

Standard Details

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1 Purpose

The City of Waterloo has adopted the “Ontario Provincial Standard Drawings and Specifications (OPSS, OPSD)” except where amended, as indicated, in this Manual. The details found in this volume are specific to the City of Waterloo and are intended to be used, on projects, within the City limits.

These details are not sealed by a licensed engineer or landscape architect. The City accepts no liability in the use of these details and the application of these details is the sole responsibility of the licensed engineering practitioner or landscape architect for the project.

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STANDARD DRAWING

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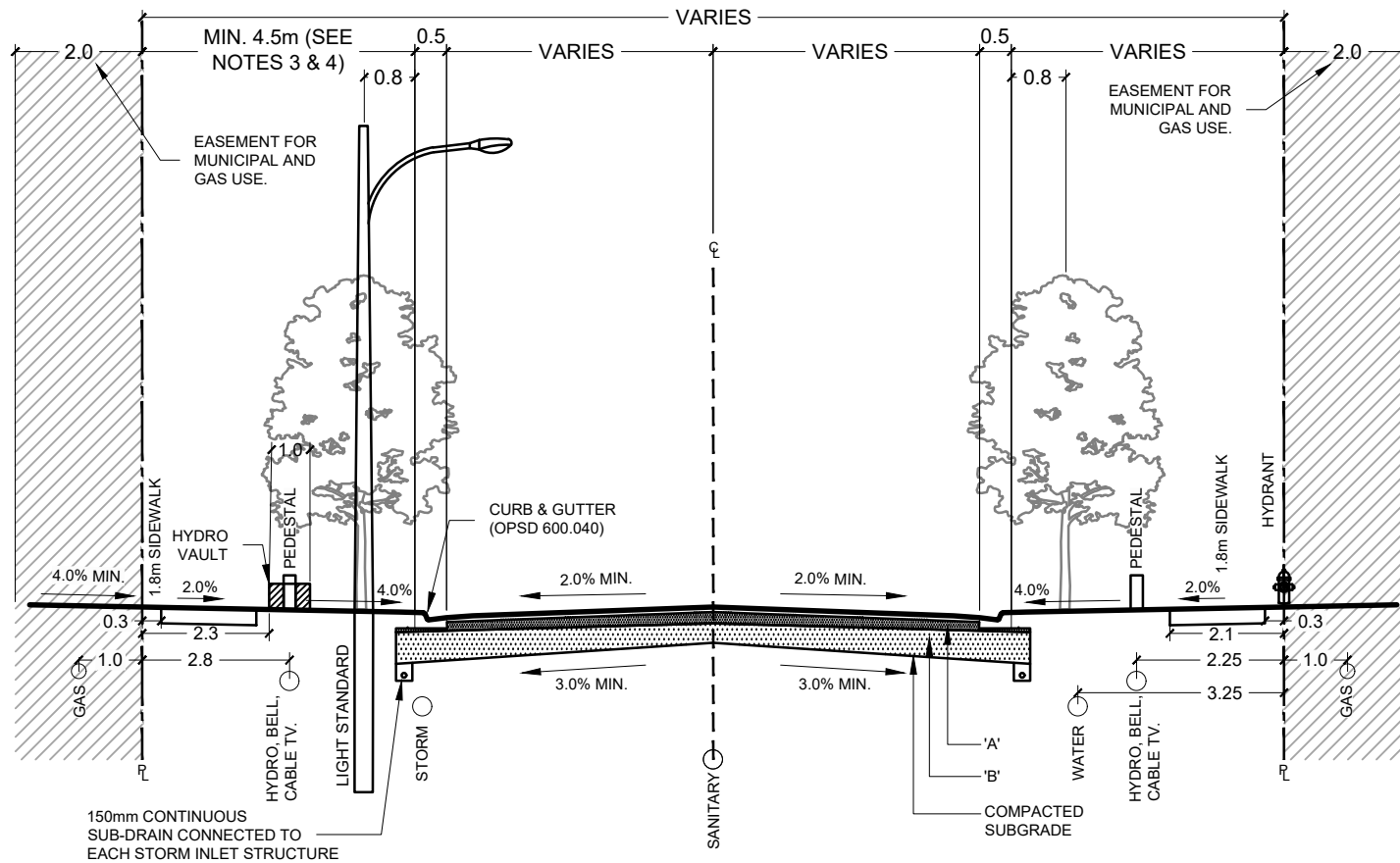
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STANDARD TITLE BLOCK

THE CITY OF 
Waterloo

CW-101

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UTILITY	MIN. COVER
SANITARY	2.8
STORM	1.5
WATER	2.0
HYDRO	0.9
BELL	0.76
CABLE	0.76
GAS	0.76

NOTES:

- REFER TO PAVEMENT DESIGN IN THE ENGINEERING MANUAL FOR MINIMUM PAVEMENT THICKNESS.
- WHERE THE SOILS CONSULTANT'S RECOMMENDATIONS EXCEED MINIMUMS NOTED, THE SOILS CONSULTANT'S RECOMMENDATIONS SHALL BE USED.
- A MIN. BOULEVARD WIDTH OF 4.5m IS REQUIRED TO ACCOMMODATE A 1.8m WIDE SIDEWALK AND HYDRO VAULTS / TRANSFORMERS, INCLUDING THEIR REQUIRED GROUNDING GRID. COORDINATION WITH ENOVA POWER CORP. IS REQUIRED FOR ALL NEW HYDRO INSTALLATIONS.
- WHEN MULTI-USE-PATHS ARE PROPOSED, THE LOCATION OF UTILITIES WILL NEED TO BE REVISED AND COORDINATED WITH THE LOCAL UTILITY PROVIDERS ON A CASE BY CASE BASIS.

SCALE: NTS

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STANDARD DRAWING

TYPICAL ROAD CROSS SECTION

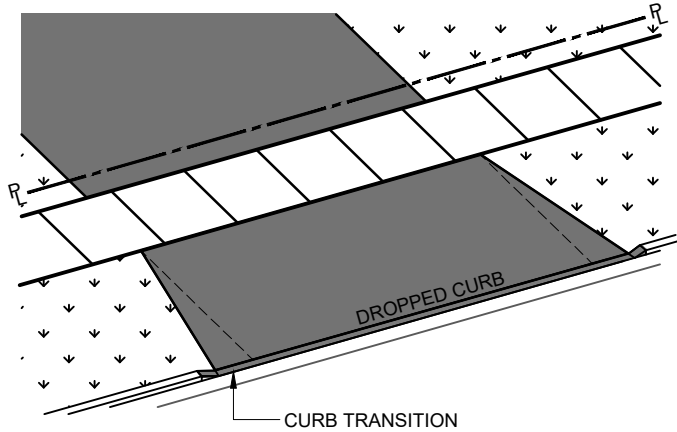
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THE CITY OF
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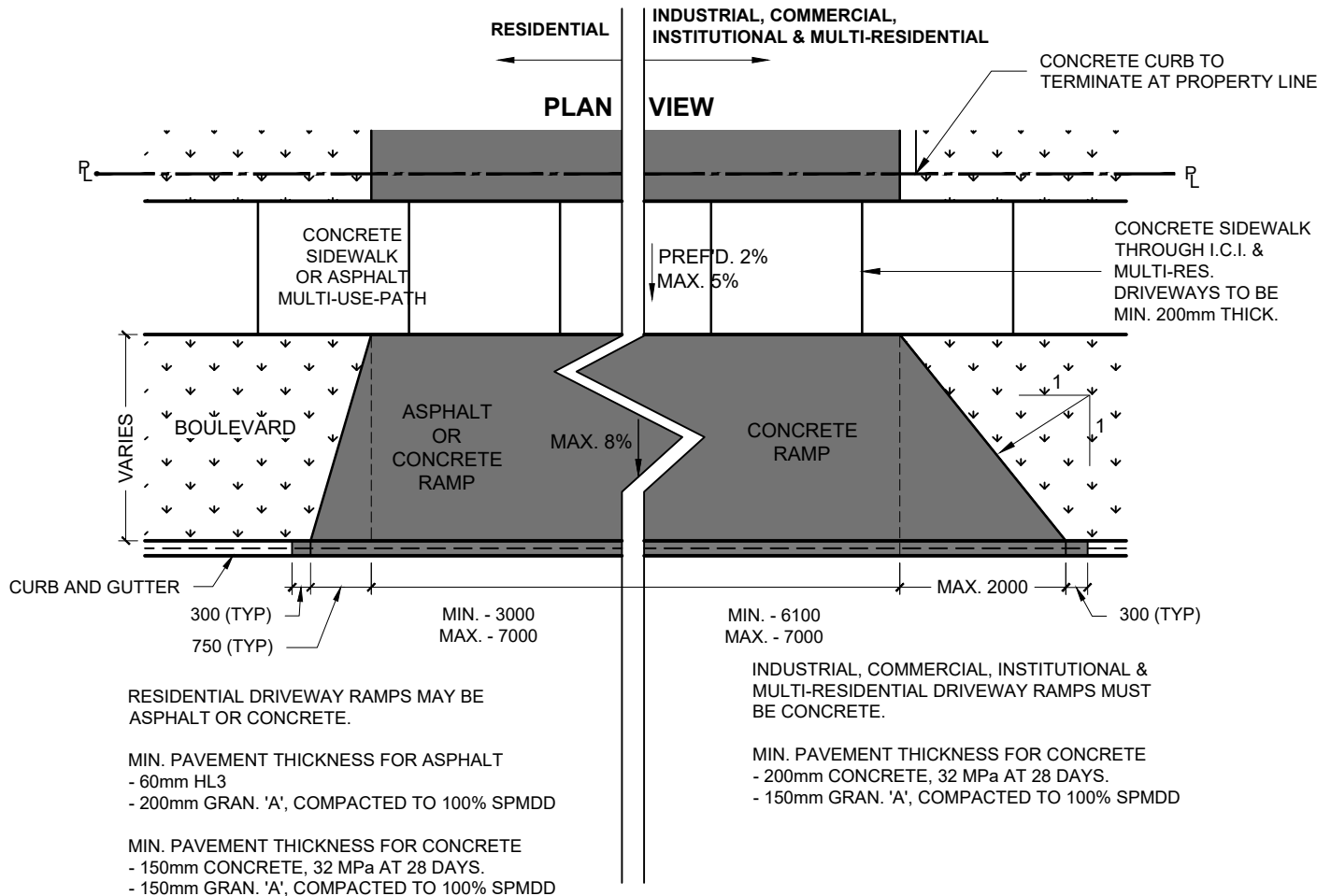
CW-201

ISOMETRIC VIEW



NOTES:

1. FOR CONCRETE RAMPS, EXPANSION JOINT MATERIAL SHALL BE INSTALLED AT THE BACK OF THE CONCRETE CURB AND A BOND BREAKER AT THE SIDEWALK AND RAMP INTERFACE.
2. FOR CONCRETE RAMPS A SAWCUT SHALL BE PLACED AT THE CENTRELINE OF THE DRIVEWAY RAMP AND EXTENDED THROUGH THE SIDEWALK AND CURB.
3. SAWCUTS SHALL BE PLACED IN THE SIDEWALK WHERE THE DRIVEWAY RAMP INTERSECTS THE SIDEWALK AND THE CURB AT THE BOTTOM OF THE CURB TRANSITION.
4. BOULEVARD SHALL BE RESTORED WITH MIN. 150mm OF SCREENED TOPSOIL AND NO. 1 NURSERY SOD, OR LOW-GROW SEED MIX AND FERTILIZER AS PER VOLUME 6 OF THE CITY OF WATERLOO COMPREHENSIVE DESIGN GUIDELINES & REQUIREMENTS (CDGR).
5. PRIOR TO PLACEMENT OF SOD IN BOULEVARD, FERTILIZER (MIN. 0-25-0 TO 0-50-0 MAX.) SHALL BE APPLIED TO TOPSOIL AS PER MANUFACTURER'S APPLICATION RATE.
6. DRIVEWAY TO BE A MINIMUM OF 1.2m FROM ANY STREET FURNITURE.
7. DEPRESSED CURB AND GUTTER AT DRIVEWAY ENTRANCES SHALL HAVE AN ADDITIONAL 50mm BENCH TO SUPPORT ADJACENT CONCRETE RAMPS, REFER TO OPSDE 600.040.



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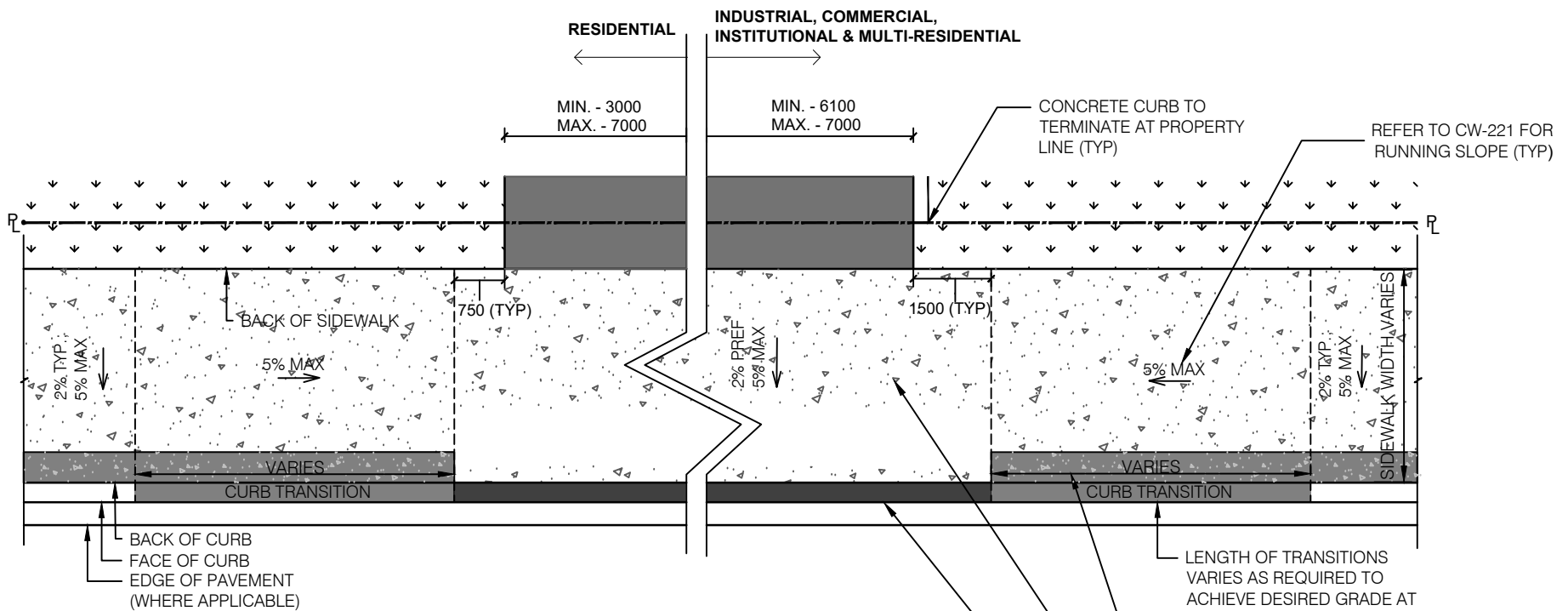
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DRIVEWAY RAMP DETAILS

THE CITY OF
Waterloo

CW-211



NOTES:

1. SAWCUTS SHALL BE PLACED IN THE SIDEWALK AT THE BOTTOM OF THE CURB TRANSITION.
2. DEPRESSED CURB AND GUTTER AT DRIVEWAY ENTRANCES SHALL HAVE AN ADDITIONAL 50mm BENCH TO SUPPORT ADJACENT CONCRETE RAMPS, REFER TO OPSD 600.040.
3. DRIVEWAY TO BE MINIMUM 1.2m FROM ANY STREET FURNITURE.
4. REFER TO CW-221 FOR COLOURED IMPRESSED CONCRETE COLOUR AND DETAILS.

- LENGTH OF TRANSITIONS VARIES AS REQUIRED TO ACHIEVE DESIRED GRADE AT CROSSING (2.5m TYP.)
- GREY IMPRESSED CONCRETE BANDING
- CONCRETE SIDEWALK THROUGH I.C.I & MULTI-RES. DRIVEWAYS TO BE MIN. 200mm THICK.
- DEPRESSED CURB

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STANDARD DRAWINGS

CURB-FACE SIDEWALK DRIVEWAY RAMP DETAIL

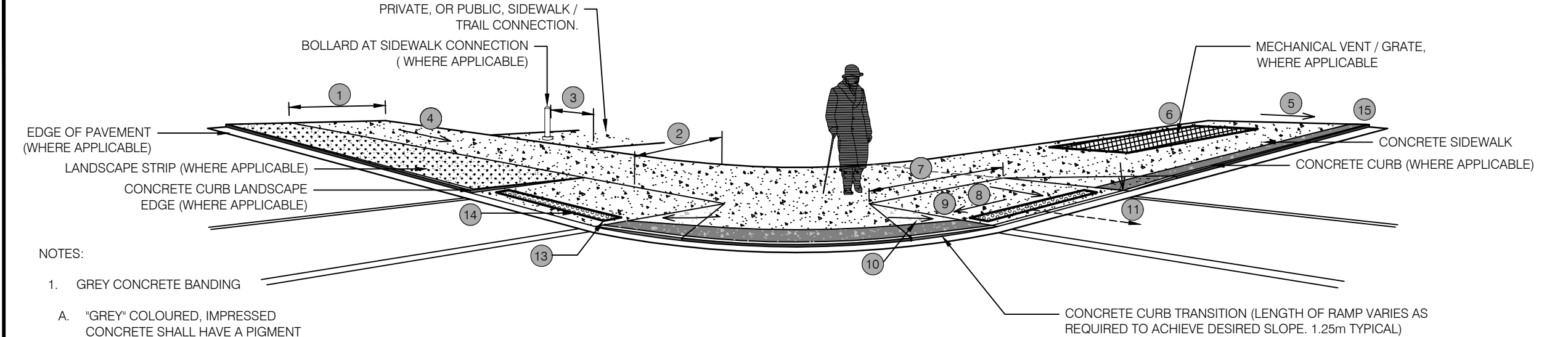
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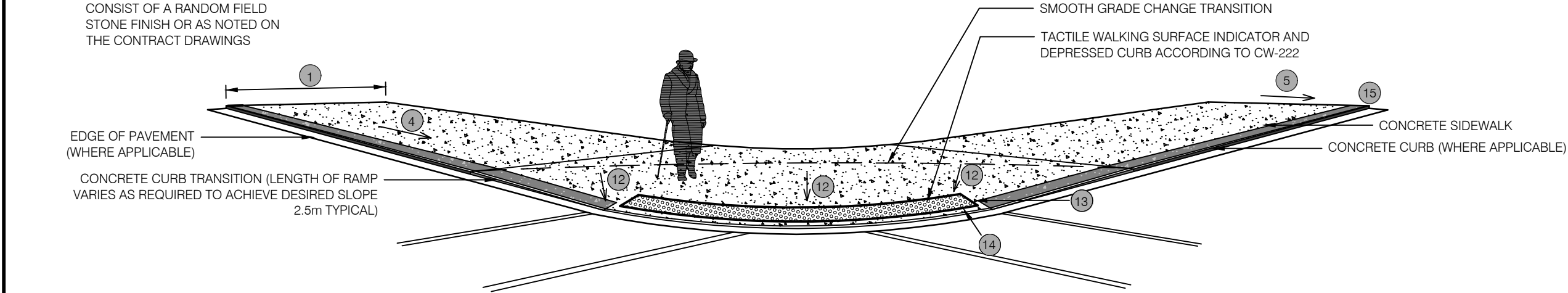


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CURB RAMPS AT INTERSECTION CORNER



CONTINUOUS DEPRESSED CURB AT INTERSECTION CORNER

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KEY	ELEMENT	DIMENSION
1	CLEAR WIDTH	1800mm PREF'D MIN. 1500mm MIN.
2	CLEAR WIDTH - LEVEL LANDING ADJACENT TO CURB RAMP	1200mm MIN
3	CLEAR WIDTH - ENTRANCE TO EXTERIOR PATH OF TRAVEL	850mm MIN
4	RUNNING SLOPE	1:20 MAX (5%), OR SLOPE OF ADJACENT ROADWAY
5	CROSS SLOPE	1:20 MAX (5%) 1:50 PREF'D (2%)
6	OPENING (VENT, GRATE ETC.)	20mm DIA. MAX

CURB RAMPS:

7	CLEAR WIDTH OF RAMP RUNNING SLOPE	1200mm MIN
8	RUNNING SLOPE OF RAMP < 75mm 75mm > 200mm > 200mm	1:8 (12.5%) MAX 1:10 (10%) MAX DESIGN AS A RAMP
9	CROSS SLOPE OF RAMP	1:50 (2%) MAX
10	FLARED SIDE MAXIMUM SLOPE	1:10 (10%) MAX
11	ALIGNMENT OF RAMP	MUST ALIGN WITH DIRECTION OF TRAVEL

DEPRESSED CURBS:

12	RUNNING SLOPE	1:20 (5%) MAX
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TACTILE WALKING SURFACE INDICATORS:

13	DEPTH	610mm MIN
14	PLACEMENT ON CURB RAMP	150mm - 200mm FROM BACK OF CURB

GREY CONCRETE BANDING:

15	WIDTH REFER TO NOTES FOR FURTHER DETAILS	300mm MIN
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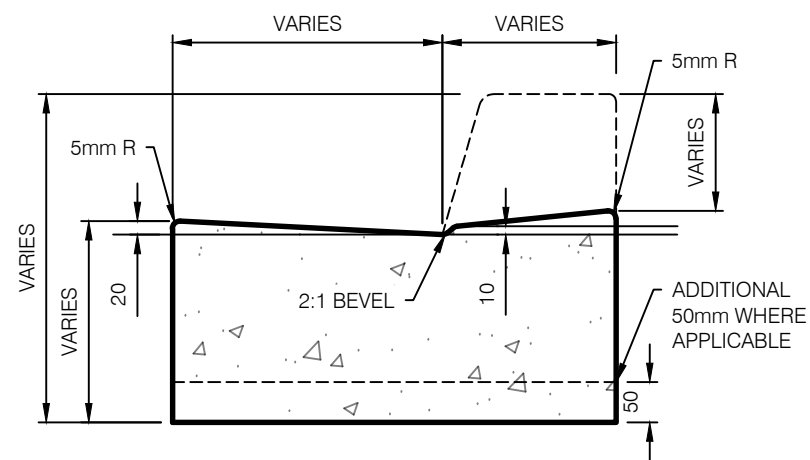
STANDARD DRAWINGS

AODA SIDEWALK AND CURB RAMP DETAILS

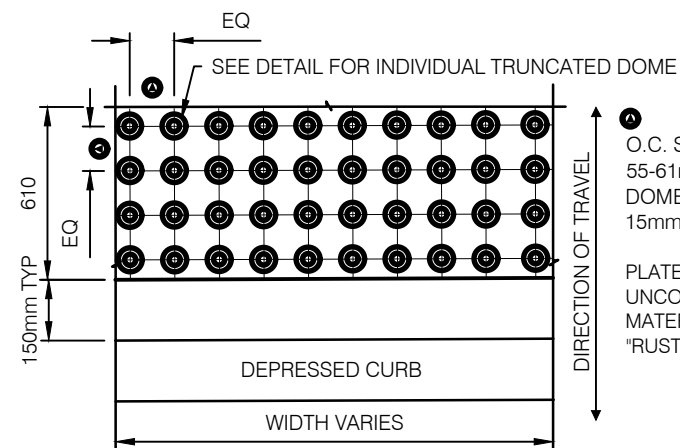
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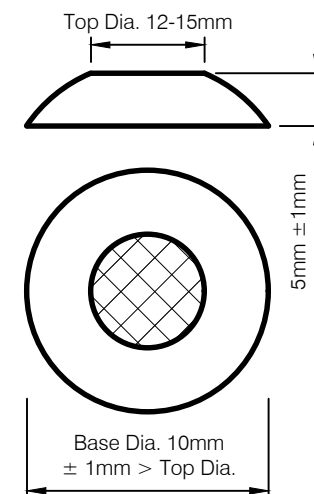
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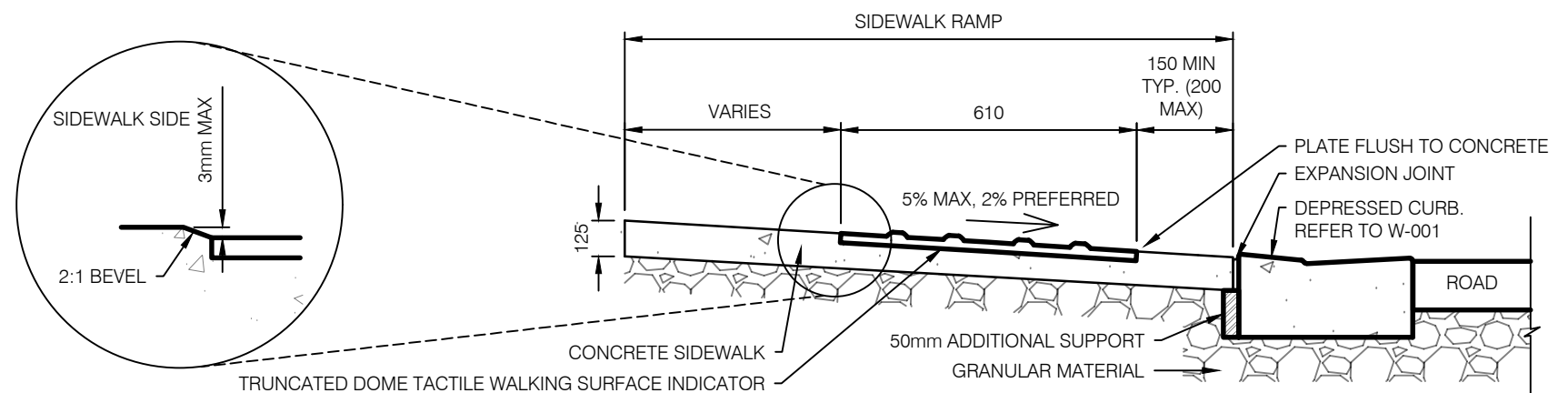
DEPRESSED CURB (PREFERRED)



TRUNCATED DOME PATTERN



TRUNCATED DOME DETAIL



CROSS SECTION OF TACTILE WALKING PLATE AT SIDEWALK AND CURB

NOTE:
RADIAL TACTILE WALKING PLATES MUST BE USED FOR DEPRESSED CURBS ALONG A RADIUS CURB AT INTERSECTIONS AND MUST MATCH THE CURB RADIUS.

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STANDARD DRAWINGS

TACTILE WALKING SURFACE INDICATOR DEPRESSED CURB DETAILS

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CW-222

REFER TO CW-221 & CW-222 FOR TACTILE WALKING
SURFACE INDICATOR & DEPRESSED CURB DETAILS.

B. ADAPTIVE 'HUMP' - CURB HEIGHT IS MODIFIED IN ORDER TO MAINTAIN A MAX SLOPE OF 5%. ALONG THE PATH OF TRAVEL. CURB HEIGHT MAY VARY BETWEEN A MIN OF 75mm to 150mm DEPENDING ON THE DISTANCE BETWEEN THE DEPRESSED CURBS. THE MIN LENGTH OF THE ADAPTIVE 'HUMP' IS 0.4m.

D. ACHIEVING THE REQUIRED GRADES AT CROSSING LOCATIONS MAY VARY THE LIMITS OF CONSTRUCTION. SIDEWALK PANELS UP & DOWNSTREAM OF THESE CROSSINGS MAY ALSO NEED TO BE RE-POURED.

1. TACTILE WALKING SURFACE INDICATORS ARE TO BE INSTALLED AT ALL PEDESTRIAN CROSSINGS IN CONJUNCTION WITH ALL ROAD AND SIDEWALK CONSTRUCTION, RECONSTRUCTION AND RESURFACING PROJECTS (WHERE APPLICABLE).

3. PLATES ARE TO BE UNCOATED CAST IRON MATERIAL WITH NATURAL "RUST" FINISH (REFER TO REGION OF WATERLOO STANDARD SPECIAL PROVISIONS RWSS 14 FOR LISTED/APPROVED SUPPLIERS).

5. FOR DEPRESSED CURBS AT SIGNALIZED INTERSECTIONS OF TWO CITY OF WATERLOO STREETS, USE THESE STANDARDS. FOR SIGNALIZED INTERSECTIONS WITH A REGIONAL ROAD, REFER TO REGION OF WATERLOO STANDARDS. EACH PROJECT TO BE CONFIRMED WITH CITY OF WATERLOO TRANSPORTATION OPERATIONS.



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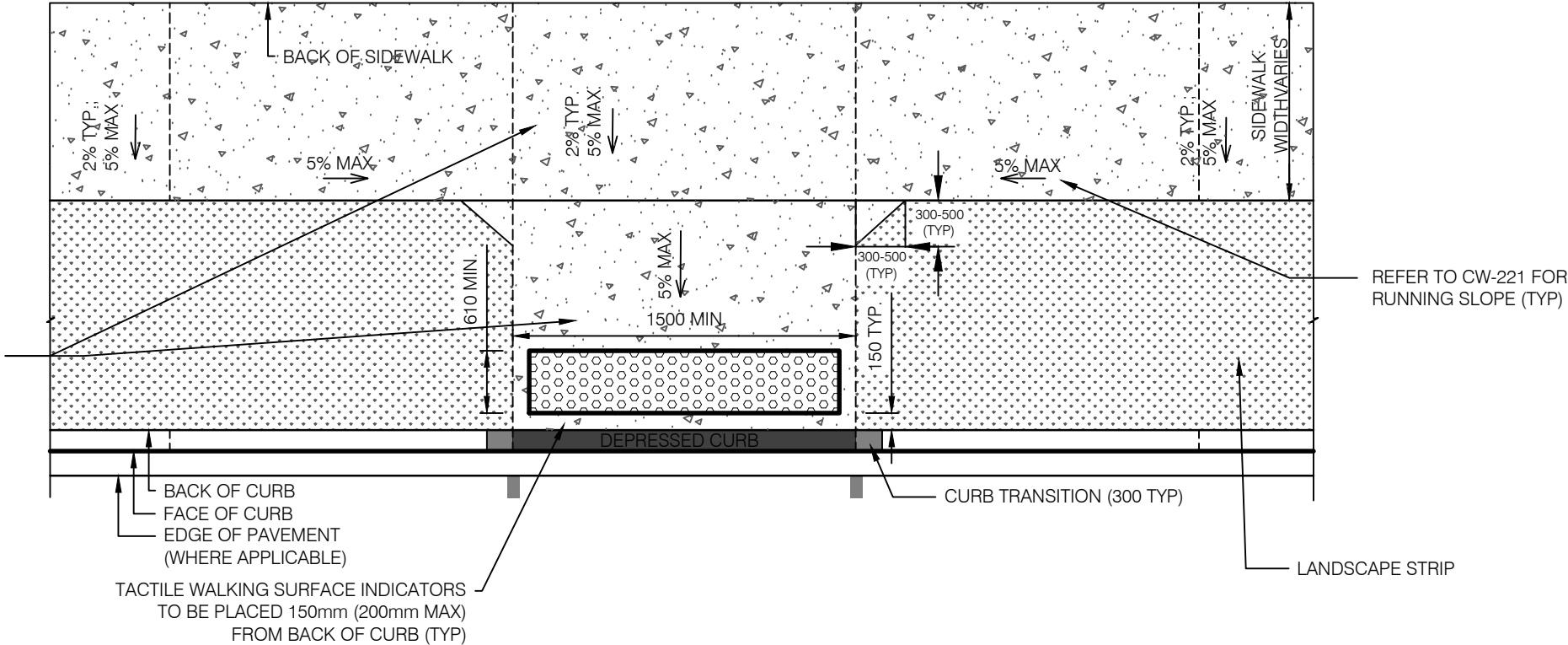
DEPRESSED CURB DETAILS FOR INTERSECTIONS

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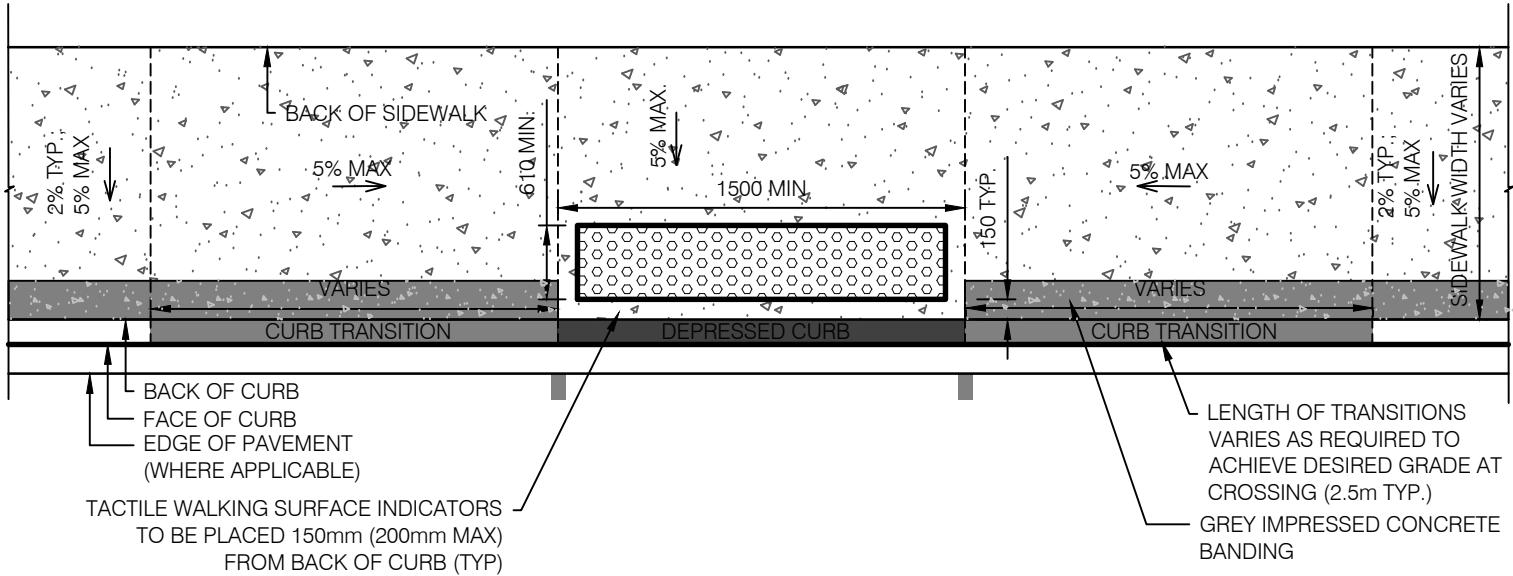
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IF THE DEPRESSED CURB IS
TO BE UTILIZED AS A
MAINTENANCE ACCESS, THE
RAMP AND SIDEWALK
THROUGH THE ACCESS ARE
TO BE MIN. 200mm THICK.



MIDBLOCK CROSSING WITH BOULEVARD



MIDBLOCK CROSSING WITH CURB-FACE SIDEWALK

NOTES:

REFER TO CW-221 & CW-222 FOR TACTILE WALKING
SURFACE INDICATOR & DEPRESSED CURB DETAILS.

1. TACTILE WALKING SURFACE INDICATORS ARE
TO BE INSTALLED AT ALL PEDESTRIAN
CROSSINGS IN CONJUNCTION WITH ALL
ROAD AND SIDEWALK CONSTRUCTION,
RECONSTRUCTION AND RESURFACING
PROJECTS (WHERE APPLICABLE).
2. EACH LOCATION IS SITE SPECIFIC AND
CONSULTATION WITH THE CITY OF
WATERLOO MAY BE REQUIRED FOR NON
TYPICAL INTERSECTIONS AND PEDESTRIAN
CROSSINGS.
3. PLATES ARE TO BE UNCOATED CAST IRON
MATERIAL WITH NATURAL "RUST" FINISH
(REFER TO REGION OF WATERLOO
STANDARD SPECIAL PROVISIONS RWSS 14
FOR LISTED/APPROVED SUPPLIERS).
4. REFER TO CW-221 FOR COLOURED
IMPRESSED CONCRETE COLOUR AND
DETAILS.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWINGS

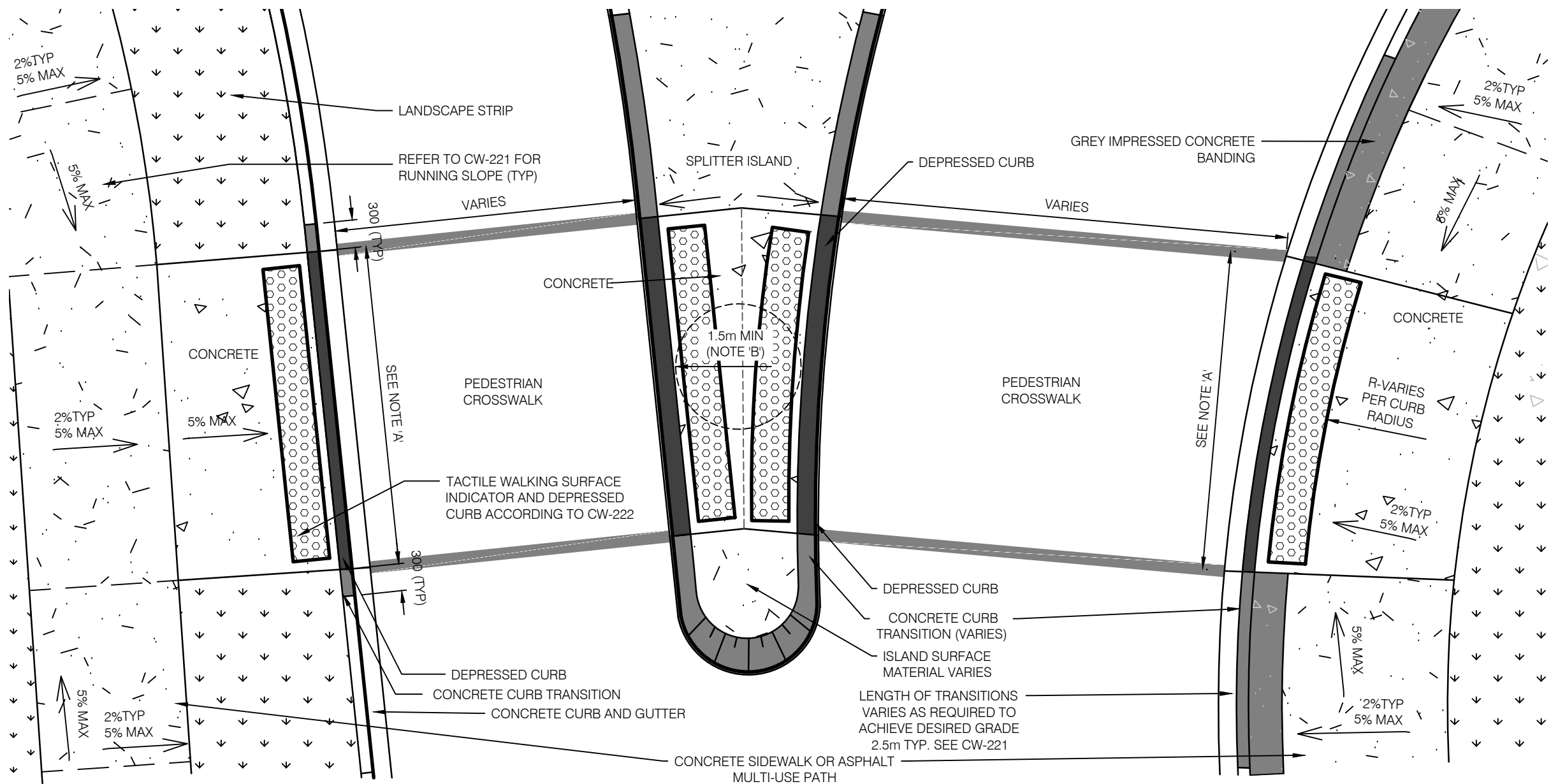
DEPRESSED CURB DETAILS FOR MIDBLOCK CROSSINGS

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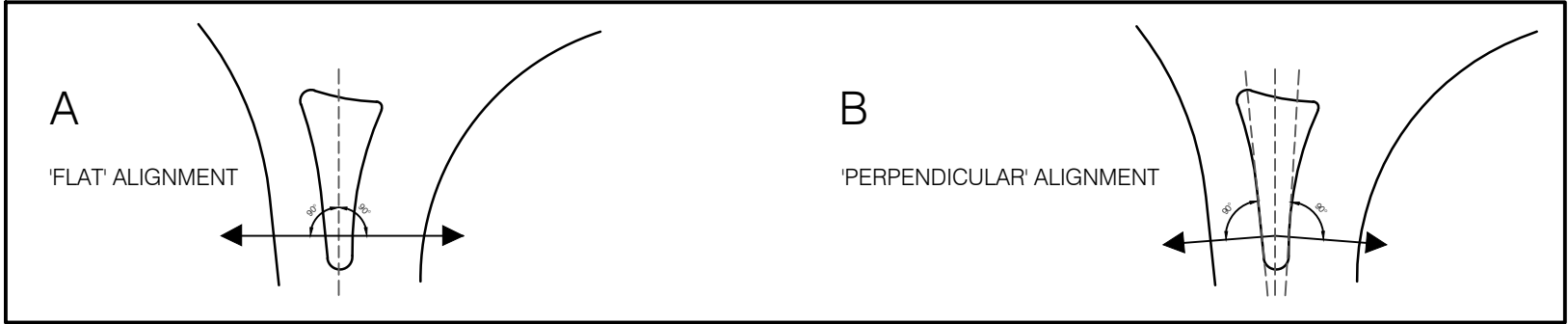


CW-224



NOTES:

1. A2.5m MINIMUM WIDTH FOR ROUNDABOUT LEG CROSSWALK PAVEMENT MARKINGS.
2. MINIMUM 1.5m CLEAR WIDTH REQUIRED IN ALL DIRECTIONS BETWEEN CURBS OF SPLITTER ISLAND WITH A MAX. SLOPE OF 5%.
3. LIMITS OF CONSTRUCTION WILL VARY BASED ON THE RUNNING SLOPE OF SIDEWALK, CROSS SLOPE OF SIDEWALK, AND HEIGHT OF CURB.
4. DEPRESSED CURBS TO BE PROVIDED FOR WIDTH OF ALL PEDESTRIAN CROSSINGS.
5. TACTILE WALKING SURFACE INDICATORS TO BE PROVIDED ONLY WITHIN WIDTH OF PEDESTRIAN CROSSINGS.
6. TACTILE WALKING SURFACE INDICATORS ARE TO BE INSTALLED AT ALL PEDESTRIAN CROSSINGS IN CONJUNCTION WITH ALL ROAD AND SIDEWALK CONSTRUCTION, RECONSTRUCTION AND RESURFACING PROJECTS (WHERE APPLICABLE).
7. EACH LOCATION IS SITE SPECIFIC AND CONSULTATION WITH THE CITY OF WATERLOO MAY BE REQUIRED.
8. ROUNDABOUT GEOMETRY IS CONCEPTUAL. ALL PAVEMENT MARKINGS AND SIGNAGE FOR ROUNDABOUTS PER CONTRACT DRAWINGS, OR, AS DIRECTED BY CITY OF WATERLOO.
9. 'PERPENDICULAR' CROSSWALK ALIGNMENT (i.e. PLACING EACH LEG OF CROSSWALK PERPENDICULAR TO CURB OF ROAD FOR ENTRY & EXIT LANES) IS PREFERRED TO 'FLAT' CROSSWALK ALIGNMENT (i.e. PLACING CROSSWALK PERPENDICULAR TO CENTERLINE OF THE APPROACH ROADWAY) TO IMPROVE EASE OF CROSSWALK ENTRY FOR MOBILITY IMPAIRED PEDESTRIANS. SEE DIAGRAMS A & B (LEFT)
10. PLATES ARE TO BE UNCOATED CAST IRON MATERIAL WITH NATURAL "RUST" FINISH (REFER TO THE REGION OF WATERLOO STANDARD SPECIAL PROVISIONS RWSS 14 FOR LISTED/APPROVED SUPPLIERS).
11. REFER TO CW-221 FOR COLOURED IMPRESSED CONCRETE COLOUR AND DETAILS.



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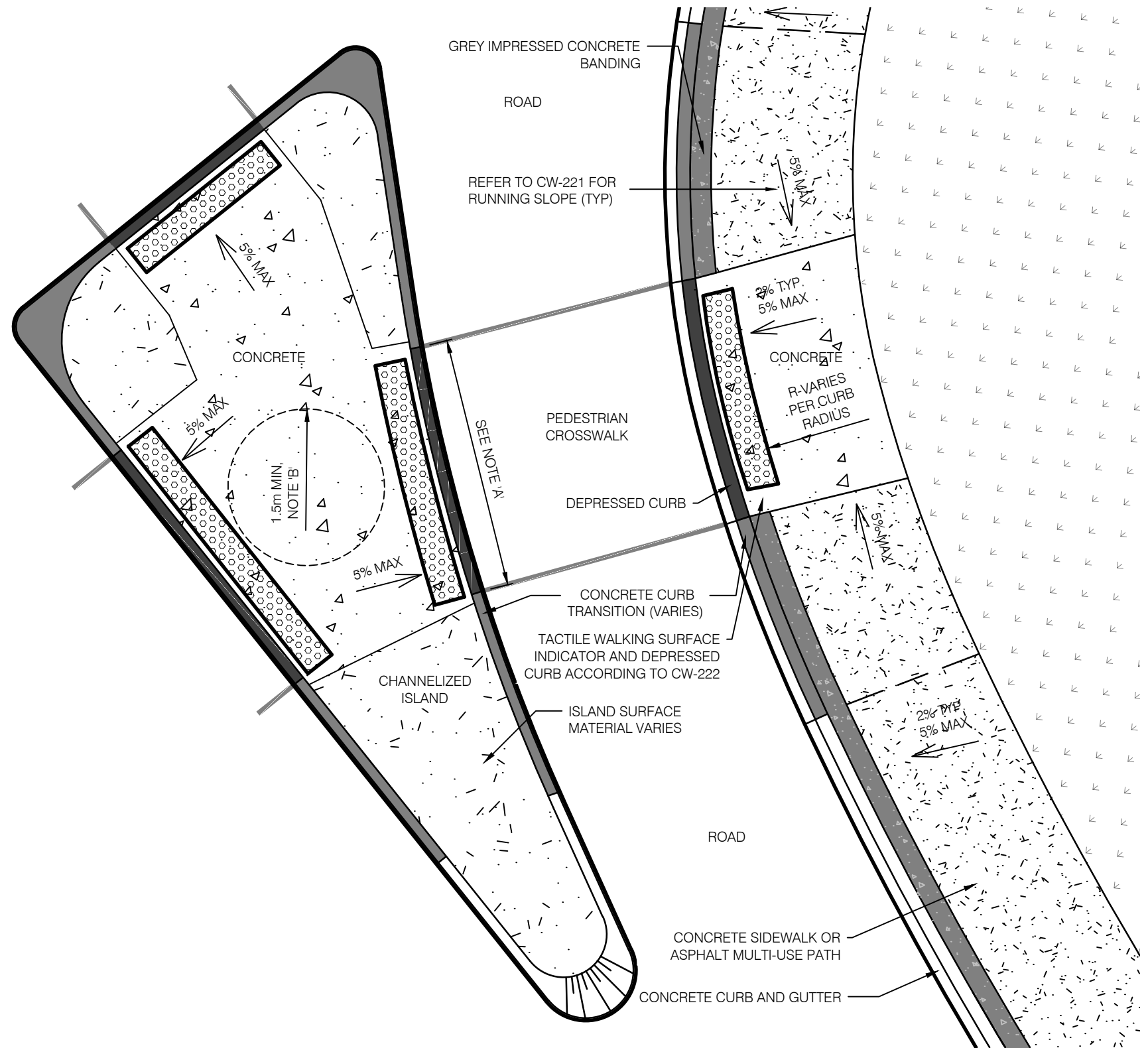
STANDARD DRAWINGS

DEPRESSED CURB DETAILS FOR ROUNDABOUTS

REV 1 MAY 2023



CW-225



- NOTES:
- A. 2.5m MINIMUM FOR CHANNELIZED ISLAND CROSSINGS.
 - B. MINIMUM 1.5m CLEAR WIDTH REQUIRED IN ALL DIRECTIONS BETWEEN CURBS WITH A MAX. SLOPE OF 5%.
 - C. LIMITS OF CONSTRUCTION WILL VARY BASED ON THE RUNNING SLOPE OF SIDEWALK, CROSS SLOPE OF SIDEWALK, AND HEIGHT OF CURB.
1. DEPRESSED CURBS TO BE PROVIDED FOR WIDTH OF ALL PEDESTRIAN CROSSINGS.
 2. TACTILE WALKING SURFACE INDICATORS TO BE PROVIDED ONLY WITHIN WIDTH OF PEDESTRIAN CROSSINGS.
 3. TACTILE WALKING SURFACE INDICATORS ARE TO BE INSTALLED AT ALL PEDESTRIAN CROSSINGS IN CONJUNCTION WITH ALL ROAD AND SIDEWALK CONSTRUCTION, RECONSTRUCTION AND RESURFACING PROJECTS (WHERE APPLICABLE).
 4. EACH LOCATION IS SITE SPECIFIC AND CONSULTATION WITH THE CITY OF WATERLOO MAY BE REQUIRED.
 5. CHANNELIZED ISLAND GEOMETRY IS CONCEPTUAL. ALL PAVEMENT MARKINGS AND SIGNAGE PER CONTRACT DRAWINGS, OR, AS DIRECTED BY CITY OF WATERLOO.
 6. PLATES ARE TO BE UNCOATED CAST IRON MATERIAL WITH NATURAL "RUST" FINISH (REFER TO REGION OF WATERLOO STANDARD SPECIAL PROVISIONS RWSS 14 FOR LISTED/APPROVED SUPPLIERS).
 7. FOR DEPRESSED CURBS AT SIGNALIZED INTERSECTIONS, REFER TO REGION OF WATERLOO STANDARDS.
 8. REFER TO CW-221 FOR COLOURED IMPRESSED CONCRETE COLOUR AND DETAILS.

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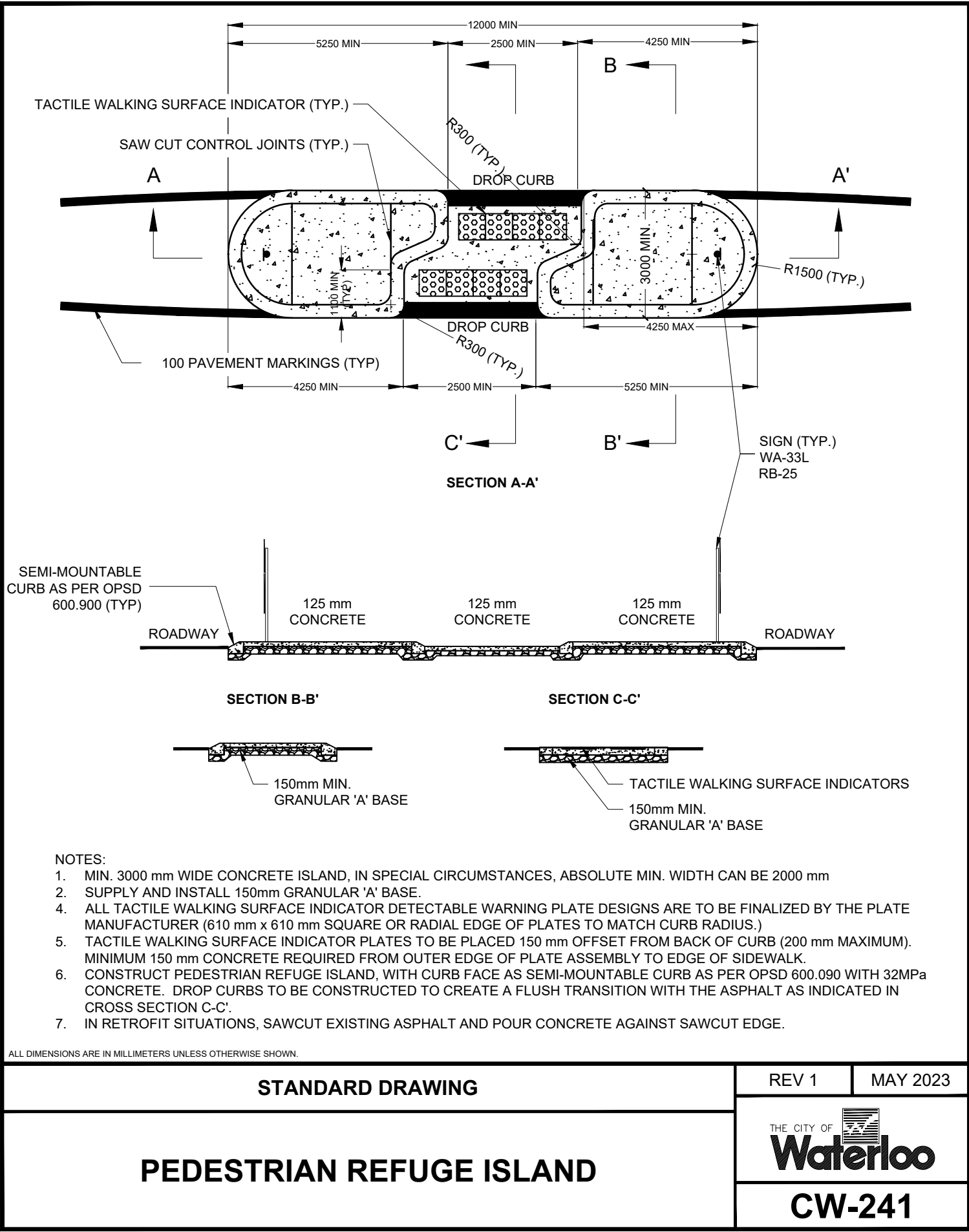
STANDARD DRAWINGS

DEPRESSED CURB DETAILS FOR CHANNALIZED ISLANDS

REV 1 MAY 2023



CW-226



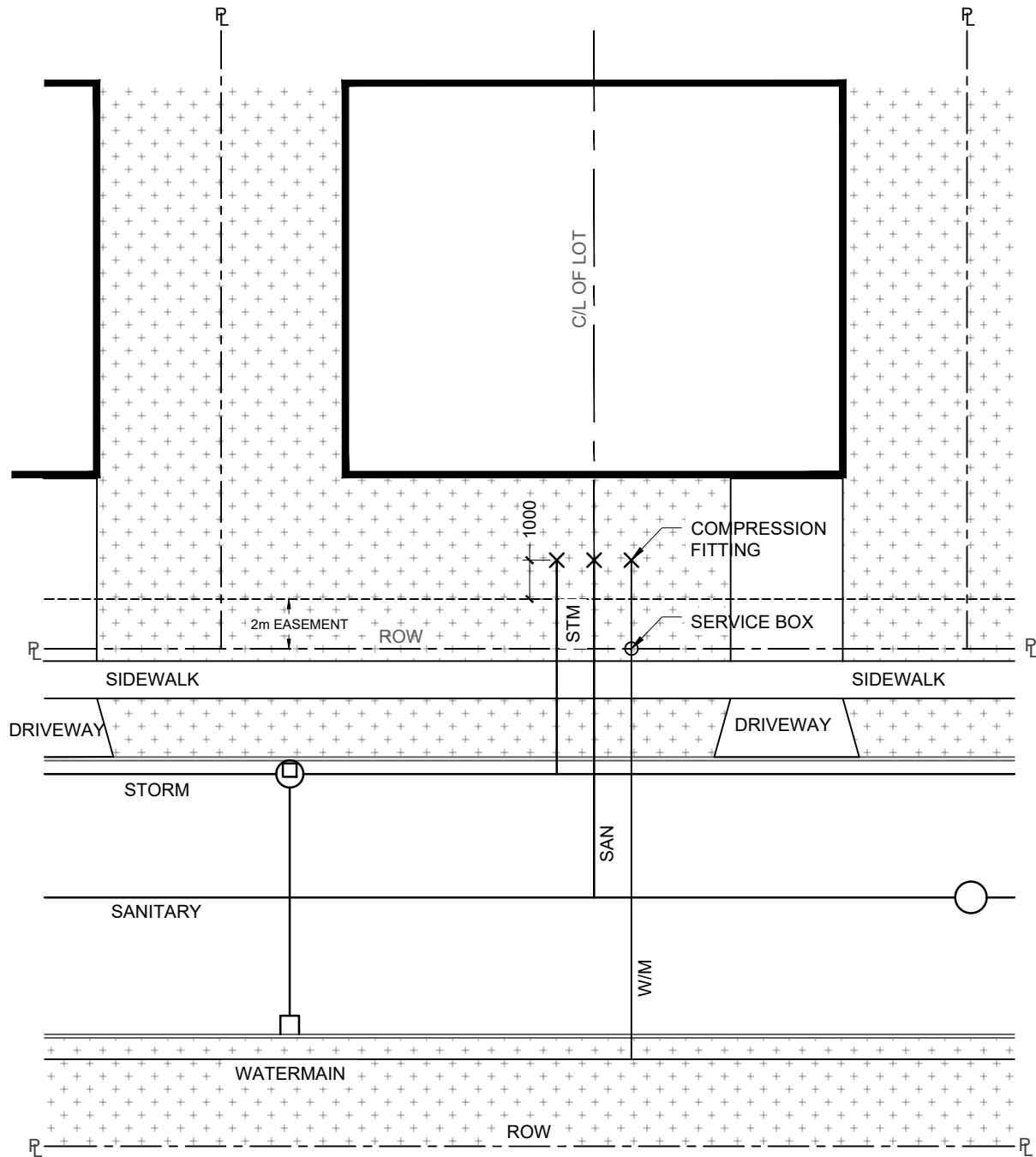
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STANDARD DRAWING

REV 1 MAY 2023

PEDESTRIAN REFUGE ISLAND

THE CITY OF
Waterloo
CW-241



NOTES:

1. THE WATER SERVICE OFFSET FROM CENTRE LINE WILL VARY DEPENDING ON DRIVEWAY WIDTH. ENSURE THAT THE SERVICE BOX IS PLACED OUTSIDE OF THE DRIVEWAY.
2. SERVICES MAY BE INSTALLED IN A COMMON TRENCH PROVIDED THAT THEY HAVE THE REQUIRED VERTICAL / HORIZONTAL SEPARATIONS PER MECF AND OBC.

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STANDARD DRAWING

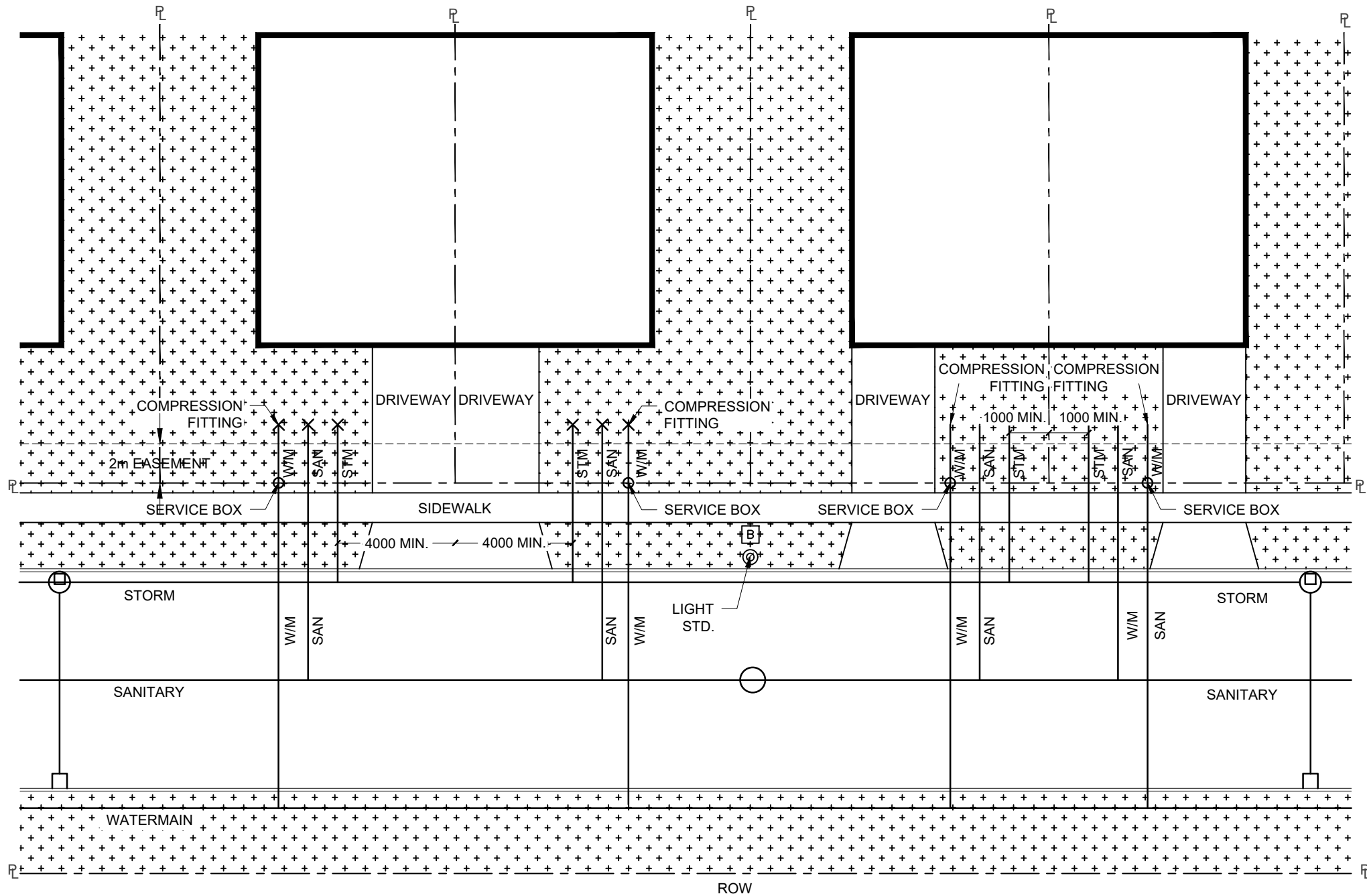
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MAY 2023

**SERVICE CONNECTION LOCATION
SINGLE LOT**

THE CITY OF
Waterloo

CW-301



- NOTES:
1. THE WATER SERVICE OFFSET FROM CENTRE LINE WILL VARY DEPENDING ON DRIVEWAY WIDTH. ENSURE THAT THE SERVICE BOX IS PLACED OUTSIDE OF THE DRIVEWAY.
 2. SERVICES MAY BE INSTALLED IN A COMMON TRENCH PROVIDED THAT THEY HAVE THE REQUIRED VERTICAL / HORIZONTAL SEPARATIONS PER MECP AND OBC.

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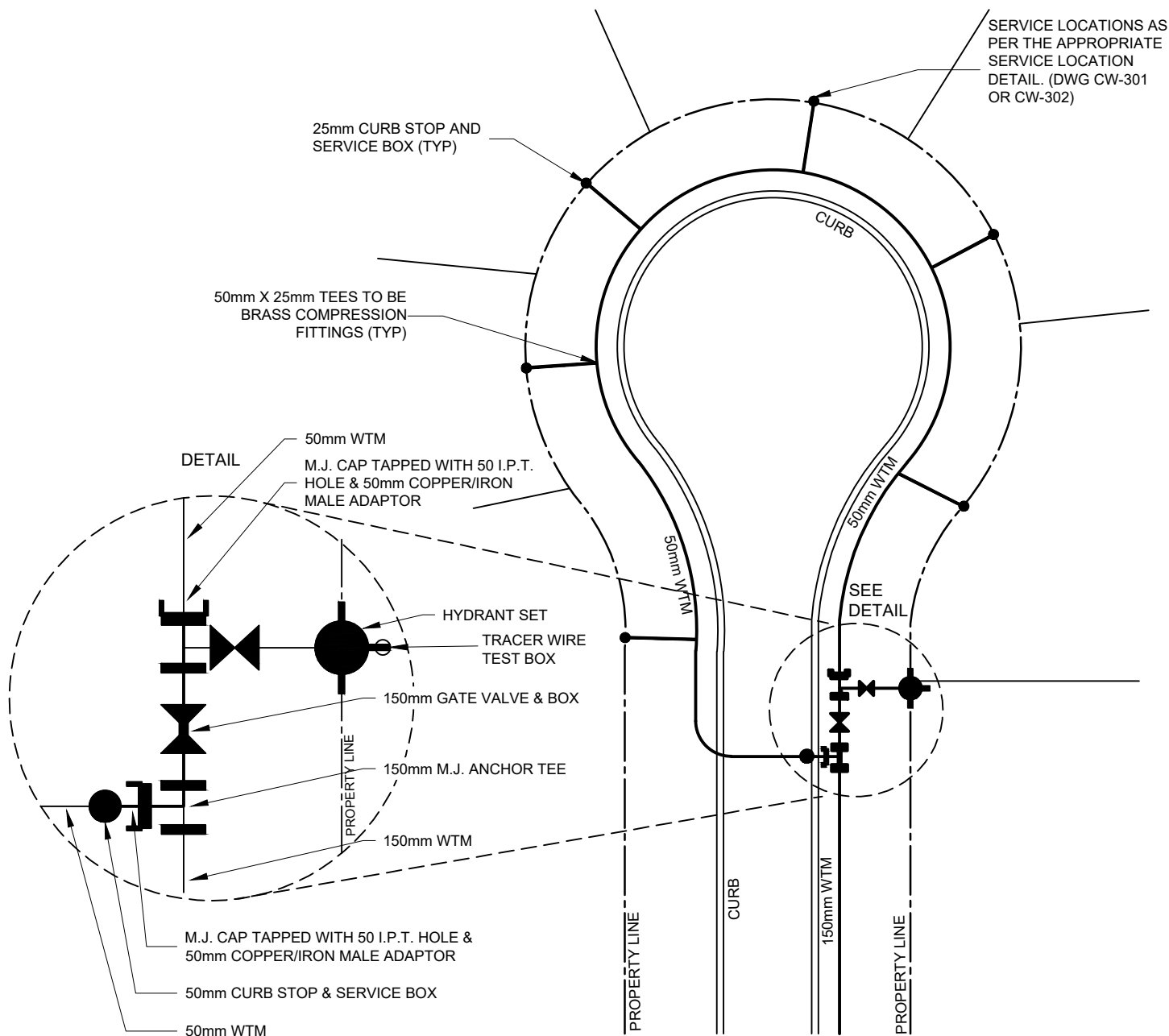
STANDARD DRAWINGS

SERVICE LOT CONNECTION - SEMI DETACHED LOT

REV 1 MAY 2023



CW-302



NOTES:

1. PROVIDE 25mm DIA. SERVICES FOR LOTS.
2. TRACER WIRE TO BE INSTALLED PER THE CITY OF WATERLOO TRACER WIRE SPECIFICATION.
3. ALL MECHANICAL JOINTS TO BE MECHANICALLY RESTRAINED.
4. CORROSION PROTECTION TO BE AFFIXED AS PER THE DGSSMS.

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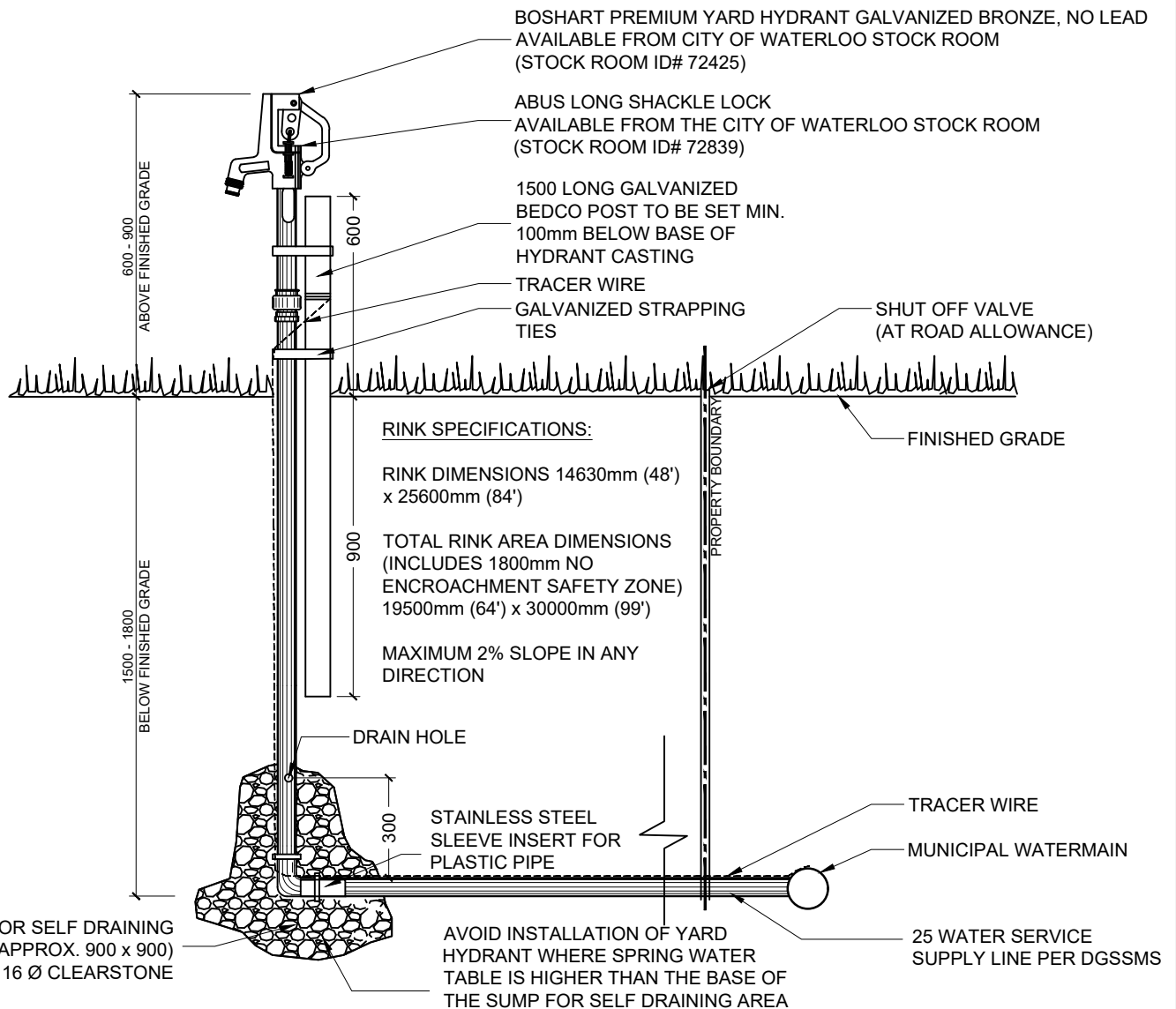
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MAY 2023

CUL-DE-SAC WATER SERVICING DETAIL

THE CITY OF
Waterloo

CW-311



NOTES:

- BOTH YARD HYDRANT AND MASTER 2126 LOCK ARE AVAILABLE FOR PURCHASE FROM CITY OF WATERLOO STOCK ROOM (STOCK ROOM ID# 72425 AND ID# 72839). PHONE 519-747-8752 TO ORDER.
- INSTALLATION OF THE WATER SERVICE REQUIRES A BUILDING PERMIT AND ENGINEERING ACCEPTANCE
- ENSURE LINE ON WHICH HYDRANT IS TO BE INSTALLED HAS BEEN THOROUGHLY FLUSHED TO WASH OUT FOREIGN PARTICLES. DRAIN HOLE IN CLEAR STONE SELF DRAINAGE AREA.
- ENSURE THE HYDRANT IS INSTALLED AND TESTED WITH PROVISION FOR OPTIMAL DRAINAGE BELOW THE FROST LINE.
- INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS AS APPROVED BY CITY OF WATERLOO.
- YARD HYDRANT IS TO BE LOCATED MINIMUM 3000 FROM RINK SITE AND MAXIMUM 7500 FROM RINK SITE.
- ENSURE THE HYDRANT SPOUT IS FACING THE IDENTIFIED RINK SITE
- FOR OUTDOOR COMMUNITY PARK HYDRO PANEL DETAILS CONTACT THE CITY PROJECT MANAGER FOR THE LATEST STANDARDS.

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STANDARD DRAWING

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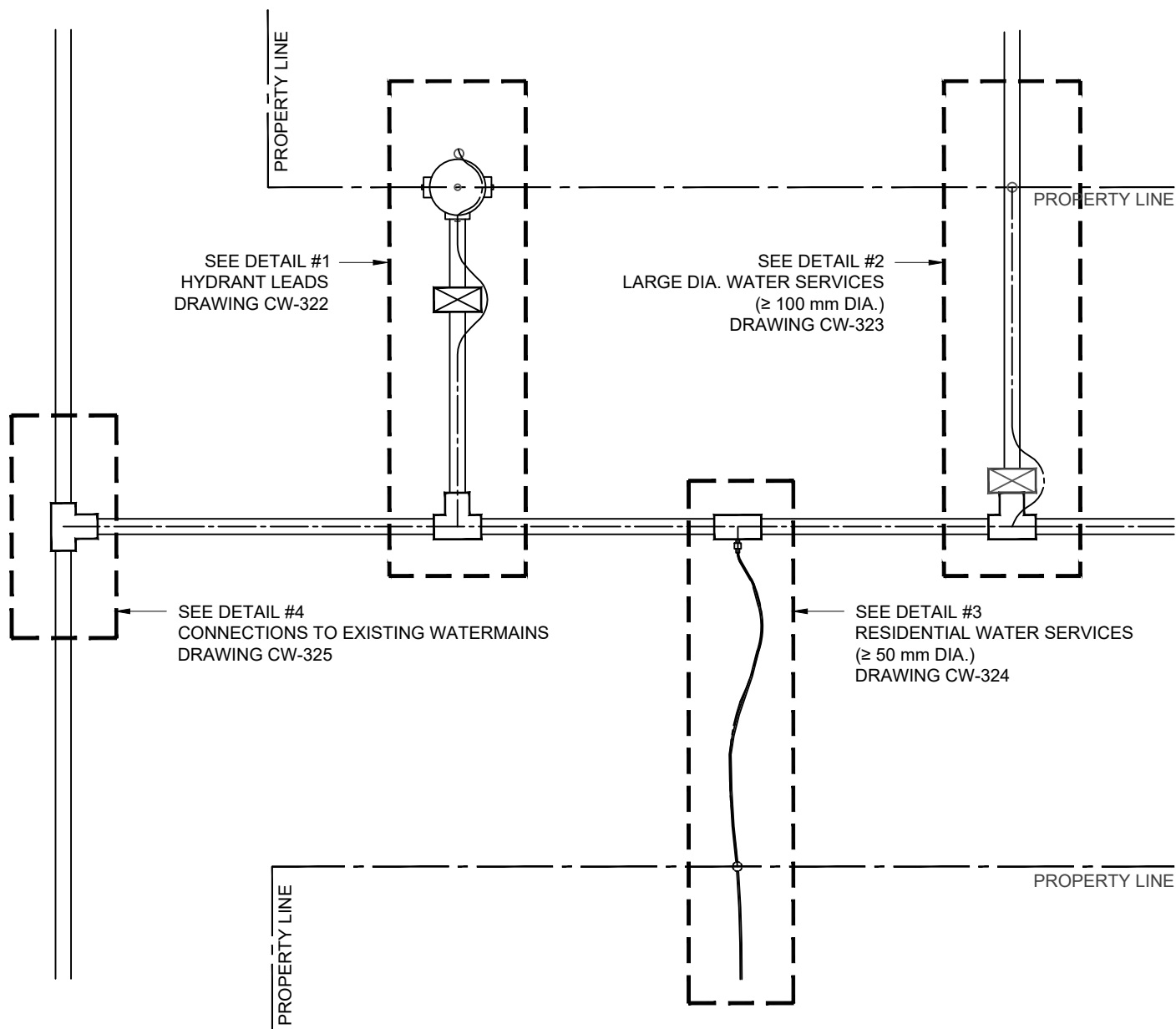
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STANDARD YARD HYDRANT

THE CITY OF
Waterloo

CW-312

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PLAN VIEW

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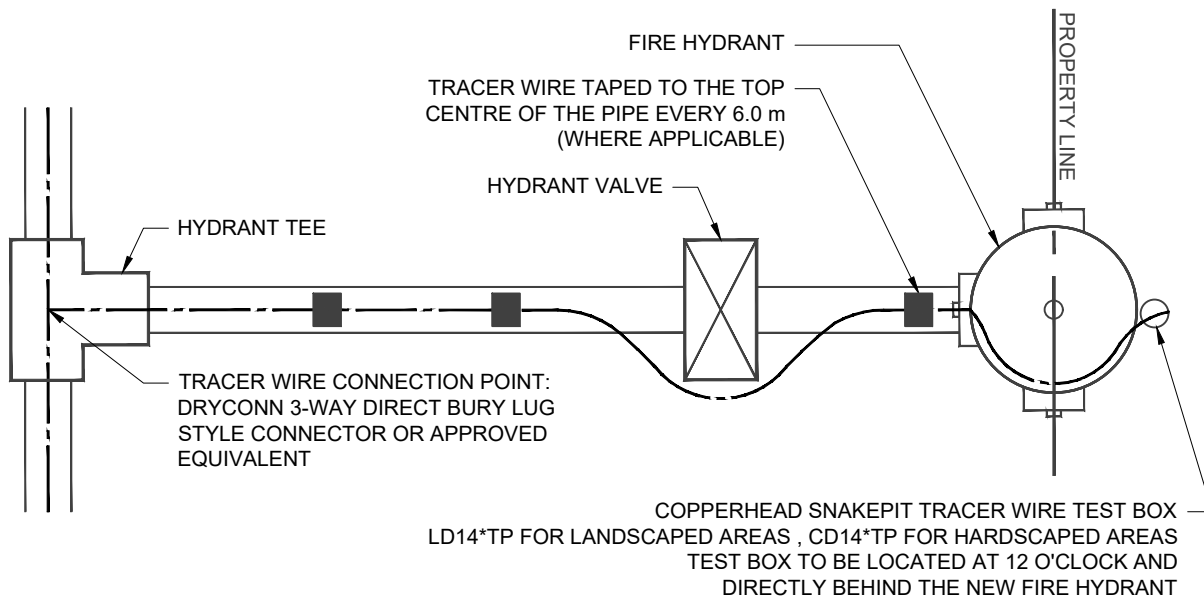
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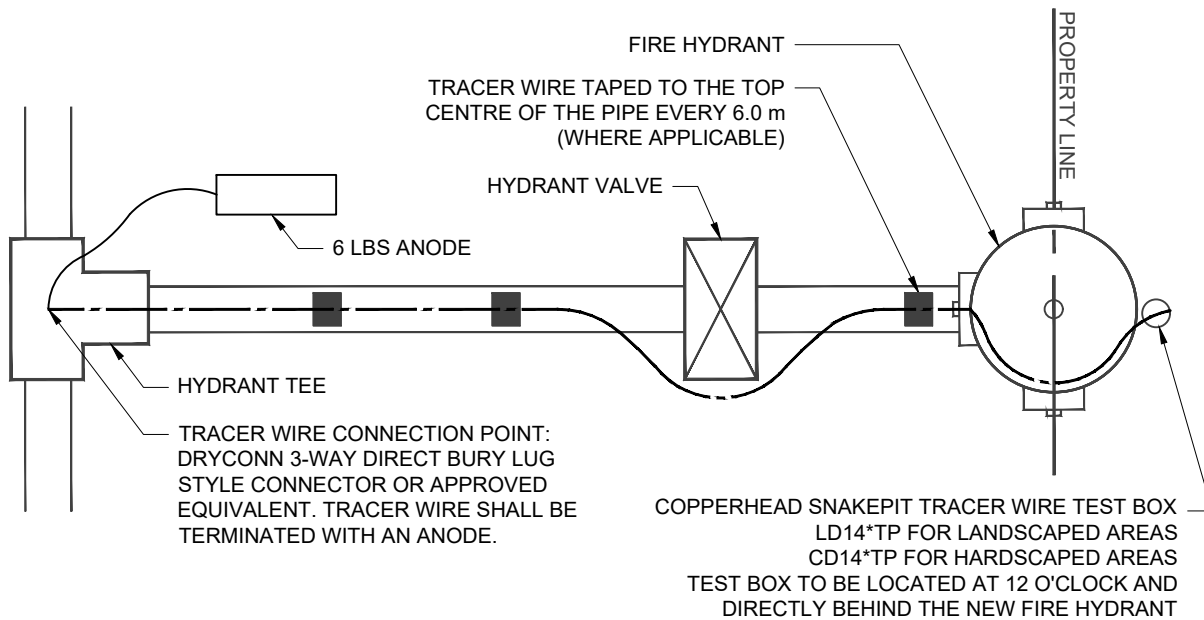
TRACER WIRE GENERAL LAYOUT

THE CITY OF
Waterloo

CW-321



CONNECTION TO NEW NON-METALLIC WATERMAIN



CONNECTION TO EXISTING METALLIC WATERMAIN

NOTES:

1. REFER TO STANDARD DRAWING CW-321 FOR GENERAL OVERVIEW OF TRACER WIRE DETAIL.
2. REFER TO CONSTRUCTION SPECIFICATION FOR TRACER WIRE INSTALLATION IN THE CITY OF WATERLOO.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

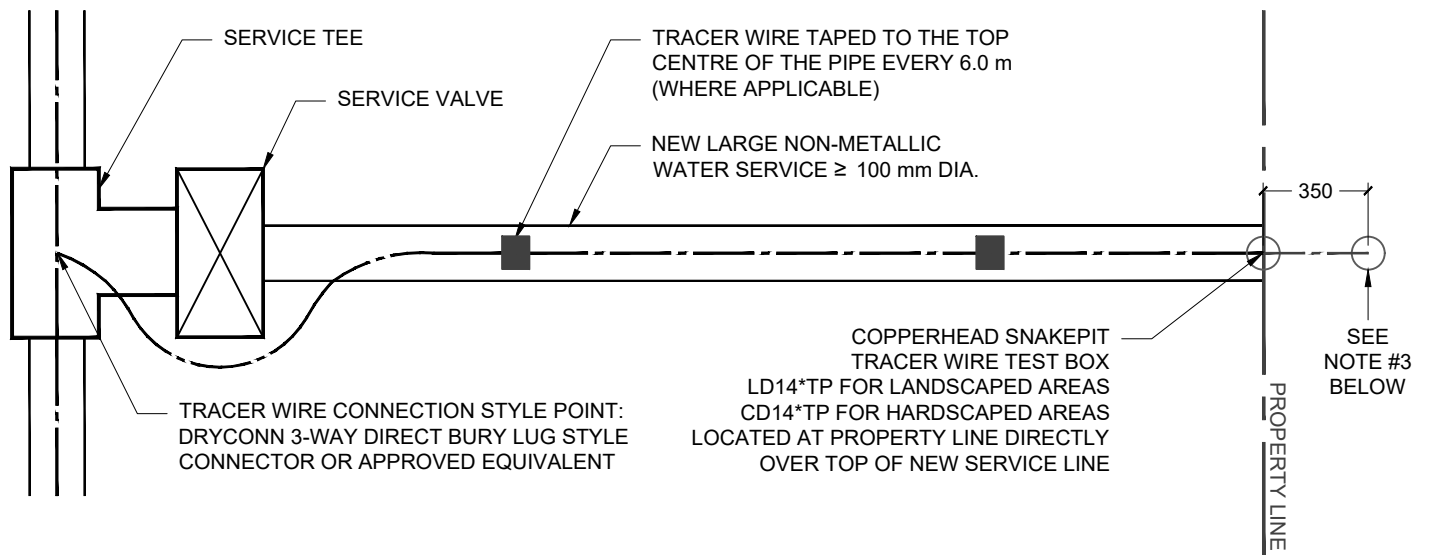
STANDARD DRAWING

REV 4

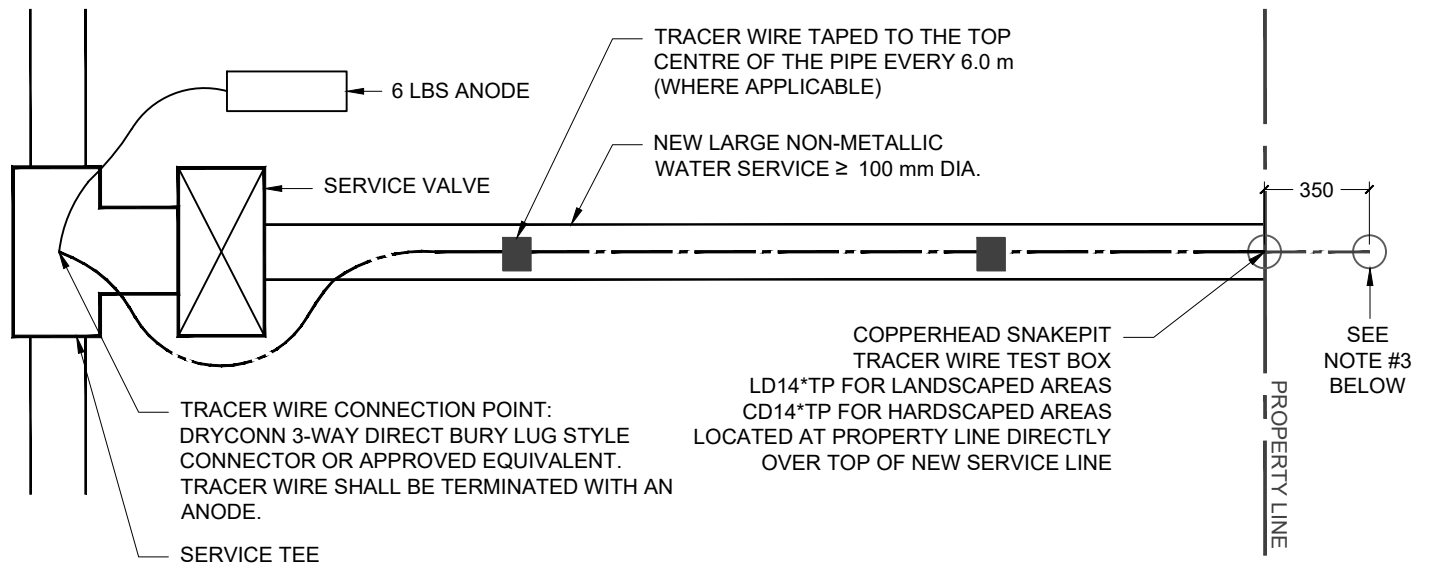
MAY 2023

**TRACER WIRE - DETAIL #1
HYDRANT LEADS**

THE CITY OF
Waterloo
CW-322



CONNECTION TO NEW NON-METALLIC WATERMAIN



CONNECTION TO EXISTING METALLIC WATERMAIN

NOTES:

1. REFER TO STANDARD DRAWING CW-321 FOR GENERAL OVERVIEW OF TRACER WIRE DETAIL.
2. REFER TO CONSTRUCTION SPECIFICATION FOR TRACER WIRE INSTALLATION IN THE CITY OF WATERLOO.
3. IF SERVICE VALVE IS LOCATED AT PROPERTY LINE, TEST BOX SHALL BE INSTALLED 350 MM BEHIND PROPERTY LINE VALVE BOX.
4. FOR SITE SERVICING PROJECTS (I.E. INFILL OR NEW SITE SERVICES), THE NEW SERVICE TRACER WIRE IS TO BE INSTALLED AS PER THE ABOVE SITUATIONS BASED ON THE EXISTING WATERMAIN MATERIAL, BUT INSTEAD OF INSTALLING A TEST BOX FOR ACCESS TO THE TRACER WIRE, A SEPARATE PIECE OF TRACER WIRE (I.E. A BRANCH WIRE) SHALL BE CONNECTED TO THE SERVICE TRACER WIRE WITH AN APPROVED CONNECTOR AND THEN DIRECTED UP THE OUTSIDE OF THE VALVE BOX (WHETHER TAPPING VALVE OR PROPERTY LINE VALVE IS USED) AND INSIDE THE GROMMET HOLE FOR ACCESS FROM THE SURFACE

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

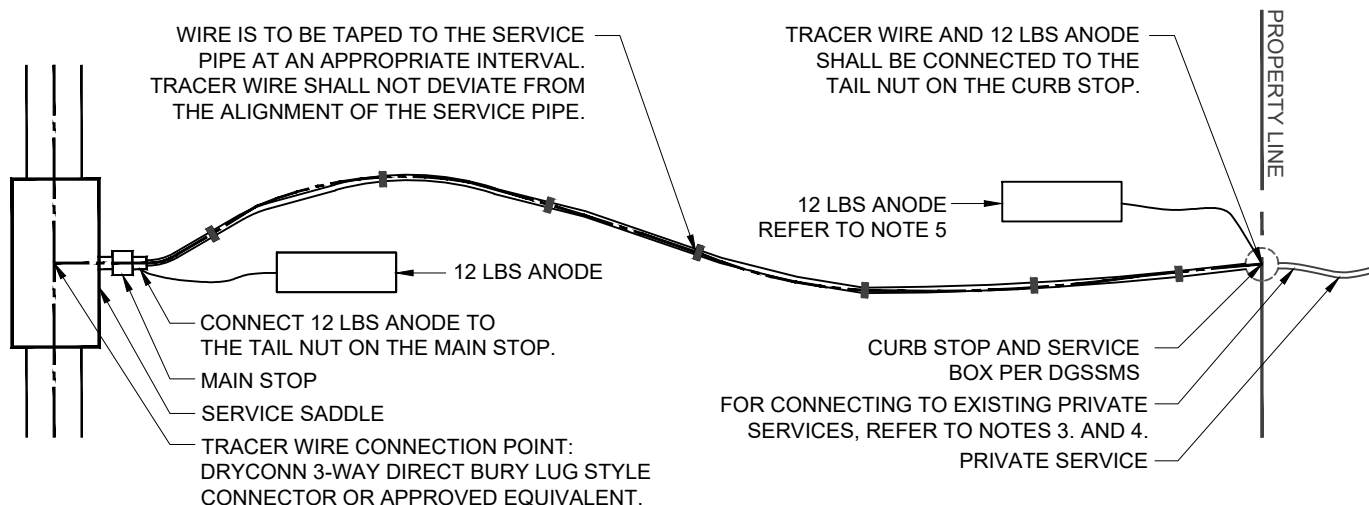
STANDARD DRAWING

REV 4

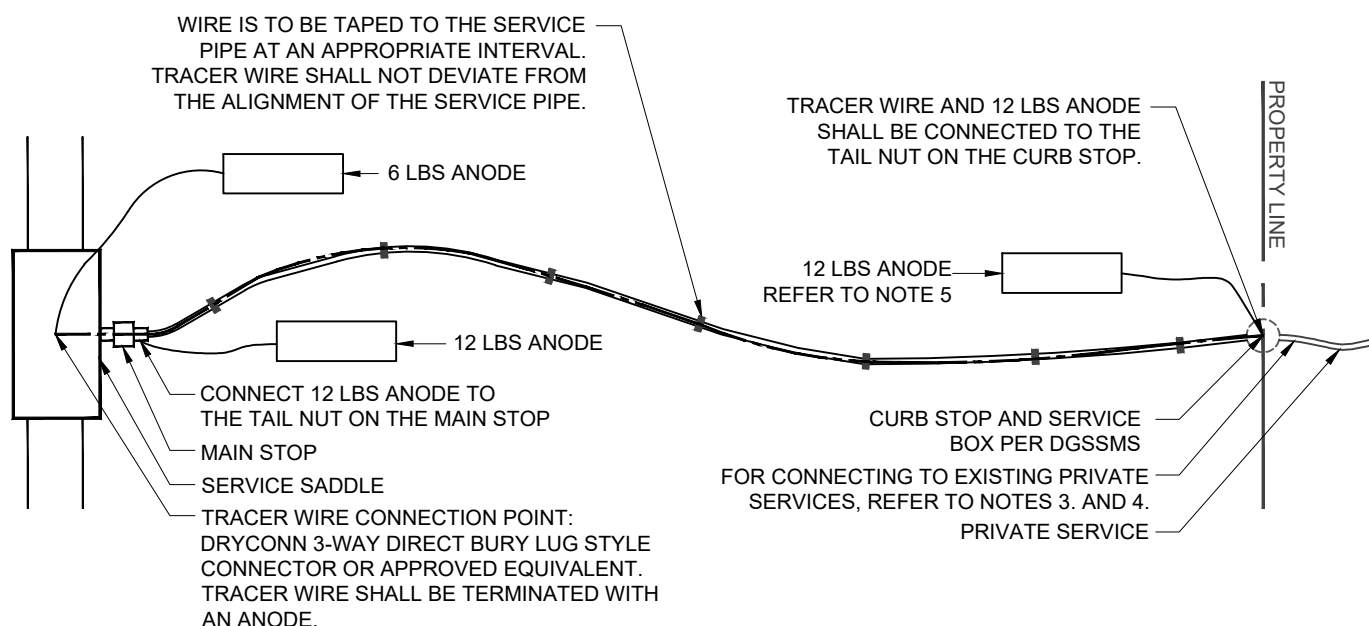
MAY 2023

TRACER WIRE - DETAIL #2 LARGE DIA. WATER SERVICES (≥ 100 mm)

THE CITY OF
Waterloo
CW-323



CONNECTION TO NEW NON-METALLIC WATERMAIN



NOTES:

CONNECTION TO EXISTING METALLIC WATERMAIN

1. REFER TO STANDARD DRAWING CW-321 FOR GENERAL OVERVIEW OF TRACER WIRE DETAIL.
2. REFER TO CONSTRUCTION SPECIFICATION FOR TRACER WIRE INSTALLATION IN THE CITY OF WATERLOO.
3. WHEN A REDUCER IS REQUIRED TO CONNECT TO AN EXISTING METALLIC SERVICE, THE SERVICE WILL BE EXTENDED FROM THE CURB STOP TO THE REDUCER USING COPPER PIPING.
4. IF THE EXISTING SERVICE IS NON-METALLIC AND A TRACER WIRE IS FOUND, IT SHALL BE EXTENDED (IF REQUIRED) USING A PIECE OF NEW 12 GAUGE AWG TRACER WIRE AND APPROVED CONNECTORS, AND ALSO CONNECTED TO THE TAIL NUT ON THE CURB STOP.
5. IF A METALLIC WATER SERVICE IS CONNECTED TO THE CURB STOP FROM THE PRIVATE SIDE, ATTACH A 12 LBS ANODE TO THE CURB STOP.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

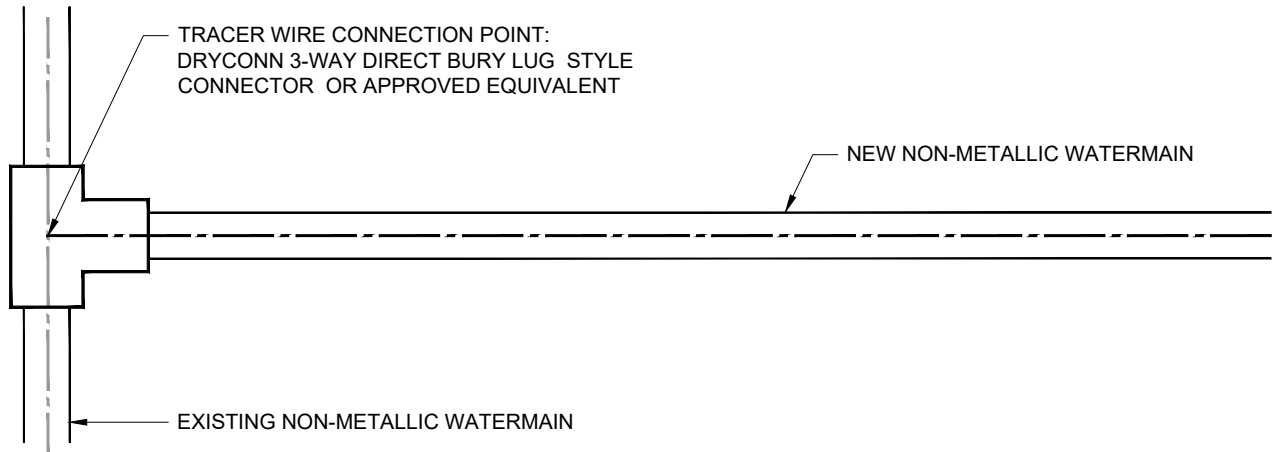
STANDARD DRAWING

REV 5

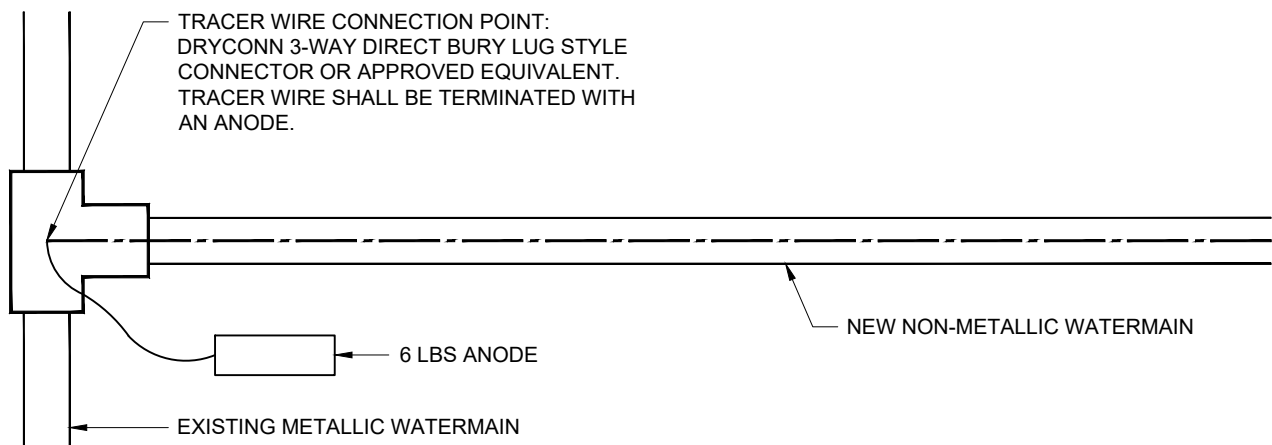
MAY 2023

TRACER WIRE - DETAIL #3 RESIDENTIAL WATER SERVICES (≤50 mm)

THE CITY OF
Waterloo
CW-324



CONNECTION TO EXISTING NON-METALLIC WATERMAIN



CONNECTION TO EXISTING METALLIC WATERMAIN

NOTES:

1. REFER TO STANDARD DRAWING CW-321 FOR GENERAL OVERVIEW OF TRACER WIRE DETAIL.
2. REFER TO CONSTRUCTION SPECIFICATION FOR TRACER WIRE INSTALLATION IN THE CITY OF WATERLOO.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

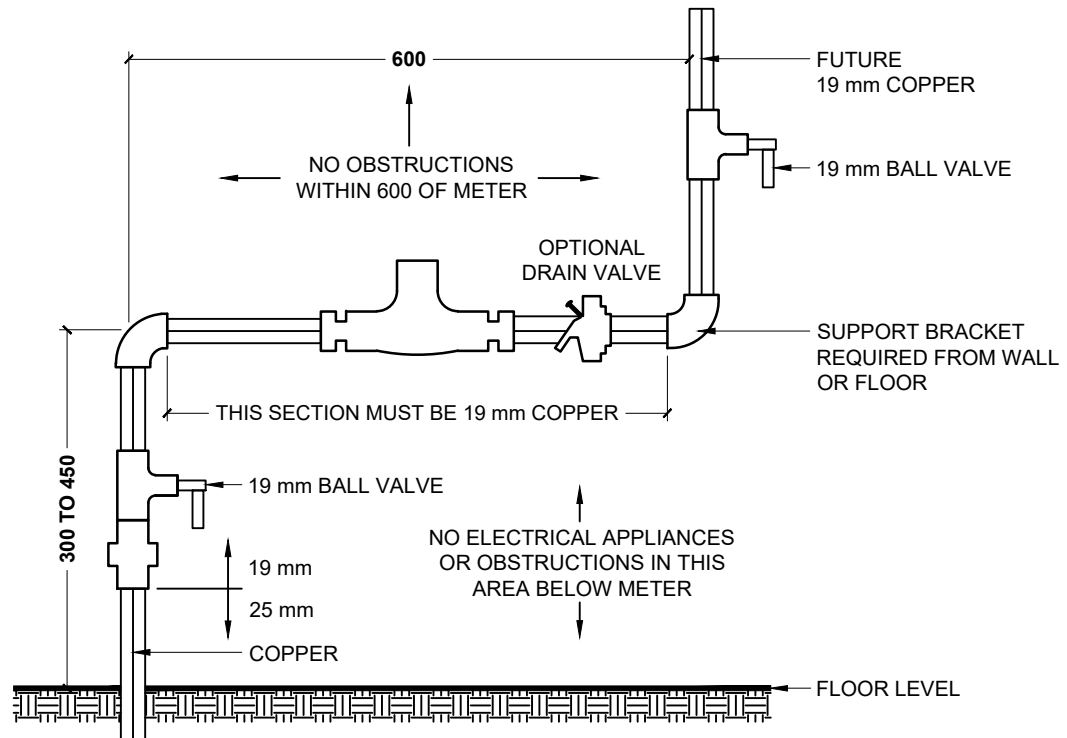
STANDARD DRAWING

REV 3

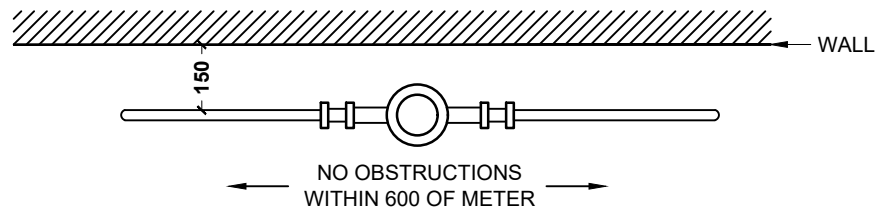
MAY 2023

**TRACER WIRE - DETAIL #4
CONNECTIONS TO EXISTING WATERMAINS**

THE CITY OF
Waterloo
CW-325



ELEVATION VIEW



PLAN VIEW

NOTES:

1. METER TO BE INSTALLED BY BUILDER/PLUMBER WITHIN 1 m FROM WHERE THE WATER SERVICE ENTERS THE DWELLING.
2. BRING 25 mm COPPER SERVICE INTO ALL RESIDENTIAL DWELLINGS AND REDUCE TO 19 mm COPPER AT THE FIRST STOP.
3. ALL METERS MUST BE ACCESSIBLE FOR READING AND MAINTENANCE FUNCTIONS. ANY OBSTRUCTIONS WILL BE BASIS FOR TERMINATION OF THE WATER SUPPLY.
4. ALL METERS ARE MARKED WITH A WATER FLOW DIRECTIONAL ARROW. PLEASE MAKE SURE ARROW CORRESPONDS WITH WATER FLOW.
5. REMOVE COUPLINGS & GASKETS FROM METER BEFORE SOLDERING, HEAT WILL DAMAGE THE INTERIOR OF THE METER.
6. ALL METER SETTINGS MUST HAVE A SHUT OFF VALVE BEFORE AND AFTER THE METER.
7. ALL METERS MUST BE INSTALLED USING THE SUPPLIED METER COUPLINGS AND GASKETS. NO OTHER MATERIAL WILL BE ACCEPTED.
8. NO CONNECTIONS SUCH AS BUT NOT LIMITED TO, CHECK VALVES, PRESSURE REDUCING VALVES, GAUGES PERMITTED UPSTREAM OF WATER METER.
9. FOLLOW WIRING DIRECTIONS THAT ARE PROVIDED WITH METER.
10. FOR ASSISTANCE CALL THE METER SHOP @ 519-886-2310 EXT 30250.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWING

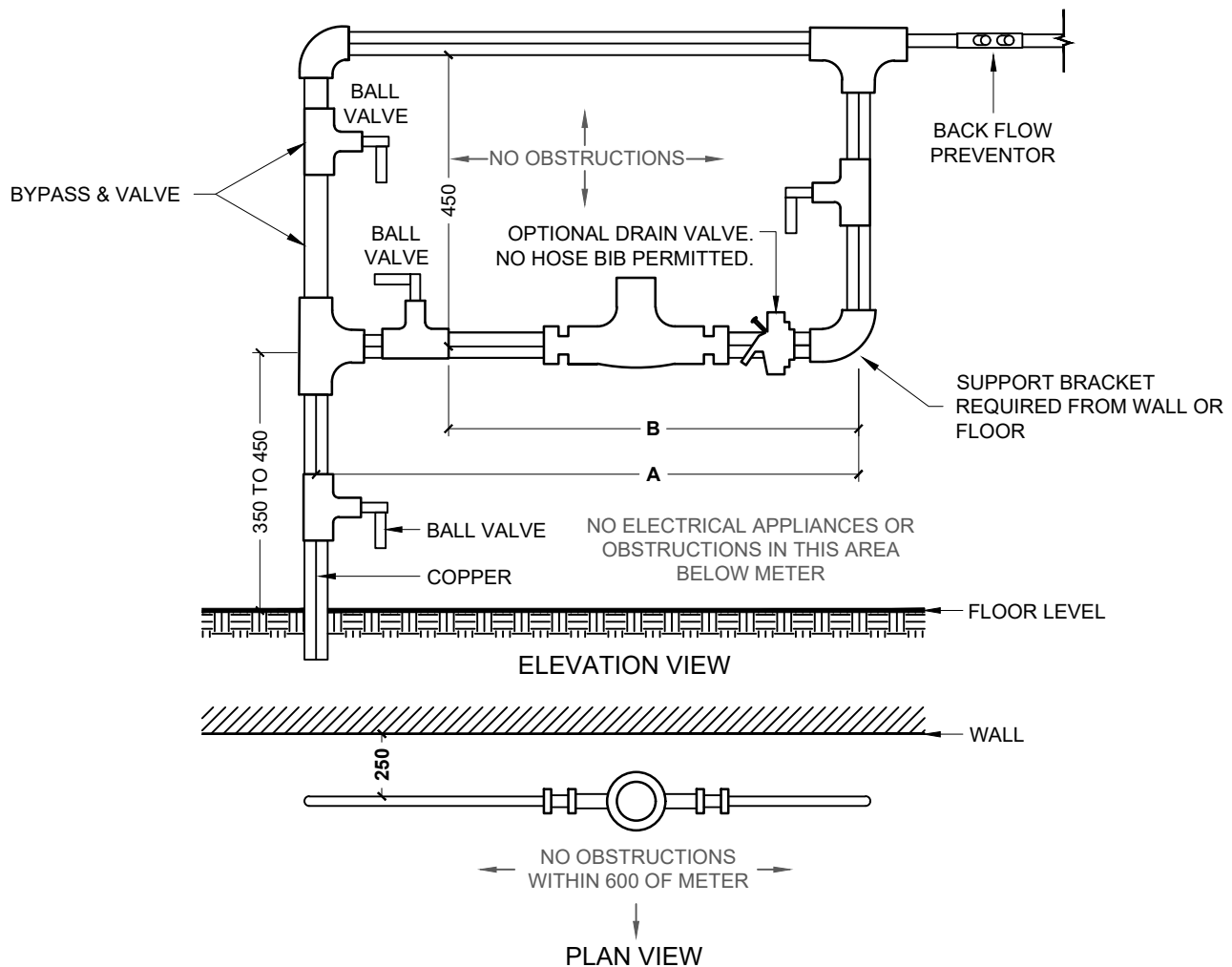
REV 1

MAY 2023

STANDARD 15mm METER ASSEMBLY DETAIL

THE CITY OF
Waterloo

CW-331



NOTES:

1. WATER METERS ARE TO BE PICKED UP AT:

*THE CITY OF WATERLOO SERVICE CENTER
265 LEXINGTON CT. WATERLOO*

2. METER TO BE INSTALLED BY BUILDER/PLUMBER WITHIN 1 m FROM WHERE THE WATER SERVICE ENTERS THE DWELLING.
3. METER TO BE INSTALLED WITHIN 2.0 m FROM WHERE THE SERVICE ENTERS THE BUILDING.
4. ALL 38 mm AND LARGER METER INSTALLATIONS ARE REQUIRED TO HAVE A BYPASS & VALVE. FOR 25 mm METER INSTALLATIONS, CONTACT THE METER SHOP TO CONFIRM IF A BYPASS IS REQUIRED FOR YOUR SCENARIO.
5. ALL METERS MUST BE ACCESSIBLE FOR READING AND MAINTENANCE FUNCTIONS. ANY OBSTRUCTIONS WILL BE BASIS FOR TERMINATION OF THE WATER SUPPLY.
6. ALL METERS ARE MARKED WITH A WATER FLOW DIRECTIONAL ARROW. PLEASE MAKE SURE ARROW CORRESPONDS WITH WATER FLOW.
7. REMOVE COUPLINGS & GASKETS FROM METER BEFORE SOLDERING. HEAT WILL DAMAGE THE INTERIOR OF THE METER.
8. ALL METER SETTINGS MUST HAVE SHUT OFF BALL VALVES BEFORE AND AFTER THE METER.
9. ALL METERS MUST BE INSTALLED USING THE SUPPLIED METER COUPLINGS AND GASKETS. NO OTHER MATERIAL WILL BE ACCEPTED.
10. NO CONNECTIONS SUCH AS BUT NOT LIMITED TO CHECK VALVES, PRESSURE REDUCING VALVES, GAUGES PERMITTED UPSTREAM OF WATER METER.
11. BACKFLOW PREVENTION PREMISE VALVE (IF REQUIRED) MUST BE INSTALLED WITHIN 3.0 m OF THE WATER METER AND EXCESSIVE PIPING BETWEEN THESE DEVICES MUST BE LABELED "NO CONNECTION PERMITTED". BACKFLOW DEVICES TO BE INSTALLED IN ACCORDANCE WITH THE CITY'S BACKFLOW PREVENTION.
12. FOLLOW WIRING DIRECTIONS THAT ARE PROVIDED WITH METER.
13. FOR ASSISTANCE CALL THE METER SHOP @ 519-886-2310 EXT 30250.

SIZE OF METER	A	B
25mm	810 mm	560 mm
38mm	920 mm	660 mm
50mm	1000 mm	760 mm
75mm	1150 mm	860 mm

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWING

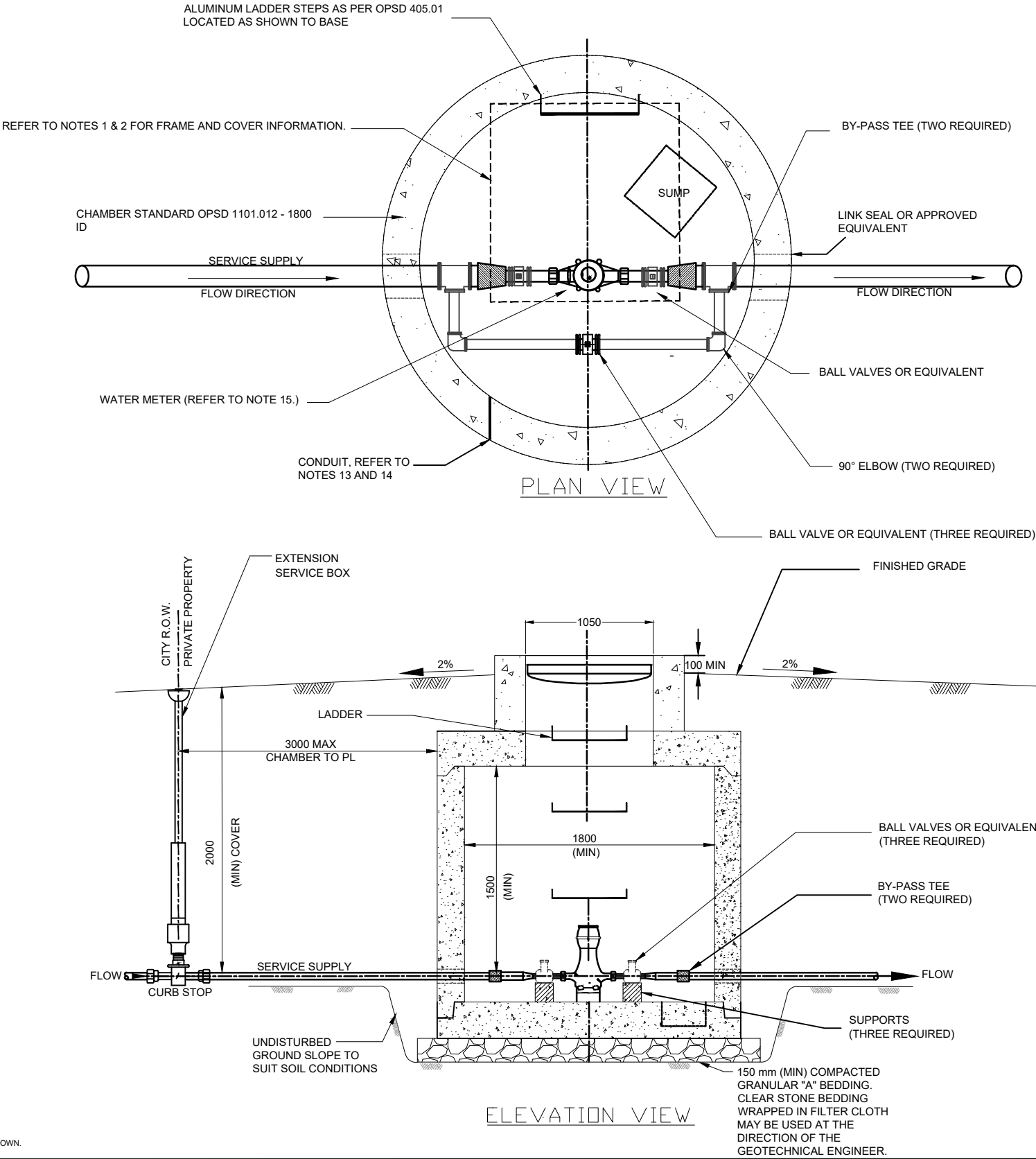
REV 1

MAY 2023

**STANDARD 25mm, 38mm, 50mm, 75mm
METER WITH BYPASS**

THE CITY OF
Waterloo

CW-332



NOTES:

1. CONCRETE CHAMBER AS PER OPSD 1108.010 OR PRECAST EQUIVALENT.
 - ADJUSTMENT UNITS FOR FRAME INSTALLATION WILL NOT BE PERMITTED, ONE PIECE CONSTRUCTION ONLY (MAX HEIGHT 1.0 m)
 - ONE PIECE ADJUSTMENT UNIT MUST EXTEND MINIMUM 100 mm TO MAXIMUM 300 mm ABOVE FINISHED GRADE.
 - FRAME TO BE POURED INTO CONCRETE RISER.
2. ACCESS FRAME MUST BE LOCKABLE WITH PADLOCK AND COVER SHALL BE BILCO TYPE J-AL (1050 mm x 1050 mm MIN.) OR APPROVED EQUIVALENT. DRAIN MUST BE INSTALLED TO ENSURE LOCK DOES NOT FREEZE. 2.0 m CLEARANCE TO BE MAINTAINED AROUND ENTRANCE FRAME.
3. CONCRETE CHAMBER TO BE APPROPRIATELY SIZED AND INSTALLED IN A LANDSCAPED AREA.
4. 350 mm CLEARANCE TO BE MAINTAINED FROM CHAMBER FLOOR.
5. CONCRETE SUPPORTS TO BE UNDER ALL VALVES AND METER.
6. BY-PASS LINE SIZE TO BE SAME SIZE AS THE METER LINE, BE IN CLOSED POSITION, AND SEALED BY THE CITY.
7. METER CHAMBER MUST BE WATERPROOF AND PROVIDED WITH A 300 mm x 300 mm x 250 mm (DEEP) SUMP.
8. NO CONNECTION FOR AN IRRIGATION SYSTEM OR OTHER TYPES OF EQUIPMENT ARE PERMITTED WITHIN CHAMBER.
9. IF A BACKFLOW DEVICE IS REQUIRED, A SEPARATE CHAMBER IS REQUIRED.
10. A FLUSH MOUNT ACCESS HATCH IS AN ACCEPTABLE INSTALLATION WITHIN A WALKWAY, PROVIDING A BILCO LU-2 GALVANIZED LADDERUP SAFETY POST IS INSTALLED AT THE ENTRANCE.
11. VEHICLES MAY NOT PARK WITHIN 2.0 m OF THE CHAMBER.
12. ALL NEW PIPE FITTINGS SHOULD BE RATED TO 150 PSI.
13. REMOTE READER TO BE MOUNTED INSIDE THE CHAMBER JUST BELOW THE LID. REMOTE READER AND WIRING WILL BE INSTALLED BY CITY UTILITIES.
14. IF THE ACCESS IS INSTALLED WITHIN A DRIVEWAY OR PARKING LOT, THE REMOTE READER IS TO BE MOUNTED ON A PERMANENT STRUCTURE WITHIN 5 m OF THE CHAMBER. REMOTE READER AND WIRING WILL BE INSTALLED BY CITY UTILITIES. THE CONTRACTOR IS TO INSTALL A 19 mm DIA. PVC CONDUIT WITH PULL STRING FROM THE CHAMBER TO THE STRUCTURE. THE CONDUIT IS TO BE TURNED UP THE SIDE OF THE STRUCTURE AND TEMPORARILY CAPPED A MIN. OF 300 mm ABOVE GRADE. CONDUIT & CONNECTIONS ARE TO BE IP68 RATED AND ALL BENDS ARE TO BE SWEEPING BENDS.
15. THE CITY INSTALLS METER UP TO AND INCLUDING 50 mm IN SIZE. TO ARRANGE FOR METER INSTALLATION CONTACT THE METER SHOP 519-886-2310 EXT . 30250

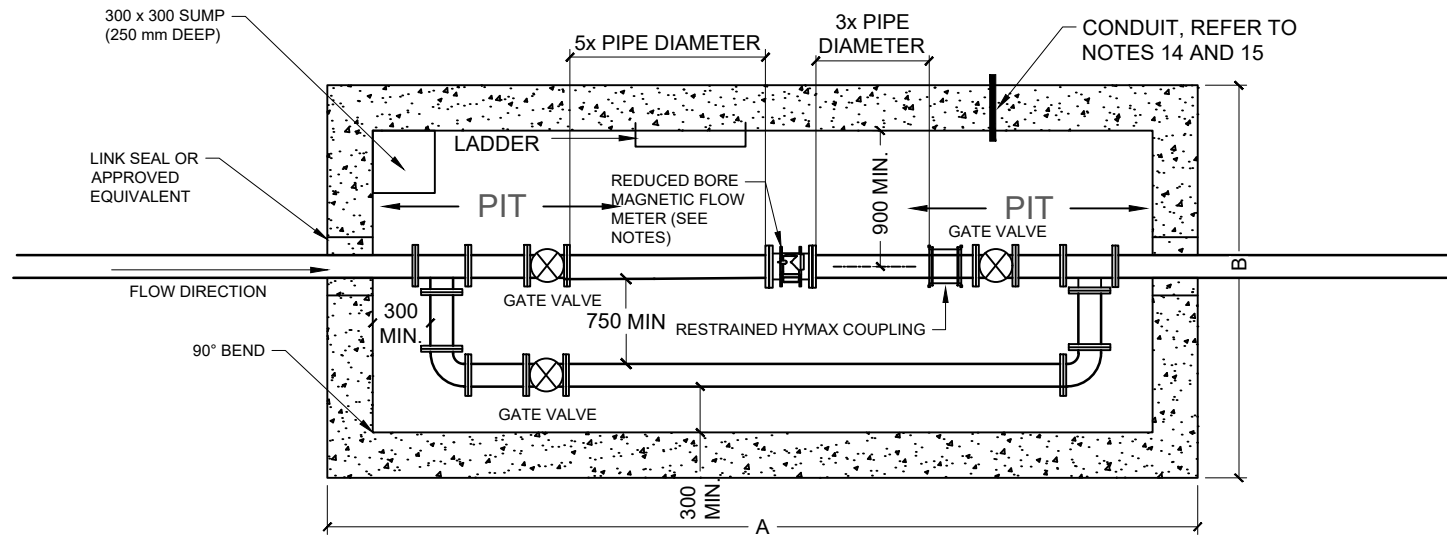
STANDARD DRAWINGS

25mm - 50mm INLINE FLOW WATER METER CHAMBER

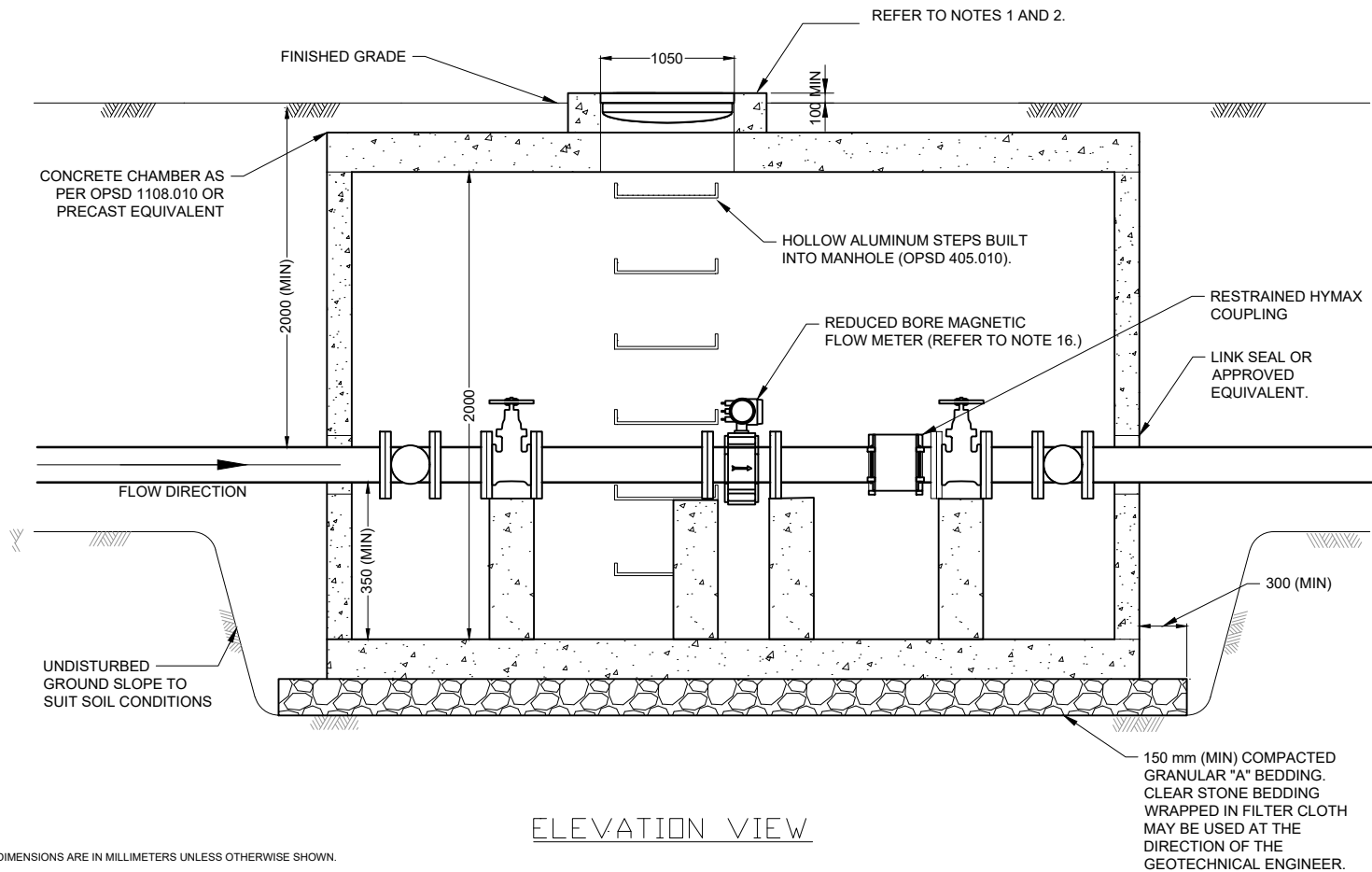
REV. 1 MAY 2023



CW-333



PLAN VIEW



ELEVATION VIEW

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

PIPE SIZE	MINIMUM INTERIOR DIMENSIONS	
	A (m)	B (m)
75 mm AND 100 mm	3.900	2.400
150 mm	4.500	2.400
200mm	5.700	2.400
250 mm	6.300	2.700
300 mm	6.600	2.700
GREATER THAN 300 mm	DESIGNED TO SUIT	

NOTES:

- CONCRETE CHAMBER AS PER OPSD 1108.010 OR PRECAST EQUIVALENT.
 - ADJUSTMENT UNITS FOR FRAME INSTALLATION WILL NOT BE PERMITTED, ONE PIECE CONSTRUCTION ONLY (MAX HEIGHT 1.0 m)
 - ONE PIECE ADJUSTMENT UNIT MUST EXTEND MINIMUM 100 mm TO MAXIMUM 300 mm ABOVE FINISHED GRADE.
 - FRAME TO BE POURED INTO CONCRETE RISER.
- ACCESS FRAME MUST BE LOCKABLE WITH PADLOCK AND COVER SHALL BE BILCO TYPE J-AL (1050 mm x 1050 mm MIN.) OR APPROVED EQUIVALENT. DRAIN MUST BE INSTALLED TO ENSURE LOCK DOES NOT FREEZE. 2.0 m CLEARANCE TO BE MAINTAINED AROUND ENTRANCE FRAME.
- CONCRETE CHAMBER TO BE APPROPRIATELY SIZED AND INSTALLED IN A LANDSCAPED AREA.
- 350 mm CLEARANCE TO BE MAINTAINED FROM CHAMBER FLOOR.
- CONCRETE SUPPORTS TO BE UNDER ALL VALVES AND METER.
- BY-PASS LINE SIZE TO BE SAME SIZE AS THE METER LINE, BE IN CLOSED POSITION, AND SEALED BY THE CITY.
- METER CHAMBER MUST BE WATERPROOF AND PROVIDED WITH A 300 mm x 300 mm x 250 mm (DEEP) SUMP.
- NO CONNECTION FOR AN IRRIGATION SYSTEM OR OTHER TYPES OF EQUIPMENT ARE PERMITTED WITHIN CHAMBER.
- IF A BACKFLOW DEVICE IS REQUIRED, A SEPARATE CHAMBER IS REQUIRED.
- A FLUSH MOUNT ACCESS HATCH IS AN ACCEPTABLE INSTALLATION WITHIN A WALKWAY, PROVIDING A BILCO LU-2 GALVANIZED LADDERUP SAFETY POST IS INSTALLED AT THE ENTRANCE.
- VEHICLES MAY NOT PARK WITHIN 2.0 m OF THE CHAMBER.
- ALL NEW PIPE FITTINGS SHOULD BE RATED TO 200 PSI.
- FLANGE MATERIAL: AWWA C207 CLASS D RINGS.
- REMOTE READER TO BE MOUNTED INSIDE THE CHAMBER JUST BELOW THE LID. REMOTE READER AND WIRING WILL BE INSTALLED BY CITY UTILITIES.
- IF THE ACCESS IS INSTALLED WITHIN A DRIVEWAY OR PARKING LOT, THE REMOTE READER IS TO BE MOUNTED ON A PERMANENT STRUCTURE WITHIN 5 m OF THE CHAMBER. REMOTE READER AND WIRING WILL BE INSTALLED BY CITY UTILITIES. THE CONTRACTOR IS TO INSTALL A 19 mm DIA. PVC CONDUIT WITH PULL STRING FROM THE CHAMBER TO THE STRUCTURE. THE CONDUIT IS TO BE TURNED UP THE SIDE OF THE STRUCTURE AND TEMPORARILY CAPPED A MIN. OF 300 mm ABOVE GRADE. CONDUIT & CONNECTIONS ARE TO BE IP68 RATED AND ALL BENDS ARE TO BE SWEEPING BENDS.
- METERS LARGER THAN 50mm IN SIZE ARE PROVIDED BY WATER SERVICES AT THE DEVELOPER'S COST. DEVELOPER'S CONTRACTOR WILL INSTALL ALL LARGER METERS AS SOON AS POSSIBLE AND ENSURE CITY INSPECTION OF INSTALLATION CONTACT THE METER SHOP @519-886-2310 EXT. 30250 TO ARRANGE FOR PURCHASE AND PICK UP OF METER.

STANDARD DRAWINGS

75mm-300mm INLINE FLOW WATER METER CHAMBER

REV. 1

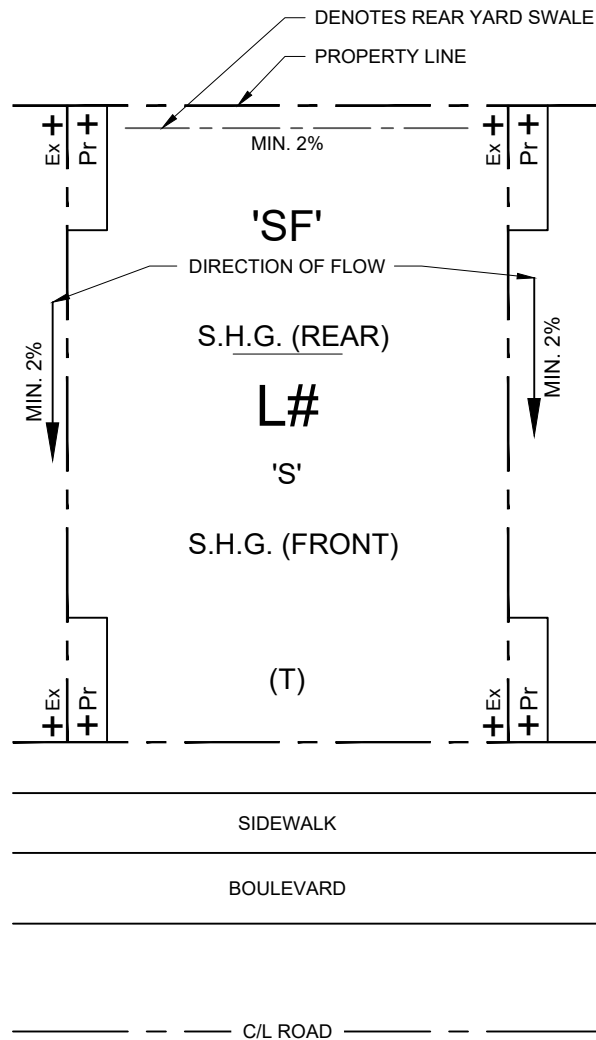
MAY 2023



CW-334

LEGEND:

Pr	PROPOSED ELEVATION
Ex	EXISTING ELEVATION
T	DRAINAGE TYPE A, B, C OR D
S.H.G.	SPECIFIC HOUSE GRADE
L#	LOT NUMBER
SF	REQUIREMENT FOR STRUCTURAL FILL (IF APPLICABLE)
S	SEMI-DETACHED (IF APPLICABLE)



NOTES:

1. FOR TYPE B & C LOTS SHOW S.H.G. AT THE FRONT AND REAR. INDICATE A 3:1 EMBANKMENT.
2. S.H.G. SPECIFIED HOUSE GRADE IS THE FINISHED GROUND ELEVATION AT THE FOUNDATION WALL.
3. TOP OF FOUNDATION WALL MUST BE A MINIMUM OF 150 mm ABOVE S.H.G.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWING

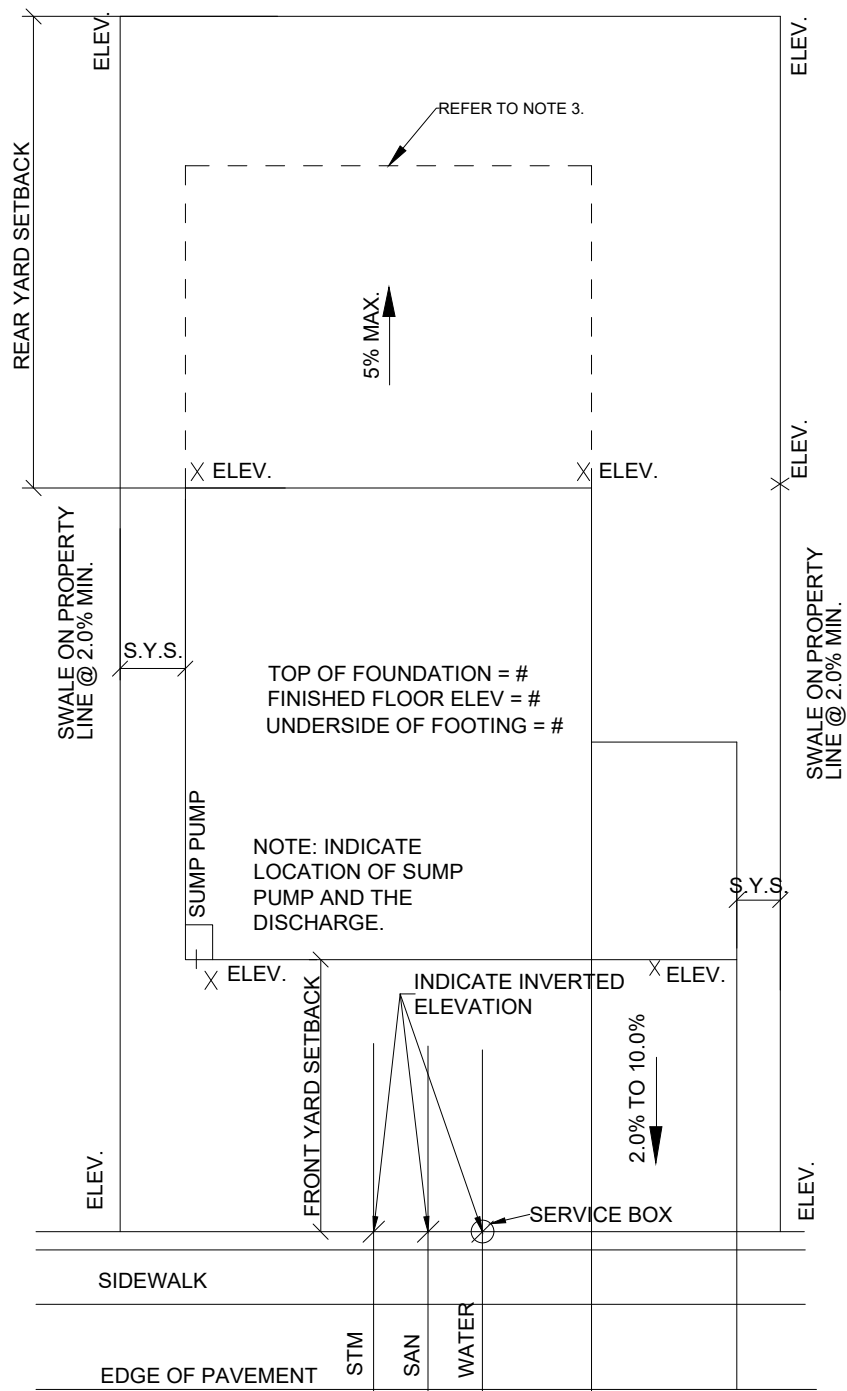
REV 1

MAY 2023

**TYPICAL LEGEND FOR
GRADING CONTROL PLAN**

THE CITY OF
Waterloo

CW-401



NOTES:

1. LOTS WHICH REQUIRE THE FOLLOWING ITEMS SHALL INCLUDE THE APPROPRIATE ACRONYMS SHOWN WITHIN THE BUILDING FOOT PRINT:
- STRUCTURAL FILL = "SF"
- PRESSURE REDUCING VALVES = "PRV"
2. IF AN INFILTRATION GALLERY IS PROPOSED, THE LOCATION AND APPROXIMATE SIZE SHALL BE INDICATED ON THE PLAN AND LABELED "INFL".
3. MINIMUM REAR YARD USEABLE AREA IS 6M FROM THE REAR OF THE HOUSE AT A MAXIMUM SLOPE OF 5% OR A MINIMUM AREA OF 56m².
4. DRIVEWAY SHALL BE A MINIMUM 1.2m FROM ANY STREET FURNITURE.

NOTES:

1. ELEVATIONS (ELEV.) SHOULD BE GIVEN AT ALL BREAK POINTS OR WHERE OTHERWISE INDICATED.
2. THE GRADING TYPE AND FEATURES MUST BE INDICATED.
3. ALL SETBACKS AND HOUSE DIMENSIONS MUST BE SHOWN.

LOT-DEVELOPMENT PLAN	PREPARED BY	NAME	APPROVED BY	NAME
MUNICIPAL ADDRESS		SIGNATURE		SIGNATURE
LOT No -	RP No -	COMPANY NAME	COMPANY NAME	DATE
		DATE		

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWING

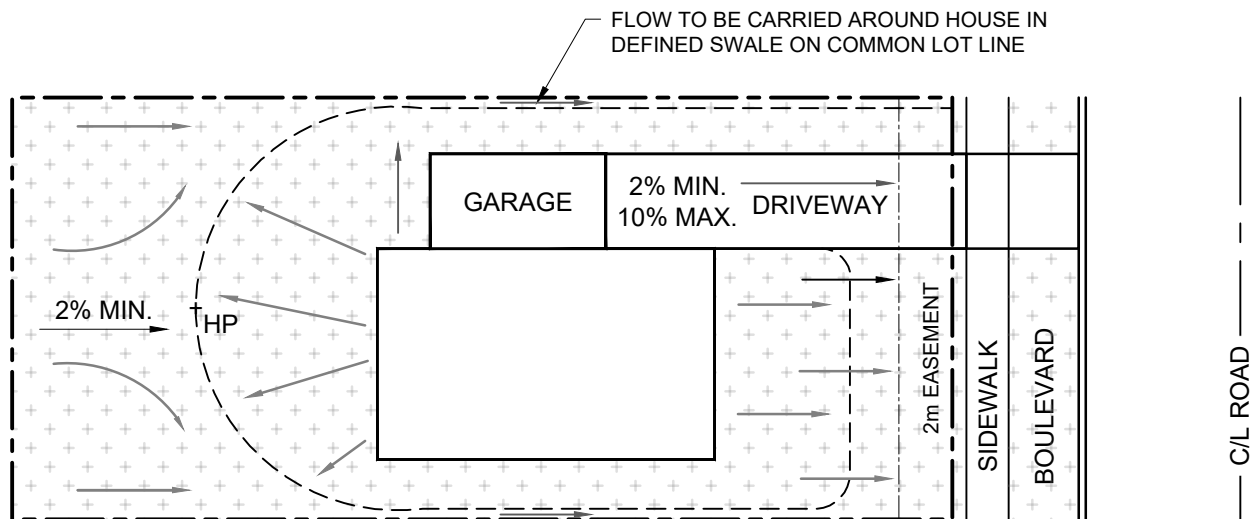
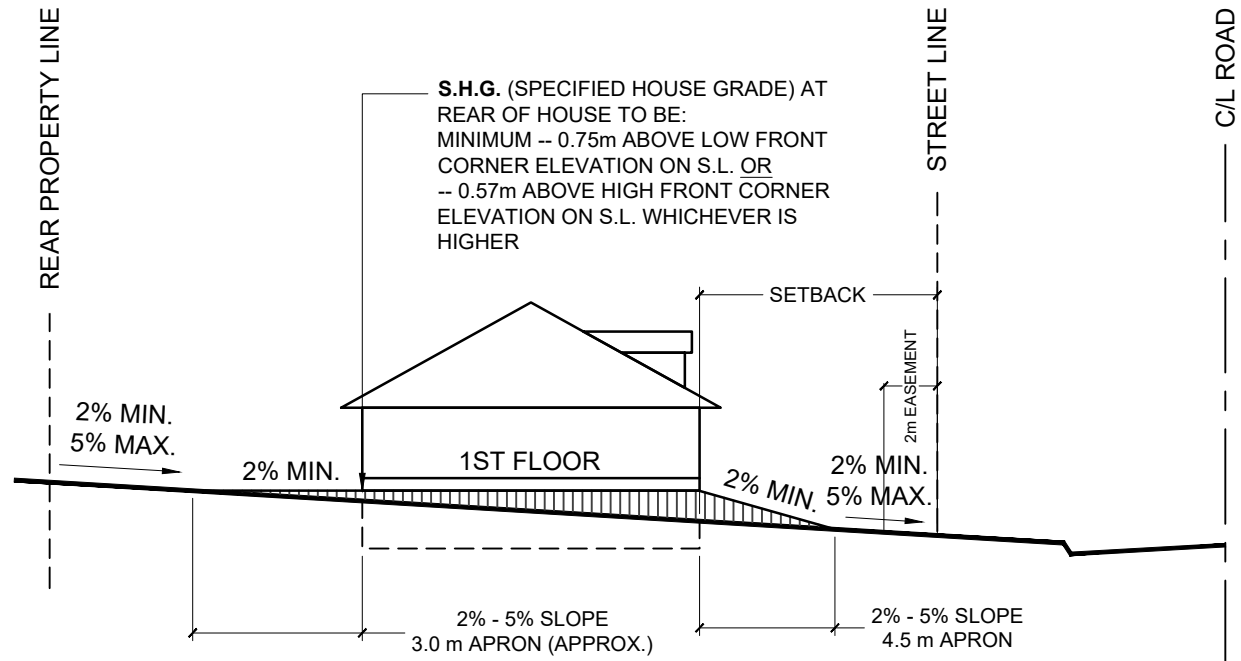
STANDARD LOT-DEVELOPMENT PLAN

REV 1

MAY 2023



CW-402



NOTES:

1. THIS STANDARD DRAWING MUST BE READ IN CONJUNCTION WITH THE GENERAL NOTES INCLUDED ON DRAWING W-321.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWING

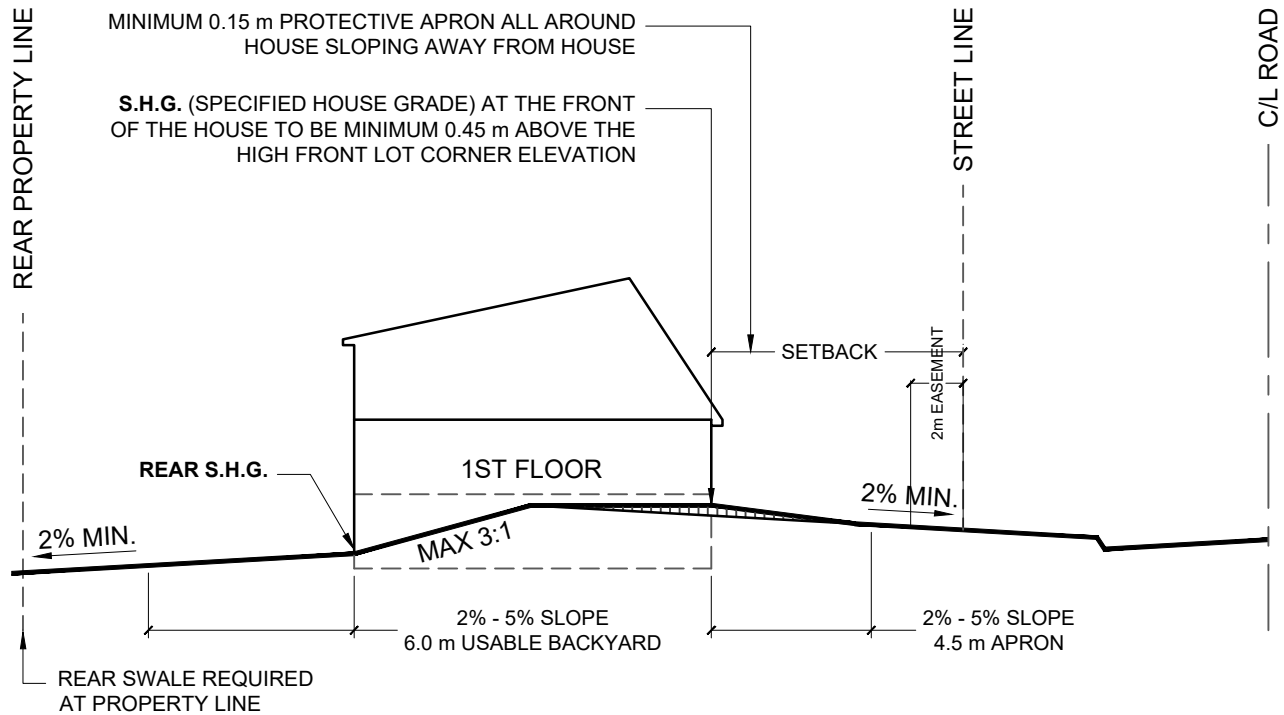
REV 1

MAY 2023

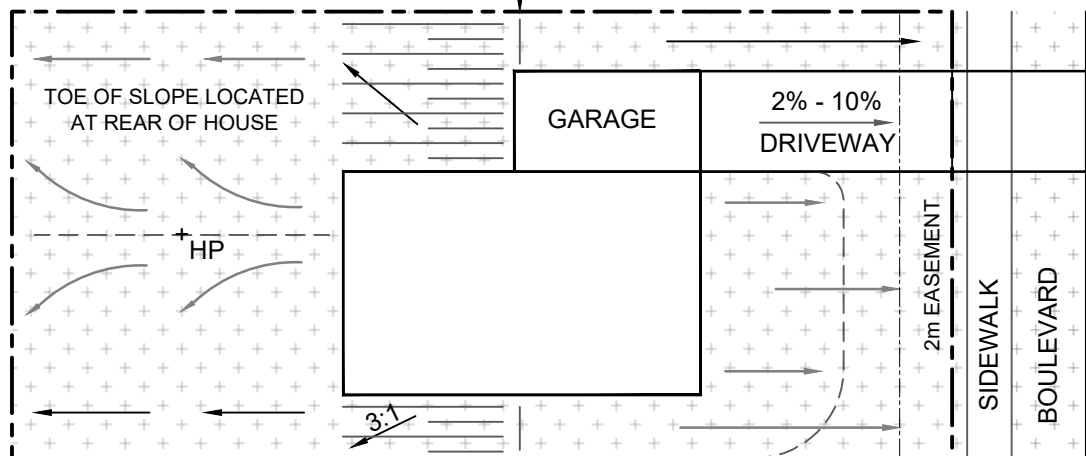
LOT DRAINAGE TYPE 'A'
REAR TO FRONT DRAINAGE

THE CITY OF
Waterloo

CW-411



LOCATION DETERMINED BY ELEVATION BEING 150 mm BELOW TOP OF LOWEST FOUNDATION



NOTES:

1. THIS STANDARD DRAWING MUST BE READ IN CONJUNCTION WITH THE GENERAL NOTES INCLUDED ON DRAWING NUMBER W-237. REFER TO DRAWING NUMBER W-320 FOR TYPICAL SWALE DETAIL.
2. "S.H.G." SPECIFIED HOUSE GRADE IS THE FINISH GRADE ELEVATION AT THE FOUNDATION WALL.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWING

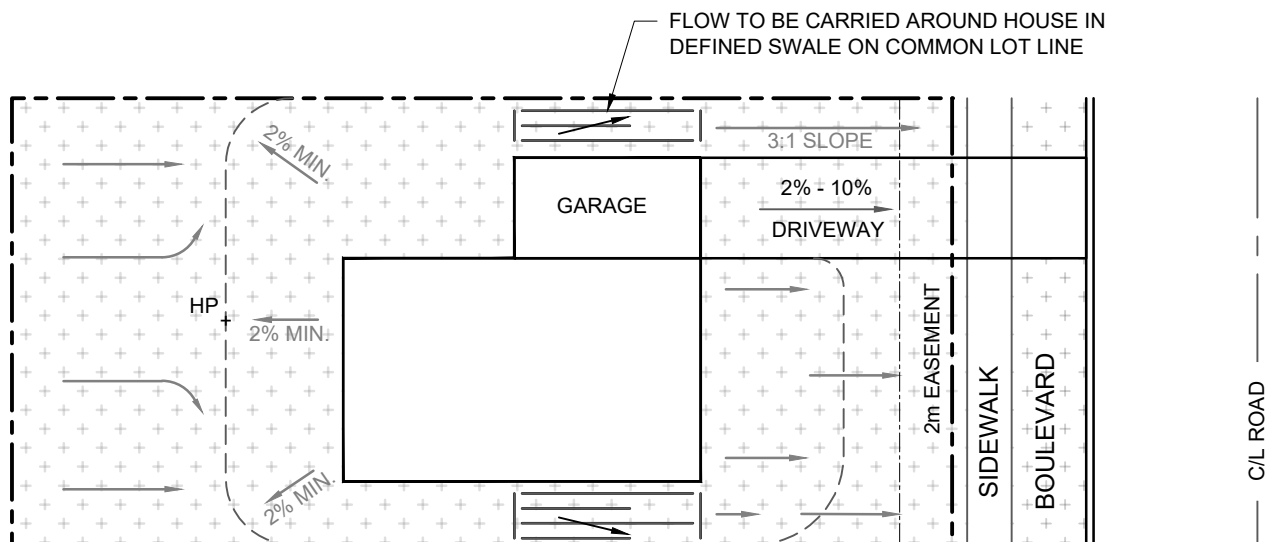
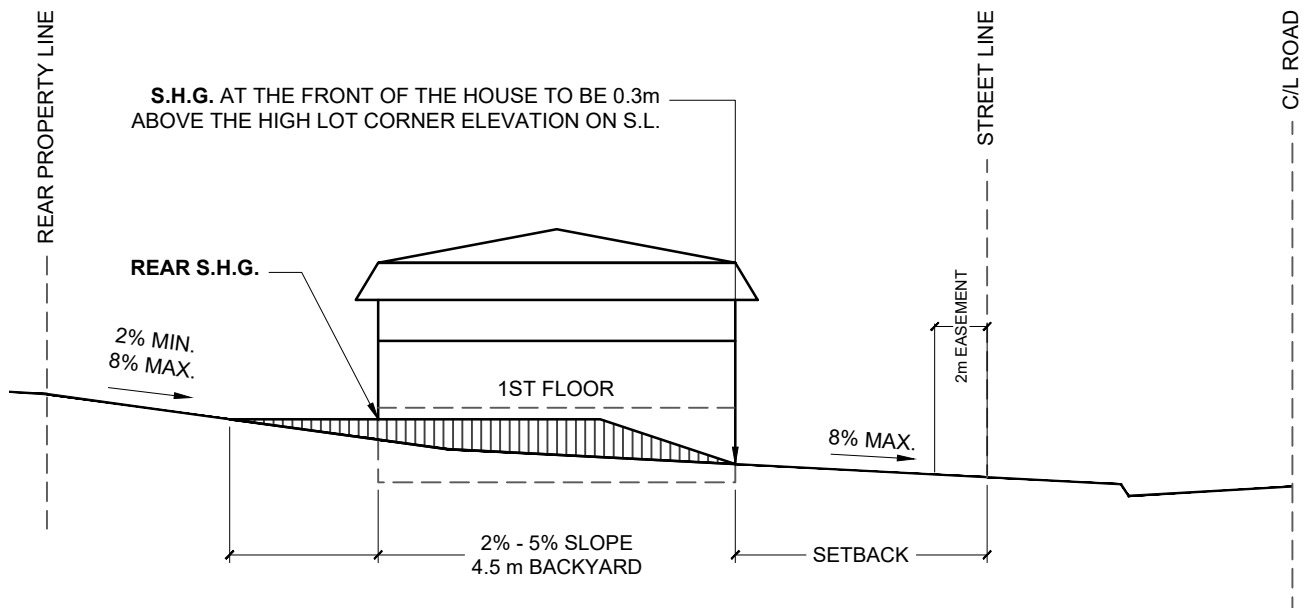
REV 1

MAY 2023

LOT DRAINAGE TYPE 'B' REAR WALKOUT / BACKSPLIT

THE CITY OF
Waterloo

CW-412



NOTES:

1. THIS STANDARD DRAWING MUST BE READ IN CONJUNCTION WITH THE GENERAL NOTES INCLUDED ON DRAWING NUMBER W-321.
2. "S.H.G." SPECIFIED HOUSE GRADE IS THE FINISH GRADE ELEVATION AT THE FOUNDATION WALL.
3. MINIMUM 0.15 m PROTECTIVE APRON ALL AROUND HOUSE SLOPING AWAY FROM HOUSE
4. THE STANDARD DIFFERENCE IN THE S.H.G. BETWEEN THE FRONT AND REAR OF THE HOUSE IS 1.2m FOR A FRONT SPLIT AND 2.1m FOR A WALKOUT TYPE HOUSE.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWING

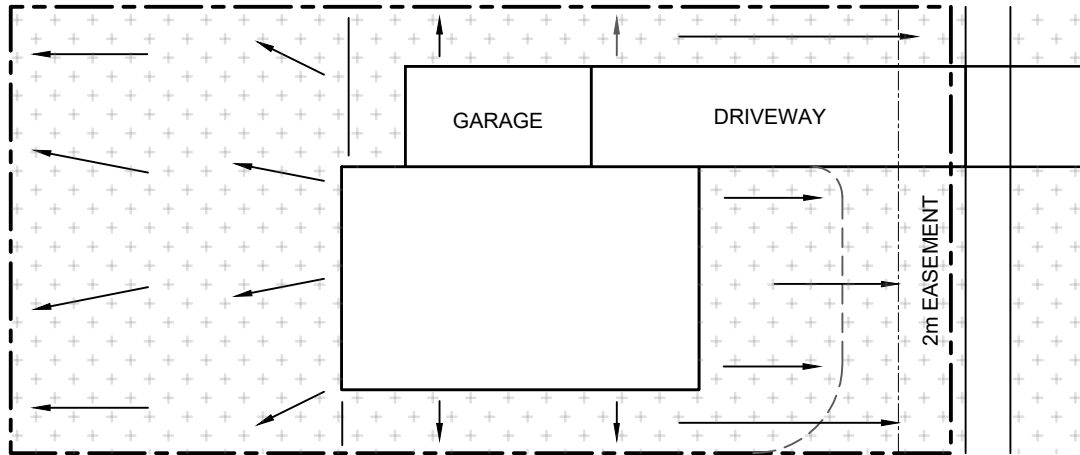
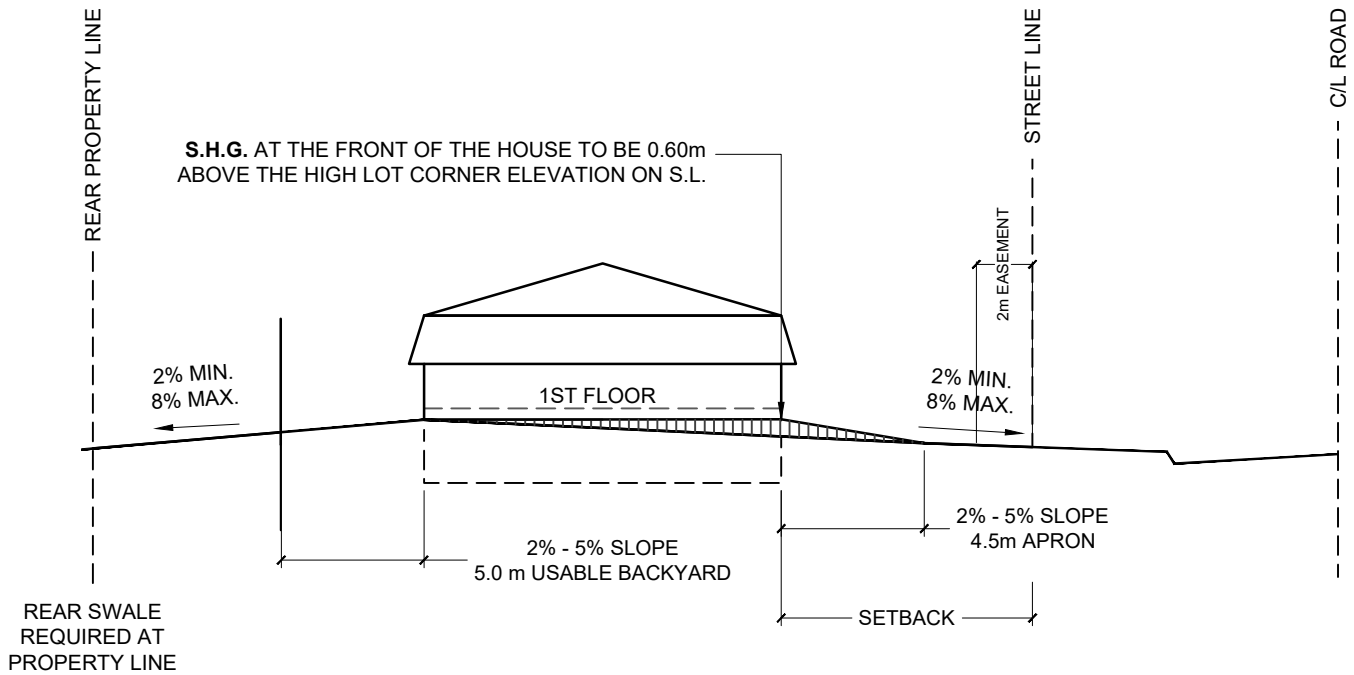
REV 1

MAY 2023

LOT DRAINAGE TYPE 'C' FRONT WALKOUT

THE CITY OF
Waterloo

CW-413



NOTES:

1. THIS STANDARD DRAWING MUST BE READ IN CONJUNCTION WITH THE GENERAL NOTES INCLUDED ON DRAWING NUMBER W-321.
2. "S.H.G." SPECIFIED HOUSE GRADE IS THE FINISH GRADE ELEVATION AT THE FOUNDATION WALL.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWING

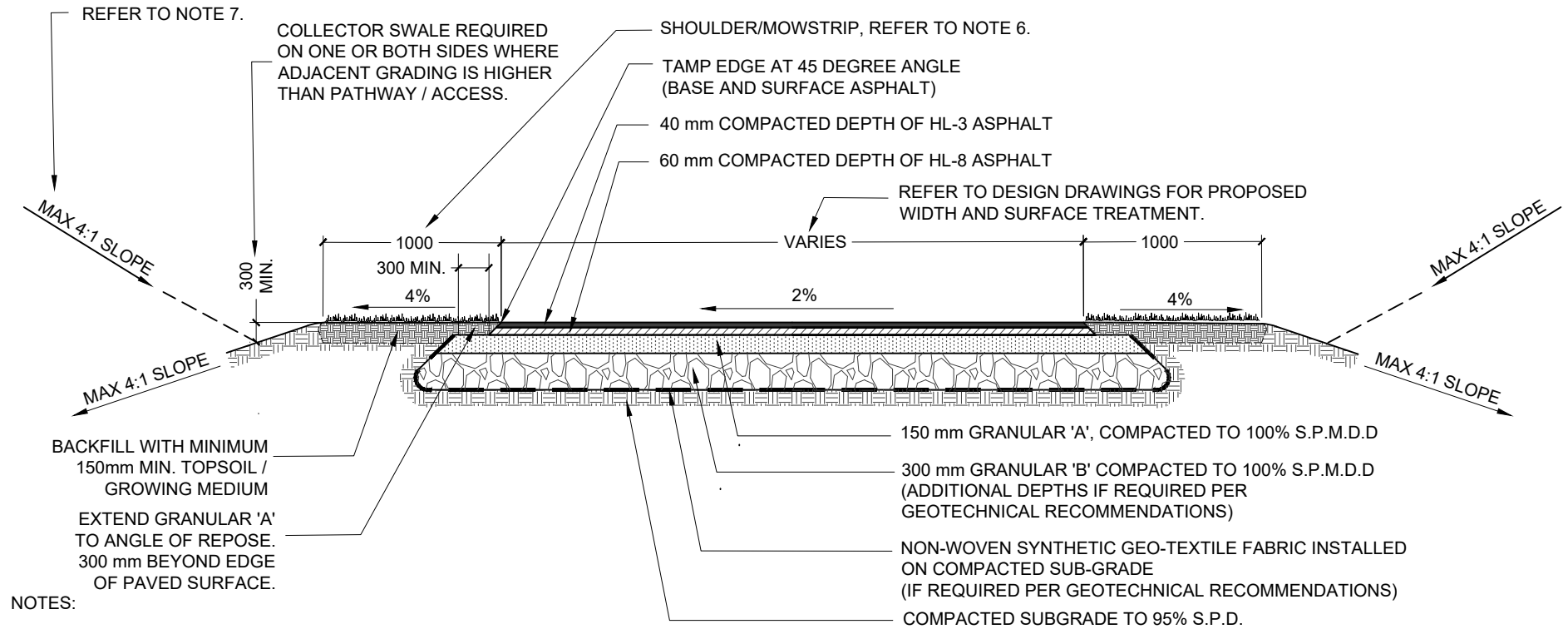
REV 1

MAY 2023

LOT DRAINAGE TYPE 'D'
SPLIT DRAINAGE

THE CITY OF
Waterloo

CW-414



NOTES:

1. GEOTECHNICAL RECOMMENDATION IS REQUIRED. PROVIDE ADDITIONAL GRANULAR MATERIAL, TESTING, AND REPORTING RECOMMENDATIONS. RECOMMENDATION FOR ASPHALT MIX DESIGN TO BE APPROVED BY CITY.
2. WHEN A STONDEUST PATHWAY IS SPECIFIED, REPLACE ASPHALT WITH 50mm DEPTH OF STONEDUST COMPACTED TO 100% S.P.D.D.
3. ENSURE POSITIVE DRAINAGE ON ASPHALT OR STONEDUST SURFACE. WATER MUST NOT BE COLLECTED AND CONVEYED ALONG ASPHALT OR STONEDUST SURFACE.
4. PATH / TRAIL / ACCESS WIDTH IS DEPENDENT ON VEHICLE ACCESS AND WINTER MAINTENANCE REQUIREMENTS.
5. REFER TO OPSS 1150 AND OPSS 501.
6. MOWSTRIP TREATMENT TO BE APPROPRIATE FOR ADJACENT/SITE CONDITIONS. IE. SOD IN MANICURED AREAS, PARKS AND BOULEVARDS AND / 'LOW MOW' SEED MIX IN AREAS WHICH DO REQUIRE REGULAR MAINTENANCE. NATIVE SEED MIX REQUIRED WHERE ADJACENT TO NATURALIZED AREAS.
7. SIDE SLOPES TO BE MAX. 4:1 IN MANICURED AND MAINTAINED AREAS. MAX. 3:1 IS PERMITTED IN NATURALIZED AREAS.
8. THE CROSS SECTION MAY BE REVISED TO HAVE A CROWNED CENTERLINE AS REQUIRED FOR SITE SPECIFIC CONDITIONS.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWING

REV 1

MAY 2023

ASPHALT MULTI-USE-PATH / TRAIL AND MAINTENACE
ACCESS DETAIL

THE CITY OF
Waterloo

CW-501

1.5m HIGH BLACK VINYL
CHAINLINK FENCE INSTALLED
150mm FROM PROPERTY LINE.
REFER TO C.O.W. STANDARD
DRAWING CW-805.

REFER TO DESIGN DRAWINGS FOR PROPOSED
WIDTH AND SURFACE TREATMENT.

VARIES

150

150

1500

TAMP EDGE AT 45
DEGREE ANGLE
(BASE AND SURFACE
ASPHALT)

40 mm COMPACTED
DEPTH OF HL-3
ASPHALT

60 mm COMPACTED
DEPTH OF HL-8
ASPHALT

2%

150 mm GRANULAR 'A', COMPACTED TO 100%
S.P.M.D.D.

300 mm GRANULAR 'B' COMPACTED TO 100% S.P.D.
(ADDITIONAL DEPTHS IF REQUIRED PER
GEOTECHNICAL RECOMMENDATIONS)

NON-WOVEN SYNTHETIC GEO-TEXTILE FABRIC INSTALLED
ON COMPACTED SUB-GRADE
(IF REQUIRED PER GEOTECHNICAL RECOMMENDATIONS)

COMPACTED SUBGRADE TO 95% S.P.D.

NOTES:

1. TYPICAL WALKWAY BLOCK IS 3000
2. TYPICAL EMERGENCY ACCESS BLOCK IS 6000
3. GEOTECHNICAL RECOMMENDATION IS REQUIRED. PROVIDE ADDITIONAL GRANULAR MATERIAL, TESTING, AND REPORTING RECOMMENDATIONS. RECOMMENDATION FOR ASPHALT MIX DESIGN TO BE APPROVED BY CITY.
4. ENSURE POSITIVE DRAINAGE ON WALKWAY / ACCESS. SURFACE WATER MUST NOT BE COLLECTED AND CONVEYED ALONG WALKWAY / ACCESS SURFACE.
5. EMERGENCY ACCESS BLOCKS REQUIRE BOLLARD GATES, REFER TO C.O.W. DOUBLE 1.8M BOLLARD GATE DETAIL, STANDARD DRAWING CW-522.
6. REFER TO OPSS 1150 AND OPSS 501.
7. THE CROSS SECTION MAY BE REVISED TO HAVE A CROWNED CENTRELINE AS REQUIRED FOR SITE SPECIFIC CONDITIONS.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWING

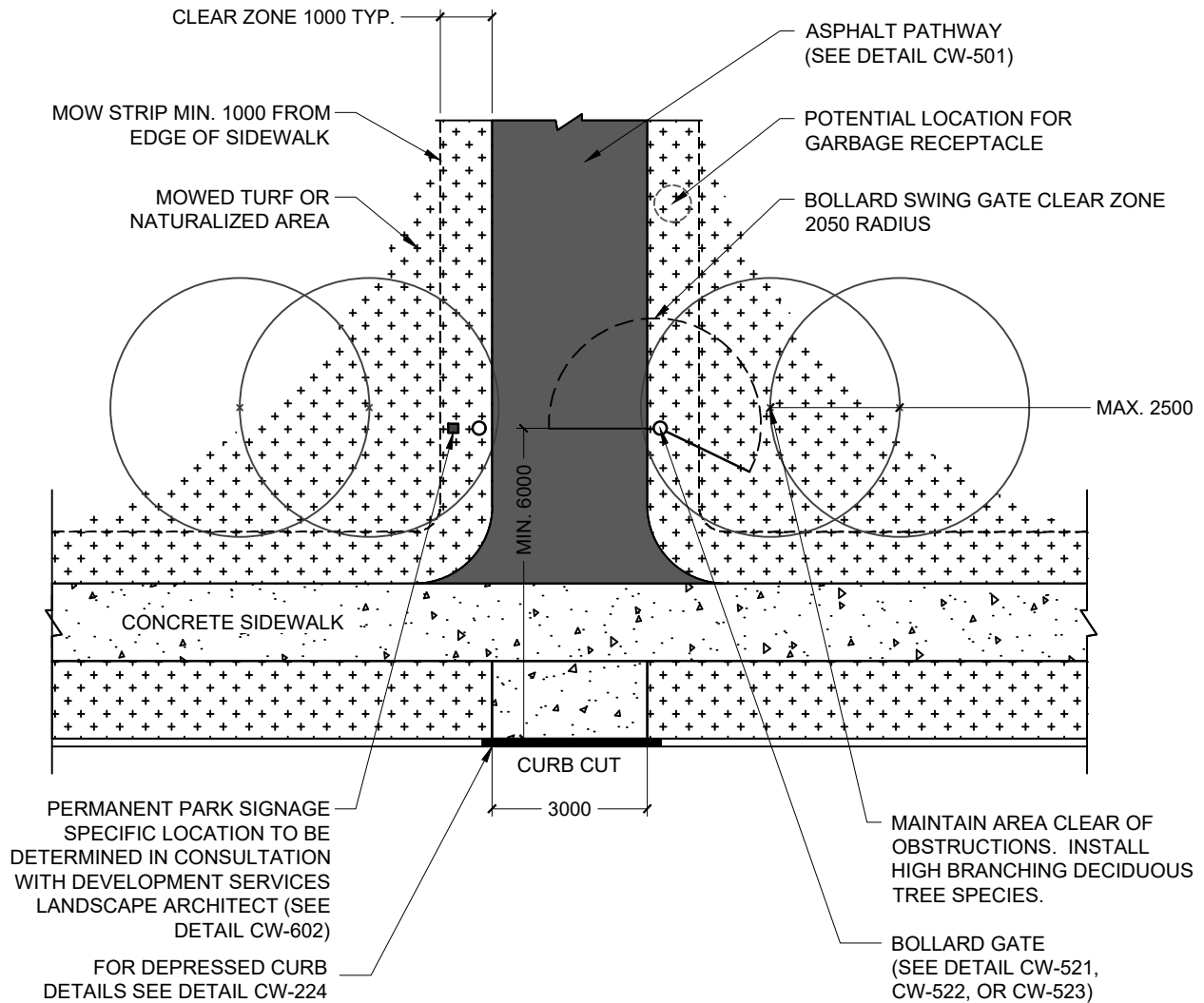
REV 1

MAY 2023

WALKWAY AND ACCESS BLOCK DETAIL

THE CITY OF
Waterloo

CW-502



NOTES:

1. SITE SPECIFICITY MAY REQUIRE ADDITIONAL TRAIL AMENITIES AT THE DISCRETION OF THE DEVELOPMENT SERVICES LANDSCAPE ARCHITECT.

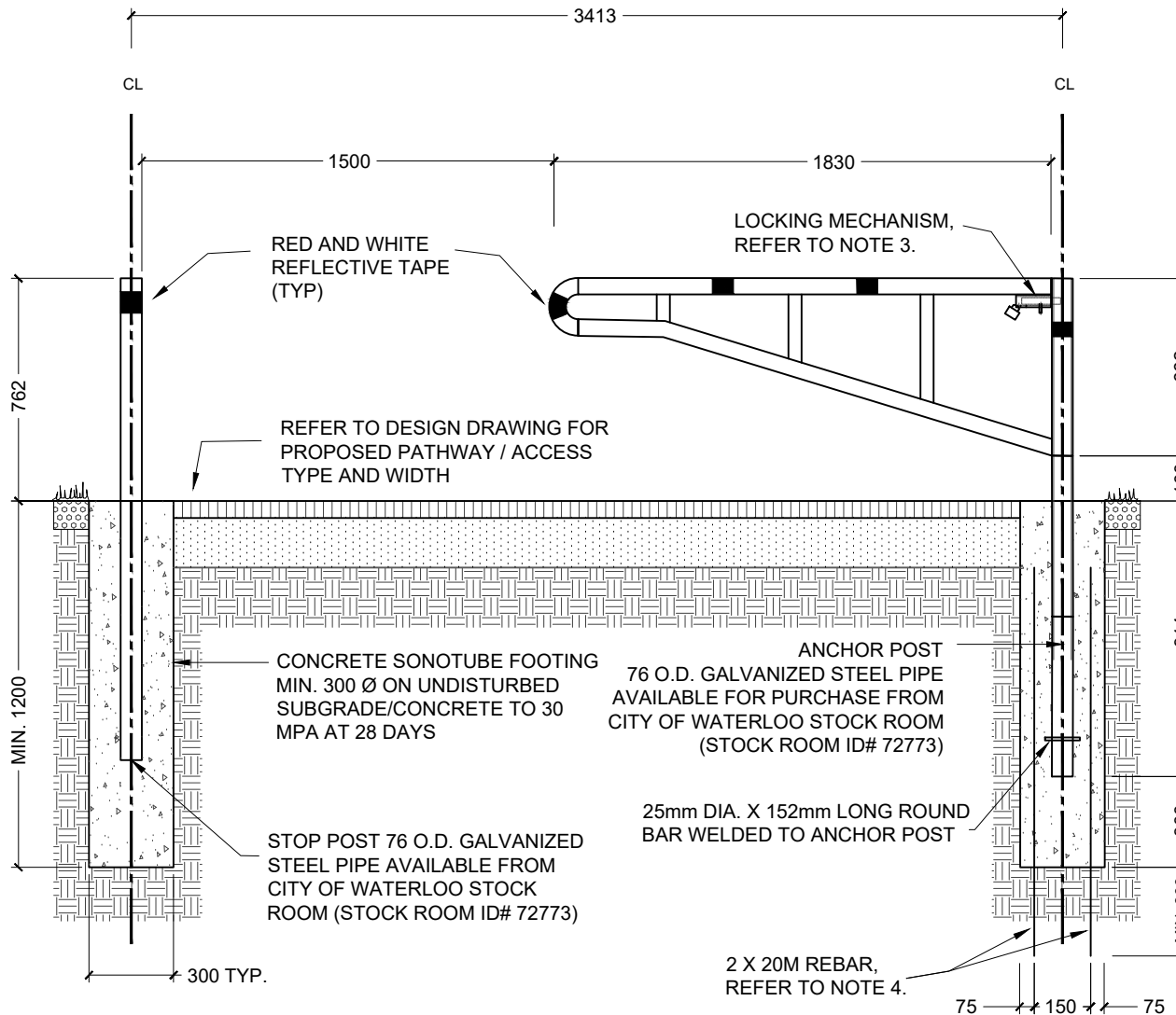
ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWING

REV 1

MAY 2023

PARK / OPEN SPACE ACCESS NODE LAYOUT



ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

NOTES:

1. BOLLARD GATE, LOCK, AND STOP POST AVAILABLE FOR PURCHASE FROM THE CITY OF WATERLOO STOCK ROOM. PHONE 519-747-8752 TO ORDER.
2. IF THE GATE IS NOT BEING PURCHASED FROM THE CITY, SHOP DRAWINGS OF THE GATE MUST BE SUBMITTED AND APPROVED PRIOR TO FABRICATION.
3. LOCKING MECHANISM TO BE A BARREL AND PIN STILE, COMPLETE WITH AN ABUS PADLOCK.
4. GATE RESTS ON 76 O.D. GALVANIZED POST. SLEEVE INTO 89 O.D. GALVANIZED GATE SLEEVE. BOTH POSTS REQUIRE 300 CONCRETE SONOTUBE FOOTINGS. ANCHOR POST FOOTING REQUIRES 2 X 20M REBAR DRIVEN MIN. 300 BELOW FOOTING TO MITIGATE ROTATION OF SONOTUBE.
5. DO NOT INSTALL GATE ONTO ANCHOR POST UNTIL THE CONCRETE HAS PROPERLY CURED. CLEAN AND REINSTATE AREAS AFFECTED BY WORKS.
6. ALL SWING GATES TO BE INSTALLED ON RIGHT-HAND SIDE AT ENTRY AND AT LEAST 2500 IN FROM SIDEWALK EDGE AND 6000 IN FROM CURB EDGE. GATES TO SWING AWAY FROM ROADWAY
7. CURB CUT REQUIREMENTS AT THE ROAD TO BE CONFIRMED WITH CITY STAFF.
8. FOR MULTI-USE-PATH / TRAIL AND MAINTENANCE ACCESS DETAILS REFER TO THE CITY OF WATERLOO DWG. CW-501
9. NOT FOR WALKWAY BLOCKS.

STANDARD DRAWING

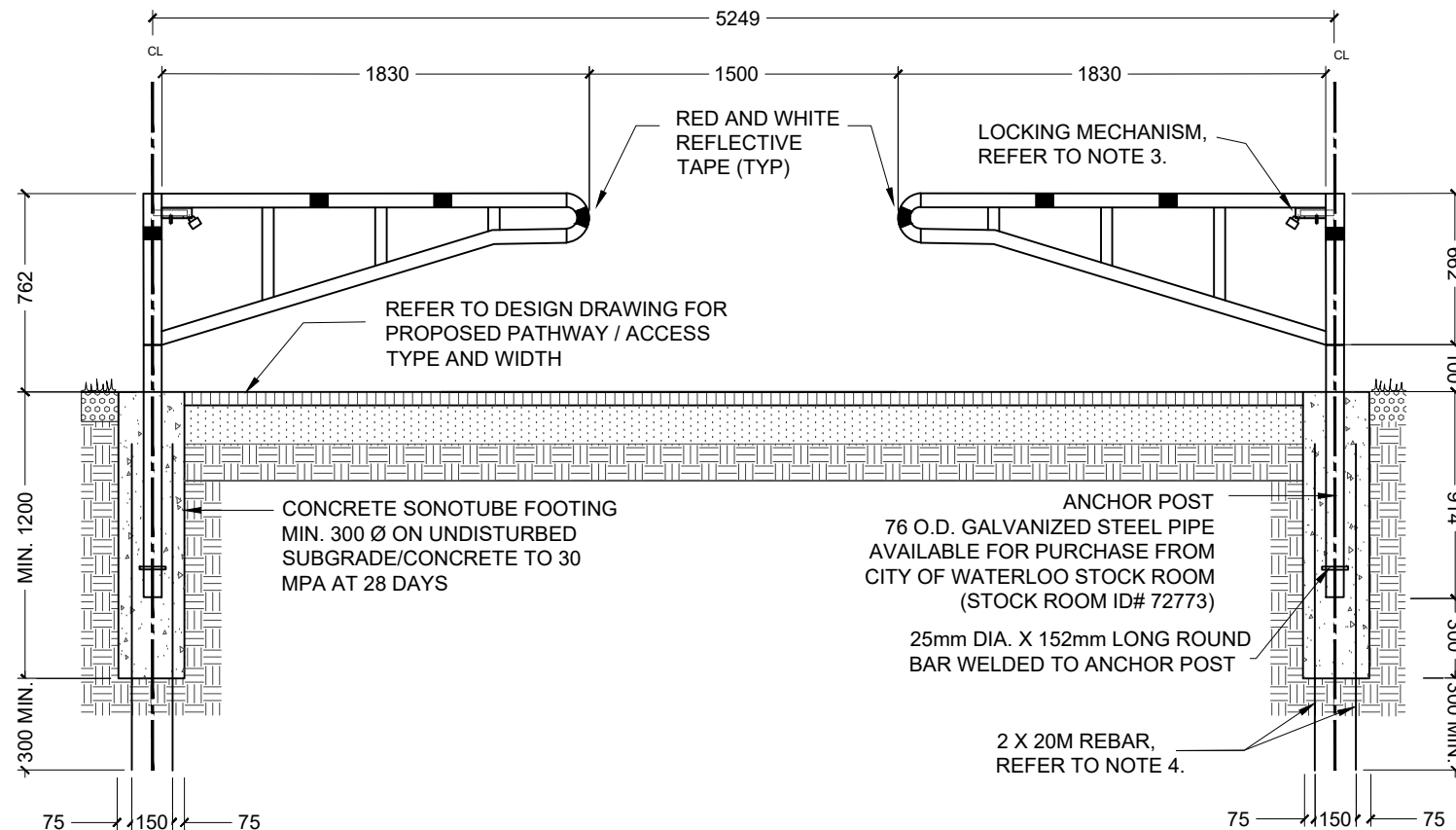
REV 1

MAY 2023

SINGLE 1.8m BOLLARD GATE DETAIL 3.0m & 4.0m WIDE PATHS / TRAILS

THE CITY OF 
Waterloo

CW-521

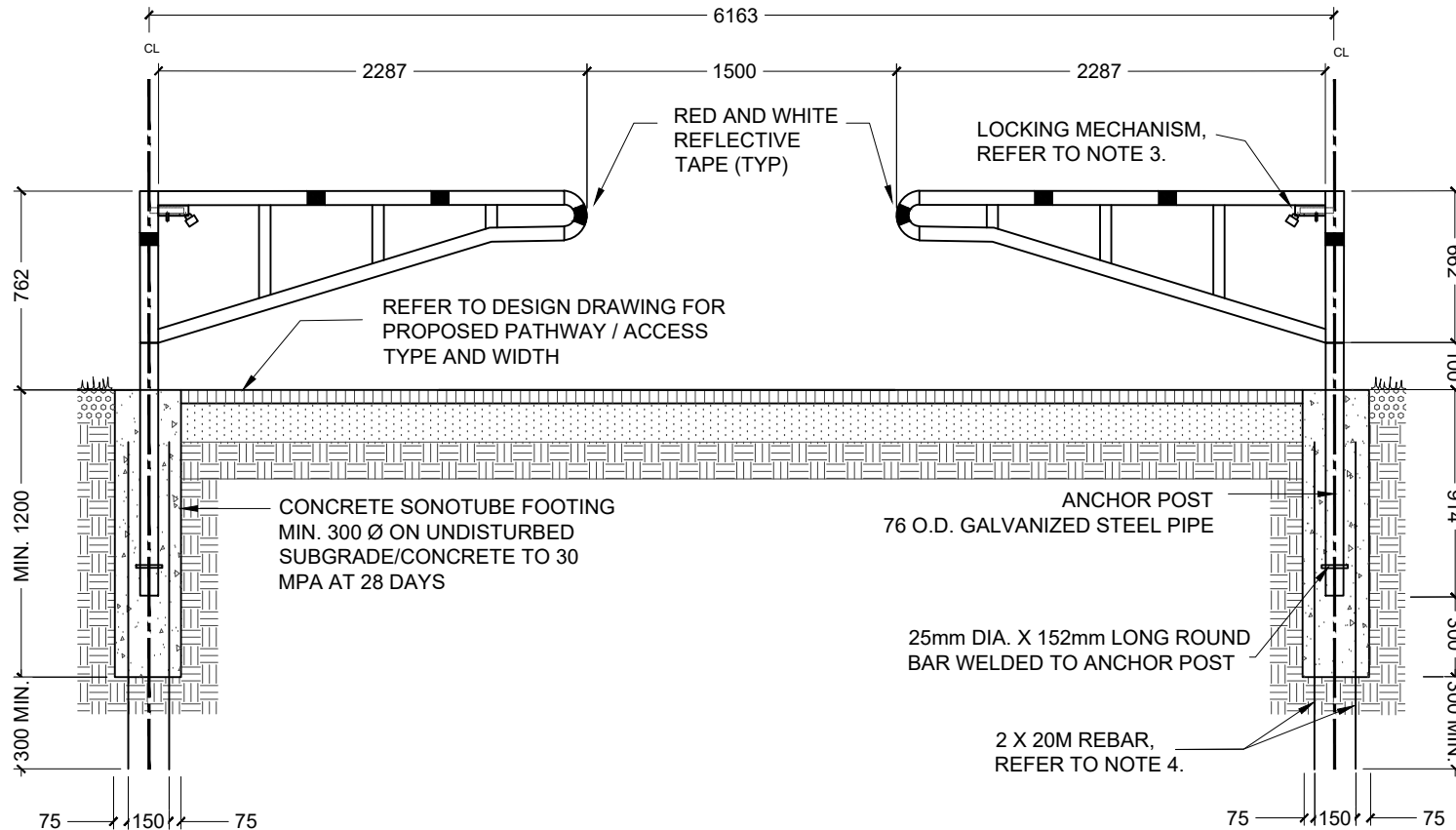


1. BOLLARD GATE AND LOCK AVAILABLE FOR PURCHASE FROM THE CITY OF WATERLOO STOCK ROOM. PHONE 519-747-8752 TO ORDER.
2. IF THE GATES ARE NOT BEING PURCHASED FROM THE CITY, SHOP DRAWINGS OF THE GATES MUST BE SUBMITTED AND APPROVED PRIOR TO FABRICATION.
3. LOCKING MECHANISM TO BE A BARREL AND PIN STYLE, COMPLETE WITH AN ABUS PADLOCK.

6. ALL SWING GATES TO BE INSTALLED AT LEAST 2500 IN. FROM SIDEWALK EDGE AND 6000 IN. FROM CURB EDGE. GATES TO SWING AWAY FROM ROADWAY
7. CURB CUT REQUIREMENTS AT THE ROAD TO BE CONFIRMED WITH CITY STAFF.
8. FOR MULTI-USE-PATH / TRAIL AND MAINTENANCE ACCESS DETAILS, REFER TO DWG. CW-501. FOR WALKWAY AND ACCESS BLOCK DETAILS, REFER TO DWG. CW-502

THE CITY OF
Waterloo

CW-522



NOTES:

1. LOCK AVAILABLE FOR PURCHASE FROM THE CITY OF WATERLOO STOCK ROOM. PHONE 519-747-8752 TO ORDER.
2. SHOP DRAWINGS OF THE GATES MUST BE SUBMITTED AND APPROVED PRIOR TO FABRICATION.
3. LOCKING MECHANISM TO BE A BARREL AND PIN STYLE, COMPLETE WITH AN ABUS PADLOCK.
4. GATES REST ON 76 O.D. GALVANIZED POST. SLEEVE INTO 89 O.D. GALVANIZED GATE SLEEVE. BOTH POSTS REQUIRE 300 CONCRETE FOOTINGS. ANCHOR POST FOOTING REQUIRES 2 X 20M REBAR DRIVEN MIN. 300 BELOW FOOTING TO MITIGATE ROTATION OF SONOTUBE.
5. DO NOT INSTALL GATE ONTO ANCHOR POST UNTIL THE CONCRETE HAS PROPERLY CURED. CLEAN AND REINSTATE AREAS AFFECTED BY WORKS.
6. ALL SWING GATES TO BE INSTALLED AT LEAST 2500 IN. FROM SIDEWALK EDGE AND 6000 IN. FROM CURB EDGE. GATES TO SWING AWAY FROM ROADWAY.
7. PROVIDE A 6000 CURB CUT AT ROAD, CURB CUTS ALONG MAJOR ARTERIAL ROADS TO BE REVIEWED ON A CASE BY CASE BASIS.
8. FOR MULTI-USE-PATH/TRAIL AND MAINTENANCE ACCESS DETAILS, REFER TO DWG. CW-501. FOR WALKWAY AND ACCESS BLOCK DETAILS, REFER TO DWG. CW-502

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

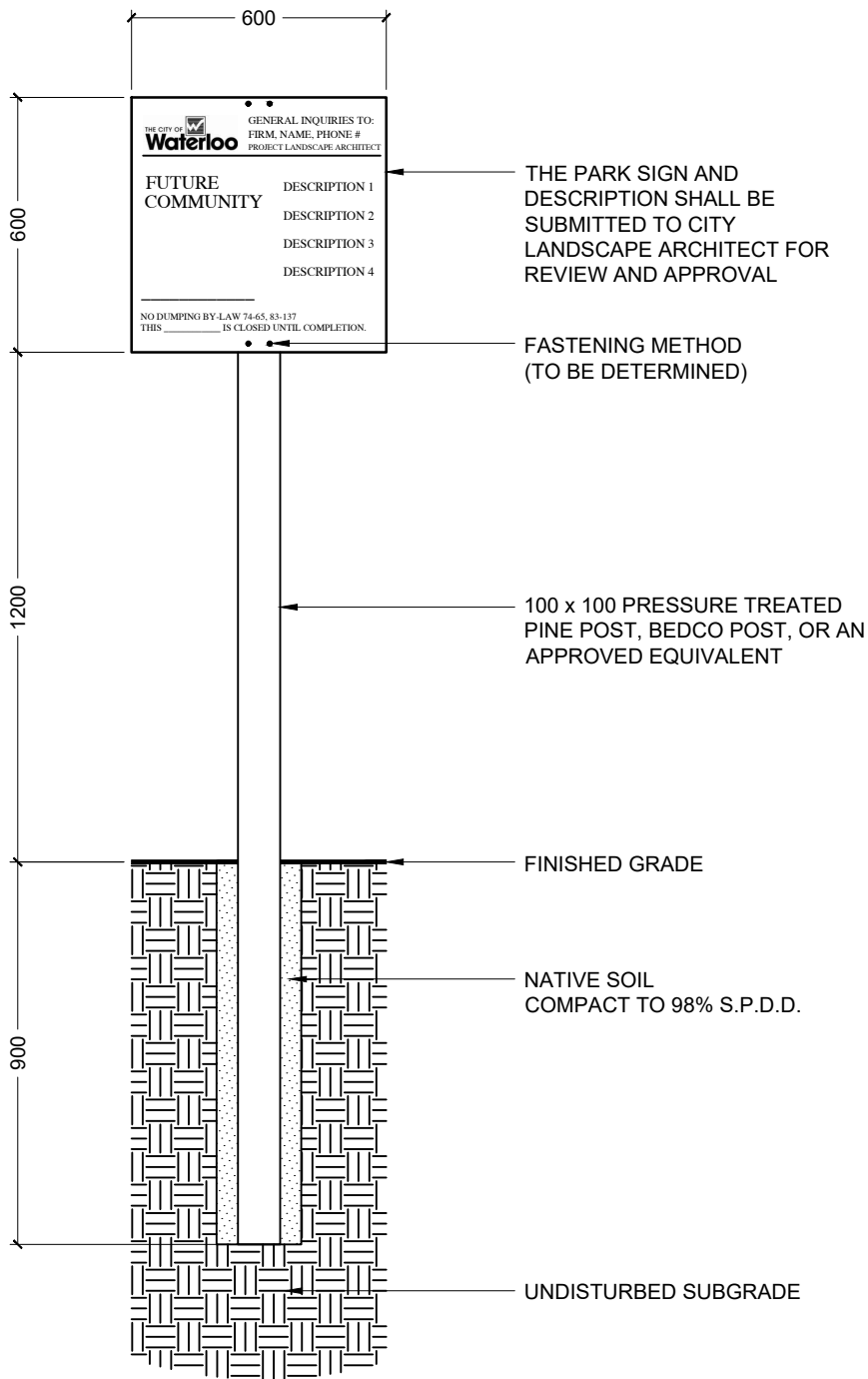
STANDARD DRAWING

DOUBLE 2.3m BOLLARD GATE DETAIL
6.0m PATH/TRAIL AND 6.0m OBC EMERGENCY ACCESS

REV 1

MAY 2023

THE CITY OF
Waterloo
CW-523



NOTES:

1. ALL MEASUREMENTS IN MILLIMETRES UNLESS OTHERWISE NOTED.
2. THE TEMPORARY PARK SIGN SHALL BE SITED APPROPRIATELY FOR VISIBILITY AND FOR THE INFORMATION THAT IS REQUIRED TO ACCURATELY DESCRIBE THE PROPOSED PARK / OPEN SPACE DEVELOPMENT.
3. SIGNAGE MATERIAL SHALL BE ALUMINUM, FASTENERS SHALL BE WEATHER RESISTANT.
4. POSTS DRIVEN INTO SUBGRADE TO A DEPTH OF 900 OR REFUSAL.
5. OPEN SPACE DESIGNATION SHOULD BE SPECIFIED ON PARK SIGN (eg: PARK, TRAIL, SWM POND, ETC.)
6. DESCRIPTIONS WILL VARY AND MAY INCLUDE: PLAYGROUND.
7. STRUCTURE, ASPHALT PATHWAYS, NATURALIZED PLANTING, SPORTS FIELD (eg: SOFTBALL, SOCCER, ETC.), NO WINTER MAINTENANCE, AND OTHER APPROPRIATE INFORMATION.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWING

REV 1

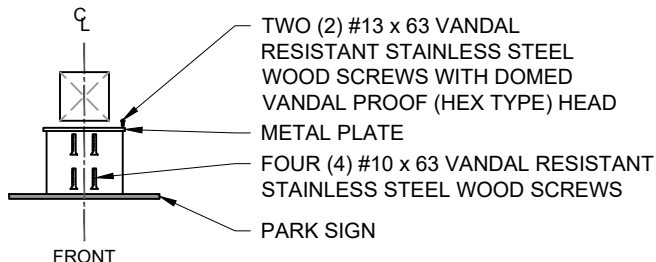
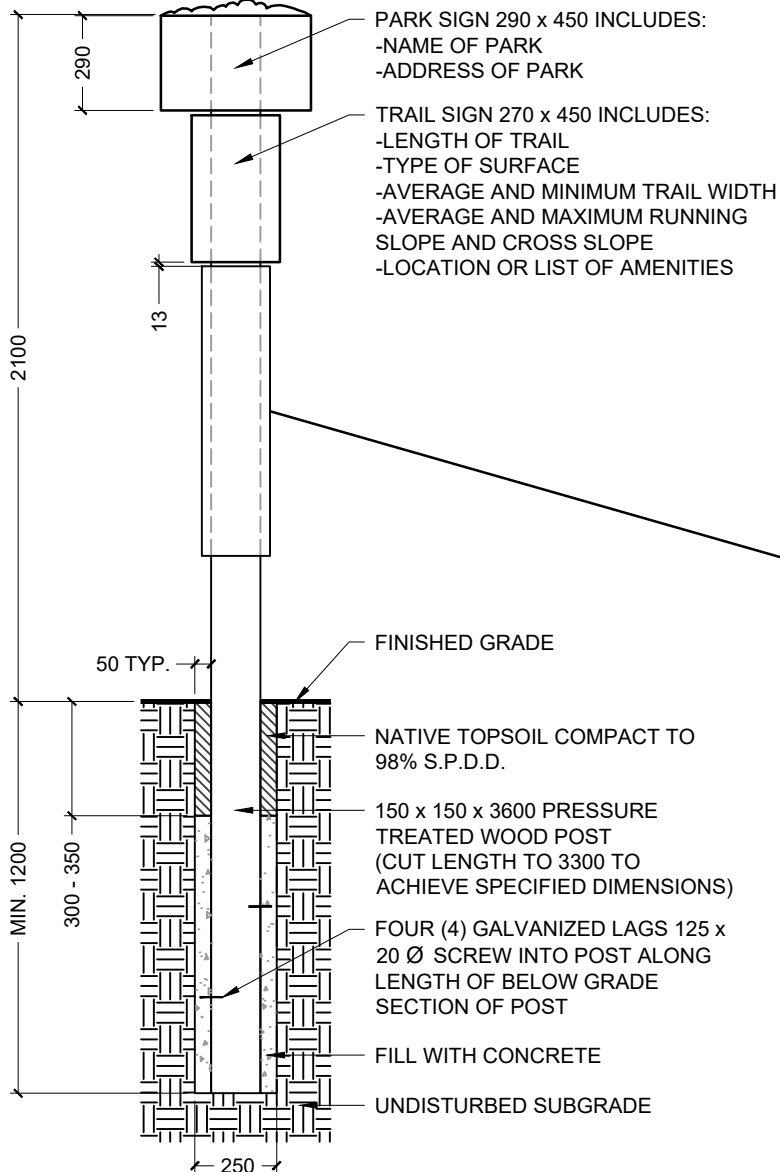
MAY 2023

**TYPICAL TEMPORARY
PRE-CONSTRUCTION PARK SIGN**

THE CITY OF
Waterloo

CW-601

TOP VIEW



ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

- STOP SIGN 250 x 250



- SINGLE-SIDED ALUMINUM SIGN: 610 x 140
- BOLT HOLES: 16 x 10 (x3)
- 3M REFLECTIVE VINYL FACE WITH FULL COLOUR DIGITAL PRINT
- LAMINATE: GRAFFITI RESISTANT

1. ALL REGULATORY SIGNAGE IS TO BE POSTED WITH 6 x 63 STAINLESS STEEL VANDAL PROOF BOLTS
2. REGULATORY SIGNAGE IS AVAILABLE FOR PURCHASE THROUGH THE CITY OF WATERLOO STOCK ROOM. PHONE 519-747-8752 TO ORDER.
3. USE PLYWOOD TEMPLATE FOR EXACT LINEUP OF BOLT HOLES.
4. ALL HARDWOOD TO BE VANDAL RESISTANT, STAINLESS STEEL AND APPROVED BY THE CITY OF WATERLOO.
5. EXCAVATE A 250 Ø PIT TO ACCOMMODATE POST AND BACKFILL MATERIAL. TREAT ALL PRESSURE TREATED POST CUTS WITH WOOD PRESERVATIVE.

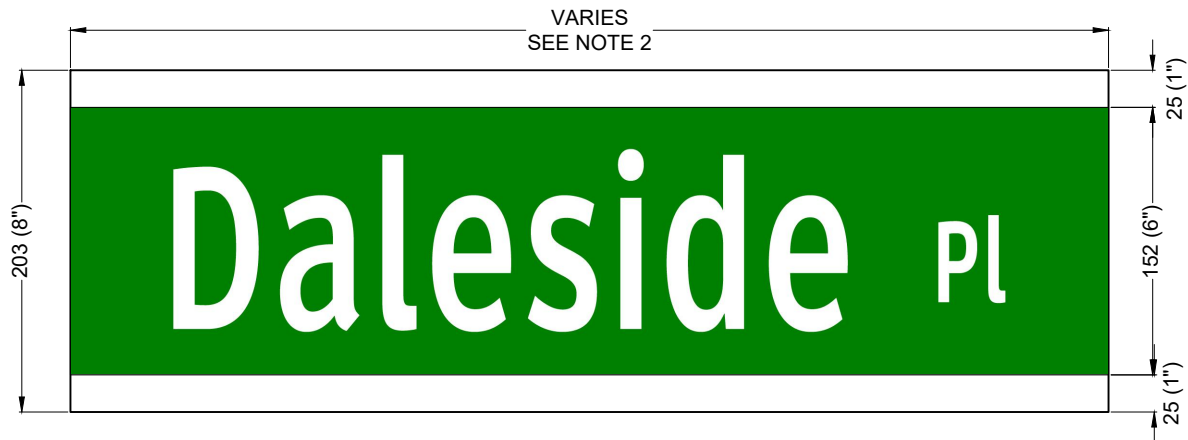
STANDARD DRAWING

MAY 2023

PERMANENT SIGNAGE DETAIL

THE CITY OF 
Waterloo

CW-602



Bricker Ave

Waterton Ct

Lake Louise Blvd

NOTES:

1. SIGN BLADE HEIGHT TO BE 203 mm (8''), DOUBLE SIDED AND CONSTRUCTED OF EXTRUDED ALUMINUM.
2. SIGN BLADE LENGTH WILL VARY DEPENDING ON THE STREET NAME. MAX. 914 mm (36''), MIN. 610 mm (24'').
3. SIGN BLADE TO BE GREEN WITH 25 mm (1'') WHITE STRIPE ON THE TOP AND BOTTOM.
4. FONT TO BE CLEARVIEW AND INCLUDE UPPER AND LOWER CASE LETTERING.
5. LETTERING MUST BE WHITE HIGH INTENSITY PRISMATIC SHEETING.
6. TEXT SIZE FOR STREET NAME TO BE 102 mm (4'') AND STREET ABBREVIATIONS TO BE 76 mm (3'').

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWING

REV 1

MAY 2023

STREET NAME SIGNAGE

THE CITY OF
Waterloo

CW-611



MUNICIPALLY OWNED POND



DEVELOPER OWNED POND

NOTES:

1. SIGN(S) MUST BE PLACED AT ALL POND ENTRANCES, MAIN CELLS, FOREBAYS AND OTHER LOCATIONS AS DIRECTED BY THE CITY OF WATERLOO
2. SIGN(S) TO BE MOUNTED TO 3.8 M U-CHANNEL GALVANIZED STEEL POST.
3. IT IS THE DEVELOPER'S RESPONSIBILITY TO OBTAIN ALL UNDERGROUND UTILITY LOCATES
4. ALL TEXT AND GRAPHICS SHOULD BE RED, BLACK, AND WHITE
5. CITY OWNED PONDS SHOULD FEATURE THE CITY OF WATERLOO LOGO

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWING

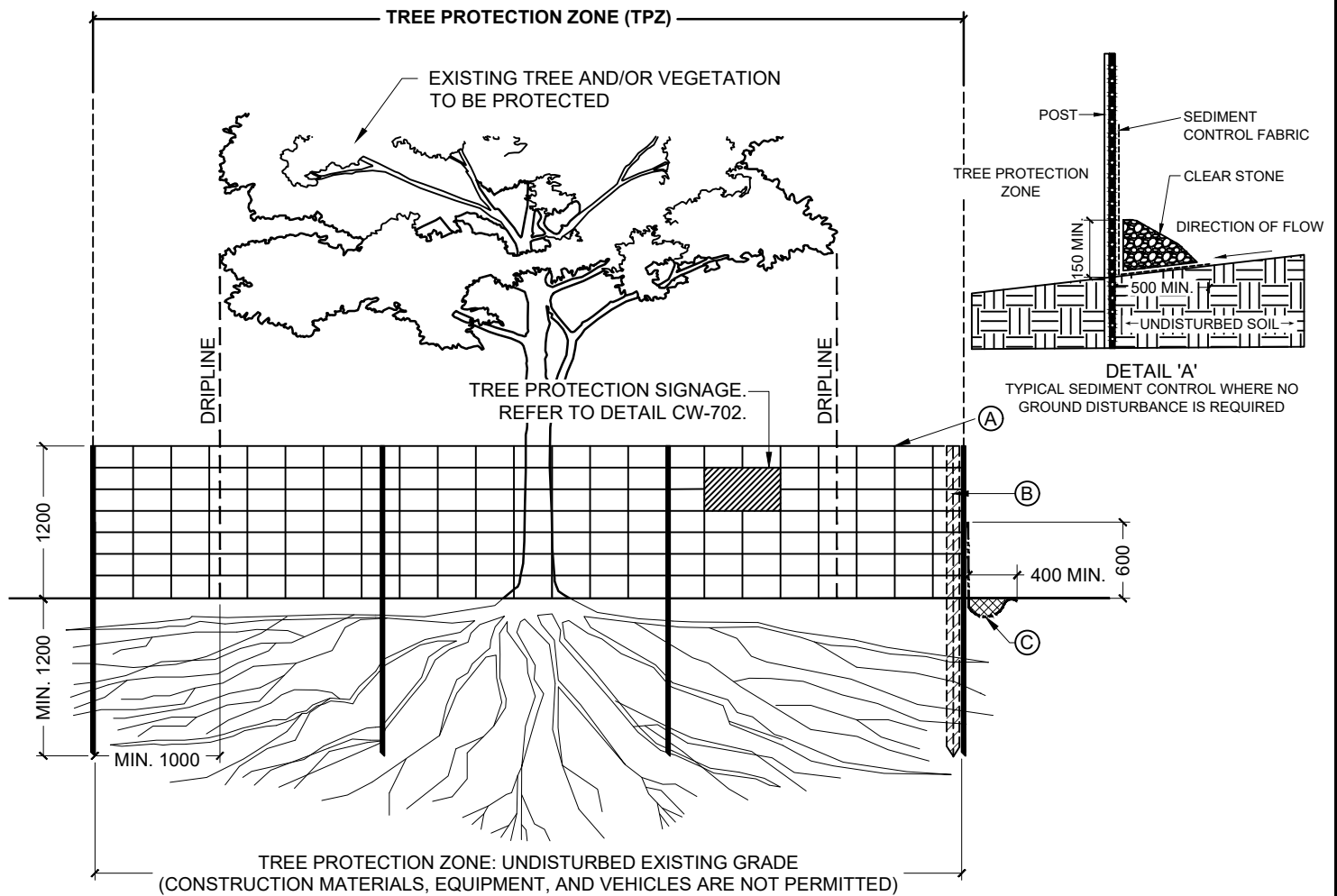
REV 1

MAY 2023

STORMWATER MANAGEMENT POND SIGNAGE

THE CITY OF **Waterloo**

CW-621



NOTES:

- (A)** 1200 mm HIGH PAIGE WIRE FARM FENCE SECURED TO STEEL T-BARS AT MIN. 3000 mm O.C.. FENCING MUST BE STRETCHED TO ACHIEVE TENSION.
- (B)** FOR SUBDIVISIONS AND ANY OTHER LONG DURATION PROJECTS (MORE THAN 1 YEAR), FENCING TO INCLUDE 2.44 m HIGH, 150 mm CEDAR POSTS LOCATED AT 21 m O.C. AND AT ALL CHANGES IN DIRECTION WHERE REQUIRED BY APPROVED VEGETATION MANAGEMENT PLAN.
- (C)** EROSION/SEDIMENT CONTROLS SHALL BE AFFIXED DIRECTLY TO TREE PROTECTION FENCING WHERE LOCATIONS COINCIDE. REFER TO EROSION CONTROL PLANS AND DETAILS WHERE APPLICABLE. WHERE NO ADJACENT GRADING/ GROUND DISTURBANCE WORKS ARE REQUIRED ON DEVELOPMENT SIDE, EROSION CONTROL MEASURES SHALL NOT BE KEYED. REFER TO DETAIL 'A'.

GENERAL:

- ATTACHMENT OF FENCE TO TREES WILL NOT BE PERMITTED.
- IF TREE ROOTS ARE EXPOSED TO AIR, ENSURE ROOTS ARE WATERED UNTIL THEY CAN BE COVERED AGAIN. ANY EXPOSED ROOTS TO BE REMOVED SHALL BE HAND PRUNED USING PROPER ARBORICULTURAL PRACTICES.
- CONTRACTOR WILL ONLY ENTER / WORK WITHIN THE TREE PROTECTION ZONE (TPZ) WHERE APPROVED BY THE CITY OF WATERLOO.
- FENCING TO BE INSPECTED ON A REGULAR BASIS AND MAINTAINED BY CONTRACTOR.
- TREE PROTECTION FENCING SHALL BE INSTALLED PER THE LOCATIONS SHOWN ON THE APPROVED VEGETATION MANAGEMENT PLAN. ONCE INSTALLED, A SITE INSPECTION WITH A REPRESENTATIVE FROM THE CITY'S ENGINEERING SERVICES SHALL BE SCHEDULED FOR APPROVALS PRIOR TO ANY WORK COMMENCING ON SITE.
- TREE PROTECTION FENCE WILL REMAIN INSTALLED FOR THE DURATION OF ALL CONSTRUCTION WORKS.

TABLE 1.0:

MINIMUM TREE PROTECTION ZONE DETERMINATION

TRUNK DIAMETER (DBH AT 1.4m)	MINIMUM PROTECTION DISTANCES REQUIRED
<10 cm	1.8 m
11 - 40 cm	2.4 m
41 - 50 cm	3.0 m
51 - 60 cm	3.6 m
61 - 70 cm	4.2 m
71 - 80 cm	4.8 m
81 - 90 cm	5.4 m
91 - 100+ cm	6.0+ m

NOTE:
MINIMUM TREE PROTECTION ZONES (TPZ) SHALL ONLY BE USED WHERE SPACE IS LIMITED AND WHERE APPROVED BY THE CITY OF WATERLOO.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWING

REV 1

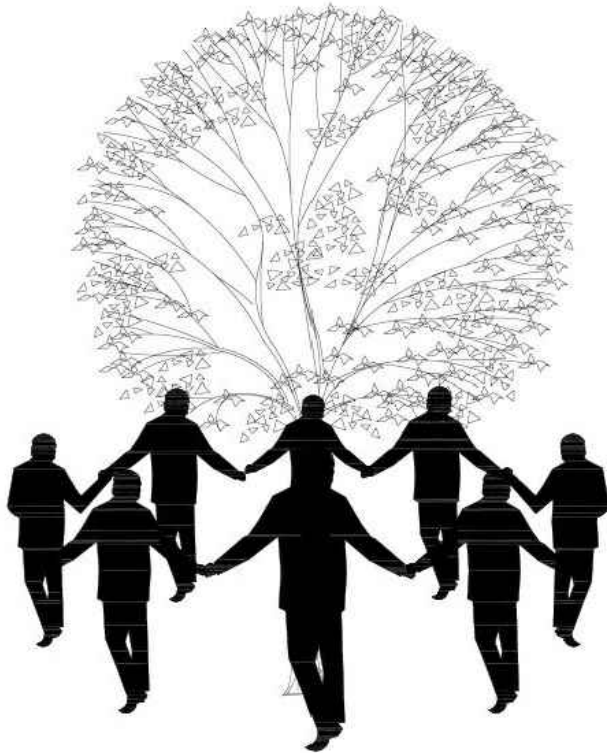
MAY 2023

TREE PROTECTION FENCING

THE CITY OF
Waterloo
CW-701

600 mm MINIMUM

300 mm MINIMUM



Tree Preservation Plan In Effect

NO DUMPING
STORAGE OF MATERIALS
TREE REMOVAL
DISTURBANCE OF ANY KIND
BEYOND THIS POINT

Developers Name

Developers
Telephone Number

Consultants Name

Consultants
Telephone Number

City Contact:

NOTES:

1. SIGN TO BE MOUNTED ON GATOR BOARD.
2. SIGN TO BE PLACED A MAXIMUM OF 30 m O.C. ALONG FENCE AND SECURED WITH OUTDOOR PLASTIC LOCKING TIE-WRAPPS.
3. AT LEAST ONE SIGN SHALL BE INSTALLED AT EACH SIDE OF THE TREE PROTECTION ZONE.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWING

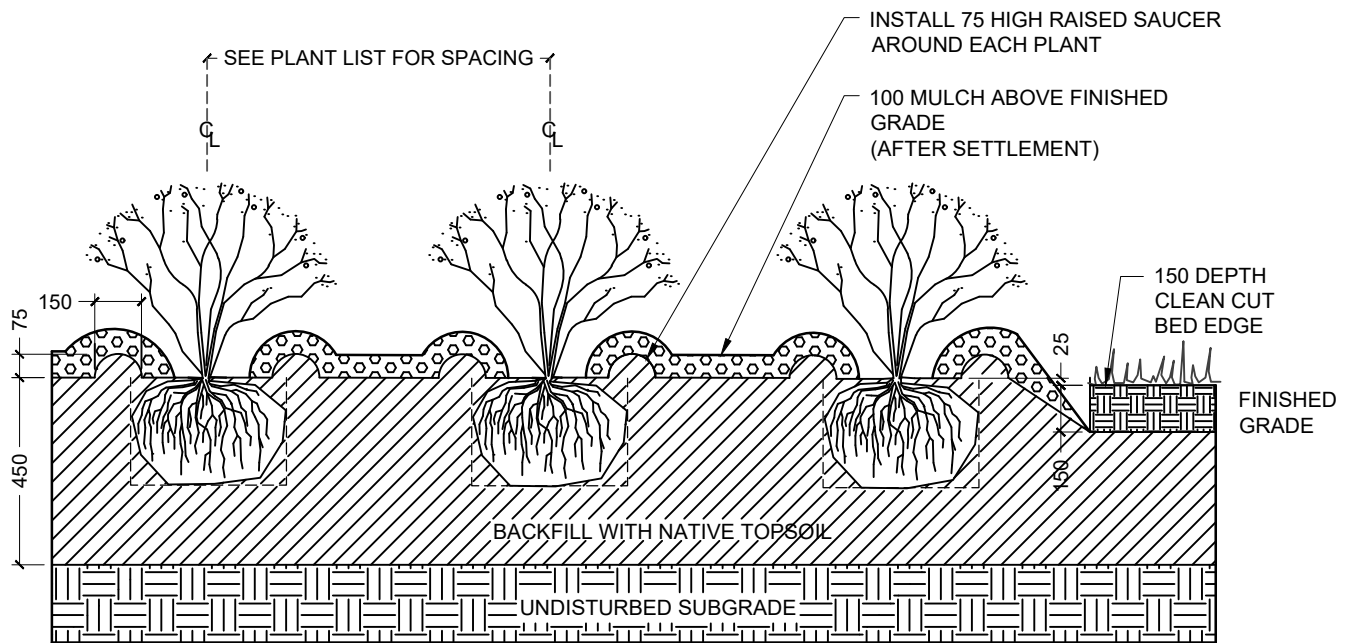
REV 1

MAY 2023

TREE PROTECTION ZONE SIGNAGE

THE CITY OF
Waterloo

CW-702



NOTES:

1. EXCAVATE AND CULTIVATE TO A DEPTH OF 600. IMPROVE STRUCTURE OF EXCAVATED SOIL BY AERATING,
2. PULVERIZING, AND MIXING, REMOVING CLOUDS, LUMPS, AND DEBRIS (SUCH AS STONE, ROOTS, ETC.). BACKFILL USING IMPROVED NATIVE TOPSOIL.
3. SET CROWN OF ROOT BALL 25 ABOVE FINISHED GRADE OF PLANTING BED TO ALLOW FOR SETTLEMENT.
4. AFTER INSTALLATION OF PLANT MATERIAL, MULCH TO A DEPTH OF 100 (AFTER SETTLEMENT).
5. SOAK WITH WATER IMMEDIATELY AFTER INSTALLATION OF PLANT MATERIAL.
6. REMOVE ALL BROKEN, DISEASED, OR WEAK BRANCHES.
7. ALL SHRUB PLANT MATERIAL WILL BE PLANTED IN A COMPACT, MULCHED PLANTING BED.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

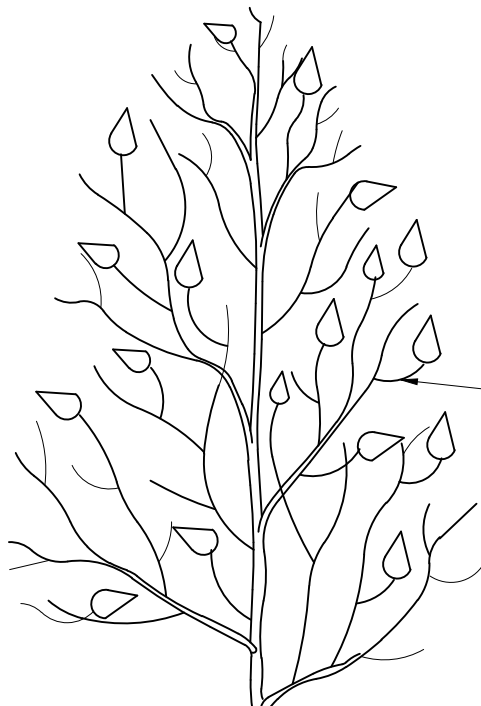
STANDARD DRAWING

REV 1

MAY 2023

SHRUB / PERENNIAL PLANTING DETAIL

THE CITY OF
Waterloo
CW-711

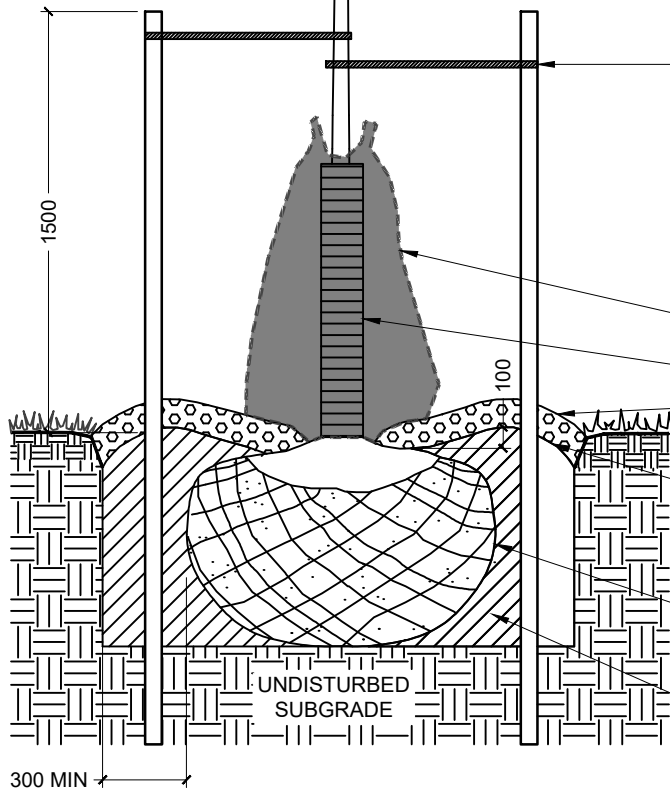
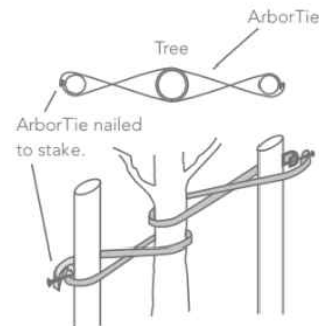


NOTES:

1. PLANTING SOIL MIXTURE: BACKFILL WITH NATIVE TOPSOIL.
2. PLANTING PIT WILL BE THE SAME DEPTH AS THE ROOTBALL AND 300 WIDER AROUND DIAMETER OF ROOTBALL.
3. ROOT COLLAR OF PLANT WILL BEAR SAME RELATIONSHIP TO FINISHED GRADE, AFTER SETTLEMENT, AS EXHIBITED IN NURSERY/POT.
4. IN HEAVY CLAY OR POORLY DRAINED SOILS, PLANT MATERIAL WILL BE INSTALLED SO THAT ROOT COLLAR IS 75-100 ABOVE ADJACENT FINISHED GRADE.
5. APPLY ADEQUATE WATER AND INSTALL MULCH IMMEDIATELY AFTER INSTALLATION OF PLANT MATERIAL.
6. INSTALL TREE GUARD TO PROTECT TRUNK OF TREE (AS APPROVED BY CITY OF WATERLOO) IMMEDIATELY AFTER INSTALLATION OF PLANT MATERIAL.

ONLY PRUNE BROKEN, DAMAGED, OR
STRUCTURALLY DEFECTIVE BRANCHES
DO NOT TOP PRUNE

DETAIL A



STAKE AND GUY

TWO (2) WOOD STAKES - 50 x 50 x 2400
WRAP ARBORTIE LOOSELY AROUND TRUNK OF TREE AND STAKES, ALLOWING MOVEMENT OF TREE. FOLD ENDS OF ARBORTIE BACK AND SECURE TO STAKE WITH 1" GALVANIZED ROOFING NAIL. (SEE DETAIL 'A' ABOVE) STAKES ARE TO BE ORIENTATED IN THE DIRECTION OF THE PREVAILING WINDS.

DO NOT DRIVE STAKE THROUGH ROOT BALL
REMOVE STAKE AND GUY AFTER TWO (2) YEARS GROWTH.

TREE GATOR WATERING BAG OR APPROVED EQUIVALENT.

TREE GUARD

100 DEPTH PINE BARK MULCH (AFTER SETTLEMENT).
KEEP MULCH 100 AWAY FROM TRUNK.

FINISHED GRADE

EARTH SAUCER

100 HIGH x 200 WIDE
INSTALL AROUND PERIMETER OF PLANTING PIT
IMMEDIATELY SOAK SAUCER AFTER INSTALLATION

REMOVE WIRE BASKET, ALL ROPE AND BURLAP
FROM TOP $\frac{1}{3}$ OF ROOT BALL BEFORE BACKFILLING
PLANTING PIT

BACKFILL WITH NATIVE TOPSOIL

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWING

REV 1

MAY 2023

PLANTING DETAIL
DECIDUOUS TREE UP TO 100 mm CALIPER

THE CITY OF
Waterloo

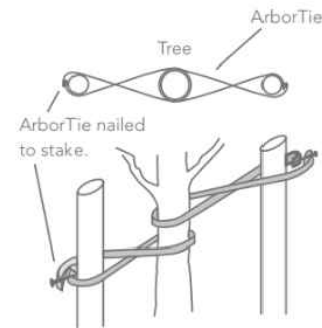
CW-721

NOTES:

1. PLANTING SOIL MIXTURE: BACKFILL WITH NATIVE TOPSOIL.
2. PLANTING PIT WILL BE THE SAME DEPTH AS THE ROOTBALL AND 300 WIDER AROUND DIAMETER OF ROOTBALL.
3. ROOT COLLAR OF PLANT WILL BEAR SAME RELATIONSHIP TO FINISHED GRADE, AFTER SETTLEMENT, AS EXHIBITED IN NURSERY / POT.
4. IN HEAVY CLAY OR POORLY DRAINED SOILS, PLANT MATERIAL WILL BE INSTALLED SO THAT ROOT COLLAR IS 75-100 ABOVE ADJACENT FINISHED GRADE.
5. APPLY ADEQUATE WATER AND INSTALL MULCH IMMEDIATELY AFTER INSTALLATION OF PLANT MATERIAL.
6. INSTALL TREE GUARD TO PROTECT TRUNK OF TREE (AS APPROVED BY CITY OF WATERLOO) IMMEDIATELY AFTER INSTALLATION OF PLANT MATERIAL.

ONLY PRUNE BROKEN, DAMAGED, OR
STRUCTURALLY DEFECTIVE BRANCHES
DO NOT TOP PRUNE

DETAIL A



STAKE AND GUY
TWO (2) WOOD STAKES - 50 x 50 x 2100
WRAP ARBORTIE LOOSELY AROUND TRUNK OF TREE AND
STAKES, ALLOWING MOVEMENT OF TREE. FOLD ENDS OF
ARBORTIE BACK AND SECURE TO STAKE WITH 1"
GALVANIZED ROOFING NAIL. (SEE DETAIL 'A' ABOVE) STAKES
ARE TO BE ORIENTATED IN THE DIRECTION OF THE
PREVAILING WINDS.
DO NOT DRIVE STAKE THROUGH ROOT BALL
REMOVE STAKE AND GUY AFTER TWO (2) YEARS GROWTH.

TREE GATOR WATERING BAG OR APPROVED EQUIVELANT.

TREE GUARD

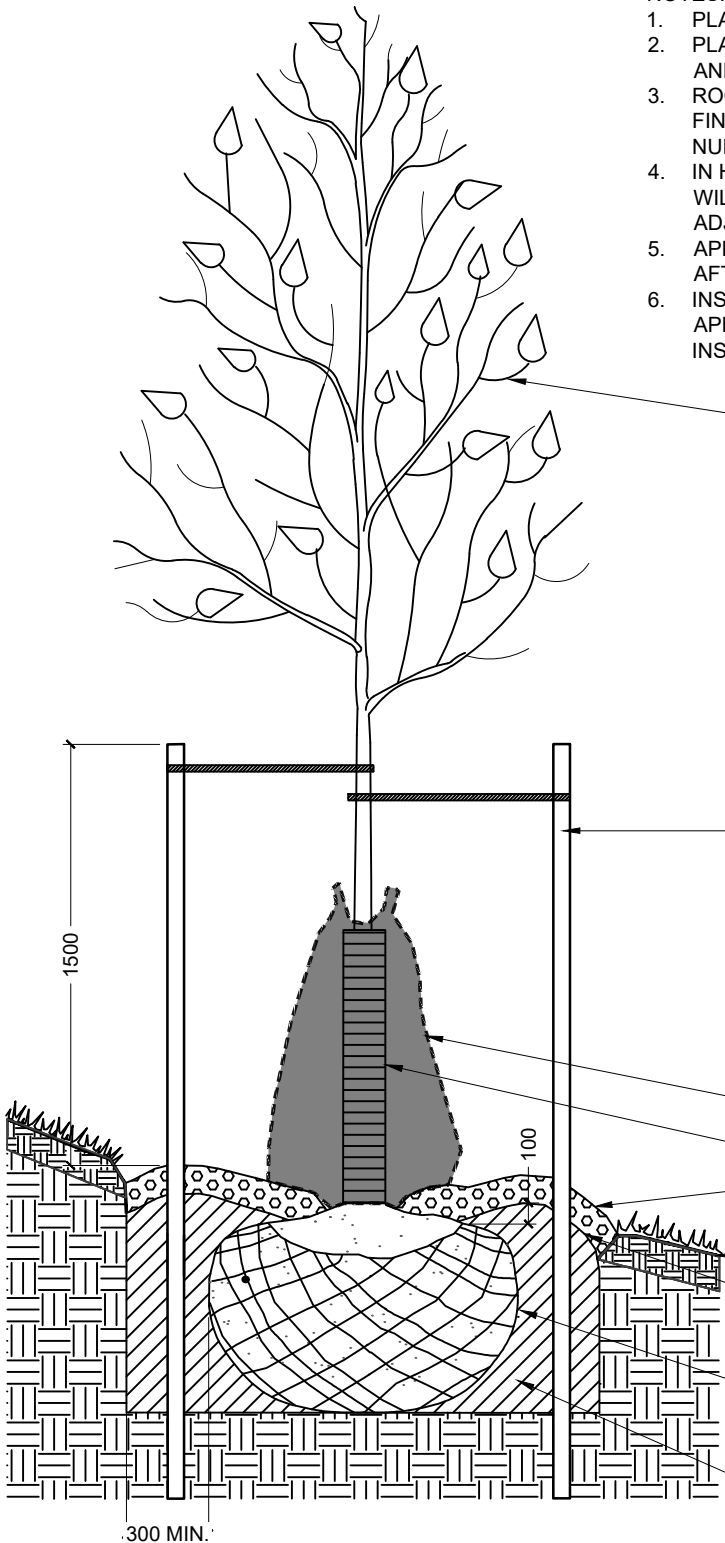
100 DEPTH PINE BARK MULCH (AFTER SETTLEMENT).
KEEP MULCH 100 AWAY FROM TRUNK.

FINISHED GRADE

EARTH SAUCER 75 HIGH AROUND BASE OF TREE.
SOAK SAUCER IMMEDIATELY AFTER INSTALLATION
OF TREE.

CUT AND REMOVE TOP $\frac{1}{3}$ OF BURLAP, ROPE, AND
WIRE BASKET FROM ROOT BALL BEFORE
BACKFILLING PLANTING PIT

BACKFILL WITH NATIVE TOPSOIL



ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWING

REV 1

MAY 2023

PLANTING DETAIL DECIDUOUS TREE ON SLOPE

THE CITY OF
Waterloo

CW-722

1. PLANTING SOIL MIXTURE: BACKFILL WITH NATIVE TOPSOIL.
2. PLANTING PIT WILL BE THE SAME DEPTH AS THE ROOTBALL AND 300 WIDER AROUND DIAMETER OF ROOTBALL.
3. ROOT COLLAR OF PLANT WILL BEAR SAME RELATIONSHIP TO FINISHED GRADE, AFTER SETTLEMENT, AS EXHIBITED IN NURSERY / POT.
4. IN HEAVY CLAY OR POORLY DRAINED SOILS, PLANT MATERIAL WILL BE INSTALLED SO THAT ROOT COLLAR IS 75-100 ABOVE ADJACENT FINISHED GRADE.
5. APPLY ADEQUATE WATER AND INSTALL MULCH IMMEDIATELY AFTER INSTALLATION OF PLANT MATERIAL.

DO NOT CUT LEADER →

1500

100

UNDISTURBED SUBGRADE

300 MIN.

STAKE AND GUY
THREE (3) WOOD STAKES - 50 x 50 x 2400
WRAP ARBORTIE LOOSELY AROUND TRUNK OF TREE
AND STAKES, ALLOWING MOVEMENT OF TREE. FOLD
ENDS OF ARBORTIE BACK AND SECURE TO STAKE WITH
1" GALVANIZED ROOFING NAIL. (SEE DETAIL 'A' ABOVE)
STAKES ARE TO BE SPACED EQUALLY AROUND THE
TREE.

100 DEPTH PINE BARK MULCH (AFTER SETTLEMENT).
KEEP MULCH 100 AWAY FROM TRUNK.

FINISHED GRADE

EARTHEN SAUCER
100 HIGH x 200 WIDE
INSTALL AROUND PERIMETER OF PLANTING
PIT IMMEDIATELY SOAK SAUCER AFTER
INSTALLATION

REMOVE WIRE BASKET, ALL ROPE, AND
BURLAP FROM TOP $\frac{1}{3}$ OF ROOTBALL BEFORE
BACKFILLING PLANTING PIT

BACKFILL WITH NATIVE TOPSOIL

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWING

REV 1

MAY 2023

THE CITY OF  **Waterloo**

CW-725

PLANTING DETAIL

CONIFEROUS TREE PLANTING

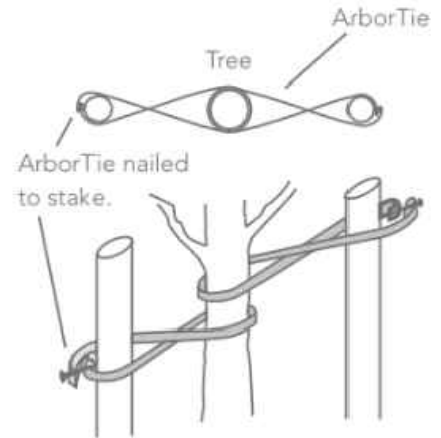
NOTES:

1. PLANTING SOIL MIXTURE: BACKFILL WITH NATIVE TOPSOIL.
2. PLANTING PIT WILL BE THE SAME DEPTH AS THE ROOTBALL AND 300 WIDER AROUND DIAMETER OF ROOTBALL.
3. ROOT COLLAR OF PLANT WILL BEAR SAME RELATIONSHIP TO FINISHED GRADE, AFTER SETTLEMENT, AS EXHIBITED IN NURSERY / POT.
4. IN HEAVY CLAY OR POORLY DRAINED SOILS, PLANT MATERIAL WILL BE INSTALLED SO THAT ROOT COLLAR IS 75-100 ABOVE ADJACENT FINISHED GRADE.
5. APPLY ADEQUATE WATER AND INSTALL MULCH IMMEDIATELY AFTER INSTALLATION OF PLANT MATERIAL.

STAKE AND GUY

THREE (3) WOOD STAKES - 50 x 50 x 2400
WRAP ARBORTIE LOOSELY AROUND TRUNK OF TREE AND STAKES, ALLOWING MOVEMENT OF TREE. FOLD ENDS OF ARBORTIE BACK AND SECURE TO STAKE WITH 1" GALVANIZED ROOFING NAIL. (SEE DETAIL 'A' BELOW)
STAKES ARE TO BE SPACED EQUALLY AROUND THE TREE.

DETAIL A



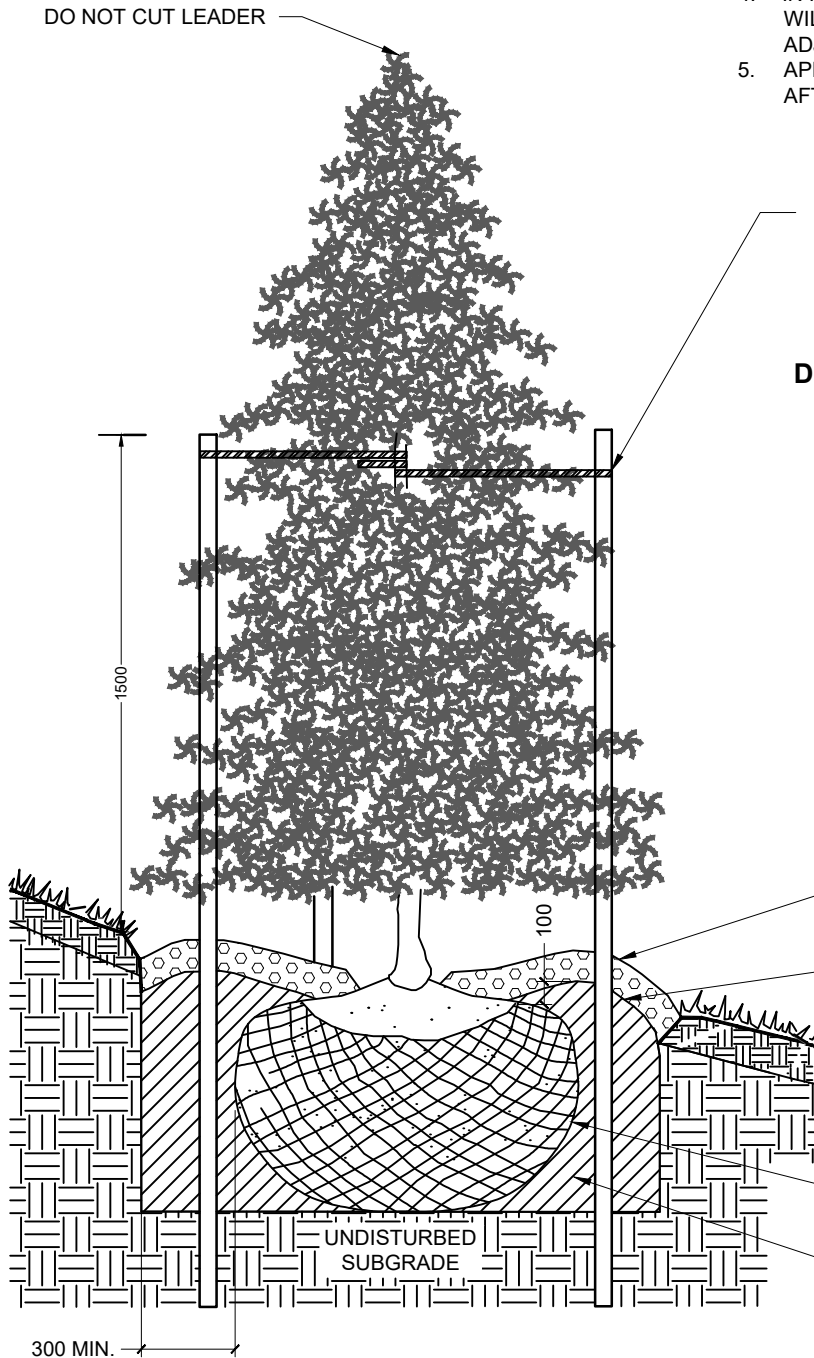
100 DEPTH PINE BARK MULCH (AFTER SETTLEMENT).
KEEP MULCH 100 AWAY FROM TRUNK.

EARTHEN SAUCER
100 HIGH x 200 WIDE
INSTALL AROUND PERIMETER OF PLANTING PIT
IMMEDIATELY SOAK SAUCER AFTER INSTALLATION

FINISHED GRADE

REMOVE WIRE BASKET, ALL ROPE, AND BURLAP
FROM TOP $\frac{1}{3}$ OF ROOTBALL BEFORE BACKFILLING

BACKFILL WITH NATIVE TOPSOIL



ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWING

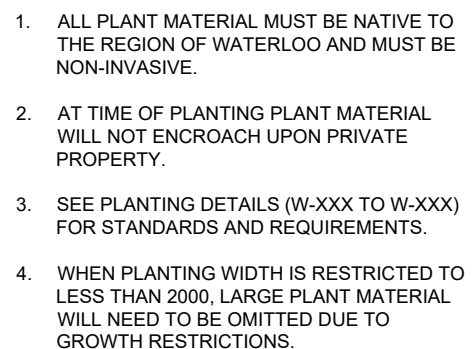
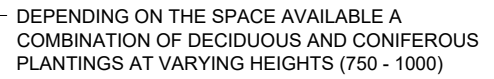
REV 1

MAY 2023

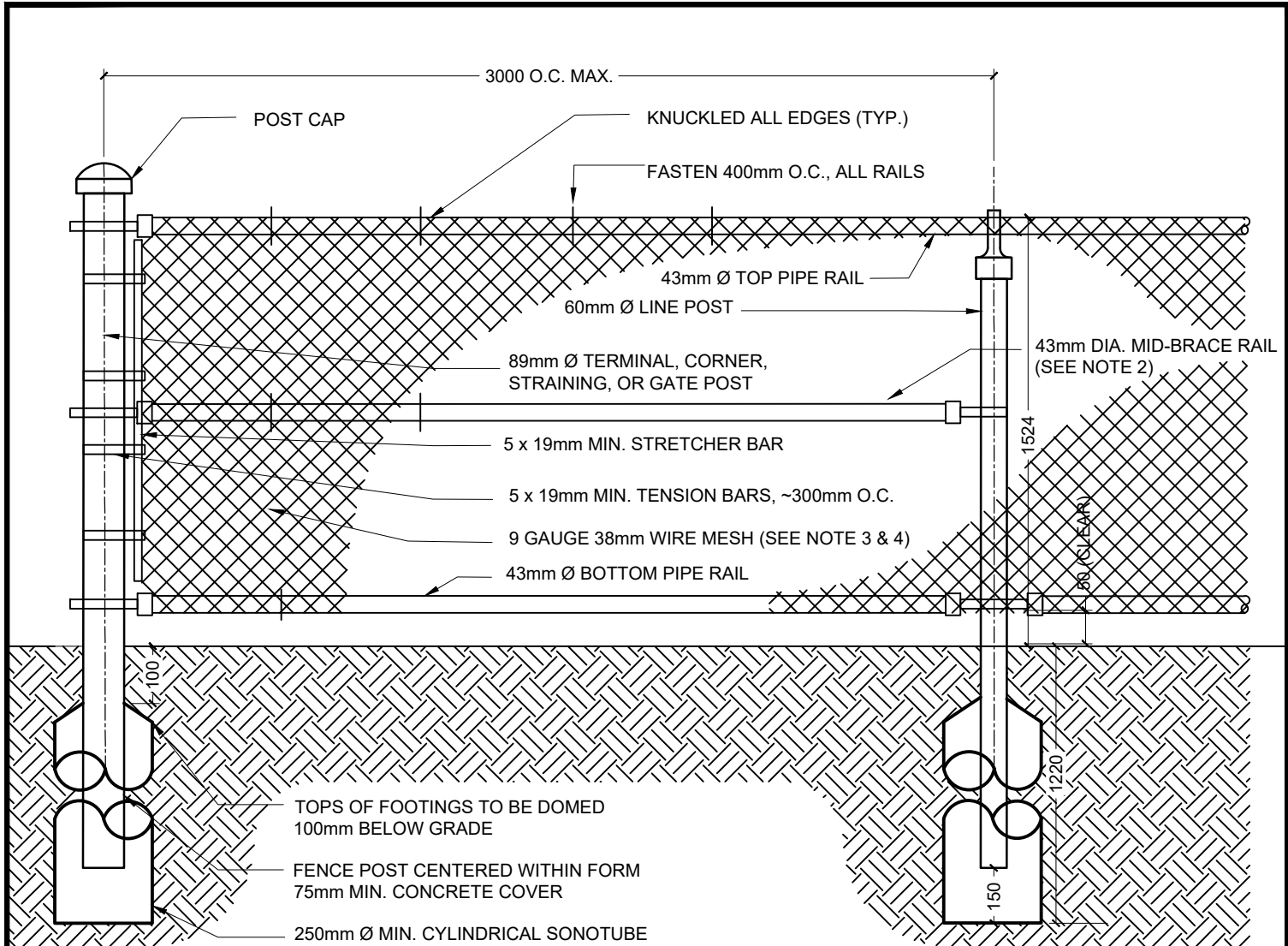
PLANTING DETAIL
CONIFEROUS TREE ON SLOPE

THE CITY OF
Waterloo

CW-726



CW-802



NOTES:

1. ALL FENCING MATERIALS, FASTENERS TO BE GALVANIZED PRIOR TO APPLICATION OF BLACK VINYL COATING.
2. MID-BRACE RAIL TO BE LOCATED EQUIDISTANT BETWEEN TOP AND BOTTOM RAIL ON TERMINAL, CORNER, STRAINING, OR GATE POSTS.
3. WIRE MESH SHALL BE INSTALLED ON THE MUNICIPAL SIDE OF THE FENCE POSTS.
4. WIRE MESH SHALL BE MEASURED AT 9 GAUGE PRIOR TO GALVANIZING AND BLACK VINYL COATING.
5. CONCRETE FOOTINGS TO BE 20MPa STRENGTH AT 28 DAYS
6. ALL PIPE TO BE SCHEDULE 40.
7. CONFIRM GRADING PRIOR TO FENCE INSTALLATION.
8. 50MM CLEARANCE, FROM THE BOTTOM RAIL AND WIRE MESH TO FINISHED GRADE, IS TO BE CONSISTENT ALONG THE ENTIRE LENGTH TO FACILITATE MAINTENANCE.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWING

REV 1 MAY 2023

CHAINLINK FENCE DETAIL

THE CITY OF 
Waterloo
CW-805

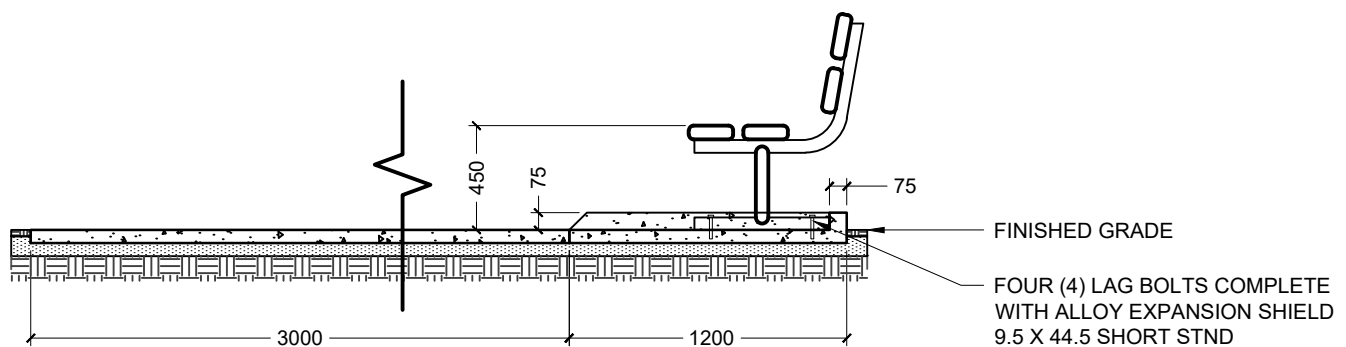
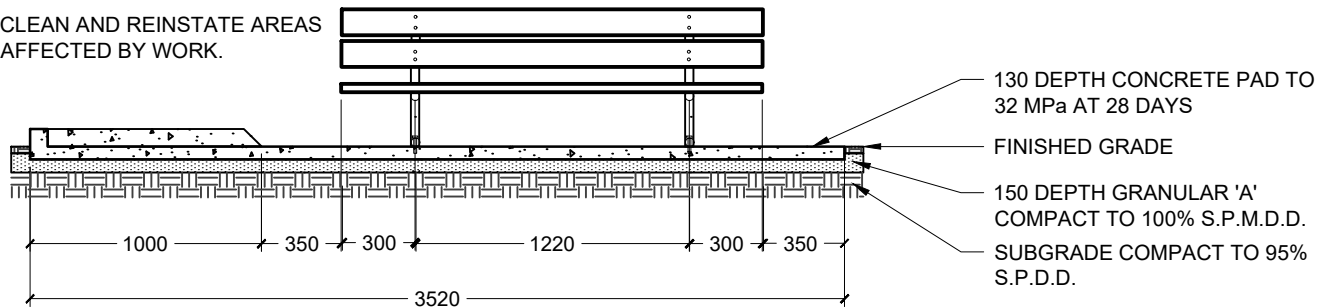
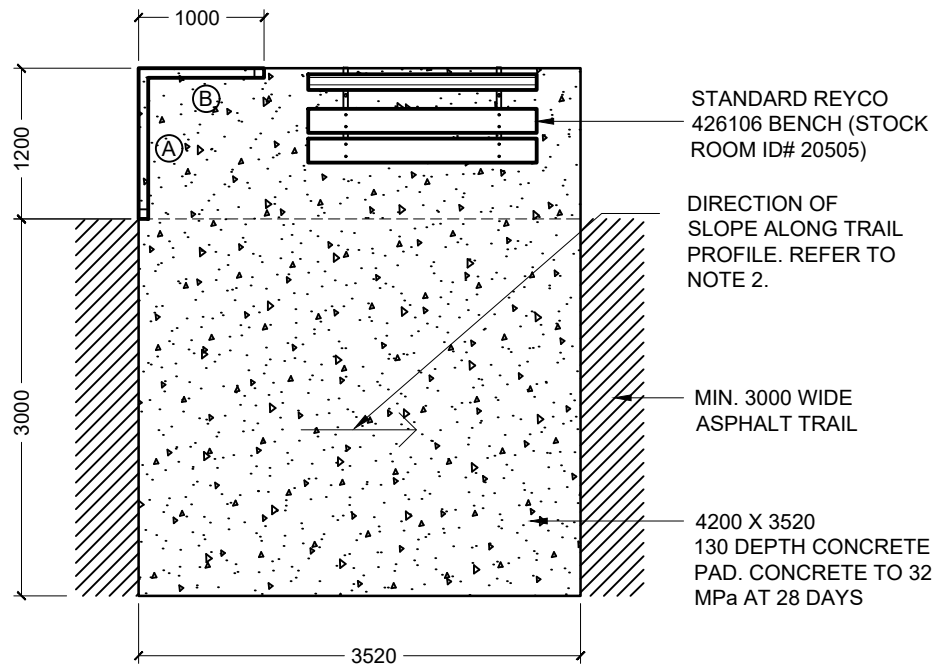
STOP CURB DETAILS:

(A) 1200 L X 75 W X 75 H CONCRETE CURB
CONCRETE TO 32 MPa AT 28 DAYS

(B) 1000 L X 75 W X 75 H CONCRETE CURB
CONCRETE TO 32 MPa AT 28 DAYS

NOTES:

1. LOCATE BENCH MINIMUM 3000
FROM WASTE RECEPTACLE.
2. IF TRAIL PROFILE IS SLOPING IN
THE OPPOSITE DIRECTION
MIRROR THE PARK BENCH AND
ACCESSIBLE RESTING AREA TO
ENSURE NO PONDING OCCURS IN
THE ACCESSIBLE RESTING AREA
DUE TO THE CURBS.
3. WHEN A STANDALONE BENCH IS
PROPOSED. THE CONCRETE PAD
SHALL BE 2520 X 1200 COMPLETE
WITH BROOM FINISH AND
FINISHED EDGES.
4. CLEAN AND REINSTATE AREAS
AFFECTED BY WORK.



ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWING

REV 1

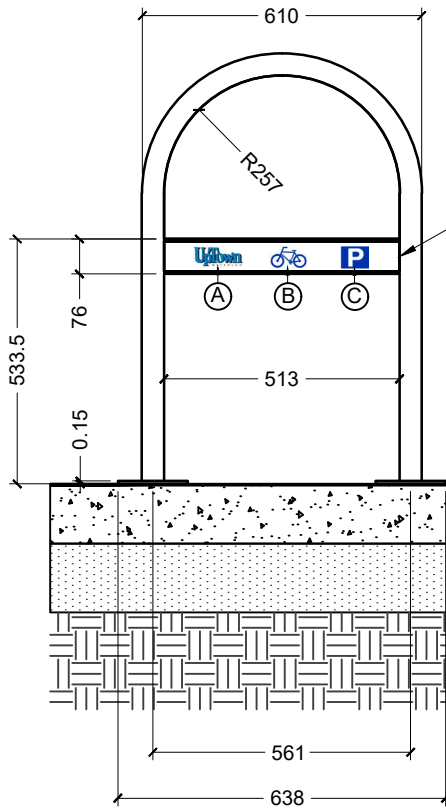
MAY 2023

ACCESSIBLE RESTING AREA
AND PARK BENCH DETAIL

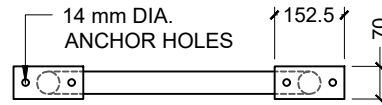
THE CITY OF
Waterloo

CW-811

FRONT VIEW



TOP VIEW



GRAPHICS BAR WITH CITY STANDARD VINYL GRAPHICS

(A) CITY OF WATERLOO LOGO OR
UPTOWN WATERLOO LOGO

(B) BIKE SYMBOL

(C) PARKING SYMBOL

SURFACE MOUNT BASE PLATES TO CONCRETE USING ANCHOR BOLTS

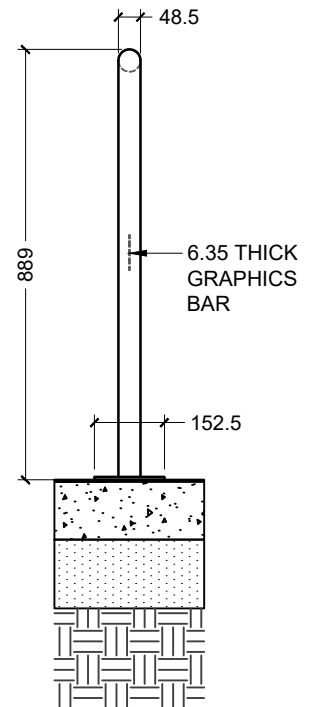
FINISHED GRADE

130 DEPTH CONCRETE PAD TO 30 MPa AT 28 DAYS

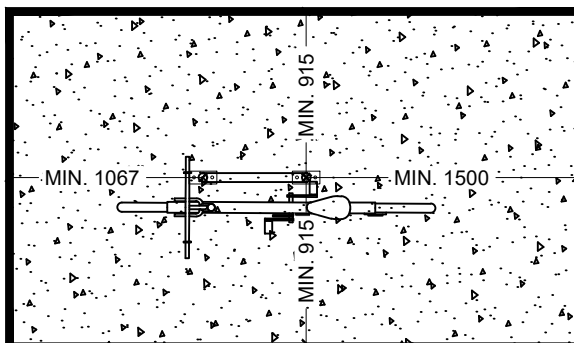
MIN. 150 DEPTH GRANULAR 'A' BASE COMPACT TO 95% S.P.D.D.

SUBGRADE COMPACT TO 95% S.P.D.D.

SIDE VIEW



MIN. CLEARANCES



NOTES:

1. COLOUR OF SINGLE ARCH BIKE RACK TO BE DETERMINED BY THE CITY OF WATERLOO:

GLOSS BLUE (RGB 0,0,255) OR
BLACK (RGB 0,0,0)

2. CONCRETE PAD WITH TROWELED EDGE AND BROOM BRUSHED SURFACE.

3. POLYESTER POWDER OVER ZINC RICH PRIMER. HOT DIP GALVANIZED.

4. CONTACT CITY OF WATERLOO FOR GRAPHIC STICKERS.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWING

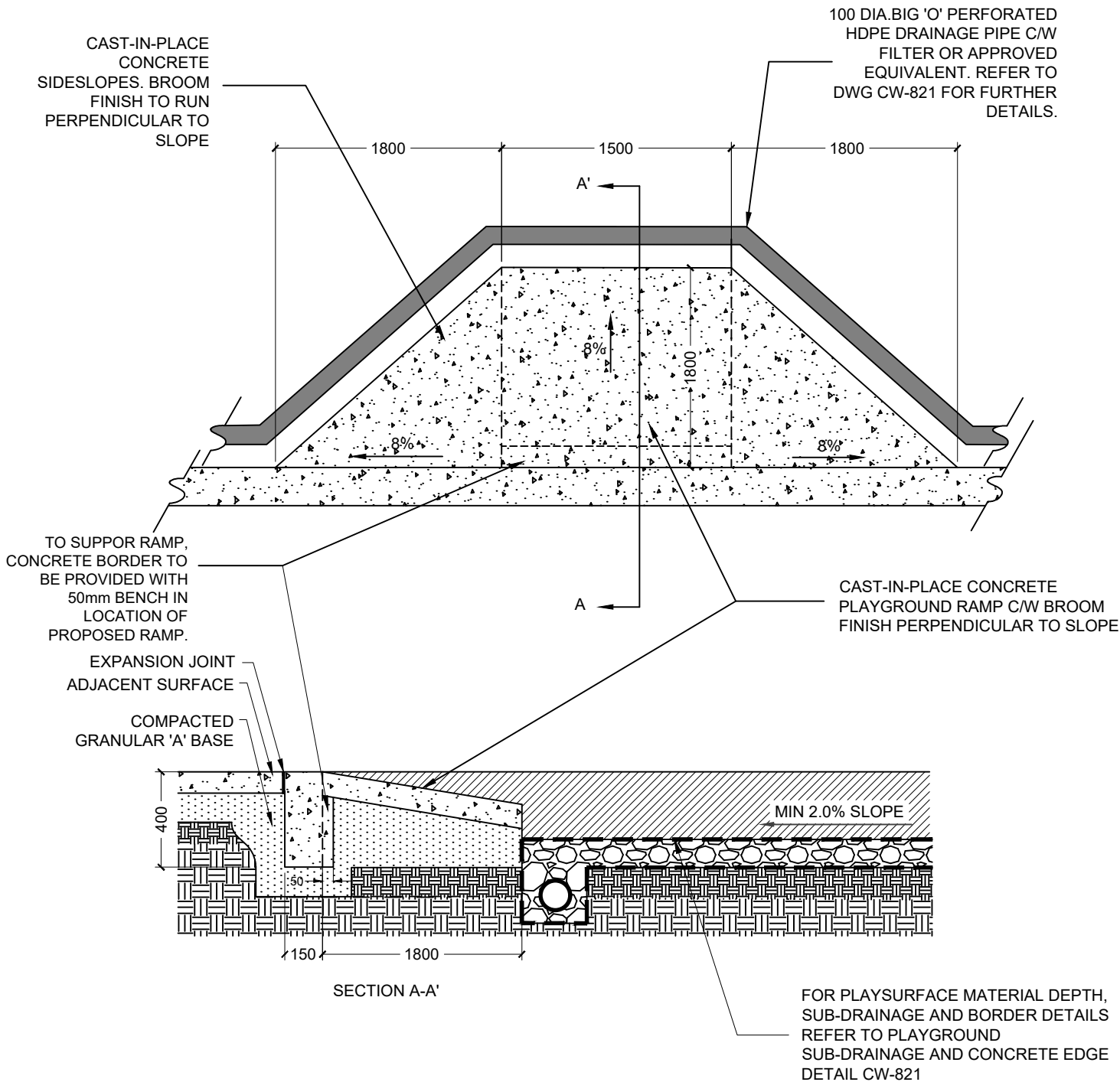
REV 1

MAY 2023

SINGLE INVERTED 'U' BIKE RACK

THE CITY OF
Waterloo

CW-812



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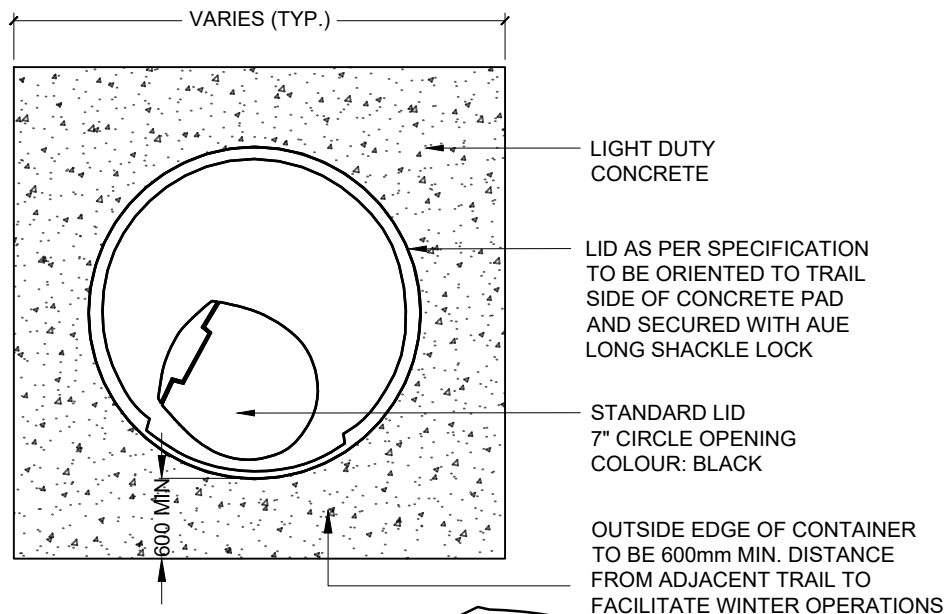
STANDARD DRAWING

REV 1

MAY 2023

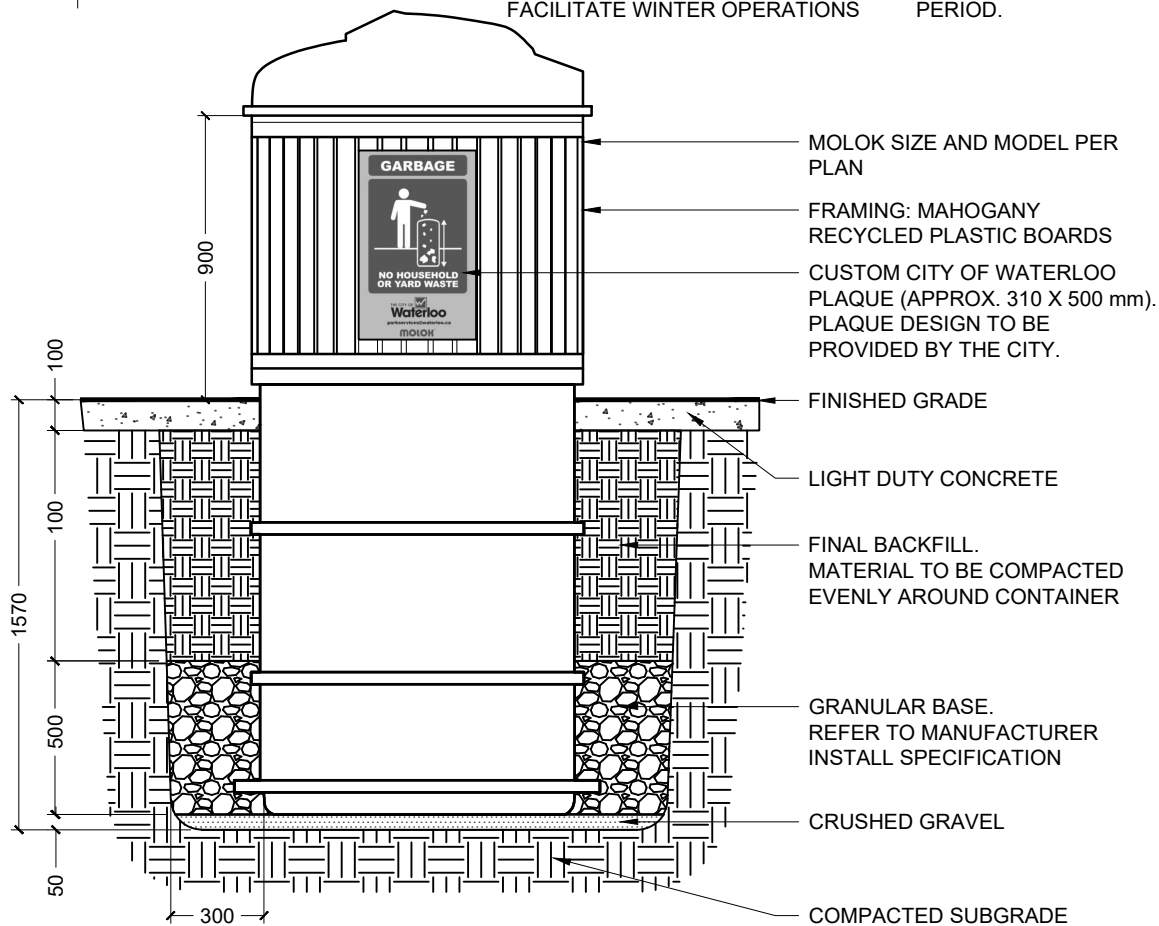
ACCESSIBLE PLAYGROUND RAMP DETAIL

THE CITY OF
Waterloo
CW-822



NOTES:

1. INSTALLATION OF SEMI-UNDERGROUND WASTE CONTAINERS MUST FOLLOW THE MANUFACTURER'S INSTALLATION SPECIFICATIONS AND INCLUDE A DISPOSABLE LINER BAG.
2. SUBSURFACE DRAINAGE IS REQUIRED AT THE PROJECT MANAGER'S DISCRETION FOR AREAS WHERE TERRAIN CONTAINS CLAY OR SILT. IF REQUIRED, SUBSURFACE DRAINAGE IS TO BE INSTALLED AS PER THE MANUFACTURER'S RECOMMENDATION.
3. THE DEVELOPER IS RESPONSIBLE FOR EMPTYING AND REPLACING THE DISPOSABLE LINER BAG WITHIN THE LIFETIME PERIOD DURING THE MAINTENANCE PERIOD.



ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWING

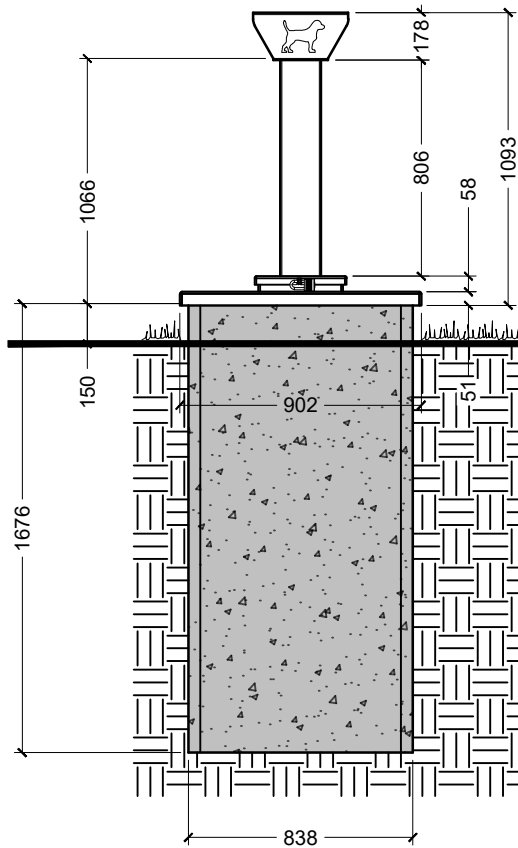
REV 1

MAY 2023

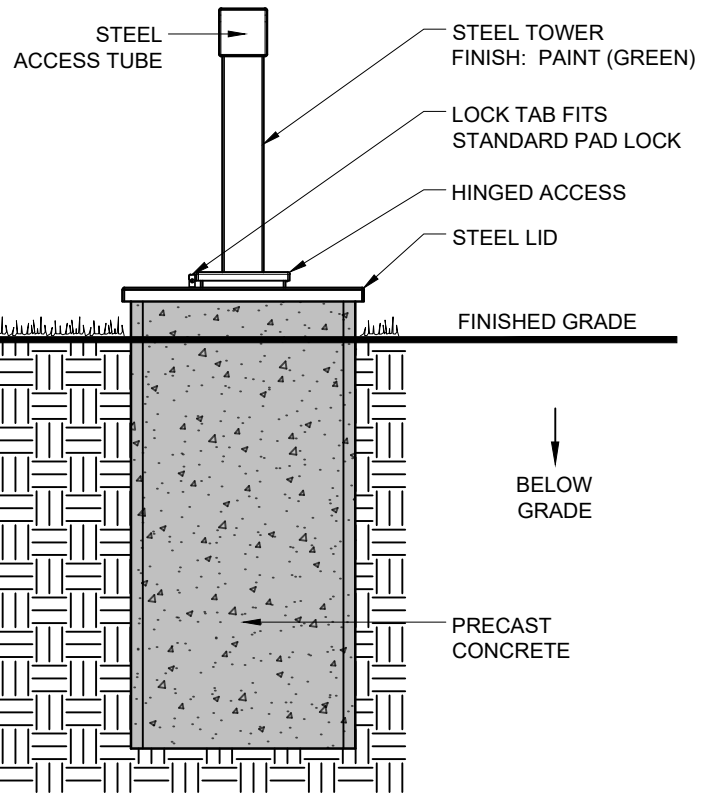
STANDARD GARBAGE RECEPTACLE



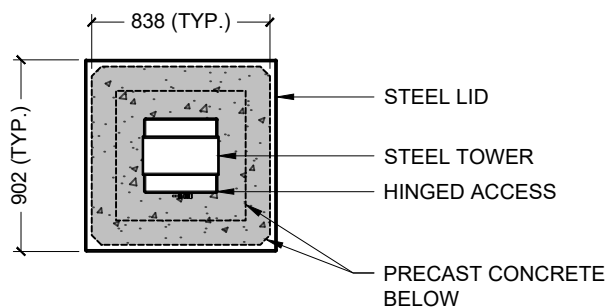
FRONT VIEW



SIDE VIEW



TOP VIEW



NOTES:

1. DOG WASTE: 542 LITERS
2. EXCAVATION: MIN 1.5 m x 2.5 m (5' x 8').
3. PRODUCT TO BE INSTALLED AS PER MANUFACTURER'S INSTRUCTIONS.
4. KEEP CLEAN BY SPRAYING DOWN WITH CLEAN WATER. GREASE ACCESS LID HINGES ANNUALLY.
5. CONTENTS TO BE REMOVED WITH BAG SYSTEM.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

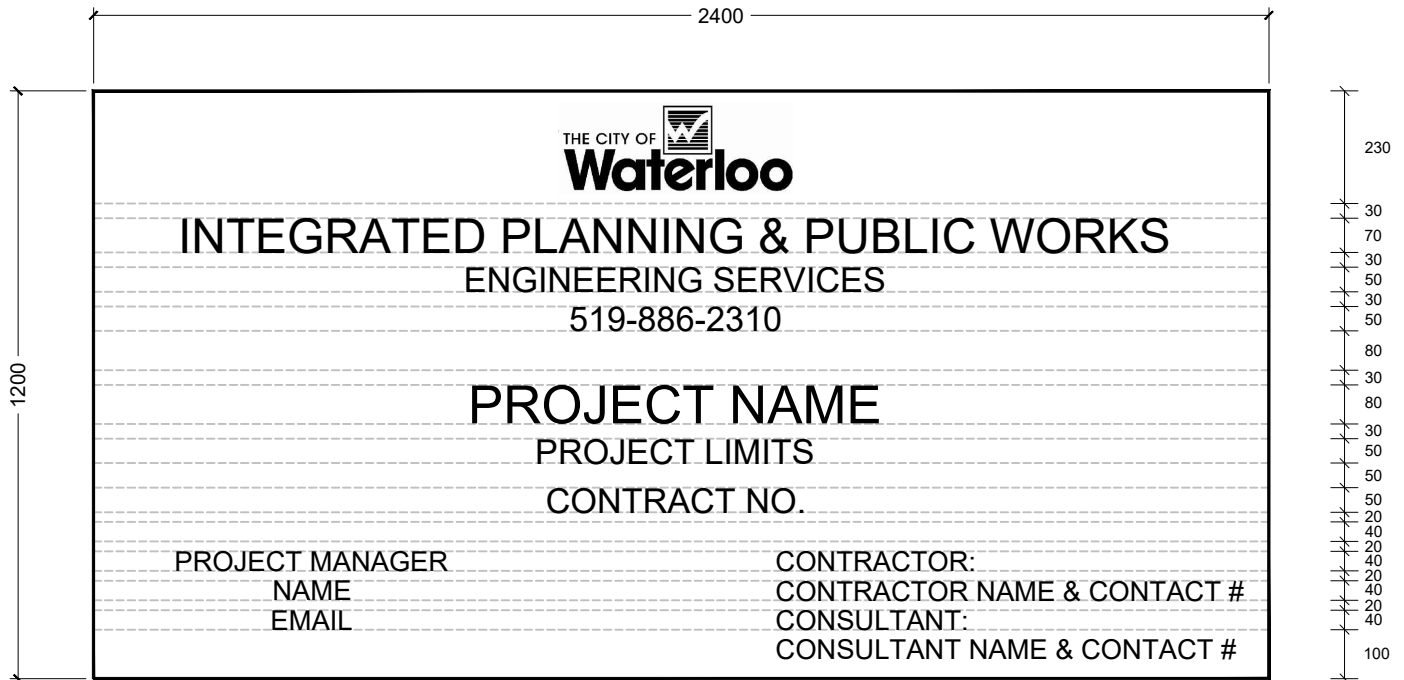
STANDARD DRAWING

REV 1

MAY 2023

DOG WASTE CONTAINMENT SYSTEM

THE CITY OF
Waterloo
CW-832



NOTE:

1. THE SIGNBOARD SHALL BE 19mm PLYWOOD MOUNTED ON 100mm x 100mm POSTS.
2. THE BACKGROUND SHALL BE WHITE AND THE LETTERING SHALL BE BLACK.
3. IF THERE ARE FUNDING PARTNERS THAN A DIFFERENT SIGN MAY BE REQUIRED TO ACCOMMODATE PARTNER'S REQUESTS.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWING

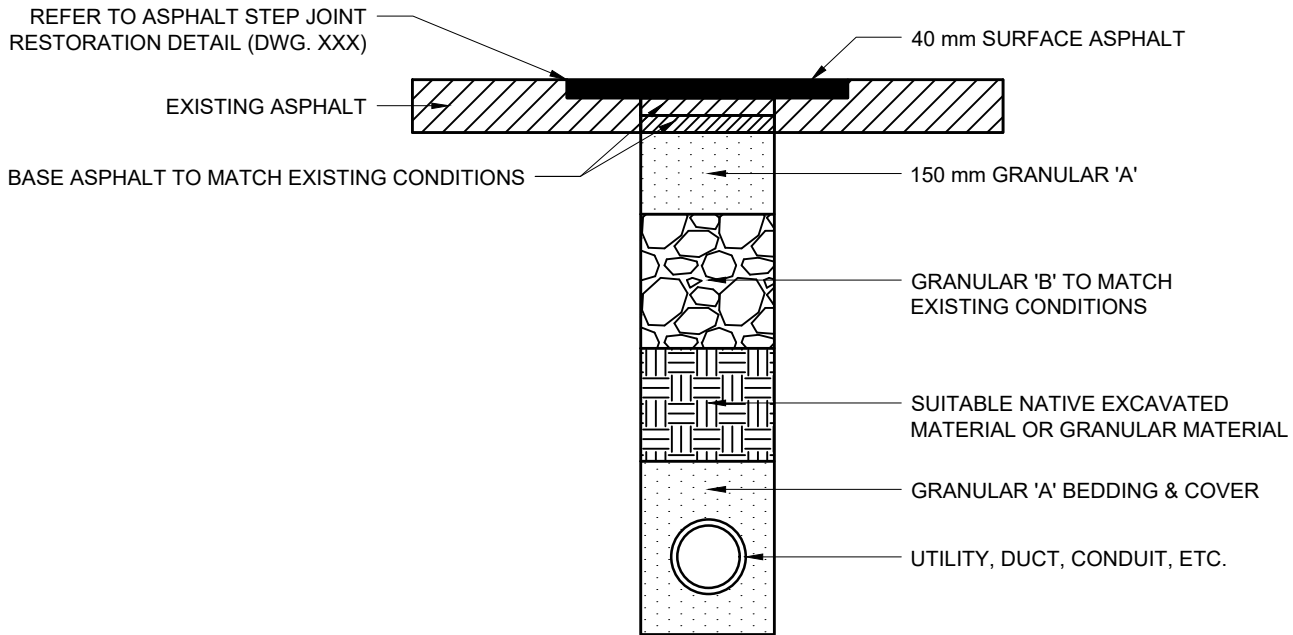
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MAY 2023

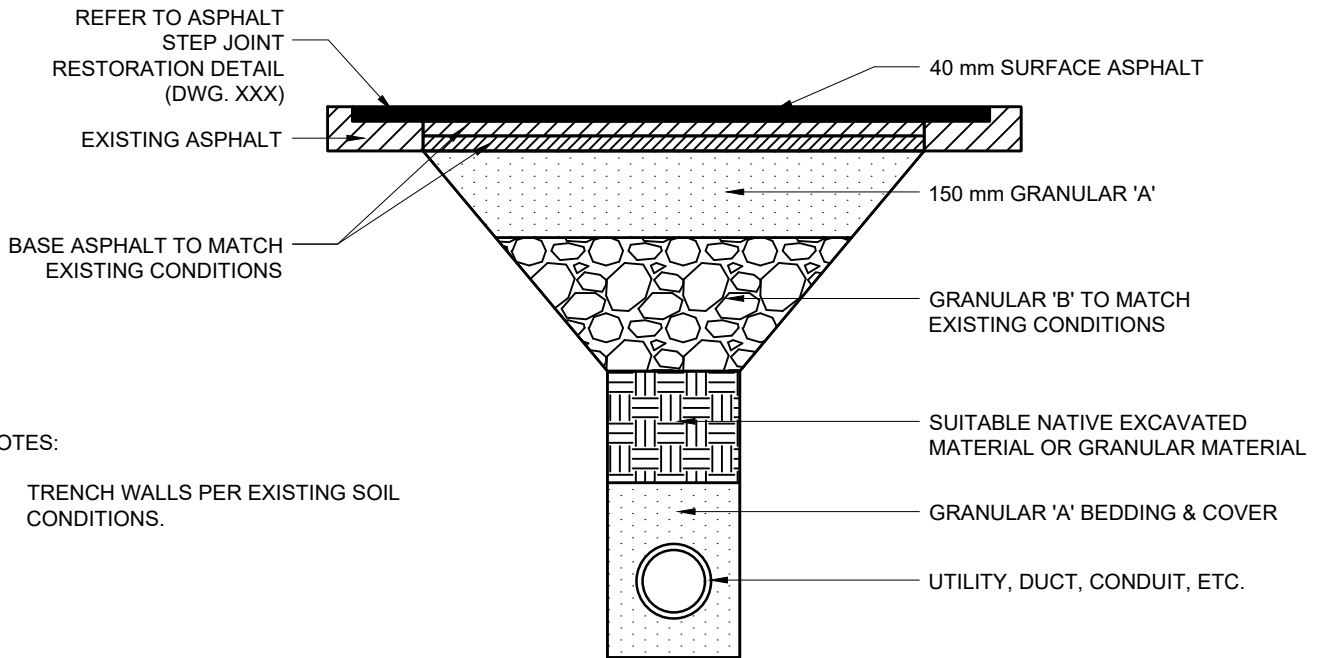
TYPICAL CAPITAL PROJECT SIGN BOARD

THE CITY OF
Waterloo

CW-901



**SHALLOW TRENCH
(1.0 m OR LESS)**



**DEEP TRENCH
(GREATER THAN 1.0 m)**

NOTES:

1. TRENCH WALLS PER EXISTING SOIL CONDITIONS.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWING

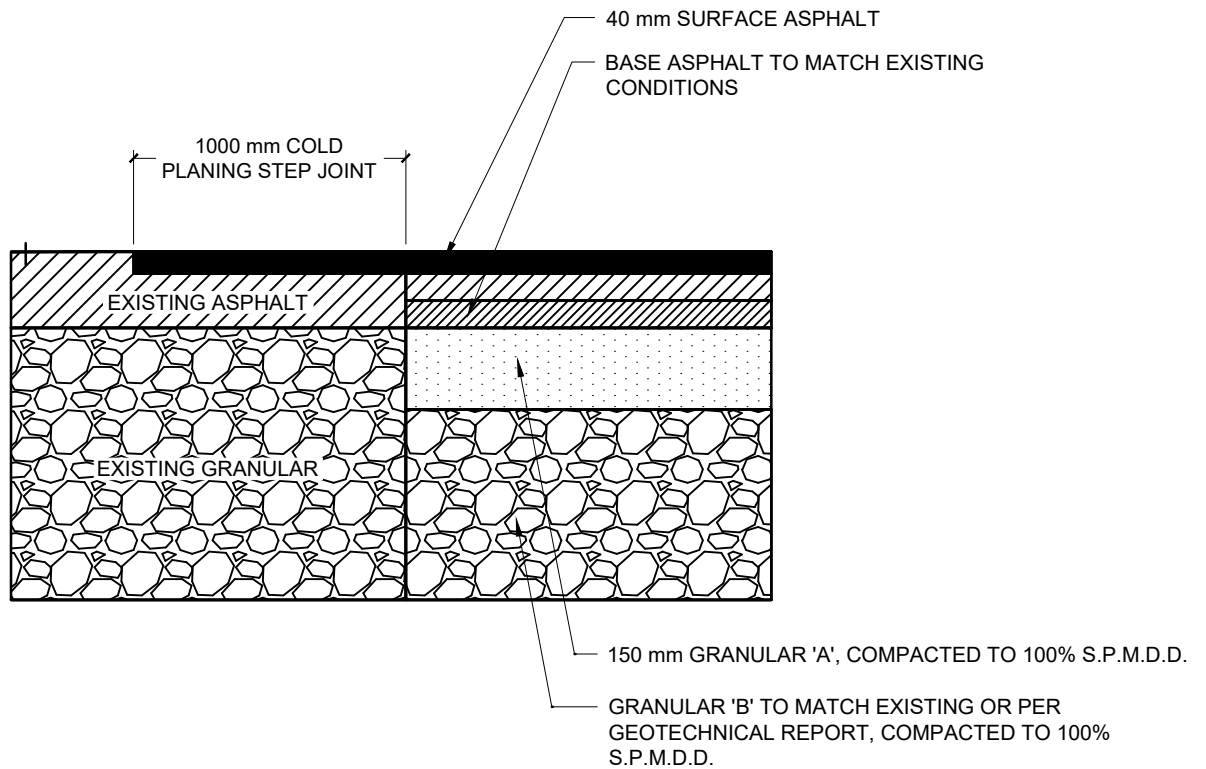
REV 1

MAY 2023

TRENCH RESTORATION DETAIL

THE CITY OF
Waterloo

CW-911



ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

STANDARD DRAWING

REV 1

MAY 2023

ASPHALT STEP JOINT RESTORATION DETAIL

THE CITY OF
Waterloo

CW-912