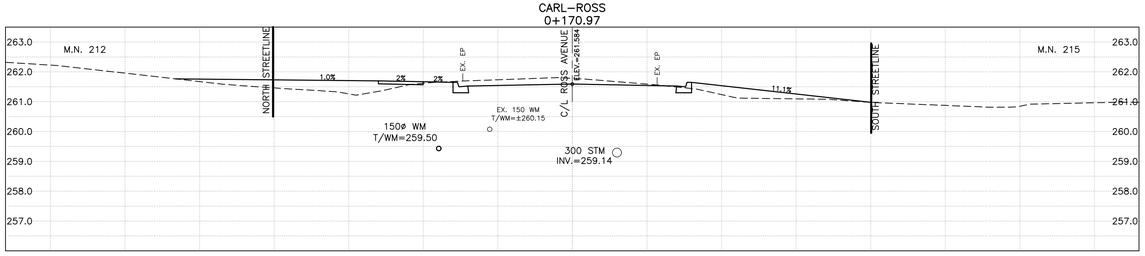


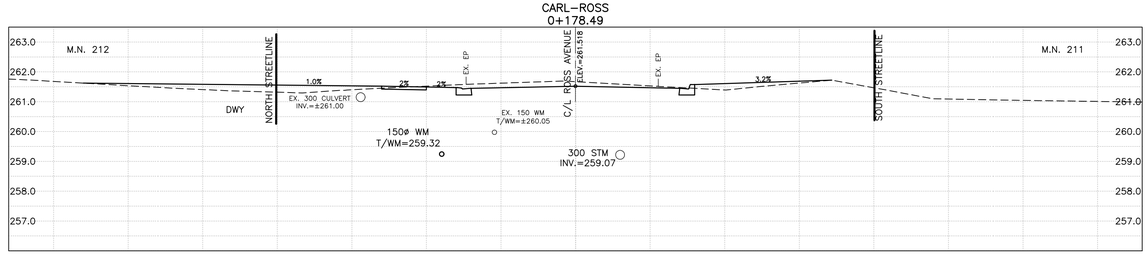












EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

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FILE: DEL20-003 SECTIONS B.DWG				

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J. R. SMITH
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Feb 28/23
PROVINCE OF ONTARIO

MUNICIPALITY OF Thames Centre

SCALE

SCALE – 1:100
1 0 2m

TITLE

PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION – PHASE 2, DORCHESTER, ON

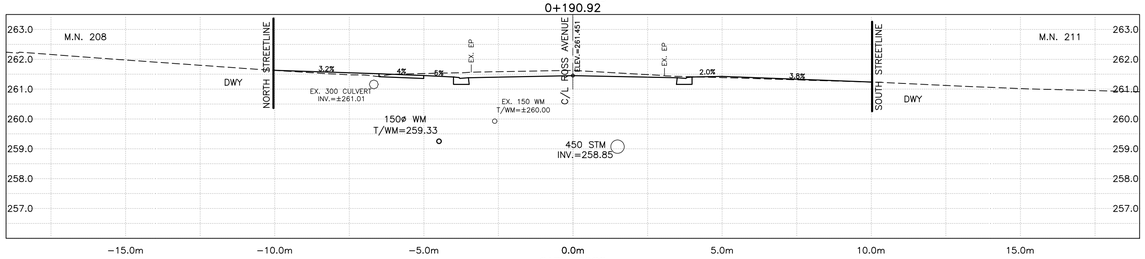
SECTIONS
ROSS AVENUE
FROM 0+100 TO 0+178.49

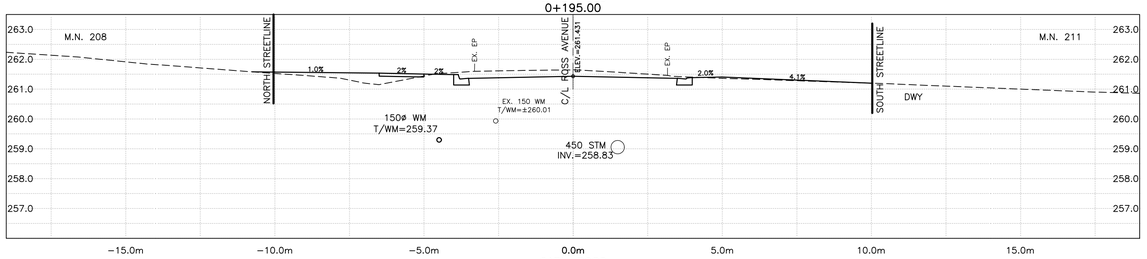
PROJECT No. DEL20–003B

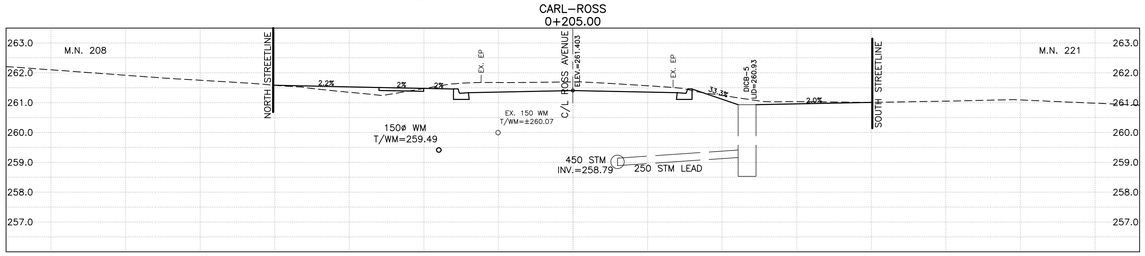
SHEET No. 14

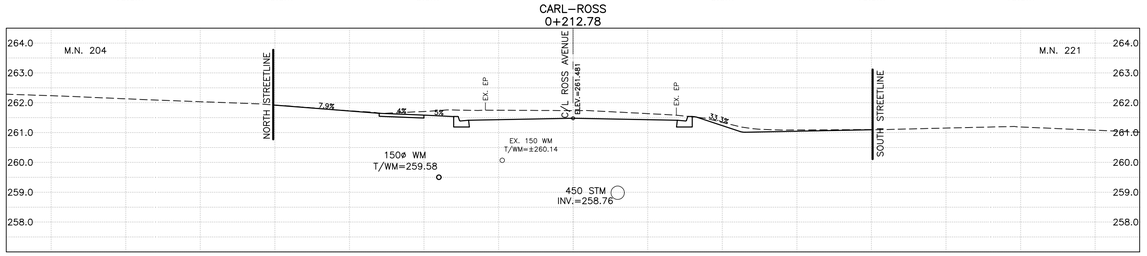
PLAN FILE No.

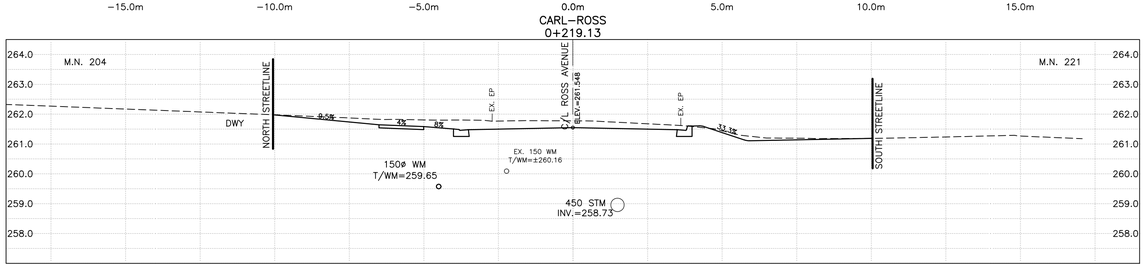
DEL20-003 SECTIONS B.dwg
rbartlett Feb 17/23 - 10:32am

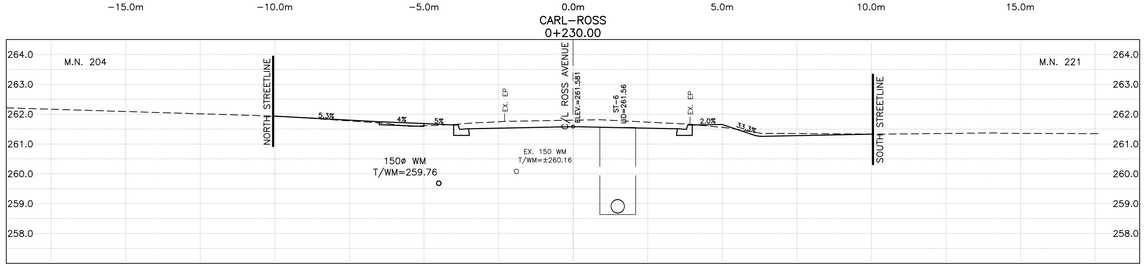


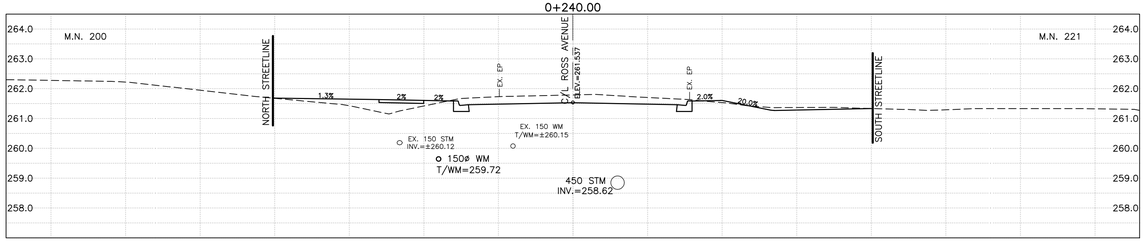


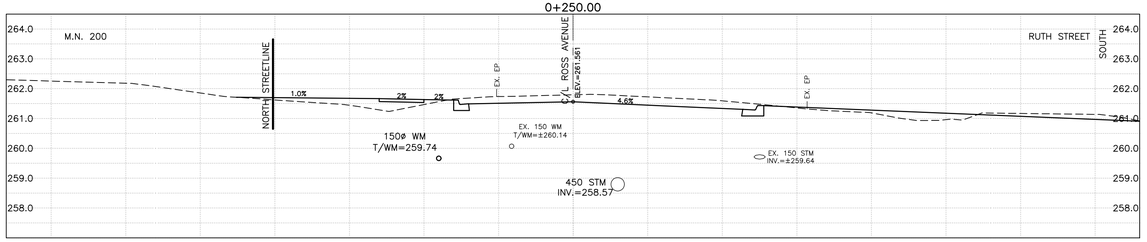


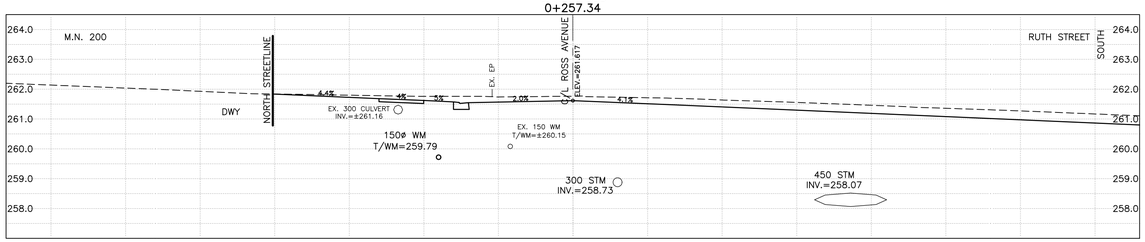


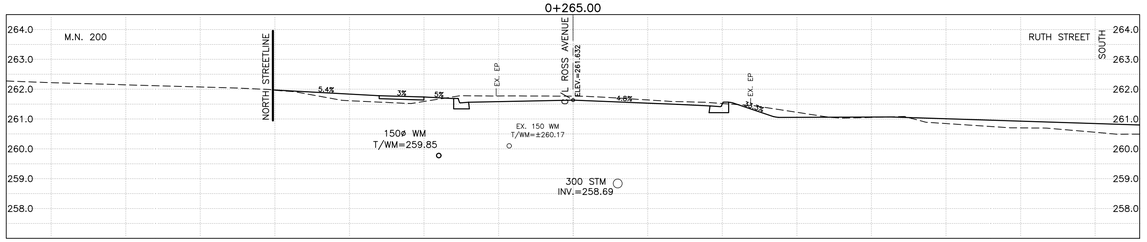












EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS	No.	REVISIONS	DATE	CONSULTANT
DESIGN BY RAB	1	ISSUED FOR TENDER	FEB 28/23	DEVENG
DRAWN BY RAB				
CHECKED BY JS				
F.BK. 1219				
FILE: DEL20-003 SECTIONS B.DWG				

CONSULTANT OR DIVISION

London Office
41 Adelaide St. N., Unit 71
(519) 672-8310

Paris Office
31 Mechanic St., Unit 301
(519) 442-1441

development engineering (London) Limited
CONSULTING CIVIL ENGINEERS

ENGINEER'S STAMP

LICENSED PROFESSIONAL ENGINEER
J. R. SMITH
100144789
Feb 28/23
PROVINCE OF ONTARIO

MUNICIPALITY OF Thames Centre

SCALE

SCALE – 1:100
1 0 2m

TITLE

PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION – PHASE 2, DORCHESTER, ON

SECTIONS
ROSS AVENUE
FROM 0+190.92 TO 0+265

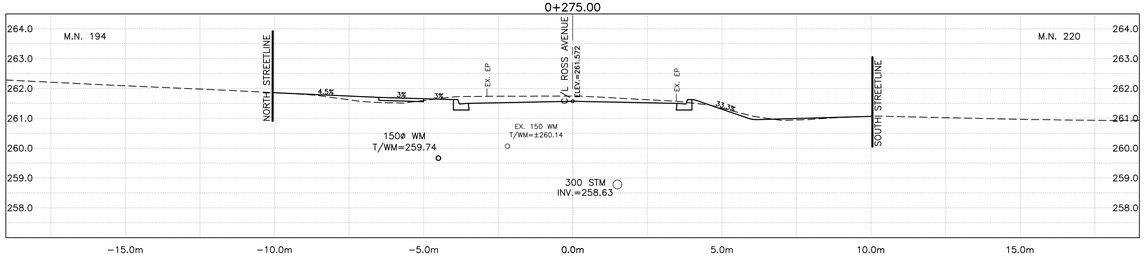
PROJECT No. DEL20–003B

SHEET No. 15

PLAN FILE No.

rbortlett Feb.17/23–10:32am DEL20–003 SECTIONS B.dwg

CARL–ROSS
0+275.00



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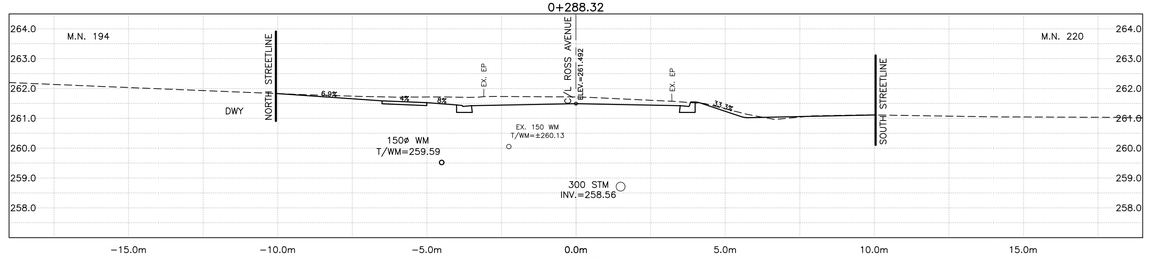

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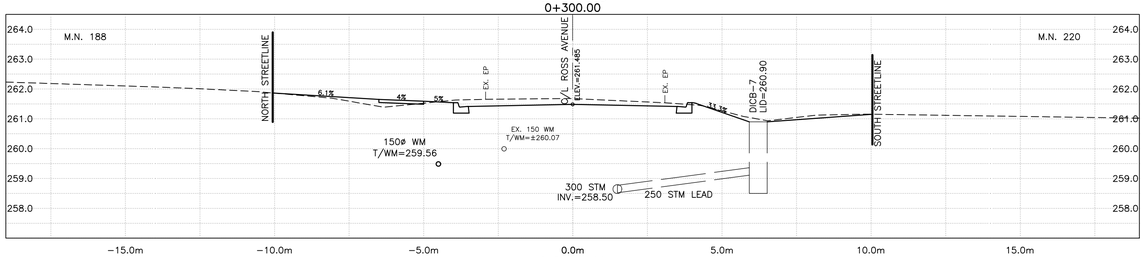
0+300.00



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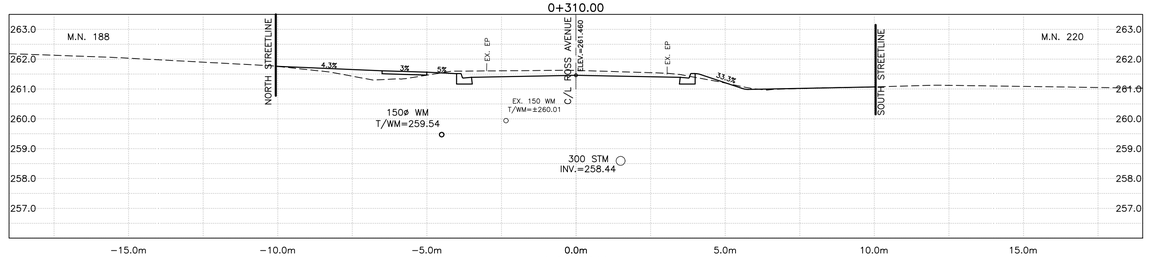

CARL–ROSS
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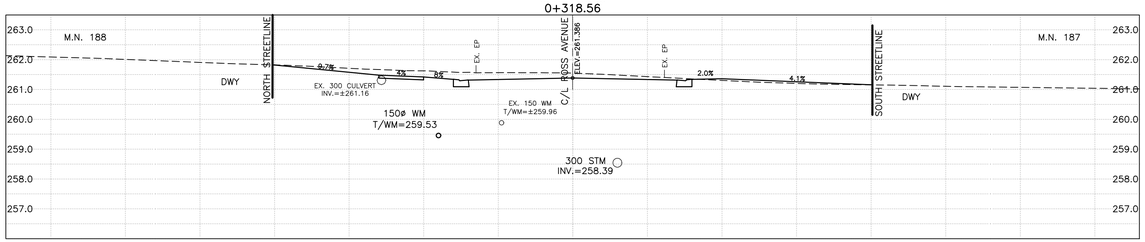

CARL–ROSS
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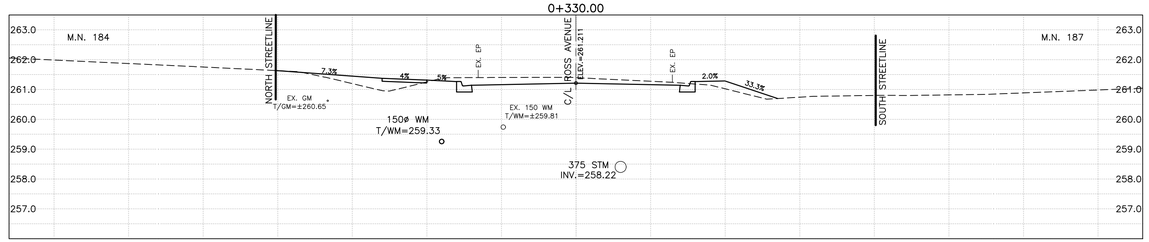
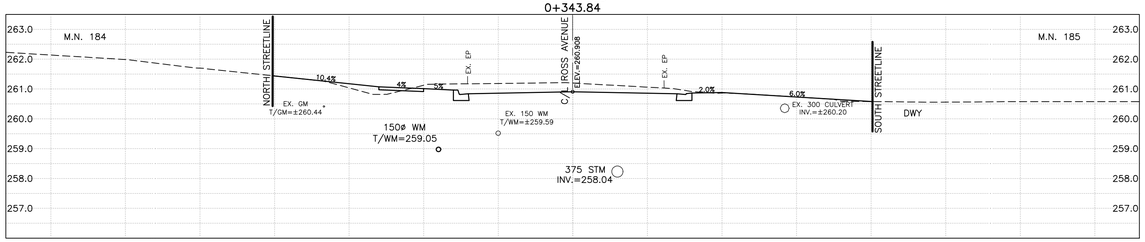
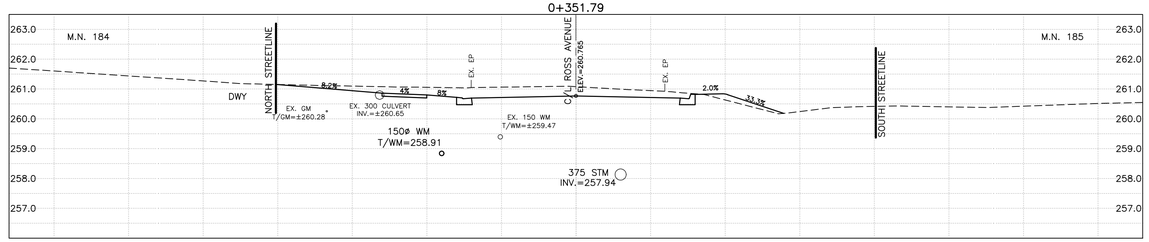


CARL–ROSS
0+343.84



CARL–ROSS
0+351.79



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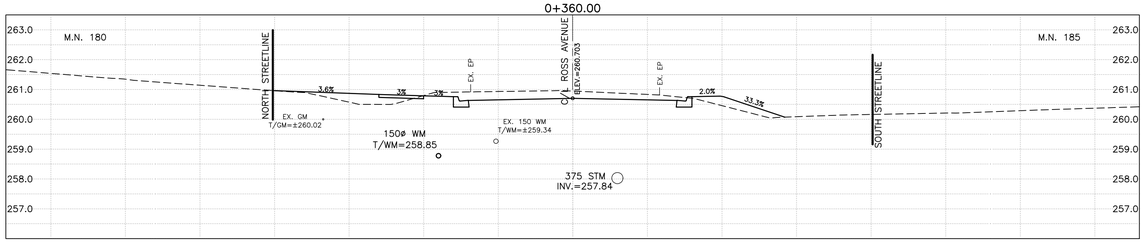
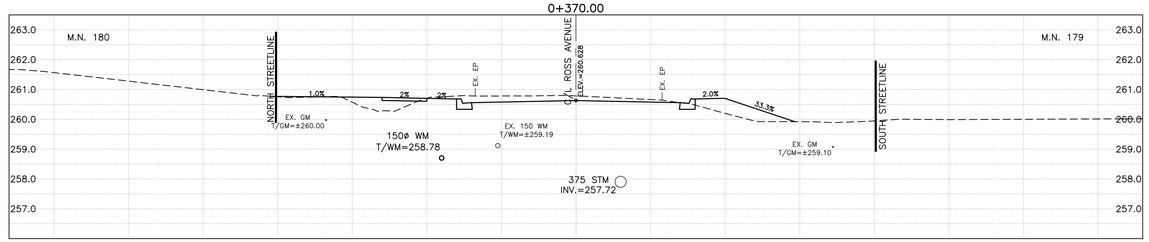


CARL–ROSS
0+370.00



EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS	No.	REVISIONS	DATE	CONSULTANT
DESIGN BY RAB	1	ISSUED FOR TENDER	FEB 28/23	DEVENG
DRAWN BY RAB				
CHECKED BY JS				
F.BK. 1219				
FILE: DEL20-003 SECTIONS B.DWG				

CONSULTANT OR DIVISION

London Office
41 Adelaide St. N., Unit 71
(519) 672-8310

Paris Office
31 Mechanic St., Unit 301
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development engineering (London) Limited
CONSULTING CIVIL ENGINEERS

ENGINEER'S STAMP

LICENSED PROFESSIONAL ENGINEER
J. R. SMITH
100144789
Feb 28/23
PROVINCE OF ONTARIO

MUNICIPALITY OF Thames Centre

SCALE

SCALE – 1:100
1 0 2m

TITLE
PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION – PHASE 2, DORCHESTER, ON

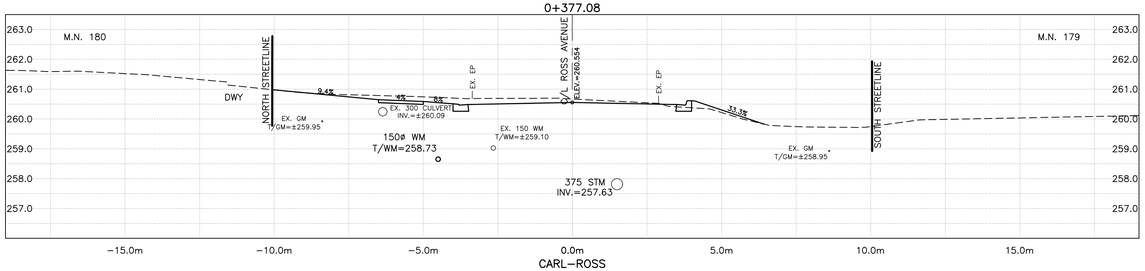
SECTIONS
ROSS AVENUE
FROM 0+275 TO 0+370

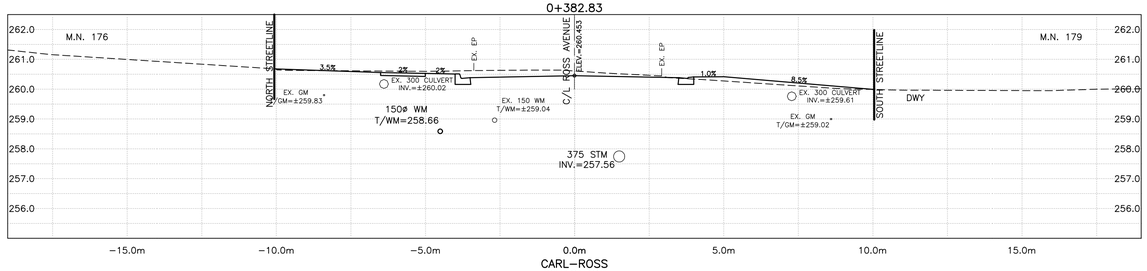
PROJECT No.
DEL20-003B

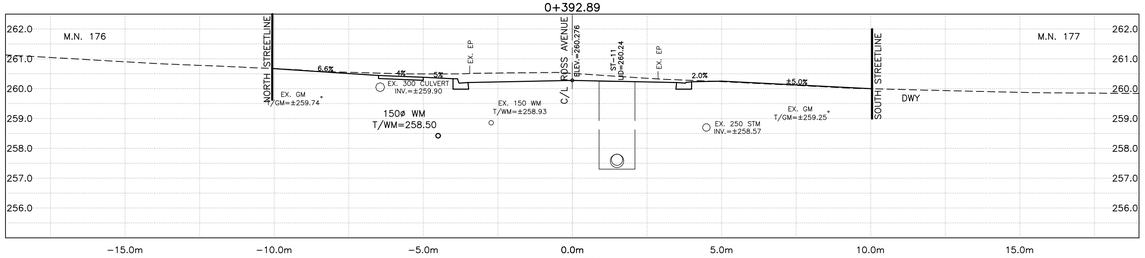
SHEET No.
16

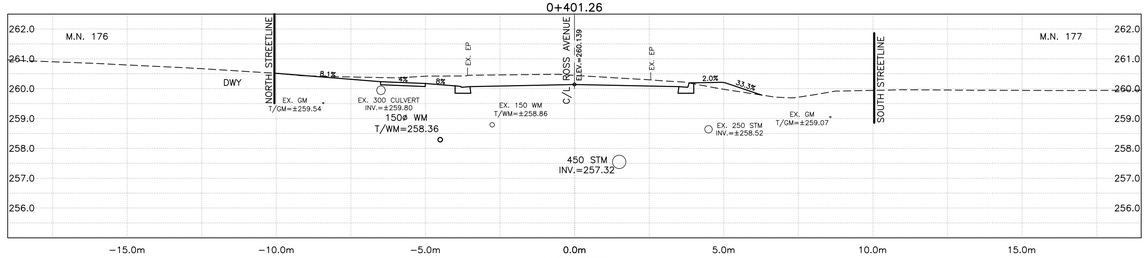
PLAN FILE No.

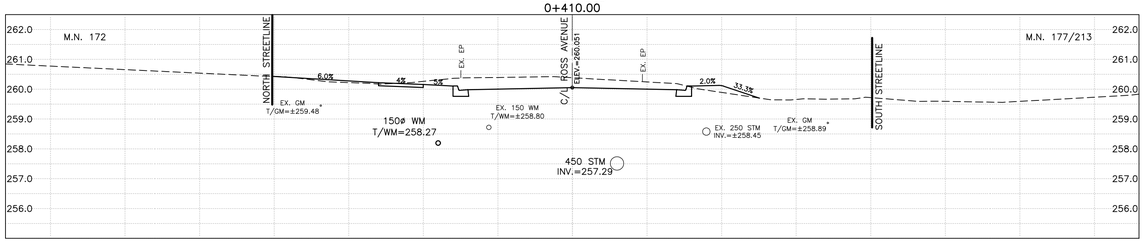
mortlett Feb.17/23-10:32am DEL20-003 SECTIONS B.dwg

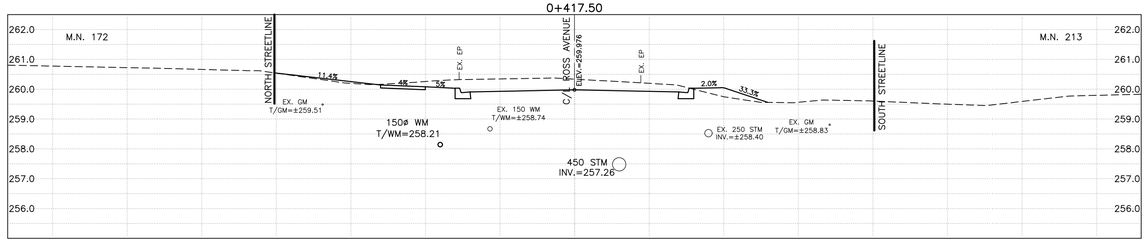


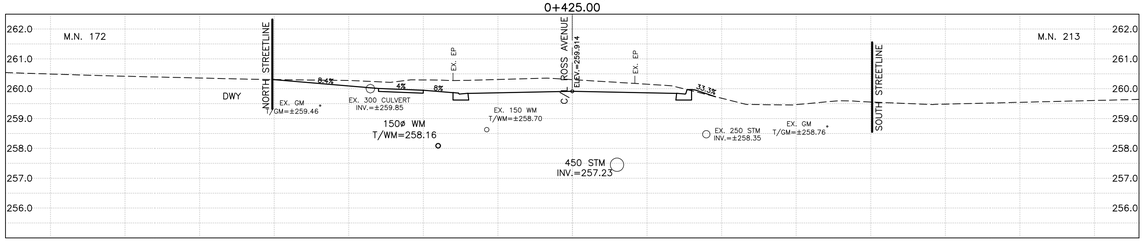


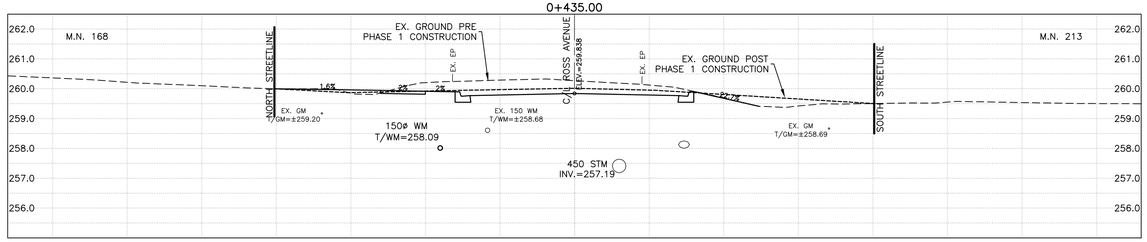


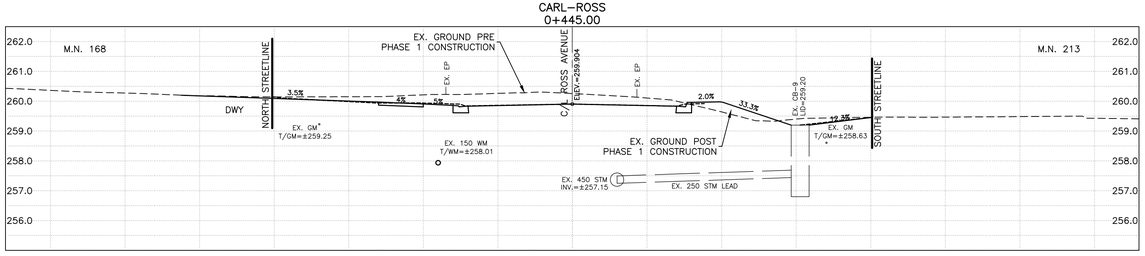


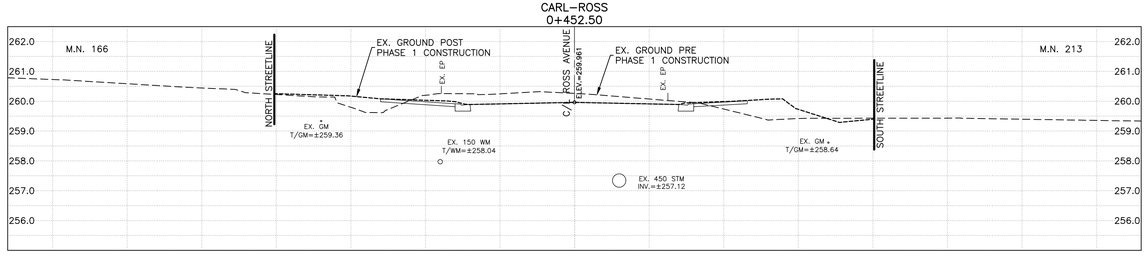












EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS	No.	REVISIONS	DATE	CONSULTANT
DESIGN BY RAB	1	ISSUED FOR TENDER	FEB 28/23	DEVENG
DRAWN BY RAB				
CHECKED BY JS				
F.BK. 1219				
FILE: DEL20–003 SECTIONS B.DWG				

CONSULTANT OR DIVISION

London Office
41 Adelaide St. N., Unit 71
(519) 672-8310

Paris Office
31 Mechanic St., Unit 301
(519) 442-1441

development engineering (London) Limited
CONSULTING CIVIL ENGINEERS

ENGINEER'S STAMP

LICENSED PROFESSIONAL ENGINEER
J. R. SMITH
100144789
Feb 28/23
PROVINCE OF ONTARIO

MUNICIPALITY OF Thames Centre

SCALE

SCALE – 1:100
1 0 2m

TITLE

PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION – PHASE 2, DORCHESTER, ON

SECTIONS
ROSS AVENUE
FROM 0+377.08 TO 0+452.50

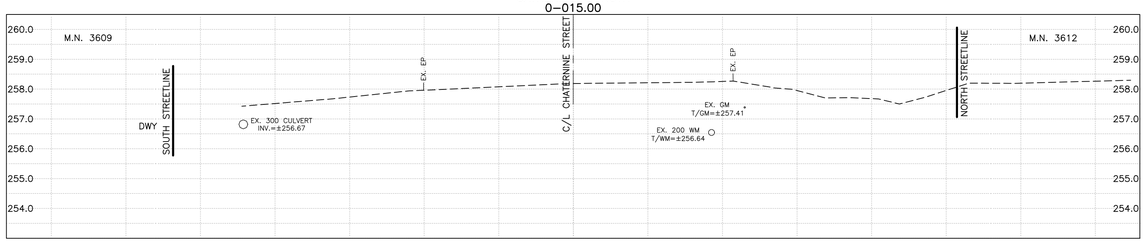
PROJECT No. DEL20–003B

SHEET No. 17

PLAN FILE No.

rbartlett Feb.17/23–10:32am DEL20–003 SECTIONS B.dwg

CATHERINE @ RUTH 0−015.00



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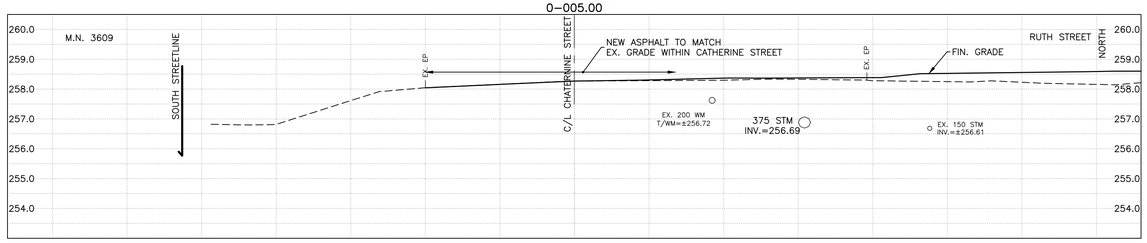
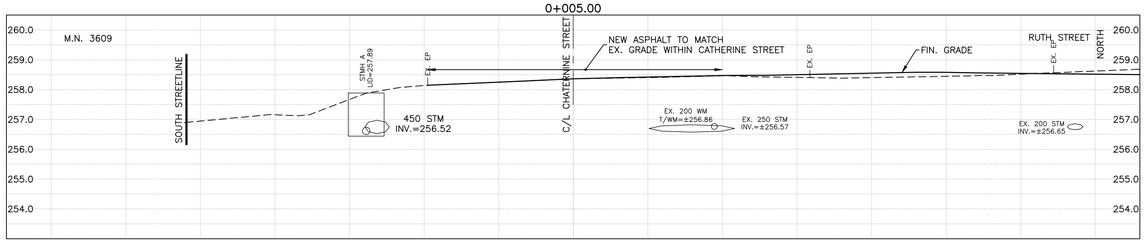
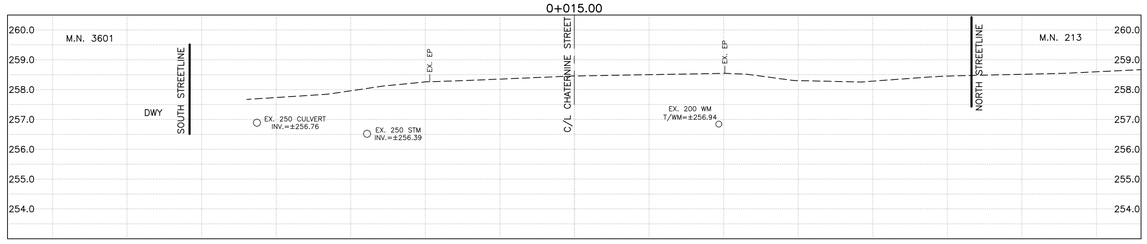


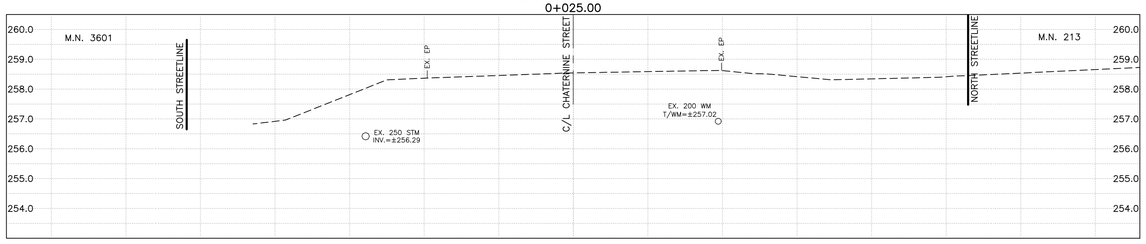
CATHERINE @ RUTH 0+005.00



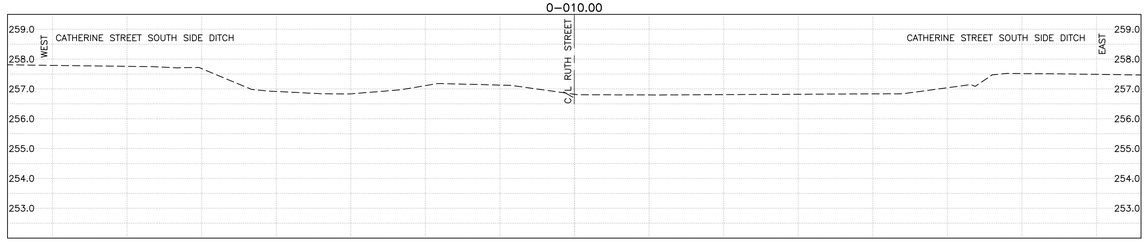
CATHERINE @ RUTH 0+015.00



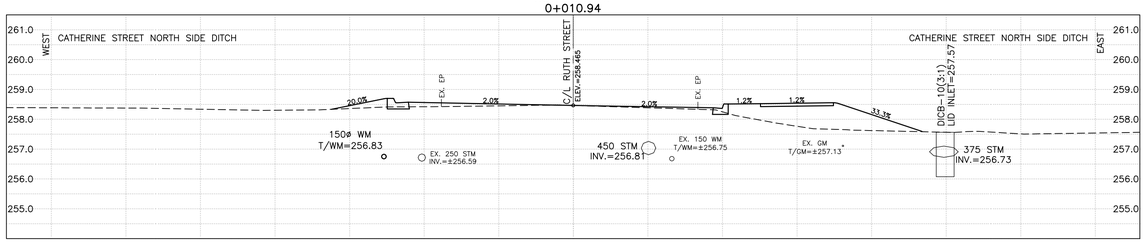
CATHERINE @ RUTH 0+025.00



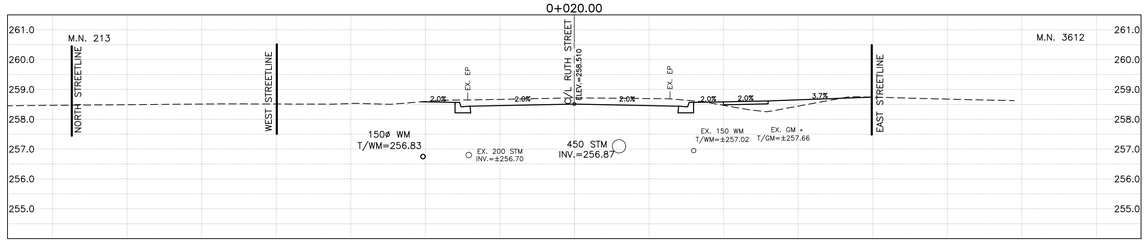
RUTH STREET 0−010.00



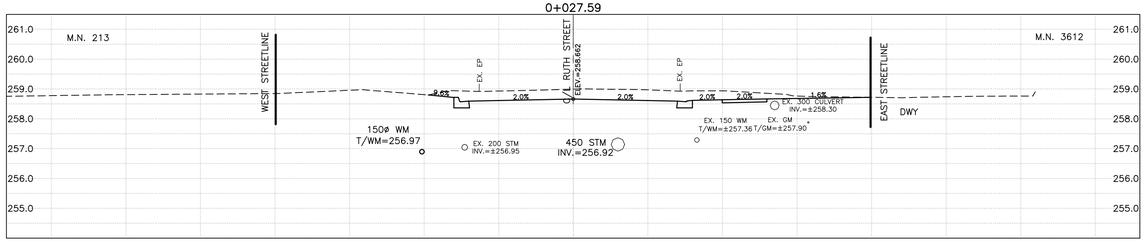
RUTH STREET 0+010.94



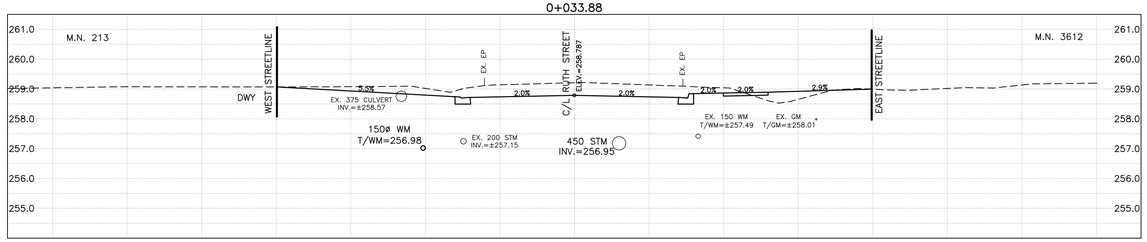
RUTH STREET 0+020.00



RUTH STREET 0+027.59



RUTH STREET 0+033.88



EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS
DESIGN BY RAB
DRAWN BY RAB
CHECKED BY JS
F.BK. 1219
FILE: DEL20−003 SECTIONS B.DWG

No.	REVISIONS	DATE	CONSULTANT
1	ISSUED FOR TENDER	FEB 28/23	DEVENG

CONSULTANT OR DIVISION

London Office
41 Adelaide St. N., Unit 71
(519) 672-8310

Paris Office
31 Mechanic St., Unit 301
(519) 442-1441

development engineering (London) Limited
CONSULTING CIVIL ENGINEERS

ENGINEER'S STAMP

LICENSED PROFESSIONAL ENGINEER
J. R. SMITH
100144789
Feb 28/23
PROVINCE OF ONTARIO

MUNICIPALITY OF Thames Centre

SCALE

SCALE − 1:100
1 0 2m

TITLE

PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION − PHASE 2, DORCHESTER, ON

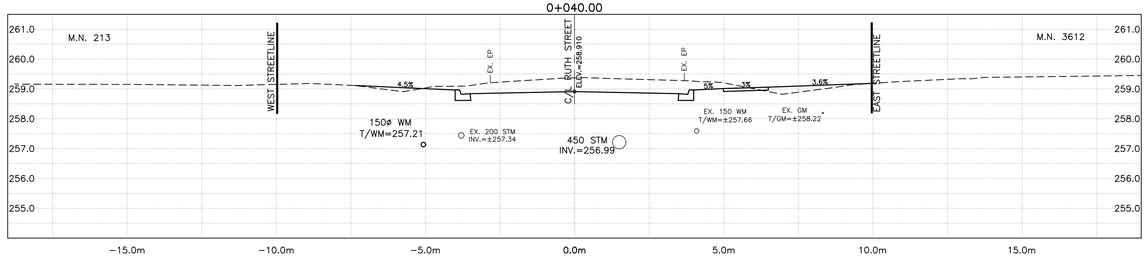
SECTIONS
CATHERINE STREET AT RUTH STREET
RUTH STREET FROM 0−010 TO 0+033.88

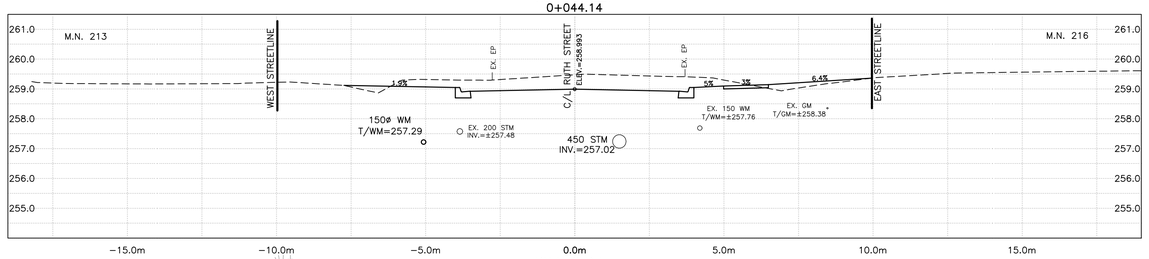
PROJECT No. DEL20−003B

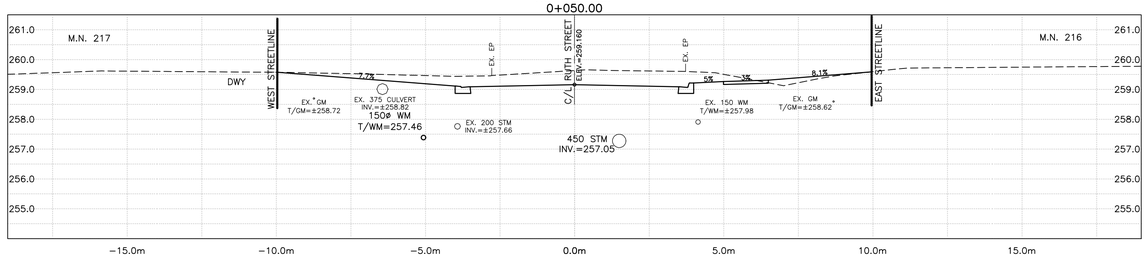
SHEET No. 18

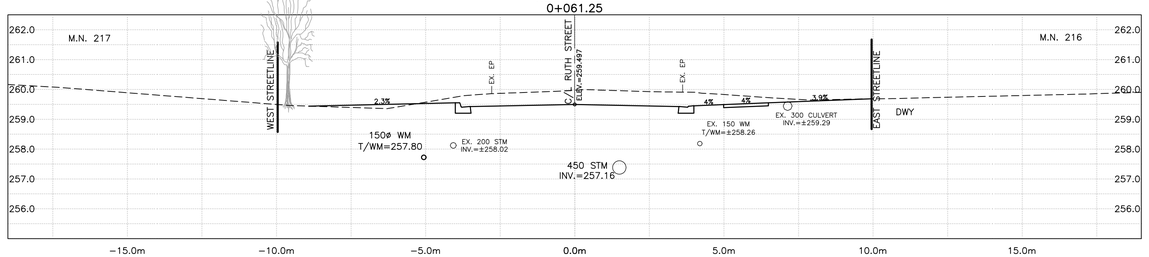
PLAN FILE No.

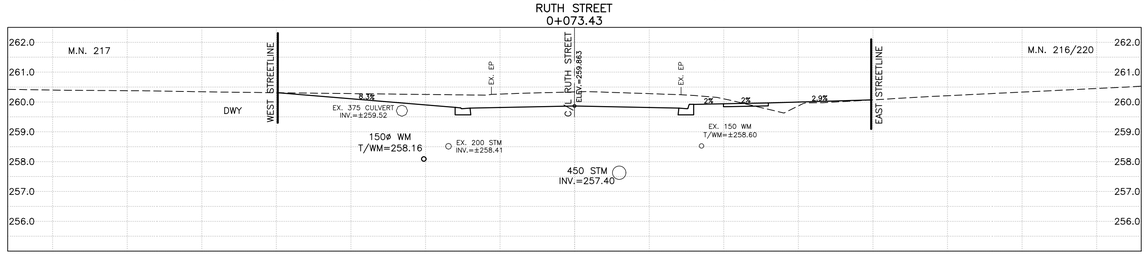
dsmtlett Feb.17/23−10:32am DEL20−003 SECTIONS B.dwg

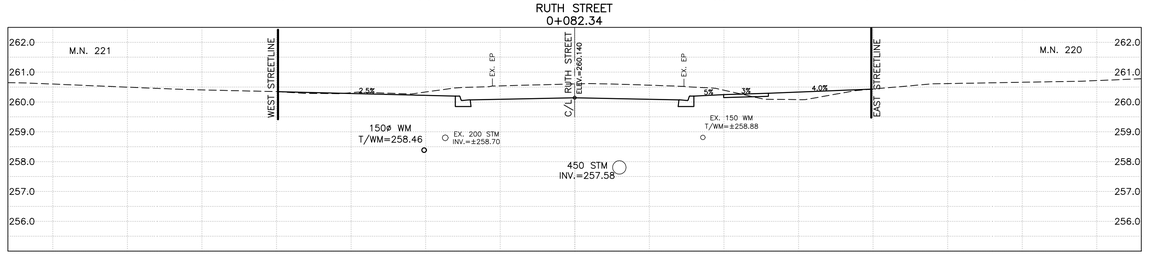


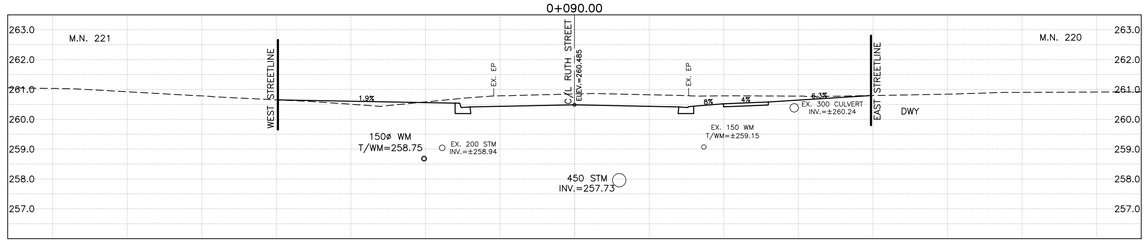


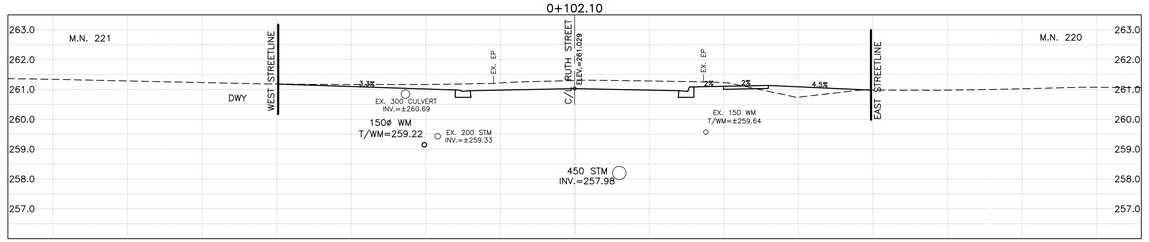


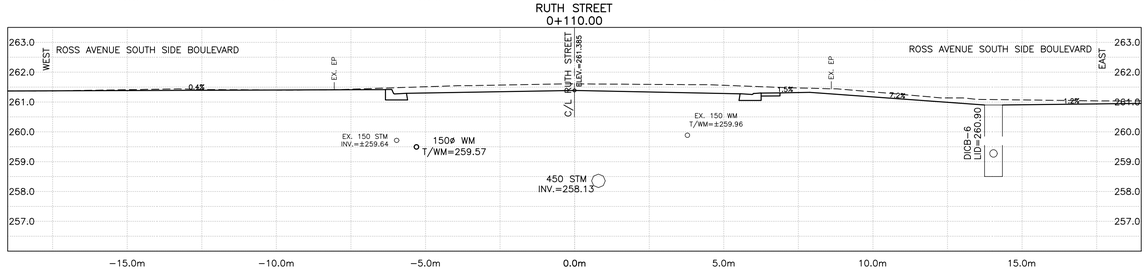


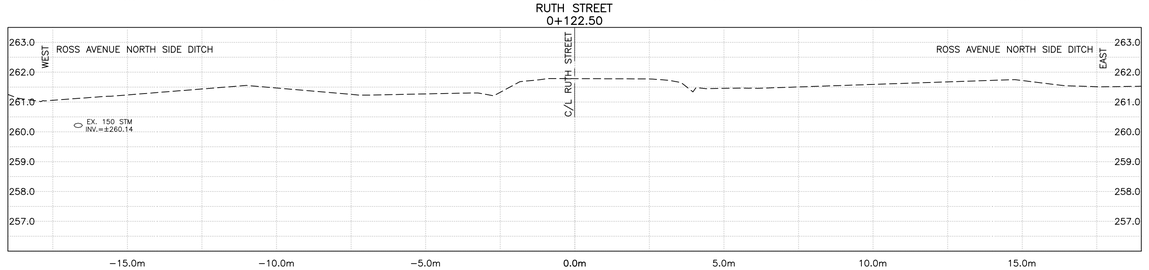












EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS
DESIGN BY RAB
DRAWN BY RAB
CHECKED BY JS
F.BK. 1219
FILE: DEL20-003 SECTIONS B.DWG

No.	REVISIONS	DATE	CONSULTANT
1	ISSUED FOR TENDER	FEB 28/23	DEVENG

CONSULTANT OR DIVISION

London Office
41 Adelaide St. N., Unit 71
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development engineering (London) Limited
CONSULTING CIVIL ENGINEERS

ENGINEER'S STAMP

LICENSED PROFESSIONAL ENGINEER
J. R. SMITH
100144789
Feb 28/23
PROVINCE OF ONTARIO

MUNICIPALITY OF Thames Centre

SCALE

SCALE − 1:100
1 0 2m

TITLE

PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION – PHASE 2, DORCHESTER, ON

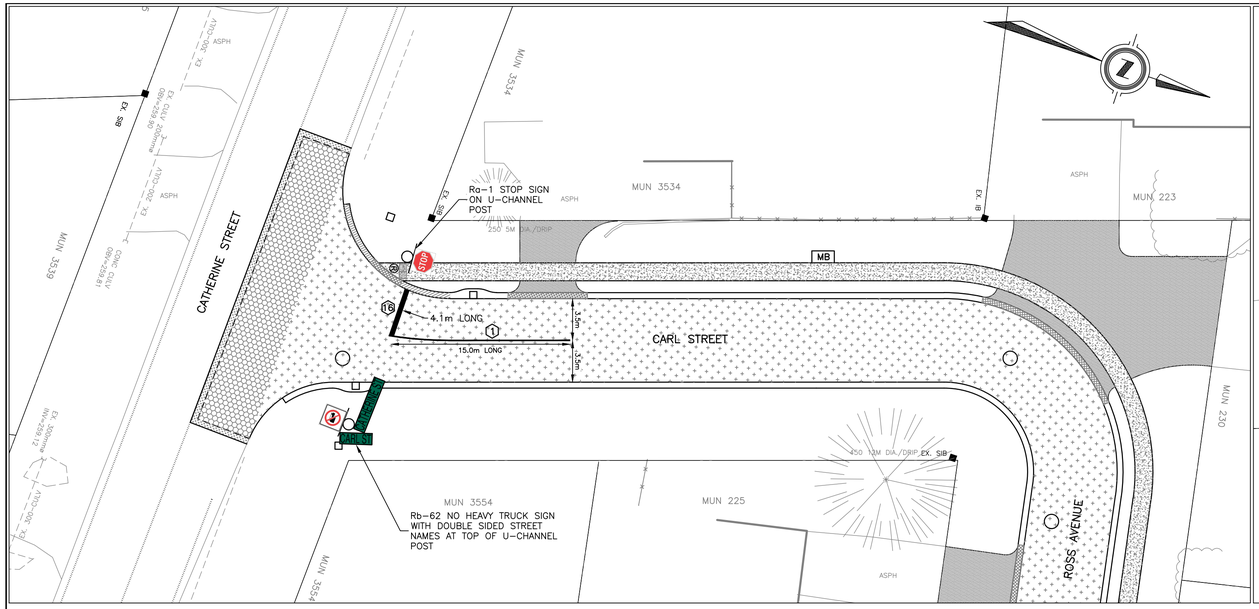
SECTIONS
RUTH STREET
FROM 0+040 TO 0+122.50

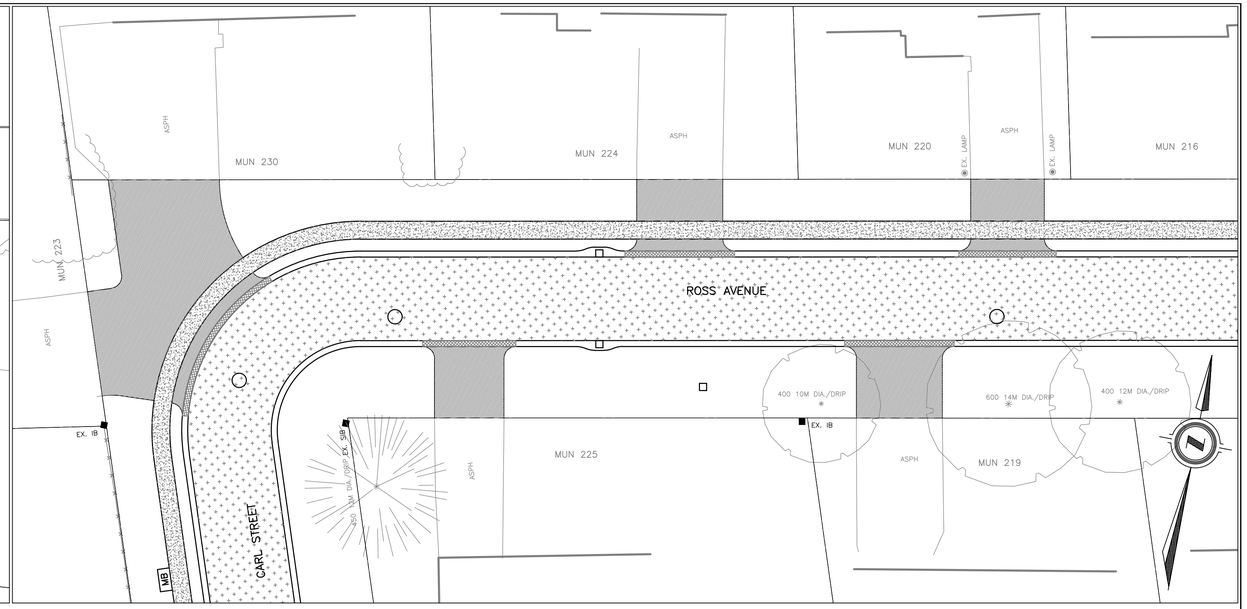
PROJECT No. DEL20−003B

SHEET No. 19

PLAN FILE No.

zbartlett Feb.17/23−10:33am DEL20−003 SECTIONS B.dwg





Pavement Design Table

STREET	SURFACE COURSE HL 3	BINDER COURSE HL 8	GRANULAR BASE 'A'	GRANULAR SUB-BASE 'B'
CARL STREET	40mm	50mm	150mm	300mm
ROSS AVENUE	40mm	50mm	150mm	300mm
RUTH STREET	40mm	50mm	150mm	300mm
CATHERINE STREET	60mm	120mm	150mm	SEE NOTE

NOTE: ALL TRENCH BACKFILL WITHIN INTERSECTION TO COMPRISE GRANULAR 'B' MATERIAL COMPACTED THROUGHOUT TO 98% MSPDD.
ASPHALT TO BE SUPPLIED AND PLACED IN ACCORDANCE WITH OPSS FORMS 310 AND 1150.
FOR GEOTECHNICAL INFORMATION AND RECOMMENDATIONS RESPECTING CONSTRUCTION, REFER TO GEOTECHNICAL REPORT PREPARED BY LDS, PROJECT No. GE-00351, DATED JUNE 12, 2020.

LEGEND

- DENOTES MILLING EDGE
- DENOTES CATHERINE STREET ASPHALT STRUCTURE
- DENOTES LIMITS OF NEW ROADWAY ASPHALT
- DENOTES DROP CURB AT ENTRANCES
- DENOTES LIMITS OF CONCRETE SIDEWALK
- DENOTES BARRIER FREE RAMP AND TACTILE PLATES
- DENOTES LIMITS OF ASPHALT DRIVEWAY TO BE RESTORED
- DENOTES LIMITS OF BRICK DRIVEWAY TO BE RESTORED
- DENOTES LIMITS OF CONCRETE DRIVEWAY TO BE RESTORED
- DENOTES SUPERELEVATED CURB PROFILE
- FACING SIDE OF SIGN — DENOTES PROPOSED SIGNAGE
- (1) **DENOTES LONGITUDINAL, SOLID 100mm, EDGE, DIRECTIONAL DIVIDING LINES (YELLOW)**
- (18) **DENOTES TRANSVERSE , STOP, 400mm WIDE, INTERSECTION STOP LINE (WHITE)**

DRIVEWAY/PRIVATE WALKWAY RESTORATION

1. CONCRETE WALKWAYS AND STEPS TO BE RESTORED WITH 125mm CONCRETE OVER 100mm GRANULAR 'A' COMPACTED TO 100% SPMDD.
2. CONCRETE DRIVEWAYS TO BE RESTORED WITH 150mm CONCRETE OVER 150mm GRANULAR 'A' COMPACTED TO 100% SPMDD. SAWCUT CONTROL JOINTS TO MATCH EXISTING (IF APPLICABLE).
3. ASPHALT DRIVEWAYS AND WALKWAYS TO BE RESTORED WITH 50mm HL3 SURFACE ASPHALT OVER 150mm GRANULAR 'A' COMPACTED TO 100% SPMDD
4. SALVAGE PAVERS/INTERLOK BRICKS OR FLAGSTONE TO BE REPLACED OVER 20mm GRANULAR 'A' COMPACTED TO 100% SPMDD AND GROUT FILLED FLUSH WITH CLEAN SAND AND VIBRATED/TAMPED AS REQUIRED.
5. SAWCUT EXISTING DRIVEWAYS AND EXISTING PRIVATE WALKWAYS AS REQUIRED PRIOR TO RESTORATION. NOTE: EXISTING GRAVEL DRIVEWAYS TO BE REPLACED WITH ASPHALT DRIVEWAY STRUCTURE TO STREET PROPERTY LINE UNLESS OTHERWISE NOTED (TYP.)
6. DRIVEWAY CURB (WHERE APPLICABLE) SHALL BE OPSD 600.110 BARRIER CURB.

CONTRACTOR IS RESPONSIBLE FOR REMOVING AND STORING SIGNS AND RE-INSTATING UPON COMPLETION OF PAVING, INCLUDING THE INSTALLATION OF U-CHANNEL POSTS.

IMAGE OF SIGN IS SHOWN AS A REPRESENTATION ONLY AND SIGN SHOULD BE PREPARED IN ACCORDANCE WITH THE ONTARIO TRAFFIC MANUAL.

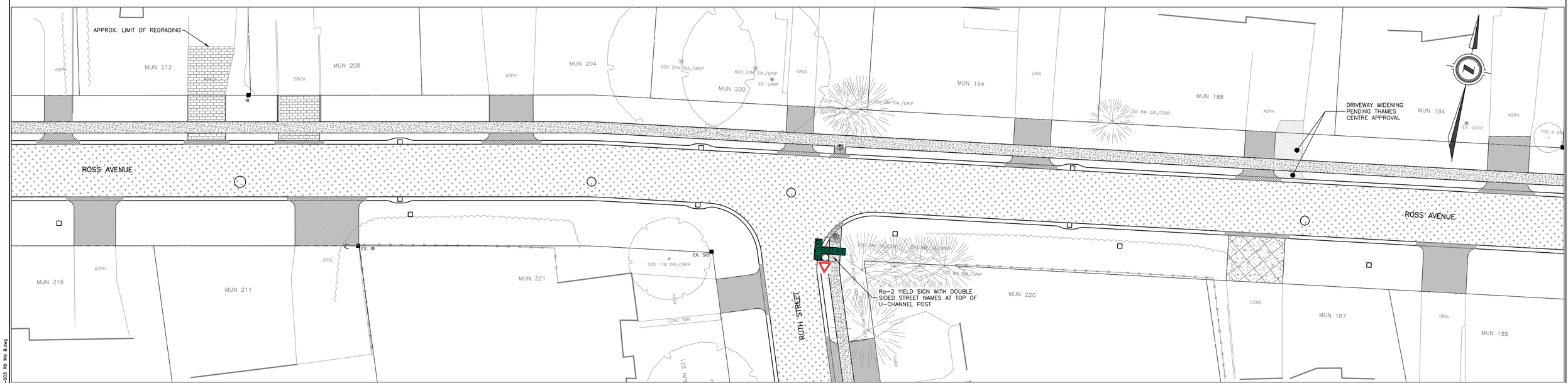
ORIENTATION OF SIGN IMAGE REPRESENTS VIEW FROM THE STREET RESULTING IN SOME IMAGES BEING ROTATED. SIGN TO BE INSTALLED CORRECT SIDE AT TOP.

ALL DRIVEWAY AND ENTRANCES TO BE RECONSTRUCTED TO LIMITS OF STREETLINE UNLESS OTHERWISE SHOWN AND/OR NOTED.

CONTRACTOR IS RESPONSIBLE FOR RESTORING ANY ROADWAY PAINT MARKINGS OUTSIDE OF IMMEDIATE CONSTRUCTION AREA THAT ARE DAMAGED OR OBLITERATED AS A DIRECT RESULT OF CONSTRUCTION PRACTICES.

SIGN POSTS TO BE LOCATED 1.0m BEHIND BACK OF CURB (TYP.) UNLESS OTHERWISE NOTED OR TO BE ATTACHED TO EX. HYDRO POLES.

ALL PAINT MARKINGS TO BE IN ACCORDANCE WITH THAMES CENTRE ENGINEERING DESIGN STANDARD 9.7



EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS	No.	REVISIONS	DATE	CONSULTANT
DESIGN BY RAB	1	ISSUED FOR TENDER	FEB 28/23	DEVENG
DRAWN BY RAB				
CHECKED BY JT				
F.BK. 1219				
FILE: DEL20-003 RD WM B.DWG				

CONSULTANT OR DIVISION

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J. R. SMITH
100144789
Feb 28/23
PROVINCE OF ONTARIO

MUNICIPALITY OF Thames Centre

SCALE
SCALE - 1:250
2.5 0 5m

TITLE
PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION - PHASE 2, DORCHESTER, ON

SURFACING SCHEDULE, SIGNAGE AND PAINTMARKINGS
CARL STREET, ROSS AVENUE FROM CARL STREET TO 105m EAST OF RUTH STREET

PROJECT No. DEL20-003B
SHEET No. 20
PLAN FILE No.

nortlett Feb.17/23-10:33am DEL20-003 RD WM B.dwg

Pavement Design Table

STREET	SURFACE COURSE HL 3	BINDER COURSE HL 8	GRANULAR BASE 'A'	GRANULAR SUB-BASE 'B'
CARL STREET	40mm	50mm	150mm	300mm
ROSS AVENUE	40mm	50mm	150mm	300mm
RUTH STREET	40mm	50mm	150mm	300mm
CATHERINE STREET	60mm	120mm	150mm	SEE NOTE

NOTE: ALL TRENCH BACKFILL WITHIN INTERSECTION TO COMPRISE GRANULAR 'B' MATERIAL COMPACTED THROUGHOUT TO 98% MSPDD.
ASPHALT TO BE SUPPLIED AND PLACED IN ACCORDANCE WITH OPSS FORMS 310 AND 1150.
FOR GEOTECHNICAL INFORMATION AND RECOMMENDATIONS RESPECTING CONSTRUCTION, REFER TO GEOTECHNICAL REPORT PREPARED BY LDS, PROJECT No. GE-00351, DATED JUNE 12, 2020.

LEGEND

- DENOTES MILLING EDGE
- DENOTES CATHERINE STREET ASPHALT STRUCTURE
- DENOTES LIMITS OF NEW ROADWAY ASPHALT
- DENOTES DROP CURB AT ENTRANCES
- DENOTES LIMITS OF CONCRETE SIDEWALK
- ® DENOTES BARRIER FREE RAMP AND TACTILE PLATES
- DENOTES LIMITS OF ASPHALT DRIVEWAY TO BE RESTORED
- DENOTES LIMITS OF BRICK DRIVEWAY TO BE RESTORED
- DENOTES LIMITS OF CONCRETE DRIVEWAY TO BE RESTORED
- DENOTES SUPERELEVATED CURB PROFILE
- FACING SIDE OF SIGN — DENOTES PROPOSED SIGNAGE
- (1) **DENOTES LONGITUDINAL, SOLID 100mm, EDGE, DIRECTIONAL DIVIDING LINES (YELLOW)**
- (16) **DENOTES TRANSVERSE , STOP, 400mm WIDE, INTERSECTION STOP LINE (WHITE)**

DRIVEWAY/PRIVATE WALKWAY RESTORATION

1. CONCRETE WALKWAYS AND STEPS TO BE RESTORED WITH 125mm CONCRETE OVER 100mm GRANULAR 'A' COMPACTED TO 100% SPMDD.
2. CONCRETE DRIVEWAYS TO BE RESTORED WITH 150mm CONCRETE OVER 150mm GRANULAR 'A' COMPACTED TO 100% SPMDD. SAWCUT CONTROL JOINTS TO MATCH EXISTING (IF APPLICABLE).
3. ASPHALT DRIVEWAYS AND WALKWAYS TO BE RESTORED WITH 50mm HL3 SURFACE ASPHALT OVER 150mm GRANULAR 'A' COMPACTED TO 100% SPMDD
4. SALVAGE PAVERS/INTERLOK BRICKS OR FLAGSTONE TO BE REPLACED OVER 200mm GRANULAR 'A' COMPACTED TO 100% SPMDD AND GROUT FILLED FLUSH WITH CLEAN SAND AND VIBRATED/TAMPED AS REQUIRED.
5. SAWCUT EXISTING DRIVEWAYS AND EXISTING PRIVATE WALKWAYS AS REQUIRED PRIOR TO RESTORATION. NOTE: EXISTING GRAVEL DRIVEWAYS TO BE REPLACED WITH ASPHALT DRIVEWAY STRUCTURE TO STREET PROPERTY LINE UNLESS OTHERWISE NOTED (TYP.)
6. DRIVEWAY CURB (WHERE APPLICABLE) SHALL BE OPSD 600.110 BARRIER CURB.

CONTRACTOR IS RESPONSIBLE FOR REMOVING AND STORING SIGNS AND RE-INSTATING UPON COMPLETION OF PAVING, INCLUDING THE INSTALLATION OF U-CHANNEL POSTS.

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ORIENTATION OF SIGN IMAGE REPRESENTS VIEW FROM THE STREET RESULTING IN SOME IMAGES BEING ROTATED. SIGN TO BE INSTALLED CORRECT SIDE AT TOP.

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CONTRACTOR IS RESPONSIBLE FOR RESTORING ANY ROADWAY PAINT MARKINGS OUTSIDE OF IMMEDIATE CONSTRUCTION AREA THAT ARE DAMAGED OR OBLITERATED AS A DIRECT RESULT OF CONSTRUCTION PRACTICES.

SIGN POSTS TO BE LOCATED 1.0m BEHIND BACK OF CURB (TYP.) UNLESS OTHERWISE NOTED OR TO BE ATTACHED TO EX. HYDRO POLES.

ALL PAINT MARKINGS TO BE IN ACCORDANCE WITH THAMES CENTRE ENGINEERING DESIGN STANDARD 9.7

EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION	DETAILS	No.	REVISIONS	DATE	CONSULTANT
					DESIGN BY RAB	1	ISSUED FOR TENDER	FEB 28/23	DEVENG
					DRAWN BY RAB				
					CHECKED BY JT				
					F.BK. 1219				
					FILE: DEL20-003 RD WM B.DWG				

CONSULTANT OR DIVISION

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(519) 442-1441

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ENGINEER'S STAMP
LICENSED PROFESSIONAL ENGINEER
J. R. SMITH
100144789
Feb 28/23
PROVINCE OF ONTARIO

MUNICIPALITY OF Thames Centre

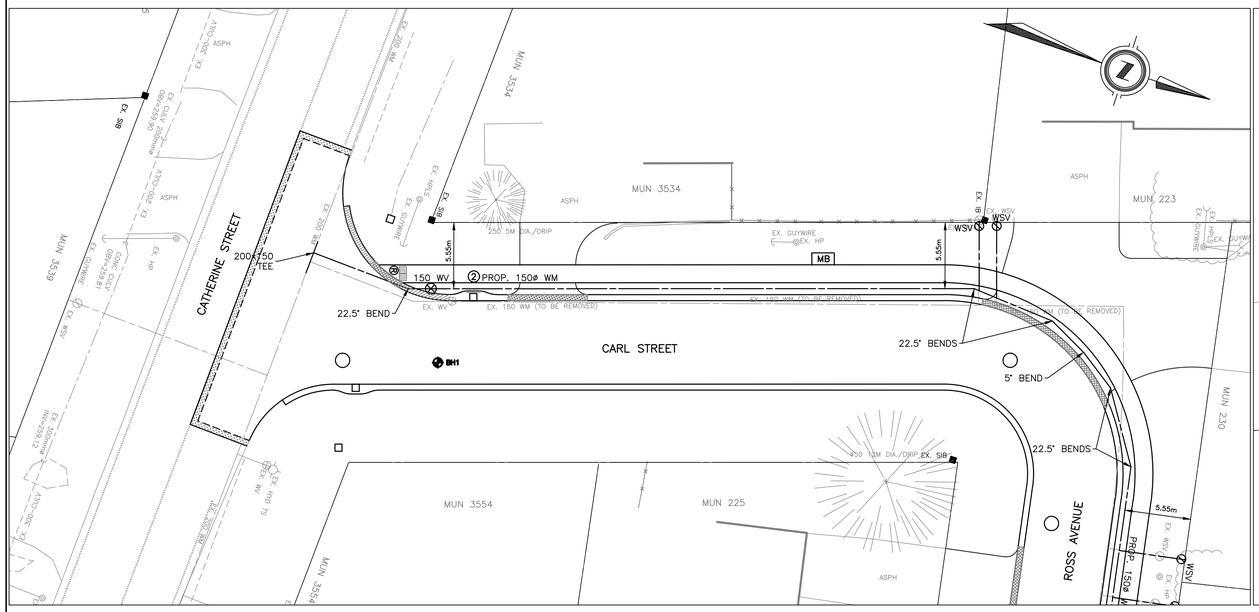
SCALE
SCALE – 1:250
2.5 0 5m

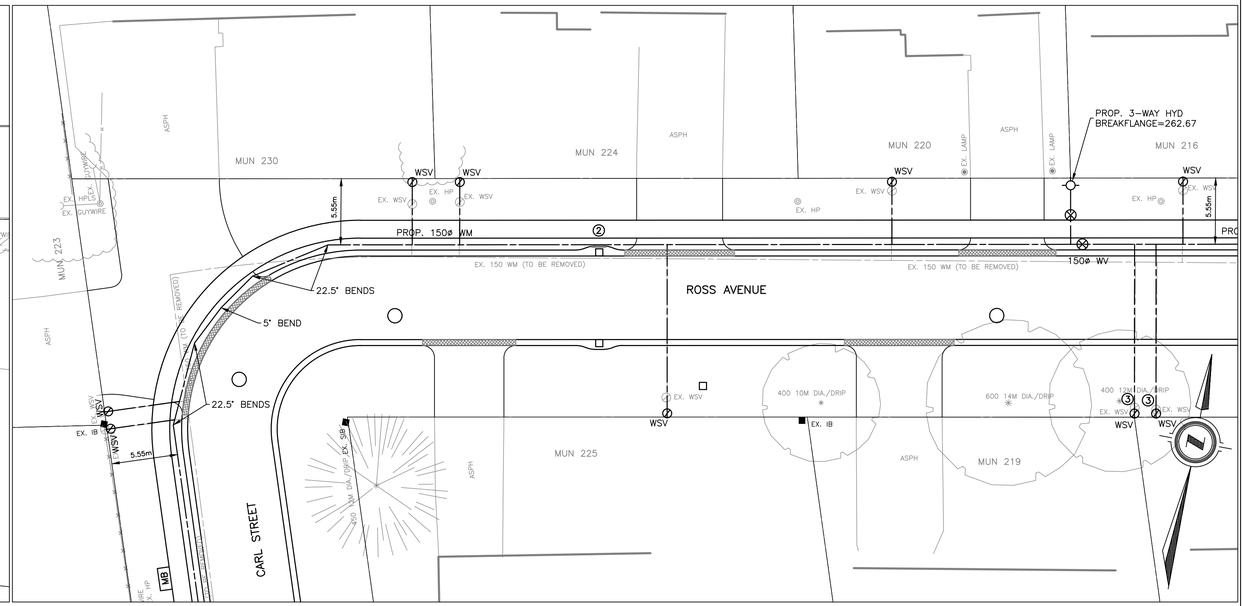
TITLE
PORTER SUBDIVISION WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION – PHASE 2, DORCHESTER, ON

SURFACING SCHEDULE, SIGNAGE AND PAINTMARKINGS
ROSS AVENUE FROM 105m WEST OF DAVID STREET TO DAVID STREET, RUTH STREET

PROJECT No. DEL20-003B
SHEET No. 21
PLAN FILE No.

rbartlett Feb.17/23-10:33am DEL20-003 RD WM B.dwg





STANDARD LOCATION OF CURB STOP WATER SERVICE VALVES IS 0.3m OFFSET FROM STREET LINE. MINOR FIELD ADJUSTMENTS MAY BE PERMITTED TO ACCOMMODATE FIELD CONDITIONS. SUBJECT TO THE APPROVAL/DIRECTION OF THE CONTRACT ADMINISTRATOR.

EXISTING WATER SERVICES WITHIN RIGHT OF WAY TO BE REMOVED UP TO CONNECTION POINT BETWEEN NEW AND EXISTING WATER SERVICE. EXISTING WATER SERVICE CAN BE ABANDONED IN PLACE WHERE THE NEW WATER SERVICE IS BEING ROCKETED UNDER SURFACE FEATURES.

TREES ARE SHOWN TO APPROX. CANOPY SIZE.

EXISTING WATER SERVICE VALVES NOT BEING REMOVED SHOULD BE CUT 0.6m BELOW GRADE IF POSSIBLE WITHOUT DISTURBING EX. ROOTS/VEGETATION.

WATER SERVICES SHALL BE 25mm AND COMPLY WITH THE MUNICIPALITY OF THAMES CENTRE STANDARDS. IF EX. SERVICE IS LARGER THAN 25mm THE NEW SERVICE SHALL MATCH EXISTING.

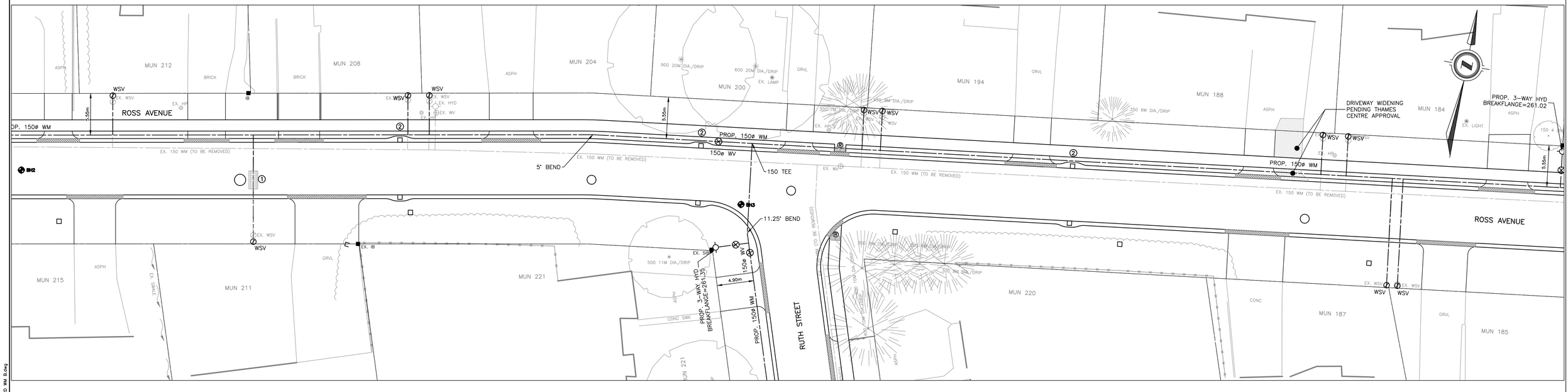
PROPOSED HYDRANTS SHOWN IN STANDARD OFFSET LOCATION MAY REQUIRE FIELD ADJUSTMENT TO AVOID EX. GASMAIN.

① DENOTES INSULATION FOR WATER SERVICE CROSSING UNDER/OVER STORM PIPE.

② DENOTES INSULATION BETWEEN CB/CICB/DCB AND WATERMAIN WHERE LESS THAN 1.7m SEPARATION

③ DENOTES WATER SERVICE TO BE INSTALLED BY TRENCHLESS TECHNOLOGY TO PROTECT EX. TREES OR OTHER SURFACE FEATURES.

NOTE: ANY CHANGE IN DIRECTION OF PVC OR PVCO WATERMAIN PIPE THAT EXCEEDS 50% OF THE PIPE MANUFACTURER'S ALLOWABLE JOINT DEFLECTION SHALL BE MADE USING AN APPROPRIATE FITTING. AXIAL BENDING (BENDING OF THE PIPE BARREL – VERTICALLY OR HORIZONTALLY) IS PROHIBITED.



EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS	No.	REVISIONS	DATE	CONSULTANT
DESIGN BY RAB	1	ISSUED FOR TENDER	FEB 28/23	DEVENG
DRAWN BY RAB				
CHECKED BY JT				
F.BK. 1219				
FILE: DEL20-003 RD WM B.DWG				

CONSULTANT OR DIVISION

London Office
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development engineering (London) Limited
CONSULTING CIVIL ENGINEERS

ENGINEER'S STAMP

LICENSED PROFESSIONAL ENGINEER
J.R. SMITH
100144789
Feb 28/23
PROVINCE OF ONTARIO

MUNICIPALITY OF Thames Centre

SCALE

SCALE – 1:250
2.5 0 5m

TITLE

PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION – PHASE 2, DORCHESTER, ON

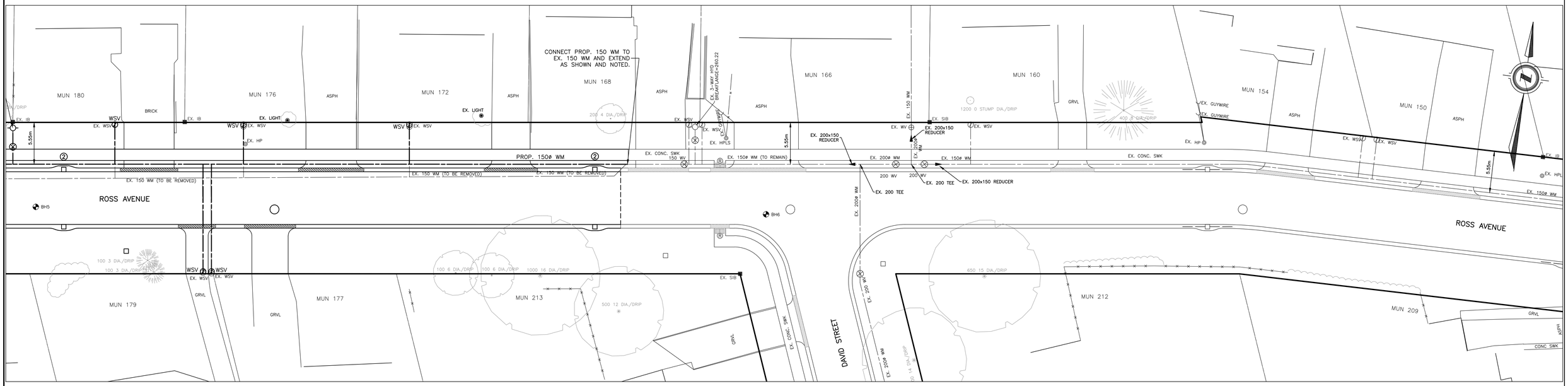
WATERMAIN AND WATER SERVICING
CARL STREET, ROSS AVENUE FROM CARL STREET TO 105m EAST OF RUTH STREET

PROJECT No. DEL20-003B

SHEET No. 22

PLAN FILE No.

rbortlett Feb.17/23-10:34am DEL20-003 RD WM B.dwg



STANDARD LOCATION OF CURB STOP WATER SERVICE VALVES IS 0.3m OFFSET FROM STREET LINE. MINOR FIELD ADJUSTMENTS MAY BE PERMITTED TO ACCOMMODATE FIELD CONDITIONS. SUBJECT TO THE APPROVAL/DIRECTION OF THE CONTRACT ADMINISTRATOR.

EXISTING WATER SERVICES WITHIN RIGHT OF WAY TO BE REMOVED UP TO CONNECTION POINT BETWEEN NEW AND EXISTING WATER SERVICE. EXISTING WATER SERVICE CAN BE ABANDONED IN PLACE WHERE THE NEW WATER SERVICE IS BEING ROCKETED UNDER SURFACE FEATURES.

TREES ARE SHOWN TO APPROX. CANOPY SIZE.

EXISTING WATER SERVICE VALVES NOT BEING REMOVED SHOULD BE CUT 0.6m BELOW GRADE IF POSSIBLE WITHOUT DISTURBING EX. ROOTS/VEGETATION.

WATER SERVICES SHALL BE 25mm AND COMPLY WITH THE MUNICIPALITY OF THAMES CENTRE STANDARDS. IF EX. SERVICE IS LARGER THAN 25mm THE NEW SERVICE SHALL MATCH EXISTING.

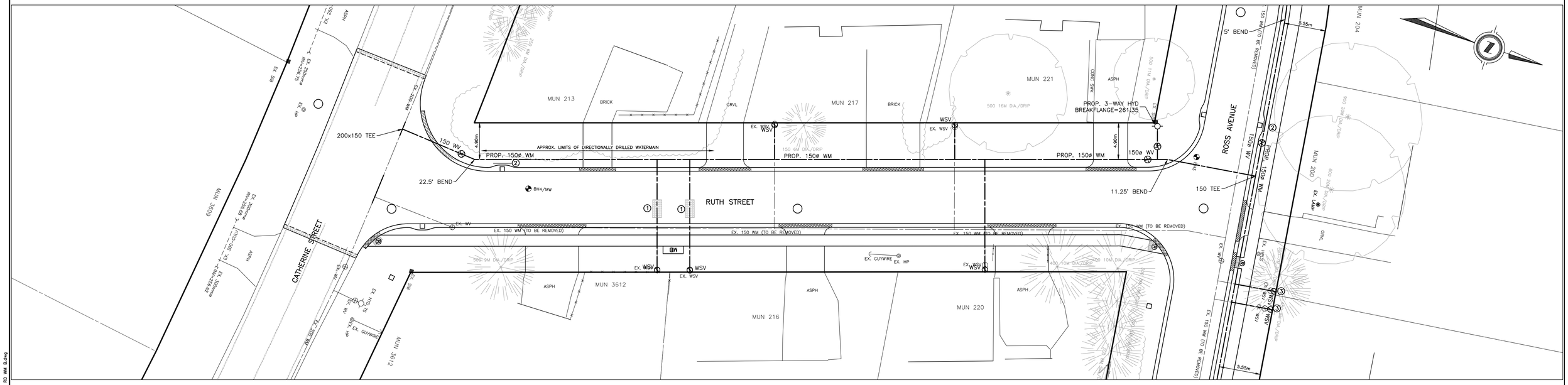
PROPOSED HYDRANTS SHOWN IN STANDARD OFFSET LOCATION MAY REQUIRE FIELD ADJUSTMENT TO AVOID EX. GASMAIN.

① DENOTES INSULATION FOR WATER SERVICE CROSSING UNDER/OVER STORM PIPE.

② DENOTES INSULATION BETWEEN CB/CICB/DCB AND WATERMAIN WHERE LESS THAN 1.7m SEPARATION

③ DENOTES WATER SERVICE TO BE INSTALLED BY TRENCHLESS TECHNOLOGY TO PROTECT EX. TREES OR OTHER SURFACE FEATURES.

NOTE: ANY CHANGE IN DIRECTION OF PVC OR PVCO WATERMAIN PIPE THAT EXCEEDS 50% OF THE PIPE MANUFACTURER'S ALLOWABLE JOINT DEFLECTION SHALL BE MADE USING AN APPROPRIATE FITTING. AXIAL BENDING (BENDING OF THE PIPE BARREL – VERTICALLY OR HORIZONTALLY) IS PROHIBITED.



EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS	No.	REVISIONS	DATE	CONSULTANT
DESIGN BY RAB	1	ISSUED FOR TENDER	FEB 28/23	DEVENG
DRAWN BY RAB				
CHECKED BY JT				
F.BK. 1219				
FILE: DEL20-003 RD WM B.DWG				

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LICENSED PROFESSIONAL ENGINEER
J. R. SMITH
100144789
Feb 28/23
PROVINCE OF ONTARIO

MUNICIPALITY OF Thames Centre

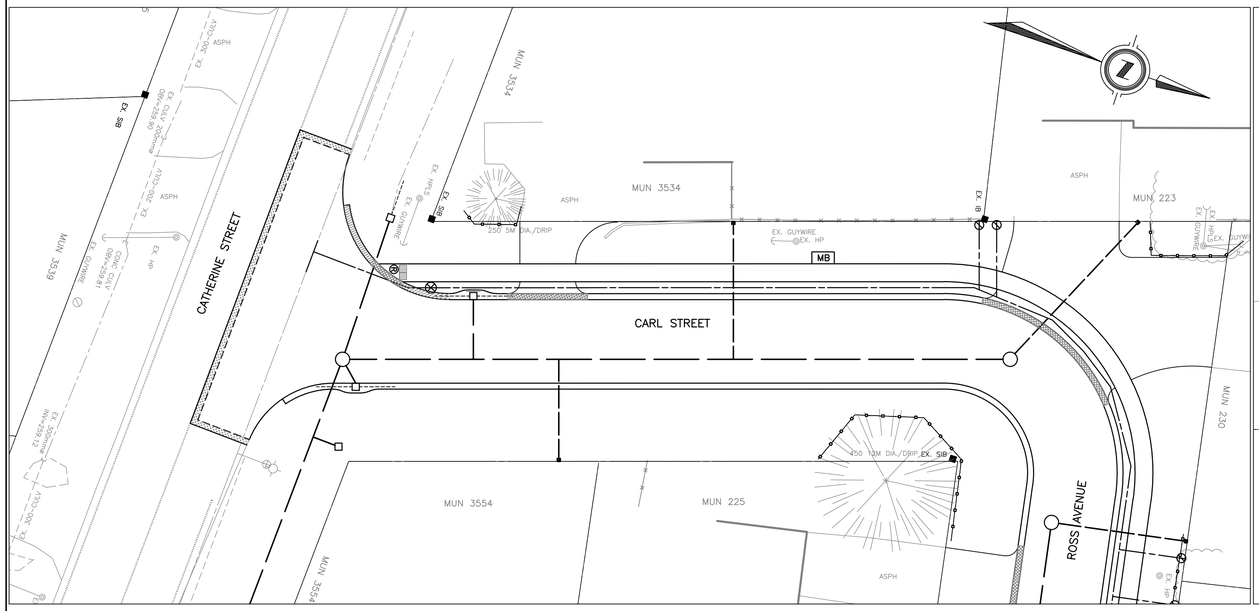
SCALE
SCALE – 1:250
2.5 0 5m

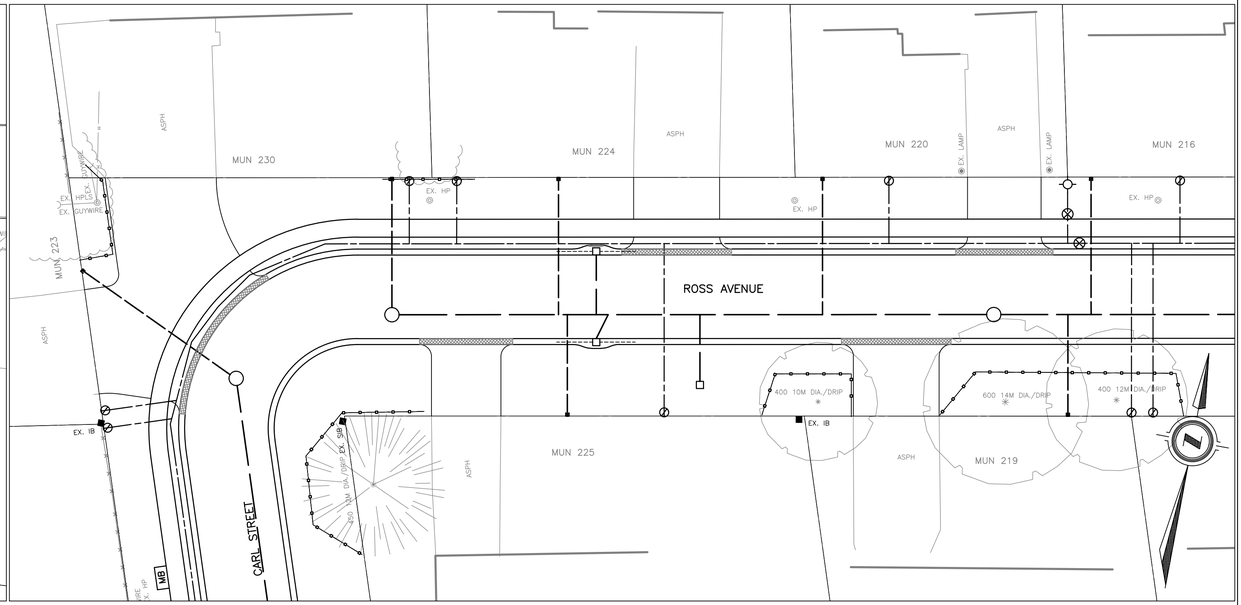
TITLE
PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION – PHASE 2, DORCHESTER, ON

WATERMAIN AND WATER SERVICING
ROSS AVENUE FROM 105m WEST OF DAVID STREET TO DAVID STREET, RUTH STREET

PROJECT No. DEL20-003B
SHEET No. 23
PLAN FILE No.

rbortlett Feb.17/23-10:34am DEL20-003 RD WM B.dwg





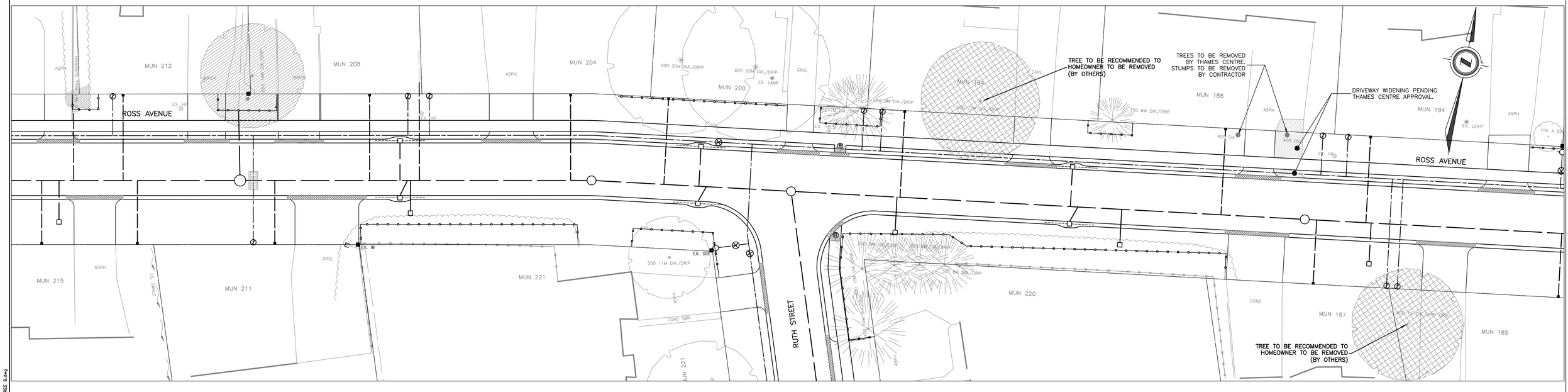
LEGEND

- DENOTES TREE PROTECTION FENCE
- DENOTES EX. CONIFEROUS TREE TO REMAIN
- DENOTES EX. DECIDUOUS TREE TO REMAIN
- DENOTES EX. CONIFEROUS TREE TO BE REMOVED
- DENOTES EX. DECIDUOUS TREE TO BE REMOVED
- DENOTES EX. HEDGE TO BE REMOVED
- DENOTES EX. TREE TO BE RELOCATED
- DENOTES EX. DECIDUOUS TREE TO BE TRIMMED
- DENOTES EX. HEDGE TO BE TRIMMED
- DENOTES EX. PRIVATE DECIDUOUS TREE TO BE RECOMMENDED TO HOMEOWNER FOR REMOVAL (BY OTHERS)

NOTE: REFER TO TREE REPORT PREPARED BY CLC TREE SERVICES REPORT #ON-1295A, FOR ALL RECOMMENDATIONS FOR THIS PROJECT.

NOTE: TREE PROTECTION FENCE SHALL BE AS PER OPSS 801.07.02 AND OPSD 220.010

NOTE: TREES ARE SHOWN TO APPROX. CANOPY SIZE.



EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS
DESIGN BY RAB
DRAWN BY RAB
CHECKED BY JS
F.BK. ***
FILE: DEL20-003 TREE B.DWG

No.	REVISIONS	DATE	CONSULTANT
1	ISSUED FOR TENDER	FEB 28/23	DEVENG

CONSULTANT OR DIVISION

London Office
41 Adelaide St. N., Unit 71
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J. R. SMITH
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Feb 28/23
PROVINCE OF ONTARIO

MUNICIPALITY OF Thames Centre

SCALE

SCALE – 1:250
2.5 0 5m

TITLE

PORTER SUBDIVISION WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION – PHASE 2, DORCHESTER, ON

TREE PRESERVATION

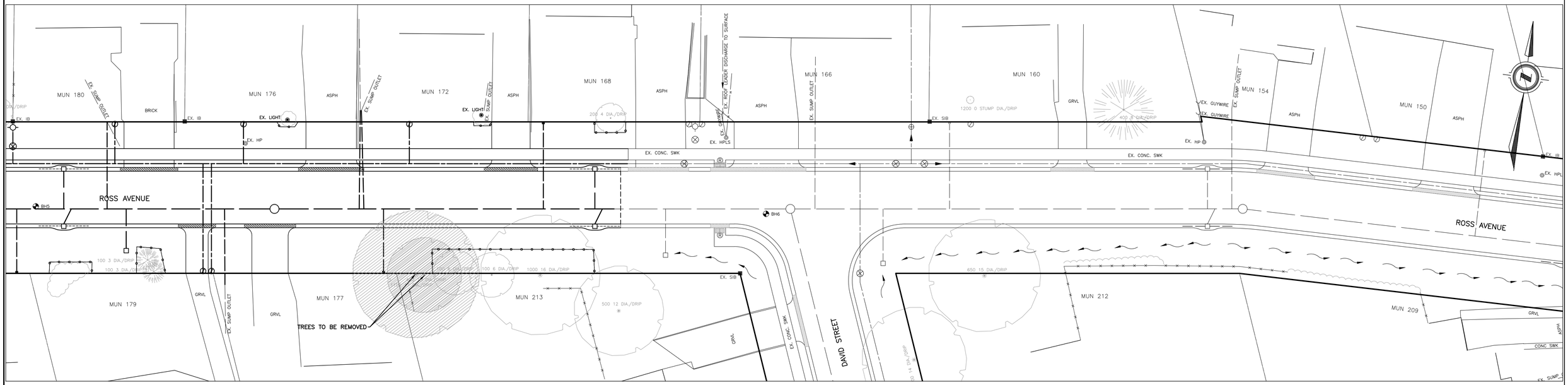
CARL STREET, ROSS AVENUE FROM CARL STREET TO 105m EAST OF RUTH STREET

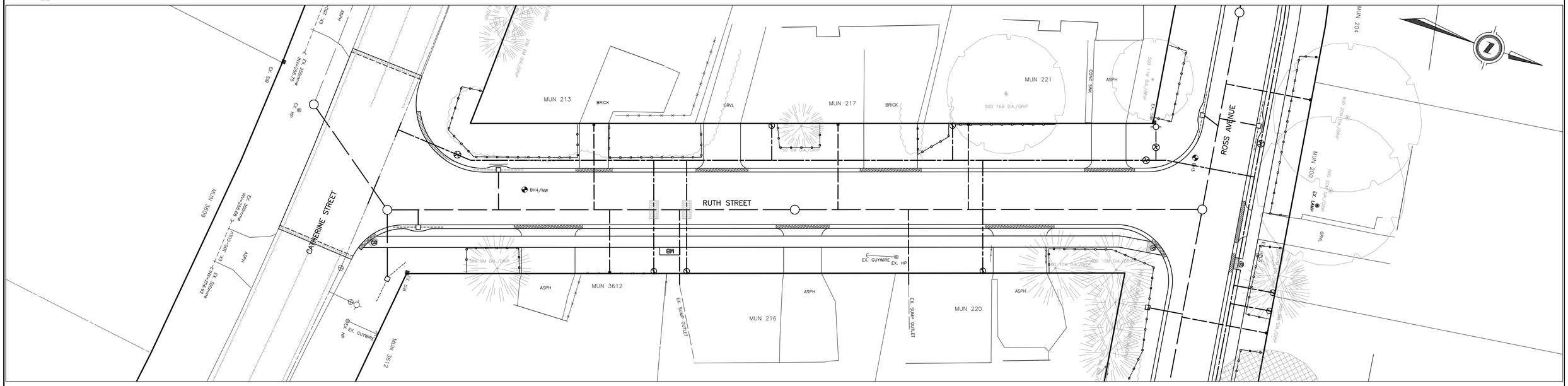
PROJECT No. DEL20-003B

SHEET No. 24

PLAN FILE No.

nbartlett Feb.17/23–10:34am DEL20–003 TREE B.dwg





LEGEND

- DENOTES TREE PROTECTION FENCE
- DENOTES EX. CONIFEROUS TREE TO REMAIN
- DENOTES EX. DECIDUOUS TREE TO REMAIN
- DENOTES EX. CONIFEROUS TREE TO BE REMOVED
- DENOTES EX. DECIDUOUS TREE TO BE REMOVED
- DENOTES EX. TREE TO BE RELOCATED
- DENOTES EX. HEDGE TO BE REMOVED
- DENOTES EX. DECIDUOUS TREE TO BE TRIMMED
- DENOTES EX. HEDGE TO BE TRIMMED
- DENOTES EX. PRIVATE DECIDUOUS TREE TO BE RECOMMENDED TO HOMEOWNER FOR REMOVAL (BY OTHERS)

NOTE: REFER TO TREE REPORT PREPARED BY CLC TREE SERVICES REPORT #ON-1295A, FOR ALL RECOMMENDATIONS FOR THIS PROJECT.

NOTE: TREE PROTECTION FENCE SHALL BE AS PER OPSS 801.07.02 AND OPSD 220.010

NOTE: TREES ARE SHOWN TO APPROX. CANOPY SIZE.

EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS	No.	REVISIONS	DATE	CONSULTANT
DESIGN BY RAB	1	ISSUED FOR TENDER	FEB 28/23	DEVENG
DRAWN BY RAB				
CHECKED BY JS				
F.BK. ***				
FILE: DEL20-003 TREE B.DWG				

CONSULTANT OR DIVISION

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development engineering (London) Limited
CONSULTING CIVIL ENGINEERS

ENGINEER'S STAMP
LICENSED PROFESSIONAL ENGINEER
J. R. SMITH
100144789
Feb 28/23
PROVINCE OF ONTARIO

MUNICIPALITY OF Thames Centre

SCALE
SCALE – 1:250
2.5 0 5m

TITLE
PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION – PHASE 2, DORCHESTER, ON

TREE PRESERVATION
ROSS AVENUE FROM 105m WEST OF DAVID STREET TO DAVID STREET, RUTH STREET

PROJECT No. DEL20-003B
SHEET No. 25
PLAN FILE No.

rbartlett Feb.17/23 - 10:34am DEL20-003 TREE B.dwg

PORTER SUBDIVISION (PHASE 2) TREE INVENTORY

CLOSEST MN	ID NUMBER	COMMON NAME	LATIN NAME	TRUNK Ø (cm)	CANOPY Ø (m)	COMMENTS / CONDITION / ISSUES	OWNERSHIP	RECOMMENDED ACTION	DECIDED ACTION
Ross 213	RS071	Norway Maple	Acer platanoides	50	12	9/10 -girdled roots	Private		
Ross 213	RS072	Silver Maple	Acer saccharinum	100	16	major included bark at main unions with decay pockets present, either remove southern most main leader over yard, or remove all together	Shared	Review at time of construction	Review at time of construction
Ross 213	RS073	Norway Maple	Acer platanoides	10	6	10/10	Shared		
Ross 213	RS074	Norway Maple	Acer platanoides	10	6	10/10	Shared		
Ross 213	RS075	Siberian Elm	Ulmus pumila	40	10	Siberian Elm cluster -all stems have major basal defects & included bark at almost every main union -heavy outer growth will cause failure	Shared	REMOVAL	REMOVAL
Ross 213	RS076	Siberian Elm	Ulmus pumila	110	17	Siberian Elm cluster -all stems have major basal defects & included bark at almost every main union -heavy outer growth will cause failure	Shared	REMOVAL	REMOVAL
Ross 179	RS077	Blue Spruce	Picea pungens	10	3	Cytospora Canker & Rhizosphaera needle cast	Shared		
Ross 179	RS078	Blue Spruce	Picea pungens	10	3	Cytospora Canker & Rhizosphaera needle cast	Municipal		
Ross 179	RS079			SHRUBS			Shared		
Ross 185	RS080	Silver Maple	Acer saccharinum	90	15	10/10 - canopy 5/10 - structure - major included bark & hollows at main unions	Private	recommend REMOVAL to homeowner	removal by others
Ross 220	RS081	White Cedar	Thuja occidentalis	30	8	10/10	Shared		
Ross 220	RS082	White Cedar	Thuja occidentalis	30	8	10/10	Shared		
Ross 220	RS083	White Cedar	Thuja occidentalis	30	8	10/10	Shared		
Ross 220	RS084	White Cedar	Thuja occidentalis	40	10	8/10 - slight thinning	Shared		
Ross 221	RS085	Sugar Maple	Acer saccharum	50	11	9/10 - minor included bark	Shared		
Ross 221	RS086	White Cedar	Thuja occidentalis	HEDGE		10/10	Shared		
Ross 219	RS087	Crimson Maple	Acer platanoides	40	12	10/10	Municipal		
Ross 219	RS088	Crimson Maple	Acer platanoides	60	14	10/10	Municipal		
Ross 219	RS089	Crimson Maple	Acer platanoides	40	10	10/10	Municipal		

PORTER SUBDIVISION (PHASE 2) TREE INVENTORY

CLOSEST MN	ID NUMBER	COMMON NAME	LATIN NAME	TRUNK Ø (cm)	CANOPY Ø (m)	COMMENTS / CONDITION / ISSUES	OWNERSHIP	RECOMMENDED ACTION	DECIDED ACTION
Ruth 213	RU001	White Cedar	Thuja occidentalis	30	6	10/10	Shared		
Ruth 213	RU002	Eastern White Spruce	Picea glauca	20	6	10/10	Shared		
Ruth 213	RU003	Norway Spruce	Picea abies	25	6	10/10	Shared		
Ruth 213	RU004	White Cedar	Thuja occidentalis	HEDGE		10/10	Shared		
Ruth 217	RU005	Nootka Cypress	Cupressus nootkatensis	15	6	10/10	Shared		
Ruth 217	RU006	White Cedar	Thuja occidentalis	HEDGE		10/10	Shared		
Ruth 221	RU007	Native Red Maple	Acer rubrum	50	16	9/10 - thinning	Private		
Ruth 220	RU008	White Cedar	Thuja occidentalis	40	10	10/10	Shared		
Ruth 3612	RU009	White Cedar	Thuja occidentalis	50	9	10/10	Shared		

PORTER SUBDIVISION (PHASE 2) TREE INVENTORY

CLOSEST MN	ID NUMBER	COMMON NAME	LATIN NAME	TRUNK Ø (cm)	CANOPY Ø (m)	COMMENTS / CONDITION / ISSUES	OWNERSHIP	RECOMMENDED ACTION	DECIDED ACTION
Carl 3534	CA001	Black Cedar	Thuja occidentalis	25	5	10/10	Private		
Carl 223	CA002	Black Cedar	Thuja occidentalis	HEDGE		10/10	Shared		
Carl 225	CA003	White Pine	Pinus strobus	45	12	10/10	Private		
Ross 230	RS001	Black Cedar	Thuja occidentalis	HEDGE		10/10	Private		
Ross 212	RS002	Black Cedar	Thuja occidentalis	HEDGE		10/10	Shared		
Ross 212	RS003	Sugar Maple	Acer saccharum	65	14	7/10 - thinning crown on west side	Private	REMOVAL	REMOVAL
Ross 200	RS004	Silver Maple	Acer saccharinum	90	20	8/10 - included bark & main union	Private		
Ross 200	RS005	Sugar Maple	Acer saccharum	60	20	8/10 - included bark & main union	Private		
Ross 200	RS006	White Pine	Pinus strobus	30	7	8/10 - thinning	Shared		
Ross 200	RS007	White Pine	Pinus strobus	45	9	10/10	Shared		
Ross 194	RS008	Manitoba Maple	Acer negundo	50	16	4/10 - dieback & thin canopy	Private	recommend REMOVAL to homeowner	removal by others
Ross188	RS009	White Cedar	Thuja occidentalis	35	6	10/10	Shared		
Ross 188	RS010	White Cedar	Thuja occidentalis	40	6	9/10 - thinning top	Municipal	Thames Centre to remove tree. Contractor to remove stump.	
Ross 188	RS011	White Cedar	Thuja occidentalis	40	6	10/10	Municipal	Thames Centre to remove tree. Contractor to remove stump.	
Ross 184	RS012	Tulip Tree	Liriodendron	15	4	10/10 - multi stem, no liability	Private		
Ross 176	RS013	Blue Spruce	Picea pungens	SHRUB		10/10	Shared		
Ross 172	RS014	Sand Cherry	Prunus pumila	SHRUB		10/10	Shared		
Ross 168	RS015	Paper Bark Maple	Acer griseum	20	4	10/10 - health - structure	Shared		

TREES TO BE REMOVED BY THAMES CENTRE, STUMPS TO BE REMOVED BY CONTRACTOR.

RECOMMENDED TO HOMEOWNER TO BE REMOVED (BY OTHERS)

TO BE REMOVED

RECOMMENDED TO HOMEOWNER TO BE REMOVED (BY OTHERS)

TO BE REMOVED

ROSS AVENUE

CARL STREET

RUTH STREET

CATHERINE STREET

DRIPLINE
LIMIT DISTURBANCE WITHIN DRIPLINE

CONSTRUCTION FENCE

'T' POST

2.4m SPACING (TYP)

CONSTRUCTION FENCE TO BE SECURED TO 'T' POSTS

1.2m (MIN.)

'T' POST SET FIRMLY INTO EXISTING GROUND

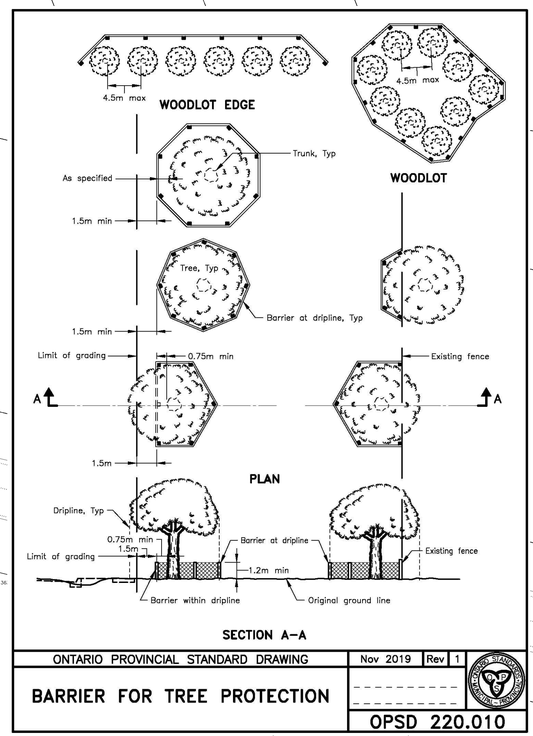
ROOT SPREAD VARIES WITH SPECIES AND SOIL CONDITIONS

DRIPLINE LOCATION

TREE PRESERVATION FENCING
(REF. OPSS 801.07.02)
NTS

(REFERENCE OPSD 220.010 FOR PLACEMENT DETAILS WITHIN DRIPLINE)

NOTE: REFER TO TREE REPORT PREPARED BY CLC TREE SERVICES REPORT #ON-1295A, FOR ALL RECOMMENDATIONS FOR THIS PROJECT.



SECTION A–A

ONTARIO PROVINCIAL STANDARD DRAWING

BARRIER FOR TREE PROTECTION

Nov 2019 | Rev 1

OPSD 220.010

EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS	No.	REVISIONS	DATE	CONSULTANT
DESIGN BY RAB	1	ISSUED FOR TENDER	FEB 28/23	DEVENG
DRAWN BY RAB				
CHECKED BY JS				
F.BK. ***				
FILE: DEL20-003 TREE B.DWG				

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development engineering (London) Limited
CONSULTING CIVIL ENGINEERS

ENGINEER'S STAMP

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J. R. SMITH
100144789
Feb 28/23
PROVINCE OF ONTARIO

MUNICIPALITY OF Thames Centre

SCALE

SCALE – 1:500
5 0 10m

TITLE

PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION – PHASE 2, DORCHESTER, ON

TREE INVENTORY
WEST HALF OF SUBDIVISION

PROJECT No. DEL20-003B

SHEET No. 26

PLAN FILE No.

rbonfield Feb.17/23–1:28pm DEL20-003 TREE B.dwg

EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION	DETAILS	No.	REVISIONS	DATE	CONSULTANT
					DESIGN BY RAB	1	ISSUED FOR TENDER	FEB 28/23	DEVENG
					DRAWN BY RAB				
					CHECKED BY JS				
					F.BK. 1219				
					FILE: DEL20-003 STM N&D TMP B.DWG				

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Feb 28/23
PROVINCE OF ONTARIO

MUNICIPALITY OF Thames Centre

SCALE

SCALE – 1:1000
10 0 20m

TITLE

PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION – PHASE 2, DORCHESTER, ON

STORM AREA PLAN
ULTIMATE DESIGN

PROJECT No. DEL20-003B

SHEET No. 27

PLAN FILE No.

DEL20-003 STM N&D TMP B.dwg
rbartlett Feb.17/23 - 10:34am

RUNOFF COEFFICIENT 'C'

PARKS & PLAYGROUNDS	0.20
RESIDENTIAL - SINGLE/SEMI	0.50
- ROWHOUSING	0.65
- APARTMENTS	0.65 / 0.70
COMMERCIAL & INDUSTRIAL	0.70 / 0.90

FLOW Q = 2.78 ACI

Q = PEAK FLOW IN LITRES PER SECOND (l/s)
A = AREA IN HECTARES (ha)
C = RUNOFF COEFFICIENT
i = RAINFALL INTENSITY IN MILLIMETERS PER HOUR (mm/hr)
RETURN PERIOD= 2 years

STORM SEWER DESIGN SHEET
DORCHESTER
PORTER SUBDIVISION

DRAINAGE AREA: 13.71 ha
DESIGNED BY: RAB
CHECKED BY: JS
DATE: November 26, 2021
FILENAME: DEL20-003 STM

LOCATION			AREA			A X C						RAINFALL INTENSITY			SEWER DESIGN								PROFILE				
												TIME ENTRY		INTENS.												INVERT ELEVATION	
STREET	FROM	TO	ID	DELTA AREA ha.	TOTAL AREA ha.	'C'	INCR A x C	TOTAL SECTION	TOTAL LATERAL	TOTAL SEWER	TOTAL 2.78 x AxC	SECT. min.	ACCUM. min.	'i' mm/hr	Q l/s	PIPE Dia. Mm	DESIGN SLOPE %	n	CAPACITY l/s	ACTUAL VELOCITY m./s.	LENGTH m	TIME OF FLOW minutes	HEAD LOSSES m	DROP IN MH m	SEWER FALL m	U.S. m	D.S. m
Carl Street	ST-1	ST-2	A1	0.481	0.481	0.55	0.265	0.000		0.265	0.735		17.75	79.00	58.07	300	0.55	0.013	71.71	1.130	56.0	0.83	0.135	0.150	0.308	260.059	259.751
Catherine Street	DICB-1	ST-2	EXT A	1.338	1.338	0.45	0.602	0.000		0.602	1.674		20.00	73.22	122.57	375	0.55	0.013	130.01	1.368	12.5	0.15	0.000	0.075	0.069	259.745	259.676
Catherine Street	ST-2	EX. CB A	-	-	1.819	-	0.000	0.602	0.265	0.867	2.409	0.15	20.15	72.78	175.33	450	0.40	0.013	180.31	1.329	27.7	0.35	0.000	0.030	0.111	259.601	259.490
Ross Avenue	ST-3	ST-4	B1	0.390	0.390	0.55	0.215	0.000		0.215	0.596		16.00	84.10	50.12	300	0.55	0.013	71.71	1.109	50.4	0.76	0.000	0.030	0.277	259.842	259.565
Ross Avenue	ST-4	ST-5	B2	0.258	0.648	0.55	0.142	0.215		0.356	0.991	0.76	16.76	81.70	80.96	300	1.00	0.013	96.70	1.534	50.4	0.55	0.000	0.150	0.504	259.535	259.031
Ross Avenue	-	ST-5	B3	0.294	0.294	0.30	0.088			0.088	0.245	0.00	23.00	66.32	16.25	600	0.50	0.022	434.16	0.597	25.0	0.70	0.121	0.121	0.125	259.827	259.702
Ross Avenue	ST-5	ST-6	B4	0.385	1.327	0.50	0.193	0.445		0.637	1.771	0.55	17.31	80.48	142.53	450	0.40	0.013	180.31	1.258	46.9	0.62	0.009	0.009	0.188	258.881	258.693
Ross Avenue	ST-6	ST-7	B5	0.187	1.514	0.55	0.103	0.637		0.740	2.057	0.62	17.93	78.50	161.47	450	0.55	0.013	211.44	1.469	26.6	0.30	0.311	0.311	0.146	258.684	258.538
Ruth Street	ST-7	ST-8	B6	0.274	1.788	0.50	0.137	0.740		0.877	2.438	0.30	18.23	77.99	190.14	450	2.00	0.013	403.19	2.493	54.2	0.36	0.000	0.030	1.084	258.227	257.143
Ruth Street	ST-8	ST-9	B7	0.260	2.048	0.50	0.130	0.877		1.007	2.799	0.36	18.59	76.76	214.85	450	0.60	0.013	220.84	1.628	54.2	0.55	0.165	0.165	0.325	257.113	256.788
Ruth Street	ST-9	EX. STMH A	-	-	2.048			1.007		1.007	2.799	0.55	19.14	75.61	211.63	450	0.60	0.013	220.84	1.621	17.1	0.18	0.000	0.030	0.103	256.623	256.520
Catherine Street	EX. STMH A	EX. STM	-	-	2.048			1.007		1.007	2.799	0.18	19.32	75.18	210.43	250	0.99	0.013	59.20	1.108	56.6	0.85	0.000	0.030	0.560	256.490	255.930
Ross Avenue	ST-7	ST-10	C1	0.433	0.433	0.55	0.238			0.238	0.662		16.00	84.10	55.67	300	0.55	0.013	71.71	1.123	68.6	1.02	0.000	0.075	0.377	258.739	258.362
Ross Avenue	ST-10	ST-11	C2	0.646	1.079	0.50	0.323	0.238		0.561	1.560	1.02	17.02	80.94	126.27	375	1.25	0.013	195.99	1.916	68.6	0.60	0.000	0.075	0.858	258.287	257.429
Ross Avenue	ST-11	ST-12	C3	0.388	1.467	0.55	0.213	0.561		0.775	2.153	0.60	17.62	79.47	171.10	450	0.40	0.013	180.31	1.320	68.6	0.87	0.337	0.337	0.274	257.354	257.080
David Street	ST-12	ST-13	C4	0.468	1.935	0.50	0.234	0.775		1.009	2.804	0.87	18.49	77.04	216.02	450	2.00	0.013	403.19	2.609	64.1	0.41	0.000	0.030	1.282	256.743	255.461
David Street	ST-13	ST-14	C5	0.450	2.385	0.50	0.225	1.009		1.234	3.429	0.41	18.90	76.02	260.67	450	1.75	0.013	377.15	2.589	64.1	0.41	0.000	0.030	1.122	255.431	254.309
David Street	ST-14	ST-15	C6	0.280	2.665	0.55	0.154	1.234		1.388	3.857	0.41	19.31	75.20	290.05	450	1.50	0.013	349.17	2.458	68.0	0.46	0.076	0.076	1.020	254.279	253.259
Catherine Street	EX. CB B	ST-15	EXT C	1.945	1.945	0.45	0.875	0.000		0.875	2.433		20.00	73.22	178.14	450	8.00	0.013	806.38	4.051	14.8	0.06	0.386	0.386	1.184	254.844	253.660
Catherine Street	ST-15	ST-26	-	-	4.610	-		1.388	0.875	2.263	6.291	Tc 1	19.88	73.49	462.33	525	1.20	0.013	471.15	2.556	14.2	0.09	0.413	0.413	0.170	253.183	253.013
Catherine Street	ST-26	ST-27	-	-	4.610	-		2.263		2.263	6.291	0.09	19.97	73.28	461.00	525	1.89	0.013	591.56	3.027	134.3	0.74	0.043	0.150	2.540	252.600	250.060
Ross Avenue	ST-12	ST-16	D1	0.405	0.405	0.55	0.223			0.223	0.619		16.00	84.10	52.06	300	0.55	0.013	71.71	1.114	60.1	0.90	0.015	0.075	0.331	257.405	257.074
Ross Avenue	ST-16	ST-17	D2	0.416	0.821	0.55	0.229	0.223		0.452	1.255	0.90	16.90	81.30	102.03	375	0.55	0.013	130.01	1.305	55.2	0.70	0.320	0.320	0.304	256.999	256.695
Patricia Avenue	ST-17	ST-18	D3	0.448	1.269	0.50	0.224	0.452		0.676	1.878	0.70	17.60	79.55	149.39	375	2.50	0.013	277.17	2.588	68.3	0.44	0.000	0.030	1.708	256.375	254.667
Patricia Avenue	ST-18	ST-19	D4	0.503	1.772	0.50	0.252	0.676		0.927	2.577	0.44	18.04	78.41	202.06	375	2.50	0.013	277.17	2.758	68.3	0.41	0.000	0.650	1.708	254.637	252.929
Ross Avenue	ST-17	ST-20	D5	0.304	0.304	0.55	0.167			0.167	0.465		16.00	84.10	39.11	300	1.00	0.013	96.70	1.272	56.6	0.74	0.000	0.030	0.566	256.905	256.339
Ross Avenue	ST-20	ST-21	D6	0.400	0.704	0.55	0.220	0.167		0.387	1.076	0.74	16.74	81.80	88.02	300	0.85	0.013	89.15	1.483	56.6	0.64	0.291	0.291	0.481	256.309	255.828
Ross Avenue	ST-21	ST-22	D7	0.542	1.246	0.50	0.271	0.387		0.658	1.830	0.64	17.38	80.34	147.02	300	2.35	0.013	148.24	2.467	90.5	0.61	0.139	0.139	2.127	255.537	253.410
Ross Avenue	ST-22	ST-23	D8	0.017	1.263	0.80	0.014	0.658		0.672	1.868	0.61	17.99	78.50	146.64	375	0.75	0.013	151.81	1.609	9.0	0.09	0.108	0.108	0.068	253.271	253.203
Ross Avenue	ST-23	ST-19	D9	0.371	1.634	0.55	0.204	0.672		0.876	2.435	0.09	18.08	78.29	190.64	450	0.45	0.013	191.25	1.416	98.8	1.16	0.371	0.371	0.445	253.095	252.650
Patricia Avenue	ST-19	ST-24	D10	0.272	3.678	0.55	0.150	0.927	0.876	1.953	5.428	Tc 2	18.83	76.14	413.29	525	1.50	0.013	526.76	2.698	44.6	0.28	0.000	0.030	0.669	252.279	251.610
Patricia Avenue	ST-24	ST-25	D11	0.305	3.983	0.55	0.168	1.953		2.120	5.894	0.28	19.11	75.70	446.18	525	1.10	0.013	451.09	2.451	60.0	0.41	0.150	0.150	0.660	251.580	250.920
Catherine Street	DICB-3	ST-25	EXT D	1.245	1.245	0.45	0.560	0.000		0.560	1.557		20.00	73.22	114.00	375	0.45	0.013	117.59	1.247	15.0	0.20	0.741	0.750	0.068	251.588	251.520
Catherine Street	ST-25	ST-27	-	-	5.228			2.120	0.560	2.681	7.452	0.41	19.52	74.67	556.44	600	0.85	0.013	566.08	2.352	17.3	0.12	0.733	0.733	0.147	250.770	250.623
Catherine Street	ST-27	EX. STMH	-	-	9.838			2.681	2.263	4.943	13.742	Tc 3	20.12	72.87	1001.38	675	2.74	0.013	1391.44	3.888	90.9	0.39	0.000	0.030	2.490	249.890	247.400

HYDROGRAPHS:

Tc 1 19.88

$T_c = \frac{(T_{c1} * Q_1) + (T_{c2} * Q_2)}{(Q_1 + Q_2)}$

$= \frac{(19.77 \times 290.05) + (20.06 \times 178.14)}{(290.05 + 171.91)}$

$= 19.88$ min

$T_{c1} = 19.31 + 0.46$
$= 19.77$
$T_{c2} = 20.00 + 0.06$
$= 20.06$

Tc 2 18.83

$T_c = \frac{(T_{c1} * Q_1) + (T_{c2} * Q_2)}{(Q_1 + Q_2)}$

$= \frac{(18.45 \times 202.06) + (19.24 \times 190.64)}{(202.06 + 0.00)}$

$= 18.83$ min

$T_{c1} = 18.04 + 0.41$
$= 18.45$
$T_{c2} = 18.08 + 1.16$
$= 19.24$

Tc 3 20.12

$T_c = \frac{(T_{c1} * Q_1) + (T_{c2} * Q_2)}{(Q_1 + Q_2)}$

$= \frac{(20.71 \times 461.00) + (19.64 \times 556.44)}{(461.00 + 55.67)}$

$= 20.12$ min

$T_{c1} = 19.97 + 0.74$
$= 20.71$
$T_{c2} = 19.52 + 0.12$
$= 19.64$

EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS	No.	REVISIONS	DATE	CONSULTANT
DESIGN BY RAB	1	ISSUED FOR TENDER	FEB 28/23	DEVENG
DRAWN BY RAB				
CHECKED BY JS				
F.BK. 1219				
FILE: DEL20-003 STM N&D TMP B.DWG				

CONSULTANT OR DIVISION

London Office
41 Adelaide St. N., Unit 71
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development engineering (London) Limited
CONSULTING CIVIL ENGINEERS

ENGINEER'S STAMP
LICENSED PROFESSIONAL ENGINEER
J. R. SMITH
100144789
Feb 28/23
PROVINCE OF ONTARIO

MUNICIPALITY OF Thames Centre

SCALE
SCALE – 1:1000
10 0 20m

TITLE
PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION – PHASE 2, DORCHESTER, ON

STORM DESIGN SHEET
ULTIMATE DESIGN

PROJECT No. DEL20-003B
SHEET No. 28
PLAN FILE No.

rbartlett Feb.17/23–10:34am DEL20-003 STM N&D TMP B.dwg

GENERAL CONSTRUCTION NOTES

1. All existing underground utilities, either shown or not shown, are to be located and marked prior to commencing construction. Any utilities damaged or disturbed during construction shall be repaired or replaced to the satisfaction of the governing body at the sole expense of the Contractor.
2. The Contractor is to meet all the requirements of the owners of the utilities on this plan, and must make satisfactory arrangements with the utility companies for crossing their installations and for providing adequate protection during construction. All existing underground plant (ie. telephone duct, gas mains, sewer, watermains) that will be crossed under during the installation of services for this development shall be supported by a support beam or by other methods as may be required by the Owners of the plant being crossed under. All temporary support measures required during the construction phase shall be the responsibility of the Contractor and independent engineering review/certifications shall be undertaken where necessary at no extra cost to the contract.
3. All existing boulevards and road surfaces disturbed during construction shall be restored to a condition at least as good as original (pre-construction condition), all to the satisfaction of the City Engineer.
4. Prior to commencing ANY construction, the Contractor must verify all outlet information, benchmarks, elevations and dimensions and report any discrepancies immediately to the Engineer.
5. Prior to commencing any work on the installation of services, an approved set of plans must be available on the job site and shall remain there until work is completed.
6. The Contractor is responsible for the control of surface and subsurface water.
7. The Contractor shall take all necessary precautions to prevent the spilling or dumping of hazardous materials while fueling and maintaining vehicles and equipment.
8. If in the opinion of the Engineer a zone is contaminated through neglect and/or deliberate mishandling of toxic materials by the Contractor, the Contractor shall at no additional expense excavate and dispose of all contaminated materials to an approved disposal site and provide soil remediation.
9. At least 48 hours prior to commencing construction on any existing road allowance maintained by the Municipality of Thames Centre or Middlesex County, the Contractor is to obtain the appropriate work approval permit from the Municipality of Thames Centre Public Works Department or Middlesex County.
10. All work in the Municipal road allowance shall meet the minimum standards and specifications of the Municipality of Thames Centre Public Works Department. All work in the County road allowance shall meet the minimum standards of the County Public Works Deptartment.
11. For geotechnical information and recommendations respecting construction, refer to geotechnical report prepared by LDS, Project No. GE-00351, dated June 12, 2020.

SITE PREPARATION NOTES FOR THE SERVICING CONTRACTOR

1. The Contractor shall take precautions to avoid damage to existing servicing and surfaces not designated for removal. Any damage shall be repaired and restoration completed at the expense of the Contractor.
2. Prior to initiating site works, the Contractor shall obtain locates for all existing underground utilities within the area of construction. The Contractor shall be responsible for the cost of repair or replacement of any utilities damaged or disturbed during construction, and shall immediately contact the appropriate utility owner upon such occurrence.
3. Where utility crossings are required, the Contractor shall undertake appropriate measures for the temporary support of such utilities in accordance with the requirements of the utility owner until such time as backfilling and compaction are complete.
4. Prior to construction, an approved set of plans and specifications shall be available on the job site and shall remain on-site for the duration of construction. The Contractor shall verify with the Contract Administrator that the most current drawings are in circulation.
5. The Contractor shall be responsible for protection of all survey markers and monuments during construction. Any legal survey monuments which are disturbed during construction shall be replaced at the expense of the Contractor.
6. All works shall be undertaken in accordance with current Occupational Health and Safety Act requirements.
7. Prior to undertaking on-site earth works, the Contractor shall install all sediment controls relevant to the area of site disturbance.
8. The Contractor shall be responsible for regular monitoring and cleanup of tracked mud/debris on adjacent lands and public roads to the satisfaction of the Engineer and Municipality.
9. The Contractor shall take all reasonable measures to avoid mixing topsoil with subsoil where required for reuse on-site.
10. On-site surface drainage shall be maintained by the Contractor at all times. Erosion and sediment controls shall be applied where necessary to prevent uncontrolled release of sediment off-site. Where excavation dewatering is necessary, pump discharge shall be directed to stable, vegetated areas or dedicated sediment traps (OPSD 219.24) to the satisfaction of the Engineer.
11. The Contractor shall maintain an operations log of erosion & sediment control structure inspections throughout the project, with particular emphasis on control measures after rainfall events of 12mm or greater. Periodic removal of accumulated sediment shall be undertaken as necessary or at the expressed direction of the Engineer. All collected sediment shall be disposed of at an approved location at no extra cost to the contract.
12. Unless otherwise noted on the plans, geotextile for erosion control measures shall be non-woven to meet OPSS 1860.07.02 (i.e. Terrafix 270R, or approved equivalent) with 300mm min. overlaps.
13. Sediment controls shall be implemented by the contractor in localized areas, as warranted, during construction phases, upon the direction of the engineer. Control approaches should be adaptable to reflect variable site conditions and circumstances.
14. The Contractor shall prevent wind blown dust by periodic application of water.
15. All substitutions are subject to approval by the Engineer.

SEWER (SERVICE) NOTES

1. All sewers and watermains are to be installed in accordance with the minimum requirements of the latest revision of the Ontario Provincial Standard Specifications, the Ontario Building Code and the Municipality of Thames Centre Public Works Department.
2. Unless labelled specifically on the plans, all sewer pipe shall be as follows:
   - All pipe less than 200mm dia. shall be PVC SDR 28 (CSA B182.2)
   - 150mm⌀ perforated PVC pipe shall be PVC (CSA B182.1) placed with perforations down, Type 'A' configuration (or approved equal). Perforated pipes to be constructed with temporary removable plugs installed at each manhole connection to be removed when surface is stabilized and approval given by Contract Administrator.
   - Storm sewers 200mm to 450mm dia. with a depth of cover between 1.2m and 4.5m shall be PVC SDR 35 (CSA B182.2) or PVC ribbed (CSA B182.4)
   - Storm sewers 200mm to 450mm dia. with a depth of cover less than 1.2m or greater than 4.5m shall be PVC SDR 35 (CSA B182.2)
   - HDPE is not permissible for use unless specified otherwise
   - 525 mm and larger concrete storm sewer pipe shall be reinforced to CSA A257.2

   The Contractor shall be responsible for protecting the pipe during construction in the event that protective cover depths are not met due to interim conditions.
3. Service bedding: Pipe bedding spec. per bedding detail, Municipality of Thames Centre Design Standards, and contract special provisions.
   Localized base improvement may be required for services bedded in loose, wet or dilatant silty/sandy subsoils, subject to the recommendations of the Geotechnical Engineer. Such improvement could include overexcavation and recompaction or crushed stone bedding wrapped in a geotextile (terrafix 270R or approved equivalent with min. 0.45m overlap) as directed by the Geotechnical Engineer. Any trench water shall be removed when pipe laying is in progress.
   When B1 bedding is used for concrete pipe bedding, cover and bedding must be wrapped in a geotextile (Terrafix 270R or approved equivalent with min. 0.45m overlap).
4. Backfill for service trenches: Services shall be backfilled with select native material or reclaimed granulars that are, in the opinion of the Geotechnical Engineer, suitable as backfill material and compacted to 95% SPMDD and 98% SPMDD in the upper 1.0m. Select natural on-site excavated subsoil can be used as trench backfill, provided the material is within 3 percent of the optimum moisture content. Otherwise, backfill material shall be imported Granular "C" compacted to 95% SPMDD and 98% SPMDD in the upper 1.0m. Backfill must be clean and compactible and free from organics and other undesirable contaminants. Service trench backfill material shall be placed in uniform layers not exceeding 300 mm in thickness, loose measurement, for the full width of the trench, and each layer shall be compacted according to OPSS 501 before a subsequent layer is placed. Backfill material shall be placed to a minimum depth of 900 mm above the crown of the pipe before power operated tractors or rolling equipment shall be used for compacting.
5. All precast concrete structures shall be bedded and backfilled with OPSS granular 'A' material compacted to 98% SPMDD, unless geotechnical conditions warrant otherwise.
6. All precast storm and sanitary sewer manholes shall be constructed in accordance with the current Ontario Provincial Standards. Catchbasins shall be 600mm square precast concrete with 600mm standard catchbasin frames and grates (OPSD 400.050 FISH TYPE) and 600mm sumps below the lowest invert.
7. Where adjacent manholes are located in close proximity to one another, the area between the adjacent manholes shall be backfilled in accordance with the specifications in the following table:

Distance between Adjacent Manholes	Material
0.60m or less	concrete or crushed stone
0.60m to 2.4m	granular material
more than 2.4m	approved native material

8. The above noted backfill shall be compacted to the standard Proctor density specified in the soils report, or as approved by the Contract Administrator.
9. All storm and sanitary sewers and catchbasin connections shall have approved rubber gasket joints. Where catchbasin or PDC leads are connected to mainline sewers, such connections shall be made using gasketted tee fittings approved for use by the Engineer.
10. 3.0 metre lengths of 150mm diameter perforated filter wrapped PVC pipe are to be installed as subdrains connected to two sides of each catchbasin in pavement. The subdrains are to be located just below subgrade elevation and placed with perforations down (see detail on sheet 45).
11. No connection of weeping tiles will be allowed to the sanitary sewer system. No gravity connection of weeping tiles to the storm sewer will be allowed unless the system has the capacity.
12. The Contractor is responsible for:
    (a) connecting any existing sewer or drain encountered during construction to a new sewer or into another existing sewer;
    (b) ensuring that there is no interruption of any surface or subsurface drainage flow that would adversely affect neighbouring properties or the safety of the construction site.
13. The Contractor shall construct temporary measures to control silt entering the storm drainage system. These measures are to remain in place until construction has been completed all to the specifications of the Director of Public Works. Geotextile and straw bale filters shall be installed around all existing and new CB's immediately upon installation in accordance with the detail. Straw bales are to remain in place until paving and/or sodding is complete.
14. The structural design of sewers is based upon the transition width unless otherwise noted.
15. All work shall be done in accordance with the minimum standards and specifications of the Municipality of Thames Centre Public Works Department including proper finishing off and parging of pipes in manholes and catchbasins and proper benching and manhole steps. Upon completion of sewer works, the Contractor is responsible for flushing and cleaning the sewers, manholes, catchbasin manholes and catchbasins and for successfully pulling a "PIG" through the flexible sewer pipes. The Contractor shall undertake suitable mandrel tests for installed flexible sewer pipes in accordance with OPSS 410, and full video inspection of all sewers per OPSS 409 to the satisfaction of the Engineer.
16. All sewers and watermains are to be installed in accordance with the minimum requirements of the latest revision of the Ontario Provincial Standard Specifications and the Municipality of Thames Centre Public Works Department. The Engineer will conduct periodic inspections to ensure that the proper standards are being met.
17. Any proposed substitutions are subject to approval by the Engineer.

WATERMAIN (SERVICE) NOTES

1. All materials, installation, hydrostatic testing, swabbing, flushing and disinfection shall be done in accordance with the Municipality of Thames Centre Design Specifications, MECP Drinking Water Regulations, AWWA Guidelines, the Thames Centre Municipal Drinking Water Licence and Thames Centre Drinking Water Permit.
2. The Contractor shall provide 48 hours advanced notice to the Municipality's Water Operations Division prior to undertaking any work on the water system.
3. Unless labeled specifically on the plans, all watermain pipe shall be as per the approved products in the Municipality of Thames Centre Design Standards. The watermain/service shall be installed to a depth of cover of 1.7-2.2m unless shown otherwise on the plan. Watermains and services shall be bedded in granular material (19mm max.) All watermain shall be mechanically restrained to Municipal Standards. 12 gauge tracer wire shall be used in accordance Municipal Standards, secured at 3.0 metre spacing and looped at each valve box. Corrosion protection shall be constructed per Municipal Standards.
4. The water services shall be 25mm cross-linked polyethylene (PEX) installed in accordance with ASTM F876-05, ASTM F877-05, CSA-B137.5 and NSF 61, installed to a minimum depth of cover of 1.7m unless shown otherwise on the plans and wrapped with 12 gauge copper tracer wire secured at 3m spacing and looped at each valve box, complete with zinc anode per OPSS 442. PEX water service tubing is to be used with standard copper O.D. brass fittings. PEX tubing ends to be installed with stainless steel insert. Water services shall be bedded in bedding sand.
5. Mechanical thrust restraints shall be provided at all fittings, bends, tees, valves, hydrants, crosses, reducers and plugged or capped dead ends in accordance with the Municipality of Thames Centre Standards and Figure 7.5. Watermain restraint products for C900 shall be as per the approved list of manufacturers provided by the Municipality of Thames Centre.
6. Where cover is less than 1.7m (even temporary conditions), the watermain/service shall be adequately insulated over the affected length.
7. New fire hydrants shall be 3 way hydrants with storz connection and mechanical joint restraints per Municipal Standard 7.6.
8. Service bedding: Localized base improvement may be required for services bedded in loose, wet or dilatant silty/sandy subsoils, subject to the recommendations of the Geotechnical Engineer. Such improvement could include overexcavation and recompaction or crushed stone bedding enclosed within a geotextile envelope as directed by the Geotechnical Engineer, to supersede the Typical Bedding Detail.
   Backfill for service trenches: Services shall be backfilled with select native material or reclaimed granulars that are, in the opinion of the Geotechnical Engineer, suitable as backfill material and compacted to 95% SPMDD and 98% SPMDD in the upper 1.0m. Select natural on-site excavated subsoil can be used as trench backfill, provided the material is within 3 percent of the optimum moisture content. Otherwise, backfill material shall be imported Granular "C" compacted to 95% SPMDD and 98% SPMDD in the upper 1.0m. Backfill must be clean and compactible and free from organics and other undesirable contaminants. Service trench backfill material shall be placed in uniform layers not exceeding 300 mm in thickness, loose measurement, for the full width of the trench, and each layer shall be compacted according to OPSS 501 before a subsequent layer is placed. Backfill material shall be placed to a minimum depth of 900 mm above the crown of the pipe before power operated tractors or rolling equipment shall be used for compacting.
9. Upon completion of water service installation, the Contractor is responsible for flushing, hydrostatic testing, and disinfection of the water service in accordance with Municipality of Thames Centre specifications and witnessed by the Water Operator. Bacteriological testing shall be completed by the Municipality's Water Operator at the request of the Contractor as per the Contractors commissioning plan and in accordance with the Ontario Watermain Disinfection procedure and AWWA C651. A Minimum of 48 hours notice is required for requesting testing. Additional sampling and/ or resampling shall be completed by the Municipality as the Water Operator deems required. Reasonable wait times for lab results and required resampling shall not be considered project delays.
10. All work shall meet the minimum standards and specifications of the Municipality of Thames Centre Environmental Services Department unless otherwise approved by the Director of Public Works.
11. Any proposed substitutions shall be approved by the Engineer.

Watermains (unless specified otherwise)

- PVC pipe 100-300mm shall be AWWA C900 CL235 DR18 (CSA B137.3).
- All PVC pipe and fittings are to be blue in colour.
- For PVC watermain fittings are to be PVC injection moulded (for use wiht PVC pipe conforming to AWWA C900, CSA B173.3, having CIOD) conforming to AWWA C907, be UL Listed, FM approved and certified to CSA B137.2. Ductile Iron push on fittings are not approved for use with PVC pipe. Mechanical joint Ductile Iron AWWA C110 fittings shall be used when they are integral to the restraining system;
- Ductile Iron pipe in not approved for use in Thames Centre.

Services

- Services to be 25mm dia Municipex (by Rehau), Blue 904 (by IPEX)
- Services to be installed in accordance with figure 7.7 "standard installation of <50mm water service";
- Pex water service tubing shall be installed with stainless steel inserts at all brass compression fittings
- Service saddle to be provided for: all PVC pipe
- Curb stops to be located 300mm from property line on street side; curb stops to have stainless steel cotter pins;
- Main cock and curb stop to open COUNTER clockwise;
- Approved curb and main stops: Cambridge Brass, Ford, Mueller

Hydrants

- Hydrants to be AWWA C-502 for dry barrel with push on joints to ANSI/AWWA C111/A21.11 with break flange;
- Hydrants are to open clockwise;
- Each hydrant to be controlled by a gate valve located in front of the hydrant;
- Hydrants to have chrome yellow high gloss exterior paint over quick dry red oxide primer;
- To be installed minimum 1.5m from any driveway; minimum cover of 1.7m and maximum 1.9m; flange to be graded 0mm to 75mm from finished grade;
- approved hydrants: Canada Valve Century, Mcavity Hydrant M-67

Valves

- To be resilient seated gate valves to AWWA C509/515, standard iron body, bronze mounted, non-rising stem, double-disc for buried service;
- Valves are to open clockwise complete with a stainless steel plate indicating the direction of opening with each valve;
- An extension rod and screw type valve box are to be supplied for every valve; extension rods are to extend to 150mm to 300mm below finished grade;
- Valves typically are to be located in line with the extension of the property limit line.
- Valves 100mm to 200mm dia to have bell ends; valves 250mm to 450mm to have mechanical joint ends;
- Valve flanges, bonnets, nuts, bolts and washers to be protected from corrosion using denso paste, mastic and petrolatum tape.

HARDSCAPE SURFACING (ROADS, LANES, PARKING, CURBS, SIDEWALKS) NOTES

1. All dimensions for roadworks are to edge of pavement unless otherwise shown. Curb radii are shown to edge of pavement.
2. Material Conformance: Prior to import of materials to the work site, the Owner's Contractor shall make arrangements for the geotechnical analysis of Granular A and B materials to prove conformance with OPSS 1010. Asphalt mix designs shall be submitted to indicate conformance with OPSS 1150 and placement should be undertaken in accordance with OPSS 310. Concrete shall be placed in accordance with OPSS 353 and OPSS 1350.
3. All organic, unstable or unsuitable materials beneath the road allowances or paved areas must be removed and these areas backfilled with an approved fill material or OPSS Granular 'B' compacted to 98% SPMDD, all to the satisfaction of a Geotechnical Engineer.
4. The specifications for the design of the streets/lanes in conjunction with this development project have been based on a ten (10) year life expectancy. Reference shall be drawn to the Pavement Structure Schedule (Table) on this plan further to the recommendations of LDS.
5. All existing boulevards and road surfaces disturbed during construction shall be restored to a condition at least as good as original, all to the satisfaction of the Director of Public Works.
6. All concrete to be OPS mix 30 MPa at 28 days unless otherwise noted.
7. Driveway curb (where applicable) shall be OPSD 600.110 barrier curb.
8. Sidewalks shall be founded upon competent subgrade compacted to 98% SPMDD and minimum 100mm Granular 'A' compacted to 98% SPMDD. All sidewalk approaches to roadways shall have ramps constructed per Municipal standards.
9. All public right of way curb & gutter shall be constructed as per OPSD 600.040 unless otherwise specified.
10. Phasing of Asphalt Lifts: After placement of granular base and binder asphalt, a further 6 month delay is recommended for surface course asphalt placement to permit a pavement evaluation to be undertaken by the Geotechnical Engineer to identify repair or remedial works.
11. The Owner's Contractor shall raise all CB's to final grade and complete concrete curb setbacks prior to delayed sheet asphalt.
12. All rip-rap material should comprise of sound limestone, free of inclusions. The limestone should be blasted or crushed with an average size as noted on the plans and should be approved by the Geotechnical Engineer at the quarry prior to use on site. The rip-rap shall be underlain with Terrafix 270R geotextile or an approved equal.
13. Any proposed substitutions subject to approval by the Engineer.

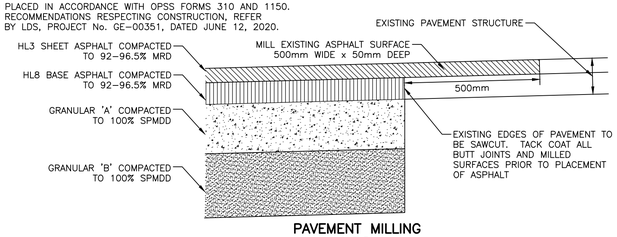
Pavement Design Table

STREET	SURFACE COURSE HL 3	BINDER COURSE HL 8	GRANULAR BASE 'A'	GRANULAR SUB-BASE 'B'
ROSS AVENUE	40mm	50mm	150mm	300mm
DAVID STREET	40mm	50mm	150mm	300mm
PATRICIA AVENUE	40mm	50mm	150mm	300mm
CATHERINE STREET	60mm	120mm	150mm	SEE NOTE

NOTE: ALL TRENCH BACKFILL WITHIN INTERSECTION TO COMPRISE GRANULAR 'B' MATERIAL COMPACTED THROUGHOUT TO 98% MSPDD.
ASPHALT TO BE SUPPLIED AND PLACED IN ACCORDANCE WITH OPSS FORMS 310 AND 1150.
FOR GEOTECHNICAL INFORMATION AND RECOMMENDATIONS RESPECTING CONSTRUCTION, REFER TO GEOTECHNICAL REPORT PREPARED BY LDS, PROJECT No. GE-00351, DATED JUNE 12, 2020.

Granular 'C'

Sieve Size	% Passing
150.0 mm	100
26.5 mm	50-100
4.75 mm	22-100
1.18 mm	10-100
0.300 mm	5-90
0.150 mm	4-30
0.075 mm	0-10



PAVEMENT MILLING
N.T.S.

EARTHWORKS NOTES AND GEOTECHNICAL CONSIDERATIONS

1. For geotechnical information and recommendations respecting construction, refer to geotechnical report prepared by LDS, Project No. GE-00351, dated June 12, 2020.
2. Subgrade preparation: Prior to placing the granular subbase or trench bedding material, existing topsoil and unsuitable fill material shall be removed from the building envelope, servicing corridors and pavement areas. It is recommended that the subgrade be proof-rolled with a heavy roller to compress the loose surface material. The need for localized subgrade improvement will be assessed by the on-site Geotechnical Engineer based upon encountered conditions. The native sand and silty subsoils may be considered suitable for reuse as backfill material subject to appropriate moisture conditioning. Any soil proposed for reuse should be within 3% of the optimum moisture and subject to approval by the Geotechnical Engineer. The backfill material should not be placed in lifts exceeding 300mm. Subgrade fill material (if required) between competent native subgrade and granular base shall be imported granular or select/approved inorganic native material (except wet sandy silt) compacted to 98% SPMDD with acceptable moisture content control to the satisfaction of the Geotechnical Engineer.
3. The Owner's Contractor shall be responsible for the excavation of unsuitable fill material above pregrade elevation from within the work zone and the disposal of all such excess material at no extra cost to the contract. A licensed hauler may be required to transport subsoil fill and construction debris from the site to an approved facility in accordance with O.Reg. 511. Testing may be undertaken by the Owner, but all costs associated with offsite disposal shall be borne by the Owner's Contractor.
4. Excavation of subsoil and fill material shall be undertaken by the Owner's Contractor to remove cobbles where necessary prior to onsite reuse.
5. Excavation into select areas may encounter Type 3 and 4 soils, as classed by the Occupational Health and Safety Act. The Owner's Contractor shall be responsible to manage and control all water (subsurface and surface) during the contract duration, and the measures used to enact such control, including all required permits/approvals (ie. PTTW or EASR) based upon selected control methods, at no extra cost to the contract.
6. The subexcavation of select areas may warrant special temporary support measures by the Owner's Contractor, including but not limited to temporary shoring, retaining walls, piles, structural beams or underpinning, and all such measures shall be appropriately designed by qualified professionals and implemented as necessary for the timely completion of works so as to maintain project schedule, at no extra cost to the contract. Shop drawings prepared and certified by qualified professionals shall be submitted for review and acceptance by the Engineer. All such structures shall be designed with consideration for drainage of backfill without risk of piping failure. Reference shall be drawn to the geotechnical recommendations by LDS.
7. Where control of groundwater may warrant the need to pump in excess of 50,000 Litres per day based upon selected control methods, the Owner's Contractor shall, at no extra cost to the contract, engage qualified professionals and Subcontractors as necessary to obtain a Permit to Take Water (PTTW) or Environmental Activity and Sector Registry (EASR), where dewatering is less than 400,000 Litres per day under normal conditions from MECP pursuant to sections 34 and 98 of the Ontario Water Resources Act further to full scale pump tests. Construction sequencing and methods will be expected to be undertaken in accordance with the Owner's Contractor's Water Control Plan.
8. Suitability of soil for reuse of select clean fill and native subsoil for compaction shall remain subject to the approval of the Geotechnical Engineer. As noted by the geotechnical investigation, blending and moisture conditioning may be warranted to prepare soils to within 3% of optimum moisture content to the satisfaction of the Geotechnical Engineer.
9. Where encountered groundwater conditions warrant, select sewer trenches shall be constructed with anti-seepage collars of select suitable subsoil or lean concrete fill to the satisfaction of the Geotechnical Engineer, at no extra cost to the contract.
10. Any structural/engineered fill placement shall be constructed by the Owner's Contractor under the full time supervision of the Geotechnical Engineer.

SEDIMENT AND EROSION CONTROL NOTES

1. Protect all exposed surfaces and control all runoff during construction.
2. All erosion control measures to be in place before starting construction and remain in place until restoration is complete.
3. Maintain erosion control measures during construction.
4. All collected sediment to be disposed of at an approved location.
5. Minimize area disturbed during construction. All dewatering to be disposed of in an approved sedimentation basin.
6. Protect all catchbasins, manholes and pipe ends from sediment intrusion with geotextile (Terrafix 270R or approved equivalent).
7. Keep all sumps clean during construction.
8. Prevent wind-blown dust.
9. Straw bales to be used in localized areas as shown and as directed by the Engineer during construction.
10. Straw bales to be laminated by stakes to contain and filter runoff.
11. All silt fencing and details are at the minimum to be constructed in accordance with the Ministry of Natural Resources Guidelines on Erosion and Sediment Control for Urban Construction Sites.
12. All of the above notes and any sediment and erosion control measures are at the minimum to be in accordance the Ministry of Natural Resources Guidelines on Erosion and Sediment Control for Urban Construction Sites.

BENCHMARKS:

CONTROL BENCHMARK: 0011910V233 BOLT LOCATED IN WEST FACE OF NORTH HEADWALL TO CONCRETE CULVERT UNDER C.N.R. BOLT SET 15cm SOUTH OF NORTH FACE AND 76cm BELOW TOP.
ELEV.=257.010m

GPS LOCAL BENCHMARKS:

TOP OF SPINDLE OF FIRE HYDRANT LOCATED AT SOUTH-EAST CORNER OF ROSS AVENUE AND PATRICIA AVENUE.
ELEV.=256.246m

TOP OF SPINDLE OF FIRE HYDRANT LOCATE ON NORTH SIDE OF ROSS AVENUE FRONTING M.N. 168.
ELEV.=260.831m

TOP OF SPINDLE OF FIRE HYDRANT LOCATED ON NORTH SIDE OF ROSS AVENUE FRONTING BETWEEN M.N. 208 AND M.N. 204.
ELEV.=262.537m

NOTE: REFER TO 2 (TWO) BENCHMARKS MINIMUM AT ALL TIMES DURING CONSTRUCTION. ADD 200 TO PROPOSED GRADES TO OBTAIN GEODETIC DATUM.

DRIVEWAY/PRIVATE WALKWAY RESTORATION

1. CONCRETE WALKWAYS AND STEPS TO BE RESTORED WITH 125mm CONCRETE OVER 100mm GRANULAR 'A' COMPACTED TO 100% SPMDD.
2. CONCRETE DRIVEWAYS TO BE RESTORED WITH 150mm CONCRETE OVER 150mm GRANULAR 'A' COMPACTED TO 100% SPMDD. SAWCUT CONTROL JOINTS TO MATCH EXISTING (IF APPLICABLE).
3. ASPHALT DRIVEWAYS AND WALKWAYS TO BE RESTORED WITH 50mm HL3 SURFACE ASPHALT OVER 150mm GRANULAR 'A' COMPACTED TO 100% SPMDD
4. SALVAGE PAVERS/INTERLOK BRICKS OR FLAGSTONE TO BE REPLACED OVER 200mm GRANULAR 'A' COMPACTED TO 100% SPMDD AND GROUT FILLED FLUSH WITH CLEAN SAND AND VIBRATED/TAMPED AS REQUIRED.
5. SAWCUT EXISTING DRIVEWAYS AND EXISTING PRIVATE WALKWAYS AS REQUIRED PRIOR TO RESTORATION. NOTE: EXISTING GRAVEL DRIVEWAYS TO BE REPLACED WITH ASPHALT DRIVEWAY STRUCTURE TO STREET PROPERTY LINE UNLESS OTHERWISE NOTED (TYP.)
6. DRIVEWAY CURB (WHERE APPLICABLE) SHALL BE OPSD 600.110 BARRIER CURB.

SITE BENCHMARKS:

BENCHMARK #1 - NAIL SET IN WEST FACE OF HPLS LOCATED OFF SOUTHWEST CORNER OF MN #124 ROSS AVENUE AT 90° BEND.
ELEVATION=256.388m

BENCHMARK #2 - NAIL SET IN EAST FACE OF HPLS BETWEEN MN #187 & 191 PATRICIA AVENUE.
ELEVATION=256.291m

BENCHMARK #3 - SPIKE SET IN NORTH FACE HPLS AT NORTHEAST CORNER OF CATHERINE STREET & PATRICIA AVENUE.
ELEVATION=253.421m

BENCHMARK #4 - SPIKE SET IN NORTH FACE OF HP LOCATED ON SOUTH SIDE OF CATHERINE STREET AT MN#3632 CATHERINE STREET.
ELEVATION=255.505m

BENCHMARK #5 - CUT CROSS SET IN TOP OF SOUTHEAST CORNER OF CONCRETE PAD TO MAILBOX LOCATED ON WEST SIDE OF RUTH STREET AT MN#213
ELEVATION=259.321m

BENCHMARK #6 - TOP OF SOUTHEAST CORNER OF CONCRETE DICB AT MN#3582 CATHERINE STREET.
ELEVATION=258.572m

BENCHMARK #7 - SPIKE SET IN EAST FACE OF HPLS LOCATED NORTHWEST CORNER OF CATHERINE & CARL STREET. MN#3534 CATHERINE STREET.
ELEVATION=261.386m

BENCHMARK #8 - TOP NORTHEAST CORNER OF CONCRETE PORCH TO MN#225 ROSS STREET.
ELEVATION=262.438m

BENCHMARK #9 - TOP SOUTHWEST CORNER OF CONCRETE PORCH TO MN#201 ROSS STREET.
ELEVATION=263.189m

BENCHMARK #10 - SPIKE SET IN SOUTH FACE OF HP LOCATED ON NORTH SIDE ROSS STREET BETWEEN MN#188 & 184.
ELEVATION=261.619m

BENCHMARK #11 - SPIKE SET IN SOUTH FACE OF HPLS LOCATED ON NORTH SIDE ROSS STREET BETWEEN MN#168 & 166 OPPOSITE DAVIS STREET.
ELEVATION=260.301m

BENCHMARK #12 - SPIKE SET IN SOUTH FACE OF HPLS LOCATED ON NORTH SIDE OF ROSS STREET AT MN#148.
ELEVATION=259.857m

BENCHMARK #13 - TOP SOUTHEAST CORNER OF CONCRETE CURB ALONG EAST EDGE OF GRAVEL DRIVEWAY TO MN# 140 ROSS STREET.
ELEVATION=259.381m

EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION	DETAILS	No.	REVISIONS	DATE	CONSULTANT
					DESIGN BY RAB	1	ISSUED FOR TENDER	FEB 28/23	DEVENG
					DRAWN BY RAB				
					CHECKED BY JS				
					F.BK. 1219				
					FILE: DEL20-003 STM N&D TMP B.DWG				

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J. R. SMITH
100144789
Feb 28/23
PROVINCE OF ONTARIO

MUNICIPALITY OF Thames Centre

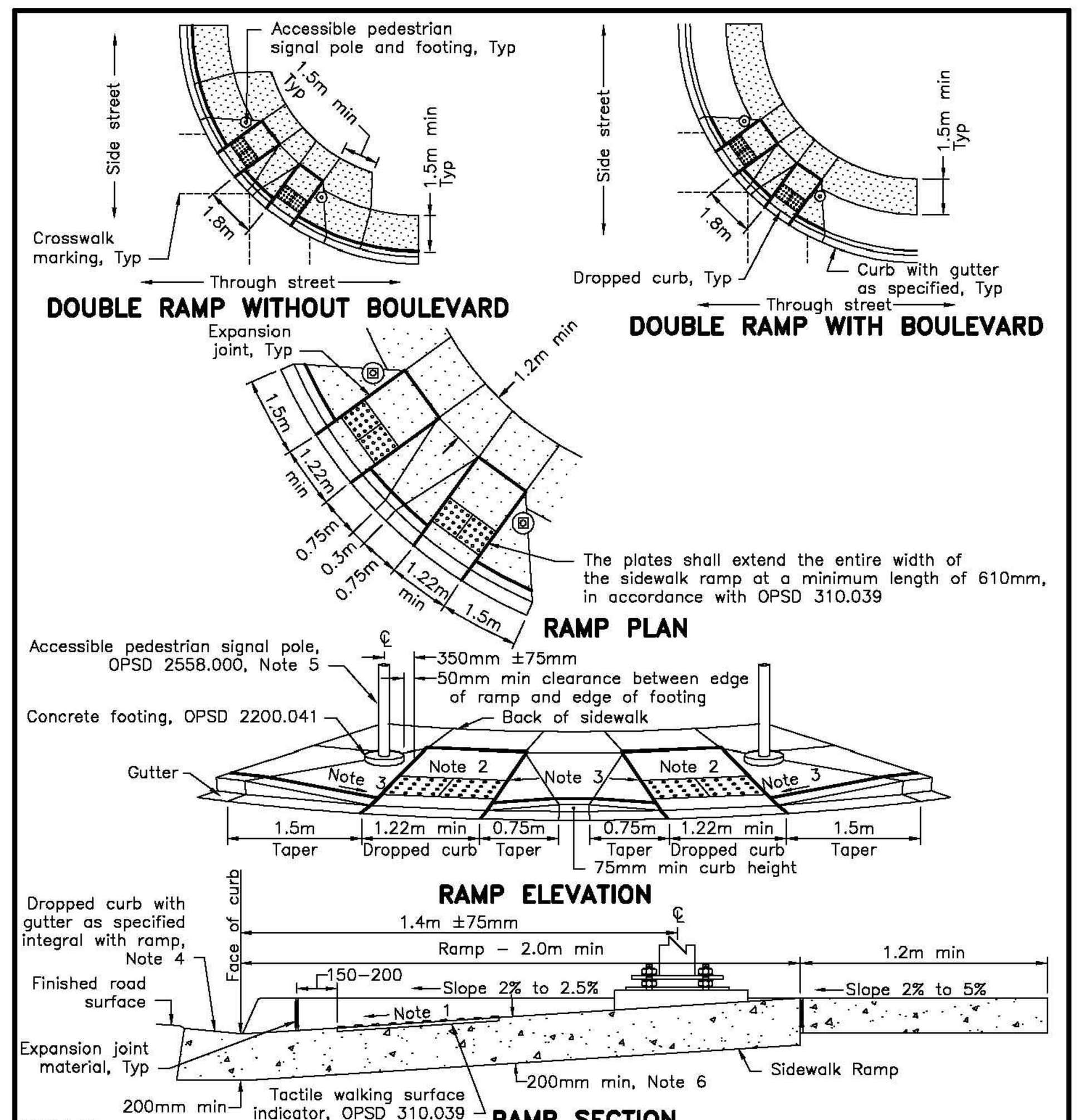
SCALE

TITLE
PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION - PHASE 2, DORCHESTER, ON

MISCELLANEOUS NOTES AND DETAILS I

PROJECT No. DEL20-003B
SHEET No. 29
PLAN FILE No.

dbartlett Feb.17/23-10:34am DEL20-003 STM N&D TMP B.dwg

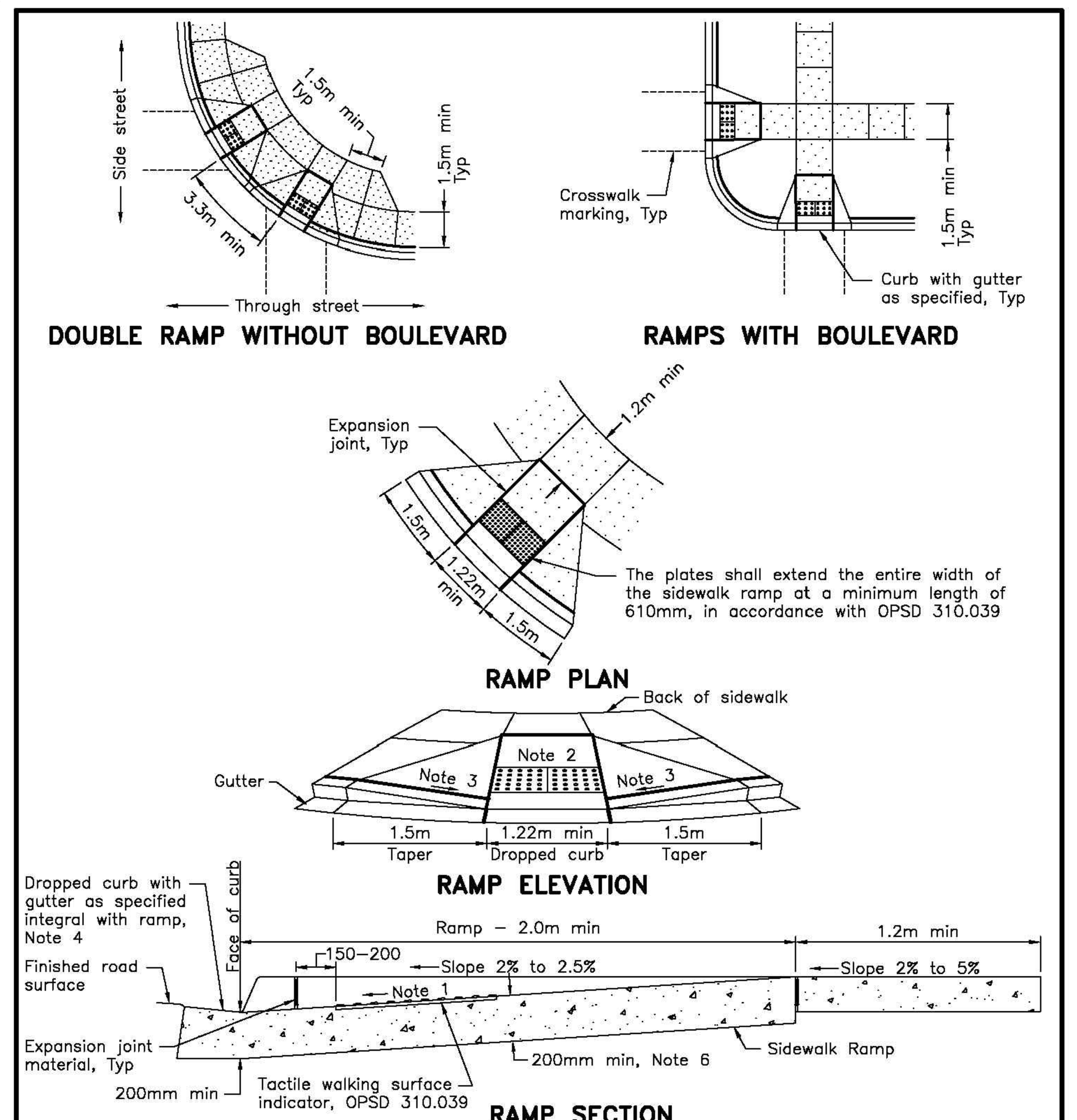


NOTES:
1 Slope of ramp shall not exceed 8%.
2 Cross slope of ramp shall not exceed 2% in either direction.
3 Cross slope of flared side of ramp shall not exceed 8%.
4 Dropped curb at ramp shall be modified to eliminate 30 mm step at gutter line.
5 Accessible pedestrian signal to have tactile arrow that aligns with direction of crosswalk.
6 Minimum thickness of ramp is 200mm. Minimum thickness of sidewalk and flared sides adjacent to ramp is 150mm.
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING | Nov 2015 | Rev 0

CONCRETE SIDEWALK RAMPS AT SIGNALIZED INTERSECTIONS WITH INTERSECTING CROSSWALKS

OPSD 310.031

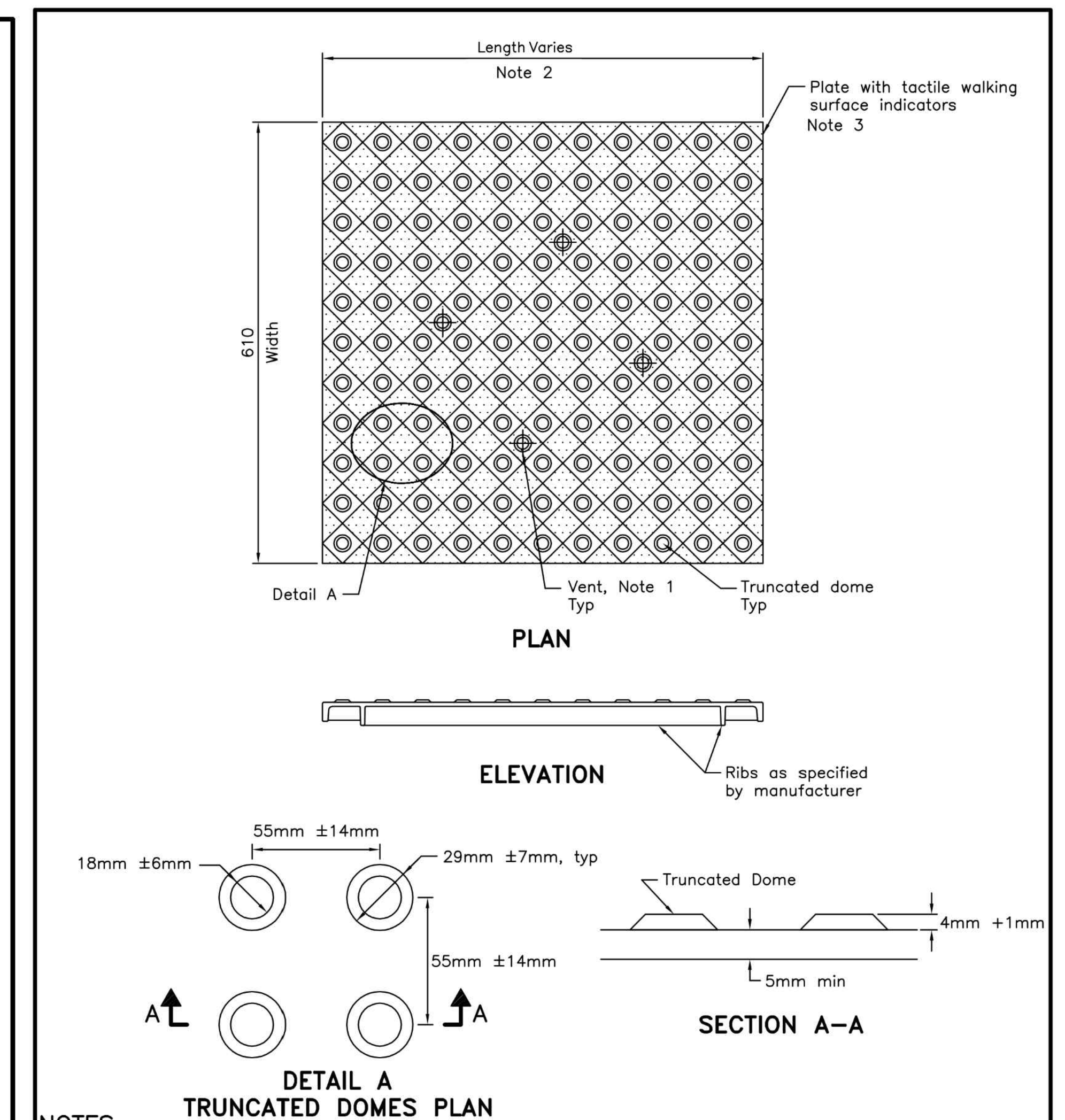


NOTES:
1 Slope of ramp shall not exceed 8%.
2 Cross slope of ramp shall not exceed 2% in either direction.
3 Cross slope of flared side of ramp shall not exceed 8%.
4 Dropped curb at ramp shall be modified to eliminate 30 mm step at gutter line.
5 Minimum thickness of ramp is 200mm. Minimum thickness of sidewalk and flared sides adjacent to ramp is 150mm.
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING | Nov 2019 | Rev 1

CONCRETE SIDEWALK RAMPS AT UNSIGNALIZED INTERSECTIONS

OPSD 310.033



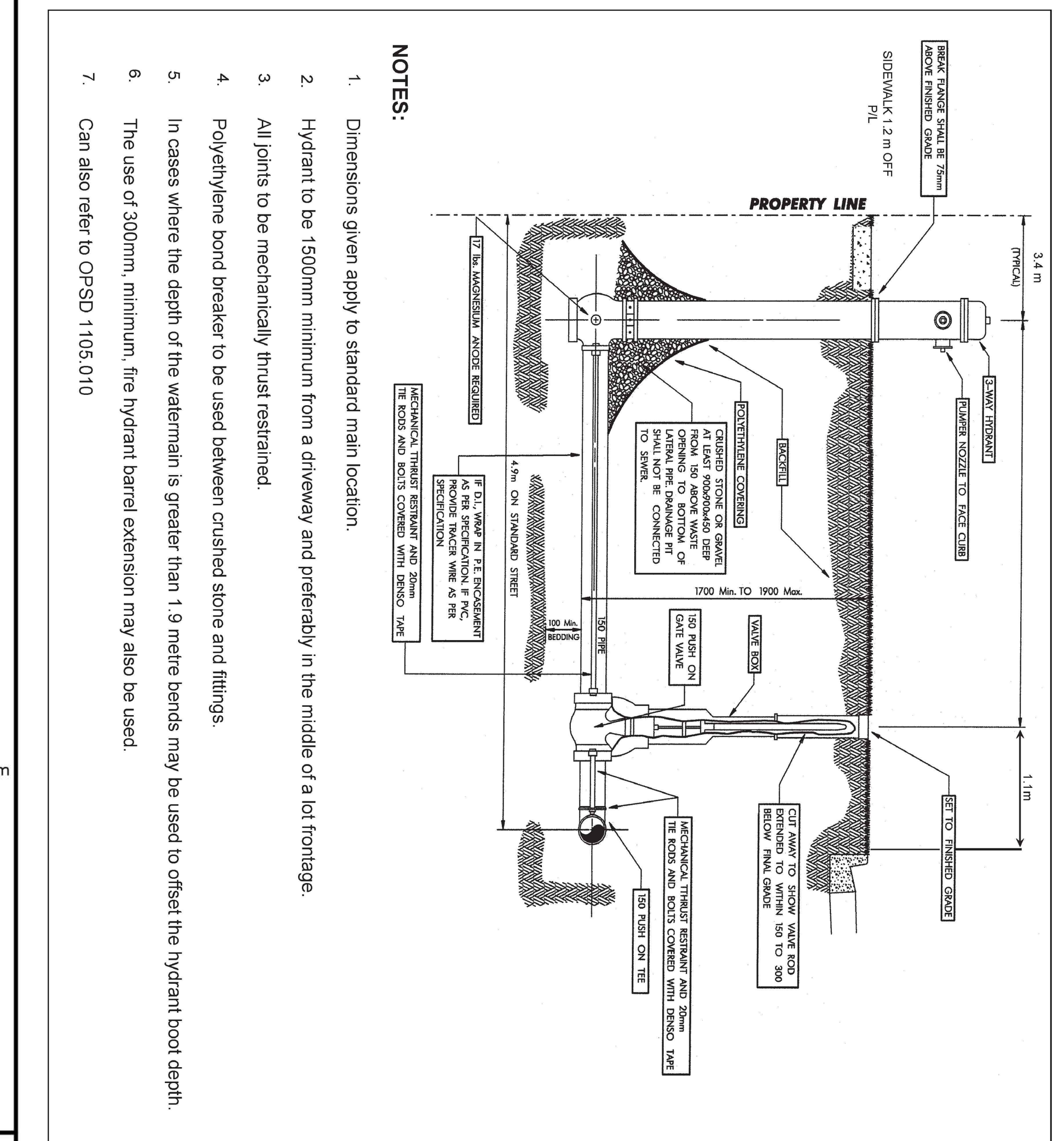
NOTES:
1 Vents shall be as specified by the manufacturer.
2 Length of plate may be increased to suit the curb depression width.
3 Material of plate shall be as specified in Contract Documents.
A Adjacent cast iron plates shall be permanently connected using a locking mechanism and any hardware shall be hot dipped galvanized.
B All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING | Nov 2019 | Rev 1

CONCRETE SIDEWALK RAMPS TACTILE WALKING SURFACE INDICATORS COMPONENT

OPSD 310.039

ENGINEERING DESIGN STANDARDS
THE CORPORATION OF THE MUNICIPALITY OF THAMES CENTRE
Standard Drawings

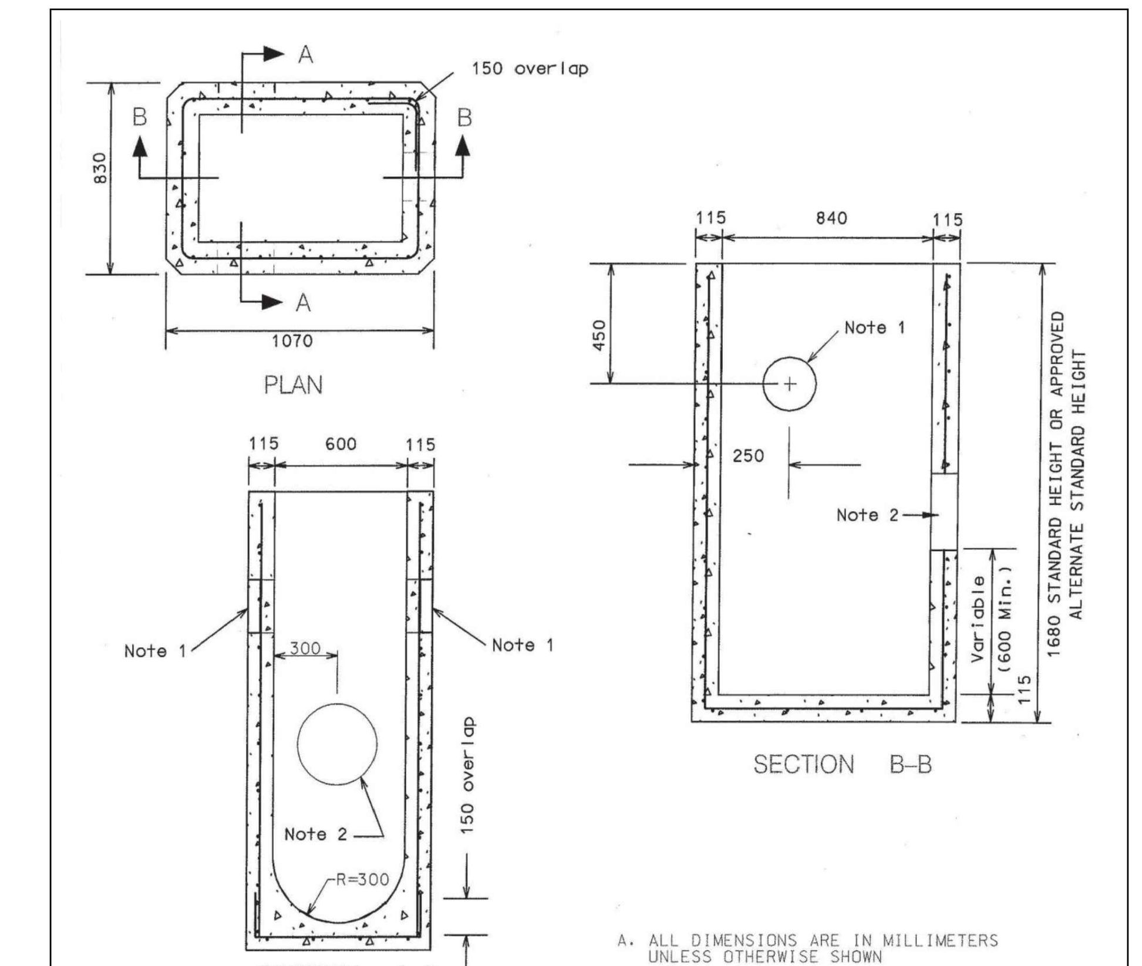


CORPORATION OF MUNICIPALITY OF THAMES CENTRE – STANDARD DRAWING

Hydrant and Valve Installation	REVISION DATE:	DEC 2020
	DRAWING #:	7.6

THAMES CENTRE | 2021 EDITION

ENGINEERING DESIGN STANDARDS
THE CORPORATION OF THE MUNICIPALITY OF THAMES CENTRE
Standard Drawings

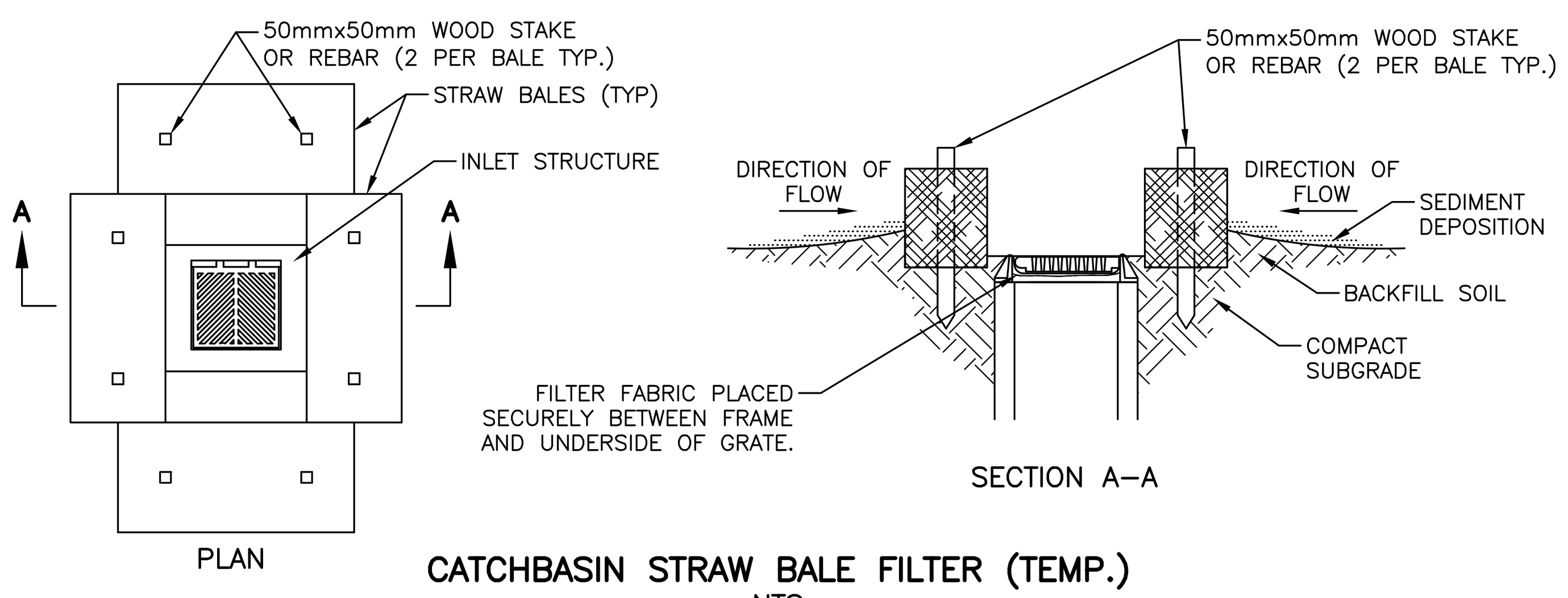


NOTES:
1. 200mm dia. knockout to accommodate subdrain. Knockout to be half wall thickness from the outside.
2. Outlet hole size 400mm dia. location as required.
3. All reinforcing steel bars to be 15. Reinforcing steel shall have 50mm cover
A. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN
4. Granular backfill to be placed and compacted to a min. thickness of 300mm all around
5. Adjustment units shall be installed as per OPSD-704.010. Minimum of 1 unit and a maximum of 300mm.
6. Class of concrete: 30 MPa at 28 days
7. Refer to OPSD-400.09 for catch basin cast iron curb inlet overflow plate details.

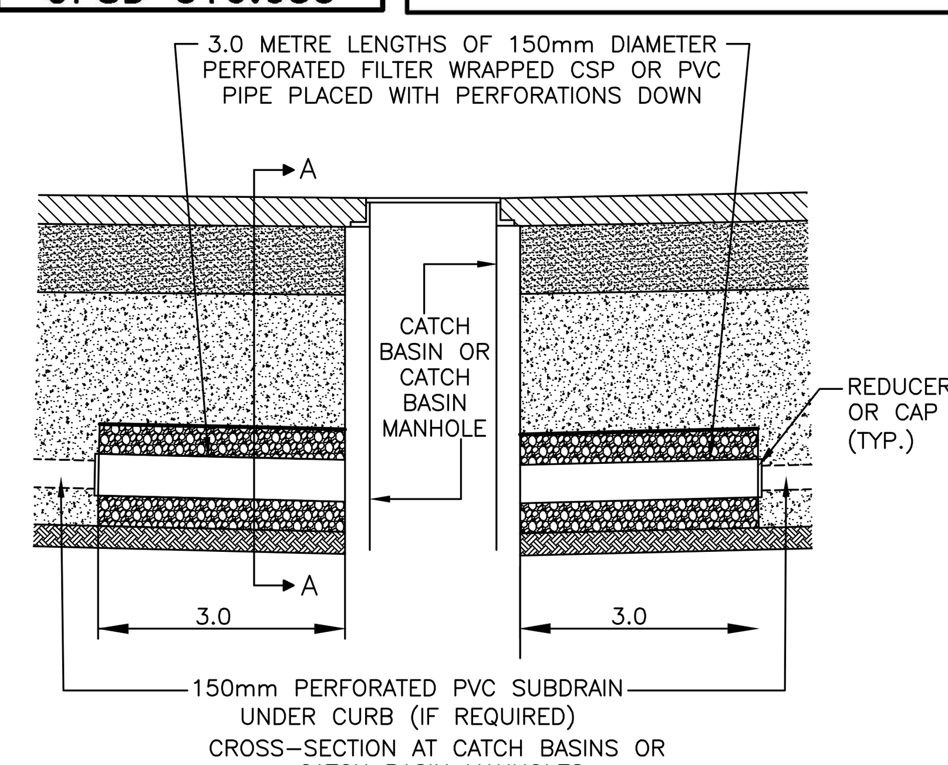
CORPORATION OF MUNICIPALITY OF THAMES CENTRE – STANDARD DRAWING

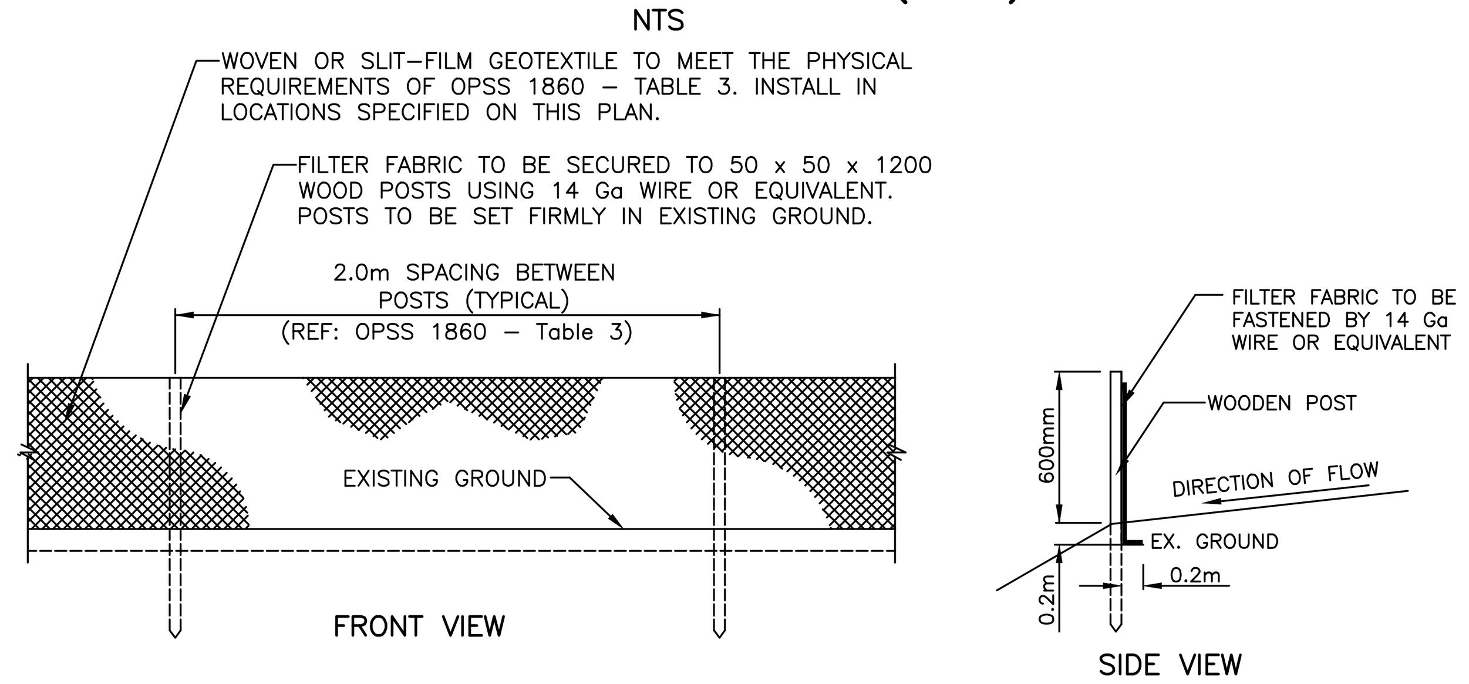
600X 840 Precast Concrete Curb Inlet Catchbasin	REVISION DATE:	NOV 2020
	DRAWING #:	SW-3.0

THAMES CENTRE | 2021 EDITION

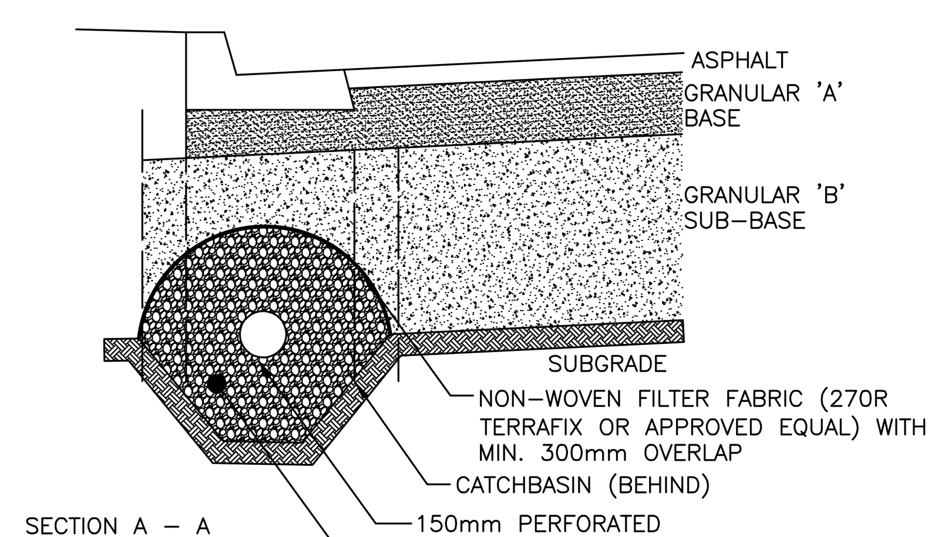


CATCHBASIN STRAW BALE FILTER (TEMP.)
NTS

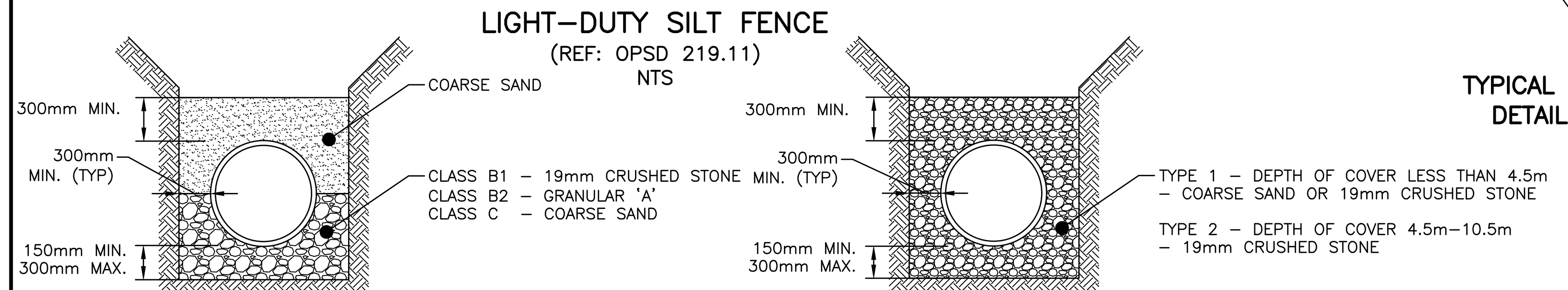




LIGHT–DUTY SILT FENCE
(REF: OPSD 219.11)
NTS



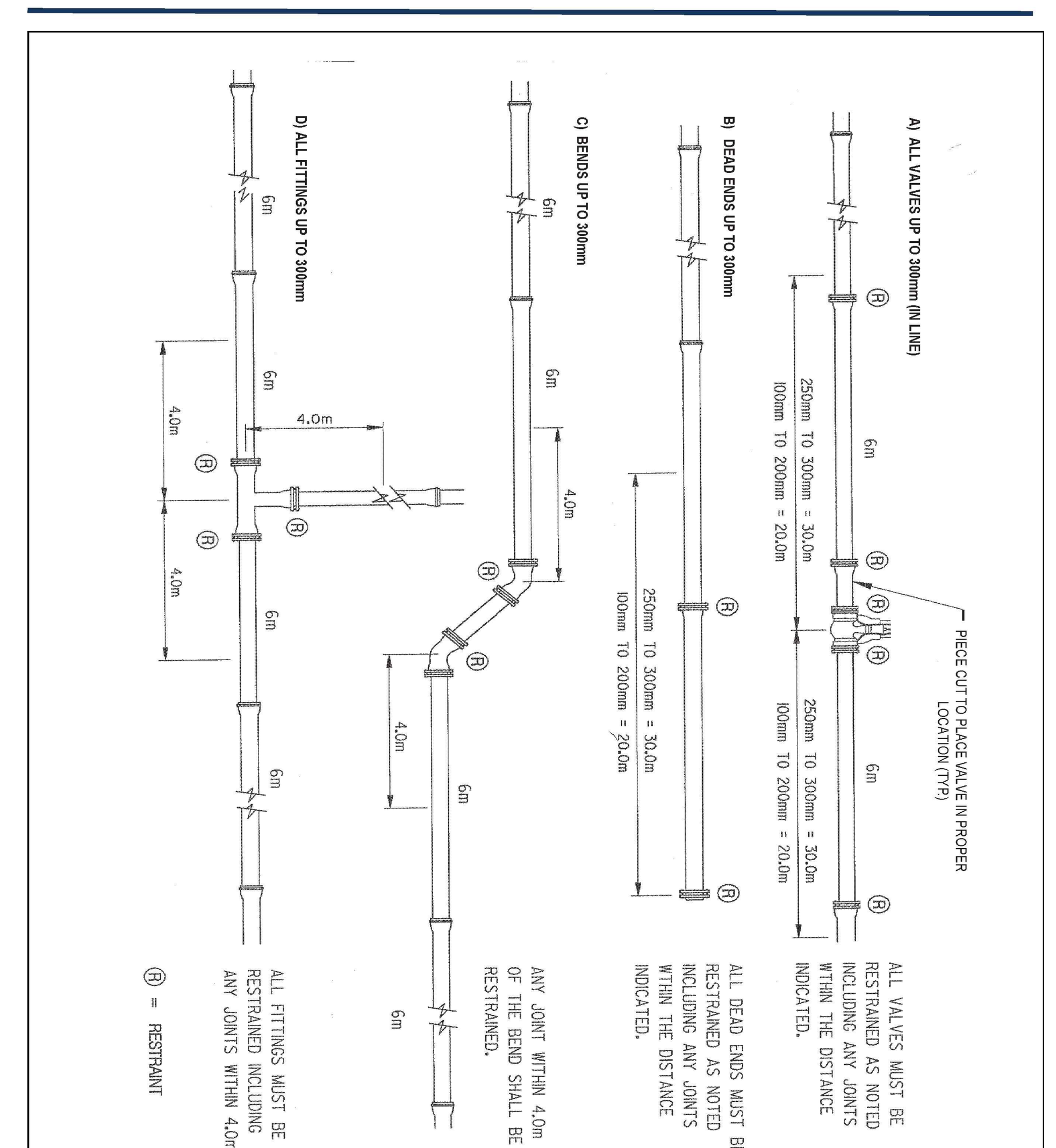
TYPICAL SUBDRAIN INSTALLATION DETAIL AT CB, DCB, CICB's
NTS



NOTES:
- PROPERLY CONSOLIDATED AND COMPACTED 19mm CRUSHED STONE BEDDING TO BE EXCLUSIVELY UTILIZED AS BEDDING MATERIAL WITHIN 5.0m OF ALL MANHOLES.
- FOR SERVICES BEDDED IN LOOSE, WET OR DILATANT SILTY/SANDY SUBSOILS, CRUSHED STONE BEDDING TO BE WRAPPED IN A GEOTEXTILE (TERRAFIX 270R OR APPROVED EQUIVALENT WITH MIN. 0.45m OVERLAP) AS DIRECTED BY THE GEOTECHNICAL ENGINEER.

BEDDING STANDARD FOR GRAVITY AND PRESSURE PIPE
NTS

ENGINEERING DESIGN STANDARDS
THE CORPORATION OF THE MUNICIPALITY OF THAMES CENTRE
Standard Drawings

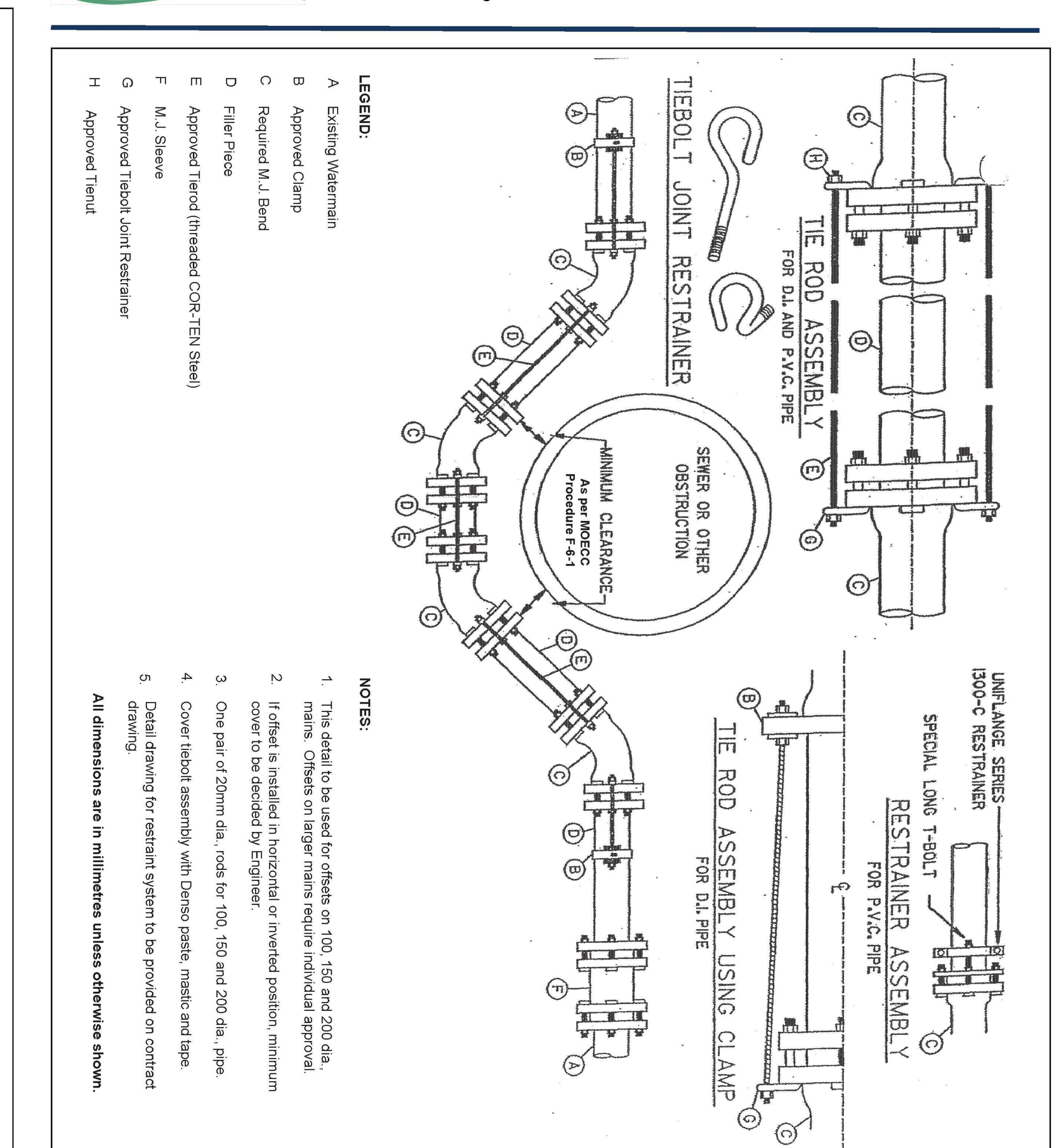


CORPORATION OF MUNICIPALITY OF THAMES CENTRE – STANDARD DRAWING

Typical Restraint Details	REVISION DATE:	DEC 2020
	DRAWING #:	7.5

THAMES CENTRE | 2021 EDITION

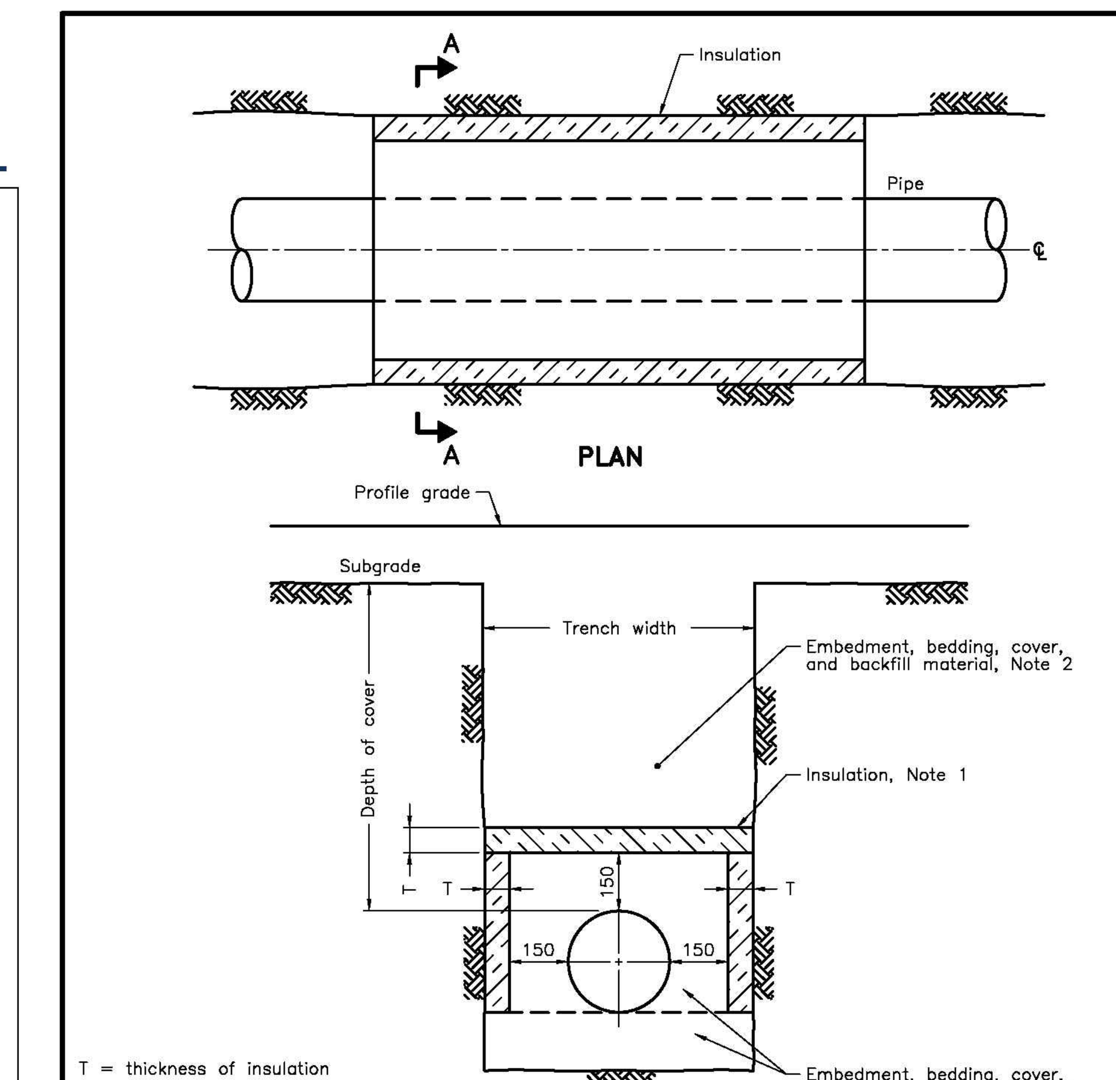
ENGINEERING DESIGN STANDARDS
THE CORPORATION OF THE MUNICIPALITY OF THAMES CENTRE
Standard Drawings



CORPORATION OF MUNICIPALITY OF THAMES CENTRE – STANDARD DRAWING

Standard Mechanical Joint Offset Installation Using Tiebolt Couplings	REVISION DATE:	DEC 2020
	DRAWING #:	7.1

THAMES CENTRE | 2021 EDITION



SECTION A–A
TYPICAL PIPE INSULATION DETAIL

NOTES:
1 The insulation material shall be extruded polystyrene according to OPSS 1605 with a minimum compressive strength of 275 kPa.
2 Pipe embedment or bedding, cover, and backfill shall be according to:
a) Flexible OPSD 802.010, 802.013, 802.020, and 802.023.
b) Rigid – OPSD 802.030, 802.031, 802.032, 802.033, 802.050, 802.051, 802.052, and 802.053.
A Minimum insulation thickness shall be 50mm.
B Joints shall be staggered for multiple insulation sheets.
C This OPSD is to be read in conjunction with OPSD 3090.100 and 3090.101.
D All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING | Nov 2020 | Rev 1

INSULATION FOR SEWERS AND WATERMAINS IN SHALLOW TRENCHES

OPSD 1109.030

EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION	DETAILS	No.	REVISIONS	DATE	CONSULTANT
					DESIGN BY RAB	1	ISSUED FOR TENDER	FEB 28/23	DEVENG
					DRAWN BY RAB				
					CHECKED BY JS				
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					FILE: DEL20–003 STM N&D TMP B.DWG				

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LICENSED PROFESSIONAL ENGINEER J. R. SMITH 100144789 Feb 28/23 PROVINCE OF ONTARIO

MUNICIPALITY OF Thames Centre

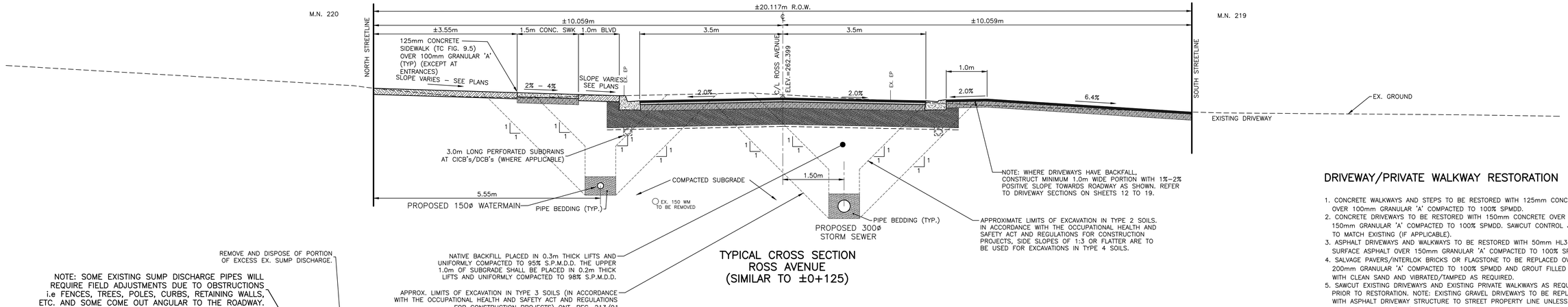
SCALE

TITLE
PORTER SUBDIVISION WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION – PHASE 2, DORCHESTER, ON

MISCELLANEOUS NOTES AND DETAILS II

PROJECT No. DEL20–003B
SHEET No. 30
PLAN FILE No.

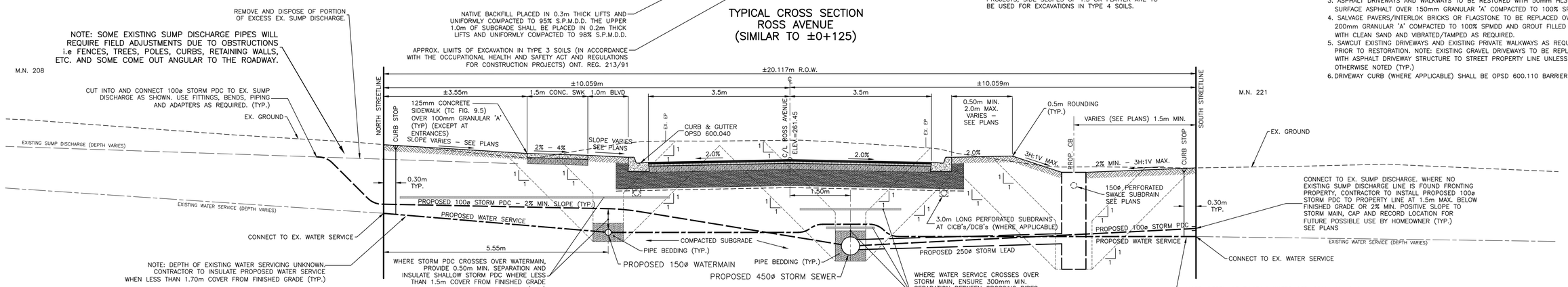
rbartlett Feb.17/23–10:34am DEL20–003 STM N&D TMP B.dwg



TYPICAL CROSS SECTION
ROSS AVENUE
(SIMILAR TO ±0+125)

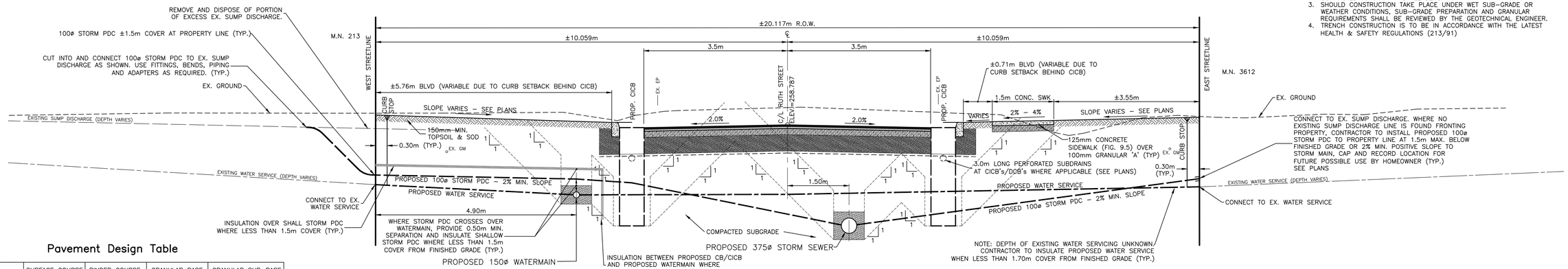
DRIVEWAY/PRIVATE WALKWAY RESTORATION

1. CONCRETE WALKWAYS AND STEPS TO BE RESTORED WITH 125mm CONCRETE OVER 100mm GRANULAR 'A' COMPACTED TO 100% SPMDD.
2. CONCRETE DRIVEWAYS TO BE RESTORED WITH 150mm CONCRETE OVER 150mm GRANULAR 'A' COMPACTED TO 100% SPMDD. SAWCUT CONTROL JOINTS TO MATCH EXISTING (IF APPLICABLE).
3. ASPHALT DRIVEWAYS AND WALKWAYS TO BE RESTORED WITH 50mm HL3 SURFACE ASPHALT OVER 150mm GRANULAR 'A' COMPACTED TO 100% SPMDD
4. SALVAGE PAVERS/INTERLOK BRICKS OR FLAGSTONE TO BE REPLACED OVER 200mm GRANULAR 'A' COMPACTED TO 100% SPMDD AND GROUT FILLED FLUSH WITH CLEAN SAND AND VIBRATED/TAMPED AS REQUIRED.
5. SAWCUT EXISTING DRIVEWAYS AND EXISTING PRIVATE WALKWAYS AS REQUIRED PRIOR TO RESTORATION. NOTE: EXISTING GRAVEL DRIVEWAYS TO BE REPLACED WITH ASPHALT DRIVEWAY STRUCTURE TO STREET PROPERTY LINE UNLESS OTHERWISE NOTED (TYP.)
6. DRIVEWAY CURB (WHERE APPLICABLE) SHALL BE OPSD 600.110 BARRIER CURB.



TYPICAL CROSS SECTION
ROSS AVENUE
(SIMILAR TO ±0+205)

NOTES:
1. ALL GRANULAR MATERIALS SHALL BE COMPACTED TO 100% S.P.M.D.D.
2. ALL ASPHALT MATERIAL SHALL BE PRODUCED AND PLACED IN ACCORDANCE WITH THE CURRENT OPSS REQUIREMENTS AND UNIFORMLY COMPACTED TO 97% MARSHALL DENSITY.
3. SHOULD CONSTRUCTION TAKE PLACE UNDER WET SUB–GRADE OR WEATHER CONDITIONS, SUB–GRADE PREPARATION AND GRANULAR REQUIREMENTS SHALL BE REVIEWED BY THE GEOTECHNICAL ENGINEER.
4. TRENCH CONSTRUCTION IS TO BE IN ACCORDANCE WITH THE LATEST HEALTH & SAFETY REGULATIONS (213/91)



TYPICAL CROSS SECTION
RUTH STREET
(SIMILAR TO ±0+034)

Pavement Design Table

STREET	SURFACE COURSE HL 3	BINDER COURSE HL 8	GRANULAR BASE 'A'	GRANULAR SUB–BASE 'B'
CARL STREET	40mm	50mm	150mm	300mm
ROSS AVENUE	40mm	50mm	150mm	300mm
RUTH STREET	40mm	50mm	150mm	300mm
CATHERINE STREET	60mm	120mm	150mm	SEE NOTE

NOTE: ALL TRENCH BACKFILL WITHIN INTERSECTION TO COMPRISE GRANULAR 'B' MATERIAL COMPACTED THROUGHOUT TO 98% MSPDD.
ASPHALT TO BE SUPPLIED AND PLACED IN ACCORDANCE WITH OPSS FORMS 310 AND 1150.
FOR GEOTECHNICAL INFORMATION AND RECOMMENDATIONS RESPECTING CONSTRUCTION, REFER TO GEOTECHNICAL REPORT PREPARED BY LDS, PROJECT No. GE–00351, DATED JUNE 12, 2020.

EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS	No.	REVISIONS	DATE	CONSULTANT
DESIGN BY RAB	1	ISSUED FOR TENDER	FEB 28/23	DEVENG
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F.BK. 1219				
FILE: DEL20–003 STM N&D TMP B.DWG				

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Feb 28/23
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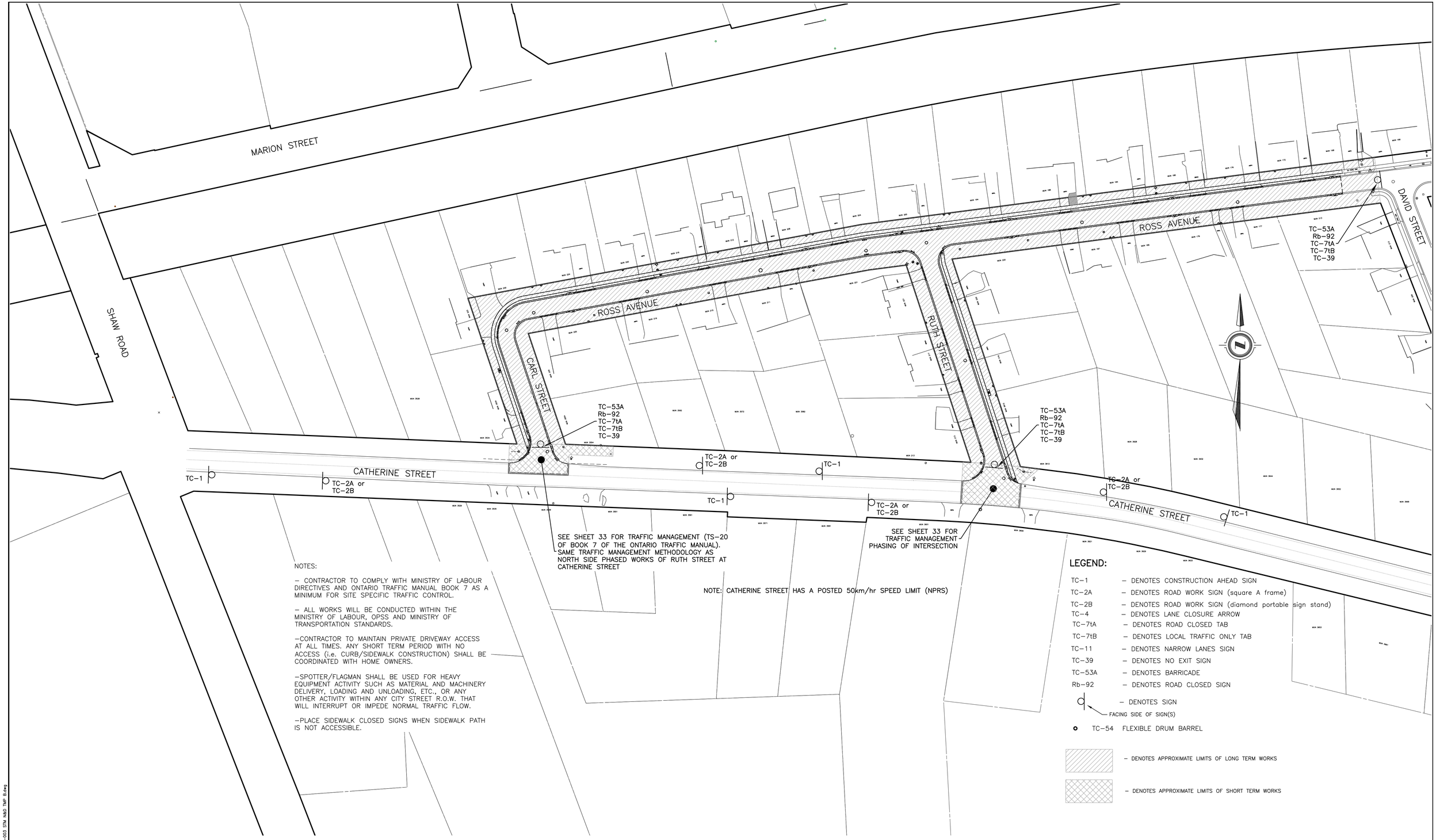
SCALE
SCALE – 1:50
0.5 0 1m

TITLE
PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION – PHASE 2, DORCHESTER, ON
TYPICAL CROSS SECTIONS

PROJECT No. DEL20–003B
SHEET No. 31
PLAN FILE No.



NOTES:

– CONTRACTOR TO COMPLY WITH MINISTRY OF LABOUR DIRECTIVES AND ONTARIO TRAFFIC MANUAL BOOK 7 AS A MINIMUM FOR SITE SPECIFIC TRAFFIC CONTROL.

– ALL WORKS WILL BE CONDUCTED WITHIN THE MINISTRY OF LABOUR, OPSS AND MINISTRY OF TRANSPORTATION STANDARDS.

–CONTRACTOR TO MAINTAIN PRIVATE DRIVEWAY ACCESS AT ALL TIMES. ANY SHORT TERM PERIOD WITH NO ACCESS (i.e. CURB/SIDEWALK CONSTRUCTION) SHALL BE COORDINATED WITH HOME OWNERS.

–SPOTTER/FLAGMAN SHALL BE USED FOR HEAVY EQUIPMENT ACTIVITY SUCH AS MATERIAL AND MACHINERY DELIVERY, LOADING AND UNLOADING, ETC., OR ANY OTHER ACTIVITY WITHIN ANY CITY STREET R.O.W. THAT WILL INTERRUPT OR IMPEDE NORMAL TRAFFIC FLOW.

–PLACE SIDEWALK CLOSED SIGNS WHEN SIDEWALK PATH IS NOT ACCESSIBLE.

LEGEND:

TC–1	– DENOTES CONSTRUCTION AHEAD SIGN
TC–2A	– DENOTES ROAD WORK SIGN (square A frame)
TC–2B	– DENOTES ROAD WORK SIGN (diamond portable sign stand)
TC–4	– DENOTES LANE CLOSURE ARROW
TC–7tA	– DENOTES ROAD CLOSED TAB
TC–7tB	– DENOTES LOCAL TRAFFIC ONLY TAB
TC–11	– DENOTES NARROW LANES SIGN
TC–39	– DENOTES NO EXIT SIGN
TC–53A	– DENOTES BARRICADE
Rb–92	– DENOTES ROAD CLOSED SIGN

– DENOTES SIGN FACING SIDE OF SIGN(S)

TC–54 FLEXIBLE DRUM BARREL

– DENOTES APPROXIMATE LIMITS OF LONG TERM WORKS

– DENOTES APPROXIMATE LIMITS OF SHORT TERM WORKS

EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS	No.	REVISIONS	DATE	CONSULTANT
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F.BK. 1219				
FILE: DEL20–003 STM N&D TMP B.DWG				

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MUNICIPALITY OF Thames Centre

SCALE

SCALE – 1:750
7.5 0 15m

TITLE

PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION – PHASE 2, DORCHESTER, ON

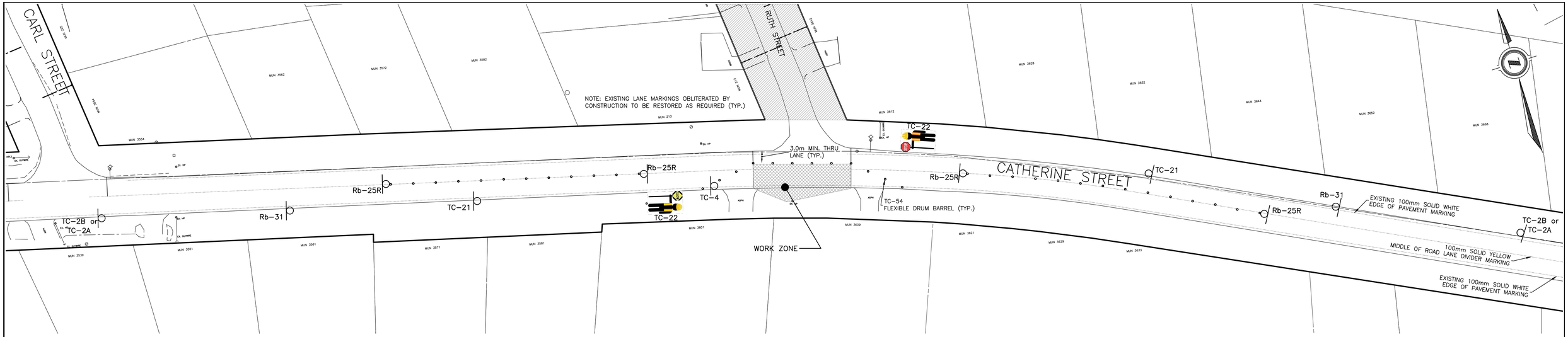
TRAFFIC MANAGEMENT PLAN

PROJECT No. DEL20–003B

SHEET No. 32

PLAN FILE No.

DEL20–003 STM N&D TMP B.dwg
rbortlett Feb.17/23–10:35am



NOTES:

- CONTRACTOR TO COMPLY WITH MINISTRY OF LABOUR DIRECTIVES AND ONTARIO TRAFFIC MANUAL BOOK 7 AS A MINIMUM FOR SITE SPECIFIC TRAFFIC CONTROL.
- ALL WORKS WILL BE CONDUCTED WITHIN THE MINISTRY OF LABOUR, OPSS AND MINISTRY OF TRANSPORTATION STANDARDS.
- CONTRACTOR TO MAINTAIN PRIVATE DRIVEWAY ACCESS AT ALL TIMES. ANY SHORT TERM PERIOD WITH NO ACCESS (i.e. CURB/SIDEWALK CONSTRUCTION) SHALL BE COORDINATED WITH HOME OWNERS.
- SPOTTER/FLAGMAN SHALL BE USED FOR HEAVY EQUIPMENT ACTIVITY SUCH AS MATERIAL AND MACHINERY DELIVERY, LOADING AND UNLOADING, ETC., OR ANY OTHER ACTIVITY WITHIN ANY CITY STREET R.O.W. THAT WILL INTERRUPT OR IMPEDE NORMAL TRAFFIC FLOW.
- NOTIFY LOCAL EMERGENCY SERVICES OF THESE WORKS
- ADDITIONAL SIGNAGE WARNING OF UPCOMING WORK IS REQUIRED TWO WEEKS PRIOR TO CONSTRUCTION

CATHERINE STREET AT RUTH STREET
SOUTH SIDE OF ROADWAY WORKS

AS PER FIG. TS-20 OF BOOK 7 OF ONTARIO TRAFFIC MANUAL
50km/h POSTED SPEED LIMIT (NPRS)

LEGEND:

TC-2A	– DENOTES ROAD WORK SIGN (square A frame)
TC-2B	– DENOTES ROAD WORK SIGN (diamond portable sign stand)
TC-4	– DENOTES LANE CLOSURE ARROW
TC-21	– DENOTES TRAFFIC CONTROL PERSON AHEAD SIGN
TC-22	– DENOTES TRAFFIC CONTROL PERSON
Rb-25	– DENOTES KEEP RIGHT (Rb-25R) OR KEEP LEFT (Rb-25L)
Rb-31	– DENOTES DO NOT PASS SIGN

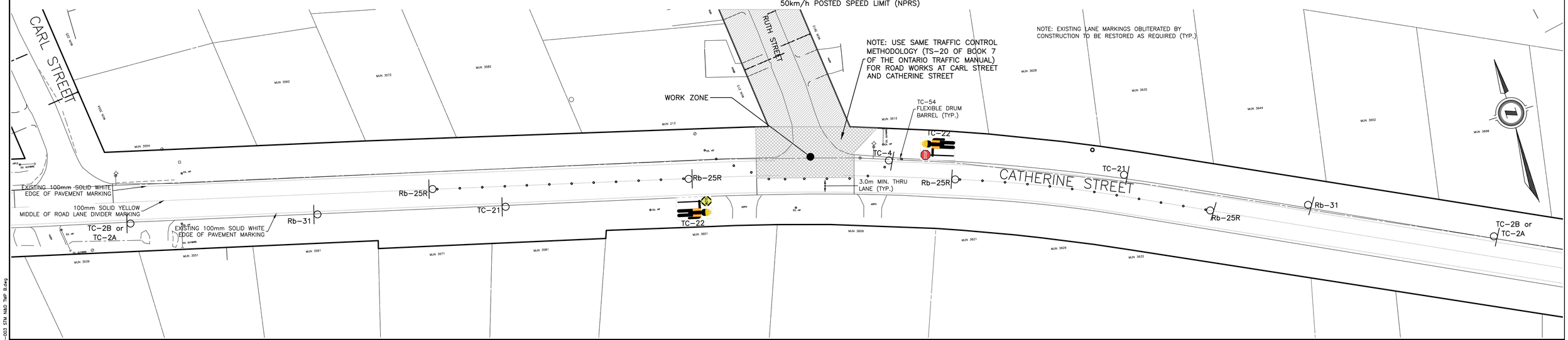
– DENOTES APPROXIMATE LIMITS OF LONG DURATION WORKS

– DENOTES APPROXIMATE LIMITS OF SHORT TERM WORKS

– DENOTES SIGN
FACING SIDE OF SIGN(S)
TC-54 FLEXIBLE DRUM BARREL

CATHERINE STREET AT RUTH STREET
NORTH SIDE OF ROADWAY WORKS

AS PER FIG. TS-20 OF BOOK 7 OF ONTARIO TRAFFIC MANUAL
50km/h POSTED SPEED LIMIT (NPRS)



EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS	No.	REVISIONS	DATE	CONSULTANT
DESIGN BY RAB	1	ISSUED FOR TENDER	FEB 28/23	DEVENG
DRAWN BY RAB				
CHECKED BY JS				
F.BK. 1219				
FILE: DEL20-003 STM N&D TMP B.DWG				

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J. R. SMITH
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Feb 28/23
PROVINCE OF ONTARIO

MUNICIPALITY OF Thames Centre

SCALE
SCALE – 1:500
5 0 10m

TITLE
PORTER SUBDIVISION
WATERMAIN REPLACEMENT AND ROAD RECONSTRUCTION – PHASE 2, DORCHESTER, ON

TRAFFIC MANAGEMENT PLAN INTERSECTION PHASING

PROJECT No. DEL20-003B
SHEET No. 33
PLAN FILE No.

rbartlett Feb.17/23 - 10:35am DEL20-003 STM N&D TMP B.dwg