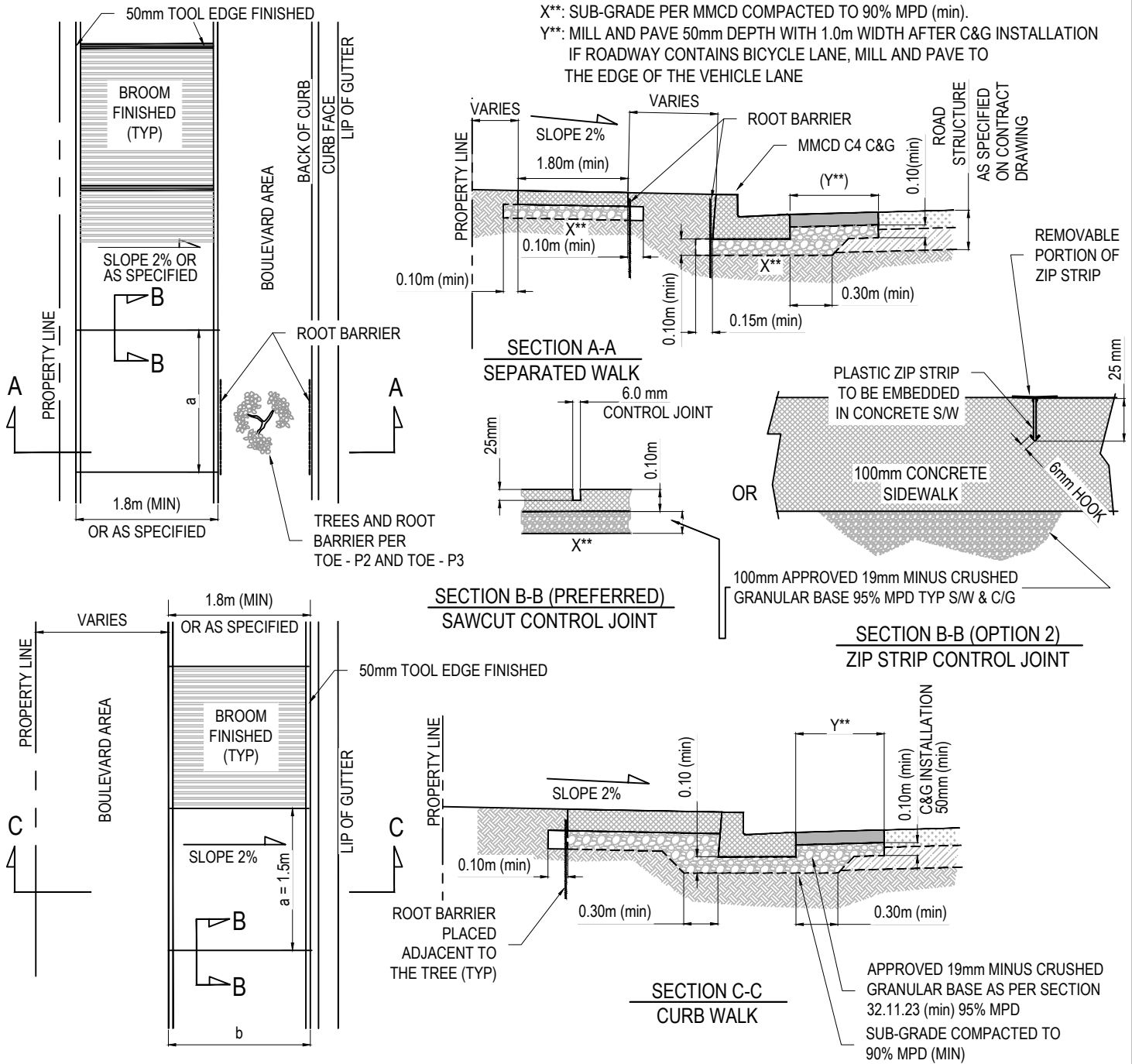




ESQUIMALT ROAD PHASE 2

SUPPLEMENTAL DETAIL DRAWINGS





NOTES:

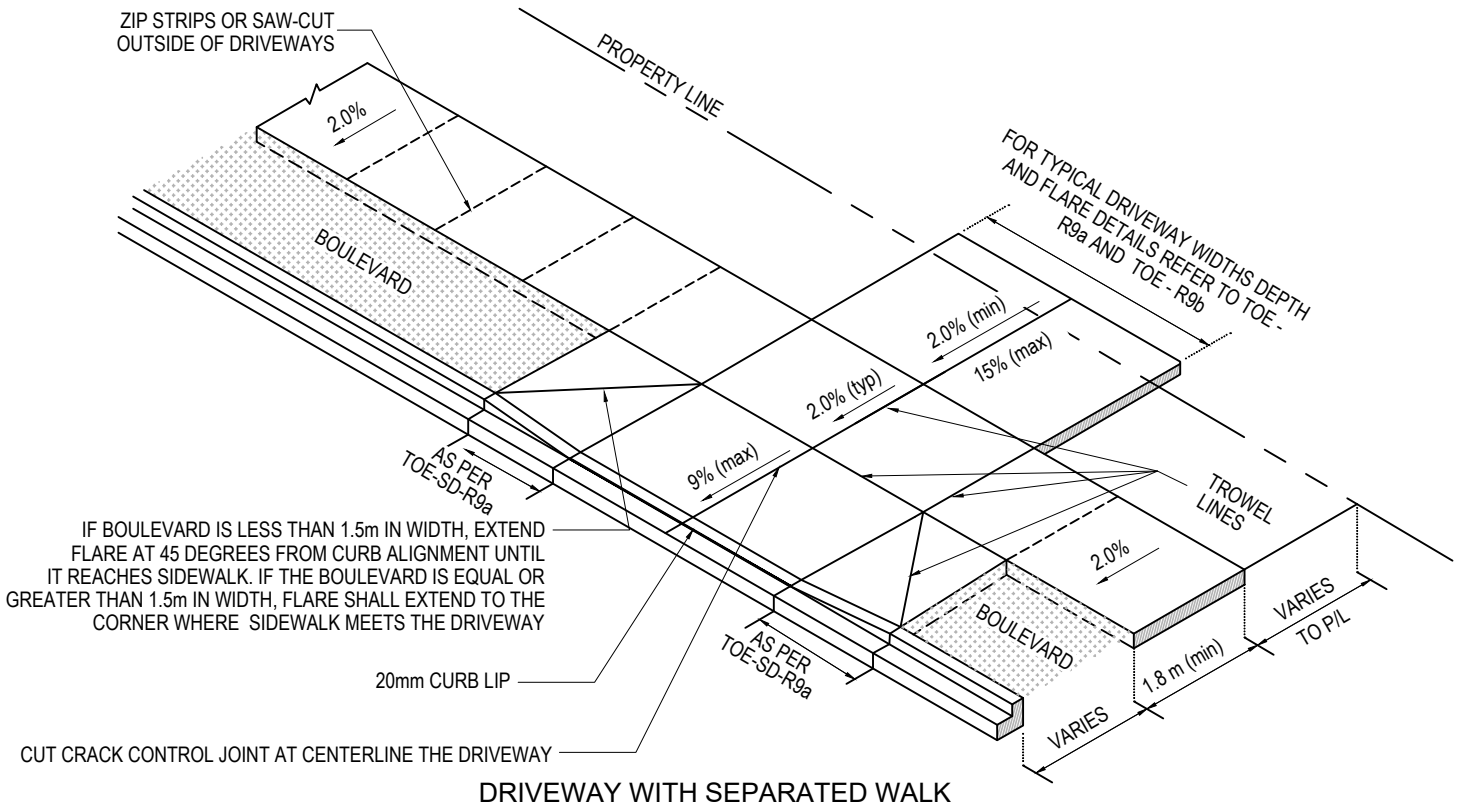
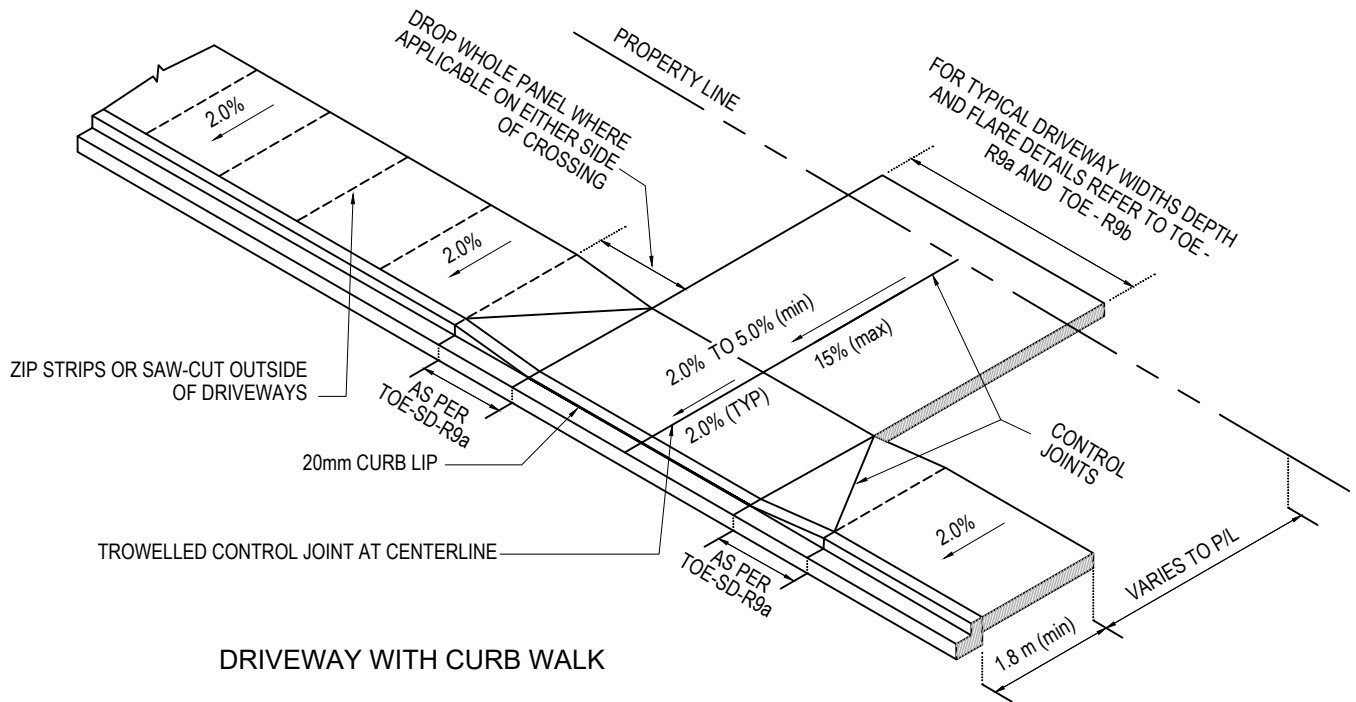
1. SIDEWALK TYP. 1.8m CLEAR WIDTH. WHERE SITE CONDITIONS DO NOT PERMIT, CONTACT THE TOWNSHIP ENGINEERING FOR APPROVAL.
2. DIMENSION "a" SHALL BE EQUAL SPACING FOR THE ENTIRE SIDEWALK BLOCK AT A DESIRED LENGTH OF 1.5m.
3. ADD SAW CUT WHEN SIDEWALK IS >2.4m, CENTER PARTITION AT EQUAL WIDTH OR AS SPECIFIED BY TOWNSHIP.
4. WHERE SIDEWALK IS ADJACENT TO BUILDING FACE, A 0.30m BUILDING STRIP CONTROL JOINT IS DESIRED.
5. REFER TO MMCD FOR DRAWING C4 NARROW BASE FOR THE CURB / GUTTER DIMENSIONS AND SECTION 03.30.20 FOR SPECIFICATIONS.
6. CONTROL JOINTS SHALL BE SAWED INTO THE SIDEWALK WITHIN 24 - 48 HOURS AFTER THE POUR OR,
7. PLASTIC ZIP STRIPS AT 1.5m INTERVAL ARE ACCEPTABLE AT SIDEWALK AREA FOR CONTROL JOINTS, REMOVE TOP PORTION AND TROWEL OVER WHEN CONCRETE SETS.
8. ASPHALT COLD PATCH RESTORATIONS ARE ALLOWED ONLY FOR 2 WEEKS OR LESS DURING CONSTRUCTION, OTHERWISE HOT MIX IS REQUIRED UNTIL FINAL RESTORATION IS COMPLETED.

NTS

CONCRETE SIDEWALK

ISSUE DATE: MAY 21, 2026
APPROVED BY: C. DAVIE

0	DEC. 06, 2023	EFS
1	APR. 15, 2026	EFS
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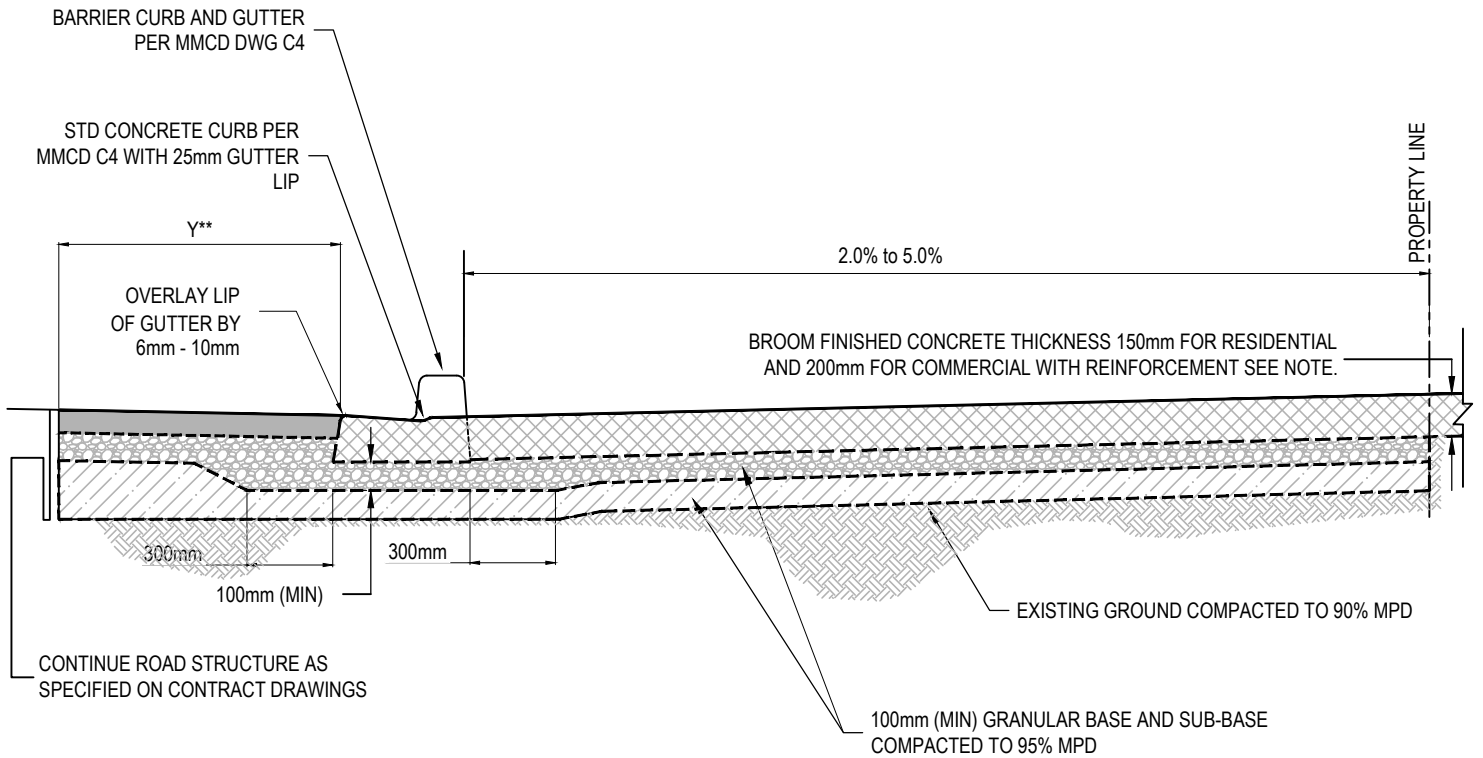
- NOTE:
1. DRIVEWAY CONTROL JOINTS TO BE TROWEL LINES FOR SIDEWALK AREA.
 2. FOR SIDEWALK SEE TOE-SD-C2.1
 3. ALL NEW SIDEWALK WITH SIGNIFICANT AREA ABUTTING OLD SIDEWALK NEARLY TO ITS LIFE END OR EXISTING UTILITIES SUBJECT TO A FUTURE DEVELOPMENT SHALL BE INSTALLED WITH ASPHALT BASE EXPANSION BOARD.
 4. IF SITE CONDITIONS CAN NOT BE ACHIEVED THE RECOMMENDED DESIGN PARAMETERS, CONTACT THE TOWNSHIP'S ENGINEERING DEPARTMENT.

NTS

TYPICAL DRIVEWAY CROSSING

ISSUE DATE: MAY 21, 2026
APPROVED BY: C. DAVIE

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CONTINUE ROAD STRUCTURE AS SPECIFIED ON CONTRACT DRAWINGS

Y** = MILL AND PAVE 1.0m AFTER CURB AND GUTTER INSTALLATION (50mm MIN) UNLESS DEFINED BY TOWNSHIP OF ESQUIMALT (TOE - SD-G5.1)

NOTE:

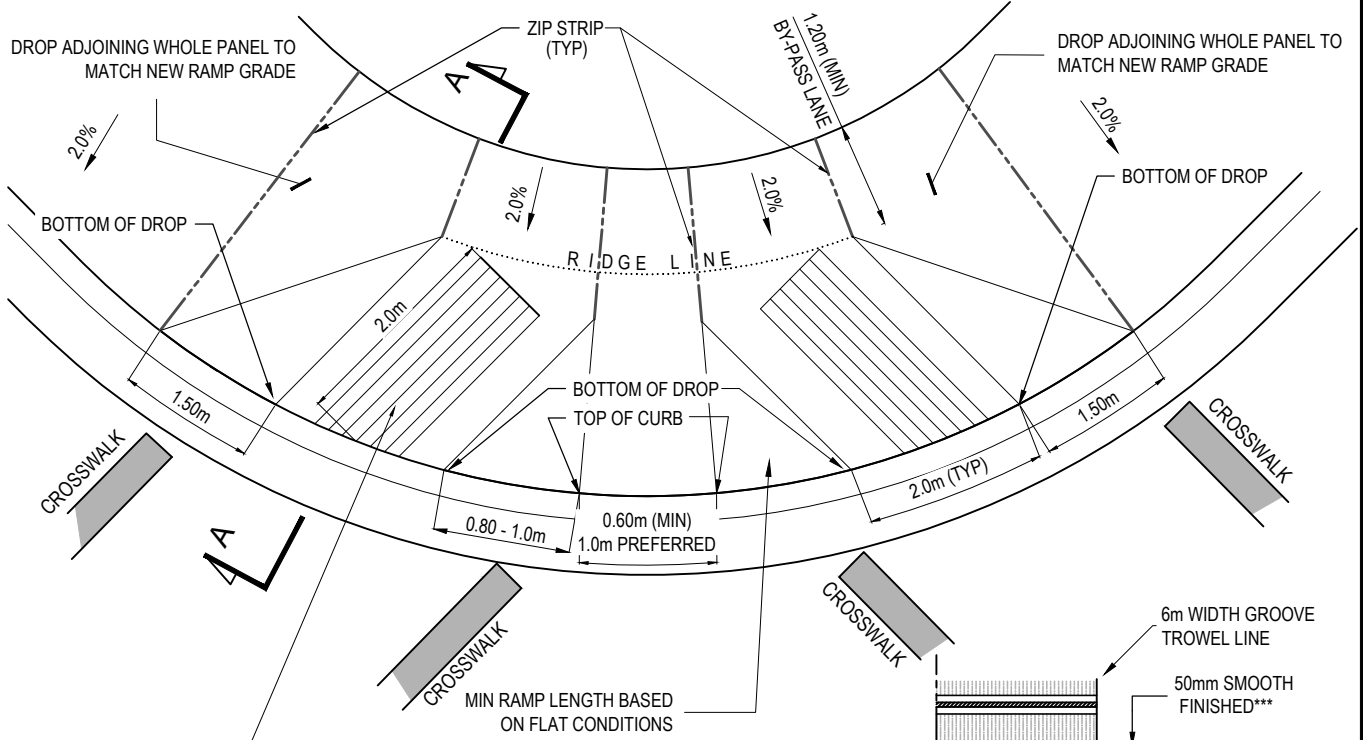
1. FOR SINGLE RESIDENTIAL DRIVEWAYS, USE 8 GAUGE (150 X 150 mm) STANDARD WIRE MESH.
2. FOR MULTI-RESIDENTIAL DRIVEWAYS, USE 6 GAUGE (150 X 150 mm) GALVANIZED WIRE REINFORCEMENT.
3. FOR COMMERCIAL DRIVEWAYS, USE #5 OR 15M SPACED AT MAX 300mm ON CENTER BOTH WAYS. REBAR DEPTH TO BE AT LEAST 75mm FROM DRIVEWAY FINISHED GRADE.
4. RE-BAR CHAIR TO BE USED TO SEAT RE-BAR FROM GROUND (HEAVY DUTY PLASTIC OR CONCRETE CUBE C/W TIE-BARS).
5. IF SITE CONDITIONS CAN NOT ACHIEVED THE RECOMMENDED DESIGN PARAMETERS, CONTACT THE TOWNSHIP'S ENGINEERING DEPARTMENT.

NTS

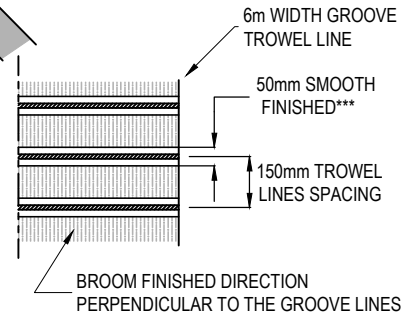
**TYPICAL DRIVEWAY CROSSING
CROSS SECTION**

ISSUE DATE: MAY 21, 2026
APPROVED BY: C. DAVIE

0	DEC.06.2023	EFS
1	APR.15, 2026	EFS
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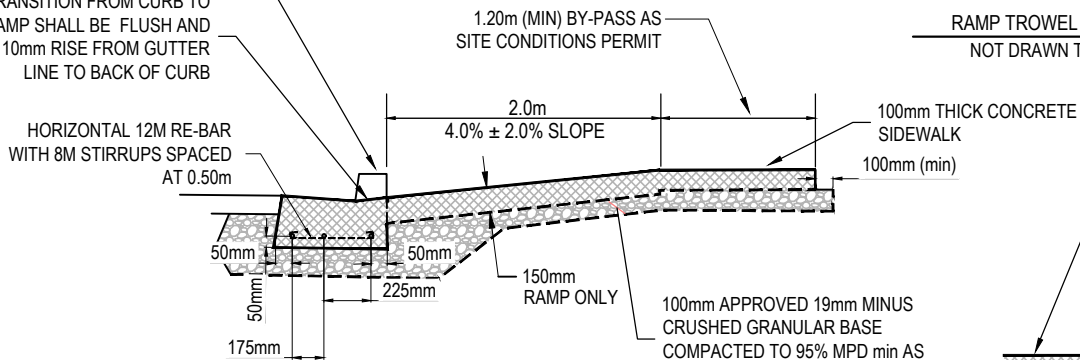
TROWEL LINES MUST LINE UP IN THE DIRECTION OF TRAVEL AND PARALLEL WITH THE PEDESTRIAN CROSSING OR MARKED CROSSWALK. SEVEN (7) TROWEL LINES (PREF) 150mm APART. USE 8.0mm TROWEL STRAIGHT EDGE TOOL FINISHED (TYP.) SEE RAMP TROWEL DETAIL.



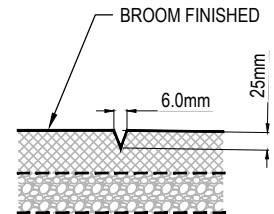
RAMP TROWEL LINES DETAIL
NOT DRAWN TO SCALE

BARRIER TYPE MMCD DWG C4
TRANSITION FROM CURB TO RAMP SHALL BE FLUSH AND MAX 10mm RISE FROM GUTTER LINE TO BACK OF CURB

***: GROOVE MUST BE RE-TOOLED TO HIGHLIGHT STRAIGHT EDGE



SECTION A-A CURB RAMP
NOT DRAWN TO SCALE



TROWEL MARK DETAIL
NOT DRAWN TO SCALE

NOTES:

- STANDARD RAMP LENGTH : 2.0m TYP (±) AT CENTER OF RAMP
- RAMP SLOPE (4.0% ± 2%).
- WHEN SITE CONDITIONS DO NOT PERMIT TYPICAL LAYOUT, CONTACT TOWNSHIP'S ENGINEERING DEPARTMENT FOR APPROVAL OF DESIGN.
- SIDEWALK MUST EXTEND AROUND SIGNAL POLE TO ACHIEVE ACCESSIBILITY TO PUSH BUTTONS.

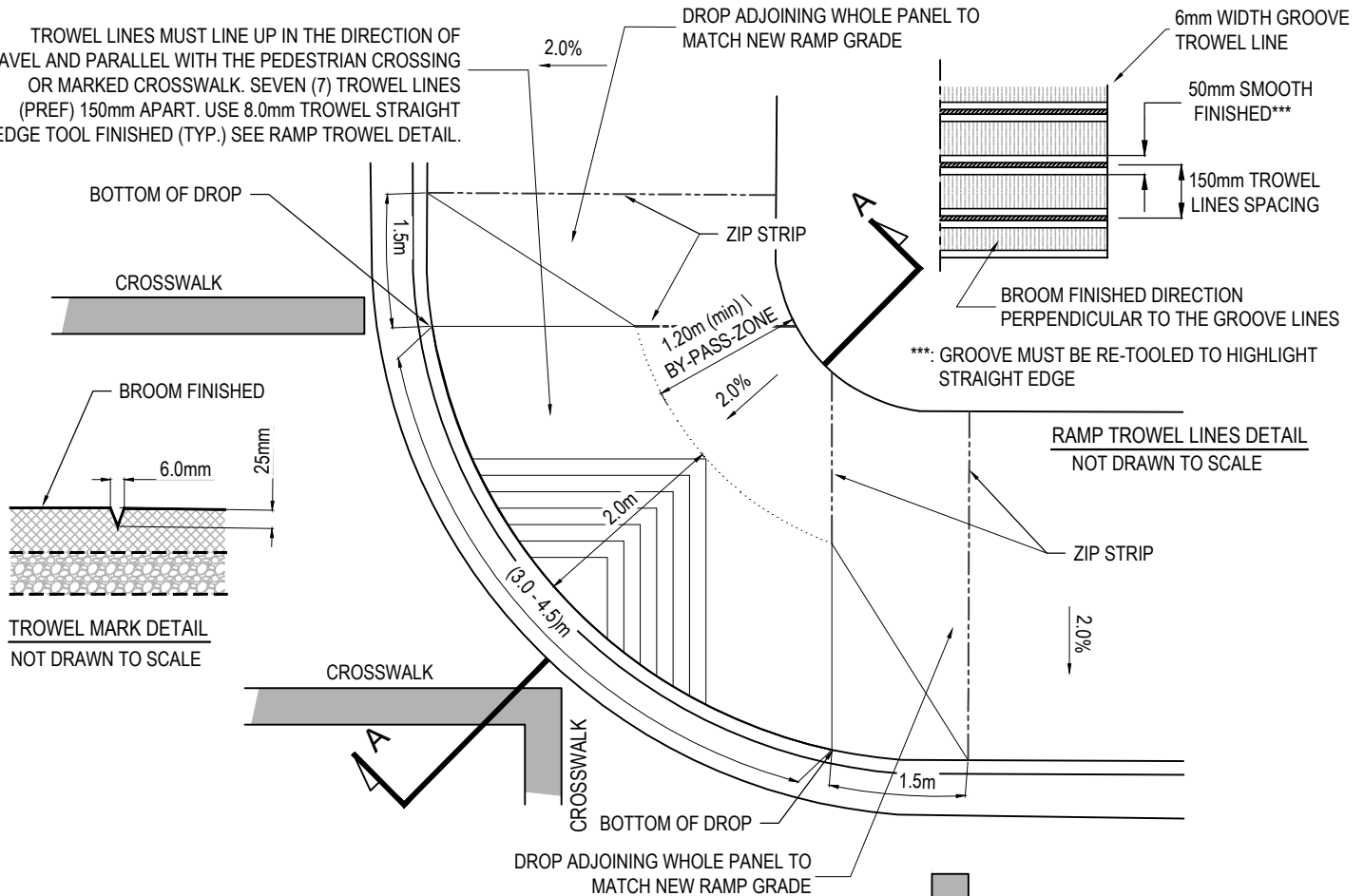
NTS

0	DEC.06.2023	EFS
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DOUBLE WHEELCHAIR RAMPS (PREFERRED)

ISSUE DATE: MAY 21, 2026
APPROVED BY: C. DAVIE

TROWEL LINES MUST LINE UP IN THE DIRECTION OF TRAVEL AND PARALLEL WITH THE PEDESTRIAN CROSSWALK OR MARKED CROSSWALK. SEVEN (7) TROWEL LINES (PREF) 150mm APART. USE 8.0mm TROWEL STRAIGHT EDGE TOOL FINISHED (TYP.) SEE RAMP TROWEL DETAIL.



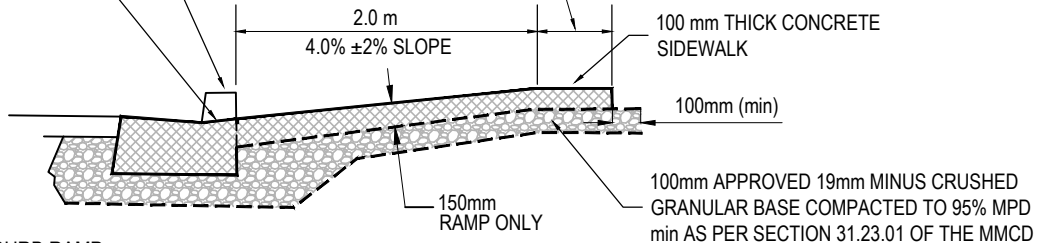
TROWEL MARK DETAIL
NOT DRAWN TO SCALE

RAMP TROWEL LINES DETAIL
NOT DRAWN TO SCALE

BARRIER TYPE MMCD DWG C4

TRANSITION FROM CURB TO RAMP SHALL BE FLUSH AND MAX 10mm RISE FROM GUTTER LINE TO BACK OF CURB

1.20m (MIN) BY-PASS AS SITE CONDITIONS PERMIT



SECTION A-A CURB RAMP
NOT DRAWN TO SCALE

NOTES:

1. STANDARD RAMP LENGTH: 2.0m TYP (±) AT CENTER OF RAMP.
2. RAMP SLOPE (4.0% ±2%).
3. WHEN SITE CONDITIONS DO NOT PERMIT TYPICAL LAYOUT, CONTACT TOWNSHIP'S ENGINEERING DEPARTMENT FOR APPROVAL OF DESIGN.
4. SIDEWALK MUST EXTEND AROUND SIGNAL POLE (WHERE APPLICABLE) TO ACHIEVE ACCESSIBILITY TO PUSH BUTTONS.

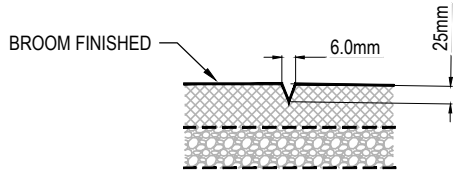
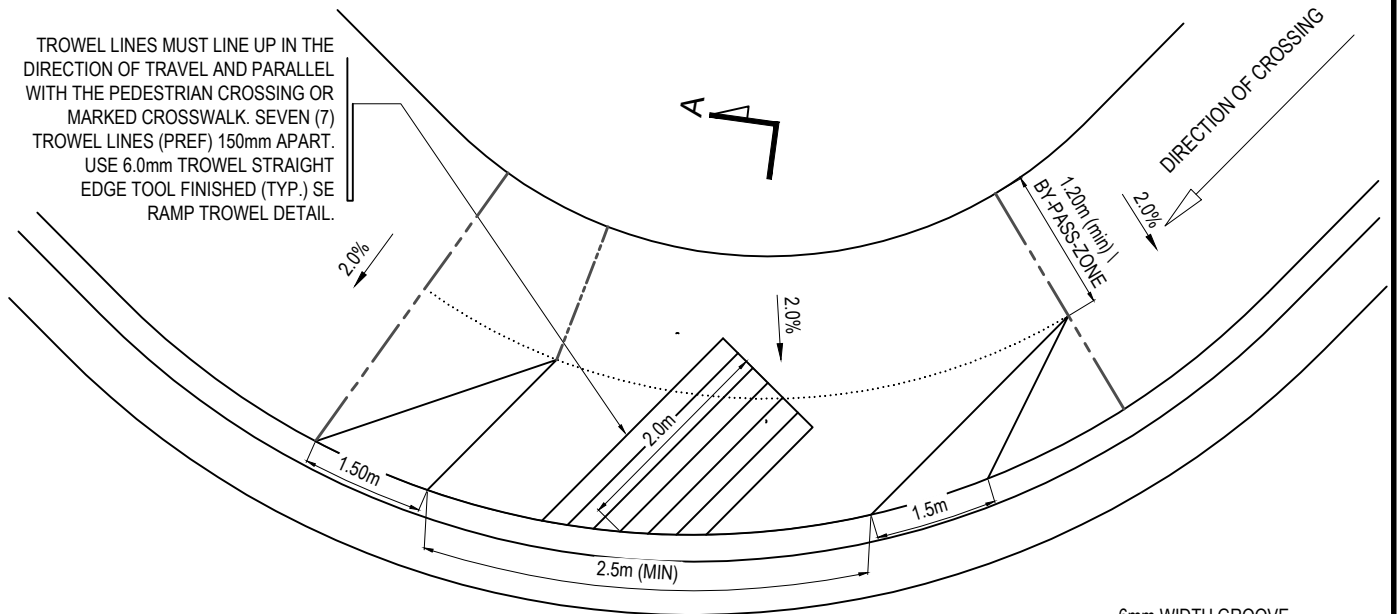
NTS

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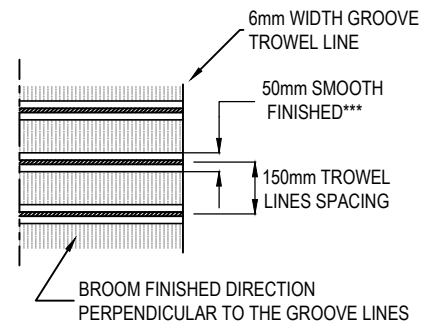
SINGLE RADIAL WHEELCHAIR RAMP

ISSUE DATE: MAY 21, 2026
APPROVED BY: C. DAVIE

TROWEL LINES MUST LINE UP IN THE DIRECTION OF TRAVEL AND PARALLEL WITH THE PEDESTRIAN CROSSING OR MARKED CROSSWALK. SEVEN (7) TROWEL LINES (PREF) 150mm APART. USE 6.0mm TROWEL STRAIGHT EDGE TOOL FINISHED (TYP.) SE RAMP TROWEL DETAIL.

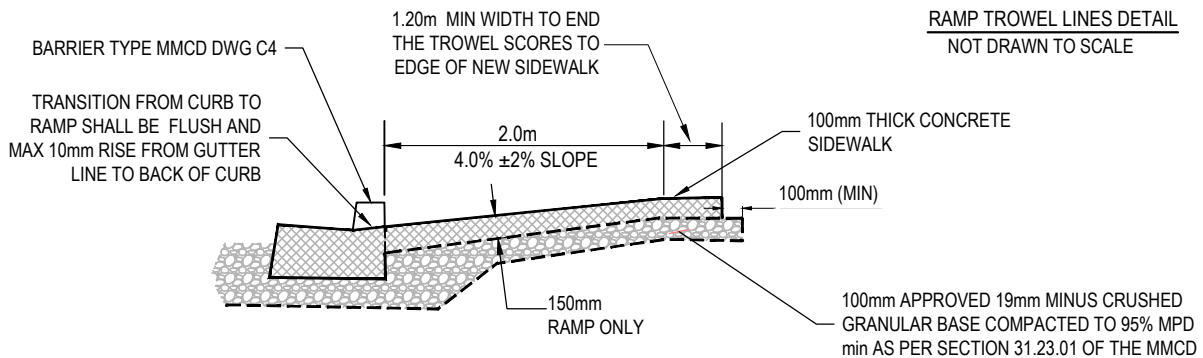


TROWEL MARK DETAIL
NOT DRAWN TO SCALE



***: GROOVE MUST BE RE-TOOLED TO HIGHLIGHT STRAIGHT EDGE

RAMP TROWEL LINES DETAIL
NOT DRAWN TO SCALE



SECTION A-A CURB RAMP
NOT DRAWN TO SCALE

NOTES:

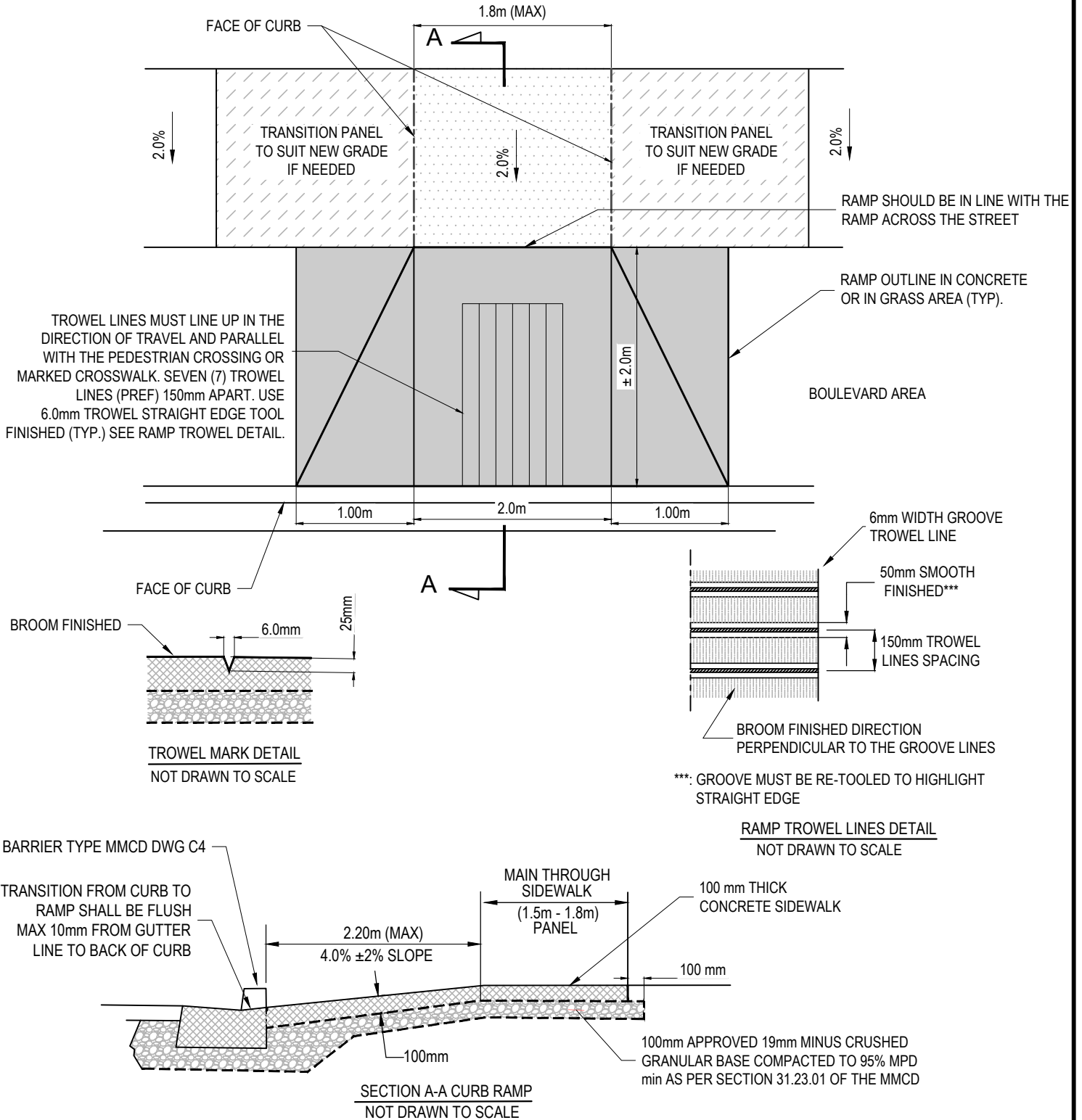
1. STANDARD RAMP LENGTH : 2.0m TYP(±) AT CENTER OF RAMP
2. RAMP SLOPE (4.0% ±2%).
3. WHEN SITE CONDITIONS DO NOT PERMIT TYPICAL LAYOUT, CONTACT TOWNSHIP'S ENGINEERING DEPARTMENT FOR APPROVAL OF DESIGN.
4. SIDEWALK MUST EXTEND AROUND SIGNAL POLE TO ACHIEVE ACCESSIBILITY TO PUSH BUTTONS.

NTS

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1	APR.15.2026	EFS
REV	REVISION DATE	UPDATED BY

SINGLE DIRECTIONAL WHEELCHAIR RAMP

ISSUE DATE: MAY 21, 2026
APPROVED BY: C. DAVIE



NOTES:

1. STANDARD RAMP LENGTH : 2.0m TYP(±) AT CENTER OF RAMP
2. RAMP SLOPE (4.0% ± 2%).
3. WHEN SITE CONDITIONS DO NOT PERMIT TYPICAL LAYOUT, CONTACT TOWNSHIP'S ENGINEERING DEPARTMENT FOR APPROVAL OF DESIGN.
4. SIDEWALK MUST EXTEND AROUND SIGNAL POLE TO ACHIEVE ACCESSIBILITY TO PUSH BUTTONS.

NTS

0	DEC.06.2023	EFS
1	APR.15.2026	EFS
REV	REVISION DATE	UPDATED BY

T - INTERSECTION/MID-BLOCK WHEELCHAIR RAMP

ISSUE DATE: MAY 21, 2026
APPROVED BY: C. DAVIE

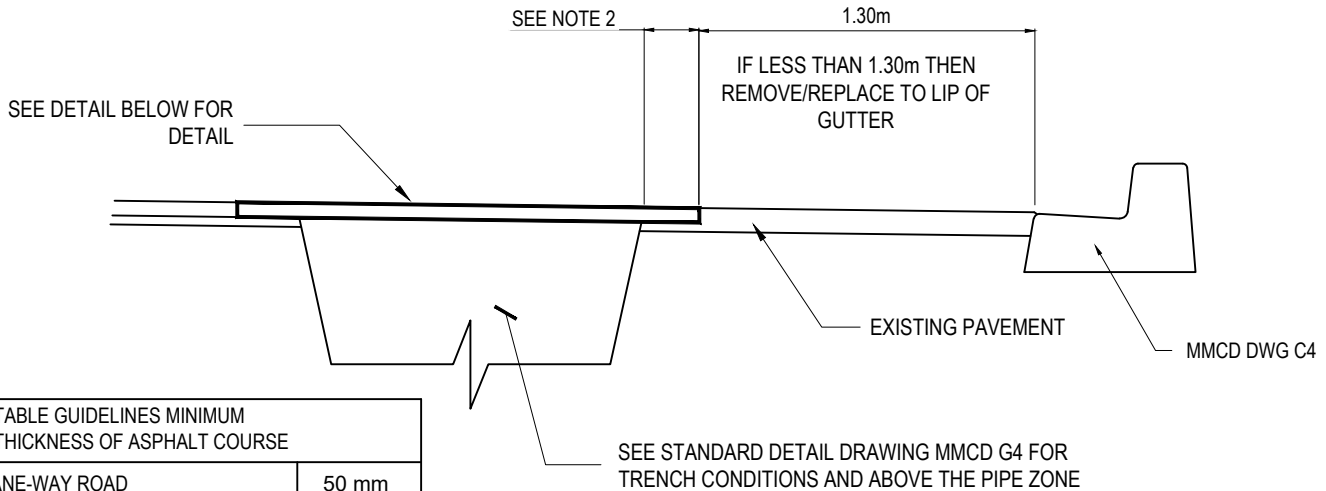
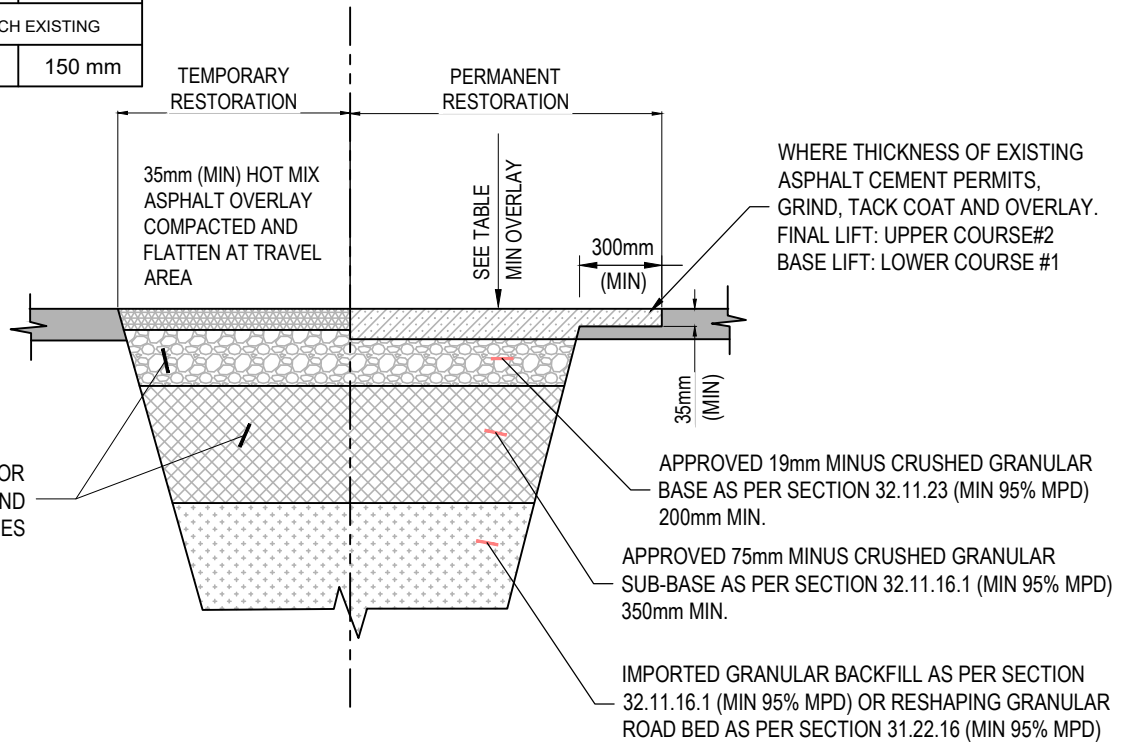


TABLE GUIDELINES MINIMUM THICKNESS OF ASPHALT COURSE	
LANE-WAY ROAD	50 mm
LOCAL ROAD	75 mm
COLLECTOR ROAD	100 mm
ARTERIAL ROAD	150 mm
ALL THICKNESSES ARE * MIN OR MATCH EXISTING	
** ALL BUS STOP / BAYS	150 mm



REFER TO CONTRACT DRAWINGS FOR REQUIRED THICKNESS OF BASE AND SUB-BASE PER DESIGN GUIDELINES

NOTES:

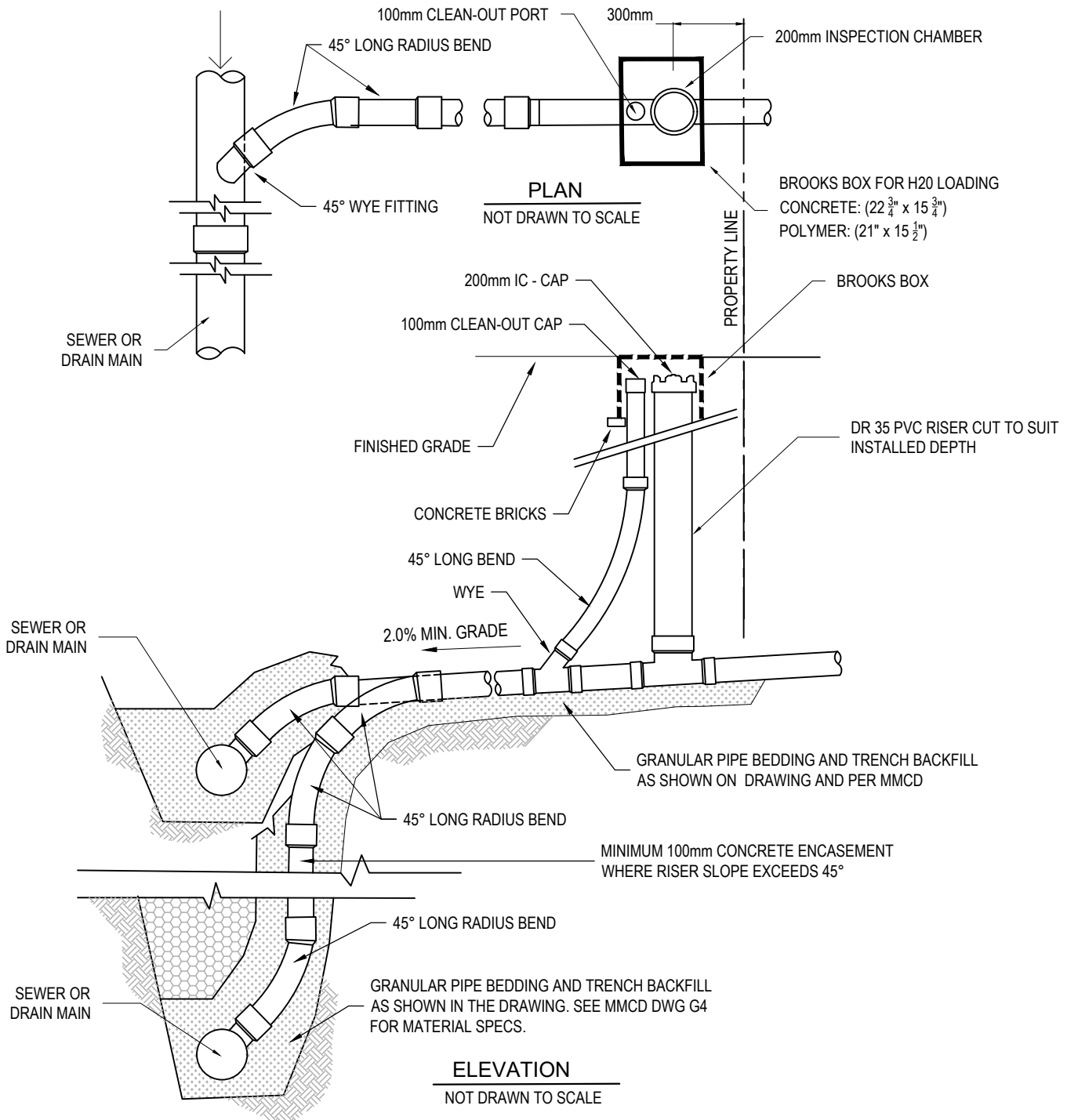
1. TRENCHLINE SHOWN FROM APPROVED CONSTRUCTION PLAN SHALL BE SUPERSEDED WITH THE NEW LINE FROM THE UNDISTURBED AREA BEING REFERENCED.
2. EXTEND PAVEMENT RESTORATION LIMITS TO NEAREST LANE/CENTRELINE/BIKE LINE OR HALF LANE WIDTH (VEHICLE LANES ONLY). ENSURE SEAMS ARE OUTSIDE OF WHEEL PATH.
3. COLD MIX ASPHALT OVERLAY IS ACCEPTABLE FOR 2 WEEKS. FOR TEMPORARY RESTORATION, OTHERWISE HOT-MIX REQUIRED. CONTRACTOR TO MONITOR ROAD FOR GRANULAR AGGREGATES SPALLING. IMMEDIATE POT HOLE REPAIR IS REQUIRED FOR DAMAGED AREAS.

NTS

PAVEMENT RESTORATION

0	DEC.06.2023	EFS
1	APR.15, 2026	EFS
REV	REVISION DATE	UPDATED BY

ISSUE DATE: MAY 21, 2026
APPROVED BY: C. DAVIE



NOTES:

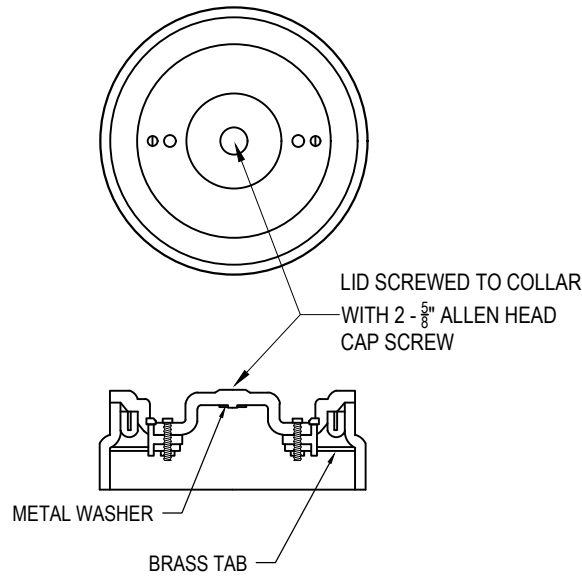
1. CONNECTIONS TO BE 100mm TO 200mm AS SPECIFIED ON CONTRACT DRAWINGS.
2. RISER TYPE SERVICE TO BE USED ONLY WHEN SERVICE IS MORE THAN 2.4m ABOVE WYE INVERT OR AS DIRECTED BY THE TOWNSHIP ENGINEERING.
3. SERVICE CROSSINGS COVER LESS THAN 1.0m AT ROAD AREAS TO BE DESIGN BY AN ENGINEER AND TO BE APPROVE BY THE TOWNSHIP.
4. LOCATION OF SERVICE AND MARKER AS SHOWN ON CONTRACT DRAWINGS.
5. SEE DRAWING S9a FOR DETAILS OF INSPECTION CHAMBER AND INSTALLATION REQUIREMENTS.
6. INSPECTION CHAMBER AND CLEAN-OUT TO BE HOUSED IN THE BROOKS BOX SHOWN IN DWG S9a. BOX TO BE ADJUSTED TO SUIT INSTALLATION IF NEEDED.
7. LID TO BE COLOR CODED (RED = SEWER , GREEN = DRAIN)

NTS

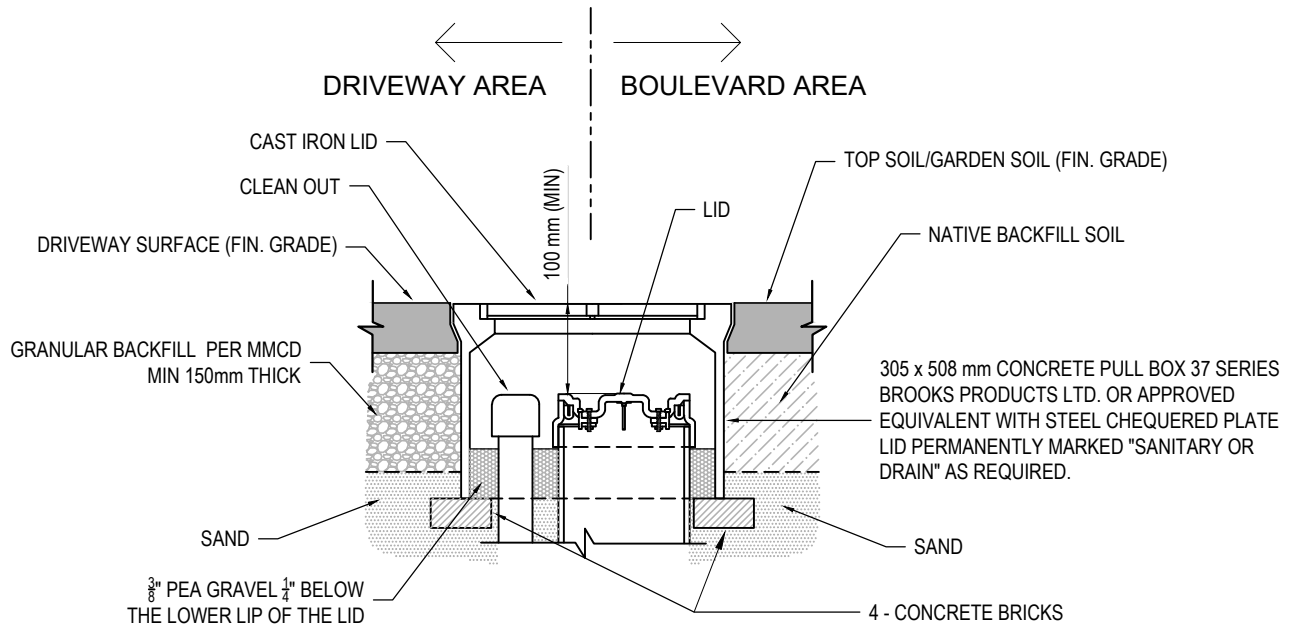
0	DEC.06.2023	EFS
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SANITARY AND STORM SEWER SERVICES

ISSUE DATE: MAY 21, 2026
APPROVED BY: C. DAVIE



LID DETAIL
NOT DRAWN TO SCALE



INSTALLATION IN DRIVEWAY AND BOULEVARD
NOT DRAWN TO SCALE

NOTES:

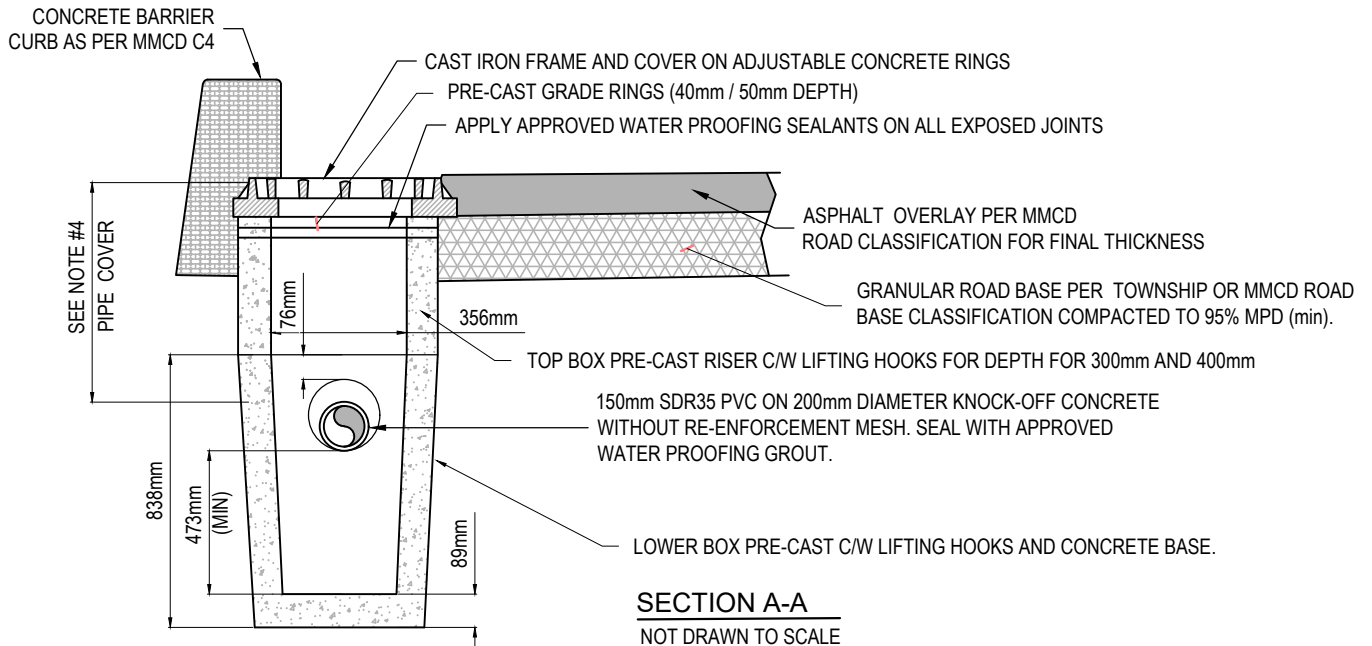
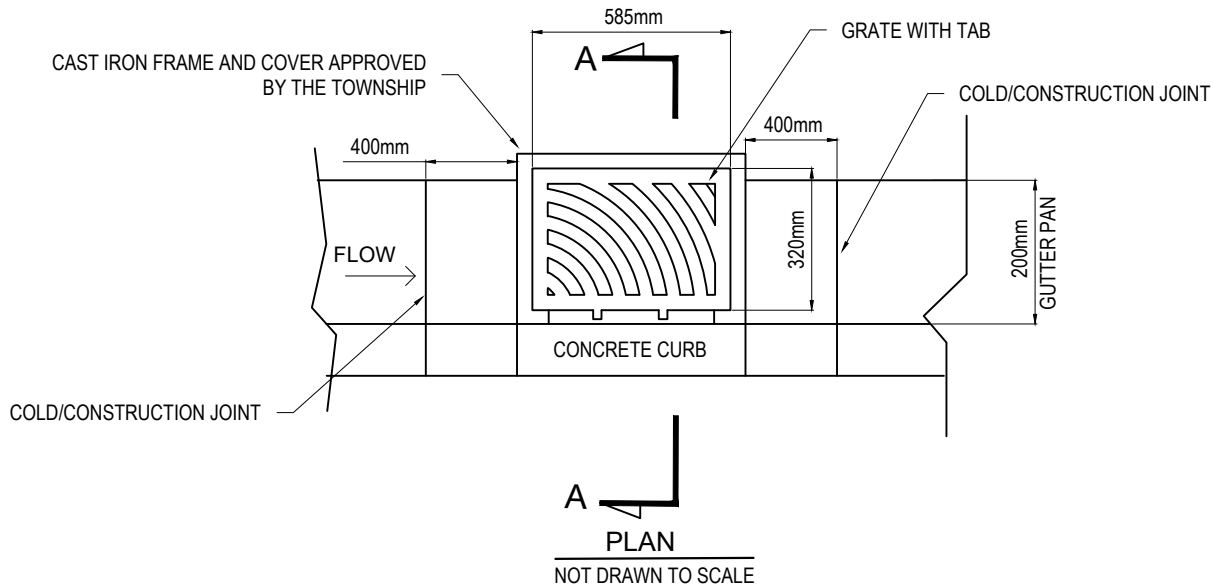
1. REFER TO DRAWING S7-a FOR INSTALLATION REQUIREMENTS
2. INSPECTION CHAMBER TO BE APPROVED MANUFACTURED FITTING.
3. REFER TO CONTRACT DRAWINGS FOR SITE SPECIFIC DIMENSIONS REFER TO SECTION 33 30 01 FOR DETAILED SPECIFICATIONS.
4. ONLY CONCRETE BROOK BOXES WITH CAST IRON LID IS ALLOWED FOR DRIVEWAY OR PARKING AREAS.

NTS

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**INSPECTION CHAMBER FOR 100mm TO 200mm
DRAIN & SEWER CONNECTION**

ISSUE DATE: MAY 21, 2026
APPROVED BY: C. DAVIE



NOTES:

1. PRE-CAST UNITS C/W BASE AND H-20 RATING, APPROVED BY THE TOWNSHIP ENGINEERING DEPARTMENT ARE ACCEPTABLE.
2. REFER TO MMCD DRAWINGS AND SECTION 33 44 01 FOR SPECIFICATIONS UNLESS ITS MODIFIED IN THIS DRAWING.
3. CATCH BASIN FRAME AND COVER TO BE INSTALLED 20mm LOWER FROM THE GUTTER PAN / TOE OF FACE OF CURB.
4. COMBINED STORM LEADS TO BE SIZED BY THE ENGINEER ON RECORD OR CONFIRM WITH THE TOWNSHIP ENGINEERING.
5. CB LEAD COVER FOR RESIDENTIAL ROAD TO BE 1.00m AND (ARTERIAL/COLLECTOR) TO BE 1.20m.
6. USE PRE-CAST RINGS TO ATTAIN TO DESIRED FINISH GRADE. ALL JOINTS INSIDE THE CHAMBER MUST BE SEALED WITH APPROVED SEALANT OR WATER PROOFING CONCRETE MORTAR.
7. NO BRICK OR CONCRETE PAVER TO BE USED IN GRADE ADJUSTMENT TO FINAL GRADE.
8. INLET PIPE HOLE TO BE SEALED COMPLETELY IN/OUT OF THE CHAMBER. INTERIOR WALL FINISHED OF THE CHAMBER MUST BE SMOOTH.
9. IF SITE CONDITION DOESN'T PERMIT, CONTACT THE TOWNSHIP'S ENGINEERING DEPARTMENT.

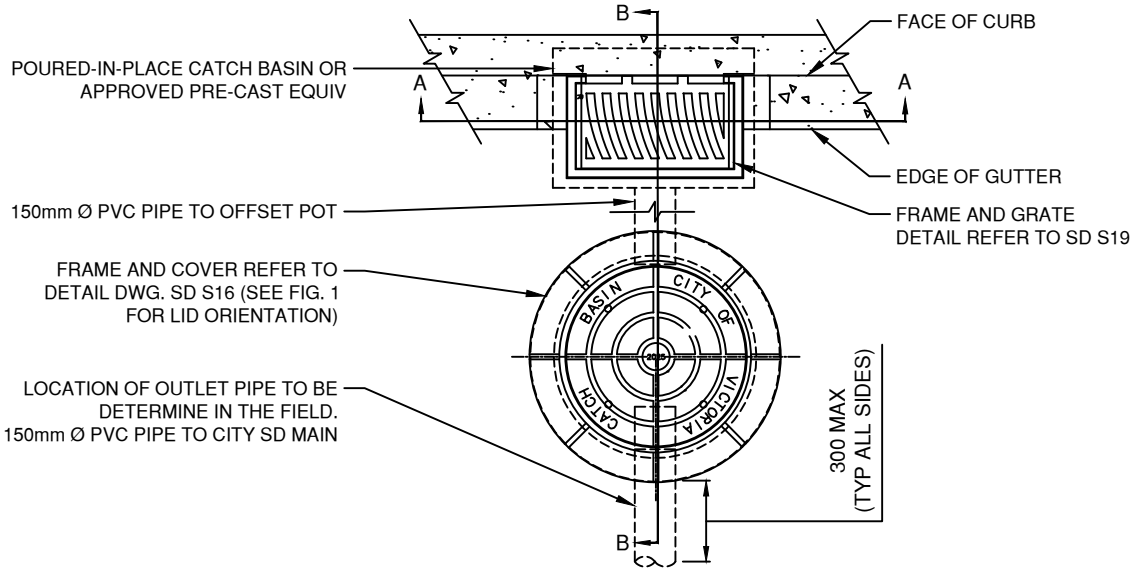
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TOP INLET CATCH BASIN

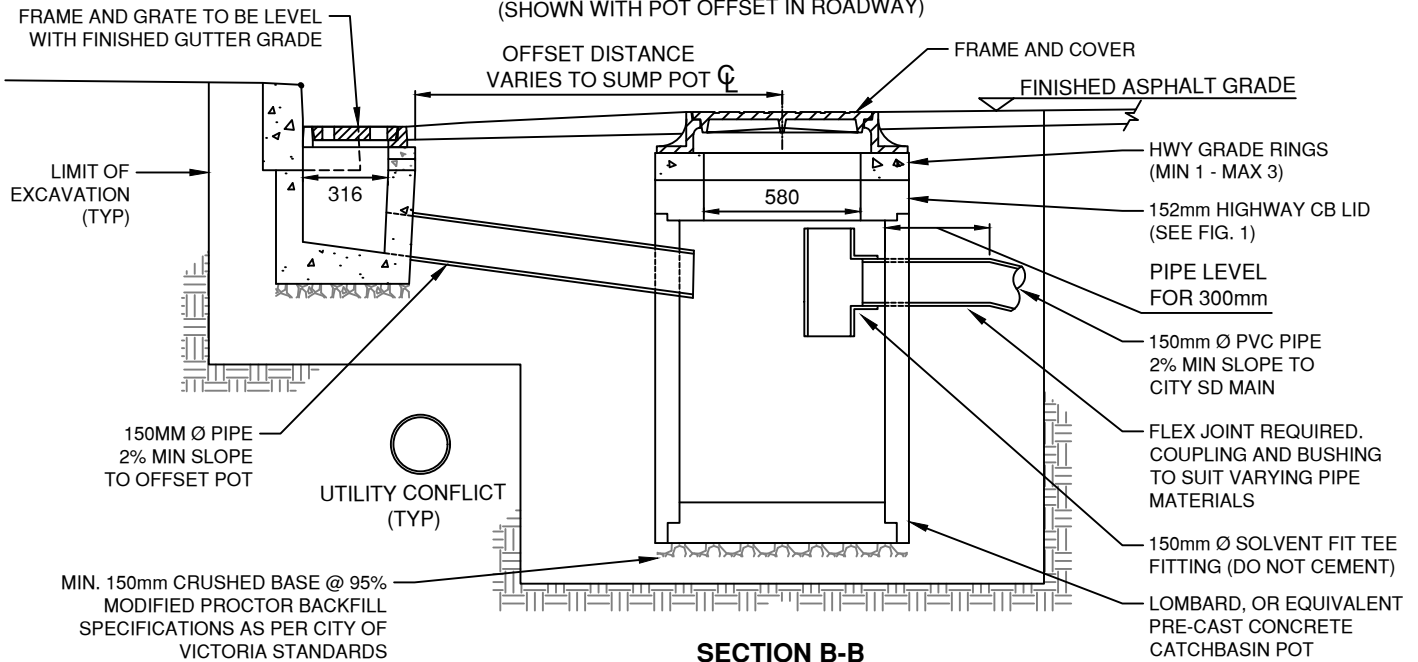
ISSUE DATE: MAY 21, 2026
APPROVED BY: C. DAVIE

SUPPLEMENTARY STANDARD DETAIL DRAWING

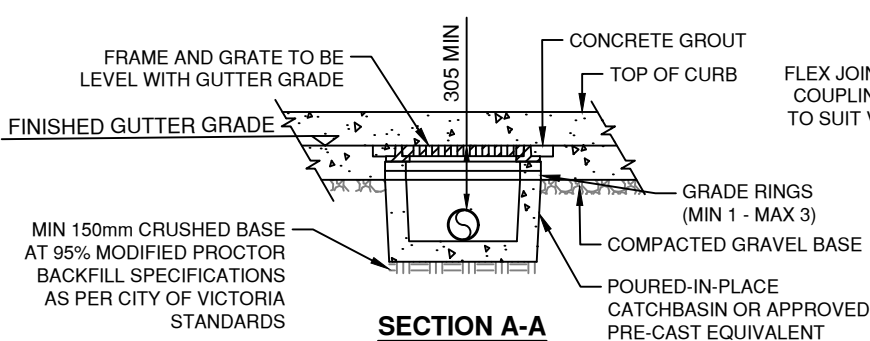


PLAN

(SHOWN WITH POT OFFSET IN ROADWAY)



SECTION B-B



SECTION A-A

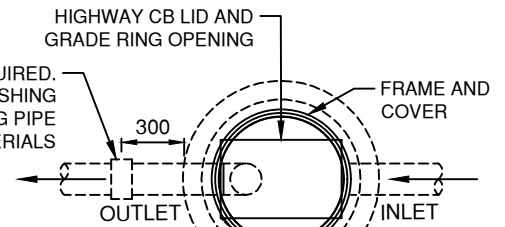


FIG. 1

OFFSET SUMP LID ORIENTATION
HIGHWAY GRADE RINGS ARE AVAILABLE IN
50mm AND 100mm THICKNESS

NOT TO SCALE

STANDARD OFFSET CATCHBASIN DETAIL

Revision Date

JULY 2025

Drawing Number

SD S11c

Bollard Cover R-7301

General Description:

R-7301 Stainless Steel Bollard Covers offer the most versatile protection for posts under 4-1/2 inches in diameter. This is a shorter model in comparison to the R-7301-EX with a height of 36 inches and features a dome top. Increase visibility and aesthetics of steel pipe security posts, while ensuring protection from wear and corrosion. 4 installation types available: Spray foam adhesive, set screws, top hanger, or J hanger. Covers are made from corrosion-resistant 316 stainless steel. Optional powder coating is available in 1 of 6 custom colors.

Specifications:

Height: 36"
 Base Diameter: 6 1/4"
 Weight: 25 lbs (Bollard Only)
 Material: Stainless Steel 316
 Max. Interior Security Post Size:
 4 1/2" x 34" (Diameter x Height)

Finish Options:

- Satin #6 Buffed
- Polyester Powdercoated (Additional service charge)

See Reliance Foundry's standard color options at:
www.reliance-foundry.com/bollard/colors-bollards

Installation Options:

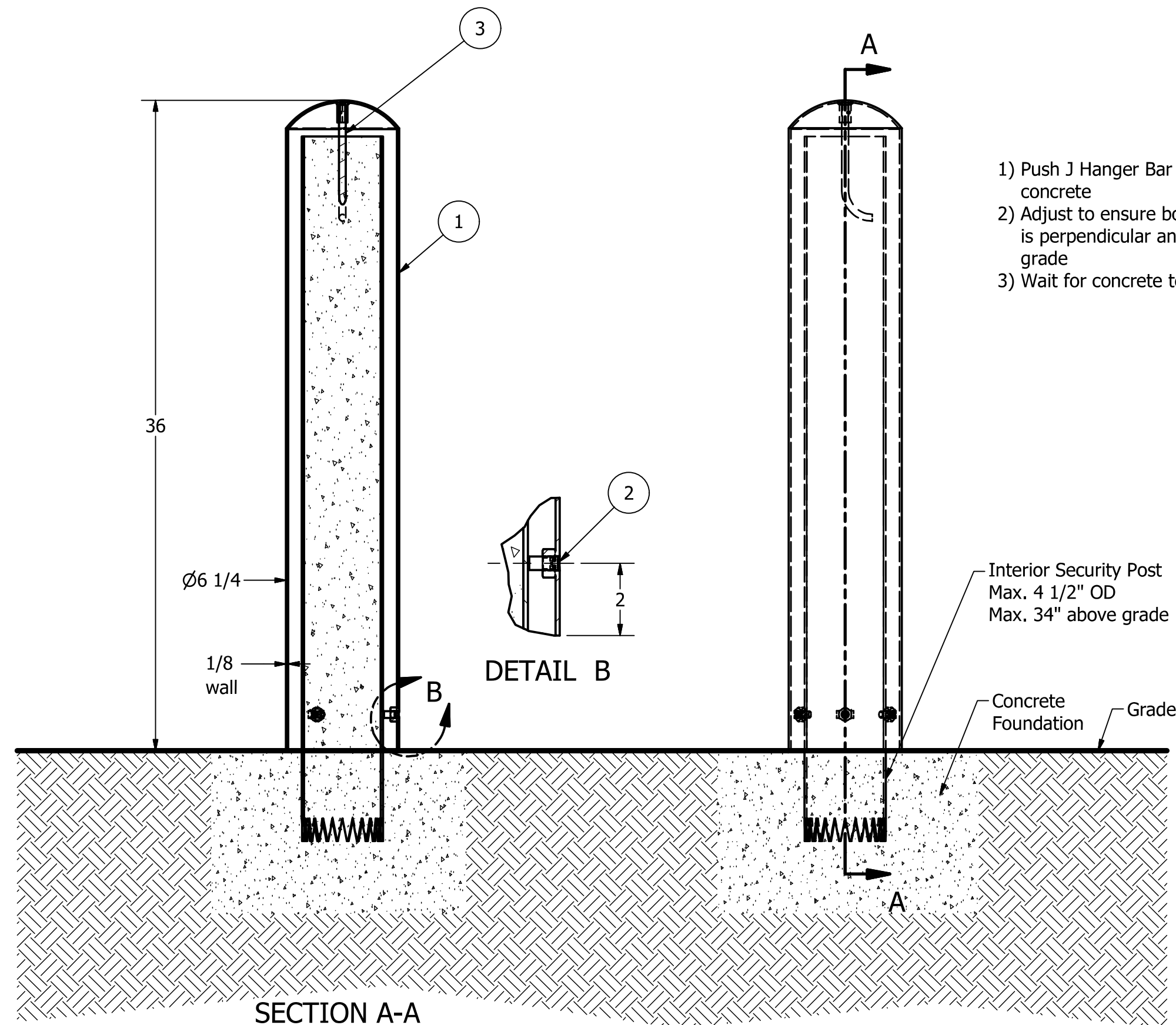
- Set Screw Installation Option
(see sheet 2 of 5)
- Adhesive Foam Installation Option
(see sheet 3 of 5)
- Top Hanger Installation in Existing Concrete
(see sheet 4 of 5)
- J Hanger Installation in New Concrete
(see sheet 5 of 5)

For more information on bollard post installation, please visit:
www.reliance-foundry.com/bollard/installation-bollards

Care and Maintenance:

Despite its natural anti-corrosion properties, stainless steel may corrode if cautionary procedures are not followed, or if products are neglected for extended periods of time. High-saline environments or other areas with high exposure to chlorides may increase risk of stainless steel corrosion. Regular cleaning will maintain optimal condition and appearance.

See Reliance Foundry's maintenance guide at:
www.reliance-foundry.com/bollard/stainless-steel-maintenance



- 1) Push J Hanger Bar into wet concrete
- 2) Adjust to ensure bollard cover is perpendicular and flush to grade
- 3) Wait for concrete to cure



J Hanger Installation in New Concrete

Notes:

- 1) Bollard cover is provided as shown. Concrete, foundation and/or installation ordered separately or provided by others.
- 2) Minimum foundation sizes depend on local soil conditions, weather conditions, and engineering requirements.
- 3) Dimensions provided herein is for reference only. Please consult Reliance Foundry sales professionals if any dimension is critical to your particular installation.
- 4) Reliance Foundry reserves the right to amend design and specifications without prior notice for product improvement.

PARTS LIST

ITEM	QTY	PART NUMBER	DESCRIPTION	MATERIAL	WEIGHT
1	1	R-7301	R7301 Stainless Steel Bollard Cover	Stainless Steel 316	25 lbs
2	3	Hexagon Socket Set Screw 3/8" x 7/8"	Hexagon Socket Set Screw 3/8" x 7/8" - requires 3/16" hex key	Stainless Steel	
3	1	R7300 J HANGER 3/8"	R7300 Top J Hanger 3/8" Custom Order Length	Steel	1/4 lbs

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RELIANCE FOUNDRY
 SINCE 1925

Unit 207, 6450 - 148 Street, Surrey, BC V3S 7G7, Canada
 1-877-789-3245 info@reliance-foundry.com
www.reliance-foundry.com

TITLE

Bollard Cover R-7301

SIZE
C

DWG NO
R7301

REV
C2

NOT TO SCALE

SHEET 5 OF 5

MMCD Section 33 11 01 - WATERWORKS

NOTE:
 1. All waterworks product to conform to NSF61.
 2. All waterworks product to conform to NSF372 to be "lead free".
 3. All bolts, nuts, rods and washers for use on all fittings and restraints shall be Core 10
 4. Waterworks products shall conform to CSA Standard, where applicable.

MAINLINE PIPES

MMCD Sub-Section	Manufacturer	Make / Model	Size Range	Comments/Restrictions.
2.2.1 Ductile Iron	Canada Pipe, US Pipe	Ductile PC350 AWWA C151	100mm to 450mm	
2.2.2 PVC Pressure Pipe	IPEX, NAPCO Royal Pipe	PVC DR18, PR235 AWWA C900	100mm to 300mm	
	IPEX, NAPCO Royal Pipe	PVC CIOD, PR235 AWWA C909	100mm to 450mm	Thickened bells
	NAPCO Royal Pipe	Cobra Lock PVC DR18, PR235 AWWA C900	100mm to 300mm	For use on temporary / by-pass piping situations only

FITTINGS

MMCD Sub-Section	Manufacturer	Make / Model	Size Range	Comments/Restrictions.
2.2.4.3 Compact Ductile Iron	Sigma Star Pipe Canada Terminal City / ACS Westview Sales	AWWA C153	100mm to 450mm	Fittings may be HxH, HxFI, MJxMJ, MJxFI or FlxFI Hub ends shall have lugs with holes suitable for restraint rods.
2.2.4.4 & PVC Injection & 2.2.4.5 Fabricated	IPEX NAPCO Royal Pipe	C900 / C907 / C909	100mm to 450mm	Pressure class to meet or exceed mainline
2.2.4.12 Couplings and Flanged Coupling Adaptors	EBAA	3800	100mm to 400mm	400mm available only for C900 including C909
	ROBAR	1506	100mm to 400mm	
	ROBAR ROMAC	1508 501	100mm to 400mm 100mm to 400mm	
<i>Wide Range Couplings:</i>	ROMAC	XR501	100mm to 300mm	including C909 not approved for use with C909
	ROMAC	Alpha	100mm to 400mm	
	ROBAR	1596	100mm to 300mm	
	Smith-Blair	421	100mm to 400mm	
	Smith-Blair Krausz Industries	461 Hymax	100mm to 300mm 38mm to 400mm	
<i>Restrained Couplings:</i>	EBAA	3800	100mm to 400mm	400mm for PVC only including C909 including C909 NOTE: Hymax not approved for use with C909 including C909 400mm for DI only
	Ford Meter Box	Uniflange RCDD	75mm to 400mm	
	Ford Meter Box	Uniflange RCPP	75mm to 400mm	
	Ford Meter Box	Uniflange RCDP	75mm to 400mm	
	Krausz Industries	Hymax Grip	100mm to 300mm	
	ROMAC	Romac Alpha	100mm to 400mm	
	Smith-Blair	471	100mm to 400mm	
	Smith-Blair Smith-Blair	472 473	100mm to 400mm 100mm to 400mm	
2.2.4.13 Joint Restraint Devices	<i>Restraining MJ & PO Fittings to Ductile</i>	EBAA	1100	including C909
		EBAA	15MJ00TD	
		EBAA	15PF00TD	
		Ford Meter Box	Uniflange 1309	
		Ford Meter Box	Uniflange 1400	
		ROMAC	PVC Romagrip	
		Sigma	SLD	
		Smith-Blair	111	
		Star Pipe Products	StarGrip	
		Star Pipe Products Star Pipe Products	All StarGrip Series 1000	

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MMCD Sub-Section	Manufacturer	Make / Model	Size Range	Comments/Restrictions.
<i>Restraining MJ & PO Fittings to PVC:</i>	EBAA	15MJ00TD	400mm	C909 use limited to SDR26 or heavier wall thickness
	EBAA	15PF00TD		
	EBAA	2000PV		
	EBAA	19MJ00		
	EBAA	19PF00		
	EBAA	2016PV		
	Ford Meter Box	Uniflange 1309		
	ROMAC	PVC Romagrip		
	ROMAC	612		
	Sigma	SLD		
	Smith-Blair	120		
	Star Pipe Products	StarGrip		
	Star Pipe Products	All StarGrip Series 1000		
<i>Restraining Bell & Spigot Joints for Ductile & PVC:</i>	EBAA	1500 TD	400mm 100mm to 400mm 100mm to 300mm 100mm to 300mm	C900 and DI C909 and DI C909 C900 C909 and DI (with reduced pressure rating) C909 new installation only C900 and DI C900 and C909 DI only C900 and DI AWWA CI OD C900/C909 PVC/PVCO Pipe Joints C900, C909 and DI C900, C909 and DI
	EBAA	1900		
	EBAA	2916		
	Ford Meter Box	Uniflange 1390 and 1399		
	Ford Meter Box	Uniflange 1390 and 1399		
	Ford Meter Box	UFR 1559		
	ROMAC	611		
	Sigma	SLC		
	Sigma	SLDE		
	Smith-Blair	165		
	Star Pipe Products	1100G2C		
	Star Pipe Products	StarGrip		
	Star Pipe Products	Series 1000		
<i>Restraining PVC Fittings to PVC:</i>	EBAA	2500	100mm to 300mm	including C909 AWWA CI OD C900/C909 PVC/PVCO Pipe Joints
	EBAA	2600		
	Smith-Blair	136		
	Star Pipe Products	1200G2C		
	Star Pipe Products	Series 1000		
<i>Restrained Flange Adaptors</i>	Ford Meter Box	Uniflange RFAD	75mm to 400mm	DI
	Ford Meter Box	Uniflange RFAP	75mm to 400mm	Including C909, not approved for DI
2.2.4.14 Tapping Sleeves for branch connections (75mm & larger)	ROBAR	6606		Stainless steel
	ROMAC	SSTIII		Stainless steel
	Smith-Blair	622		Stainless steel
	Smith-Blair	664		Stainless steel
	Smith-Blair	665		Stainless steel
2.2.4.15 Repair Clamps	ROBAR	5616		Stainless steel
	ROBAR	5626		Stainless steel
	ROMAC	SS1		Stainless steel
	ROMAC	SS2		Stainless steel
	Smith-Blair	261		Stainless steel
	Smith-Blair	262		Stainless steel
	Cambridge	825		Stainless steel
2.3.1 Mainline Valves - General Requirements	Clayton			Control Valves
	Singer			Control Valves
	Watts			Control Valves
	Red & White		50mm and under	Ball & Gate Valves
	Watts		50mm and under	Ball & Gate Valves
2.3.2 Mainline Gate Valves	American Flow Cont	Series 2500	100mm to 450mm	Resilient wedge only
	CLOW		100mm to 450mm	Resilient wedge only
	Mueller Canada		100mm to 450mm	Resilient wedge only
	Terminal City	3200 Series PO x FL	100mm to 450mm	Resilient wedge only
2.3.3 Mainline Butterfly Valve	Dezurik	Series 4500		
	M & H			
	Mueller Canada			
	Pratt			

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MMCD Sub-Section	Manufacturer	Make / Model	Size Range	Comments/Restrictions.
2.3.5 Air Release/Combination Air Valves	ARI Valves Inc. Valmatic	D040		epoxy coated on inside (fusion bonded)
2.3.8 Detector Check Valves	Febco Mueller Watts Watts	800 EDCIV SS07F 1000DCV EPX	100mm	
2.5 Service Connection Pipe	REHAU	Type K Copper PEX-a	19mm to 50mm 19mm to 25mm	
2.6 Hydrants	CLOW Mueller Canada Terminal City / ACS	Canada Valve C71P	150mm 150mm 150mm	c/w Storz fitting c/w Storz fitting c/w Storz fitting; C71P long body only
2.7.2 Corporation Stops	AY McDonald Cambridge Mueller		19mm to 50mm 19mm to 50mm 19mm to 50mm	Ball type, compression Ball type, compression Ball type, compression

OTHER

MMCD Sub-Section	Manufacturer	Make / Model	Size Range	Comments/Restrictions.
Municipal Castings	Terminal City / ACS Westview Sales			as per MMCD and Cov Supplementals as per MMCD and Cov Supplementals
Service Saddles	Cambridge Cambridge Canpac ROBAR ROMAC Smith-Blair	8403 8413/15 304 2616 306 372	19mm to 25mm up to 200mm	Stainless steel Stainless steel - integral c/w corp stop Stainless steel Stainless steel Stainless steel Stainless steel
Bell Joint Leak Clamps	ROBAR ROMAC Smith-Blair	5508 516 274		Stainless steel Stainless steel Stainless steel
Displacement & Floating Ball Meters	Badger Neptune Sensus Sensus Sensus	Recordall T-10 AccuSTREAM iPEARL Omni R2	19mm to 25mm 19mm to 50mm 19mm to 25mm 19mm to 25mm 38mm to 50mm	Touch read Touch read Touch read Touch read Touch read; Flanged
Compound Meters	Neptune Sensus	TRU/FLO Omni C2	50mm to 150mm 50mm to 150mm	Touch read Touch read
Turbine Meters	Neptune Sensus	High Performance Omni T2	50mm to 150mm 50mm to 150mm	Touch read Touch read
Ultrasonic Meters	Kamstrup	FIQ3101 Stainless	50mm (2")	For use on combined Domestic/Fire service
Meter Setters and Meter Resetters	AY McDonald Cambridge Mueller		19mm to 25mm 19mm to 25mm 19mm to 25mm	
Meter Box	Brooks Box Brooks Box DFW	37 66 Heavy duty polymer	300mm x 500mm 425mm x 750mm	H2O Loading H2O Loading not for use in road or driveways
Meter Box Lids	Terminal City / ACS Terminal City / ACS	37 66	300mm x 500mm 425mm x 750mm	H2O Loading, labeled with "Water" H2O Loading, labeled with "Water"
Meter Vault Hatches	Norinco	Model # TI4S106070AV (Roadway) Model # TI3S106070AV (Sidewalk)		Triangular lids, Traffic (H2O Loading) & Non-Traffic
Tracer Wire	Copperhead Industries Ltd.	Soloshot EHS		

MMCD Section 33 30 01 - SANITARY SEWER (Gravity)

NOTE:

1. All concrete used in construction shall be sulphate resistant Type HS (Type 50) or alternate cement type may be approved by City Engineer.
2. Sanitary Sewer products shall conform to CSA Standard, where applicable.

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MAINLINE PIPES

MMCD Sub-Section	Manufacturer	Make / Model	Size Range	Comments/Restrictions.
2.2 Plastic Pipe, Mainline Smooth Profile	IPEX Northern Pipe NAPCO Royal Pipe	Ring Tite DR35 PVC DR35 PVC DR35	100mm to 1200mm 100mm to 375mm 100mm to 1200mm	

OTHER

MMCD Sub-Section	Manufacturer	Make / Model	Size Range	Comments/Restrictions.
Municipal Castings	Terminal City / ACS Westview Sales			as per MMCD and Cov Supplementals as per MMCD and Cov Supplementals
Inspection Chamber	Orbit Plastics Ltd. Proline Fittings Inc. NAPCO Royal Pipe		100mm & 150mm 100mm & 150mm 100mm & 150mm	for 100mmØ and 150mmØ service connections
Inspection Chamber surface box	Brooks Box Brooks Box Raven	37 66	300mm x 500mm 425mm x 750mm	H2O Loading H2O Loading not for use in road or driveways
Inspection Chamber surface box lids	Terminal City / ACS Terminal City / ACS	37 66	300mm x 500mm 425mm x 750mm	H2O Loading, labeled with "Sanitary" H2O Loading, labeled with "Sanitary"
Couplings & Bushings	Fernco Mission Rollee ROMAC	Kwik couplings bolted couplings		w/stainless steel sheer band w/stainless steel sheer band w/stainless steel sheer band w/stainless steel sheer band (to AWWA C219)
Tapping Saddles	Fernco Mission Rollee		100mm & 150mm 100mm & 150mm 100mm & 150mm	flexible saddle flexible saddle flexible saddle

MMCD Section 33 34 01 - SEWAGE FORCEMAINS

NOTE:

- 1 All bolts, nuts, rods and washers for use on all fittings and restraints shall be Core 10
- 2 Sewage forcemain products shall conform to CSA Standard, where applicable.

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MAINLINE PIPES

MMCD Sub-Section	Manufacturer	Make / Model	Size Range	Comments/Restrictions.
2.2.1 Ductile Iron	Canada Pipe, US Pipe	Ductile PC350 AWWA C151	100mm to 450mm	
2.2.2 PVC Pressure Pipe	IPEX, NAPCO Royal Pipe	PVC DR18, PR235 AWWA C900	100mm to 300mm	
	IPEX, NAPCO Royal Pipe	PVC CIOD, PR235 AWWA C909	100mm to 450mm	Thickened bells
	NAPCO Royal Pipe	Cobra Lock PVC DR18, PR235 AWWA C900	100mm to 300mm	For use on temporary / by-pass piping situations only

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FITTINGS

MMCD Sub-Section	Manufacturer	Make / Model	Size Range	Comments/Restrictions.
2.2.5 Fittings				All ferrous fittings to be epoxy coated.
2.2.5.3 Compact Ductile Iron	Sigma Star Pipe Canada Terminal City / ACS Westview Sales	AWWA C153	100mm to 450mm	Fittings may be HxH, HxFI, MJxMJ, MJxFI or FxFI Hub ends shall have lugs with holes suitable for restraint rods.
2.2.5.4 & CIOD PVC Injection & 2.2.5.5 IPSOD Fabricated	IPEX NAPCO Royal Pipe	C900 / C907 / C909	100mm to 450mm	Pressure class to meet or exceed mainline

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MMCD Section 33 40 01 - STORM SEWERS (Gravity)

NOTE:

1. All concrete used in construction shall be sulphate resistant Type HS (Type 50) or alternate cement type may be approved by City Engineer.
2. Sanitary Sewer products shall conform to CSA Standard, where applicable.

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MAINLINE PIPES

MMCD Sub-Section	Manufacturer	Make / Model	Size Range	Comments/Restrictions.
2.2 Plastic Pipe, Mainline Smooth Profile	IPEX Northern Pipe NAPCO Royal Pipe	Ring Tite DR35 PVC DR35 PVC DR35	100mm to 1200mm 100mm to 375mm 100mm to 1200mm	

OTHER

MMCD Sub-Section	Manufacturer	Make / Model	Size Range	Comments/Restrictions.
Municipal Castings	Terminal City / ACS Westview Sales			as per MMCD and Cov Supplementals as per MMCD and Cov Supplementals
Inspection Chamber	Orbit Plastics Ltd. Proline Fittings Inc. NAPCO Royal Pipe		100mm & 150mm 100mm & 150mm 100mm & 150mm	for 100mmØ and 150mmØ service connections
Inspection Chamber surface box	Brooks Box Brooks Box Raven	37 66	300mm x 500mm 425mm x 750mm	H2O Loading H2O Loading not for use in road or driveways
Inspection Chamber surface box lids	Terminal City / ACS Terminal City / ACS	37 66	300mm x 500mm 425mm x 750mm	H2O Loading, labeled with "Storm" H2O Loading, labeled with "Storm"
Couplings & Bushings	Fernco Mission Rollee	Kwik couplings		w/stainless steel sheer band w/stainless steel sheer band w/stainless steel sheer band
Tapping Saddles	Fernco Mission Rollee		100mm & 150mm 100mm & 150mm 100mm & 150mm	flexible saddle flexible saddle flexible saddle

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34 41 13 Traffic Signals					
2.16		Vehicle Signal		McCain	
2.19		Vehicle Signal Mounting Hardware		Astro-Brac (Pelco Products)	
2.16		Pedestrian Signal Heads		Model 7090 McCain #141SPO	
2.2		Audible Pedestrian Signal Heads		Novax DS2000	
2.26.2.2		Conflict Monitors		Eberie Model 210E	
2.26.4		Controller Cabinets - 332, 226 & 338		Safetran & Signal Control Company (SCC, Peak)	

32 17 23 Painted Pavement Markings						
2.1	.5 Glass Beads	Swarco	Premium Glass Bead Type-I (T-20 coated)			
	.6 Pavement Markings	Ennis-Flint	Solvent based traffic marking paint			
				Yellow road marking paint prod # 986063		
				White road marking paint prod # 986061		
	.7S Thermoplastic	Ennis-Flint	Pave Mark (both yellow and white)			

32 01 17.6 Sealing Pavement Cracks for Maintenance Purposes					
2.1		Cold Pour Crack Sealer	Cold Pour Crack Sealer	CRF Wilco	Good for over 5 minute cure rate only
		Hot Pour Crack Sealer	Hot Pour Crack Sealer	KOCH - 9211, Crafcro & Tremco	

31 32 19 Geosynthetics					
2.1		Stress Absorbing Membrane	Stress Absorbing Membrane	Amopave 4599 & Trevira S-112-C	

Other					
1	Petrolatum Tape Systems	Winn & Coales		Denso	
		Chase Construction Products		Longwrap	