

CONTRACTOR SHALL VERIFY ALL LOCATIONS OF GASMAINS, WATERMAINS, TV CABLES, HYDRO AND TELEPHONE DUCTS, SANITARY AND STORM SEWERS AND ALL EXISTING PRIVATE SEWER, WATER AND UTILITY SERVICES PRIOR TO START OF CONSTRUCTION.

STANDARD NOTES

A. SEWERS

1. SANITARY AND STORM SEWERS

- A. CONSTRUCTION OF SANITARY AND STORM SEWERS AND PRIVATE DRAINS SHALL BE IN ACCORDANCE WITH CITY STANDARDS & SPECIFICATIONS (LATEST EDITION) AND THE MINISTRY OF ENVIRONMENT, CONSERVATION AND PARKS (MECP) GUIDELINES (LATEST EDITION).
- B. COVER AND BEDDING MATERIAL FOR CONCRETE PIPE SHALL BE GRANULAR 'A' MATERIAL AS PER OPSD 802.030 OR 802.033, CLASS 'B' BEDDING.
- C. COVER AND BEDDING MATERIAL FOR PVC PIPE SHALL BE GRANULAR 'A' MATERIAL AS PER OPSD 802.010 OR 802.013.
- D. PVC PIPE WILL REQUIRE SPECIAL CONSTRUCTION PROCEDURES AS PER CITY SPECIFICATIONS.
- E. ALL SEWERS TO BE FLUSHED PRIOR TO VIDEO INSPECTION.
- F. MANHOLE FRAMES AND COVERS SHALL BE AS PER OPSD 401.010 (STORM-OPEN, SANITARY-CLOSED).
- G. SANITARY SEWER (200mm TO 375mm DIA.) SHALL BE PVC PIPE, CSA B182.2, SDR-35.
- H. STORM SEWER (300mm TO 600mm DIA.) SHALL BE PVC PIPE, CSA B182.2, SDR-35.
- I. STORM SEWER > 600mm DIA. SHALL BE CONCRETE PIPE, CSA A257.2 (AS SPECIFIED).
- J. PVC (SANITARY AND STORM) SEWERS ARE TO BE TESTED FOR DEFLECTION (MANDREL PASSAGE) AFTER INSTALLATION. SANITARY SEWERS SHALL ALSO BE TESTED FOR LEAKAGE (LOW AIR PRESSURE). PRIOR TO ASSUMPTION BY THE CITY, PIPE DEFLECTION TESTING SHALL BE REPEATED.
- K. ALTERNATE MATERIALS MAY BE ACCEPTABLE PROVIDED APPROVAL HAS FIRST BEEN OBTAINED FROM THE CITY/ENGINEER.

2. PRIVATE DRAINS

- A. SANITARY AND STORM LATERALS AND PIPES TO BE LOCATED AS NOTED ON PLAN.
- B. PRIVATE DRAINS TO BE 150mm DIA. PVC PIPE, CSA B182.1 M-1983, SDR 28 AS PER FORM 500. STORM PIPE SHALL BE WHITE AND SANITARY SHALL BE ANY COLOUR OTHER THAN WHITE. WOOD MARKER AT END OF SANITARY PRIVATE DRAIN SHALL BE PAINTED RED.
- C. COVER AND BEDDING MATERIAL FOR PRIVATE DRAINS SHALL BE GRANULAR 'A' INSTALLED AS PER OPSD 802.010 OR 802.013.
- D. MINIMUM FALL FOR PRIVATE DRAINS TO BE 2.00%.
- E. INVERT OF SANITARY PRIVATE DRAIN AT STREET LINE TO BE AS NOTED ON PLAN.
- F. INVERT OF STORM PRIVATE DRAIN AT STREET LINE TO BE AS NOTED ON PLAN.
- G. BUILDING RAINWATER LEADERS SHALL NOT BE CONNECTED TO THE STORM PRIVATE DRAIN BUT SHALL DISCHARGE ONTO THE GROUND SURFACE VIA SPLASH PADS.
- H. SUMP PUMPS WITH CHECK VALVES SHALL BE INSTALLED IN EACH DWELLING TO PUMP THE WEeping TILES TO THE STORM PRIVATE DRAINS. THE SUMP OUTLET PIPE SHALL EXTEND A MINIMUM OF 150mm ABOVE THE PROPOSED GRADE AT THE DWELLING (BASEMENT CEILING) PRIOR TO DISCHARGING TO THE STORM PRIVATE DRAIN.

B. WATERMAINS AND WATER SERVICES

1. WATERMAINS

- A. CONSTRUCTION OF WATERMAINS AND PRIVATE SERVICES SHALL BE IN ACCORDANCE WITH CITY STANDARDS & SPECIFICATIONS (LATEST EDITION) AND THE MINISTRY OF ENVIRONMENT, CONSERVATION AND PARKS (MECP) GUIDELINES (LATEST EDITION).
- B. TO BE INSTALLED TO A MINIMUM DEPTH OF 1.60m BELOW PROPOSED CENTRE LINE OF ROAD GRADE.
- C. PVC PIPE IN SIZES 100mm THROUGH 300mm SHALL BE CLASS 150, DR18 CONFORMING TO AWWA C900.
- D. TRACER WIRE SHALL BE INSTALLED WITH PVC PIPE IN ACCORDANCE WITH FORM 400. IT SHALL BE 12 GAUGE TW75, TWJ75 OR RW90XLPE COATED COPPER AND SHALL BE POSITIONED ALONG THE TOP OF THE PIPE AND FASTENED AT 6 METRE INTERVALS. THE WIRE IS TO BE INSTALLED BETWEEN EACH VALVE AND/OR THE END OF THE NEW PVC WATERMAIN. JOINTS IN THE WIRE BETWEEN VALVES ARE NOT PERMITTED. AT EACH GATE VALVE A LOOP WIRE IS TO BE BROUGHT UP INSIDE THE VALVE BOX TO THE CAP. THE TRACER WIRE SHALL BE BROUGHT TO THE SURFACE AT THE SECONDARY VALVE ON ALL FIRE HYDRANTS. THE TRACER WIRE SHALL ALSO BE CONNECTED TO THE CATHODIC PROTECTION SYSTEM AS REQUIRED.
- E. MOLDED PVC FITTINGS FOR PIPE SIZES 100mm TO 300mm SHALL CONFORM TO AWWA C900 AND CERTIFIED TO CSA B137.2.
- F. FABRICATED FITTINGS 250mm AND 300mm SHALL BE MANUFACTURED FROM SEGMENTS OF AWWA C900, CLASS 150 (DR18) PVC PIPE, BONDED TOGETHER AND OVER-WRAPPED WITH FIBREGLASS-REINFORCED POLYESTER TO MEET THE REQUIREMENTS OF CSA B137.3.
- G. WHERE METAL FITTINGS ARE TO BE USED ON PVC MAINS SUFFICIENT CATHODIC PROTECTION MUST BE PROVIDED AS PER THE FOLLOWING REQUIREMENTS:
- MINIMUM OF ONE 11kg ZINC ANODE SHALL BE INSTALLED FOR EVERY 1000m OF TRACER WIRE;
 - ONE 11kg ZINC ANODE SHALL BE INSTALLED FOR EACH COPPER WATER SERVICE CONNECTION;
 - ONE 11kg ZINC ANODE SHALL BE INSTALLED ON EVERY VALVE, HYDRANT, BEND, TEE, SLEEVE, REDUCER, PLUG, CAP, JOINT RESTRAINT, COUPLING, ETC., CONNECTED TO THE PVC PIPE.
- H. BEDDING AND BACKFILL AS PER WM-200.01 AND WM-200.02 GRANULAR 'A' MATERIAL FOR MAINS AND SERVICES GREATER THAN 50mm.
- I. WATERMAIN DEFLECTION FOR PVC PIPE:
- MAXIMUM ALLOWABLE DEFLECTION OF 1.5 DEGREES PER JOINT UP TO 250mm DIAMETER (160mm PER 6.1M PIPE LENGTH) AND 1.2 DEGREES FOR 300mm DIAMETER (128mm PER 6.1M PIPE LENGTH) SHALL NOT BE EXCEEDED.
 - ALL JOINTS SHALL BE DEFLECTED AN EQUAL AMOUNT.
- J. MINIMUM HORIZONTAL SEPARATION BETWEEN WATER SERVICES AND SEWERS SHALL BE 2.5m. VERTICAL SEPARATION WHERE WATER SERVICES AND WATERMAINS CROSS BELOW SEWERS MUST BE 500mm BETWEEN INSIDE OF PIPE WALLS AND 200mm WHERE WATER SERVICES AND WATERMAIN CROSS ABOVE SEWERS. IN ACCORDANCE WITH MOE GUIDELINES TO ALLOW FOR PROPER BEDDING AND STRUCTURAL SUPPORT OF THE SERVICES. WHEN THE WATERMAIN PASSES BELOW THE SEWER, THE LENGTH OF WATER PIPE SHALL BE CENTERED AT THE POINT OF CROSSING SUCH THAT JOINTS IN THE WATERMAIN WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER, CROSSING PERPENDICULAR IF POSSIBLE.

2. FLUSHING, SWABBING AND TESTING

- A. ALL NEW WATERMAINS ARE TO BE SWABBED IN ACCORDANCE WITH CITY SPECIFICATIONS.
- B. A REDUCED PRESSURE ZONE BACKFLOW PREVENTER (WATTS SERIES 909 OR APPROVED EQUAL) IS REQUIRED ON THE TEMPORARY SUPPLY LINES USED FOR FILLING AND FLUSHING OR SWABBING OF WATERMAINS.

C. UPON COMPLETION OF INSTALLATION, THE CONTRACTOR SHALL PERFORM A PRESSURE TEST ON THE WATERMAINS AS PER FORM 400. WATERMAIN IS TO BE TESTED PRIOR TO CONNECTION TO EXISTING WATERMAINS USING TEMPORARY CAPS OR PLUGS. PIPE CLOSURES, WHERE REQUIRED, ARE TO BE SUPPLIED BY THE CONTRACTOR. THE CONTRACTOR WILL ALSO SUPPLY AND INSTALL ALL ADAPTOR PIECES IN ORDER TO CONNECT TO EXISTING WATERMAINS.

1. WATER SERVICES

- A. 'W' DENOTES WATER SERVICE CONNECTION (25mm DIA. TYPE 'K' SOFT COPPER) AS PER WM-207.01, OR AS DETAILED.
- B. GRANULAR BEDDING AS PER WM-200.01 AND WM-200.02 TO BE GRANULAR 'D' AS PER FORM 600.
4. VALVES & VALVE BOXES
- A. ALL VALVE BOXES TO BE SET TO PROPOSED GRADES EXCEPT IN ASPHALT ROADS WHERE THEY ARE SET TO BASE ASPHALT THEN RAISED TO FINAL ASPHALT AT TIME OF FINAL ASPHALT APPLICATION.
- B. 100mm TO 300mm GATE VALVE & VALVE BOXES AS PER WM-202.

5. ANCHOR BLOCKS & RESTRAINED JOINTS

- A. FOR 100mm TO 300mm WATERMAINS, ALL FITTINGS INCLUDING GATE VALVES SHALL HAVE ANCHOR BLOCKS AS PER WM-204.01 OR WM-204.10 AND RESTRAINED JOINTS IN EACH DIRECTION AS DESCRIBED IN FORM 400 (PAGE 11).
- B. MECHANICAL RESTRAINERS FOR PVC PIPE SHALL MEET ASTM F1674-05 SPECIFICATIONS AND BE ON THE CITY OF HAMILTON APPROVED WATERMAIN PRODUCT LIST.

6. HYDRANTS

- A. TO BE INSTALLED WITH SECONDARY VALVES AS PER WM-203.01 OR WM-203.02 AS DETAILED. THEY SHALL OPEN COUNTER-CLOCKWISE (LEFT) AND HAVE AN 'L' PAINTED ON THE BARREL SECTION. THE 100mm PUMPER 'STORZ' CONNECTION SHALL FACE THE ROADWAY AND BE PAINTED BLACK.
- B. ALL FIRE HYDRANTS SHALL CONFORM TO THE CITY OF HAMILTON (MUNICIPALITY) FIRE DEPARTMENT'S REQUIREMENTS AND SHALL BE OF SAME MANUFACTURE.

C. ROADWORKS

1. GENERAL

- A. CONSTRUCTION OF ROADWAYS & RELATED WORKS SHALL BE IN ACCORDANCE WITH CITY STANDARDS AND SPECIFICATIONS (LATEST EDITION).

2. PRELIMINARY ROADS

- A. NO PRELIMINARY ROADS TO BE INSTALLED.

3. CATCH BASINS

- A. CATCH BASIN CONNECTIONS TO BE 250mm DIA. PVC PIPE CSA B182.2, SDR-35 UNLESS OTHERWISE NOTED.
- B. SINGLE/DOUBLE STREET CATCH BASINS AS PER OPSD 705.010/705.020 RESPECTIVELY (NO GOSS TRAPS).
- C. PRIVATE REAR YARD CATCH BASINS AS PER OPSD 705.010 (SUMPLESS & NO GOSS TRAPS).
- D. STREET CB GRATES AS PER OPSD 400.020 (FLAT) AND REAR YARD CB GRATES TO BE BEEHIVE TYPE FRAME & GRATE.

4. FINAL ROAD AREAS

- A. CROSS-FALL TO BE 2.00%.
- B. PAVEMENT STRUCTURE THICKNESS FOR VEHICLE ACCESS AND PARKING AREAS SHALL BE 40mm SP9.5, 80mm SP19.0 ON 150mm GRANULAR 'A' AND 300mm GRANULAR 'B', TYPE II 100% CRUSHED AGGREGATE.
- C. MANHOLES AND CATCH BASINS SHALL BE INSTALLED FLUSH WITH THE SURFACE COURSE ASPHALT.

5. SIDEWALKS AND CURBS & GUTTERS

- A. CONCRETE BARRIER CURB AS PER OPSD 600.110, MINIMUM 30 MPa STRENGTH.
- B. CURB DEPRESSION AT DRIVEWAYS AS PER OPSD 600.040 AND OPSD 310.050.
- C. 1.5m WIDE CONCRETE SIDEWALK AND CURB AS PER RD-103, 30 MPa STRENGTH WITH 150mm GRANULAR 'A' BASE.
- D. WHEELCHAIR RAMPS REQUIRED AT ALL INTERSECTIONS AS PER OPSD 310.030.
- E. ASPHALT RAMPING SHALL BE PLACED TO SUIT THE WHEELCHAIR RAMPS IF SURFACE COURSE ASPHALT IS NOT INSTALLED AT THE SAME TIME. THESE RAMPS ARE TO BE REMOVED JUST PRIOR TO PLACEMENT OF SURFACE COURSE ASPHALT.

6. ROAD SUBDRAINS

- A. 100mm FILTER WRAPPED CORRUGATED SUBDRAINS TO BE INSTALLED CONTINUOUSLY BELOW THE CURB AND GUTTER AND CONNECTED TO THE CB'S.

D. COMPACTION REQUIREMENTS

- A. ALL BEDDING AND BACKFILL MATERIAL, ROAD SUB-GRADES AND GENERALLY ALL MATERIAL USED FOR LOT GRADING AND FILL SECTIONS, ETC., SHALL BE COMPACTED TO MIN. 95% SPMD (UNLESS OTHERWISE RECOMMENDED BY THE GEOTECHNICAL ENGINEER). ALL MATERIAL SHALL BE PLACED IN LAYERS NOT EXCEEDING 300mm LIFTS.
- B. ALL GRANULAR ROAD BASE MATERIALS SHALL BE COMPACTED TO MINIMUM 98% SPMD.
- C. FOR ALL SEWERS AND WATERMAINS IN FILL SECTIONS, THE COMPACTION SHALL BE CERTIFIED BY A GEOTECHNICAL ENGINEER PRIOR TO LAYING OF PIPE.

E. ADDITIONAL SERVICING NOTES

- A. ALL WATER SERVICES TO BE INSTALLED WITH A MINIMUM OF 1.60m COVER. SEWER DRAINS TO BE INSTALLED WITH A MINIMUM COVER OF 2.20m AT THE PROPERTY LINE BELOW THE FINAL ROAD GRADE OR AT SUCH HIGHER ELEVATION ONLY AS MAY BE NECESSITATED BY THE LEVEL OF THE MAIN SEWER. ON PRIVATE PROPERTY THE MINIMUM COVER FOR SEWER DRAINS IS TO BE NO LESS THAN 1.20m.
- B. MINIMUM HORIZONTAL SEPARATION BETWEEN WATER SERVICES AND SEWERS SHALL BE 2.5m. VERTICAL SEPARATION WHERE WATER SERVICES AND SEWERS CROSS MUST BE 500mm BETWEEN THE OUTSIDE OF THE WATER SERVICE AND THE OUTSIDE OF THE SEWER. THE LENGTH OF WATER PIPE SHOULD BE CENTERED AT THE POINT OF CROSSING SUCH THAT JOINTS IN THE WATERMAIN WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER, CROSSING PERPENDICULAR IF POSSIBLE.
- C. A WATER METER MUST BE INSTALLED ON ALL DOMESTIC WATER SERVICES AT THE SERVICE POINT OF ENTRY TO THE BUILDING, OR ALTERNATE PERMITTED LOCATION. INTERNAL WATER METER INSTALLATIONS TO BE AS PER WM-210 WITH METER INSTALLED AT FLOOR LEVEL. HORIZONTAL MULTI UNIT RESIDENTIAL - INDIVIDUAL WATER METER REQUIRED IN EACH UNIT, MASTER METER NOT REQUIRED. WATER METERS TO BE ISSUED AT BUILDING PERMIT ISSUANCE.
- D. ALL BACKFLOW PREVENTION DEVICES MUST BE SELECTED, AND MAINTAINED IN ACCORDANCE WITH THE CITY OF HAMILTON'S BACKFLOW PREVENTION BY-LAW # 10-103 THE MANUFACTURER'S SPECIFICATIONS AND THE GUIDELINES SET OUT IN THE MOST RECENT VERSIONS OF THE AWWA CANADIAN CROSS CONNECTION CONTROL MANUAL AND THE CSA. B64.10 / 07 / B64. 10.1-07 STANDARDS. A GENERAL NOTE TO THIS EFFECT SHOULD BE INCLUDED ON ALL PLANS SUBMITTED FOR WATER PERMIT ISSUANCE THROUGH THE GROWTH MANAGEMENT DIVISION.

F. LOT GRADING NOTES

GENERAL GRADING NOTES

- A. ALONG ADJOINING PROPERTIES GRADE TO MEET EXISTING OR PROPOSED ELEVATIONS WITH SODDED SLOPES (MINIMUM: 3H TO 1V) AND/OR RETAINING WALLS AS SPECIFIED.
- B. ALL RETAINING WALLS, WALKWAYS, CURBS, ETC., SHALL BE PLACED A MINIMUM OF 0.45m OFF THE PROPERTY LINE. ALL WALLS 1.0m OR HIGHER SHALL BE DESIGNED BY A P.ENG.
- C. SHOULD A RETAINING WALL BE REQUIRED, THE TOP OF WALL ELEVATIONS SHALL BE SET 150mm ABOVE THE PROPOSED SIDE YARD SWALES.
- D. RETAINING WALLS 0.6m IN HEIGHT OR GREATER REQUIRE CONSTRUCTION OF A FENCE OR GUARD RAIL AT THE TOP OF THE REAR OF THE WALL. GUARDS FOR RETAINING WALLS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF EXTERIOR GUARDS AS CONTAINED IN THE ONTARIO BUILDING CODE.
- E. SLOPES OF SWALES FOR BOTH "BACK TO FRONT" AND "SPLIT" DRAINAGE SHALL BE NO LESS THAN 2.0% GRADE AND NO GREATER THAN 33% GRADE (3:1 SLOPES).
- F. WHEN MATCHING TO EXISTING PROPERTIES WHERE A 2.0% GRADE CANNOT BE ACHIEVED, A 1.5% GRADE IS PERMITTED PROVIDED A 150mm SUB-DRAIN IS INSTALLED BELOW THE BOTTOM OF THE SWALE AND DRAINED TO A SUITABLE OUTLET, (WITH A MINIMUM 0.3m COVER OVER THE SUB-DRAIN), OR OTHER MITIGATION MEASURES.
- G. MINIMUM GRADE FOR A WRAP-AROUND SWALE IN THE BACKYARD SHALL BE 1.0%.
- H. UNLESS OTHERWISE NOTED, THE GROUND BETWEEN PROPOSED ELEVATIONS ON SIDE LOTS SHALL BE GRADED AS A STRAIGHT LINE.
- I. TOP OF FOUNDATION WALLS FOR BUILDINGS SHALL BE 150mm (MINIMUM) ABOVE FINISHED GRADE.
- J. DRIVEWAY SLOPES SHALL NOT BE LESS THAN 2% AND NOT MORE THAN 7.0%. REVERSED SLOPED DRIVEWAYS IN NEW DEVELOPMENTS ARE NOT PERMITTED.
- K. ALL FILL PLACED ON LOTS SHALL BE COMPACTED TO A MINIMUM 95% SPD (UNLESS OTHERWISE RECOMMENDED BY THE GEOTECHNICAL ENGINEER). ALL MATERIAL SHALL BE PLACED IN LAYERS NOT EXCEEDING 300mm LIFTS.
- L. IF GRADING IS REQUIRED ON LANDS ADJACENT TO THE DEVELOPMENT WHICH ARE NOT OWNED BY THE DEVELOPER, THEN THE DEVELOPER MUST OBTAIN WRITTEN PERMISSION FROM THE ADJACENT PROPERTY OWNER TO ALLOW THE DEVELOPER TO GRADE ON THE ADJACENT LANDS, OTHERWISE RETAINING WALLS MUST BE USED.
- M. THE WRITTEN PERMISSION REQUIRED FROM THE ADJACENT LANDOWNER SHALL BE OBTAINED PRIOR TO ENTERING THE LANDS. SHOULD PERMISSION NOT BE OBTAINED OR IS WITHDRAWN PRIOR TO COMMENCING THE WORK, THEN THE DEVELOPER SHALL LIMIT HIS ACTIVITIES TO THE LIMITS OF THE DEVELOPMENT SITE.
- N. DRIVEWAY AND DRIVEWAY APPROACHES SHALL BE LOCATED SUCH THAT HYDRO VAULTS AND OTHER STREET FURNITURE ARE A MINIMUM OF 1.2m FROM THE PROJECTIONS OF THE OUTSIDE GARAGE WALLS.

BACKYARD GRADING NOTES

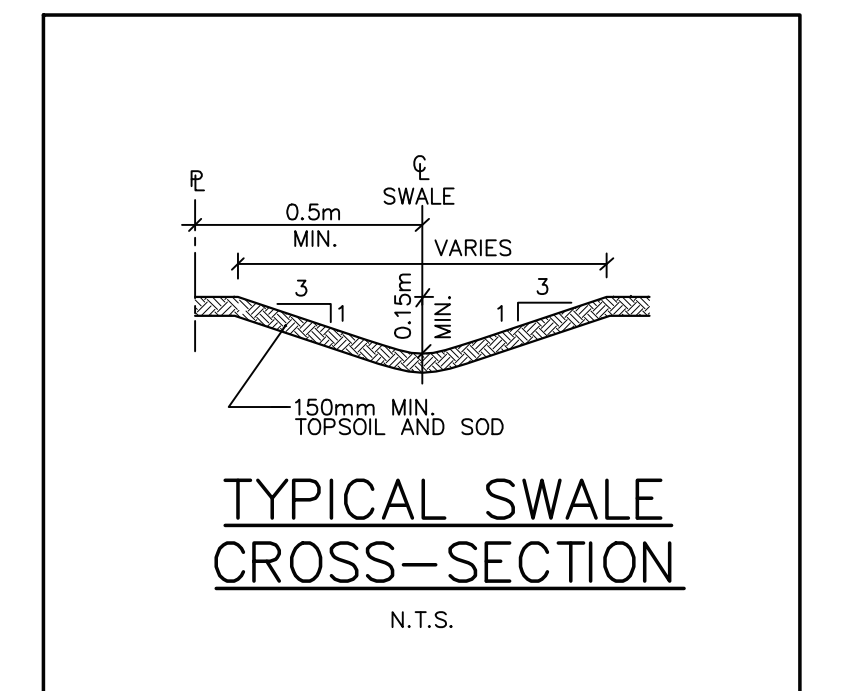
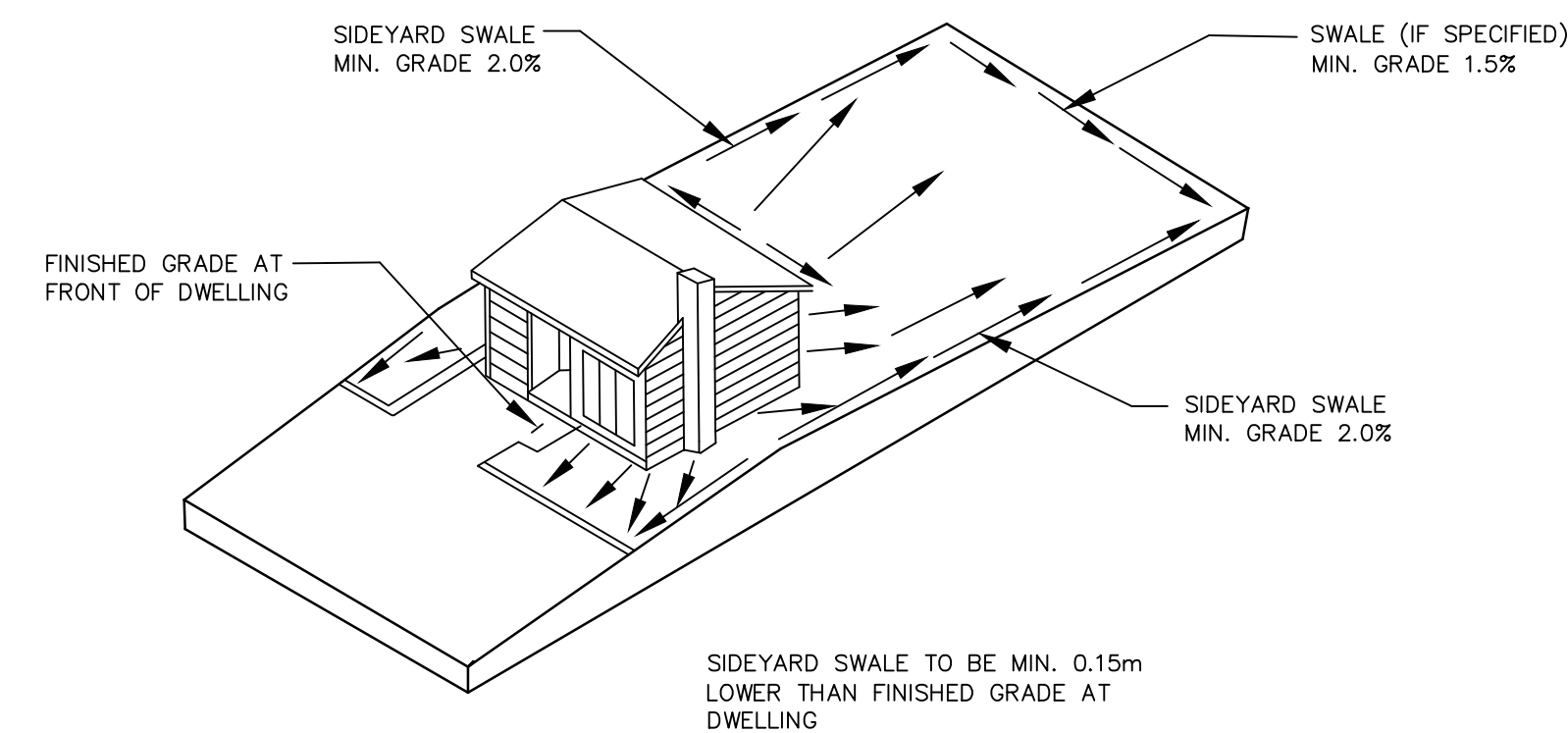
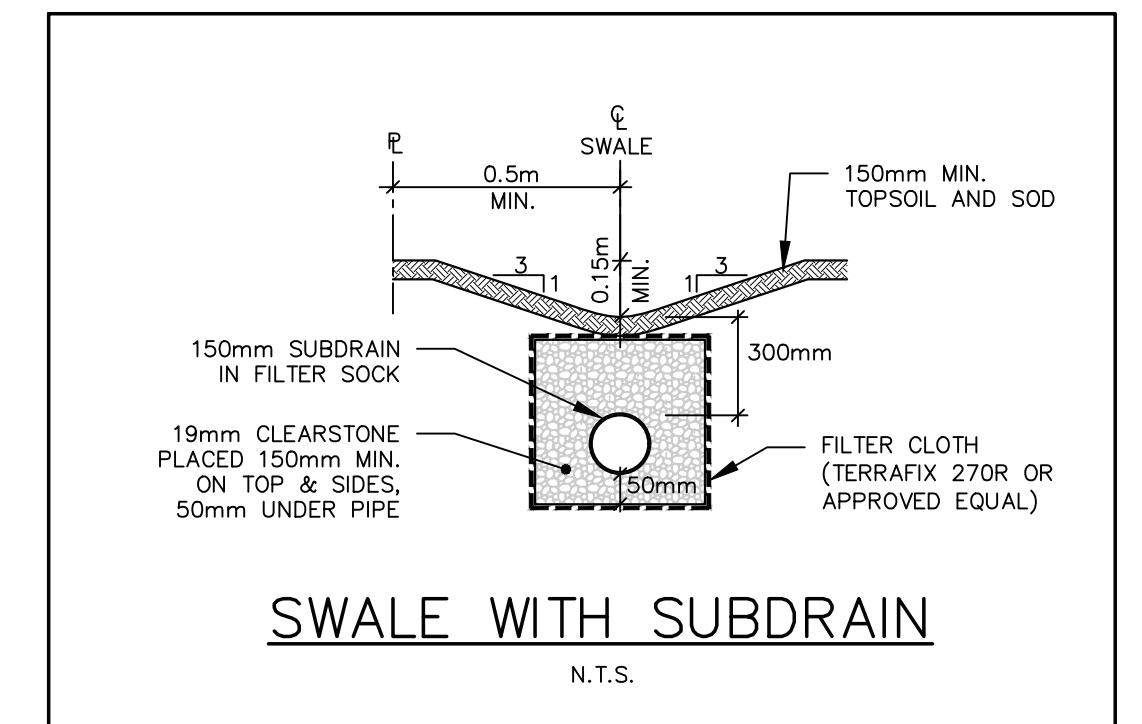
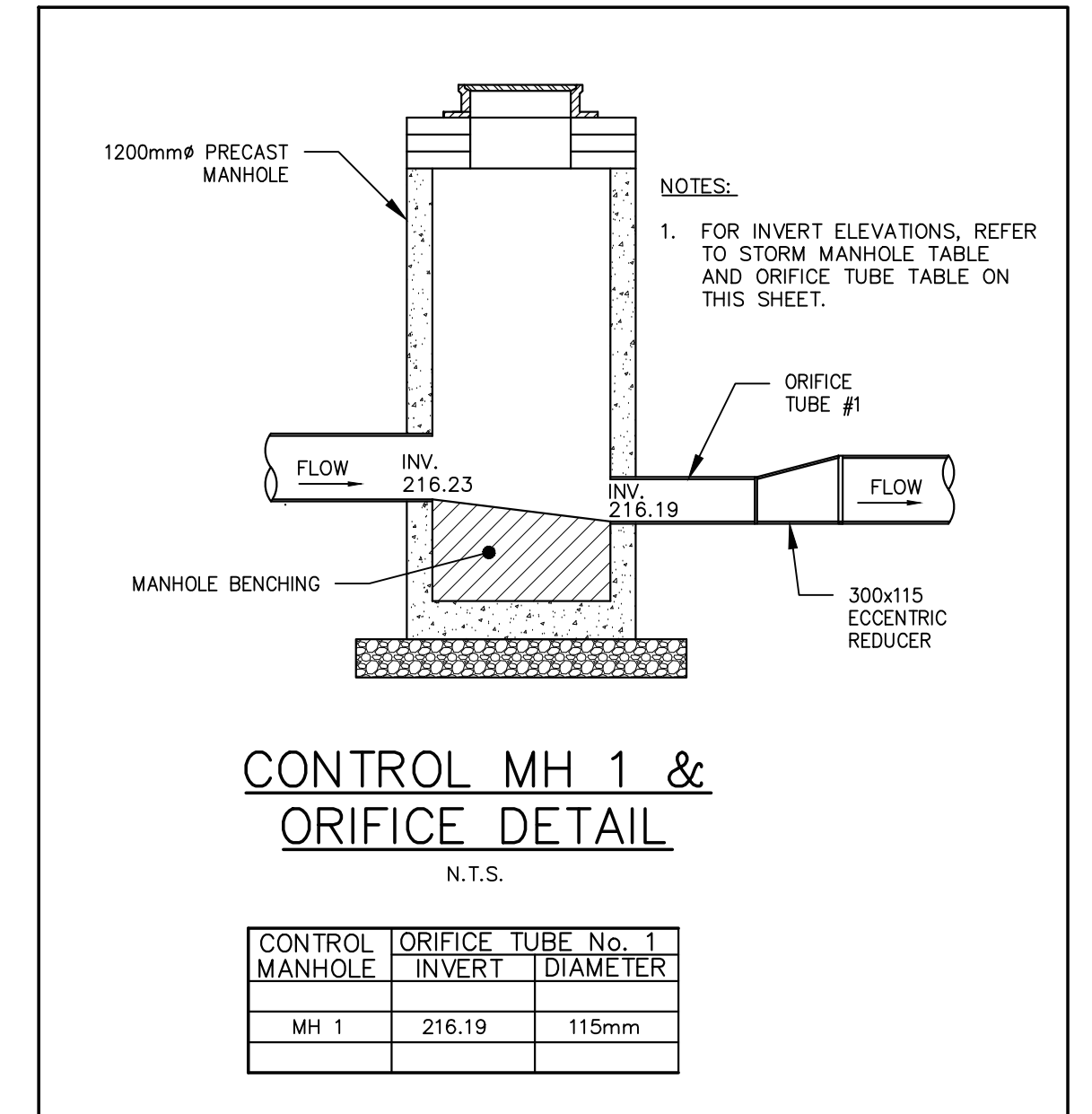
- A. DEFINITION: "REQUIRED BACK YARD" SHALL MEAN THE LESSER OF THE DISTANCE REGULATED BY THE ZONING BY-LAW OR 6m.
- B. THE MAXIMUM SLOPE IN THE BACK YARD ADJACENT TO THE BUILDING FOR A DISTANCE EQUAL TO THE REQUIRED BACK YARD SHALL BE 5%, EXCEPT AS SET OUT IN ITEMS BELOW.
- C. THE 5% RESTRICTION SHALL NOT APPLY TO THE SIDES OF A SWALE ALONG THE SIDES OR BACK OF THE LOT, PROVIDING THE TOTAL WIDTH OF THE SWALE SHALL NOT EXCEED ONE (1) METRE ON EACH LOT.
- D. WHERE THE 5% RESTRICTION ON THE BACKYARD GRADES RESULTS IN ELEVATION DIFFERENCES BETWEEN DIFFERENT PROPERTIES, RETAINING WALLS SHALL BE CONSTRUCTED ALONG THE SIDES AND THE BACK OF THE LOT. SLOPES WITH A MAXIMUM OF THREE HORIZONTAL TO ONE VERTICAL MAY REPLACE THE WALLS WHERE THE DIFFERENCE IN ELEVATION IS LESS THAN 0.3m.
- E. GENERALLY, SLOPES SHALL BE PLACED ON THE LOWER LOT, WHEREAS RETAINING WALLS SHALL BE PLACED ON THE HIGHER LANDS.
- F. THE 5% RESTRICTION DOES NOT PRECLUDE RETAINING WALLS IN THE REQUIRED BACKYARDS PROVIDING THE TERRACES ARE MAINTAINED TO THE 5% GRADE AS SET OUT IN ITEM B) ABOVE. THE INTENTION OF THIS PROVISION IS TO PROVIDE FLEXIBILITY OF HOUSE CONSTRUCTION.
- G. THERE IS NO CONTROL ON THE STEEPNESS OF THE SLOPES IN SIDE YARDS, FRONT YARDS AND BACK YARDS, OUTSIDE THE AREA DEFINED IN A) ABOVE, PROVIDING THE SLOPES ARE STABLE FOR THE SOILS OF THE AREA (MINIMUM 3H:1V).

ROOFWATER LEADERS

ALL ROOFWATER LEADERS SHALL DISCHARGE ONTO SPLASH PADS AND THEN TO GRASSED OR LANDSCAPED AREAS A MINIMUM OF 0.6m FROM THE BUILDING FACE.

SUMP PUMPS

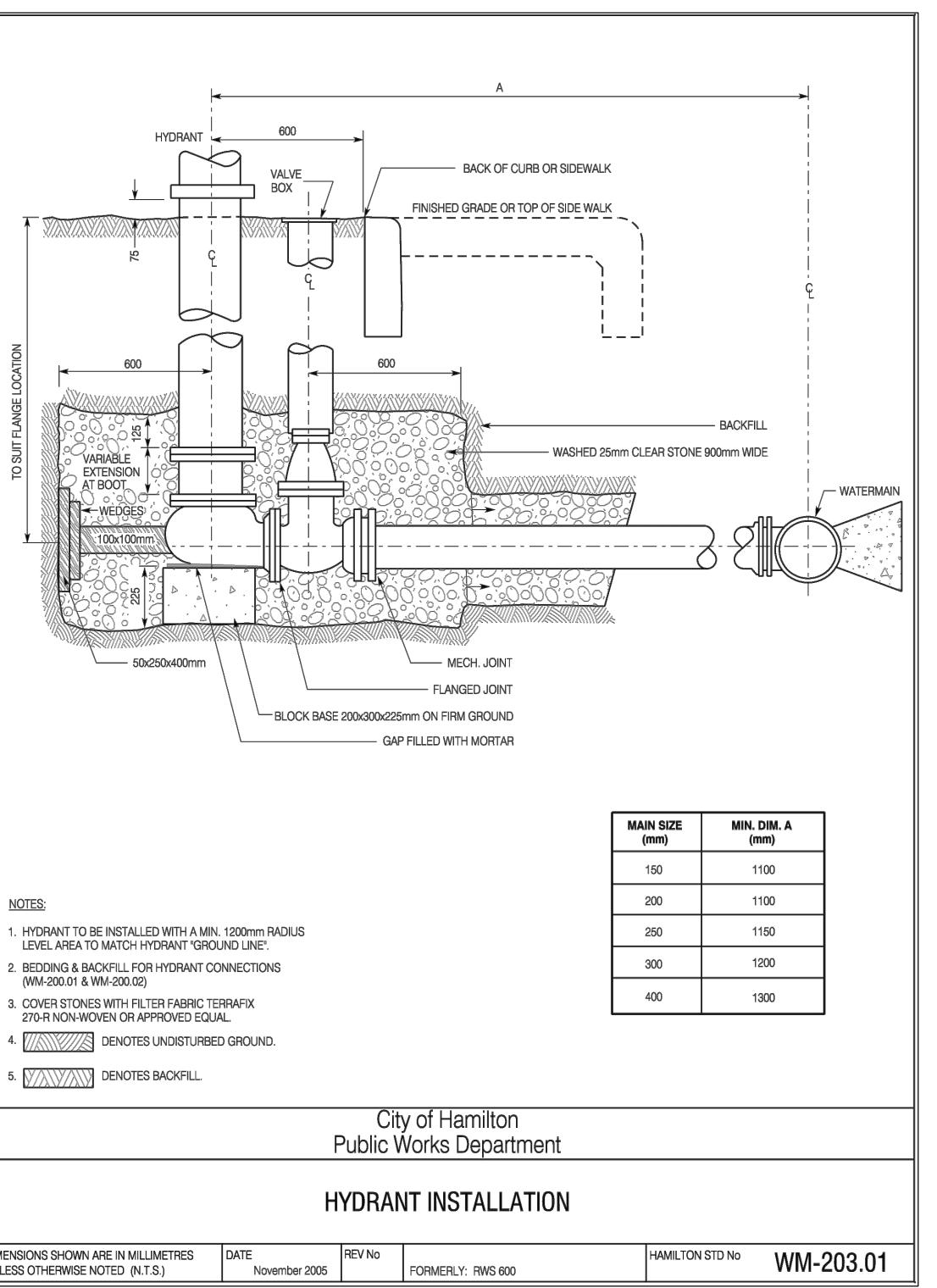
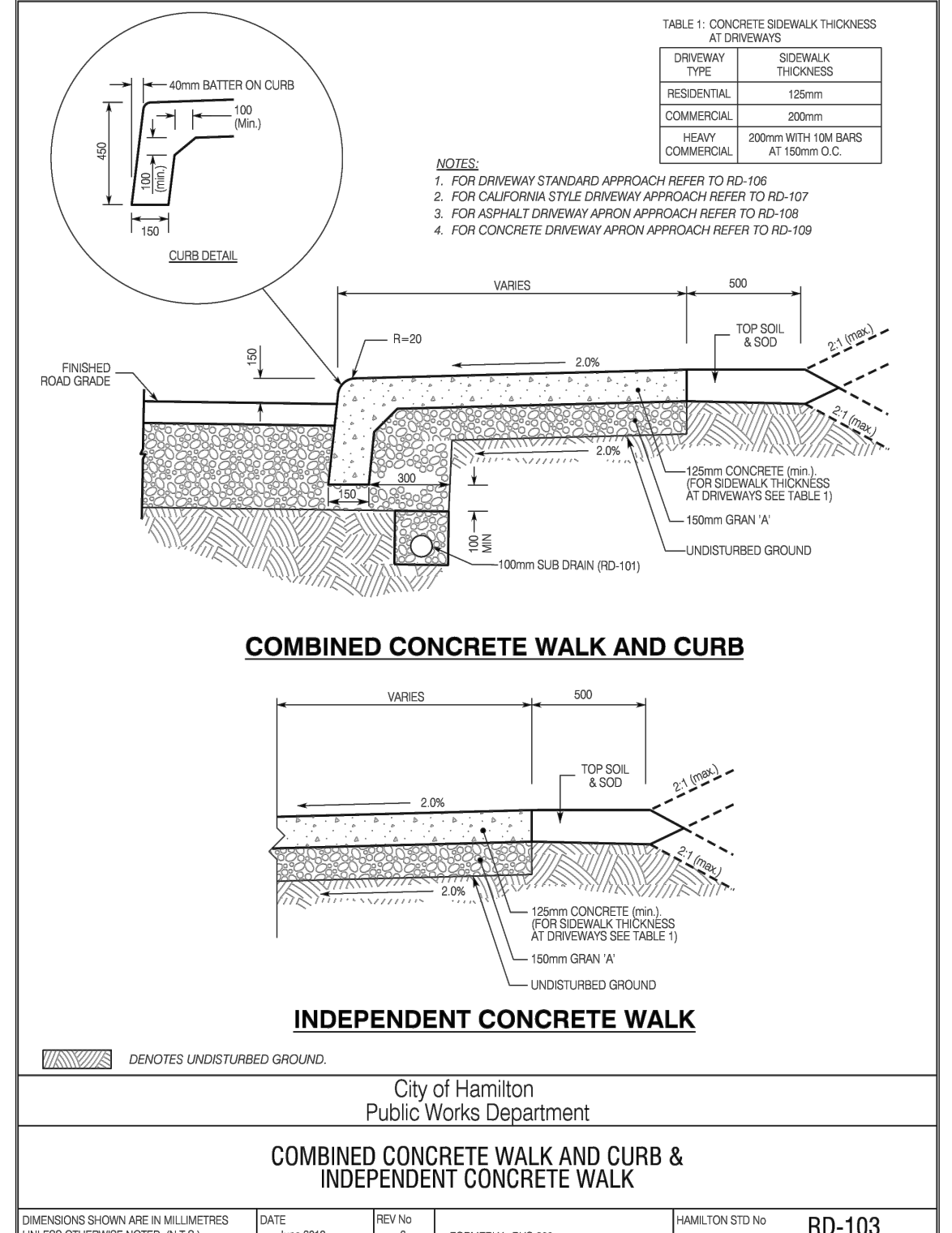
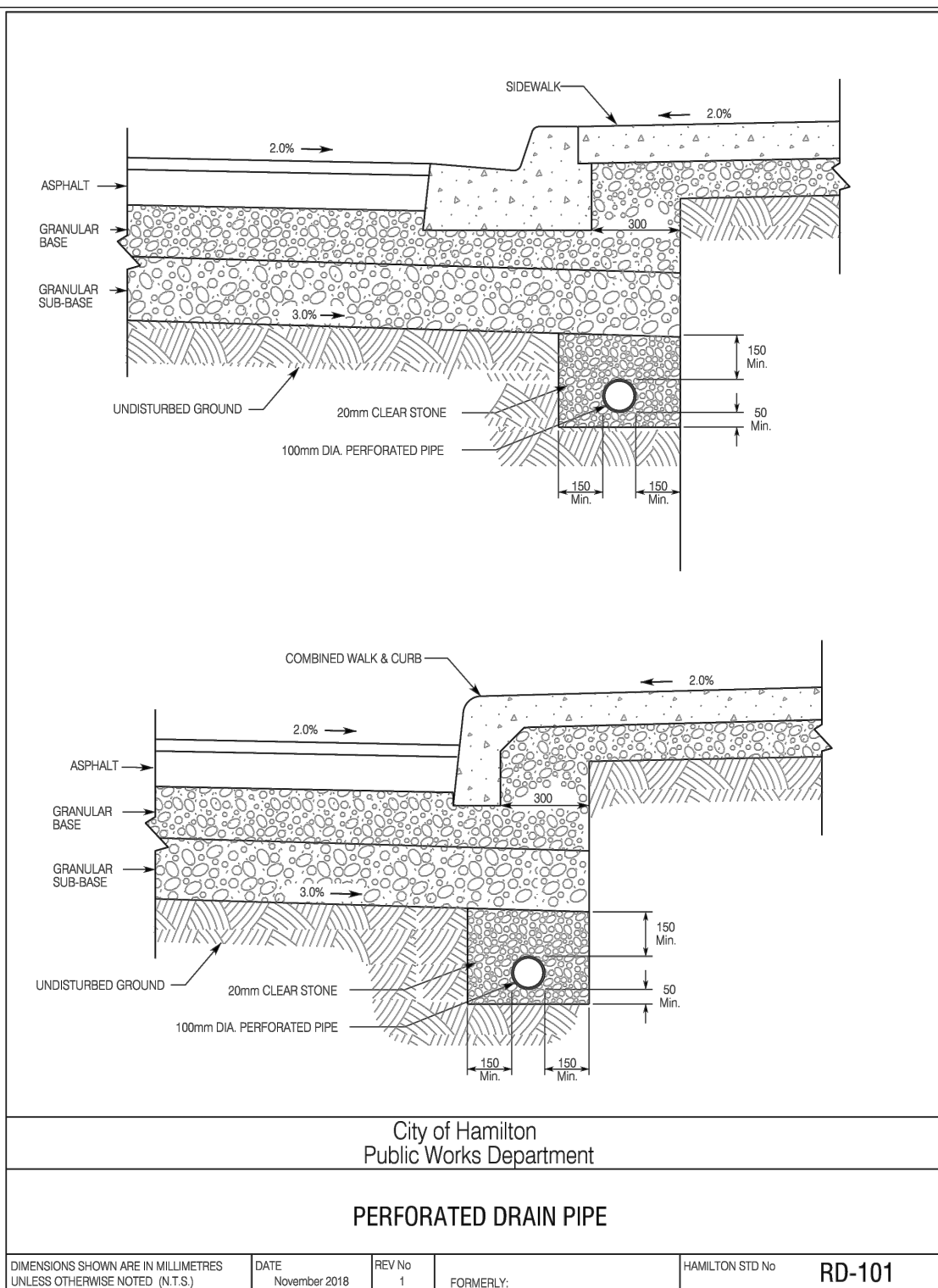
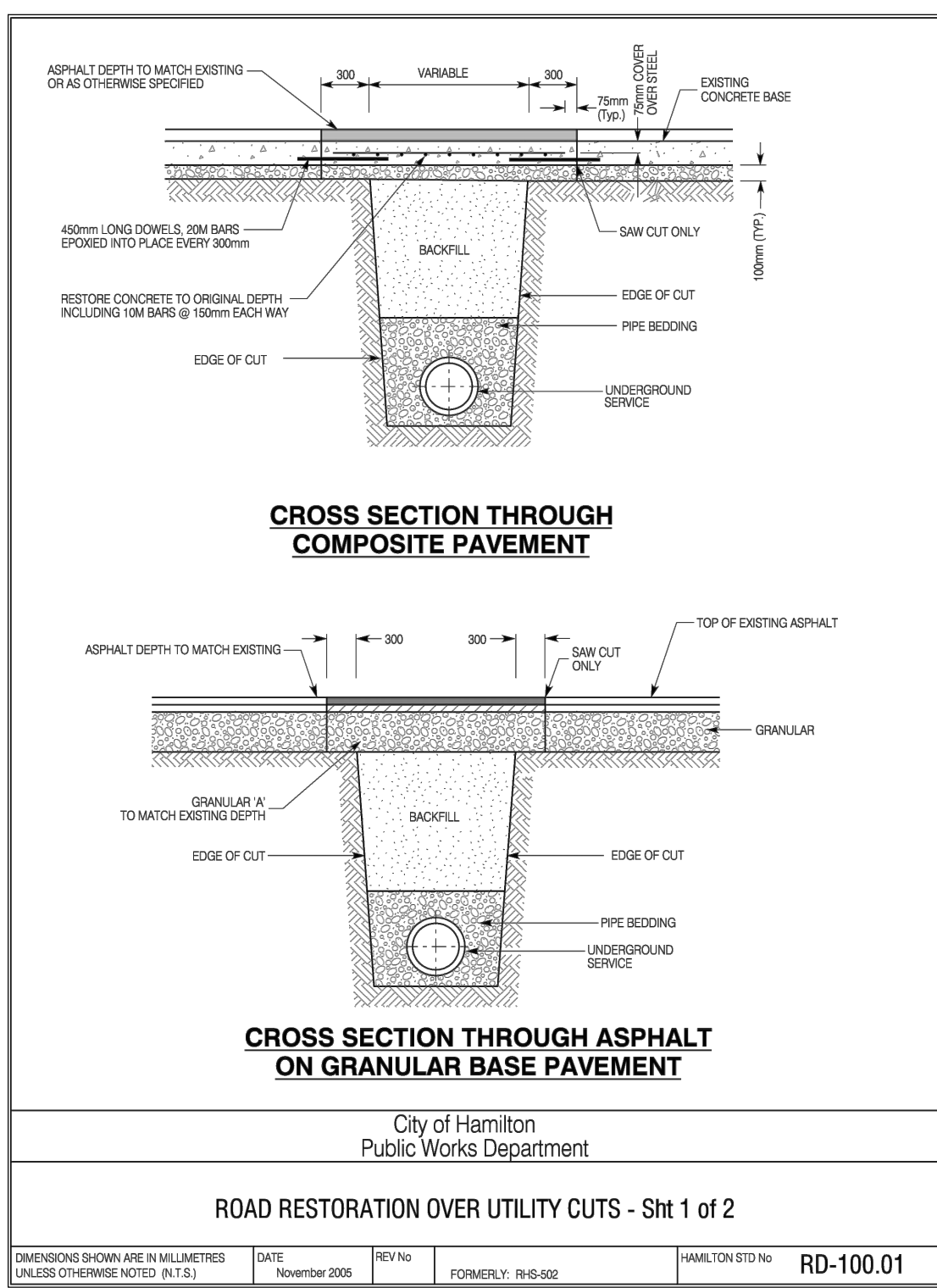
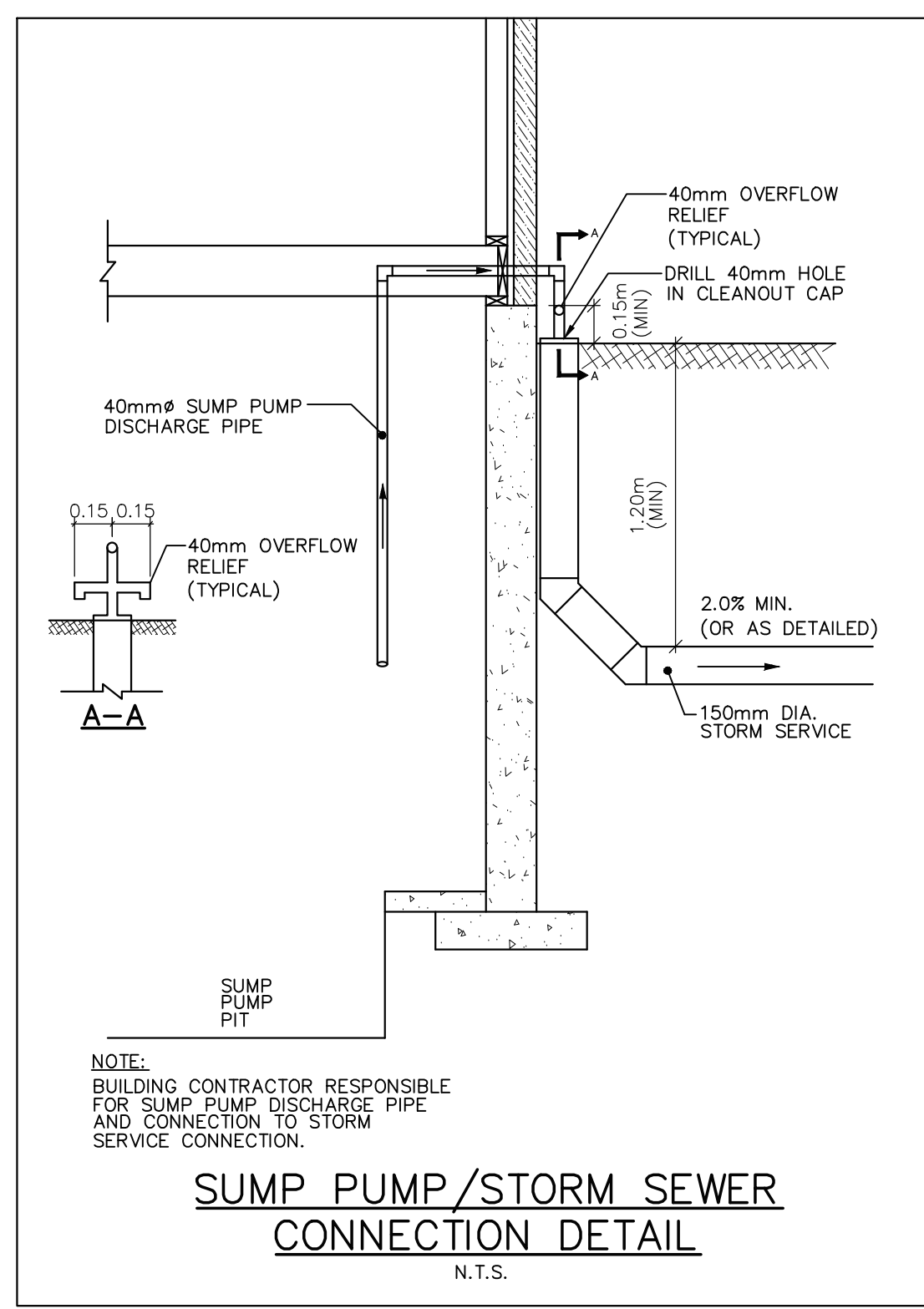
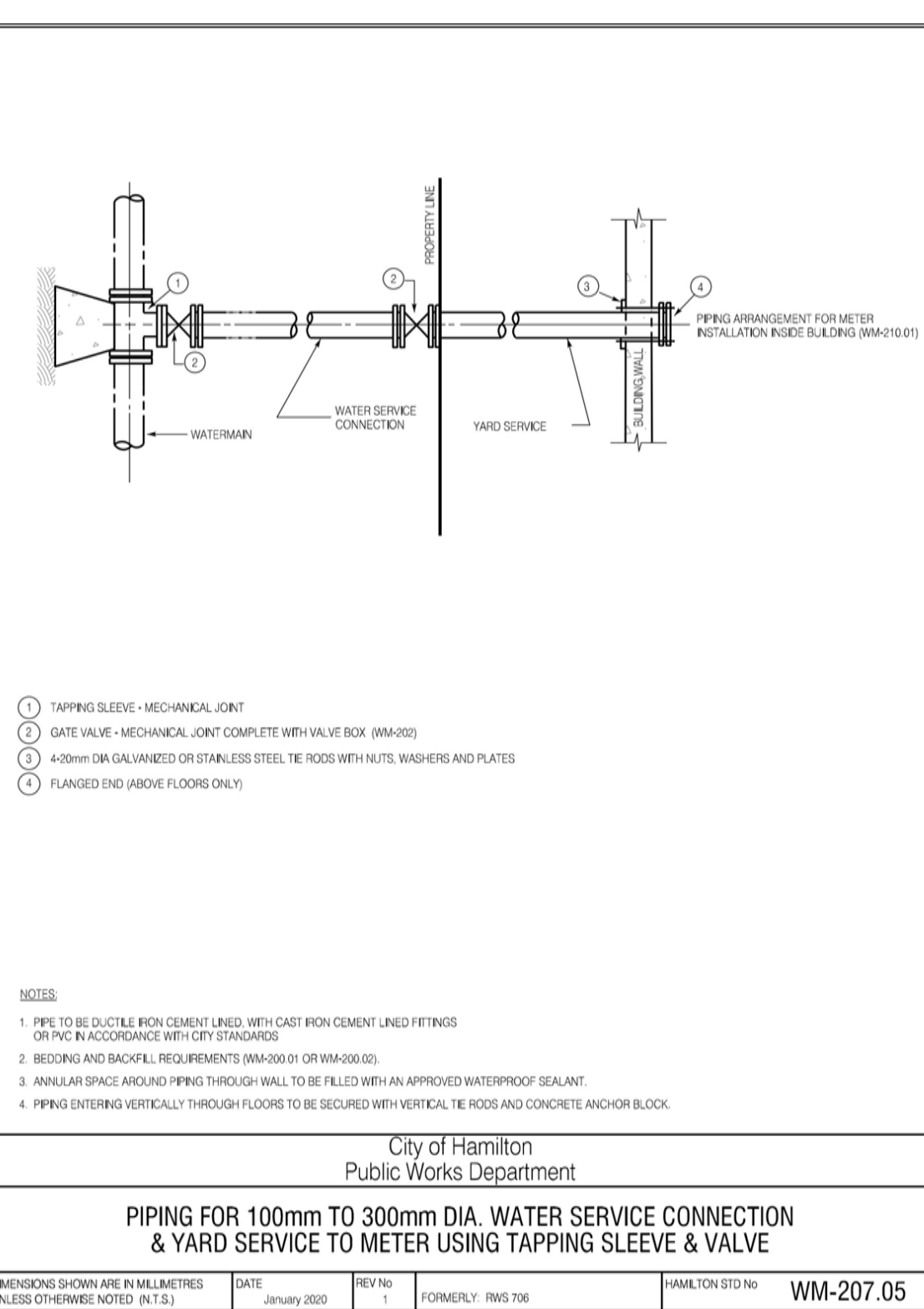
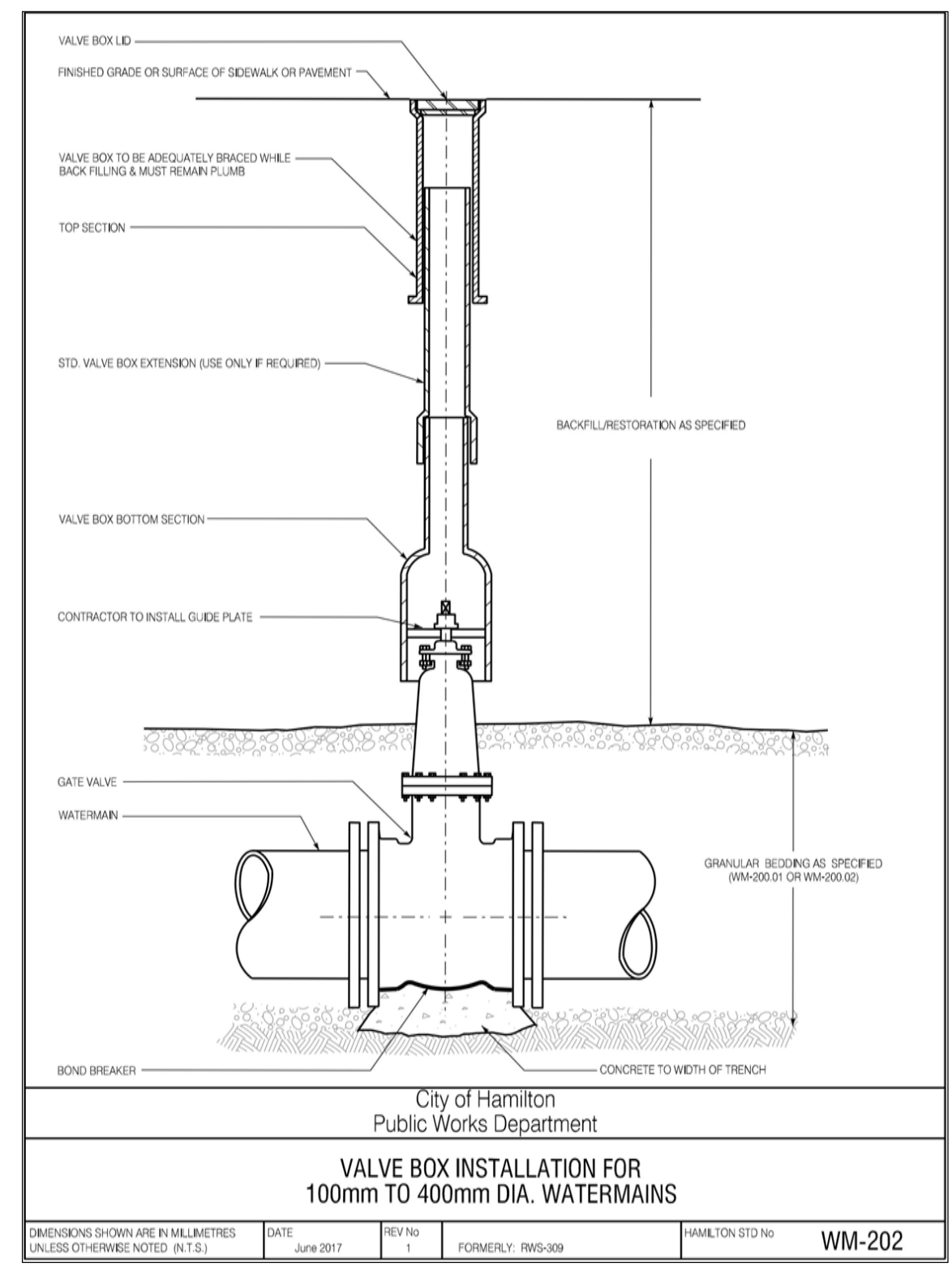
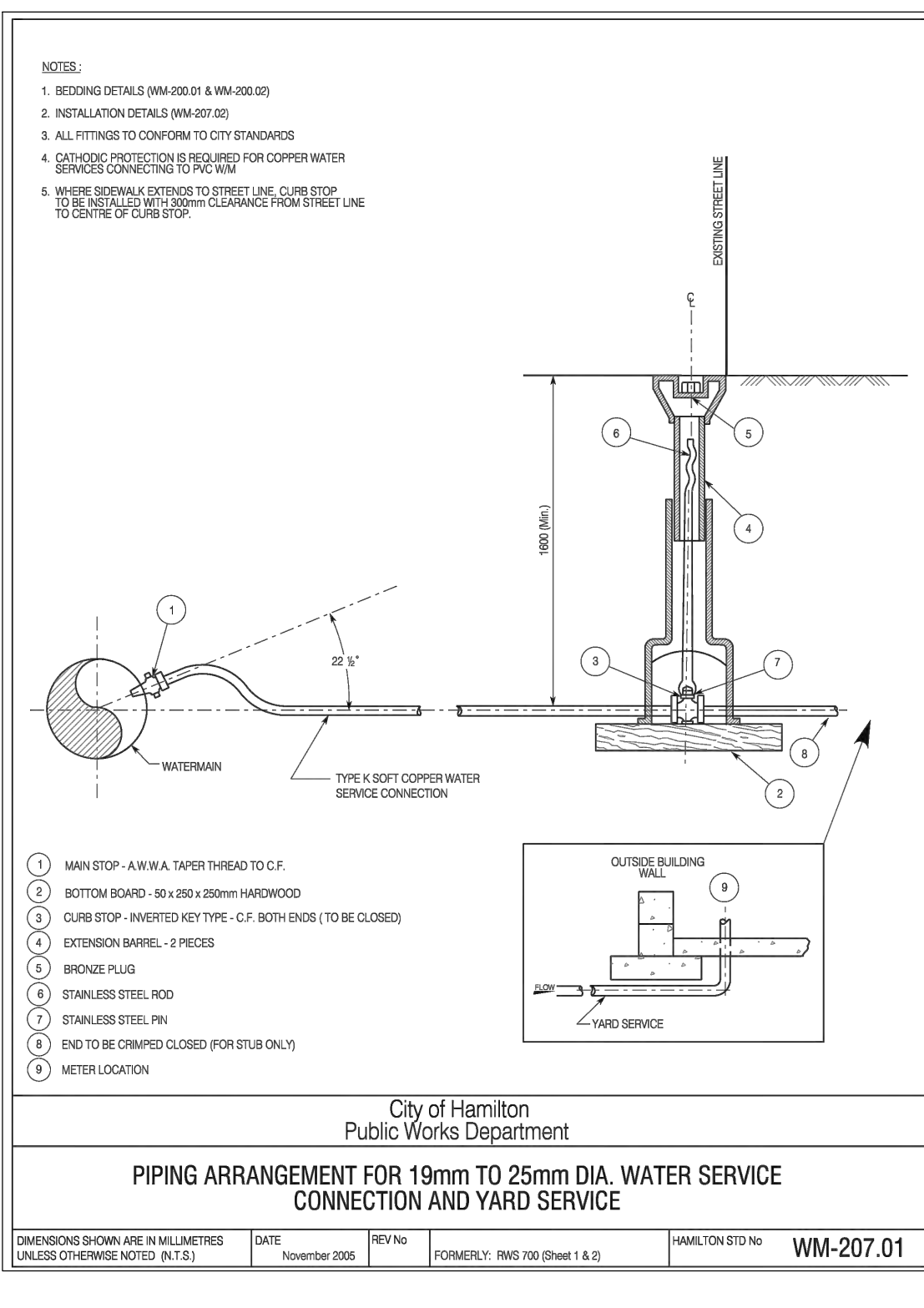
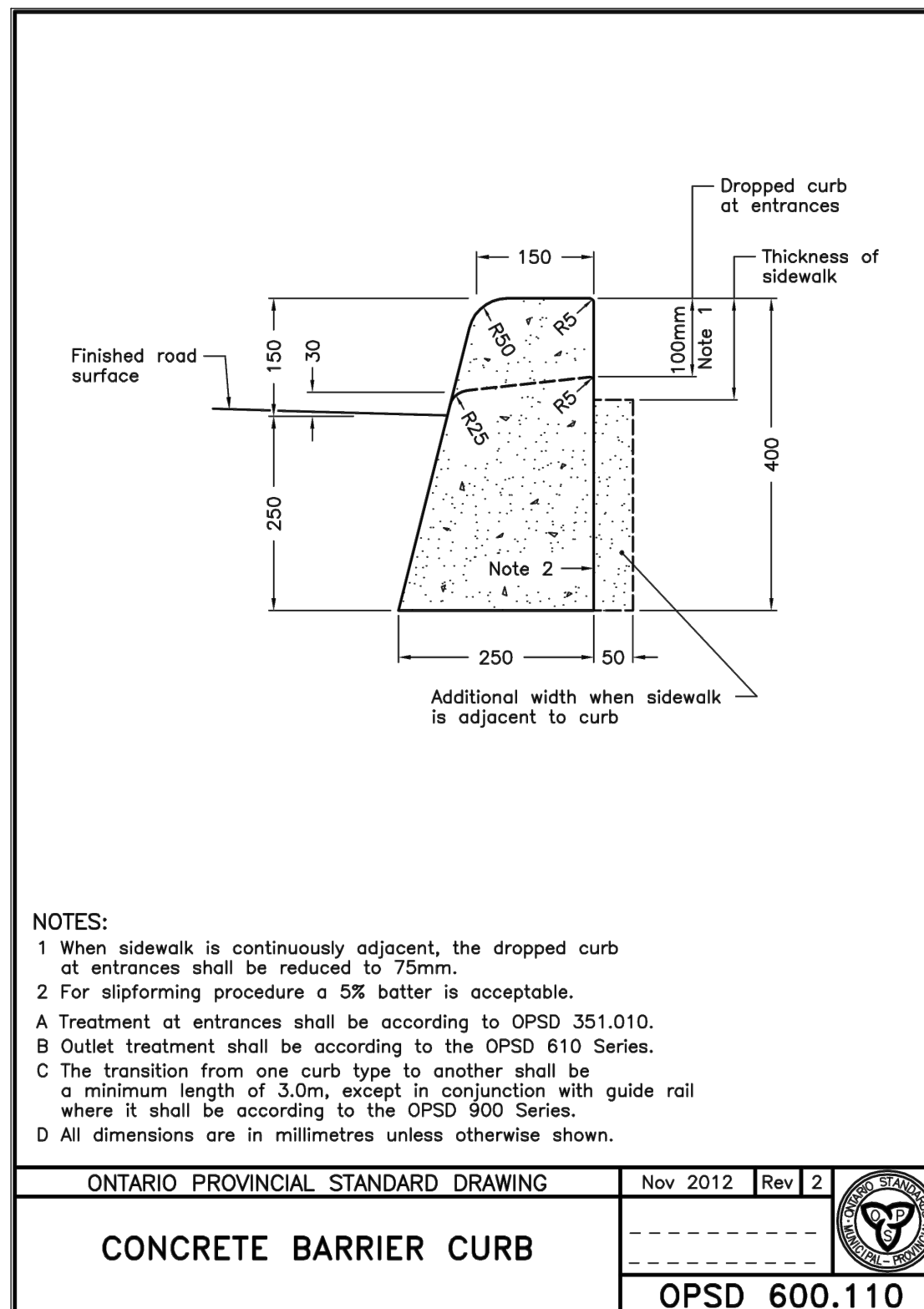
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ISSUED FOR APPROVAL

SCALE VALID ONLY FOR 24"x36" VERSION

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| | | | | APPROVALS | | | | Design | | | | 705-713 RYMAL ROAD EAST HAMILTON, ON | | | | GENERAL NOTES AND DETAILS PLAN | | | | Contract No. | | | |
| | | | | | | | | Drawn | | | | | | | | City File No. | | | | | | | |
| | | | | | | | | Scale | | | | 1:200 | | | | Drawing No. | | | | | | | |
| | | | | | | | | Date | | | | DECEMBER 2020 | | | | SHEET 1 OF 6 | | | | | | | |
| 1 | | | | FEB 08, 21 | | | | AJC | | | | ISSUED FOR APPROVAL | | | | | | | | | | | |
| No | | | | Date | | | | Drawn | | | | Appr'd | | | | Revisions | | | | | | | |



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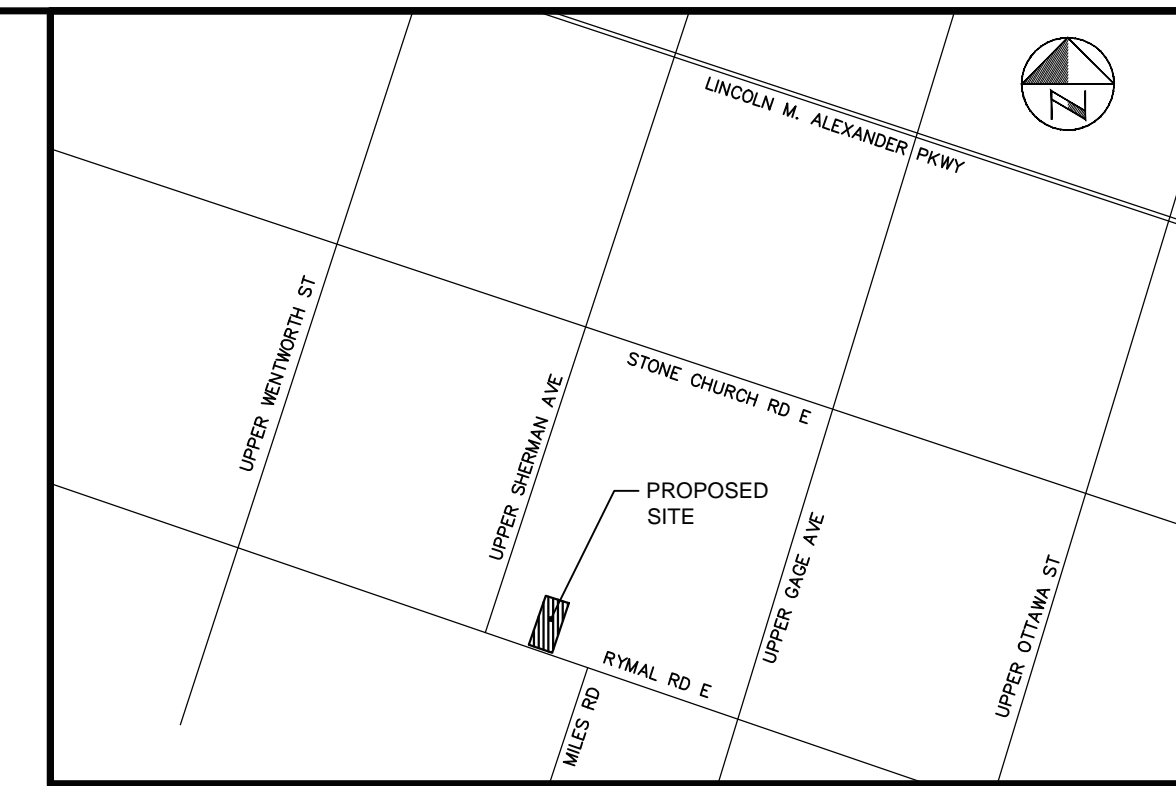
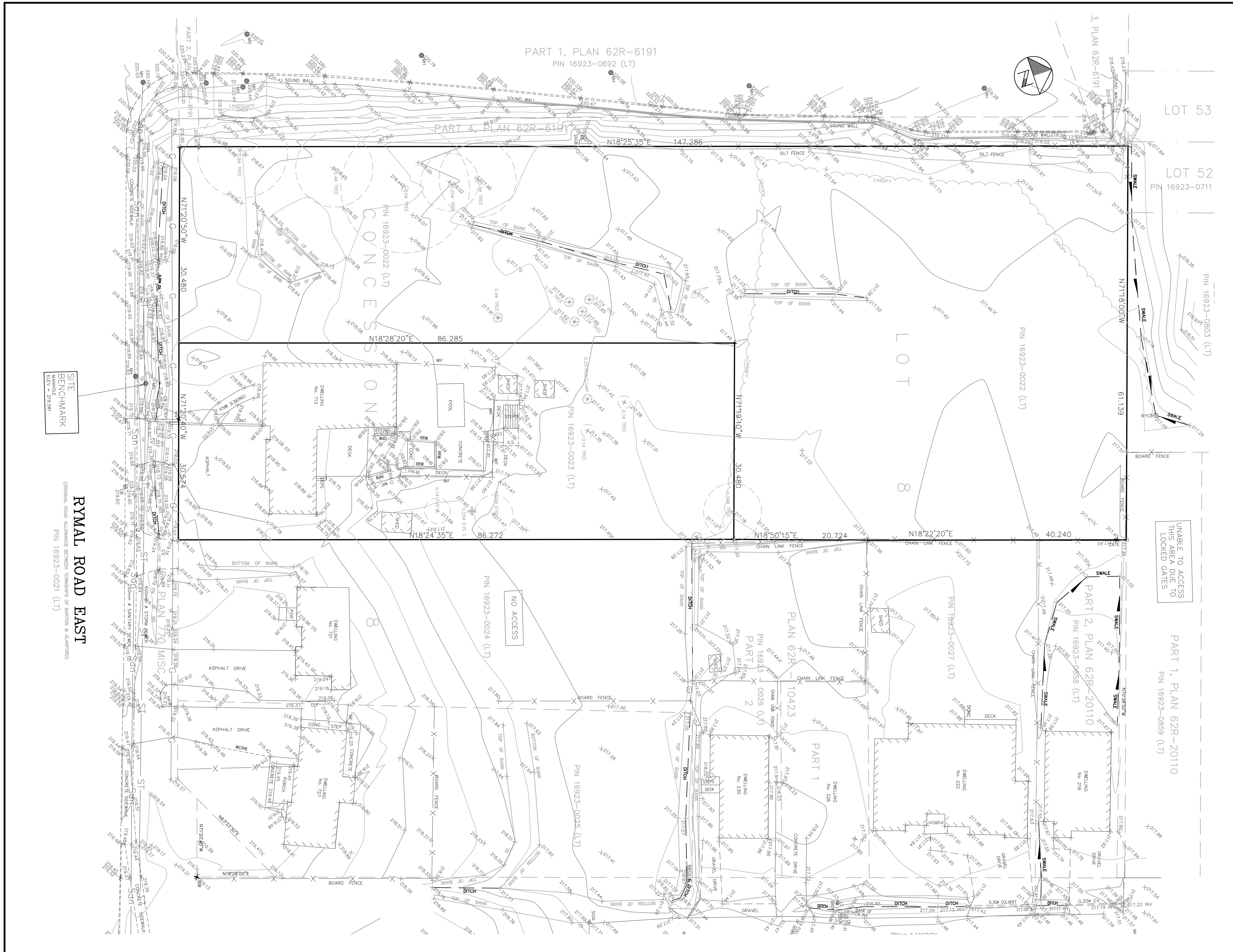
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| Date | DECEMBER 2020 | | |

705-713 RYMAL ROAD EAST
 HAMILTON, ON

DETAILS
 PLAN



Contract No.
 City File No.
 Drawing No.
 SHEET 2 OF 6



KEY PLAN

LEGEND

- EXISTING CONTOUR
- EXISTING GROUND ELEVATION
- EXISTING STORM SEWER
- EXISTING MANHOLE
- EXISTING CATCHBASIN/MANHOLE
- EXISTING CATCHBASIN
- EXISTING DOUBLE CATCHBASIN
- EXISTING SURFACE FLOW DIRECTION

SITE BENCHMARK
ELEV = 218.981

RYMAL ROAD EAST
(ORIGINAL ROAD ALLOWANCE BETWEEN TOWNSHIP OF BARTON & QUANBORO)
PIN 16923-0021 (LT)

UNABLE TO ACCESS
THIS AREA DUE TO
LOOKED GATES

ISSUED FOR APPROVAL

SCALE VALID ONLY
FOR 24"x36" VERSION

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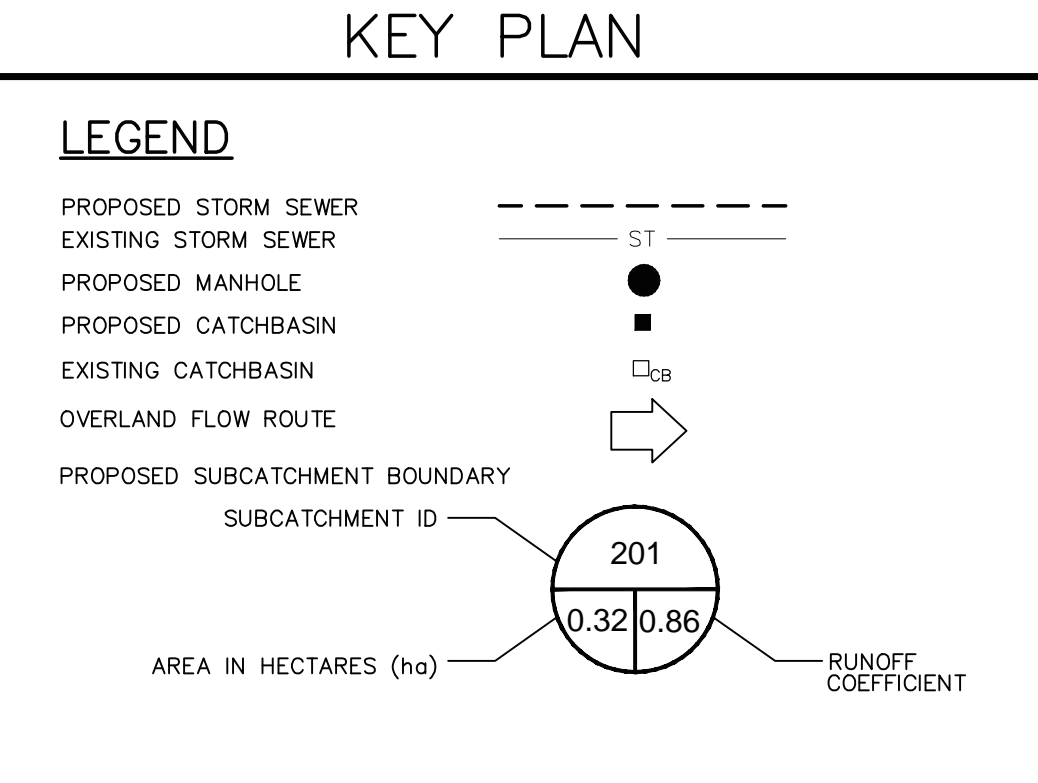
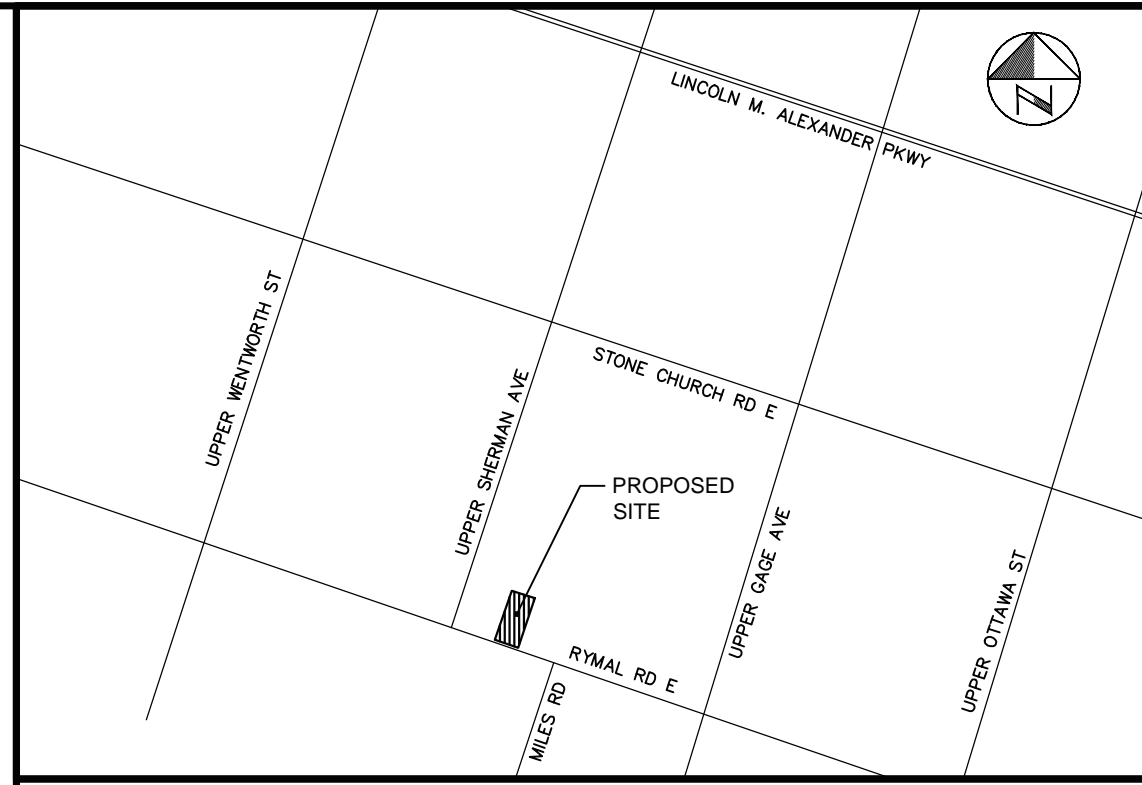
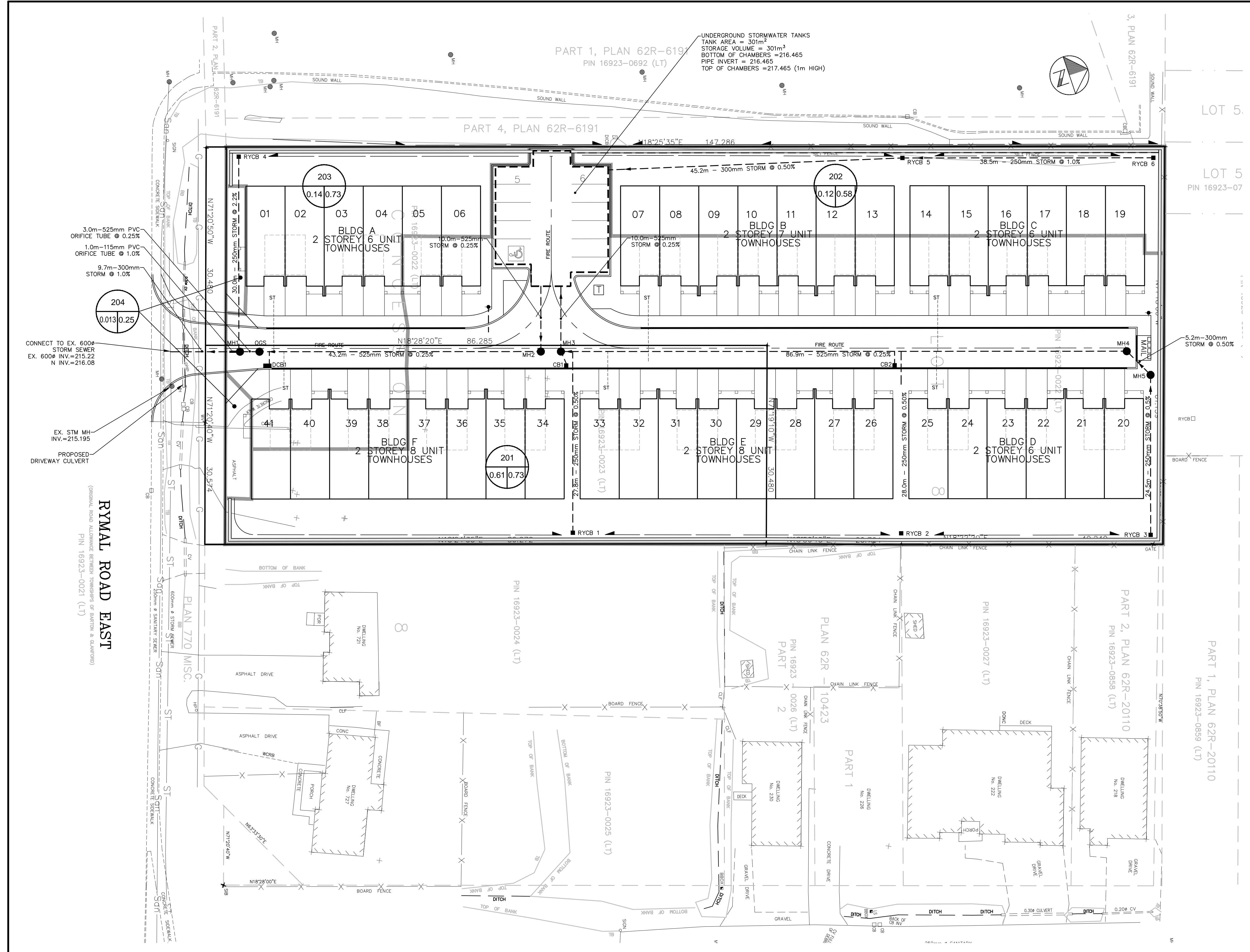
| APPROVALS | | | |
|-----------|---------------|---------|-----|
| Design | AJC | Checked | AJC |
| Drawn | AJC | Checked | AJC |
| Scale | 1:200 | | |
| Date | DECEMBER 2020 | | |

705-713 RYMAL ROAD EAST
HAMILTON, ON

EXISTING CONDITIONS
PLAN



| |
|---------------|
| Contract No. |
| City File No. |
| Drawing No. |
| SHEET 3 OF 6 |



ISSUED FOR APPROVAL

SCALE VALID ONLY FOR 24"x36" VERSION

| No | Date | Drawn | Appr'd | Revisions |
|----|------------|-------|--------|---------------------|
| 1 | FEB 08, 21 | AJC | AJC | ISSUED FOR APPROVAL |

| APPROVALS | | | |
|-----------|---------------|---------|-----|
| Design | AJC | Checked | AJC |
| Drawn | AJC | Checked | AJC |
| Scale | 1:200 | | |
| Date | DECEMBER 2020 | | |

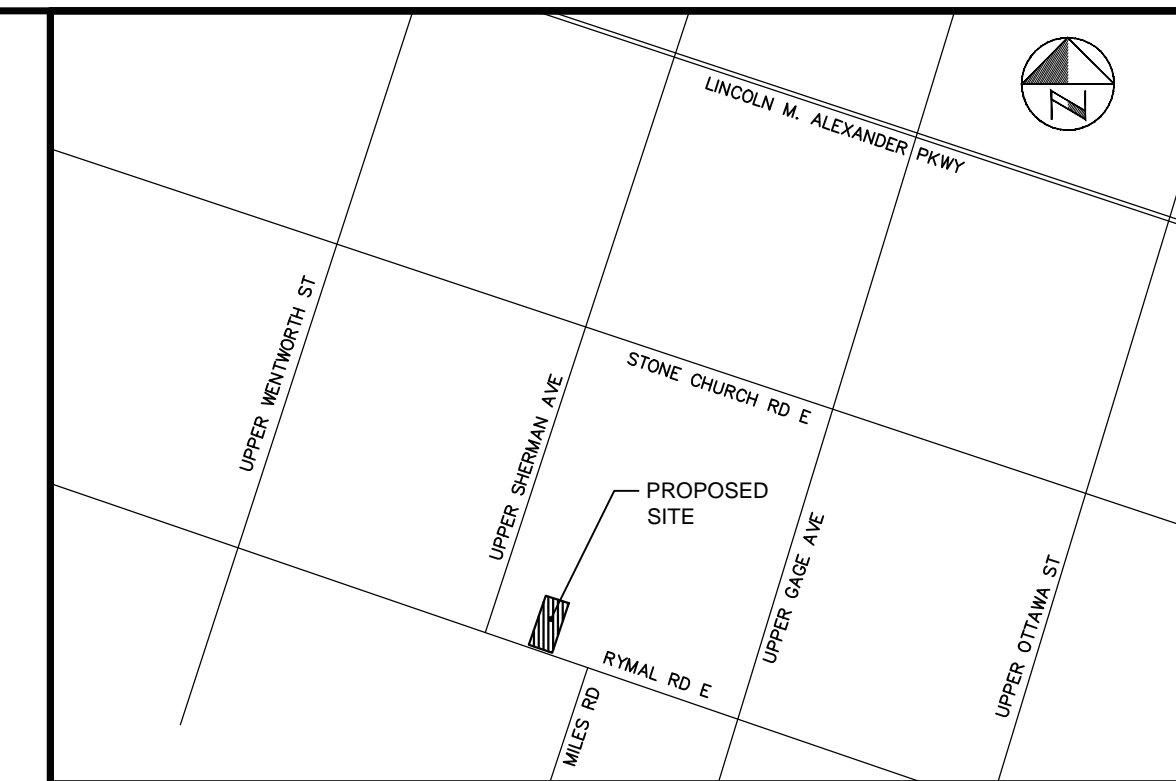
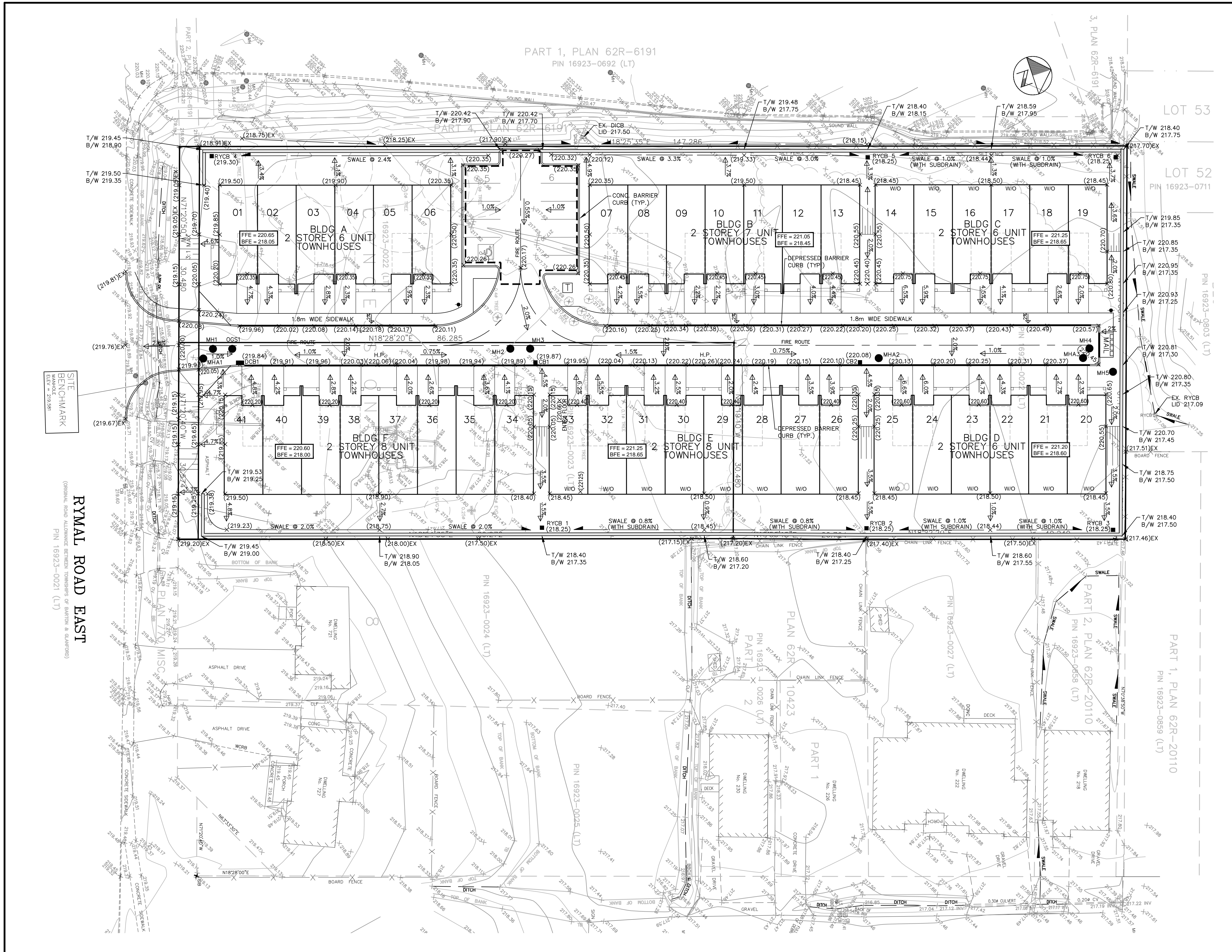
**705-713 RYMAL ROAD EAST
 HAMILTON, ON**

**STORM DRAINAGE AREA
 PLAN**

AC GROUP

Contract No. _____
 City File No. _____
 Drawing No. _____

SHEET 4 OF 6



KEY PLAN

LEGEND

- EXISTING CONTOUR
- EXISTING GROUND ELEVATION
- PROPOSED GROUND ELEVATION
- PROPOSED GROUND ELEVATION TO MATCH EXISTING GRADE
- PROPOSED SWALE ELEVATION
- DIRECTION OF SURFACE DRAINAGE SWALE
- DIRECTION OF SHEET FLOW
- MANHOLE
- CATCHBASIN
- HYDRANT
- HYDRO PADMOUNT TRANSFORMER
- LIGHT STANDARD & LIGHT BOLLARD
- EXISTING MANHOLE
- EXISTING CATCHBASIN
- EXISTING DOUBLE CATCHBASIN
- EXISTING HYDRANT
- EXISTING LIGHT STANDARD
- EXISTING HYDRO POLE
- EXISTING HYDRO VAULT
- MAJOR OVERLAND FLOW ROUTE

| | | | | |
|----|------------|-------|--------|---------------------|
| 1 | FEB 08, 21 | AJC | AJC | ISSUED FOR APPROVAL |
| No | Date | Drawn | Appr'd | Revisions |

| | | | |
|-----------|---------------|---------|-----|
| APPROVALS | | | |
| Design | AJC | Checked | AJC |
| Drawn | AJC | Checked | AJC |
| Scale | 1:200 | | |
| Date | DECEMBER 2020 | | |

**705-713 RYMAL ROAD EAST
HAMILTON, ON**

**SITE GRADING
PLAN**

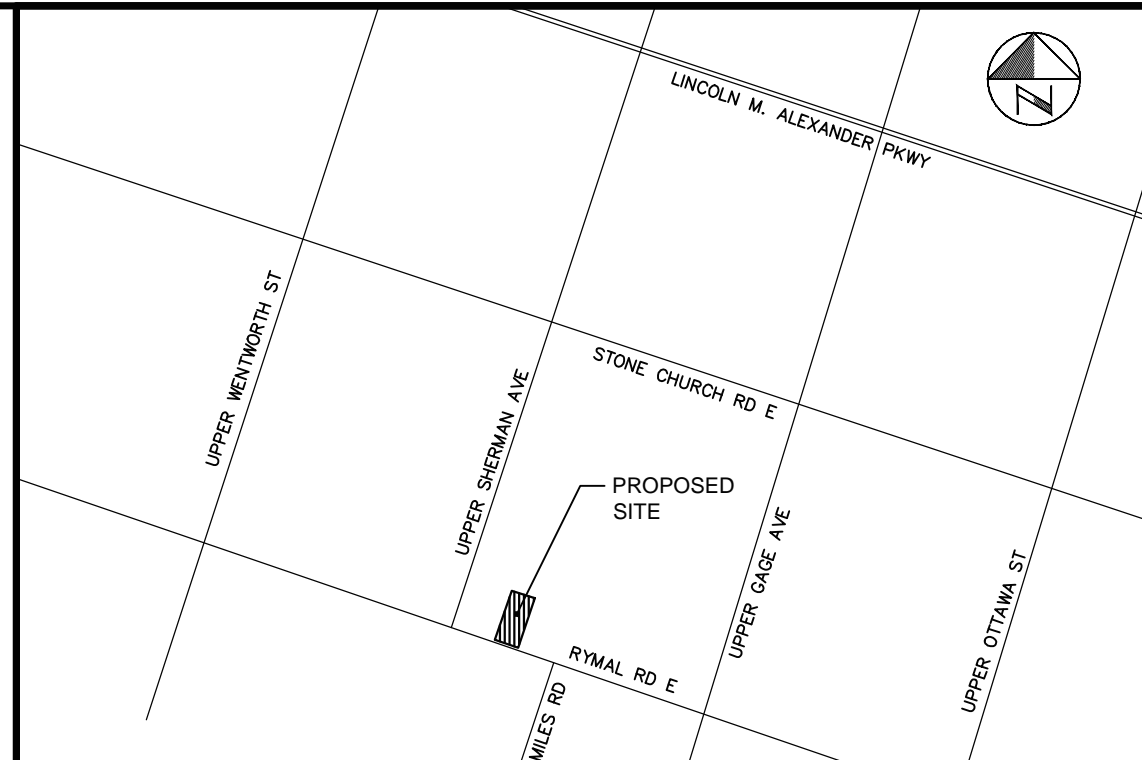
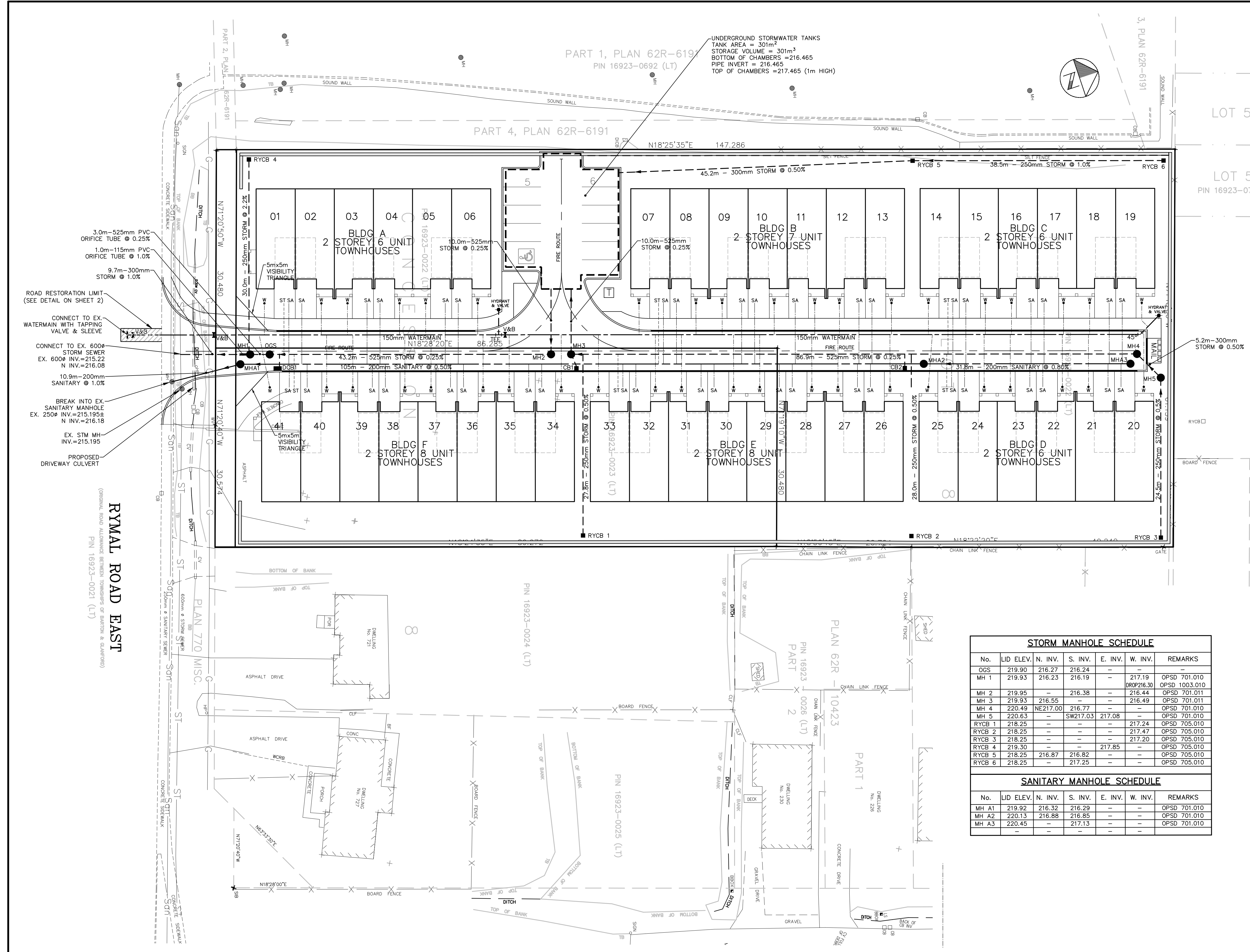
ISSUED FOR APPROVAL

SCALE VALID ONLY FOR 24"x36" VERSION

AC GROUP

Contract No.
City File No.
Drawing No.

SHEET 5 OF 6



LEGEND

- STORM SEWER
- SANITARY SEWER
- WATERMAIN
- STORM SERVICE
- SANITARY SERVICE
- WATER SERVICE WITH CURB STOP
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING WATERMAIN
- EXISTING OVERHEAD HYDRO
- EXISTING BELL CONDUIT
- MANHOLE
- CATCHBASIN
- HYDRANT
- WATER VALVE
- CURB STOP
- PLUG
- EXISTING MANHOLE
- EXISTING CATCHBASIN/MANHOLE
- EXISTING CATCHBASIN
- EXISTING DOUBLE CATCHBASIN
- EXISTING HYDRANT
- EXISTING WATER VALVE
- EXISTING WATER VALVE CHAMBER
- EXISTING CURB STOP
- EXISTING PLUG
- EXISTING LIGHT STANDARD
- EXISTING PADMOUNT TRANSFORMER
- EXISTING POLE
- EXISTING BELL PEDESTAL

STORM MANHOLE SCHEDULE

| No. | LID ELEV. | N. INV. | S. INV. | E. INV. | W. INV. | REMARKS |
|--------|-----------|----------|----------|---------|---------|-----------------------------|
| OGS | 219.90 | 216.27 | 216.24 | - | - | - |
| MH 1 | 219.93 | 216.23 | 216.19 | - | 217.19 | OPSD 701.010 DROP 216.30 |
| MH 2 | 219.95 | - | 216.38 | - | 216.44 | OPSD 701.011 |
| MH 3 | 219.93 | 216.55 | - | - | 216.49 | OPSD 701.011 |
| MH 4 | 220.49 | NE217.00 | 216.77 | - | - | OPSD 701.010 |
| MH 5 | 220.63 | - | SW217.03 | 217.08 | - | OPSD 701.010 |
| RYCB 1 | 218.25 | - | - | - | 217.24 | OPSD 705.010 |
| RYCB 2 | 218.25 | - | - | - | 217.47 | OPSD 705.010 |
| RYCB 3 | 218.25 | - | - | - | 217.20 | OPSD 705.010 |
| RYCB 4 | 219.30 | - | - | - | 217.65 | OPSD 705.010 |
| RYCB 5 | 218.25 | 216.87 | 216.82 | - | - | OPSD 705.010 |
| RYCB 6 | 218.25 | - | - | - | 217.25 | OPSD 705.010 |

SANITARY MANHOLE SCHEDULE

| No. | LID ELEV. | N. INV. | S. INV. | E. INV. | W. INV. | REMARKS |
|-------|-----------|---------|---------|---------|---------|--------------|
| MH A1 | 219.92 | 216.32 | 216.29 | - | - | OPSD 701.010 |
| MH A2 | 220.13 | 216.88 | 216.85 | - | - | OPSD 701.010 |
| MH A3 | 220.45 | - | 217.13 | - | - | OPSD 701.010 |

ISSUED FOR APPROVAL

SCALE VALID ONLY FOR 24"x36" VERSION

| APPROVALS | | | |
|-----------|---------------|---------|-----|
| Design | AJC | Checked | AJC |
| Drawn | AJC | Checked | AJC |
| Scale | 1:200 | | |
| Date | DECEMBER 2020 | | |

705-713 RYMAL ROAD EAST
 HAMILTON, ON

SITE SERVICING
 PLAN

| | |
|--|---------------|
| | Contract No. |
| | City File No. |
| | Drawing No. |

SHEET 6 OF 6

| No | Date | Drawn | Appr'd | Revisions |
|----|------------|-------|--------|---------------------|
| 1 | FEB 08, 21 | AJC | AJC | ISSUED FOR APPROVAL |