Engineering Design Criteria & Standard Drawings

(December 2020)

APPENDIX A – STANDARD DRAWINGS

FOREWORD

The Standard Drawings presented are meant to be read in conjunction with the City's Design Criteria document.

The 2020 edition of the Standard Drawings has been prepared in response to the planned growth envisioned by the City's Official Plan and informed by various Master Plan studies for transportation, water, wastewater and stormwater management infrastructure. While the previous stock of Standard Drawings has been simplified and consolidated wherever appropriate, additional standard drawings have been created to address the past experience of the City as well as emerging trends in the industry.

Changes and revisions will be made to the Design Criteria and Standard Drawings from time-to-time. It is the responsibility of the developer, its engineer(s) and others using this information to obtain and make use of the latest versions available at the time of design.

The Standard Drawings are unique to the City of Vaughan and take precedence over any Ontario Provincial Standard Drawings (OPSD) for similar matters, unless approved otherwise by the City.

If no standard drawing is provided by the City, the OPSD are to be consulted and referenced. In the event that OPSD does not contained the required standard, the developer, through its engineer, may prepare a standard for the review and approval of the City prior to the submission of any designs.

Please consider the environment before printing.

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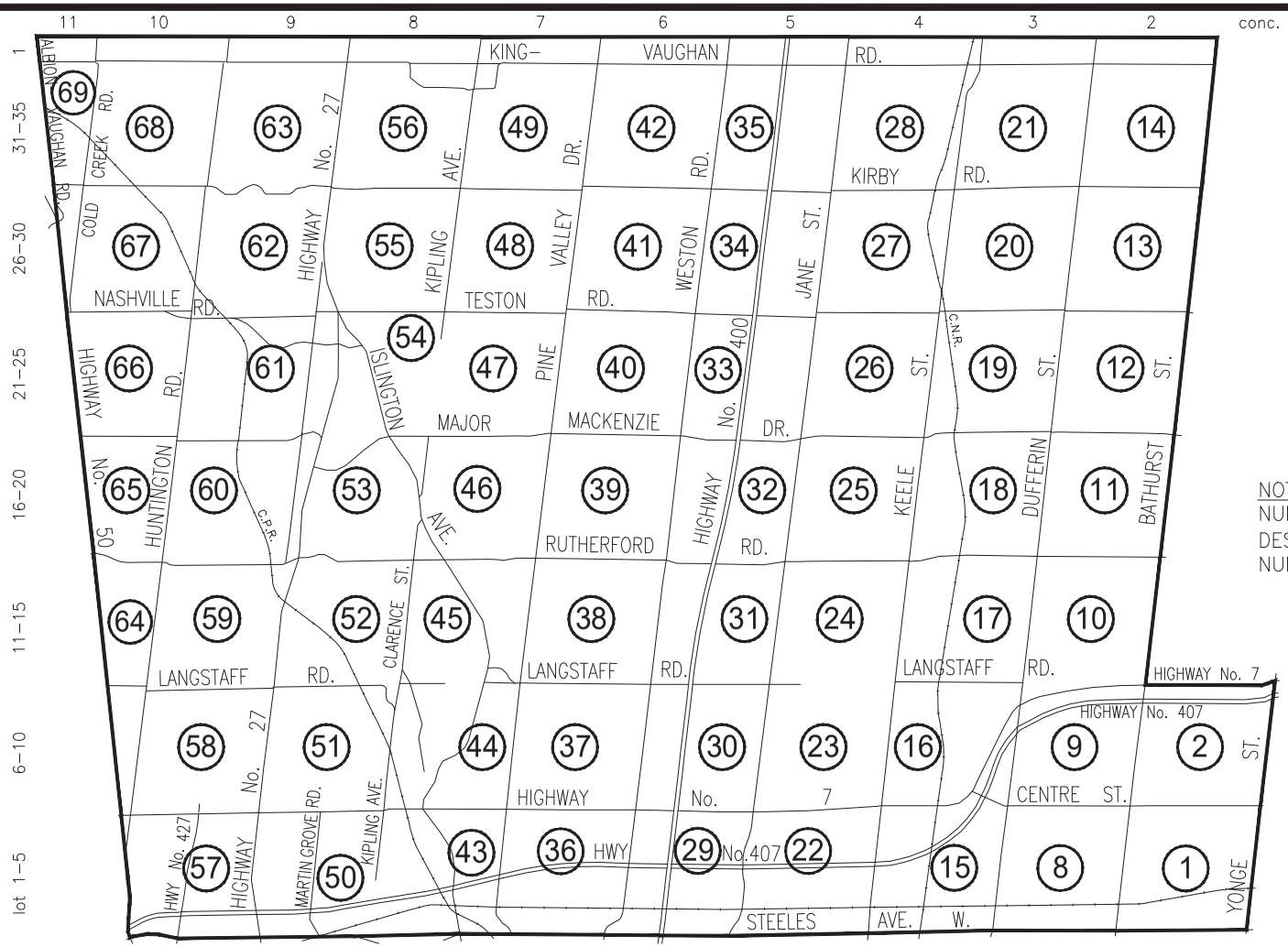

NOTE
NUMBERS IN CIRCLES ARE DESIGNATED AS 'BLOCK' NUMBERS.

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	REVISIONS	DATE

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

BASE MAP

NOT TO SCALE	DESIGNED:	STD. DWG.
REVISION:	DATE: DEC. 2020	G - 101

FILE: O:\Infrastructure Delivery\Infrastructure Programming\PMO\City Standards\Design Criteria 2020-21\City Standards Update Folder\CoVStandardDrawings_CAD_2021\G-101 - Base Map.dwg

WATER

- (size) W — EXISTING WATERMAIN
- (size) WATERMAIN — PROPOSED WATERMAIN (UP TO 675mmø)
- (size) WATERMAIN — PROPOSED WATERMAIN (OVER 675mmø)
- (size) VC/VB — VALVE CHAMBER / IN BOX
- (size) AV — AIR VALVE IN CHAMBER
- (size) DV — DRAIN VALVE IN CHAMBER
- HYD — HYDRANT & VALVE IN BOX
- CS — CURB STOP
- REDUCER
- PLUG
- CAP
- CHECK VALVE
- PRESSURE REDUCING VALVE

SEWER

- (size) SAN/STM — EXISTING SANITARY / STORM SEWER
- (size) SANITARY/STORM SEWER — PROPOSED SEWER (UP TO 675mmø)
- (size) SANITARY/STORM SEWER — PROPOSED SEWER (OVER 675mmø)
- (size) FDC — FOUNDATION DRAIN COLLECTOR
- MH — EXISTING MAINTENANCE HOLE
- MH — PROPOSED MAINTENANCE HOLE
- EXISTING DUAL MAINT. HOLE
- PROPOSED DUAL MAINT. HOLE
- CB — EXISTING CATCHBASIN
- CB — PROPOSED CATCHBASIN
- DCB — EX. DOUBLE CATCHBASIN
- DCB — PR. DOUBLE CATCHBASIN
- FM (size) PS — FORCE MAIN & PUMPING STATION
- CB/MH — CATCHBASIN MH
- CONC. ENCASEMENT

ROAD

- REMOVAL SYMBOL
- CURB & GUTTER OR CONCRETE CURB
- (width) C.S.W. — CONCRETE SIDEWLAK
- (height & type) — FENCE
- (type) — GUIDE RAIL
- PROPERTY LINE / STREET LINE
- DITCH / SWALE
- EXISTING CULVERT
- S/MB — SIGN / MAIL BOX
- HP/BP/TP/LP/TL/HP — HYDRO POLE/BELL POLE TIE POLE/LIGHT POLE TRAFFIC LIGHT

UNDERGROUND UTILITIES

- G — GAS MAIN
- B — BELL CABLE/CONDUIT
- H — HYDRO CABLE
- B & H — BELL & HYDRO (COMMON TRENCH)
- PROPOSED CULVERT (12 / 4.5 / 1.6 — LENGTH / DIAMETER / GAUGE)

GENERAL

- CHANGE OF ROAD GRADE (PROFILE DRAWING)
- (angle) — CHANGE IN HORIZONTAL DIRECTION OF WATERMAIN (PROFILE DRAWING)
- TB — CONCRETE THRUST BLOCK
- FIB/SIB/RIB — PROPERTY BAR
- BM(number) — BENCH MARK (description, location, elevation in notes)
- BH(number) — BORE HOLE

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VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

LEGEND OF SYMBOLS

NOT TO SCALE — DESIGNED: _____

REVISION: _____ — DATE: DEC. 2020

STD. DWG. G - 102

FILE: O:\Infrastructure Delivery\Infrastructure Programming\PMO\City Standards\Design Criteria 2020-21\City Standards Update Folder\CoVStandardDrawings_CAD_2021\G-102 - Legend of Symbols.dwg

ABUTMENT	ABUT.
ALLOWANCE	ALL'CE
AMERICAN SOCIETY FOR TESTING & MATERIALS	A.S.T.M
APARTMENT	APT.
APPROVED	APP'D
ASBESTOS CEMENT	A.C.
ASPHALT	ASPH.
AVERAGE ANNUAL DAILY TRAFFIC	A.A.D.T.
BACK FILL	B'FILL
BACKSIGHT OR BUS STOP	B.S.
BASEMENT	BMNT.
BEDDING	BED.
BEGINNING OF CURVE	B.C.
BEGINNING OF VERTICLE CURVE	B.V.C.
BELL TELEPHONE	B.
BELL TELEPHONE POLE	B/P
BENCH MARK	B.M.
BOULEVARD	BLVD.
BUILDING	BLDG.
CHECK VALVE	C.V.
CANADIAN NATIONAL RAILWAY	C.N.R.
CANADIAN PACIFIC RAILWAY	C.P.R.
CAST IRON	C.I.
CATCH BASIN	C.B.
CATCH BASIN MAINTENANCE HOLE	C.B.M.H.
CENTRE TO CENTRE	C./C. or O.C.
CENTRE LINE	C/L
CHAIN LINK FENCE	C.L.F.
CHECKED	CHK'D
CLASS or CLAY	CL.
CLEAN OUT	C.O.
COMMERCIAL	COMM.
CONCESSION	CONC.
CHORD	CH.
CORNER	COR.
CORREGATED STEEL	C.S.
CUBIC	CU.
CULVERT	CULV.
CURB AND GUTTER	C. & G.
CURVE TO SPIRAL or CURB STOP	C.S.
DEGREE OF CURVE	D.
DEPARTMENT	DEPT.
DIAMETER	DIA.
DISTANCE	DIST.
DIVISION	DIV.
DRAWING	DWG.
DRIVEWAY	DWY.
DUCTILE IRON	D.I.
EACH	EA.
END OF CURVE	E.C.
EAST OF EXTERNAL	E.
EDGE OF PAYMENT	E.P.
ELECTRIC	ELEC.
ELECTRICAL MAINTENANCE HOLE	EMH.
ELEVATION	EL.
END OF VERTICAL CURVE	E.V.C.
ENGINEER	ENG.
ENTRANCE	ENT.
ESTIMATE	EST.
EXISTING	EXIST.
EXTRA STRENGTH	E.S.
FACE OF CURB	F/C
FLOOR	FLR.
FOOTING	FTG.
FORESIGHT	F.S.
FOUNDATION	FDN.
FRAME	FR.
GALVANIZED	GALV.
GARAGE	GAR.
GAS	G.
GAUGE	GA.
GEODETIC BENCH MARK	G.B.M.
GRADE OR GRAVEL	GR.
GRANULAR	GRAN.
GUIDE RAIL	G.R.
HECTARE	HA.
HIGH POINT	H.P.
HIGH WATER LEVEL	H.W.L.
HIGHWAY	HWY.
HORIZONTAL	HOR.
HOT LAID	H.L.
HOT MIX	H.M.
HYDRANT & VALVE	H. & V.
HYDRO	H.
HYDRO POLE	H. / P.
INDUSTRIAL	IND.
INSIDE DIAMETER	I.D.
INSTRUMENT	INSTR.
INSULATED	INS.
INTERMEDIATE SIGHT	I.S.
INVERT	INV.
IRON BAR	I.B.
KILOPASCALS	K.P.S.
LEFT	LT.
LENGTH	LEN.
LENGTH OF VERTICAL CURVE	L.V.C.
LIGHT STANDARD	L.S.
LITRE	l
LITRE PER SECOND	l/s
LOW POINT	L.P.
LOW WATER LEVEL	L.W.L.
MAINTENANCE HOLE	M.H.
MAXIMUM	MAX.
MEGAPASCALS	M. Pa.
METRE	m
MILLIMETRES	mm
MILLIMETRES PER SECOND	m/s
MINSTRY OF TRANSPORTATION OF ONTARIO	M.T.O.
MINIMUM	MIN.
MUNICIPAL	MUN.
NORTH	N.
NOT TO SCALE	N.T.S.
NUMBER	No.
OBVERT	OBV.
ORIGINAL GROUND	O.G.
OUTSIDE DIAMETER	O.D.
PAVEMENT	PAV'T
PERSONS PER HECTARE	P/Ha
POINT	PT.
POINT OF INTERSECTION	P.I.
POINT OF CURVE	P.C.
POLYVINYL CHLORIDE	P.V.C.
PRESSURE REDUCING VALVE	P.R.V.
PROPERTY LINE	P or P/L
PUMPING STATION	P.S.
QUANTITY	QTY.
RADIUS	R. or RAD.
RAILWAY	RWY.
REGISTERED PLAN	R.P.
REINFORCED	REINF.
RESIDENTIAL	RES.
REVISION	REV.
RIGHT	RT.
RIGHT OF WAY	R.O.W.
ROAD	RD.
ROUND IRON BAR	R.I.B.
SAFE PASSING SIGHT DISTANCE	S.P.S.D.
SAFE STOPPING SIGHT DISTANCE	S.S.S.D.
SAND	SA.
SANITARY	SAN.
SECTION	SECT.
SEWAGE TREATMENT PLANT	S.T.P.
SEWER	SEW.
SHEET	SH.
SIDEWALK	S/W
TRAFFIC SIGNAL	TS
SOUTH OR SUPERELEVATION	S.
SPECIFICATION	SPEC.
SPIRAL TO CURVE	S.C.
SPIRAL TO TANGENT	S.T.
SQUARE	SQ.
STANDARD IRON BAR	S.I.B.
STANDARD STRENGTH	S.S.
STATION	STA.
STOP OR STREET	ST.
STOPPING SIGHT DISTANCE	S.S.D.
STORM	STM.
STOREY	STY.
STREET LINE	S/L
STRUCTURE	STR.
STUCCO	STUC.
SUBDIVISION	SUBD'N
SUBDIVIDER	SUBD'R
TANGENT	TAN.
TANGENT TO SPIRAL or TAPPING SLEEVE	T.S.
TECHNICAL	TECH.
TELEPHONE POLE	T/P
TOWNSHIP	TWP.
TRAFFIC WARNING LIGHT	TWL
TRANSFORMER	TRANS.
TURNING POINT	T.P.
TYPICAL	TYP.
VALVE IN BOX	V.B.
VALVE IN CHAMBER	V.C.
VELOCITY	VEL.
VERTICAL	VERT.
VERTICAL POINT OF INTERSECTION	V.P.I.
VITRIFIED	VT.
VOLUME	VOL.
VAUGHAN LIGHT CONCRETE POLE	VLCP.
VAUGHAN LIGHT HYDRO POLE	VLHP.
VAUGHAN LIGHT WOOD POLE	VLWP.
VAUGHAN LIGHT BELL POLE	VLBP.
VAUGHAN LIGHT PEDESTAL	VLP.
VAUGHAN LIGHT HANDWELL	VLH.
WALKWAY	W/W
WATER LEVEL	W.L.
WATER SERVICE VALVE	W.V.
WATERMAIN	W.M.
WEST	W

4.		
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	REVISIONS	DATE

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

ABBREVIATIONS

NOT TO SCALE DESIGNED: _____

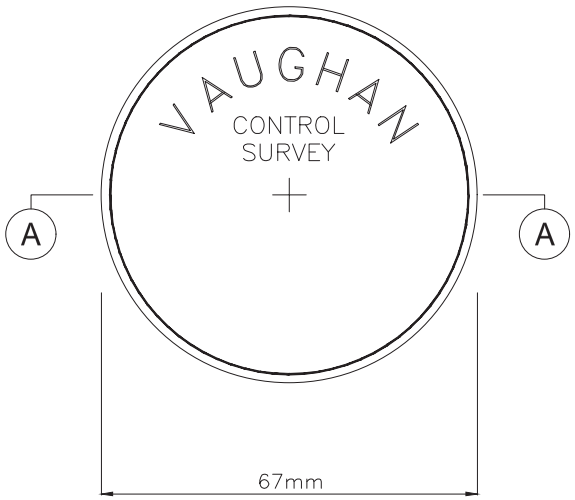
REVISION: _____ DATE: DEC. 2020

STD. DWG.

G - 103

FILE: O:\Infrastructure Delivery\Infrastructure Programming\PMO\City Standards\Design Criteria 2020-21\City Standards Update Folder\CoVStandardDrawings_CAD_2021\G-103 - Abbreviations.dwg

PLAN



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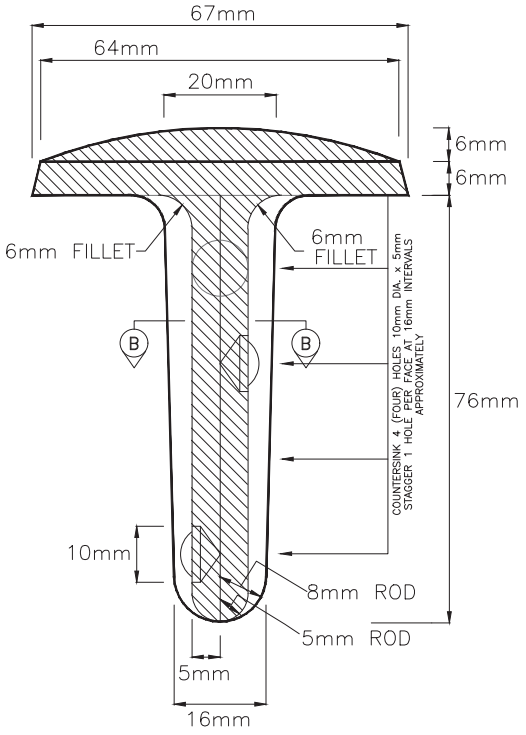
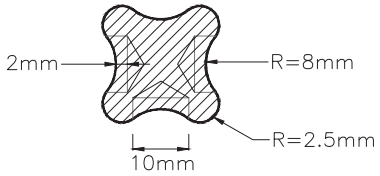


SECTION A-A



SECTION B-B

MATERIAL – BRASS OR BRONZE WITH NOT LESS THAN 83% COPPER CONTENT.
B METAL 0.78 lbs.

NOTE

1. REFER TO DRAWING STD. G–106 FOR ENGRAVING / STAMPING DETAILS.

City of Vaughan
The City Above Toronto

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

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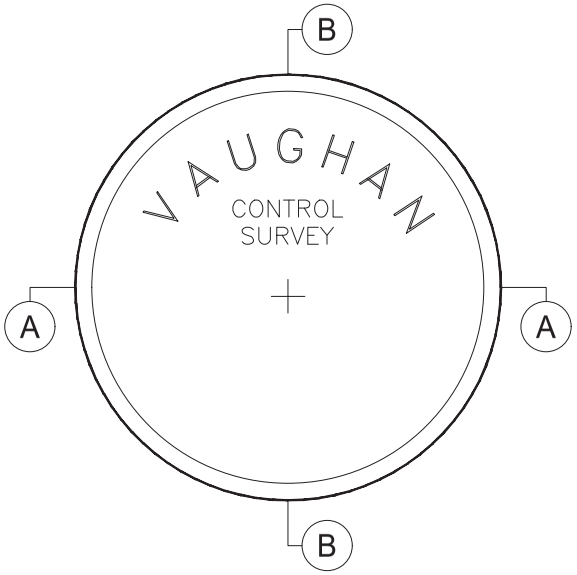
1.		
	REVISIONS	DATE

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

GEODETIC CONTROL SURVEY MARKER - TYPE A

NOT TO SCALE	DESIGNED:	STD. DWG.
REVISION:	DATE: DEC. 2020	G - 104



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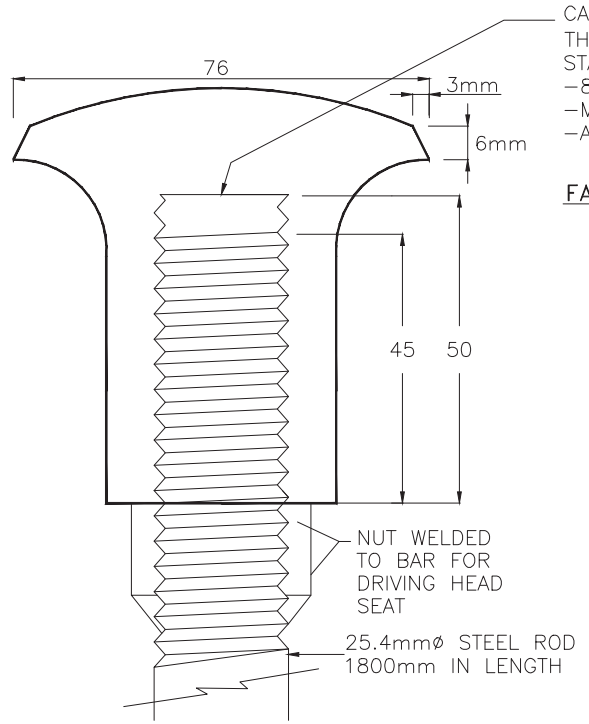
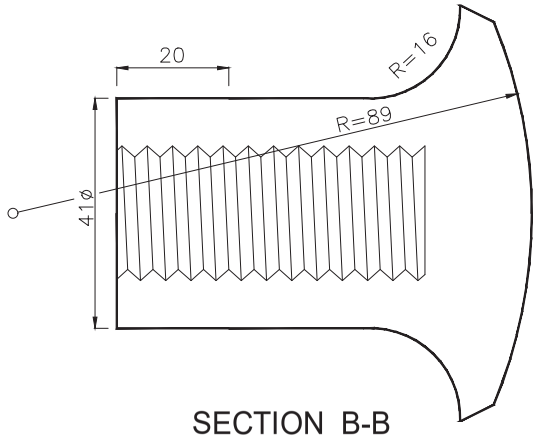


SECTION A-A

NOTE

1. REFER TO DRAWING STD. G–106 FOR ENGRAVING / STAMPING DETAILS.



SECTION B-B

MATERIAL – BRASS OR BRONZE WITH NOT LESS THAN 83% COPPER CONTENT.
B METAL 2 32 lbs.

4.		
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	REVISIONS	DATE

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

GEODETIC CONTROL SURVEY MARKER - TYPE B

NOT TO SCALE	DESIGNED:	STD. DWG.
REVISION:	DATE: DEC. 2020	G - 105

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

FILE: Q:\Infrastructure Delivery\Infrastructure Programming\PMO\City Standards\Design Criteria 2020-21\City Standards Update Folder\CoVStandardDrawings_CAD_2021\G-105 - Geodetic Control Survery Marker TypeB.dwg

PLAN VIEW

LETTER STYLE – STANDARD GOTHIC

LETTER SIZE – 5mm STROKE CENTRE TO STROKE CENTRE; 6mm EDGE TO EDGE FOR OUTER INSCRIPTION
3mm STROKE CENTRE TO STROKE CENTRE; 3mm EDGE TO EDGE FOR INNER INSCRIPTION

LETTER DEPTH – 1mm

LETTER TAPERED 20° PER SIDE

	REVISIONS	DATE
4.		
3.		
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1.		

VAUGHAN

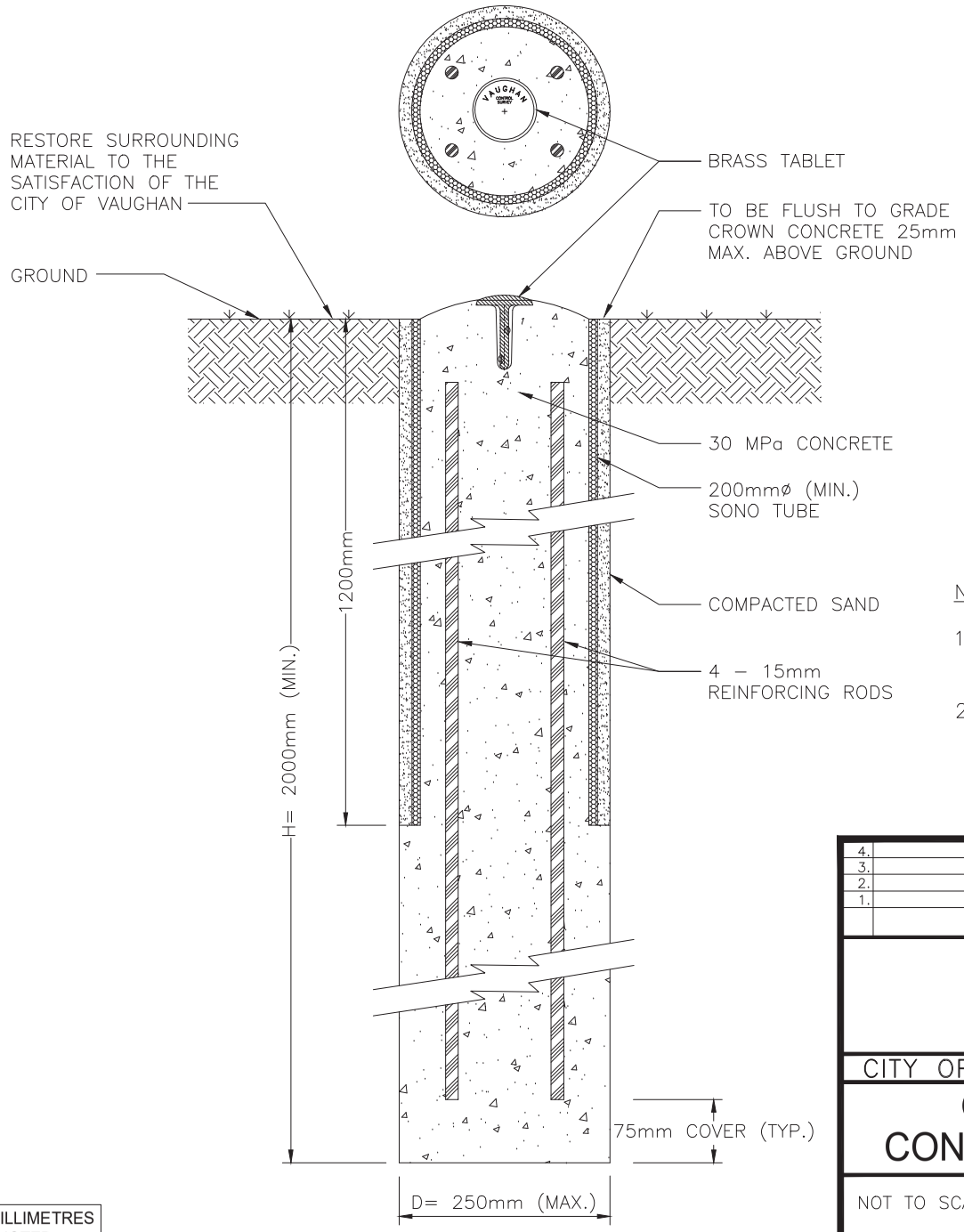
CITY OF VAUGHAN ENGINEERING STANDARD

GEODETIC CONTROL SURVEY MARKER ENGRAVING / STAMPING

NOT TO SCALE DESIGNED: _____

REVISION: _____ DATE: DEC. 2020

STD. DWG.
G - 106



NOTE

1. REFER TO DRAWING STD. G–106 FOR ENGRAVING / STAMPING DETAILS.
2. REFER TO DRAWING STD. G–104 FOR BRASS TABLET DETAILS.

4.		
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	REVISIONS	DATE

VAUGHAN

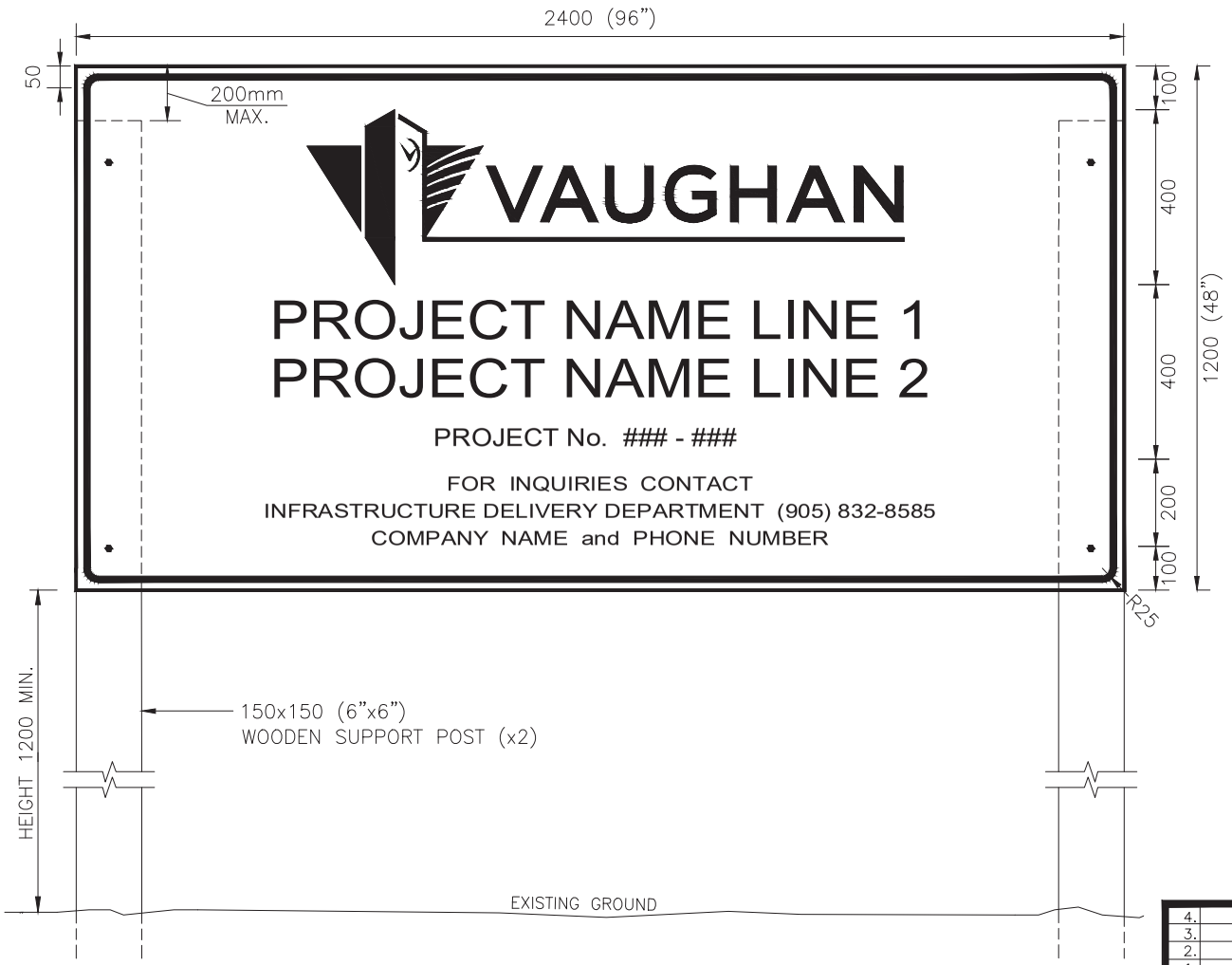
CITY OF VAUGHAN ENGINEERING STANDARD

GEODETIC CONTROL CONCRETE SURVEY MARKER

NOT TO SCALE	DESIGNED:	STD. DWG.
REVISION:	DATE: DEC. 2020	G - 107

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

FILE: Q:\Infrastructure Delivery\Infrastructure Programming\PMO\City Standards\Design Criteria 2020-21\City Standards Update Folder\CoVStandardDrawings_CAD_2021\G-107 - Geodetic Control Concrete Survery Marker.dwg



NOTES

1. PROJECT TITLE & CONTRACT NUMBER TO BE PROVIDED BY THE CITY.
2. COMPANY NAME & NUMBER TO BE CONFIRMED.
3. MINIMUM 20mm THICK PLYWOOD SIGN.
4. WOODEN SUPPORT POSTS TO BE INSTALLED AS PER OPSD 985.220

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

SIGN COLOURS & FONTS

BACKGROUND: WHITE

CITY LOGO:
GRAPHIC AVAILABLE ON CITY WEB SITE
PANTONE 376 GREEN
PANTONE 294 BLUE

EDGE STRIPE:
WIDTH–15mm, PANTONE 294 BLUE
CORNER RADIUS–25mm

PROJECT NAME: (TWO LINES PREFERRED)
UNIVERS 65 BOLD–250 pt, PANTONE 294 BLUE, UPPER CASE
LINE 1: PRIMARY STREET WHERE WORK IS TAKING PLACE e.g. "MCKENZIE STREET"
LINE 2: PROJECT TYPE (PRIMARY WORK) e.g. "WATERMAIN REPLACEMENT"

CONTRACT NUMBER: (1 LINE)
UNIVERS 55 ROMAN BOLD–115 pt, PANTONE 294 BLUE, UPPER CASE

CONTACT INFORMATION: (3 LINES)
UNIVERS 55 ROMAN BOLD–90 pt, PANTONE 294 BLUE, UPPER CASE

	REVISIONS	DATE
4.		
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VAUGHAN

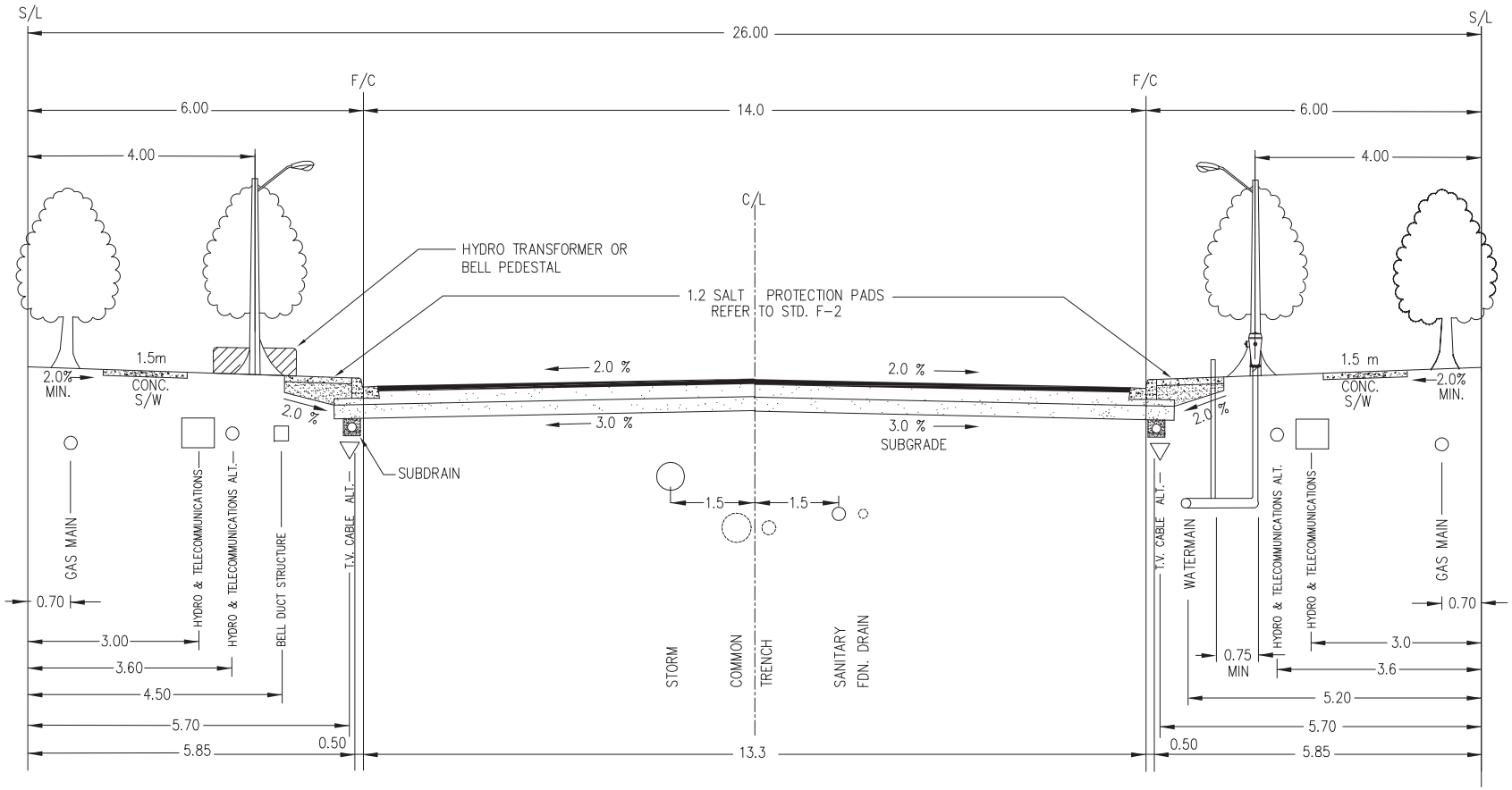
CITY OF VAUGHAN ENGINEERING STANDARD

PROJECT SIGN

NOT TO SCALE DESIGNED: _____
REVISION: _____ DATE: DEC. 2020

STD. DWG.
G - 108

FILE: O:\Infrastructure Delivery\Infrastructure Programming\PMO\City Standards\Design Criteria 2020-21\City Standards Update Folder\CoVStandardDrawings_CAD_2021\G-108 - Project Sign.dwg



NOTES

1. PAVEMENT WIDTH IS DESIGNED TO ACCOMMODATE 4 TRAVEL LANES OR 2 TRAVEL LANES WITH 2 PARKING LANES.
2. PAVEMENT DESIGN SHALL CONFORM TO MINIMUM CITY STANDARDS AND/OR APPROVED GEOTECHNICAL REPORT.
3. ACTIVELY GROWING No. 1 NURSERY SOD TO BE LAID ON 150mm OF TOPSOIL, PROPERLY GRADED AND ROLLED.
4. DEPTH OF COVER ON ALL MUNICIPAL INFRASTRUCTURE SHALL CONFORM TO MINIMUM CITY STANDARDS.

m DIMENSIONS IN METRES EXCEPT AS NOTED

4.		
3.		
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1.		
	REVISIONS	DATE

City of Vaughan
The City Above Toronto

ENGINEERING DEPARTMENT

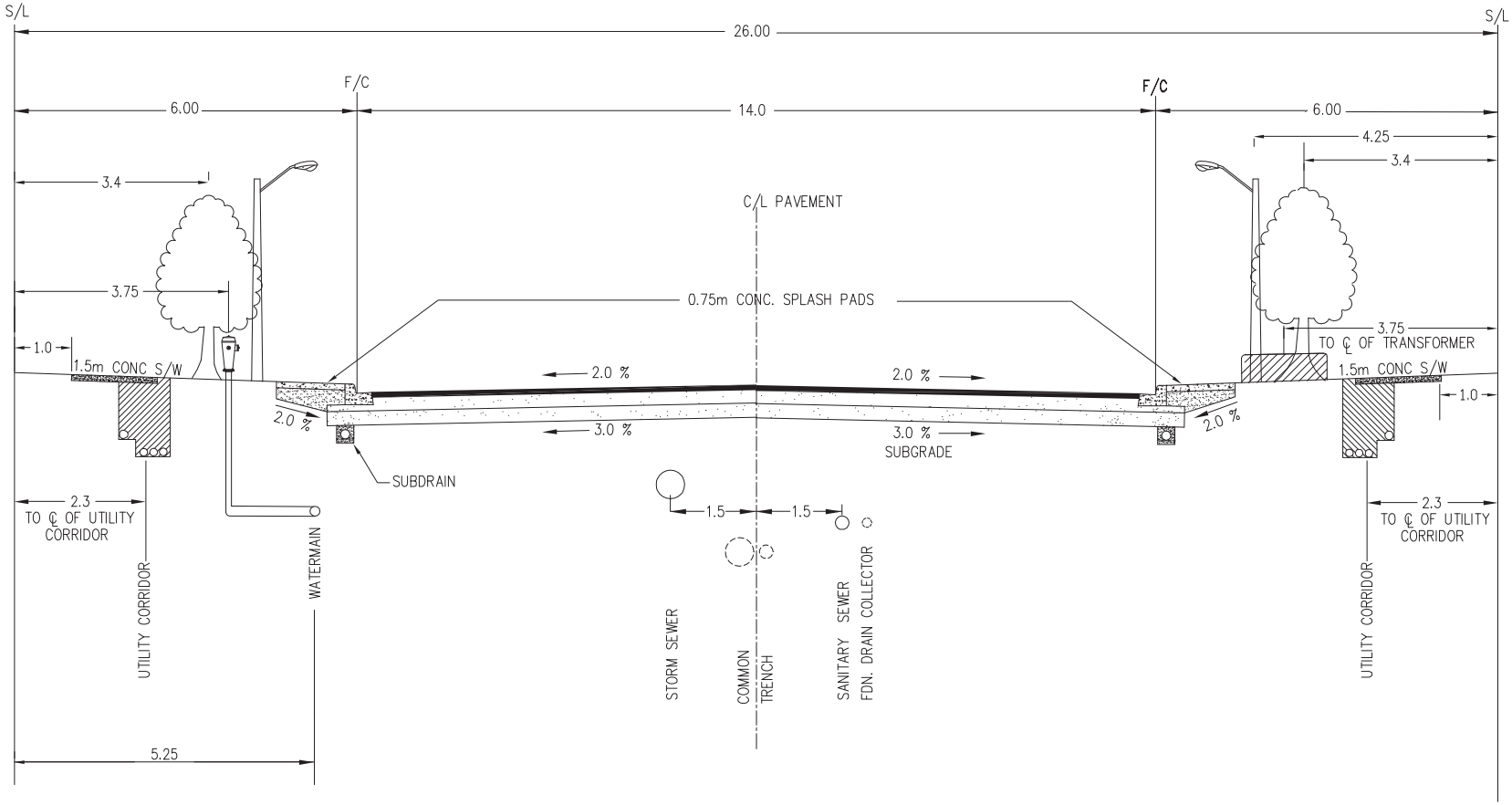
CITY OF VAUGHAN ENGINEERING STANDARD

MAJOR COLLECTOR ROAD
26m R.O.W.

NOT TO SCALE
DESIGNED: ENG. DEPT.
REVISION:
DATE: MARCH 2004

STD. DWG.
B - 3

Acad File: R:\ENGDRAFT\$$Design Std Drawings 2004\B_Roads\B-3.DWG



NOTES

1. PAVEMENT WIDTH IS DESIGNED TO ACCOMMODATE 4 TRAVEL LANES OR 2 TRAVEL LANES WITH 2 PARKING LANES.
2. PAVEMENT DESIGN SHALL CONFORM TO MINIMUM CITY STANDARDS AND/OR APPROVED GEOTECHNICAL REPORT.
3. ACTIVELY GROWING No. 1 NURSERY SOD TO BE LAID ON 150mm OF TOPSOIL, PROPERLY GRADED AND ROLLED.
4. DEPTH OF COVER ON ALL MUNICIPAL INFRASTRUCTURE SHALL CONFORM TO MINIMUM CITY STANDARDS.

m DIMENSIONS IN METRES EXCEPT AS NOTED

	REVISIONS	DATE
4.		
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City of Vaughan — The City Above Toronto

ENGINEERING DEPARTMENT

CITY OF VAUGHAN ENGINEERING STANDARD

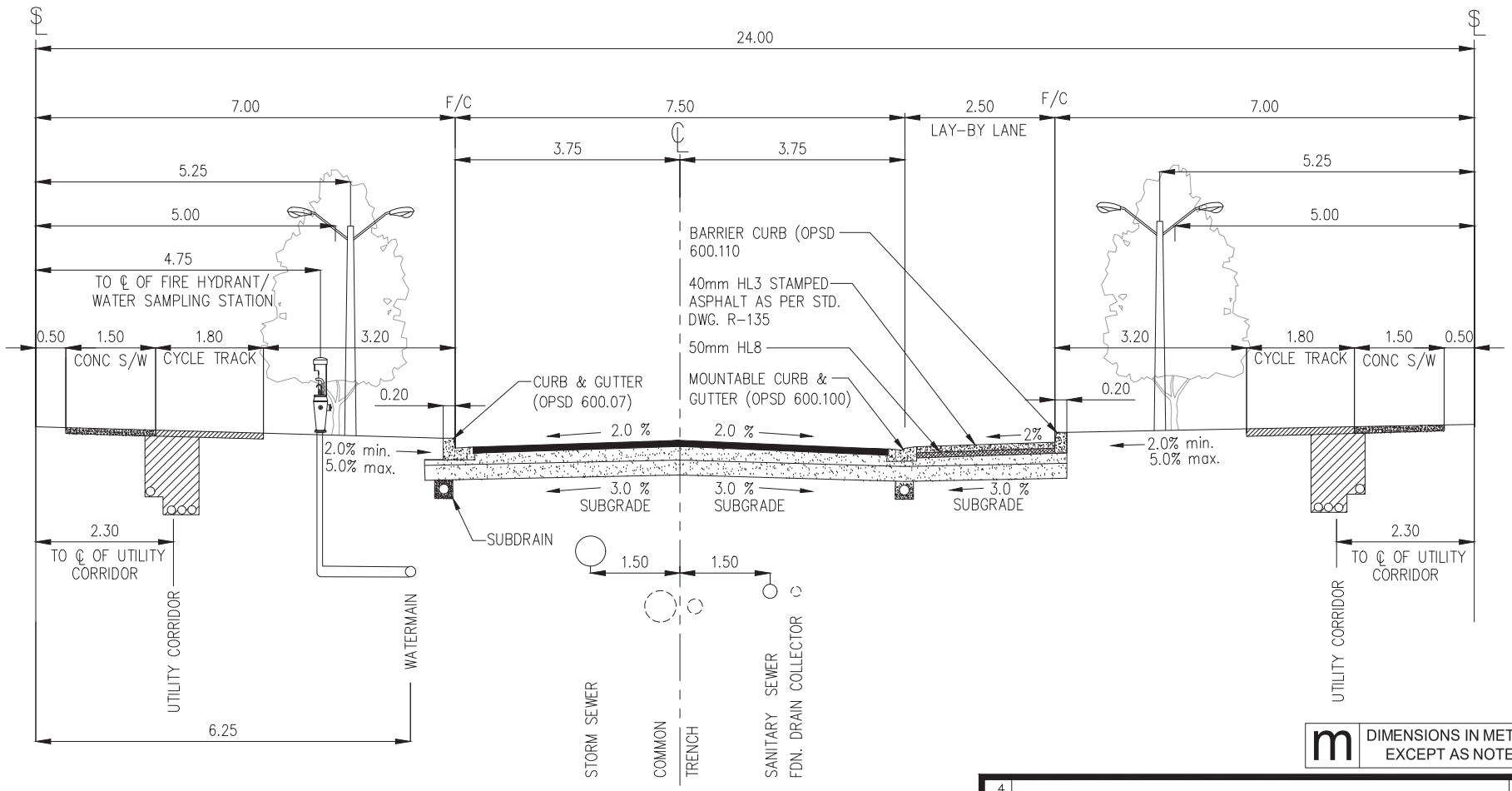
MAJOR COLLECTOR ROAD 26m R.O.W. - 14m PAVEMENT

NOT TO SCALE | DESIGNED: ENG. DEPT.

REVISION: _____ | DATE: MARCH 2004

STD. DWG. B - 8

Acad File: R:\ENGDRAFT\$$Design Std Drawings 2004\B_Roads\B-8.dwg



m DIMENSIONS IN METRES EXCEPT AS NOTED

NOTES

1. PAVEMENT DESIGN SHALL CONFORM TO MINIMUM CITY STANDARDS AND/OR APPROVED GEOTECHNICAL REPORT.
2. ACTIVELY GROWING No. 1 NURSERY SOD TO BE LAID ON 150mm OF TOPSOIL, PROPERLY GRADED AND ROLLED.
3. DEPTH OF COVER ON ALL MUNICIPAL INFRASTRUCTURE SHALL CONFORM TO MINIMUM CITY STANDARDS.
4. COLOR AND PATTERN OF CONCRETE UNIT PAVERS TO BE APPROVED BY THE ENGINEERING DEPARTMENT IN CONSULTATION WITH THE URBAN DESIGN DEPARTMENT.
5. REFER TO BIKEWAY TRAFFIC CONTROL GUIDELINES FOR CANADA (LATEST EDITION, TAC & O.T.M., YORK REGION) FOR TYPICAL BICYCLE FACILITY SPECIFICATIONS INCLUDING PAVEMENT MARKING & SIGNAGE AND INTERSECTION APPLICATION.
6. THE DEDIRED CYCLE TRACK WIDTH OF 1.8m SHOULD BE ACCOMMODATED WHERE POSSIBLE
7. WHERE RAISED PLANTER OR VERTICAL OBJECT WILL ABUT THE CYCLE TRACK, 0.5m OF CLEARANCE MUST BE PROVIDED.
8. THE SUBSTITUTION OF SEPARATED PEDESTRIAN AND CYCLING FACILITIES INSTEAD OF COMBINED FACILITIES IS ACCEPTABLE. THE DESIGN OF THE ACTIVE TRANSPORTATION FACILITIES SHOULD BE CONFIRMED WITH CITY STAFF.
9. PARKING PERMITTED WITHIN THE LAY–BY–LANE.

	REVISIONS	DATE
4.		
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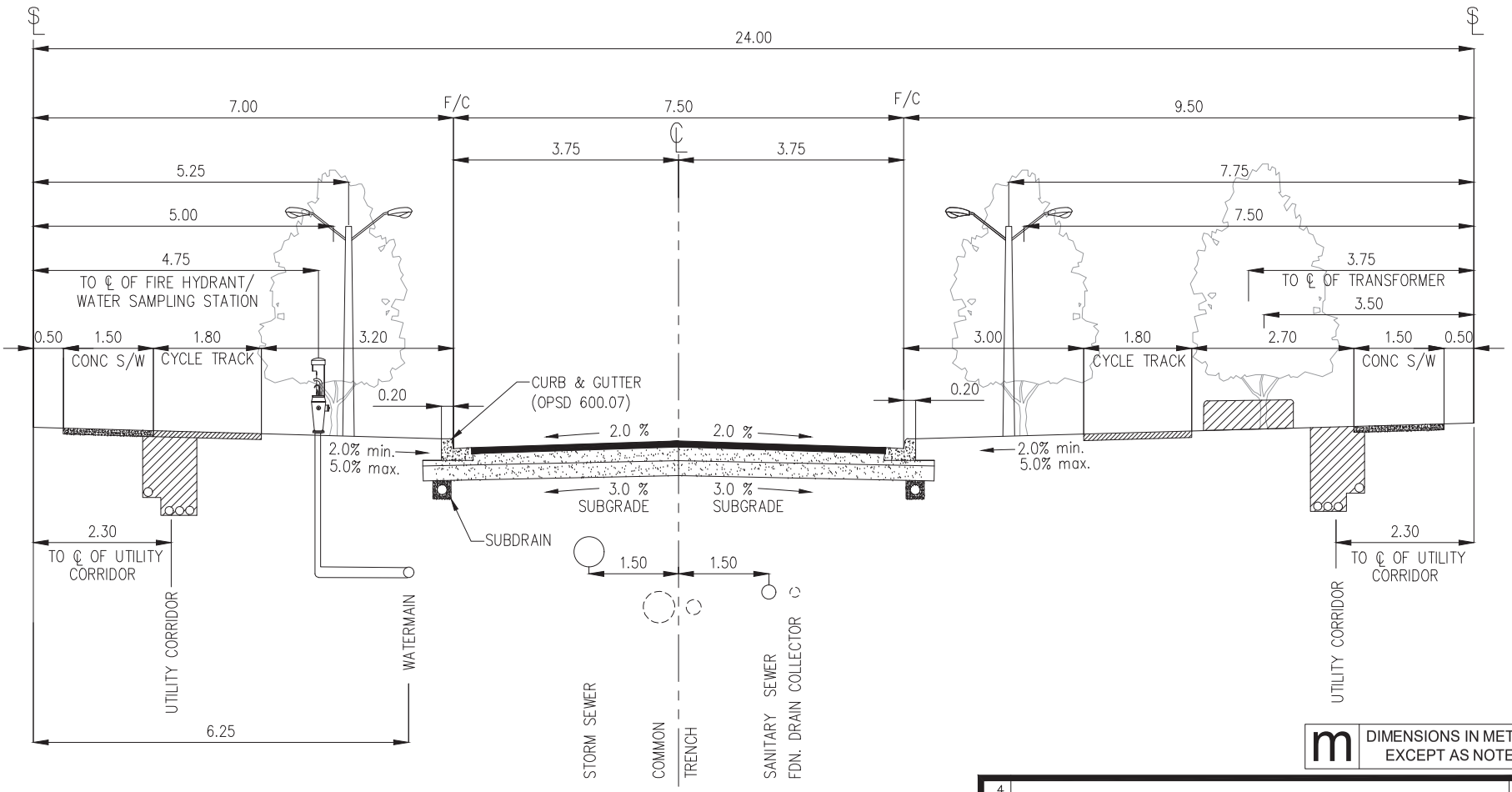
VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

MINOR COLLECTOR ROAD
24m R.O.W. (WITH LAY-BY LANE)

NOT TO SCALE	DESIGNED:	STD. DWG.
REVISION:	DATE: JAN. 2022	R - 102



m DIMENSIONS IN METRES EXCEPT AS NOTED

NOTES

1. PAVEMENT DESIGN SHALL CONFORM TO MINIMUM CITY STANDARDS AND/OR APPROVED GEOTECHNICAL REPORT.
2. ACTIVELY GROWING No. 1 NURSERY SOD TO BE LAID ON 150mm OF TOPSOIL, PROPERLY GRADED AND ROLLED.
3. DEPTH OF COVER ON ALL MUNICIPAL INFRASTRUCTURE SHALL CONFORM TO MINIMUM CITY STANDARDS.
4. COLOR AND PATTERN OF CONCRETE UNIT PAVERS TO BE APPROVED BY THE ENGINEERING DEPARTMENT IN CONSULTATION WITH THE URBAN DESIGN DEPARTMENT.
5. REFER TO BIKEWAY TRAFFIC CONTROL GUIDELINES FOR CANADA (LATEST EDITION, TAC & O.T.M., YORK REGION) FOR TYPICAL BICYCLE FACILITY SPECIFICATIONS INCLUDING PAVEMENT MARKING & SIGNAGE AND INTERSECTION APPLICATION.
6. THE DEDIRED CYCLE TRACK WIDTH OF 1.8m SHOULD BE ACCOMMODATED WHERE POSSIBLE
7. WHERE RAISED PLANTER OR VERTICAL OBJECT WILL ABUT THE CYCLE TRACK, 0.5m OF CLEARANCE MUST BE PROVIDED.
8. THE SUBSTITUTION OF SEPARATED PEDESTRIAN AND CYCLING FACILITIES INSTEAD OF COMBINED FACILITIES IS ACCEPTABLE. THE DESIGN OF THE ACTIVE TRANSPORTATION FACILITIES SHOULD BE CONFIRMED WITH CITY STAFF.
9. PARKING NOT PERMITTED ON THE ROADWAY.

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	REVISIONS	DATE

VAUGHAN

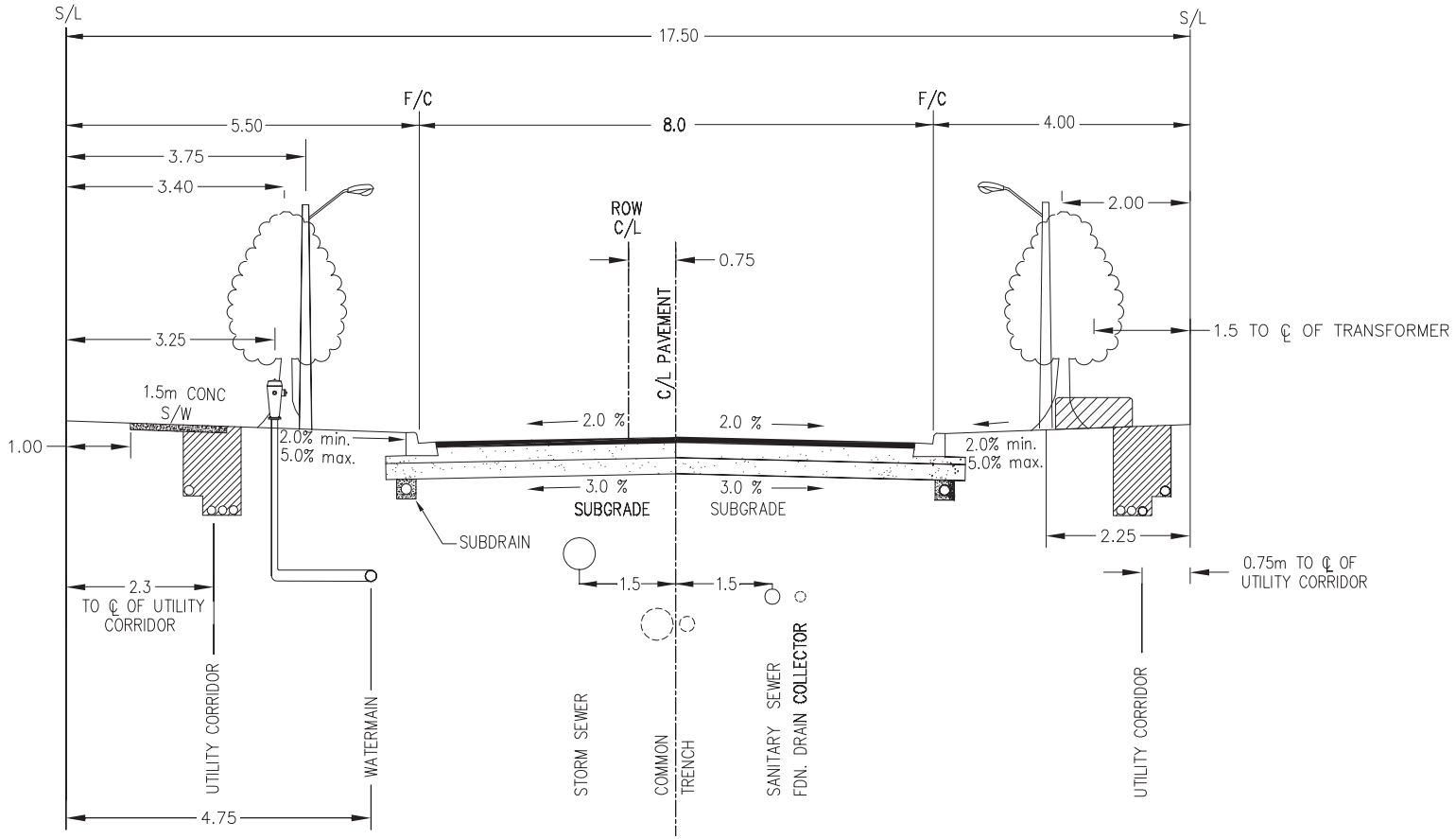
CITY OF VAUGHAN ENGINEERING STANDARD

MINOR COLLECTOR ROAD
24m R.O.W. (W/O LAY-BY LANE)

NOT TO SCALE DESIGNED: _____

REVISION: _____ DATE: JUN. 2021

STD. DWG.
R - 103



NOTES

1. PAVEMENT WIDTH IS DESIGNED TO ACCOMMODATE 2 TRAVEL LANES WITH 1 PARKING LANE.
2. PAVEMENT DESIGN SHALL CONFORM TO MINIMUM CITY STANDARDS AND/OR APPROVED GEOTECHNICAL REPORT.
3. ACTIVELY GROWING No. 1 NURSERY SOD TO BE LAID ON 150mm OF TOPSOIL, PROPERLY GRADED AND ROLLED.
4. DEPTH OF COVER ON ALL MUNICIPAL INFRASTRUCTURE SHALL CONFORM TO MINIMUM CITY STANDARDS.

m DIMENSIONS IN METRES EXCEPT AS NOTED

	REVISIONS	DATE
4.		
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City of Vaughan — The City Above Toronto

ENGINEERING DEPARTMENT

CITY OF VAUGHAN ENGINEERING STANDARD

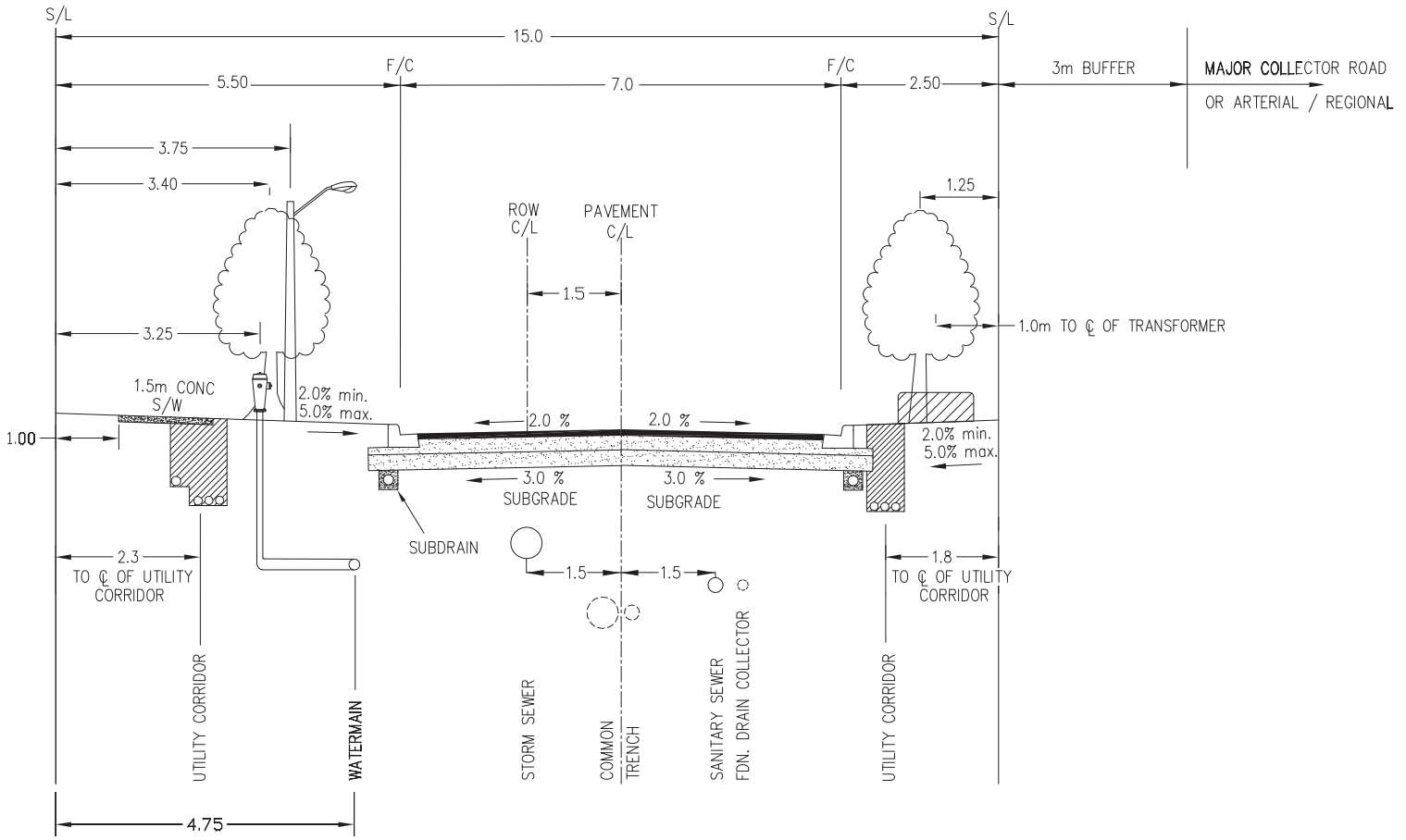
LOCAL ROAD
17.5 m R.O.W. - 8m PAVEMENT

NOT TO SCALE | DESIGNED: ENG. DEPT.

REVISION: | DATE: MARCH 2004

STD. DWG. B - 12

Acad File: R:\ENGDRAFT\$$Design Std Drawings 2004\B_Roads\B-12.dwg



NOTES

1. PAVEMENT WIDTH IS DESIGNED TO ACCOMMODATE 2 TRAVEL LANES WITH NO PARKING.
2. PAVEMENT DESIGN SHALL CONFORM TO MINIMUM CITY STANDARDS AND/OR APPROVED GEOTECHNICAL REPORT.
3. ACTIVELY GROWING No. 1 NURSERY SOD TO BE LAID ON 150mm OF TOPSOIL, PROPERLY GRADED AND ROLLED.
4. DEPTH OF COVER ON ALL MUNICIPAL INFRASTRUCTURE SHALL CONFORM TO MINIMUM CITY STANDARDS.
5. BUFFER ROAD SHALL ONLY BE USED ADJACENT TO MAJOR COLLECTOR OR HIGHER CLASSIFICATION ROAD.

m DIMENSIONS IN METRES EXCEPT AS NOTED

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1.		
	REVISIONS	DATE

City of Vaughan
The City Above Toronto

ENGINEERING DEPARTMENT

CITY OF VAUGHAN ENGINEERING STANDARD

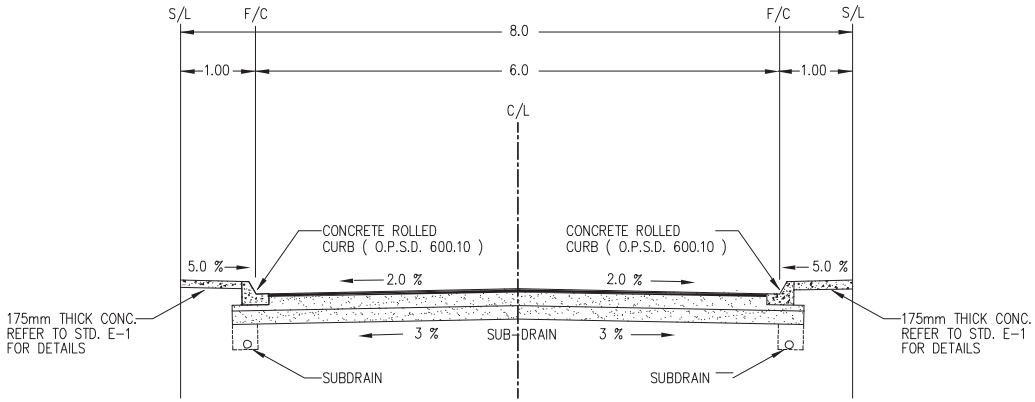
BUFFER ROAD
15 m R.O.W. - 7m PAVEMENT

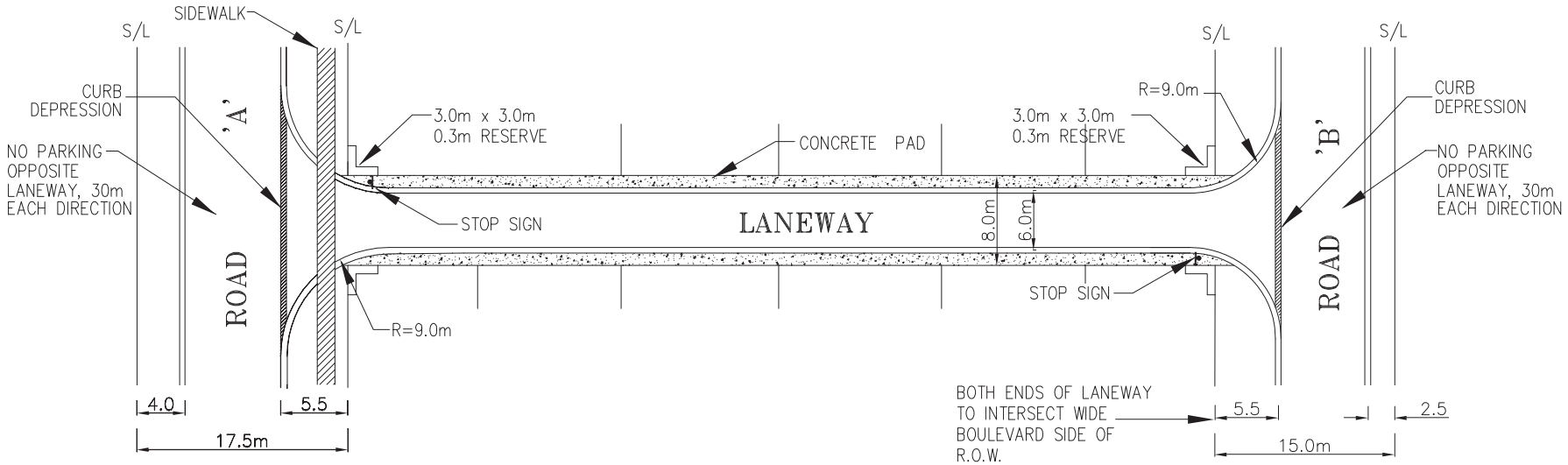
NOT TO SCALE
DESIGNED: ENG. DEPT.
REVISION:
DATE: MARCH 2004

STD. DWG.
B - 13

Acad File: R:\ENGDRAFT\$$Design Std Drawings 2004\B_Roads\B-13.dwg

DIMENSIONS IN METRES EXCEPT AS NOTED





NOTES

1. STOP SIGN SIZE 60cm x 60cm INTERSECTING (15.0m/17.5m/20.0m/23.0m) R.O.W.
2. "NO PARKING FIRE ROUTE" SIGNS TO BE INSTALLED AT ENTRY POINTS AND LOCATED 45.0m APART THEREAFTER (WHENEVER POSSIBLE).
3. ALL SIGNS TO BE INSTALLED ON U-CHANNEL GALVANIZED STEEL POSTS.
4. STREET NAME SIGNS TO ON 150mm DOUBLE FACED ALUMINUM BLADES (REFLECTORIZED).
5. ALL REGULATORY SIGNS MANUFACTURED USING HIGH INTENSITY SHEETING.
6. LUMINAIRES TO BE PROVIDED ON GARAGES WHERE APPLICABLE.
7. PAVEMENT DEPTH SHALL CONFORM TO MINIMUM CITY STANDARDS AND/OR APPROVED GEOTECHNICAL REPORT.
8. DEPTH OF COVER ON ALL MUNICIPAL INFRASTRUCTURE SHALL CONFORM TO MINIMUM CITY STANDARDS.

4.		
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	REVISIONS	DATE

City of Vaughan — The City Above Toronto

ENGINEERING DEPARTMENT

CITY OF VAUGHAN ENGINEERING STANDARD

LANEWAY
8m R.O.W. - 6m PAVEMENT

NOT TO SCALE | DESIGNED: ENG. DEPT.

REVISION: _____ | DATE: MARCH 2004

STD. DWG. B - 14

Acad File: R:\ENGDRAFT\$$Design Std Drawings 2004\B_Roads\B-14.DWG

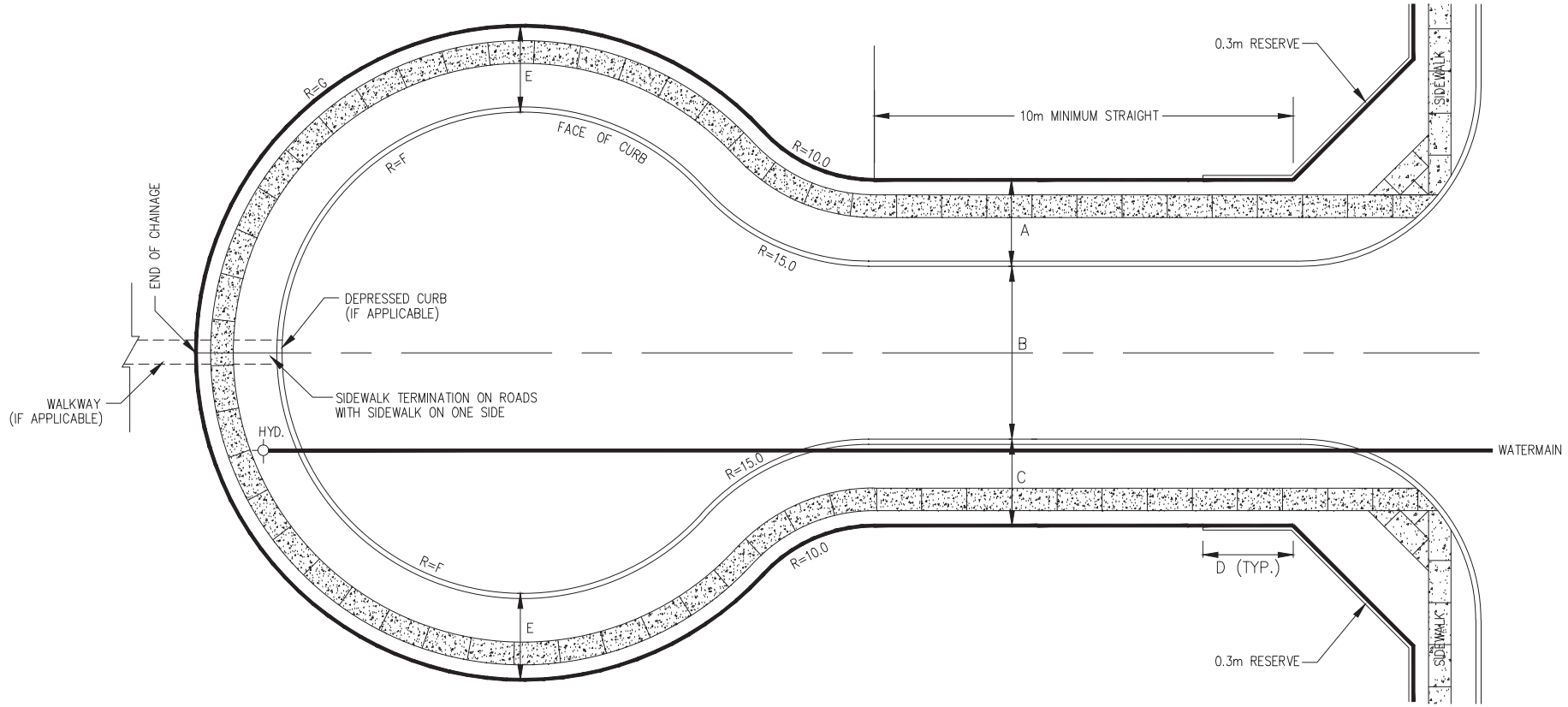


TABLE:

	R.O.W.	A	B	C	D	E	F	G
MINOR COLLECTOR/INDUSTRIAL ROAD	24.0m	5.5	10.5	8.0	6.0*	5.5	16.0	21.5
LOCAL ROAD	17.5m	4.0	8.0	5.5	3.0	5.5	13.25	18.75

NOTES

1. AT THE CURB, THERE SHALL BE A MIN. 1.0m BARRIER CURB BETWEEN EVERY DRIVEWAY AROUND THE BULB OF THE CUL-DE-SAC.
2. HYDRANT TO BE LOCATED AT THE END OF THE WATERMAIN, AS CLOSE TO THE END OF THE CUL-DE-SAC AS POSSIBLE.
3. MINIMUM 0.7% GUTTER GRADE.
4. MAXIMUM 40 UNITS ON CUL-DE-SAC.

m DIMENSIONS IN METRES EXCEPT AS NOTED

	REVISIONS	DATE
4.		
3.		
2.		
1.	*REVISED/UPDATED TABLE	11/24

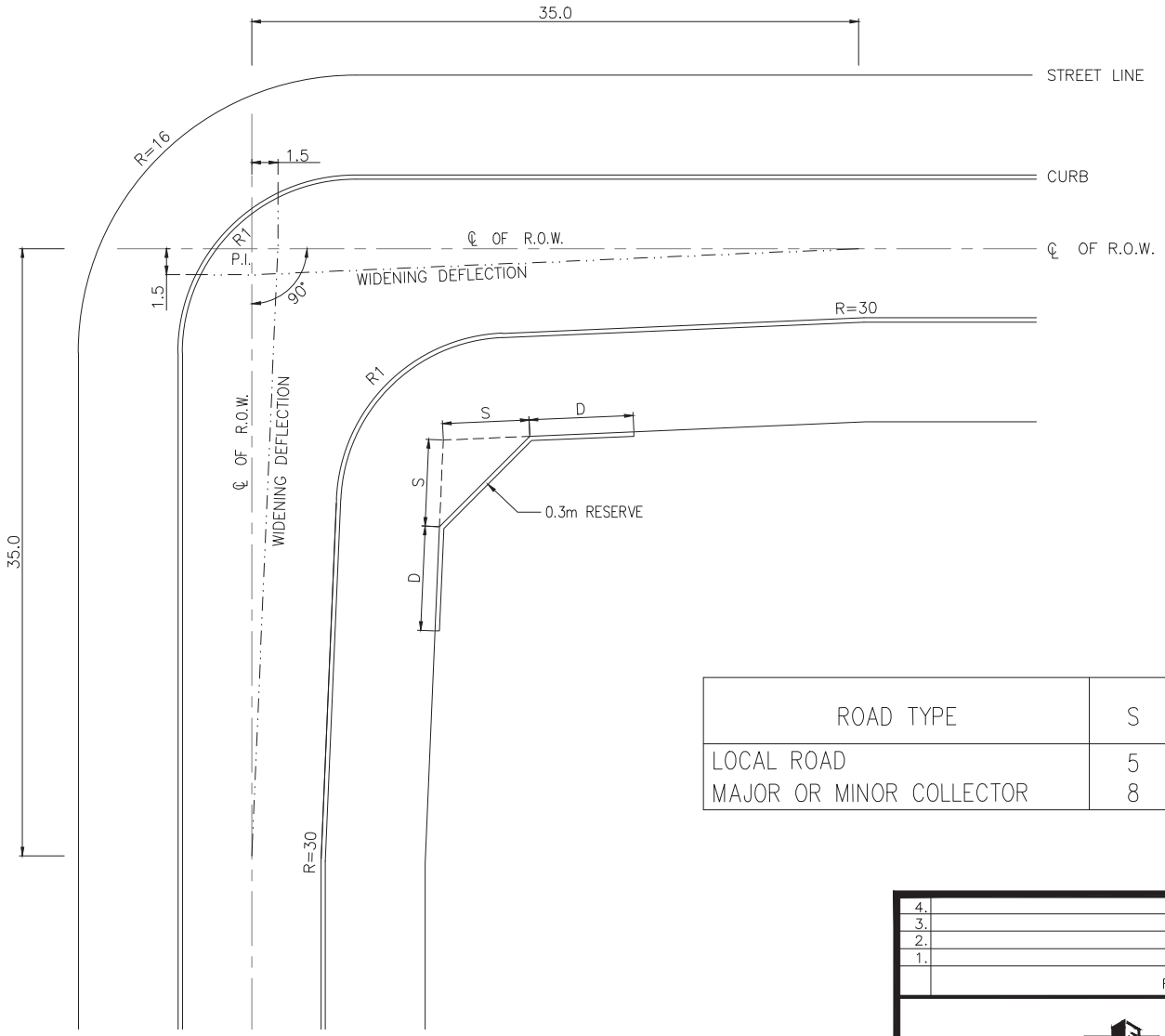
CITY OF VAUGHAN ENGINEERING STANDARD

CUL-DE-SAC

NOT TO SCALE DESIGNED: _____

REVISION: 1 DATE: JUN. 2021

STD. DWG.
R - 107



ROAD TYPE	S	D	RI
LOCAL ROAD	5	–	10
MAJOR OR MINOR COLLECTOR	8	6	12

NOTES

1. MINIMUM 0.7% GUTTER GRADE.
2. BOULEVARD WIDTHS TO BE MAINTAINED AS PER ROAD CROSS–SECTION DETAILS.
3. APPLICABLE ONLY TO ROADS BELOW MAJOR COLLECTOR STATUS.
4. AT THE CURB ON THE OUTSIDE OF THE BEND THERE SHALL BE A MINIMUM 1.0m SPACE BETWEEN EVERY SECOND DRIVEWAY.

m DIMENSIONS IN METRES EXCEPT AS NOTED

4.		
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	REVISIONS	DATE

VAUGHAN

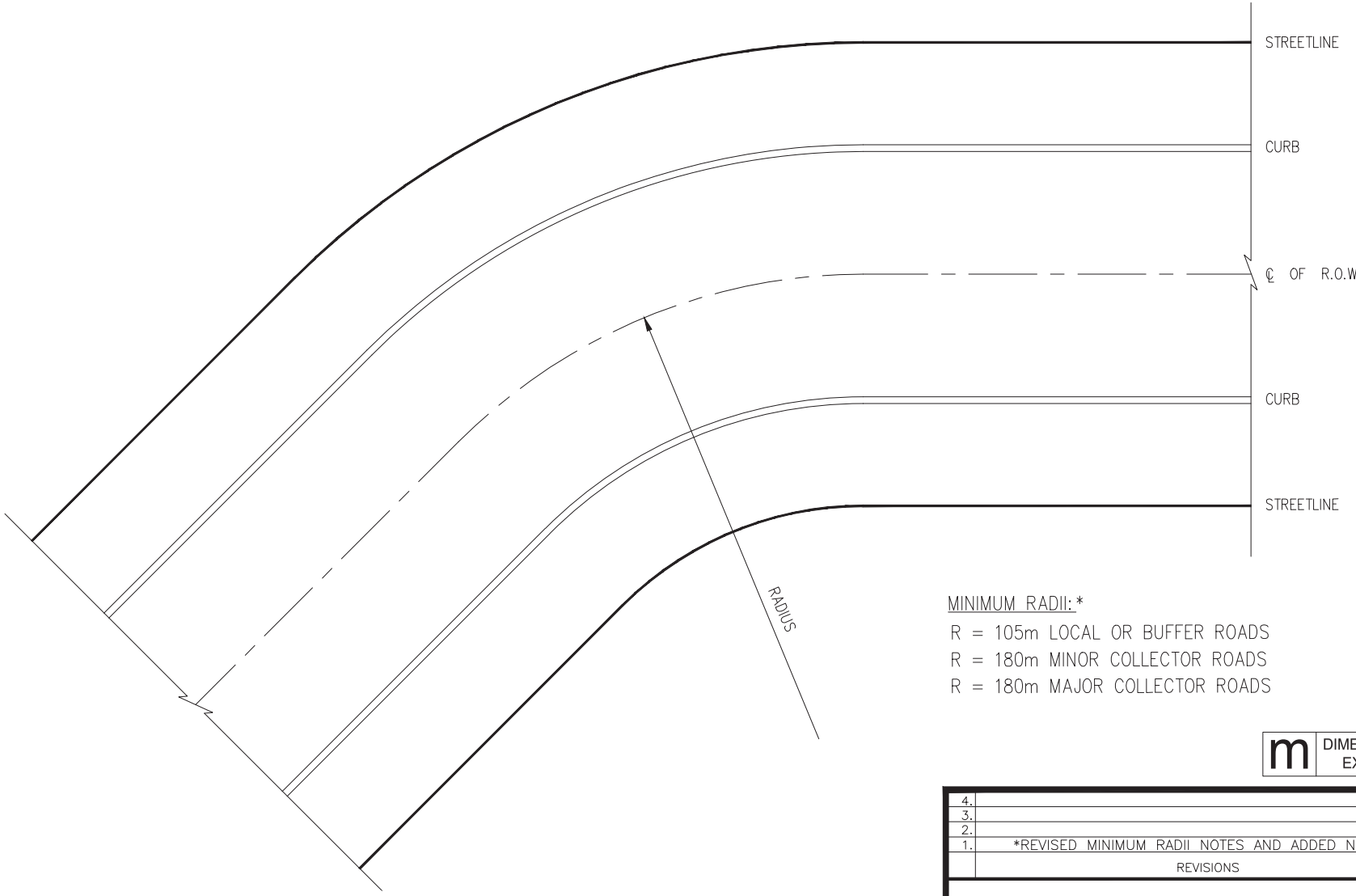
CITY OF VAUGHAN ENGINEERING STANDARD

ANGLE BEND

NOT TO SCALE | DESIGNED: _____ | STD. DWG. R - 108

REVISION: _____ | DATE: DEC. 2020

FILE: O:\Infrastructure Delivery\Infrastructure Programming\PMO\City Standards\Design Criteria 2020-21\City Standards Update Folder\CoVStandardDrawings_CAD_2021\R-108 - Angle Bend.dwg



MINIMUM RADII:*

R = 105m LOCAL OR BUFFER ROADS
R = 180m MINOR COLLECTOR ROADS
R = 180m MAJOR COLLECTOR ROADS

m DIMENSIONS IN METRES EXCEPT AS NOTED

NOTES:

1. BOULEVARD WIDTHS TO BE MAINTAINED AS PER ROAD CROSS–SECTION DETAILS THROUGHOUT THE CURVE.

2. 20m MINIMUM STRAIGHT R.O.W. BEYOND/BETWEEN CURVES.

3. FOR OTHER CURB RADII REFER TO DESIGN CRITERIA.

4. VALUES PROVIDED RELATE TO CROWN ROADWAY SECTIONS AND THE VALUES REFLECT NORMAL CROWN. VALUES MAY BE REDUCED IN CONSULTATION WITH THE CITY BY WAY OF APPLYING ROADWAY SUPER–ELEVATION OR REDUCING DESIGN SPEED UPON APPROVAL BY THE CITY.*

4.		
3.		
2.		
1.	*REVISED MINIMUM RADII NOTES AND ADDED NOTE #4	11/24
	REVISIONS	DATE

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

HORIZONTAL CURVE

NOT TO SCALE DESIGNED: _____

REVISION: 1 DATE: DEC. 2020

STD. DWG. R - 109

FILE: C:\Users\cudiamap\CITY OF VAUGHAN\City Standards – General\Design Criteria 2024\Dev – Standards\CAD\R-109 – Horizontal Curve.dwg

NOTES

1. ALL ROADS TO INTERSECT AT 90°.
2. MAJOR AND MINOR LEGS OF THE INTERSECTION MAY REQUIRE 2.0m MEDIAN SUBJECT TO CITY REQUEST.
3. LANE MARKINGS TO BE TAPERED IN ACCORDANCE WITH O.T.M. BOOK 11.
4. LOCAL TO ARTERIAL INTERSECTIONS DISCOURAGED & WHERE NECESSARY THEIR DESIGN MUST BE APPROVED BY THE CITY AND REGION (WHERE APPLICABLE).
5. INCREASED CURB RADII CAN BE CONSIDERED WHERE JUSTIFIED BASED ON HIGH TRAFFIC AND/OR BUS VOLUMES EXPECTED.

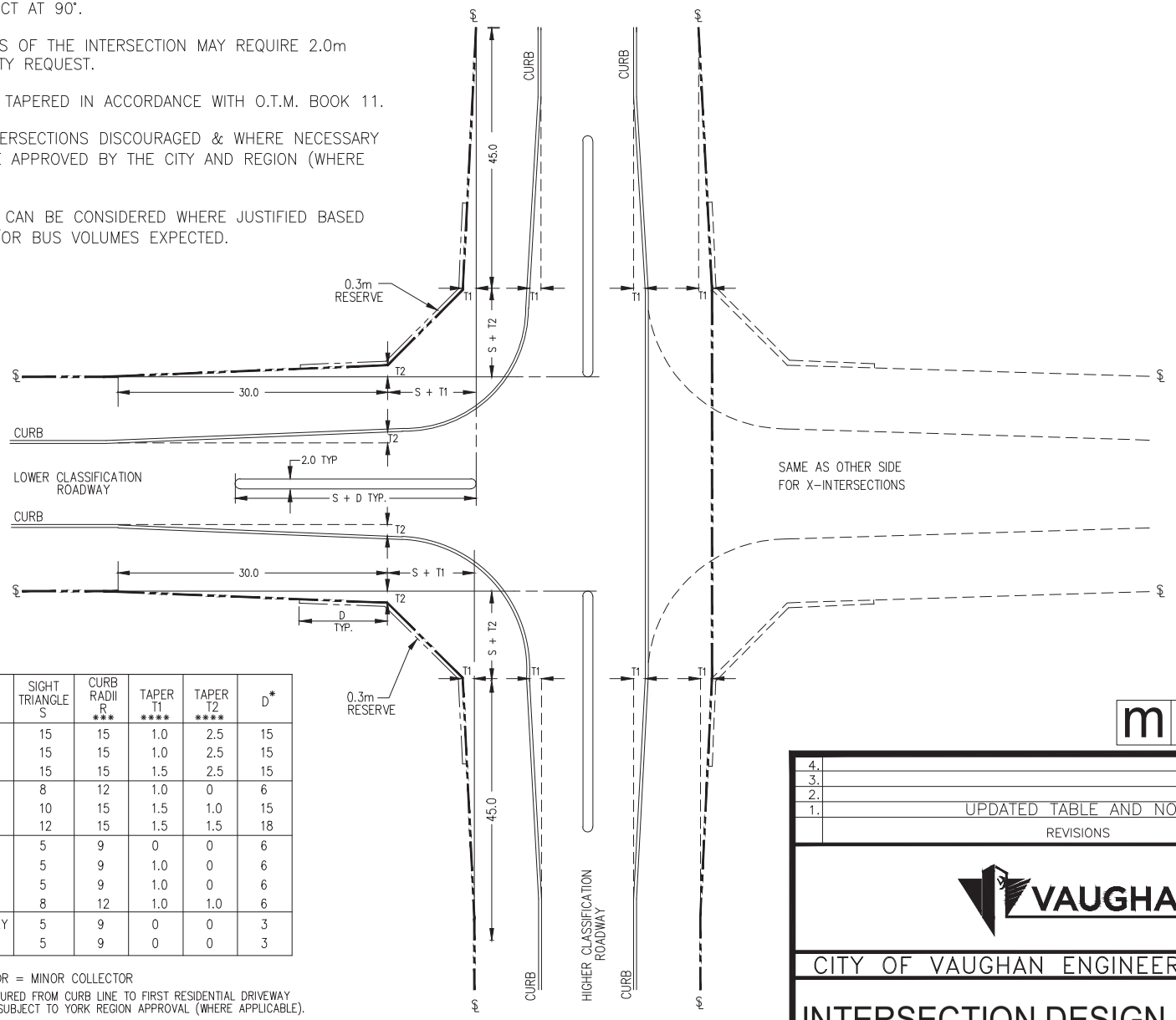


TABLE:

INTERSECTION OF:	SIGHT TRIANGLE S	CURB RADII R ***	TAPER T1 ****	TAPER T2 ****	D*
ARTERIAL AND LOCAL**	15	15	1.0	2.5	15
ARTERIAL AND MINOR**	15	15	1.0	2.5	15
ARTERIAL AND MAJOR**	15	15	1.5	2.5	15
MAJOR AND LOCAL	8	12	1.0	0	6
MAJOR AND MINOR	10	15	1.5	1.0	15
MAJOR AND MAJOR	12	15	1.5	1.5	18
MINOR AND LANEWAY	5	9	0	0	6
MINOR AND LOCAL	5	9	1.0	0	6
MINOR AND BUFFER	5	9	1.0	0	6
MINOR AND MINOR	8	12	1.0	1.0	6
LOCAL AND LOCAL/BUFFER/LANEWAY	5	9	0	0	3
BUFFER AND BUFFER/LANEWAY	5	9	0	0	3

MAJOR = MAJOR COLLECTOR; MINOR = MINOR COLLECTOR

* SUBJECT TO MAXIMUM 25m MEASURED FROM CURB LINE TO FIRST RESIDENTIAL DRIVEWAY (NOT MULTI-UNIT APPARMENTS) SUBJECT TO YORK REGION APPROVAL (WHERE APPLICABLE).

** UNLESS OTHERWISE REQUIRED BY YORK REGION

*** THE CITY WOULD WELCOME SMALLER CURB RADII TO BENEFIT PEDESTRIANS IN URBAN AREAS, INTENSIFICATION AREAS AND AREAS WITH HIGHER DENSITY. THE CITY'S TRANSPORTATION MASTER PLAN MAKES RECOMMENDATIONS FOR OPTIMUM CURB RADII (CITY OF VAUGHAN 2012, 6-21). PROPOSALS TO REDUCE CURB RADII SHALL BE SUPPORTED BY A TRANSPORTATION CONSULTANT.

**** THE PROVISION OF TAPER T1 AND T2 IS SUBJECT TO CITY DISCRETION/REQUIREMENT.

m DIMENSIONS IN METRES EXCEPT AS NOTED

	REVISIONS	DATE
4.		
3.		
2.		
1.	UPDATED TABLE AND NOTES	11/24

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

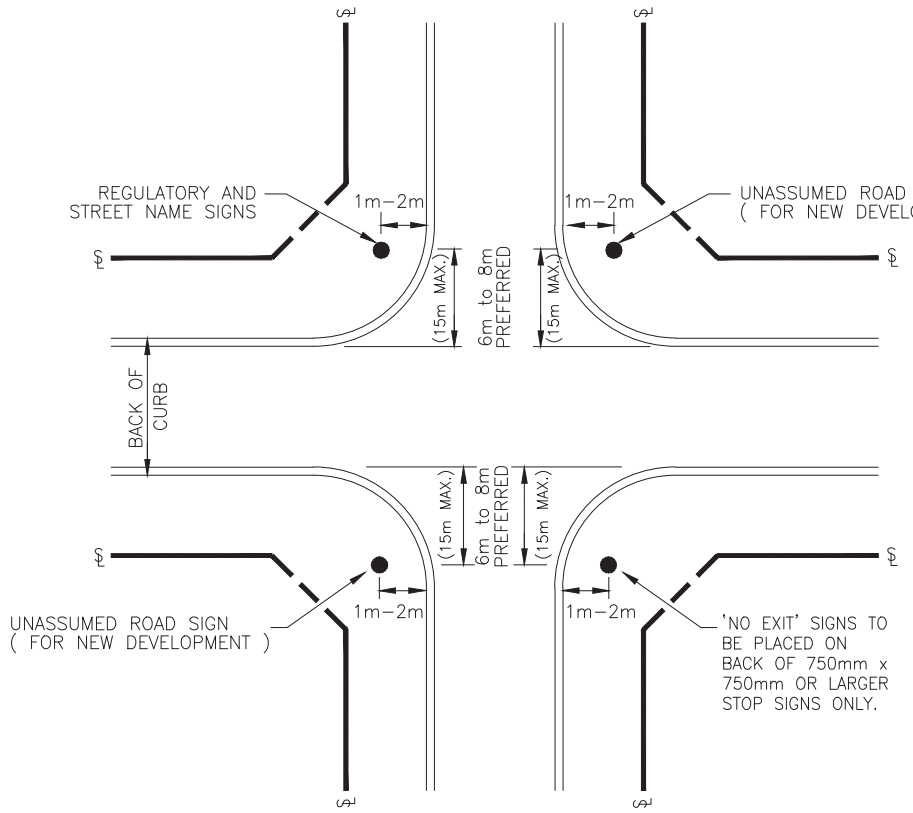
INTERSECTION DESIGN GUIDELINES

NOT TO SCALE DESIGNED: _____

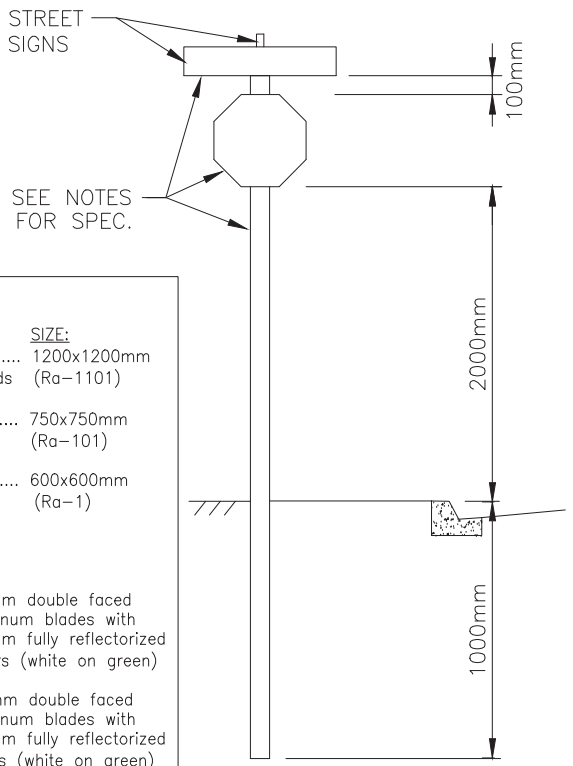
REVISION: 1 DATE: AUG. 2021

STD. DWG. R - 110

LOCATION PLAN



INSTALLATION DETAIL



STOP SIGN SIZES

INTERSECTION:	SIZE:
–Arterial to Arterial, Collector (14m), ...	1200x1200mm
–Collector (14m) to Collector (14m) roads	(Ra–1101)
–Collector (11.5m) to Collector (14m).....	750x750mm
–Local to Collector	(Ra–101)
–Local to Local roads	600x600mm (Ra–1)

STREET NAME SIGN SIZES

INTERSECTION:	SIZE:
–Collector to Local	150mm double faced aluminum blades with 100mm fully reflectorized letters (white on green)
–Local to Local roads	
–All other roads	200mm double faced aluminum blades with 150mm fully reflectorized letters (white on green)

NOTES

1. REGULATORY SIGN AS PER OHTA REG. 615/95 OR AMENDMENTS THEREOF.
2. ALL REGULATORY SIGNS MANUFACTURES USING HIGH INTENSITY DIAMOND GRADE (OR EQUIVALENT) RETROREFLECTIVE SHEETING STAMPED WITH DATE (MONTH/YEAR) ON SIGN FACE BY MANUFACTURER.
3. SIGN POSTS SHALL BE BREAKAWAY–TYPE IN ACCORDANCE WITH MTOD 986.101, 986.105, 987.101, 987.105 AND OPSS 915.
4. REGULATORY AND STREET SIGNS MAY BE PLACED ON LIGHT STANDARDS, PROVIDED THEY ARE CLEARLY VISIBLE AND WITHIN SPECIFIED LOCATIONS.
5. SPECIAL CIRCUMSTANCES MAY WARRANT LARGER STOP SIGNS, OR SECOND STOP SIGN ON SAME APPROACH.

m DIMENSIONS IN METRES EXCEPT AS NOTED

	REVISIONS	DATE
4.		
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VAUGHAN

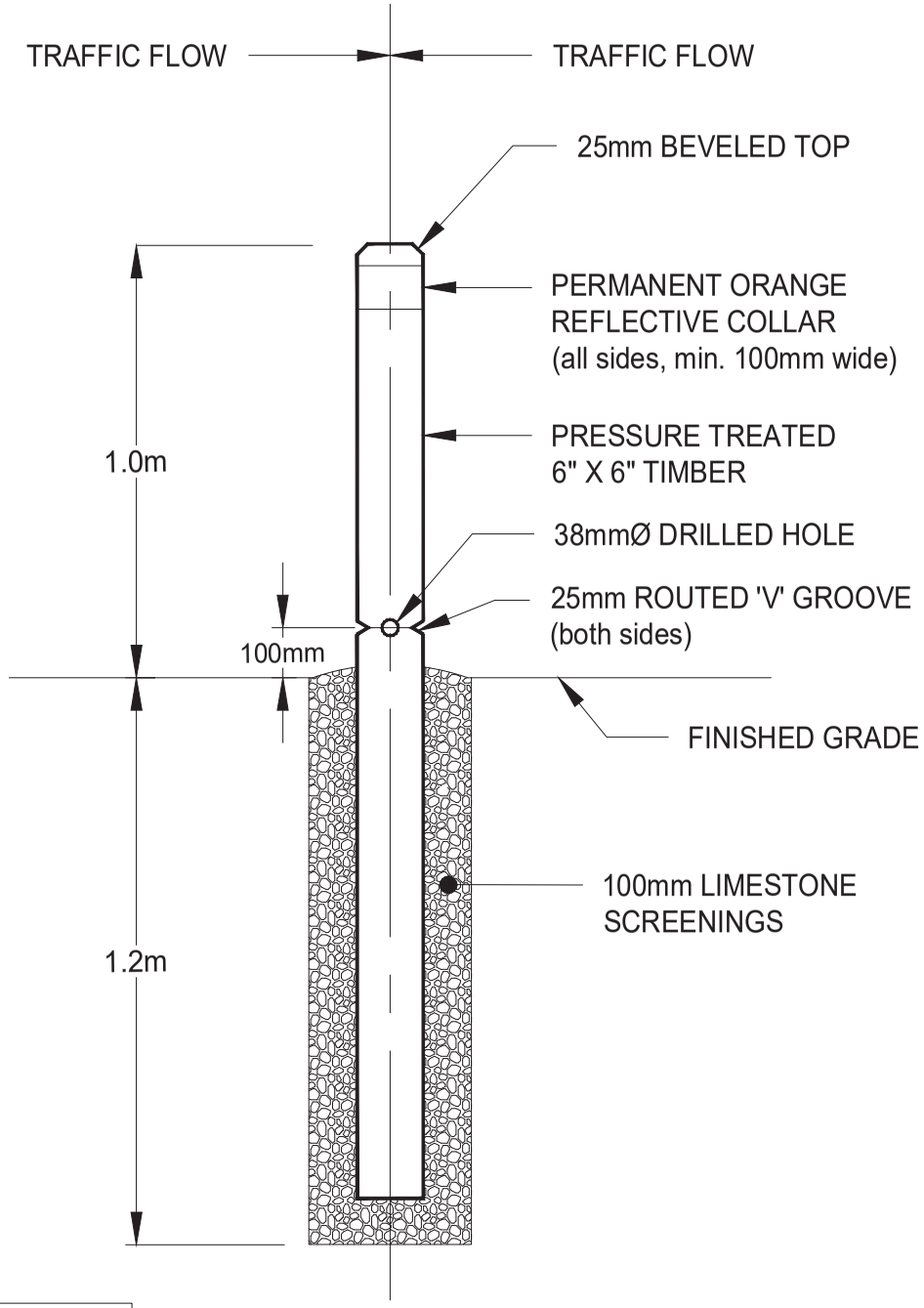
CITY OF VAUGHAN ENGINEERING STANDARD

STREET SIGNS

NOT TO SCALE | DESIGNED: _____ | REVISION: _____ | DATE: DEC. 2020

STD. DWG. R - 111

FILE: O:\Infrastructure Delivery\Infrastructure Programming\PMO\City Standards\Design Criteria 2020-21\City Standards Update Folder\CoVStandardDrawings_CAD_2021\R-111 - Street Signs.dwg



NOTE:

1. BOLLARDS MUST BE PLACED WITH 'V' GROOVES PERPENDICULAR TO TRAFFIC FLOW.
2. BOLLARD POSTS TO BE INSTALLED WITH MIN 2.0m CLEARANCE FROM ANY FIXED STRUCTURE/OBSTACLE

4.		
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	REVISIONS	DATE

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

BREAKAWAY BOLLARD DETAIL

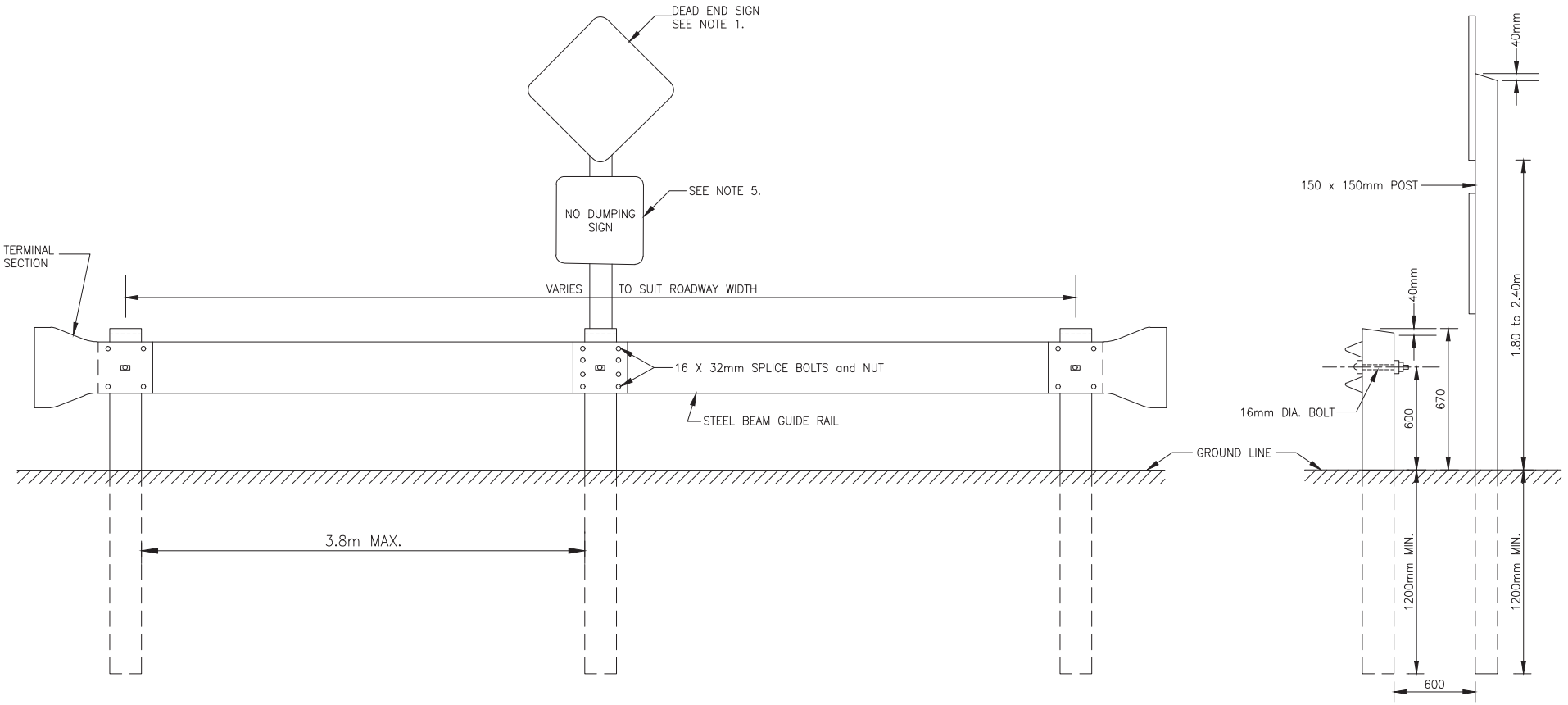
NOT TO SCALE DESIGNED: _____

REVISION: _____ DATE: DEC. 2020

STD. DWG.
R - 112

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

FILE: O:\Infrastructure Delivery\Infrastructure Programming\PMO\City Standards\Design Criteria 2020-21\City Standards Update Folder\CoVStandardDrawings_CAD_2021\R-112 - Breakaway Bollard Detail.dwg



ELEVATION

NOTES

1. DEAD END SIGN AS SPECIFIED IN THE ONTARIO TRAFFIC MANUALS (OTM)
2. ALL METAL TO BE GALVANIZED.
3. DEAD END BARRICADES REQUIRED WHEN A ROAD ENDS WITHOUT A TURNING CIRCLE AND TO EXTEND 2.0m BEYOND CURB LINE.
4. ALL POSTS TO BE GALVANIZED STEEL.
5. NO DUMPING SIGN TO BE IN ACCORDANCE WITH THE CITY STANDARDS (TRANSPORTATION SERVICES, PARKS AND FORESTRY OPERATIONS)

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
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VAUGHAN

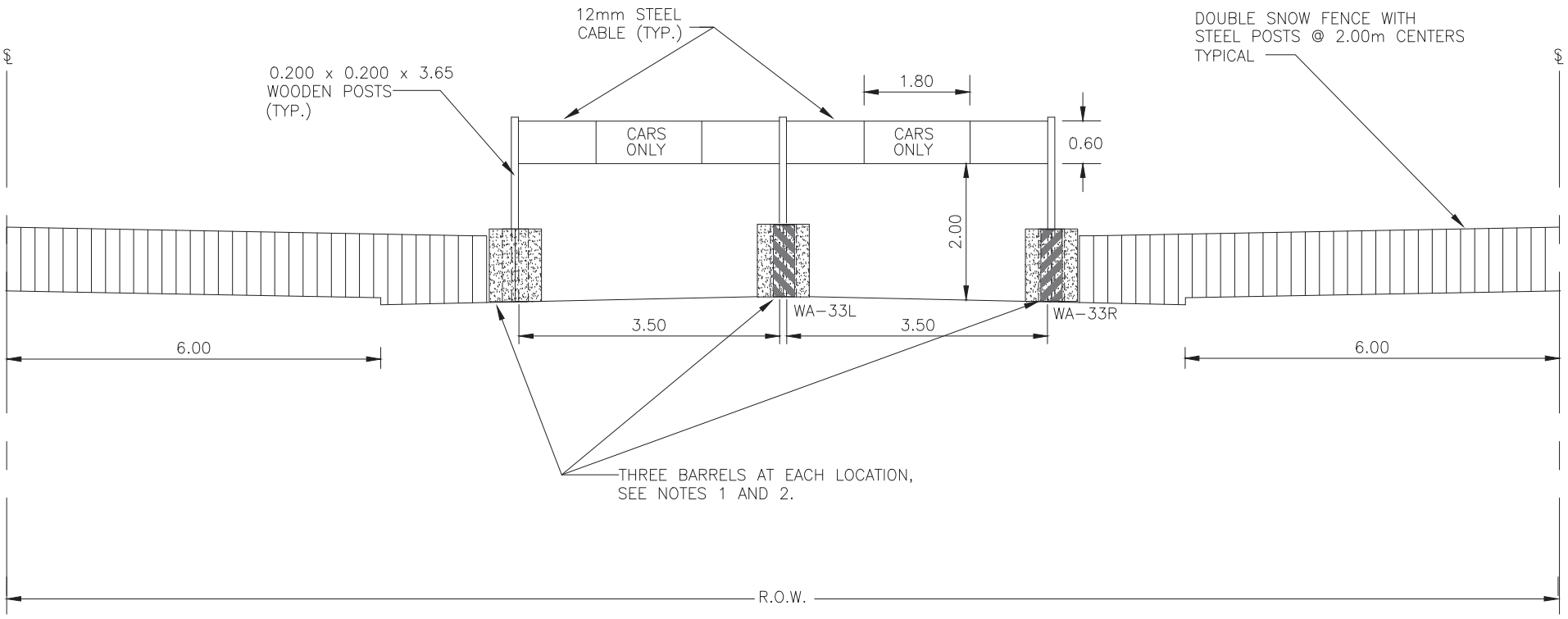
CITY OF VAUGHAN ENGINEERING STANDARD

DEAD END BARRICADE

NOT TO SCALE | DESIGNED: _____

REVISION: _____ | DATE: DEC. 2020

STD. DWG. R - 113



NOTES

1. TWO FRONT BARRELS TO BE FILLED WITH SAND; REAR BARREL TO BE FILLED WITH CONCRETE.
2. CONTRACTOR TO EMBED 200 x 200mm POSTS IN REAR BARREL.
3. MINIMUM LANE WIDTH TO BE 3.00m.
4. MINIMUM CLEARANCE FROM BOTTOM OF OVERHEAD SIGN TO ROAD TO BE 2.00m.
5. CABLE TO BE ATTACHED TO POSTS WITH BOLTS TO PERMIT EMERGENCY VEHICLES TO CUT THE BOLTS AND NOT THE CABLES TO GAIN ACCESS.
6. OVERHEAD SIGNS SHALL HAVE AN ORANGE BACKGROUND WITH A BLACK LEGEND MESSAGE AND SIGN BORDER.
7. ALL SIGNS SHALL BE REFLECTORIZED TO SHOW THE SAME COLOUR AND SHAPE BY DAY AS BY NIGHT.
8. SIGNAGE TO BE THE SAME FOR OPPOSING DIRECTION.
9. DELINEATORS TO BE INSTALLED ON BOTH OPENINGS, BOTH DIRECTIONS.

m DIMENSIONS IN METRES EXCEPT AS NOTED

	REVISIONS	DATE
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VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

CONSTRUCTION TRAFFIC BARRICADES

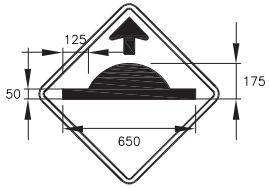
NOT TO SCALE | DESIGNED: _____ | REVISION: _____ | DATE: DEC. 2020

STD. DWG. R - 114

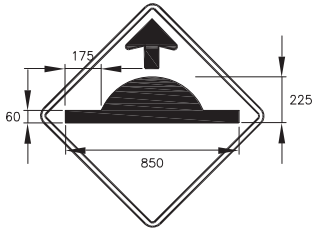
FILE: O:\Infrastructure Delivery\Infrastructure Programming\PMO\City Standards\Design Criteria 2020-21\City Standards Update Folder\CoVStandardDrawings_CAD_2021\R-114 - Construction Traffic Barricades.dwg

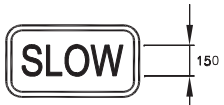
SPEED HUMP, RAISED CROSSWALK & RAISED INTERSECTION

600x600mm WARNING SIGN



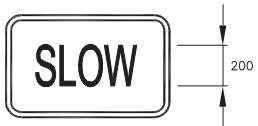
750x750mm WARNING SIGN





600x300mm TAB

INSTALL ON LOCAL ROADS



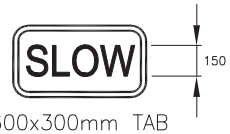
750x450mm TAB

INSTALL ON PRIMARY/FEEDER ROADS OR ABOVE

ROUNDABOUT

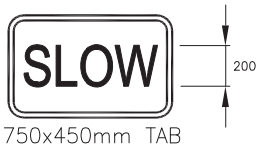
600x600mm WARNING SIGN

750x750mm WARNING SIGN



600x300mm TAB

INSTALL ON LOCAL ROADS

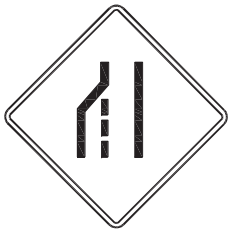


750x450mm TAB

INSTALL ON PRIMARY/FEEDER ROADS OR ABOVE

MEDIAN

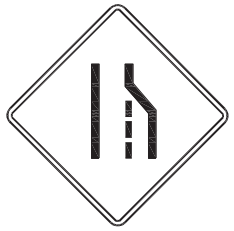
750x750mm WA-23L LANE REDUCTION SIGN



INSTALL IF MEDIAN RESULTS IN LANE REDUCTION

CURB EXTENSION & CHICANE

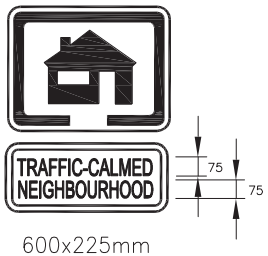
750x750mm WA-23R LANE REDUCTION SIGN



INSTALL IF CURB EXTENSION OR CHICANE RESULTS IN LANE REDUCTION

TRAFFIC-CALMED NEIGHBOURHOOD

600x450mm WHITE ON GREEN SIGN



600x225mm WHITE ON GREEN TAB

INSTALL ON ALL STREETS ENTERING A TRAFFIC CALMED NEIGHBOURHOOD (MIN. 20m FROM ARTERIAL ROAD WHEREVER POSSIBLE)

INSTALL IN BOTH DIRECTIONS PER THE FOLLOWING (EXCEPT AS NOTED):

1. 100m IN ADVANCE OF EACH MEASURE IF ON LOCAL ROAD, 150m IF ON PRIMARY/FEEDER ROAD OR ABOVE.
2. IN ADVANCE OF SERIES OF MEASURES IF THEY ARE LESS THAN 300m APART.
3. ON PROPERTY LINES WHEREVER POSSIBLE.
4. ON EXISTING LIGHT STANDARD OR UTILITY POLE IF WITHIN 30m OF LOCATION DETERMINED THROUGH PRECEDING STEPS.

NOTES:

1. ALL SIGNS MUST BE VISIBLE TO MOTORISTS FROM A DISTANCE OF 65m ON LOCAL ROADS, AND 85m ON PRIMARY/FEEDER ROADS WHEREVER POSSIBLE. TRIM OR RELOCATE OBSTRUCTING BOULEVARD TREES IF NECESSARY.
2. LETTERING AND SYMBOLS TO BE BLACK ON HIGH INTENSITY REFLECTIVE YELLOW BACKGROUND, EXCEPT WHERE NOTED.
3. MOUNT ON 3.7m U-CHANNEL GALVANIZED STEEL POSTS, OR EXISTING LIGHT STANDARDS OR UTILITY POLES IF APPROPRIATE.
4. MOUNT SO THAT BOTTOM EDGE OF WARNING SIGN IS BETWEEN 2.0 AND 2.5m HIGH AND ROADSIDE EDGE IS AT LEAST 0.3m BEHIND CURB.

mm DIMENSIONS IN MILLIMETERS EXCEPT AS NOTED

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	REVISIONS	DATE

City of Vaughan — The City Above Toronto

ENGINEERING DEPARTMENT

CITY OF VAUGHAN ENGINEERING STANDARD

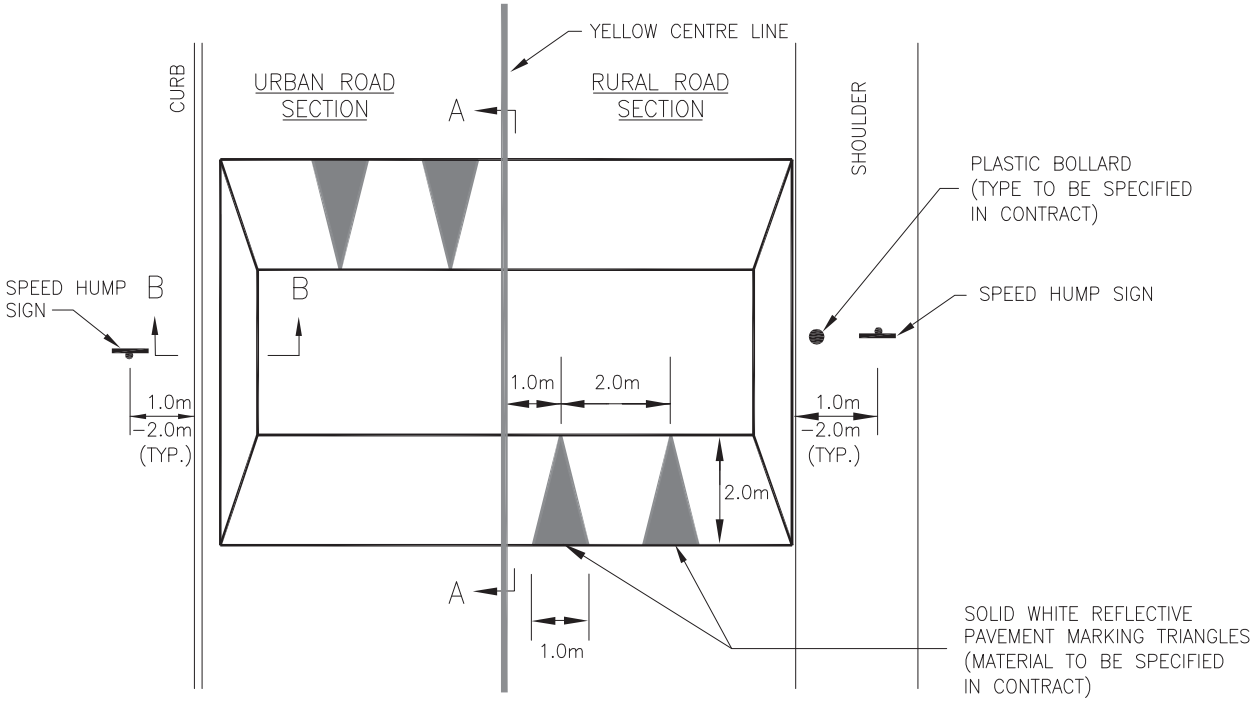
TRAFFIC CALMING ADVANCE WARNING SIGNS

NOT TO SCALE | DESIGNED: P.W.

REVISION: | DATE: MARCH 2004

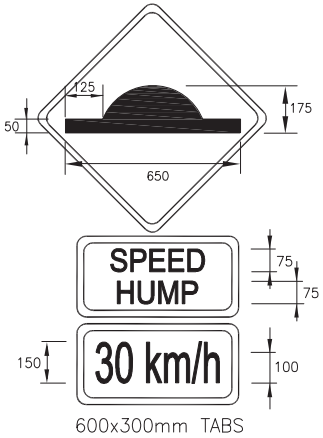
STD. DWG. J - 1

Acad File: R:\ENGDRAFT\$$Design Std Drawings 2004\J_Traffic Calming\J-1.dwg

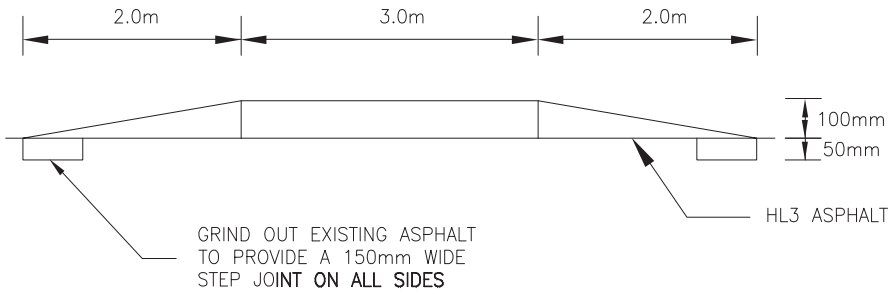


SPEED HUMP SIGN

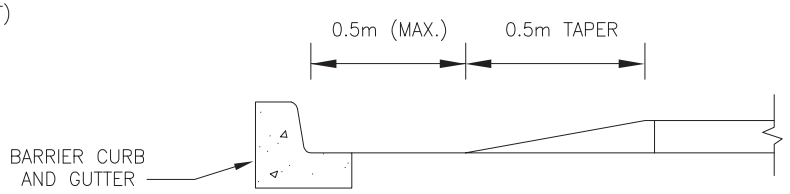
600x600mm WARNING SIGN



600x300mm TABS



SECTION A–A



SECTION B–B
URBAN ROAD SECTION

NOTES:

1. COLOURED IMPRESSED CONCRETE MAY BE SPECIFIED AS PER STD. DWG. J–3.
2. ALL SIGNS TO BE HIGH INTENSITY REFLECTIVE SHEETING ON GALVANIZED U–CHANNEL POSTS.
3. ADD THIRD PAVEMENT MARKING TRIANGLE ON EACH SIDE OF SPEED HUMP IF ON COLLECTOR ROAD.
4. INSTALL ADVANCE WARNING SIGNS IN ACCORDANCE WITH STD. DWG. J–1.

mm DIMENSIONS IN MILLIMETERS EXCEPT AS NOTED

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	REVISIONS	DATE

City of Vaughan — The City Above Toronto

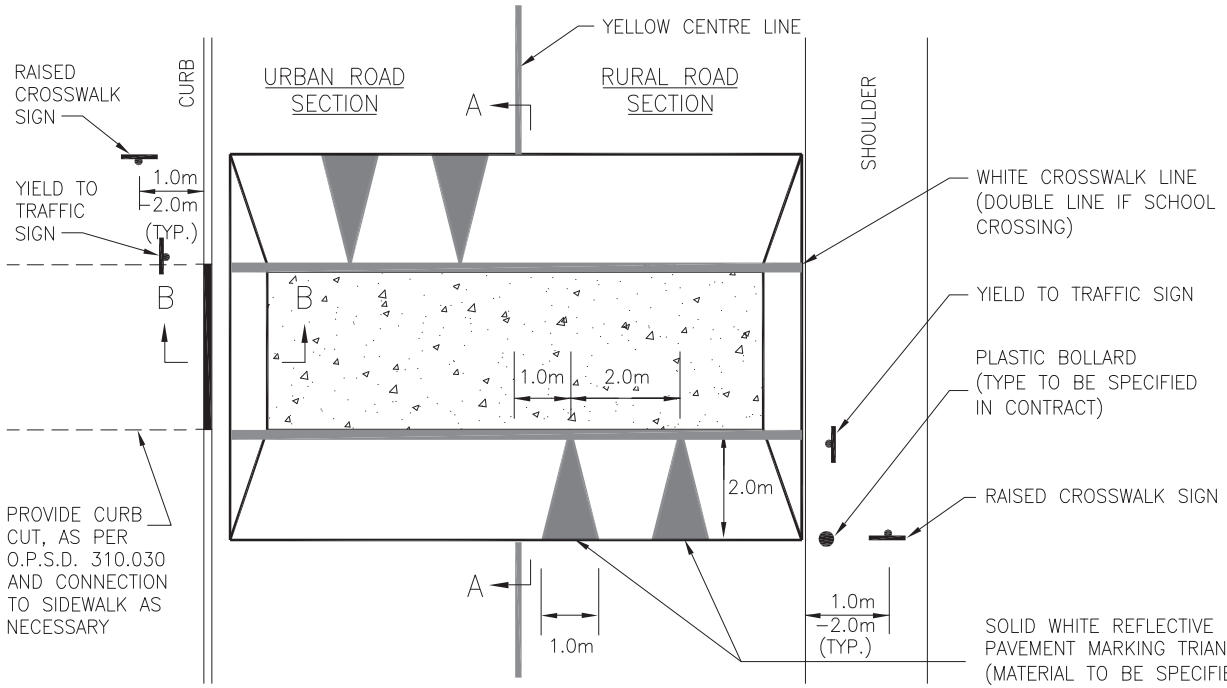
ENGINEERING DEPARTMENT

CITY OF VAUGHAN ENGINEERING STANDARD

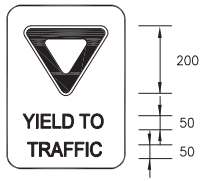
SPEED HUMP

NOT TO SCALE	DESIGNED: P.W.	STD. DWG.
REVISION:	DATE: MARCH 2004	J - 2

Acad File: R:\ENGDRAFT\$$Design Std Drawings 2004\J_Traffic Calming\J-2.dwg



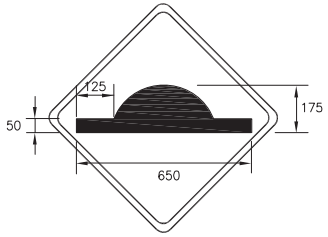
YEILD TO TRAFFIC SIGN



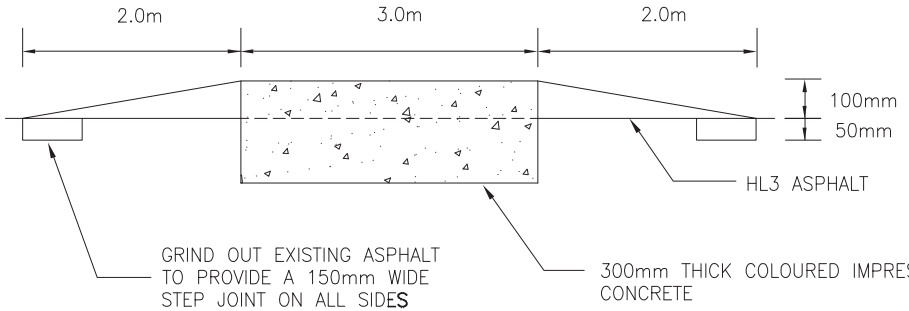
300x450mm SIGN
(RED SYMBOL, BLACK LETTERS ON WHITE)

RAISED CROSSWALK SIGN

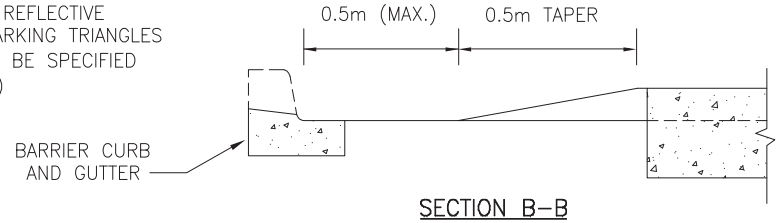
600x600mm
WARNING SIGN



600x300mm TABS



SECTION A–A



SECTION B–B
URBAN ROAD SECTION

NOTES:

1. COLOUR AND PATTERN OF IMPRESSED CONCRETE TO BE CONFIRMED WITH CITY ENGINEERING DEPARTMENT AND SPECIFIED IN CONTRACT.
2. ALL SIGNS TO BE HIGH INTENSITY REFLECTIVE SHEETING ON GALVANIZED U–CHANNEL POSTS.
3. ADD THIRD PAVEMENT MARKING TRIANGLE ON EACH SIDE OF RAISED CROSSWALK IF ON COLLECTOR ROAD.
4. PARKING RESTRICTIONS MAY BE REQUIRED TO ENSURE PEDESTRIAN VISIBILITY.
5. INSTALL ADVANCE WARNING SIGNS IN ACCORDANCE WITH STD. DWG. J–1.

mm	DIMENSIONS IN MILLIMETERS EXCEPT AS NOTED

	REVISIONS	DATE
4.		
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City of Vaughan
The City Above Toronto

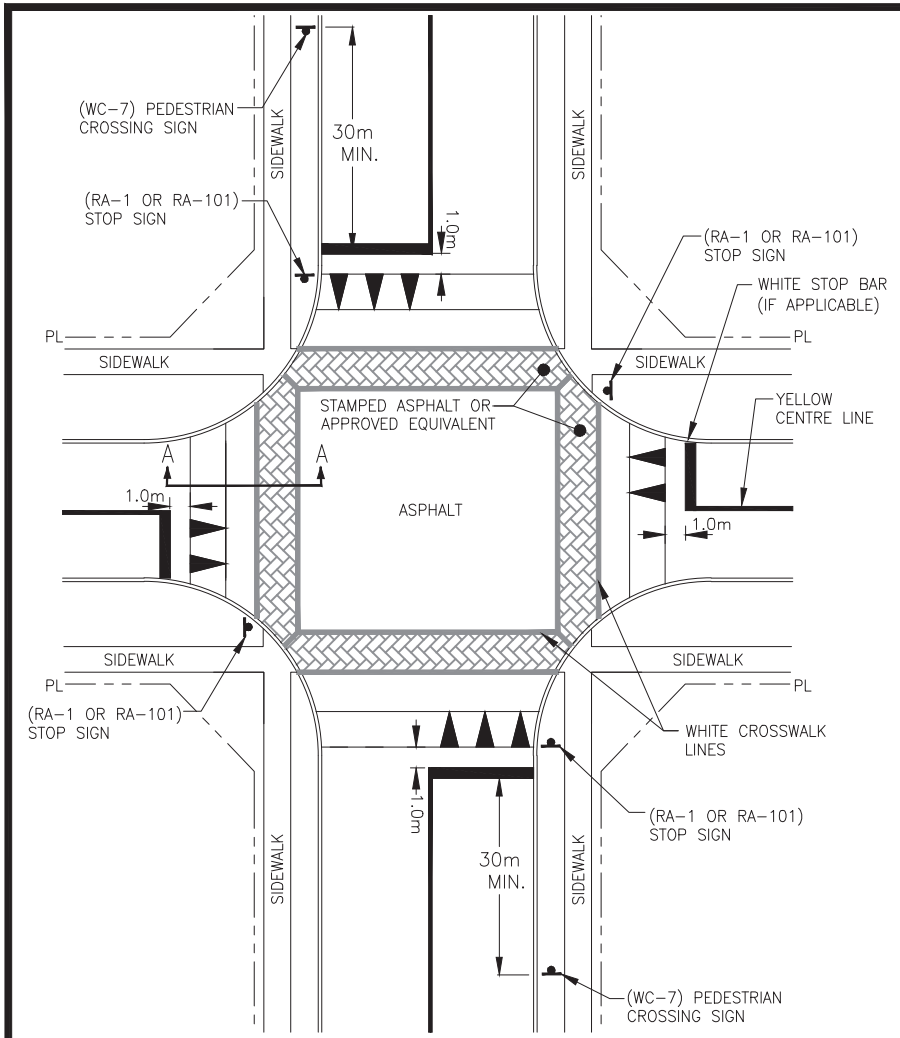
ENGINEERING DEPARTMENT

CITY OF VAUGHAN ENGINEERING STANDARD

RAISED CROSSWALK

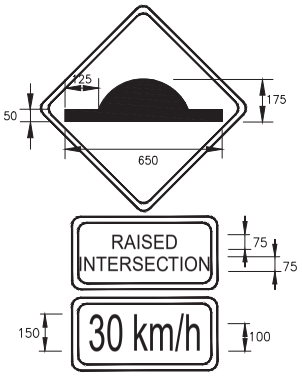
NOT TO SCALE
DESIGNED: P.W.
REVISION:
DATE: MARCH 2004

STD. DWG.
J - 3



RAISED INTERSECTION SIGN

600x600mm
WARNING SIGN

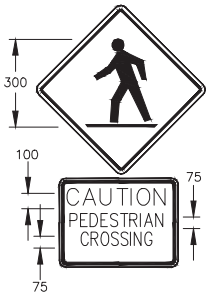


600x300mm TAB

INSTALL AT ALL APPROACHES NOT UNDER STOP CONTROL

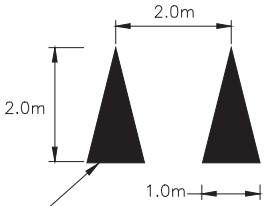
PEDESTRIAN CROSSING SIGN (WC-7)

600x600mm
WARNING SIGN

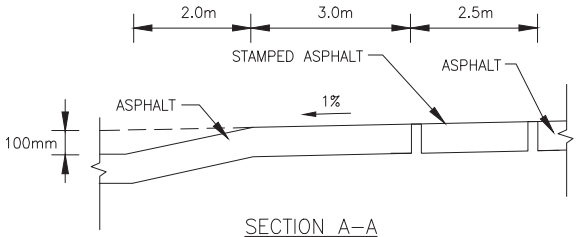


300x600mm
TAB (BLACK LETTERS ON YELLOW)

PAVEMENT MARKING DETAIL



2 OR 3 SOLID WHITE REFLECTIVE PAVEMENT MARKING TRIANGLES ON EACH APPROACH. (MATERIAL TO BE SPECIFIED IN CONTRACT)



SECTION A-A

NOTES:

1. MAINTAIN ROAD GRADES THROUGH INTERSECTION.
2. ALL SIGNS TO BE HIGH INTENSITY DIAMOND GRADE (OR EQUIVALENT) RETRO-REFLECTIVE SHEETING ON GALVANIZED U-CHANNEL POSTS.
3. ADD THIRD PAVEMENT MARKING TRIANGLE ON EACH SIDE OF RAISED INTERSECTION IF ON COLLECTOR ROAD.
4. INSTALL ADVANCE WARNING SIGNS IN ACCORDANCE WITH STD. DWG. R-115.
5. ALL SIGN POSTS SHALL BE BREAKAWAY-TYPE IN ACCORDANCE WITH RELEVANT MTOD STANDARDS AND SPECIFICATIONS.
6. SHOULD THE INTERSECTION BE LATER APPROVED FOR AN ALL-WAY STOP CONTROL, THE RAISED INTERSECTION SIGN SHALL BE REMOVED.

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1.	REVISED/UPDATED STANDARD	11/24
	REVISIONS	DATE

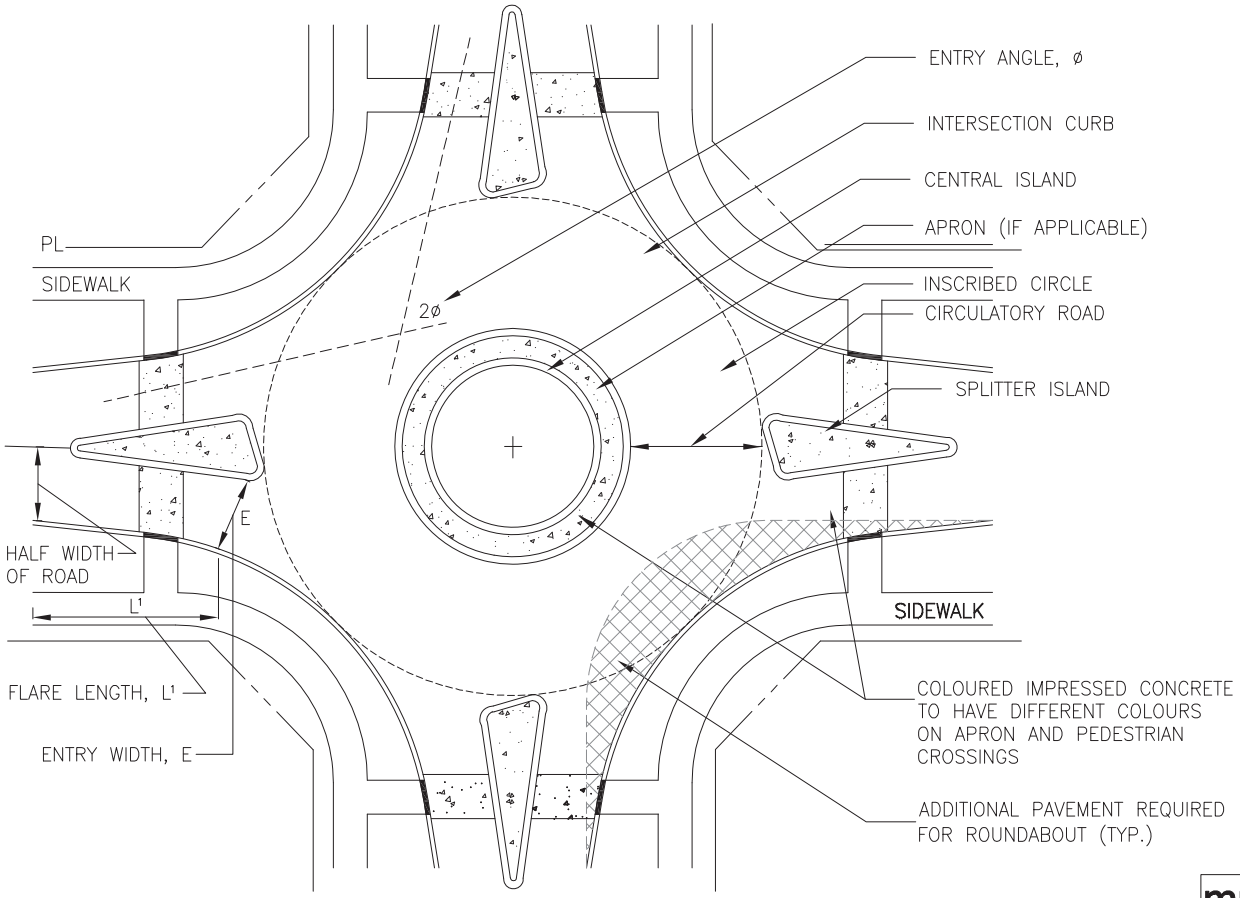
VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

RAISED INTERSECTION

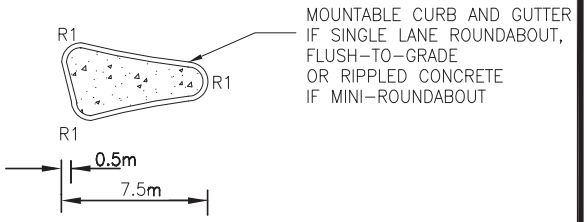
NOT TO SCALE
DESIGNED: _____
REVISION: 1
DATE: 2016

STD. DWG.
R - 118

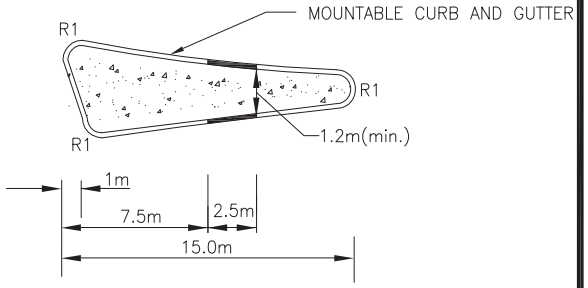


SPLITTER ISLANDS

LOCAL ROADS



PRIMARY ROADS



mm	DIMENSIONS IN MILLIMETERS EXCEPT AS NOTED

NOTES:

1. DESIGN AS PER F.H.W.A. GUIDELINES (ROUNDABOUTS: AN INFORMATIONAL GUIDE) AND GOOD ENGINEERING PRINCIPLES. CHECK HEAVY VEHICLE TURNING PATHS, FASTEST PATH SPEEDS AND SIGHTLINES.
2. SKEWED INTERSECTIONS AND INTERSECTIONS WITH COLLECTOR ROADS REQUIRE SITE–SPECIFIC DESIGNS.

ROUNDABOUT TYPE	SINGLE-LANE	MINI
INTERSECTION CURB RADIUS	11 – 31m	8 – 14m
INSCRIBED CIRCLE RADIUS	15 – 20m	7 – 12m
CENTRAL ISLAND RADIUS	8 – 10m	3 – 6m
APRON WIDTH	UP TO 3m	N/A
CIRCULATING ROAD WIDTH	6 – 7m	4 – 6m
ENTRY ANGLE, ø	20° – 60°	20° – 60°
ENTRY WIDTH, E	4.5 – 5.5m	4.5m
FLARE LENGTH, L¹	5 – 20m	5 – 10m

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	REVISIONS	DATE

City of Vaughan
The City Above Toronto

ENGINEERING DEPARTMENT

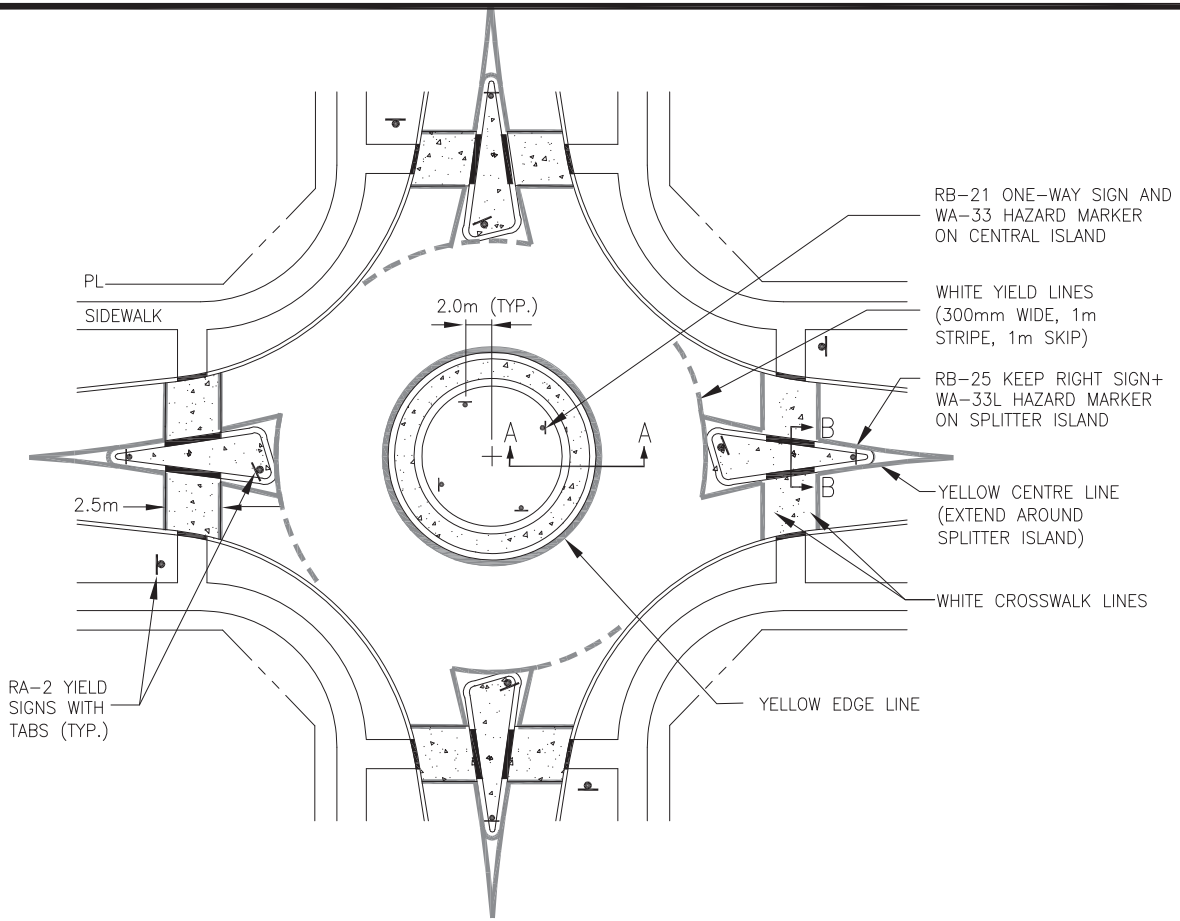
CITY OF VAUGHAN ENGINEERING STANDARD

ROUNDABOUT LAYOUT

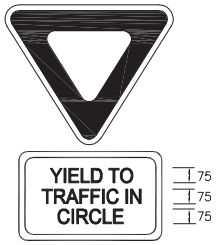
NOT TO SCALE
DESIGNED: P.W.
REVISION:
DATE: MARCH 2004

STD. DWG.
J - 5

Acad File: R:\ENGDRAFT\$$Design Std Drawings 2004\J_Traffic Calming\J-5.dwg

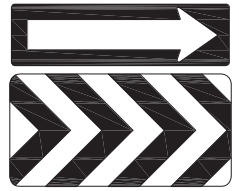


APPROACH SIGNAGE

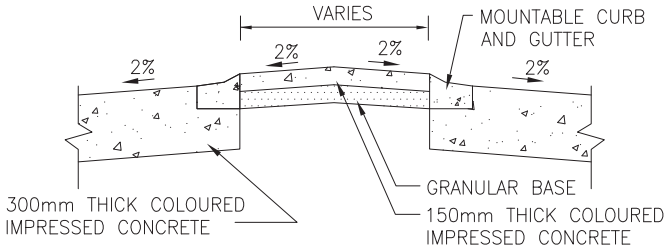


RA–2 YIELD SIGN AND 600x450mm TAB (BLACK LETTERS ON WHITE)
INSTALL ON ALL APPROACHES

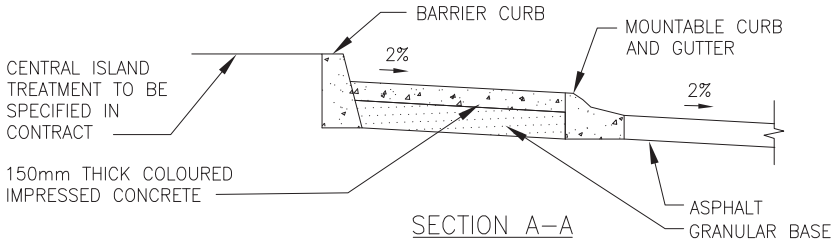
CENTRAL ISLAND SIGNAGE



RB–21 ONE–WAY SIGN AND WA–33 HAZARD MARKER INSTALL FOR EACH DIRECTION



SECTION B–B



SECTION A–A

NOTES:

1. ALL APPROACHES TO BE UNDER YIELD CONTROL.
2. ALL SIGNS TO BE HIGH INTENSITY REFLECTIVE SHEETING ON GALVANIZED U–CHANNEL POSTS.
3. COLOUR AND PATTERN OF IMPRESSED CONCRETE TO BE CONFIRMED WITH CITY ENGINEERING DEPARTMENT AND SPECIFIED IN CONTRACT.
4. INSTALL ADVANCE WARNING SIGNS IN ACCORDANCE WITH STD. DWG. J–1.

mm DIMENSIONS IN MILLIMETERS EXCEPT AS NOTED

4.		
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	REVISIONS	DATE

City of Vaughan — The City Above Toronto

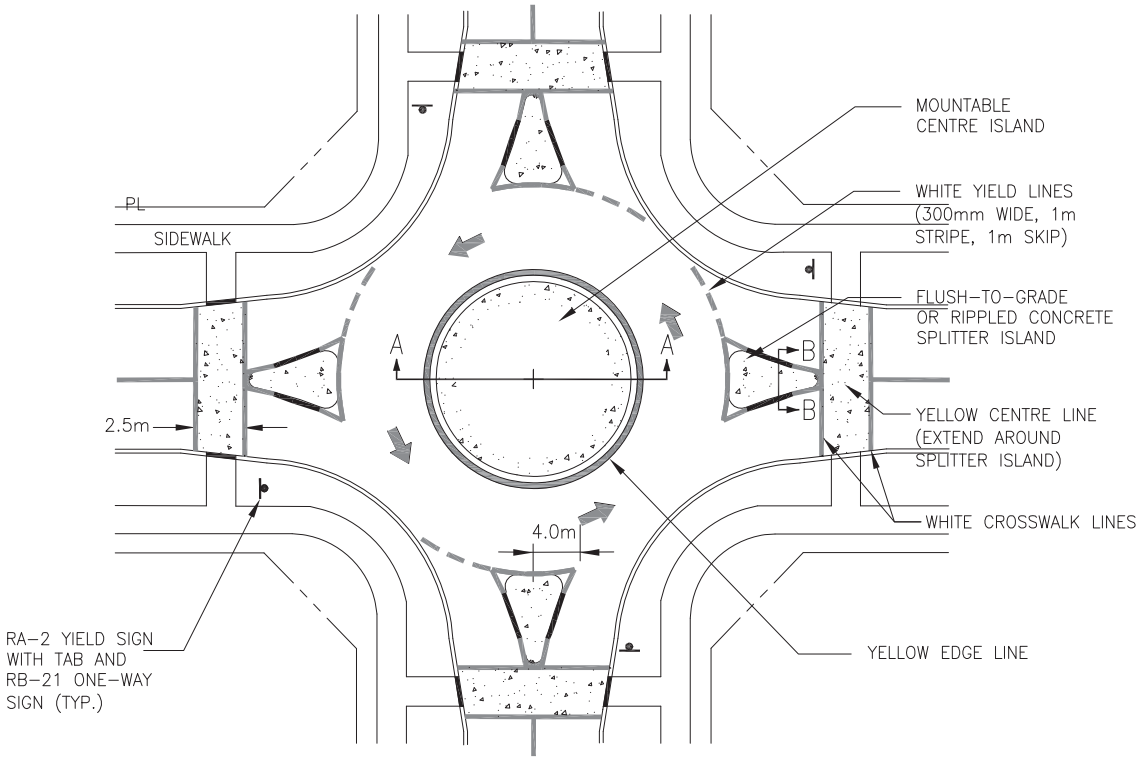
ENGINEERING DEPARTMENT

CITY OF VAUGHAN ENGINEERING STANDARD

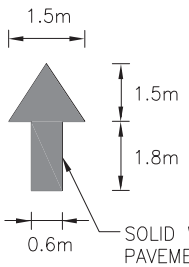
SINGLE-LANE ROUNDABOUT

NOT TO SCALE | DESIGNED: P.W.
REVISION: | DATE: MARCH 2004

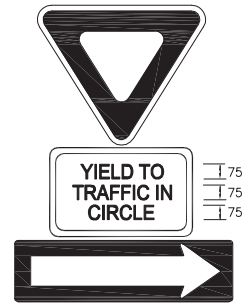
STD. DWG. J - 6



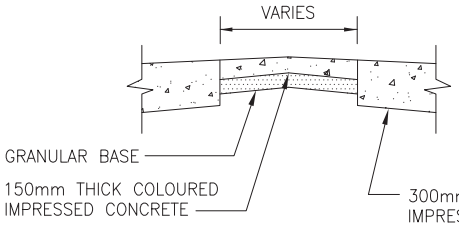
PAVEMENT MARKING DETAIL



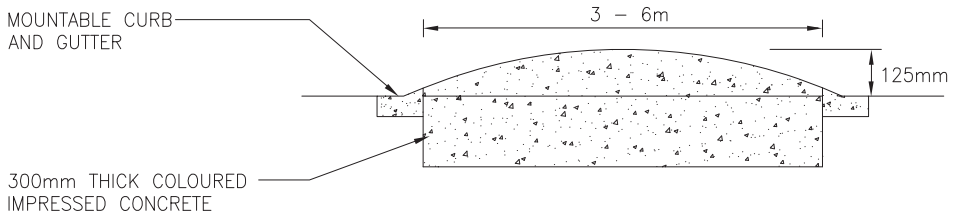
APPROACH SIGNAGE



RA-2 YIELD SIGN WITH 600x450mm TAB (BLACK LETTERS ON WHITE) AND RB-21 ONE-WAY SIGN



SECTION B-B



SECTION A-A

NOTES:

1. ALL APPROACHES TO BE UNDER YIELD CONTROL.
2. ALL SIGNS TO BE HIGH INTENSITY REFLECTIVE SHEETING ON GALVANIZED U-CHANNEL POSTS.
3. COLOUR AND PATTERN OF IMPRESSED CONCRETE TO BE CONFIRMED WITH CITY ENGINEERING DEPARTMENT AND SPECIFIED IN CONTRACT.
4. INSTALL ADVANCE WARNING SIGNS IN ACCORDANCE WITH STD. DWG. J-1.

mm DIMENSIONS IN MILLIMETERS EXCEPT AS NOTED

	REVISIONS	DATE
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City of Vaughan — The City Above Toronto

ENGINEERING DEPARTMENT

CITY OF VAUGHAN ENGINEERING STANDARD

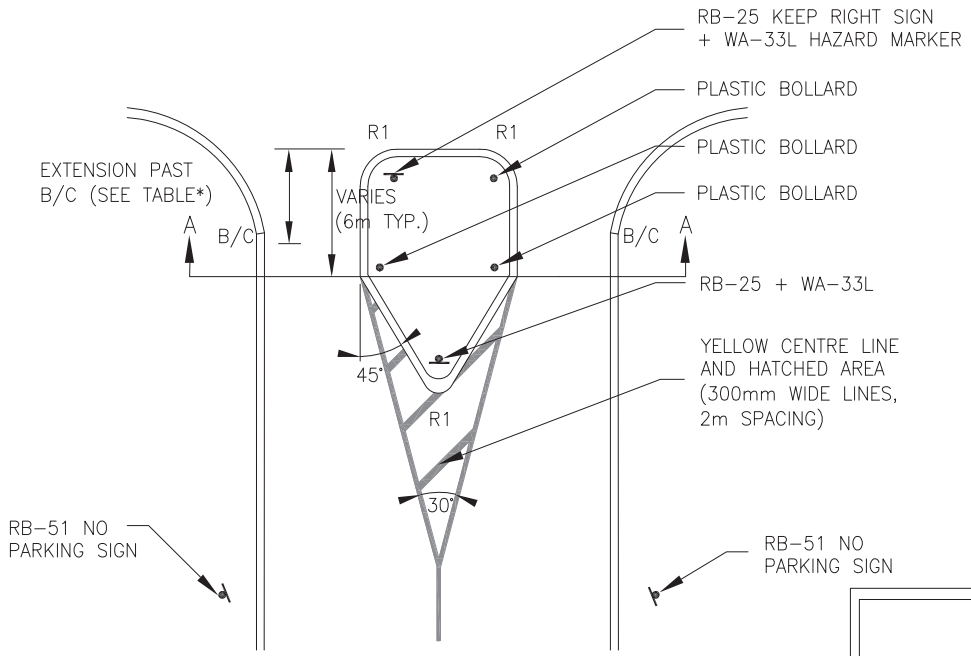
MINI-ROUNDABOUT

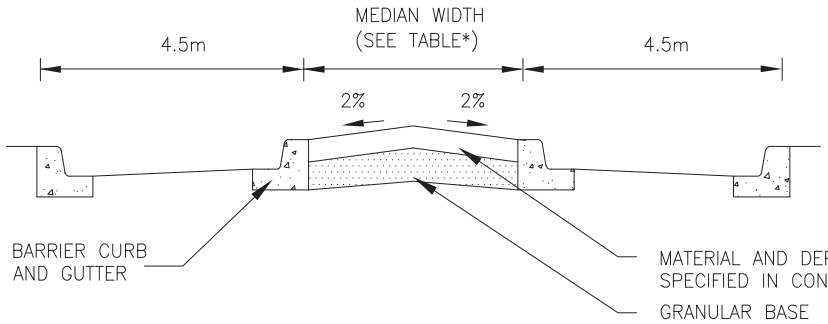
NOT TO SCALE | DESIGNED: P.W.

REVISION: | DATE: MARCH 2004

STD. DWG. J - 7

Acad File: R:\ENGDRAFT\$$Design Std Drawings 2004\J_Traffic Calming\J-7.dwg



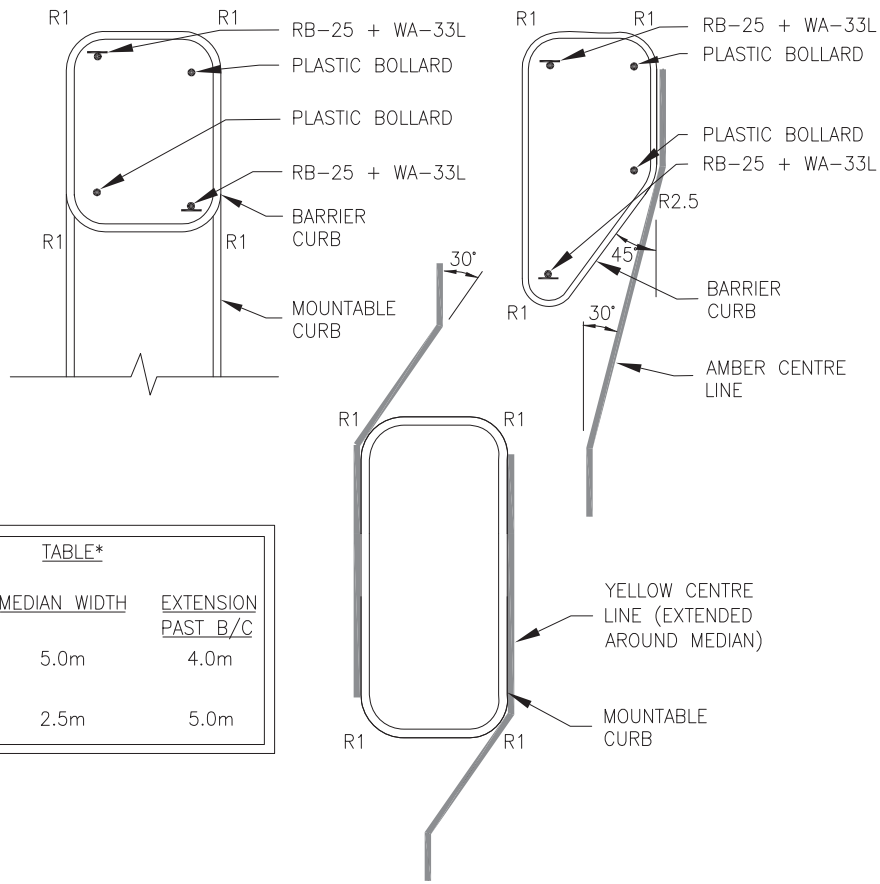


SECTION A–A

TABLE*

ROAD	MEDIAN WIDTH	EXTENSION PAST B/C
COLLECTOR	5.0m	4.0m
PRIMARY/ FEEDER	2.5m	5.0m

POSSIBLE ALTERNATIVE DESIGNS
(LENGTH VARIES)



NOTES:

1. POST NO PARKING SIGNS 15m EITHER SIDE OF ALL MEDIAN TYPES (BOTH SIDES).
2. ALL SIGNS TO BE HIGH INTENSITY REFLECTIVE SHEETING ON GALVANIZED U–CHANNEL POSTS.
3. PLASTIC BOLLARD TYPE TO BE SPECIFIED IN CONTRACT.
4. INSTALL ADVANCE WARNING SIGNS IN ACCORDANCE WITH STD. DWG. J–1.

mm DIMENSIONS IN MILLIMETERS EXCEPT AS NOTED

	REVISIONS	DATE
4.		
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City of Vaughan — The City Above Toronto

ENGINEERING DEPARTMENT

CITY OF VAUGHAN ENGINEERING STANDARD

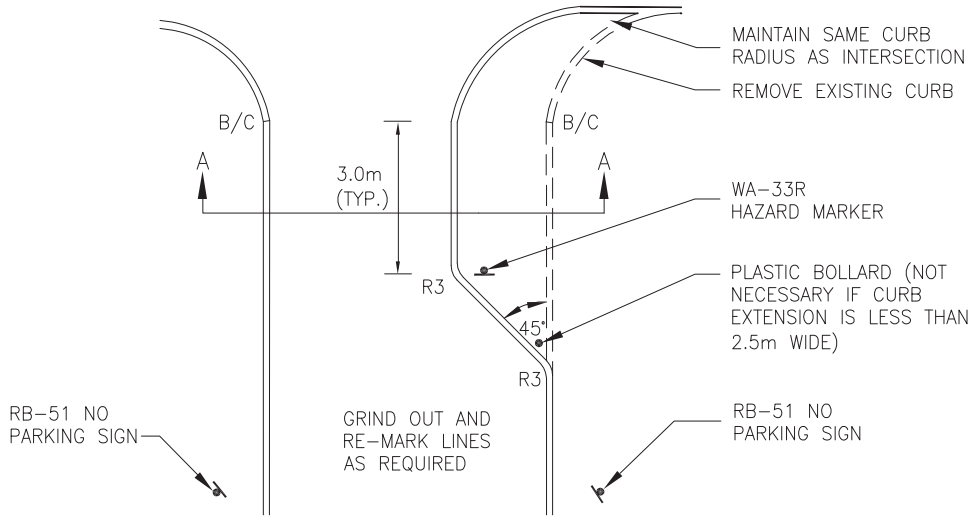
TRAFFIC CALMING MEDIANS

NOT TO SCALE | DESIGNED: P.W.

REVISION: | DATE: MARCH 2004

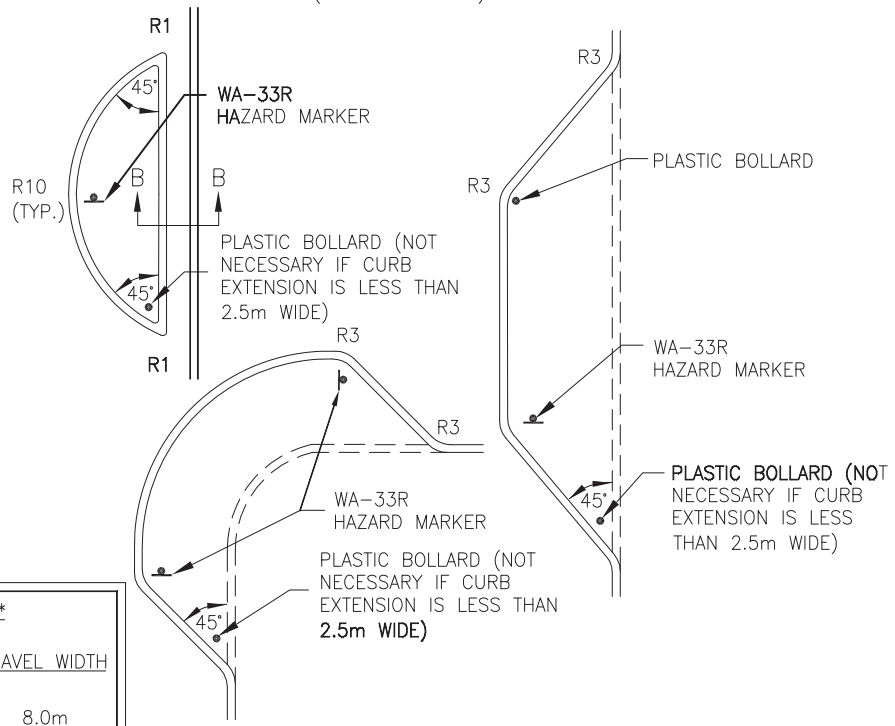
STD. DWG. J - 8

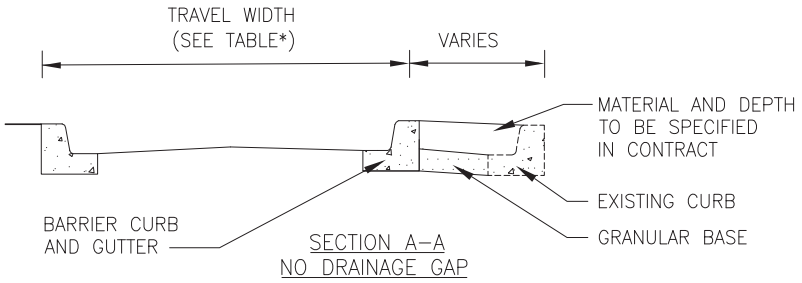
Acad File: R:\ENGDRAFT\$$Design Std Drawings 2004\J_Traffic Calming\J-8.dwg



POSSIBLE ALTERNATIVE DESIGNS

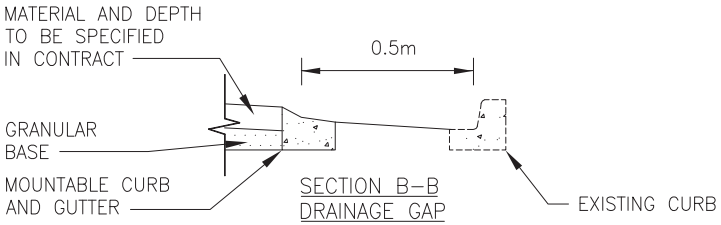
(LENGTH VARIES)





TABLE*

ROAD	TRAVEL WIDTH
COLLECTOR	8.0m
PRIMARY/ FEEDER	7.0m
LOCAL	6.0m



NOTES:

1. POST NO PARKING SIGNS 15m EITHER SIDE OF ALL CURB EXTENSION TYPES (BOTH SIDES).
2. ALL SIGNS TO BE HIGH INTENSITY REFLECTIVE SHEETING ON GALVANIZED U-CHANNEL POSTS.
3. PLASTIC BOLLARD TYPE TO BE SPECIFIED IN CONTRACT.
4. INSTALL ADVANCE WARNING SIGNS IN ACCORDANCE WITH STD. DWG. J-1.

mm DIMENSIONS IN MILLIMETERS EXCEPT AS NOTED

	REVISIONS	DATE
4.		
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City of Vaughan — The City Above Toronto

ENGINEERING DEPARTMENT

CITY OF VAUGHAN ENGINEERING STANDARD

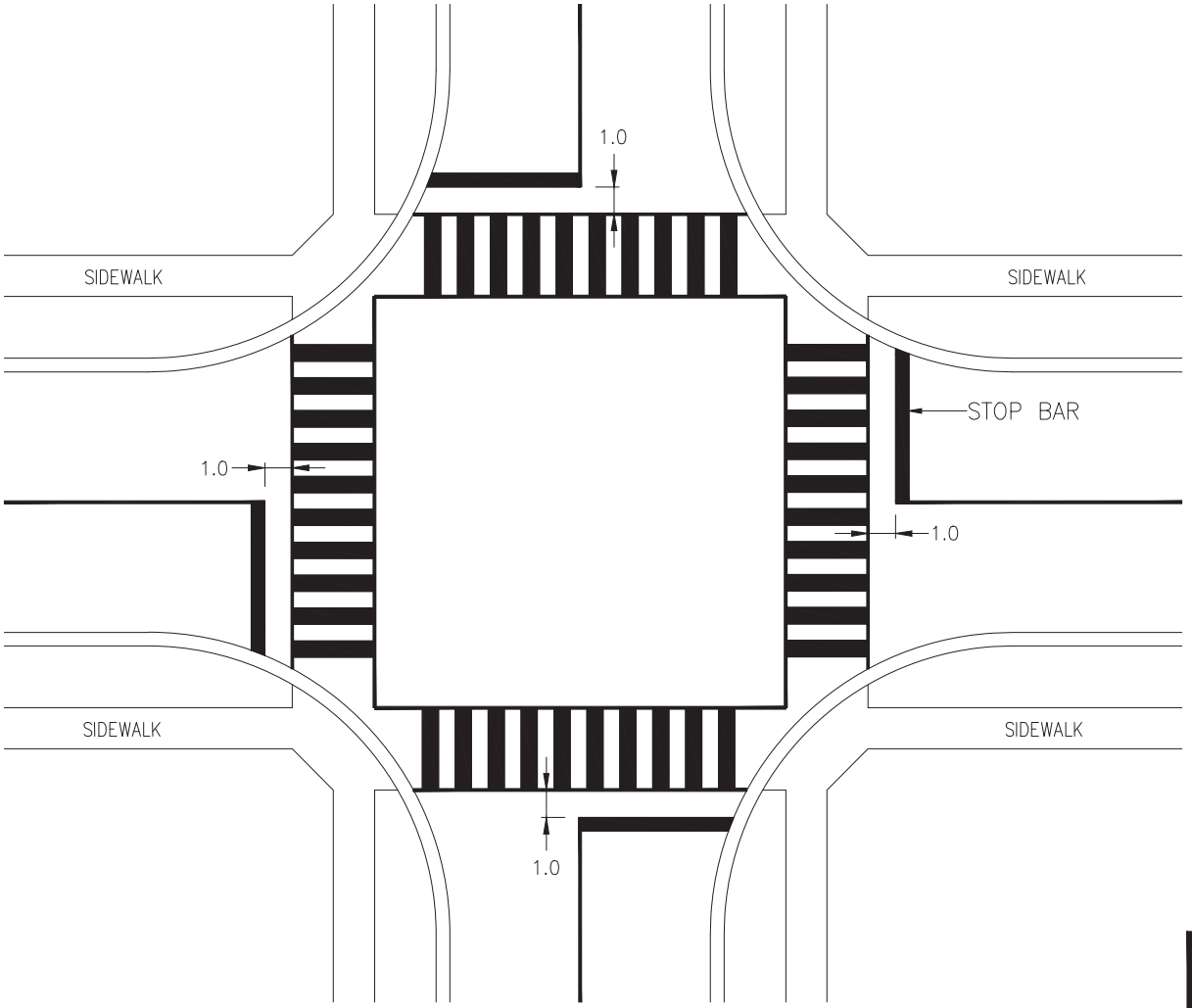
CURB EXTENSIONS and ROAD NARROWINGS

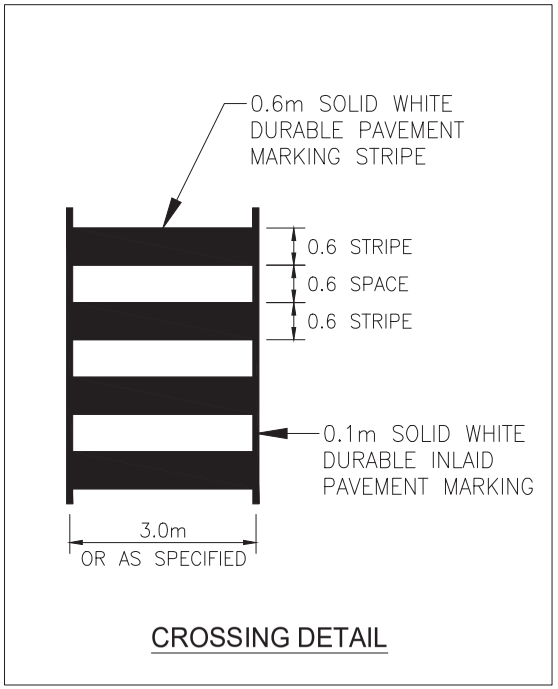
NOT TO SCALE | DESIGNED: P.W.

REVISION: | DATE: MARCH 2004

STD. DWG. J - 9

Acad File: R:\ENGDRAFT\$$Design Std Drawings 2004\J_Traffic Calming\J-9.dwg





CROSSING DETAIL

NOTES

1. ALL PAVEMENT MARKINGS SHALL BE DURABLE INLAID AS PER CONTRACT SPECIFICATIONS, UNLESS DIRECTED OTHERWISE.

2. TO PREVENT SLIPPAGE, THE FIRST STEP FROM THE CURB SHOULD NOT LAND ON A PAINTED BAR.

3. AT SKEW ANGLE CROSSWALKS, LADDER CROSSWALK MARKINGS ARE TO BE INSTALLED PARALLEL TO THE TRAFFIC FLOW (ie. ANGLED FOR THE PEDESTRIAN)

4. THIS DETAIL IS TO BE USED AS A GUIDE ONLY AND WILL REQUIRE ADJUSTMENTS TO SUIT FIELD CONDITIONS.

m DIMENSIONS IN METRES EXCEPT AS NOTED

	REVISIONS	DATE
4.		
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VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

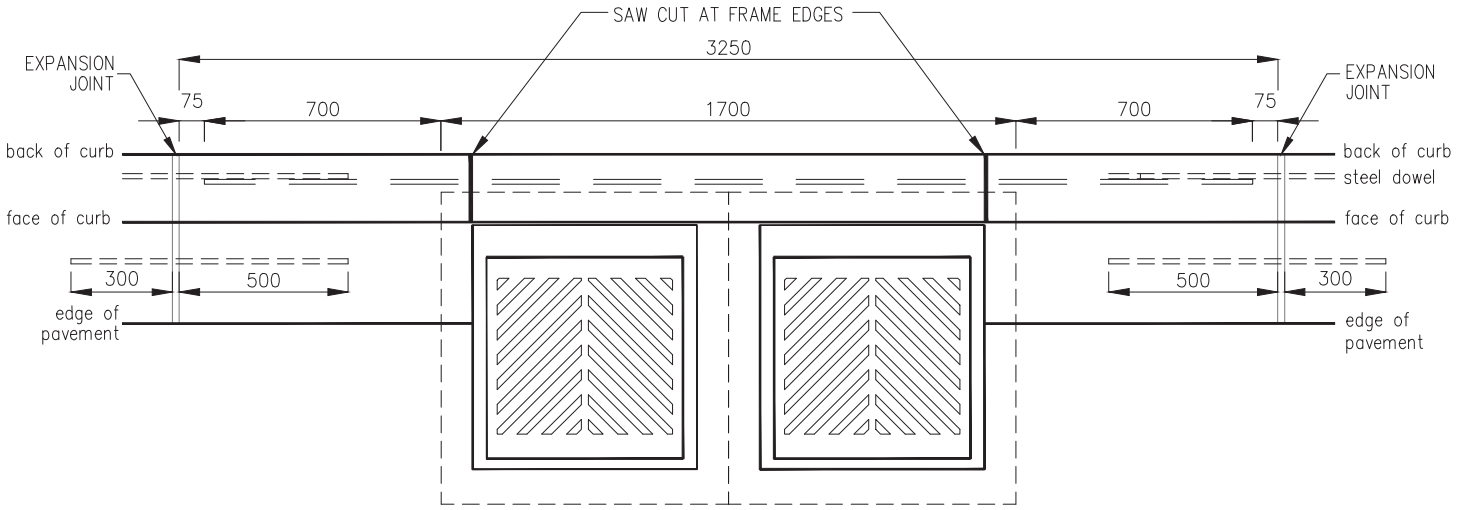
LADDER PAVEMENT MARKING DETAIL AT SIGNALIZED INTERSECTIONS

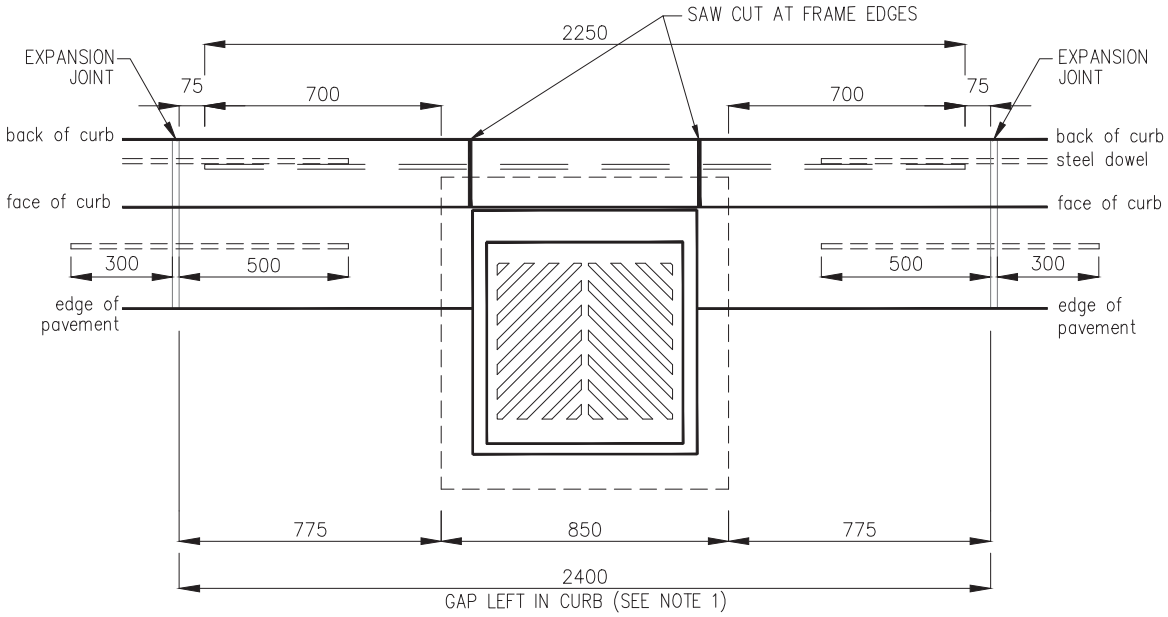
NOT TO SCALE DESIGNED: _____

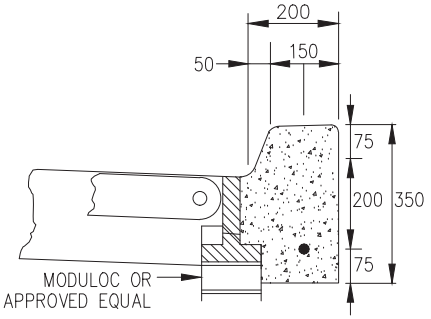
REVISION: _____ DATE: DEC. 2020

STD. DWG.

R - 124







NOTES:

1. CATCHBASINS INITIALLY SET TO BASE OR CURB COURSE ASPHALT (WHICH EVER IS LOWER) WITH TEMPORARY ASPHALT CURB AND GUTTER BETWEEN EXPANSION JOINTS.
2. CATCHBASINS RAISED TO FINAL GUTTER LEVEL WITH MODULOC OR EQUAL, AND FULL CONCRETE CURB POURED PRIOR TO FINAL ASPHALT COURSE.
3. IN INDUSTRIAL/COMMERCIAL SUBDIVISIONS CB'S TO BE INSTALLED IN THE MIDDLE OF THE LOTS
4. INSTALL CURB DOWELS TO MAINTAIN CURB INTEGRITY

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	REVISIONS	DATE

VAUGHAN

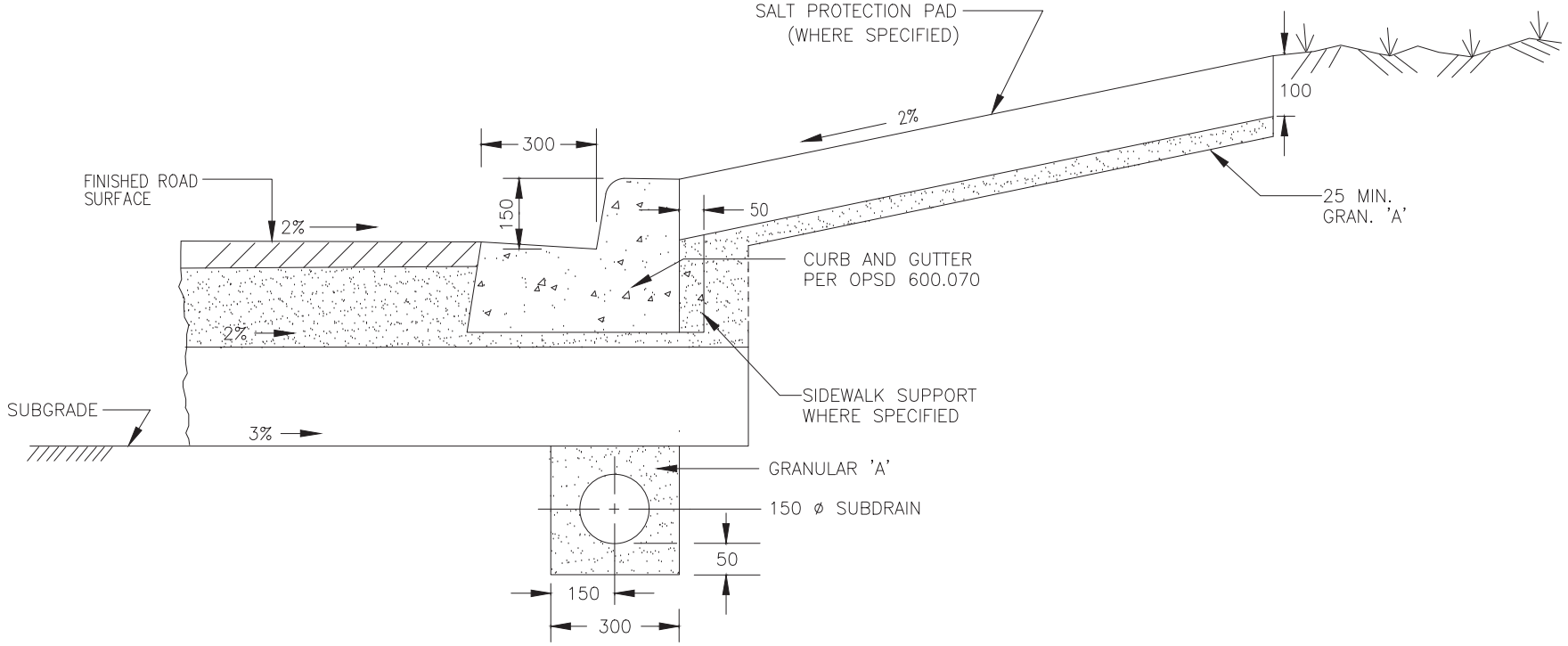
CITY OF VAUGHAN ENGINEERING STANDARD

CATCHBASIN CURB DETAIL

NOT TO SCALE	DESIGNED:	STD. DWG.
REVISION:	DATE: DEC. 2020	R - 125

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

FILE: O:\Infrastructure Delivery\Infrastructure Programming\PMO\City Standards\Design Criteria 2020-21\City Standards Update Folder\CoVStandardDrawings_CAD_2021\R-125 - Catchbasin Curb Detail.dwg



mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

NOTES

1. ALL SUBDRAIN CONNECTIONS TO BE MADE ON BOTH SIDES OF THE CATCH BASIN AND TO BE MORTARED AT THE INSIDE AND OUTSIDE OF THE CATCH BASIN WALLS UNLESS USING RUBBER GASKET CONNECTORS. THE SUBDRAIN SHALL BE CONTINUOUS PLUGGED WITH MANUFACTURED PLUG AT THE HIGH POINT WHERE THERE IS NO CATCHBASIN.
2. PIPE SHALL BE 150mm ø POLYETHYLENE WRAPPED IN FILTER FABRIC.
3. FILTER FABRIC SHALL BE IN ACCORDANCE WITH ONTARIO PROVINCIAL STANDARD SPECIFICATIONS
4. SUBDRAIN SHALL BE PLACED UNDER ALL CURB AND GUTTER.

	REVISIONS	DATE
4.		
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VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

CURB AND SUBDRAIN DETAIL

NOT TO SCALE DESIGNED: _____

REVISION: _____ DATE: DEC. 2020

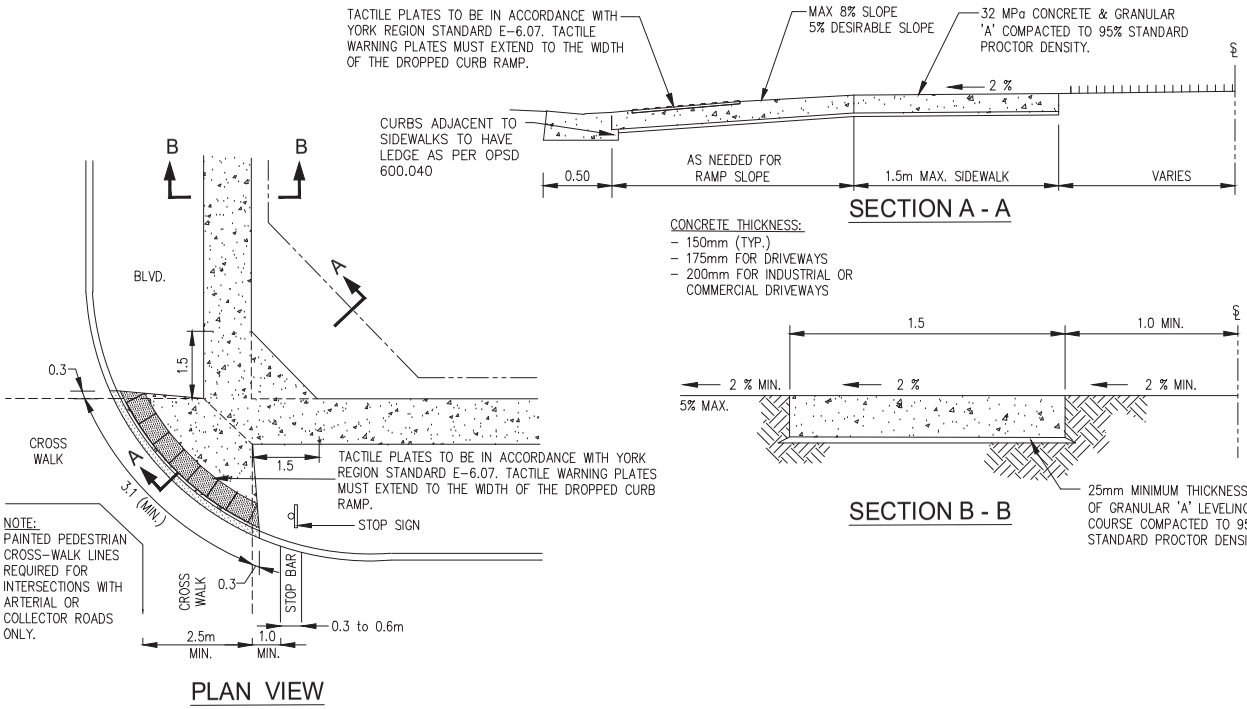
STD. DWG.
R - 126

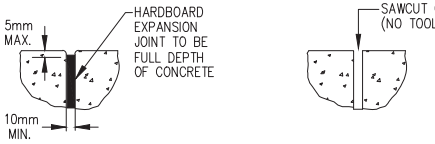
FILE: O:\Infrastructure Delivery\Infrastructure Programming\PMO\City Standards\Design Criteria 2020-21\City Standards Update Folder\CoVStandardDrawings_CAD_2021\R-126 - Curb and Subdrain Detail.dwg

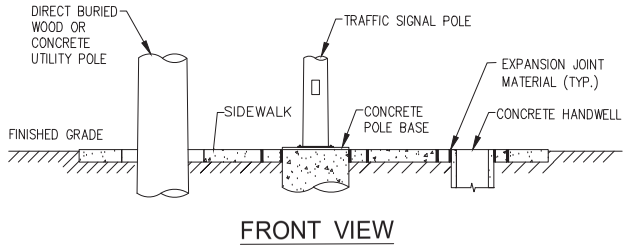
R-127 - UNIT PAVER CROSSWALK DETAIL

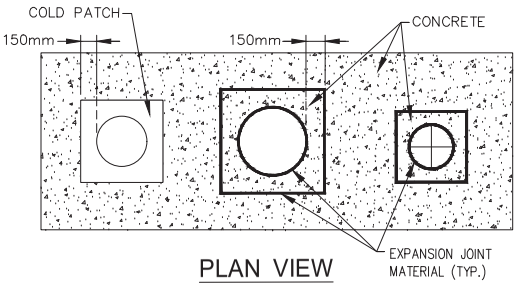
CURRENTLY UNDER DEVELOPMENT

Refer to 2004 Published Edition. Should drawing not be available, please contact the Development Engineering Department at developmentengineering@vaughan.ca









NOTES

1. CSA A23-1.00 CLASS C2 (32 MPa) CONCRETE, MAXIMUM CEMENT/WATER RATIO 0.45 WITH 6% AIR ENTRAINMENT ±1%.
2. WHERE SIDEWALK CONSTRUCTION INVOLVES CUT OR FILL, ADDITIONAL WIDENING MAY BE REQUIRED.
3. CONCRETE TO HAVE BROOM FINISH, PERPENDICULAR TO THE SIDEWALK LENGTH.
4. EXPANSION JOINTS TO BE LOCATED EVERY 6m AND WHERE CONCRETE PAVING ABUTS OTHER STRUCTURES OR BUILDINGS. THEY MUST BE OF A NON-EXTRUDED RESILIENT BITUMINOUS OR NON-BITUMINOUS MATERIAL - 10mm THICK.
5. INSTALL UTILITY ISOLATION JOINTS AT ALL NEW AND EXISTING UTILITY POLES, TRAFFIC SIGNAL POLES, HAND WELLS, MAINTENANCE HOLES, VALVE CHAMBERS, VALVE BOXES ACCORDANCE WITH YORK REGION STANDARD E-2.20 AND OPSD 310.040.
6. CONCRETE TO BE SPRAYED WITH WHITE PIGMENT CURING COMPOUND IMMEDIATELY AFTER FINISHING.
7. CAST IRON TACTILE PLATES TO BE IN ACCORDANCE WITH YORK REGION STANDARD E-6.07. TACTILE WARNING PLATES MUST EXTEND TO THE WIDTH OF THE DROPPED CURB RAMP.
8. ALL PERPENDICULAR TOOL MARKINGS FROM FINISHING TOOLS FOR EXPANSION JOINTS ARE TO BE BROOMED OUT SO NONE EXIST.
9. DUMMY JOINTS TO BE LOCATED AT INTERVALS OF 1.5m. THEY ARE TO BE SAWCUT TO 1/4 DEPTH OF CONCRETE, AFTER THE CONCRETE HAS PARTIALLY HARDENED.

m DIMENSIONS IN METRES EXCEPT AS NOTED

	REVISIONS	DATE
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2.	REVISED STANDARD - TACTILE PLATE NOTE	OCT. 24
1.	REVISED STANDARD	NOV. 22

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

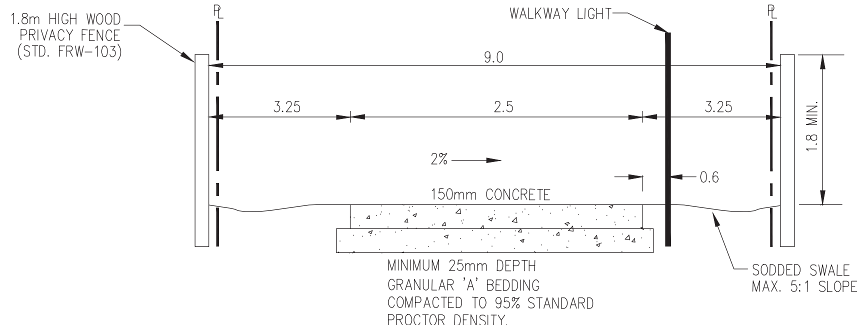
SIDEWALK AND RAMP (LOCAL ROAD RETROFIT ONLY)

NOT TO SCALE DESIGNED: _____

REVISION: 2 DATE: DEC. 2020

STD. DWG. R - 128

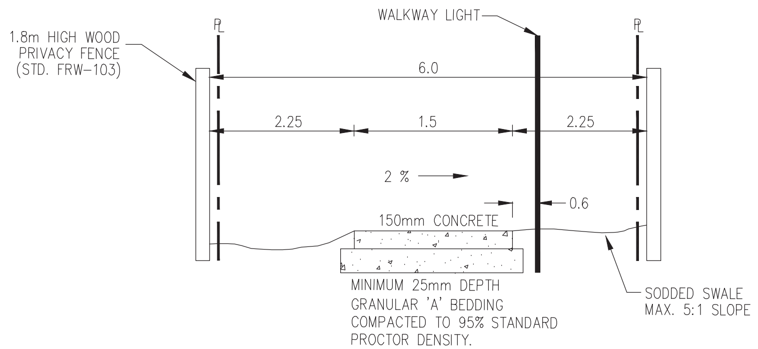
FILE: C:\Users\cudiamap\CITY OF VAUGHAN\City Standards - General\Design Criteria 2025\Dev - Standards\CAD\R-128 - Sidewalk and Ramp.dwg



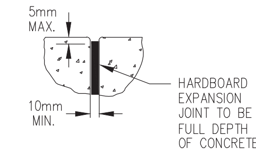
PARK ACCESS WALKWAY

BEDDING THICKNESS:
25mm ON UNDISTURBED GROUND.
150mm ON FILL OR DISTURBED GROUND.

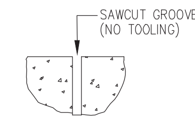
CONCRETE THICKNESS:
- 150mm (TYP.)
- 175mm FOR DRIVEWAYS
- 200mm FOR INDUSTRIAL OR COMMERCIAL DRIVEWAYS



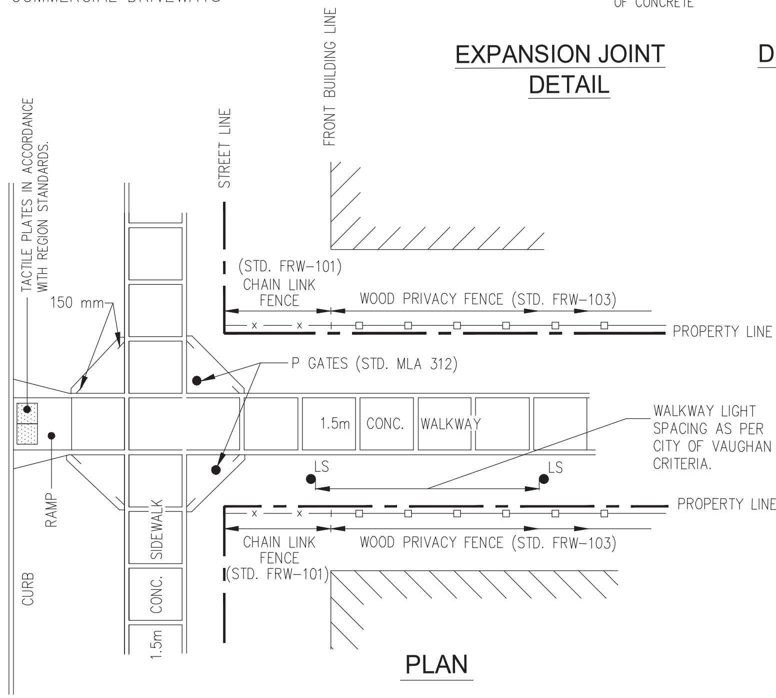
STANDARD WALKWAY



EXPANSION JOINT DETAIL



DUMMY JOINT DETAIL



PLAN

NOTES

1. CSA A23-1.00 CLASS C2 (32 MPa) CONCRETE, MAXIMUM CEMENT/WATER RATIO 0.45 WITH 6% AIR ENTRAINMENT ±1%.
2. WHERE WALKWAY CONSTRUCTION INVOLVES CUT OR FILL, ADDITIONAL WIDENING MAY BE REQUIRED
3. CONCRETE TO HAVE BROOM FINISH.
4. EXPANSION JOINTS TO BE LOCATED EVERY 6m AND WHERE CONCRETE PAVING ABUTS OTHER STRUCTURES OR BUILDINGS. THEY MUST BE OF A NON-EXTRUDED RESILIENT BITUMINOUS MATERIAL OR NON-BITUMINOUS MATERIAL 10mm THICK.
5. ALL PERPENDICULAR TOOL MARKINGS FROM FINISHING TOOLS FOR EXPANSION JOINTS ARE TO BE BROOMED OUT SO NONE EXIST.
6. DUMMY JOINTS TO BE LOCATED AT INTERVALS OF 1.5m. THEY ARE TO BE FORMED BY CUTTING A SLOT 1/4" DEPTH OF FRESH CONCRETE. AFTER THE CONCRETE HAS PARTIALLY HARDENED.
7. CONCRETE TO BE SPRAYED WITH WHITE PIGMENT CURING COMPOUND IMMEDIATELY AFTER FINISHING.
8. MAXIMUM LONGITUDINAL GRADE OF WALKWAYS: 7%
9. WALKWAY LIGHTING AND POLE AS PER CITY OF VAUGHAN CRITERIA.

m DIMENSIONS IN METRES EXCEPT AS NOTED

	REVISIONS	DATE
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VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

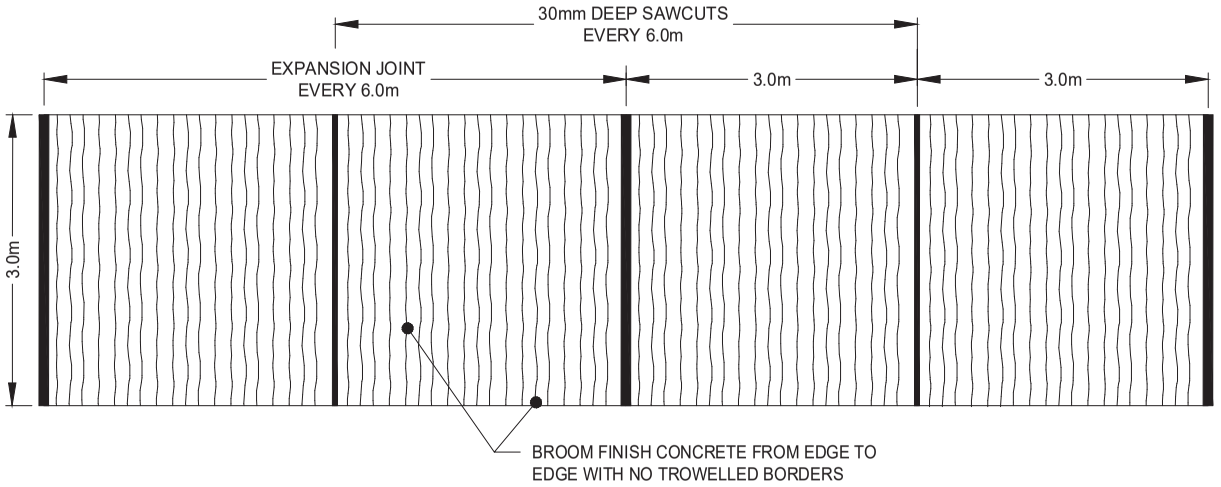
WALKWAYS

NOT TO SCALE
DESIGNED: ____
REVISION: ____
DATE: DEC. 2020
STD. DWG.
R - 129

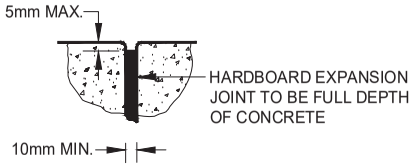
R-130 - BOLLARD DETAIL

CURRENTLY UNDER DEVELOPMENT

Refer to 2004 Published Edition. Should drawing not be available, please contact the Development Engineering Department at developmentengineering@vaughan.ca

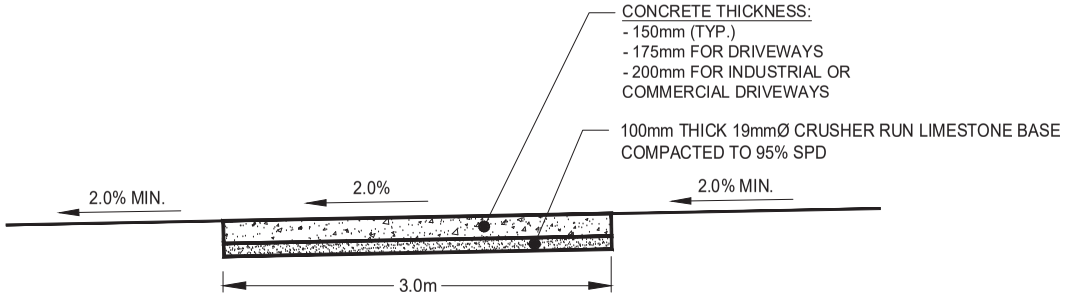


PLAN VIEW



EXPANSION JOINT TO BE OF A NON-EXTRUDED RESILIENT BITUMINOUS MATERIAL 10mm THICK.

EXPANSION JOINT DETAIL



SECTION VIEW

m DIMENSIONS IN METRES EXCEPT AS NOTED

NOTES

1. CSA A23-1.00 CLASS C2 (32 MPa) CONCRETE, MAXIMUM CEMENT/WATER RATIO 0.45 WITH 6% AIR ENTRAINMENT ±1%.
2. CONCRETE TO BE SPRAYED WITH WHITE PIGMENT CURING COMPOUND IMMEDIATELY AFTER FINISHING.
3. INTERSECTION RAMPS WITH TACTILE PLATES SHALL BE BUILT AS PER CITY OF VAUGHAN SIDEWALK AND RAMP STANDARD DRAWING R-128.
4. ALL PERPENDICULAR TOOL MARKINGS FROM FINISHING TOOLS FOR EXPANSION JOINTS ARE TO BE BROOMED SO NONE EXIST.
5. THE USE OF CONCRETE MULTI-USE PATH IS SUBJECT TO APPROVAL OF THE CITY.

	REVISIONS	DATE
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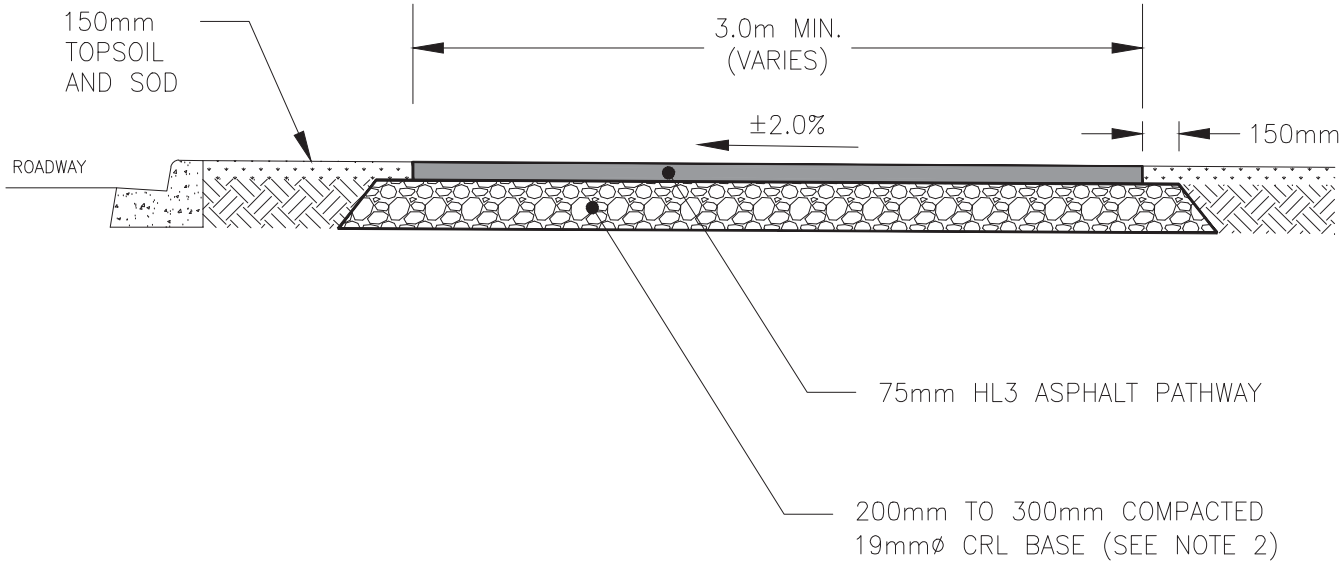
VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

CONCRETE MULTI-USE PATH DETAIL

NOT TO SCALE | DESIGNED: _____ | STD. DWG. R - 131

REVISION: _____ | DATE: MAY 2022



NOTES

1. PAVEMENT MARKINGS THROUGH INDUSTRIAL & COMMERCIAL DRIVEWAYS SHALL BE REQUIRED AS SPECIFIED.
2. GRANULAR AT EXISTING RESIDENTIAL DRIVEWAYS TO BE 300mm DEPTH AND ASPHALT 50mm HL8 BASE COURSE ASPHALT AND 25mm DEPTH HL-3F SURFACE COURSE ASHPALT.
3. A MULTI-USE OR CYCLE TRACK CROSSING THROUGH A INDUSTRIAL/COMMERCIAL/INSTITUTIONAL ENTRANCE SHALL HAVE 350mm COMPACTED DEPTH 50mm CRUSHER-RUN LIMESTONE, 125mm COMPACTED DEPTH 20mm CRUSHER RUN LIMESTONE BASE, 75mm DEPTH HL8 BASE COURSE ASPHALT AND 50mm DEPTH HL3 SURFACE COURSE ASPHALT.
4. ALL ASPHALT AND GRANULAR BASE THICKNESS SPECIFICATIONS ARE MINIMUM AFTER COMPACTION.
5. SLOPE SUBGRADE PARALLEL TO FINISHED GRADE (MIN. 2% SLOPE).
6. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND REPLACEMENT OF ANY UNSUITABLE SUBGRADE MATERIAL SUCH AS TOPSOIL. REMOVE ALL EXCAVATED MATERIAL AND DISPOSE OF OFF SITE.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	APR'D	DATE
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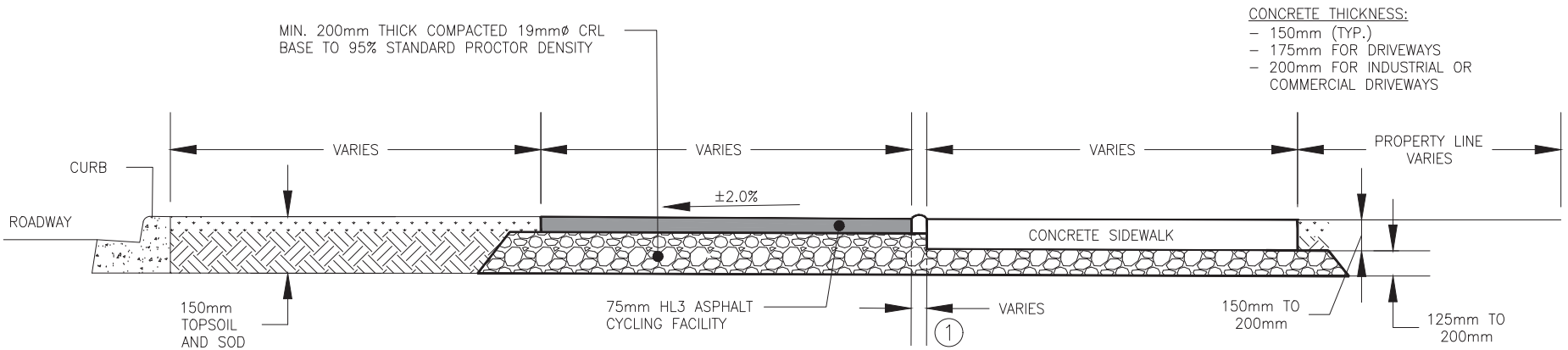
VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

ACTIVE TRANSPORTATION FACILTY
(MULTI-USE ASPHALT PATHWAY)

NOT TO SCALE
APPROVED: _____
DESIGNED: _____
DATE: MAY 2022

STD. DWG.
R - 132

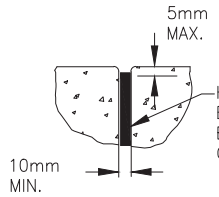


CYCLING FACILITY NOTES:

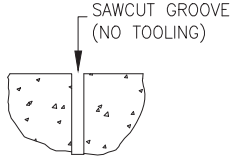
1. BUFFER BETWEEN CYCLING FACILITY AND SIDEWALK PER ONTARIO TRAFFIC MANUAL BOOK 18 (CONTINOUS BEVELLED CURB OR TACTILE BUFFER PER OTM BOOK 18)
2. PAVEMENT MARKINGS THROUGH INDUSTRIAL & COMMERCIAL DRIVEWAYS SHALL BE REQUIRED AS SPECIFIED.
3. GRANULAR AT EXISTING RESIDENTIAL DRIVEWAYS TO BE 300mm DEPTH AND ASPHALT 50mm HL8 BASE COURSE ASPHALT AND 25mm DEPTH HL–3F SURFACE COURSE ASHPALT.
4. A MULTI–USE OR CYCLE TRACK CROSSING THROUGH A INDUSTRIAL/COMMERCIAL/INSTITUTIONAL ENTRANCE SHALL HAVE 350mm COMPACTED DEPTH 50mm CRUSHER–RUN LIMESTONE, 125mm COMPACTED DEPTH 20mm CRUSHER RUN LIMESTONE BASE, 75mm DEPTH HL8 BASE COURSE ASPHALT AND 50mm DEPTH HL3 SURFACE COURSE ASPHALT.
5. ALL ASPHALT AND GRANULAR BASE THICKNESS SPECIFICATIONS ARE MINIMUM AFTER COMPACTION.

SIDEWALK NOTES:

1. CSA A23–1.00 CLASS C2 (32 MPa) CONCRETE, MAXIMUM CEMENT/WATER RATIO 0.45 WITH 6% AIR ENTRAINMENT ±1%.
2. WHERE SIDEWALK CONSTRUCTION INVOLVES CUT OR FILL, ADDITIONAL WIDENING MAY BE REQUIRED.
3. CONCRETE TO HAVE BROOM FINISH, PERPENDICULAR TO THE SIDEWALK LENGTH.
4. EXPANSION JOINTS TO BE LOCATED EVERY 6m AND WHERE CONCRETE PAVING ABUTS OTHER STRUCTURES OR BUILDINGS. THEY MUST BE OF A NON–EXTRUDED RESILIENT BITUMINOUS OR NON–BITUMINOUS MATERIAL – 10mm THICK.
5. DUMMY JOINTS TO BE LOCATED AT INTERVALS OF 1.5m. THEY ARE TO BE SAWCUT TO 1/4 DEPTH OF CONCRETE, AFTER THE CONCRETE HAS PARTIALLY HARDENED.
6. CONCRETE TO BE SPRAYED WITH WHITE PIGMENT CURING COMPOUND IMMEDIATELY AFTER FINISHING.
7. CAST IRON TACTILE PLATES TO BE IN ACCORDANCE WITH YORK REGION STANDARD.
8. ALL PERPENDICULAR TOOL MARKINGS FROM FINISHING TOOLS FOR EXPANSION JOINTS ARE TO BE BROOMED OUT SO NONE EXIST.



CONCRETE EXPANSION JOINT DETAIL



CONCRETE DUMMY JOINT DETAIL

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	APR'D	DATE
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VAUGHAN

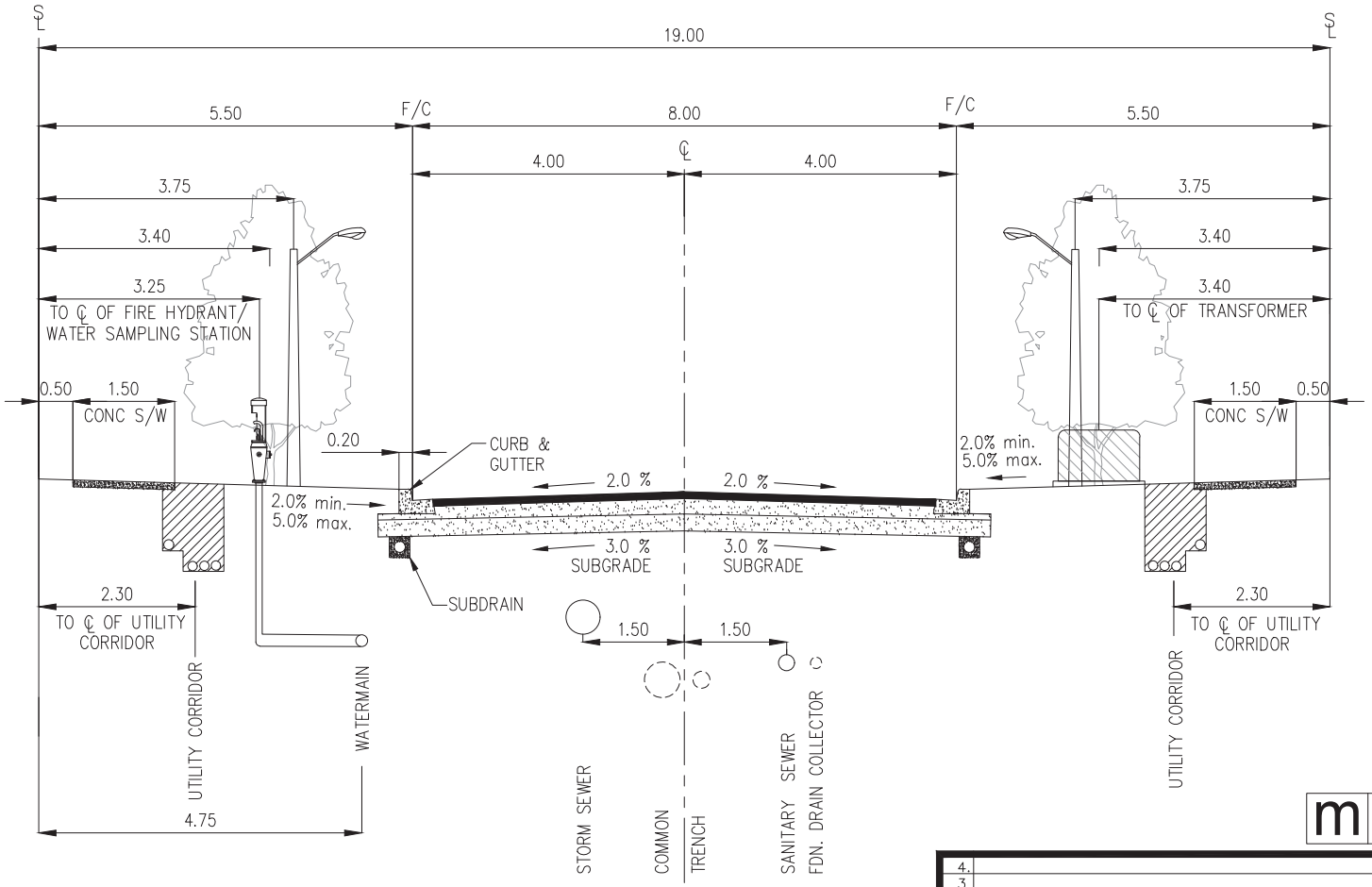
CITY OF VAUGHAN ENGINEERING STANDARD

PEDESTRIAN AND CYCLING FACILITIES

NOT TO SCALE APPROVED: _____

DESIGNED: _____ DATE: MAY 2022

STD. DWG.
R - 133



m DIMENSIONS IN METRES EXCEPT AS NOTED

NOTES

1. PAVEMENT WIDTH IS DESIGNED TO ACCOMMODATE 2 TRAVEL LANES WITH 1 PARKING LANE.
2. PAVEMENT DESIGN SHALL CONFORM TO MINIMUM CITY STANDARDS AND/OR APPROVED GEOTECHNICAL REPORT.
3. ACTIVELY GROWING No. 1 NURSERY SOD TO BE LAID ON 150mm OF TOPSOIL, PROPERLY GRADED AND ROLLED.
4. DEPTH OF COVER ON ALL MUNICIPAL INFRASTRUCTURE SHALL CONFORM TO MINIMUM CITY STANDARDS.
5. IF TRANSFORMER IS ON SIDE LOT, TURN FOUNDATION 90° TO FACE ONCOMING TRAFFIC INSTALL 1.70m TO CENTER OF FOUNDATION.
6. TRANSFORMER FOUNDATION TO ABUT EDGE OF TRENCH.

	REVISIONS	DATE
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1.	STANDARD CREATED	JAN. 21

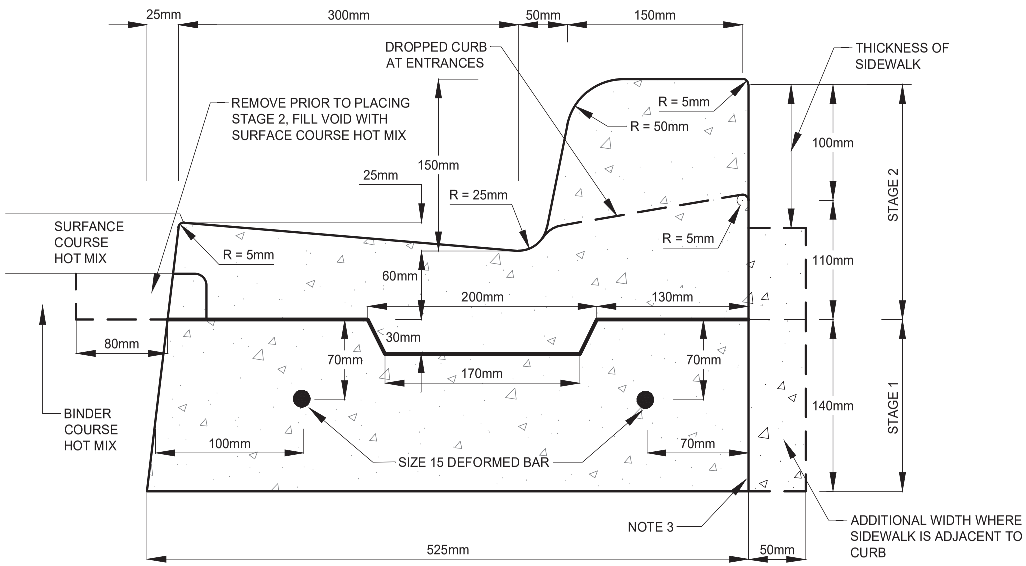
VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

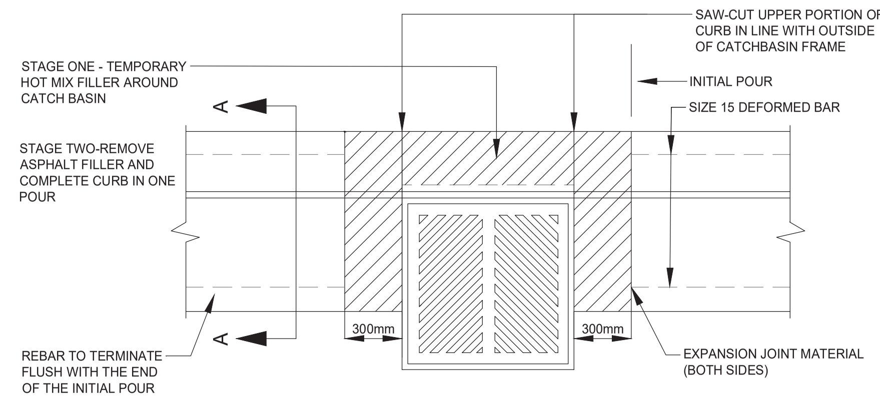
MAJOR LOCAL ROAD
19m R.O.W. - 8m PAVEMENT

NOT TO SCALE | DESIGNED: ENG. DEPT. | STD. DWG.

REVISION: 01 | DATE: JAN. 2021 | R - 134



SECTION A-A



PLAN VIEW

NOTES:

1. FLEXIBLE AND COMPOSITE PAVEMENT SHALL BE 5mm ABOVE THE ADJACENT EDGE OF GUTTER.
2. WHERE THE SIDEWALK IS CONTINUOUS TO THE CURB, ENTRANCES LOWER THE HEIGHT OF THE ADDITIONAL CONCRETE AT THE REAR OF THE CURB TO 150mm.
3. FOR SLIPFORMING PROCEDURE, A 5% BATTER IS ACCEPTABLE.
4. TREATMENT AT ENTRANCES SHALL CONFORM WITH OPSD-351.01.
5. OUTLET TREATMENT SHALL CONFORM WITH OPSD-610 SERIES.
6. THE LENGTH OF TRANSITION FROM ONE CURB TO ANOTHER SHALL BE 3.0m. EXCEPT IN CONJUNCTION WITH GUIDE RAIL, IT SHALL CONFORM TO OPSD-900 SERIES.
7. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.
8. BASE CURB IS TO BE FLUSHED THEN BLOWN OFF WITH PRESSURE AIR TO ENSURE A CLEAN DRY SURFACE.
9. ALL CONCRETE CSA, C-2, 32MPa.

mm DIMENSIONS IN MILLIMETERS EXCEPT AS NOTED

	REVISIONS	DATE
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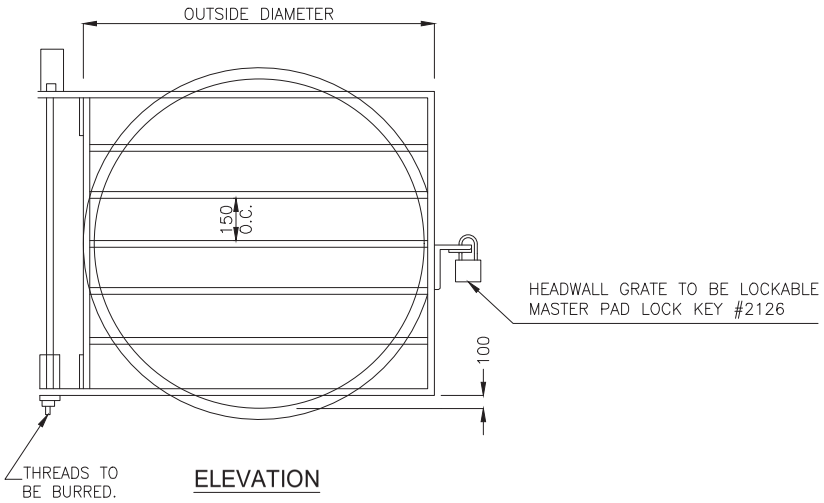
VAUGHAN

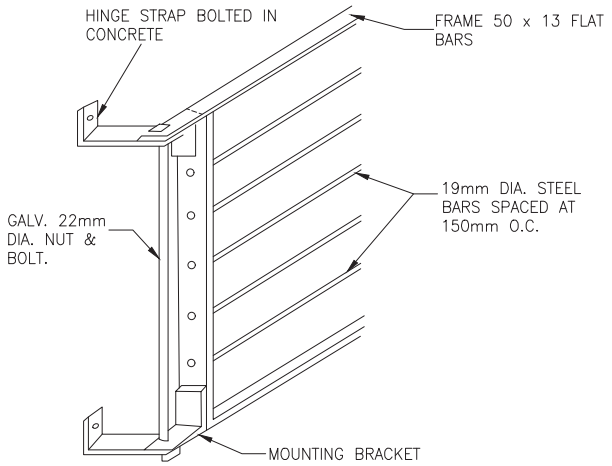
CITY OF VAUGHAN ENGINEERING STANDARD

2-STAGE CURB AND GUTTER

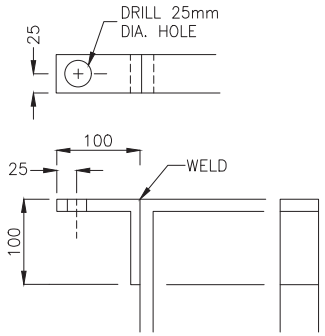
NOT TO SCALE | DRAWN BY: PC | STD. DWG.
REVISION: | DATE: JUN. 2023 | R - 135



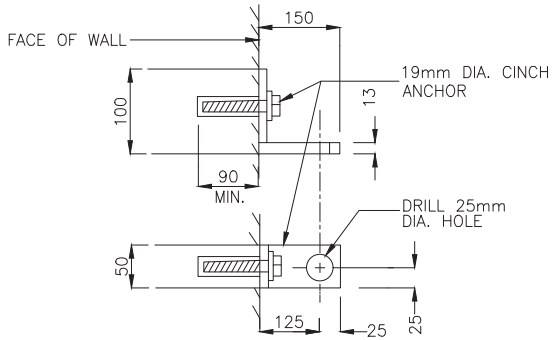
ELEVATION



ASSEMBLY



DETAIL OF MOUNTING BRACKET



DETAIL OF HINGE STRAPS

NOTES

1. FRAME, HINGE, STRAP, MOUNTING BRACKET AND STEEL RODS TO BE MEDIUM GRADE STEEL.
2. THE ENTIRE GRATE SHALL BE HOT DIPPED GALVANIZED.
3. ALL WELDS USED IN THE MANUFACTURE OF GRATES SHALL BE FULL STRENGTH WELDS.
4. ALL BOLTS, NUTS AND WASHERS SHALL BE STAINLESS STEEL.
5. OUTFALL LARGER THAN 900mmø SHALL BE DESIGNED SITE SPECIFICALLY AND APPROVED BY THE CITY.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

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	REVISIONS	DATE

VAUGHAN

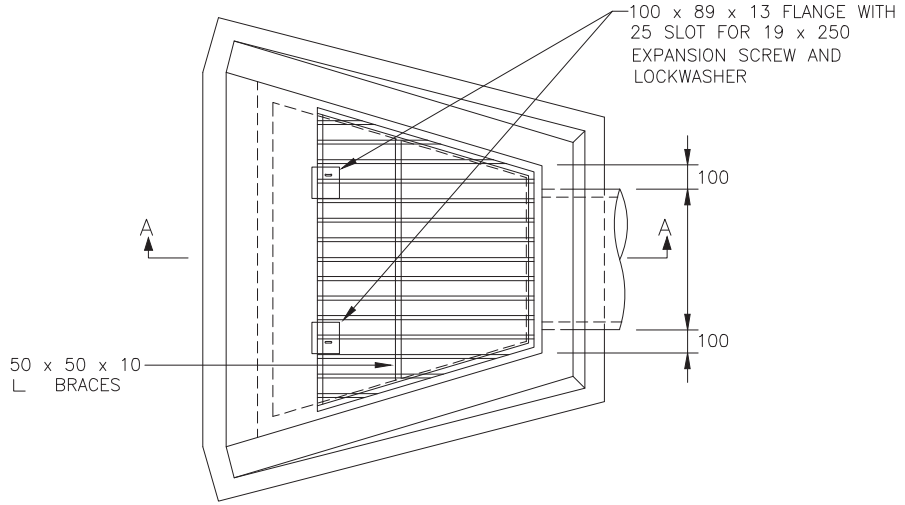
CITY OF VAUGHAN ENGINEERING STANDARD

OUTFALL GRATE MAX. 900mmØ

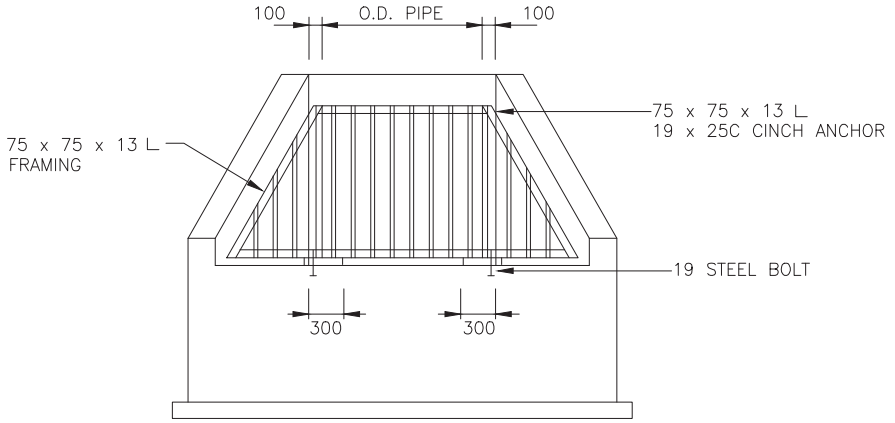
NOT TO SCALE DESIGNED: _____

REVISION: _____ DATE: DEC. 2020

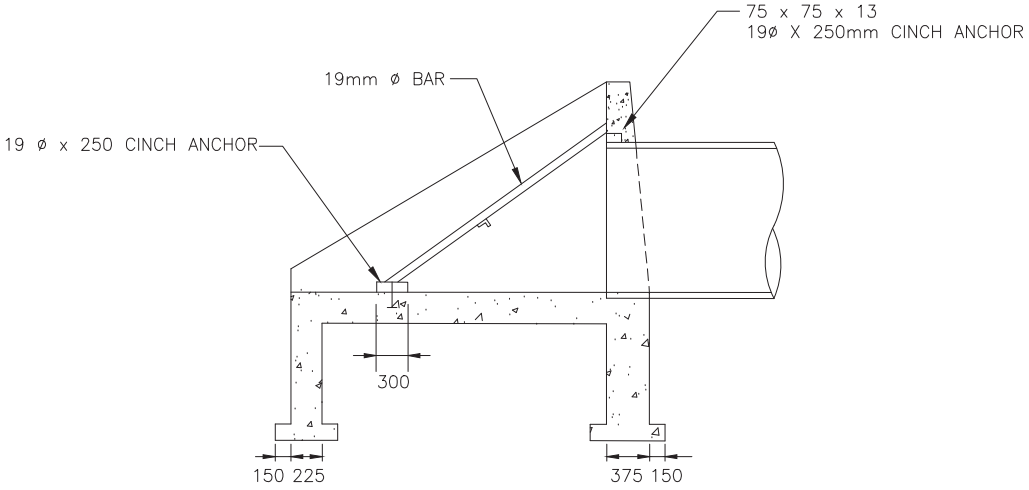
STD. DWG. S - 101



PLAN



ELEVATION



SECTION A–A

NOTES

1. ALL STEEL USED SHALL BE MEDIUM GRADE.
2. THE ENTIRE GRATE SHALL BE HOT DIPPED GALVANIZED.
3. ALL BOLTS, NUTS AND WASHERS SHALL BE STAINLESS STEEL.
4. ALL WELDS USED IN THE MANUFACTURE OF THE GRADES SHALL BE CONTINUOUS FILET WELD 6mm THROAT WIDTH.
5. GRATING TO BE SPECIFICALLY DESIGNED FOR PIPES 1.0m DIA. OR LARGER.

	REVISIONS	DATE
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VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

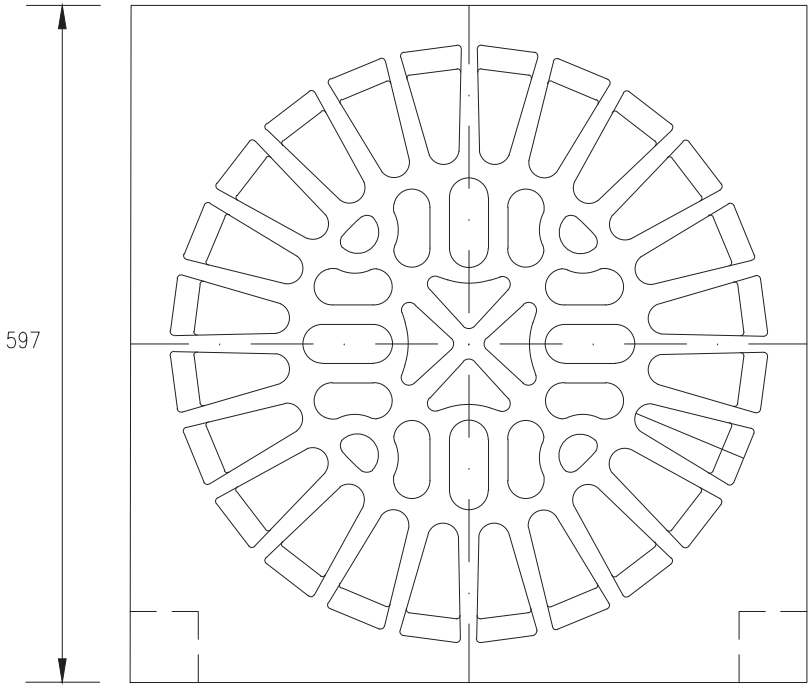
INLET GRATE

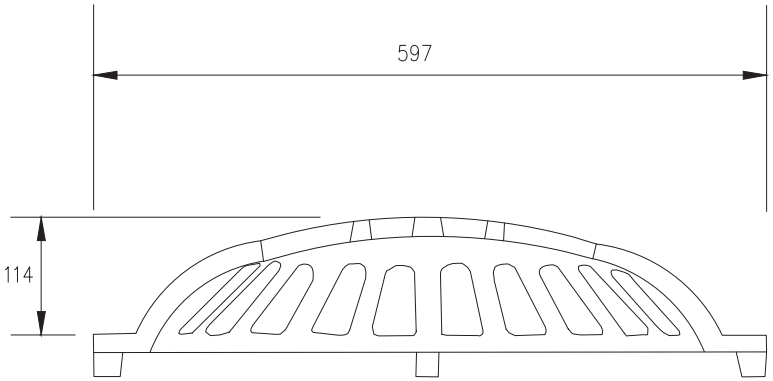
mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

NOT TO SCALE | DESIGNED: _____ | REVISION: _____ | DATE: DEC. 2020

STD. DWG. S - 102

FILE: O:\Infrastructure Delivery\Infrastructure Programming\PMO\City Standards\Design Criteria 2020-21\City Standards Update Folder\CoVStandardDrawings_CAD_2021\S-102 - Inlet Grate.dwg





mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
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VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

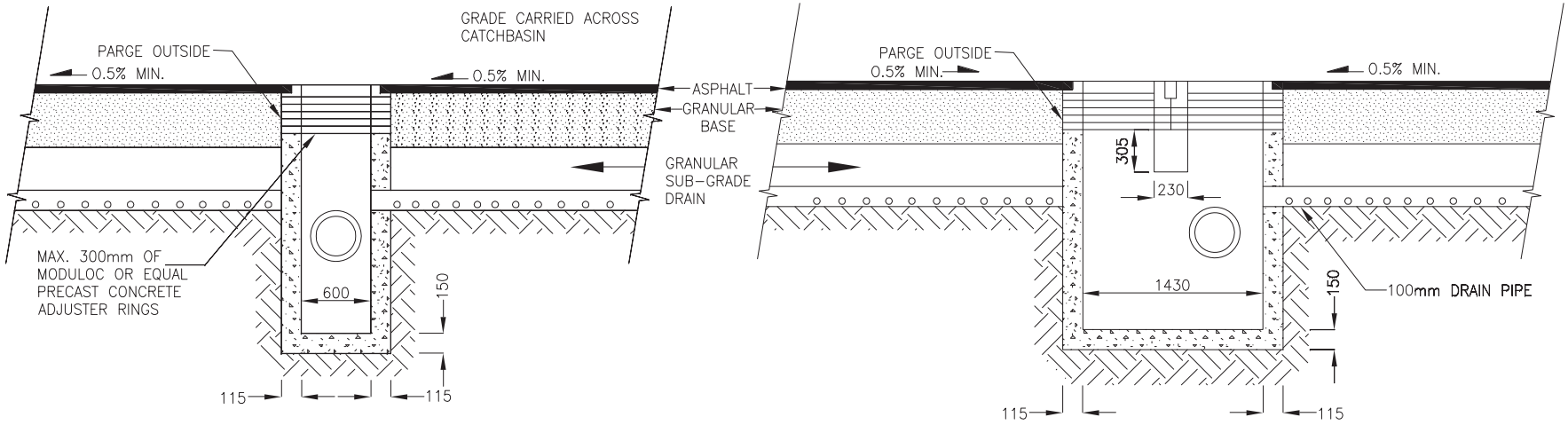
REAR YARD CATCHBASIN GRATE

NOT TO SCALE DESIGNED: _____

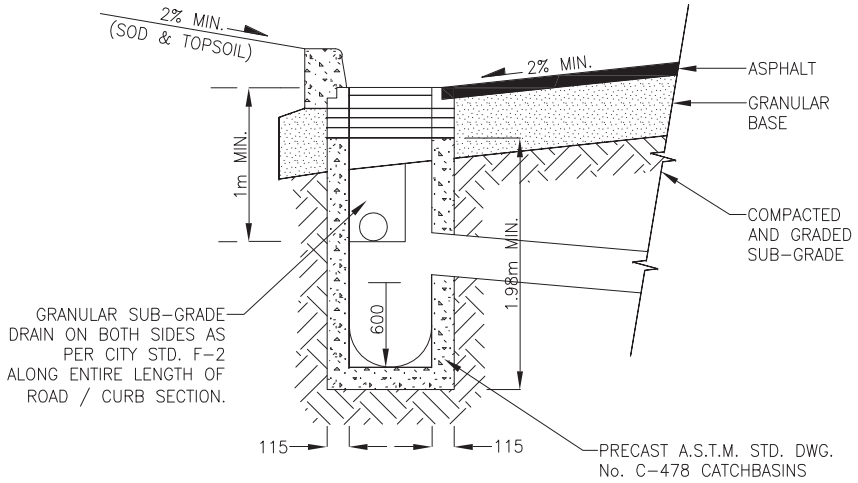
REVISION: _____ DATE: DEC. 2020

STD. DWG.

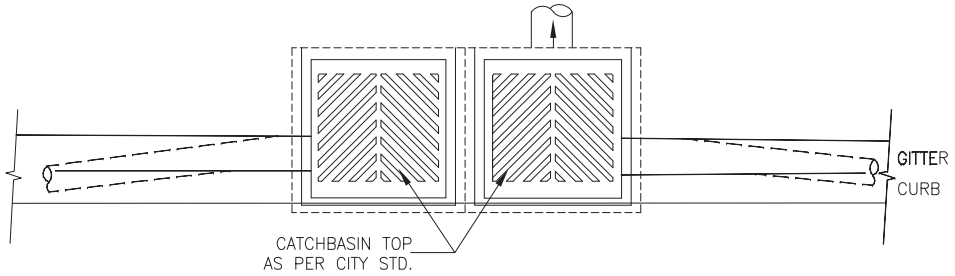
S - 103



SINGLE CATCHBASIN



DOUBLE CATCHBASIN



NOTES

1. ALL WEEP HOLES AND LIFT HOLES TO BE PLUGGED AND MORTARED.
2. ALL GRANULAR BACKFILL TO BE PLACED TO 300mm MINIMUM THICKNESS ON ALL SIDES.
3. ALL GRANULAR BACKFILL TO BE COMPACTED TO 95% S.P.D.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
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City of Vaughan — The City Above Toronto

ENGINEERING DEPARTMENT

CITY OF VAUGHAN ENGINEERING STANDARD

CATCHBASINS

NOT TO SCALE	DESIGNED: ENG. DEPT.	STD. DWG.
REVISION:	DATE: MARCH 2004	K - 4

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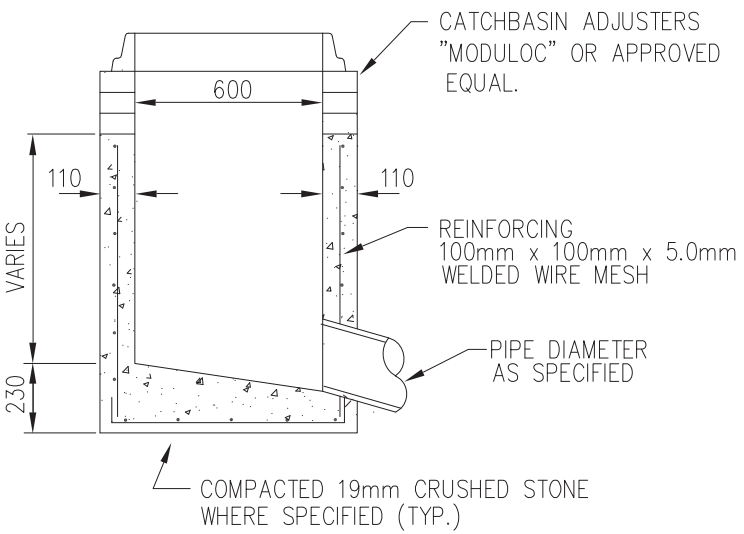
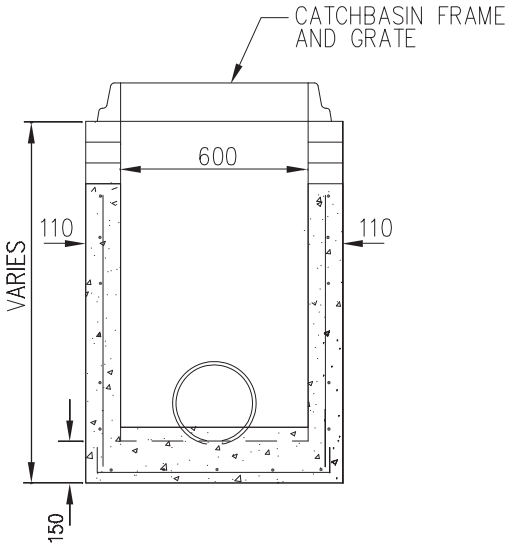
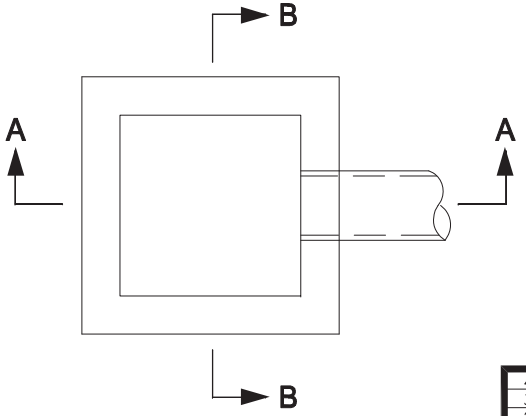


SECTION A-A



SECTION B-B



PLAN

NOTES

1. CATCHBASIN ADJUSTERS TO BE INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS. MINIMUM UNIT THICKNESS TO BE 50mm.
2. ALL JOINTS AND LIFTING HOLES TO BE COMPLETELY FILLED WITH A 1:3 MORTAR MIX AND POINTED BEFORE BACKFILLING.
3. REAR YARD CATCHBASINS TO BE OF THIS TYPE.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
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City of Vaughan — The City Above Toronto

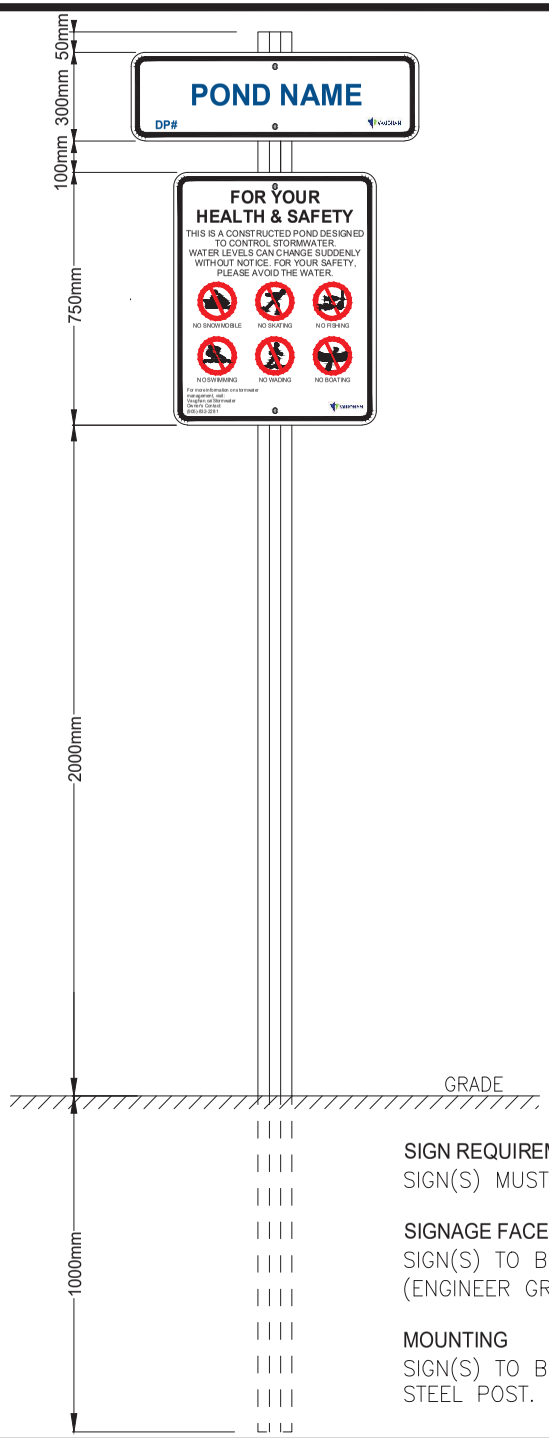
ENGINEERING DEPARTMENT

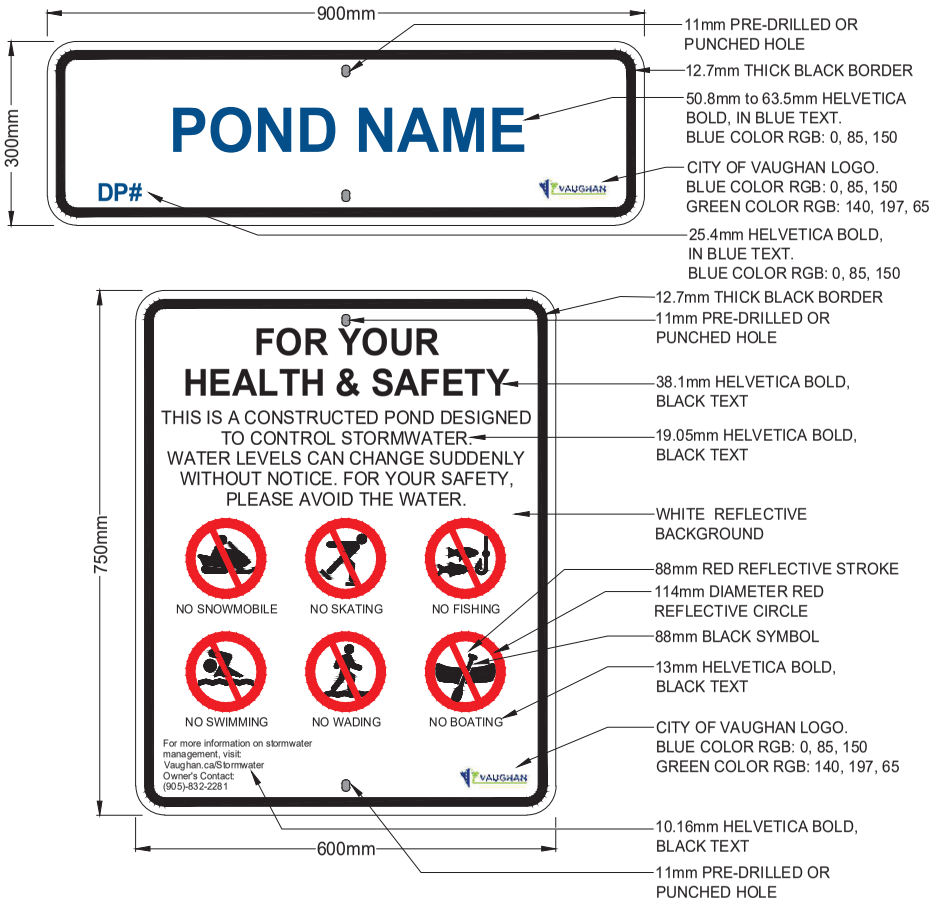
CITY OF VAUGHAN ENGINEERING STANDARD

PRECAST CATCHBASIN WITHOUT SUMP

NOT TO SCALE | DESIGNED: ENG. DEPT. | REVISION: | DATE: MARCH 2004

STD. DWG. K - 5





SIGN REQUIREMENTS

SIGN(S) MUST BE PLACED AT ALL POND ENTRANCES.

SIGNAGE FACE

SIGN(S) TO BE MANUFACTURED USING REFLECTIVE FINISH (ENGINEER GRADE), WITH TOP AND BOTTOM MOUNT HOLES.

MOUNTING

SIGN(S) TO BE MOUNTED TO 3.8m U-CHANNEL GALVANIZED STEEL POST.

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1.	REVISED/UPDATED SIGN STANDARD	07/24
	REVISIONS	DATE

VAUGHAN

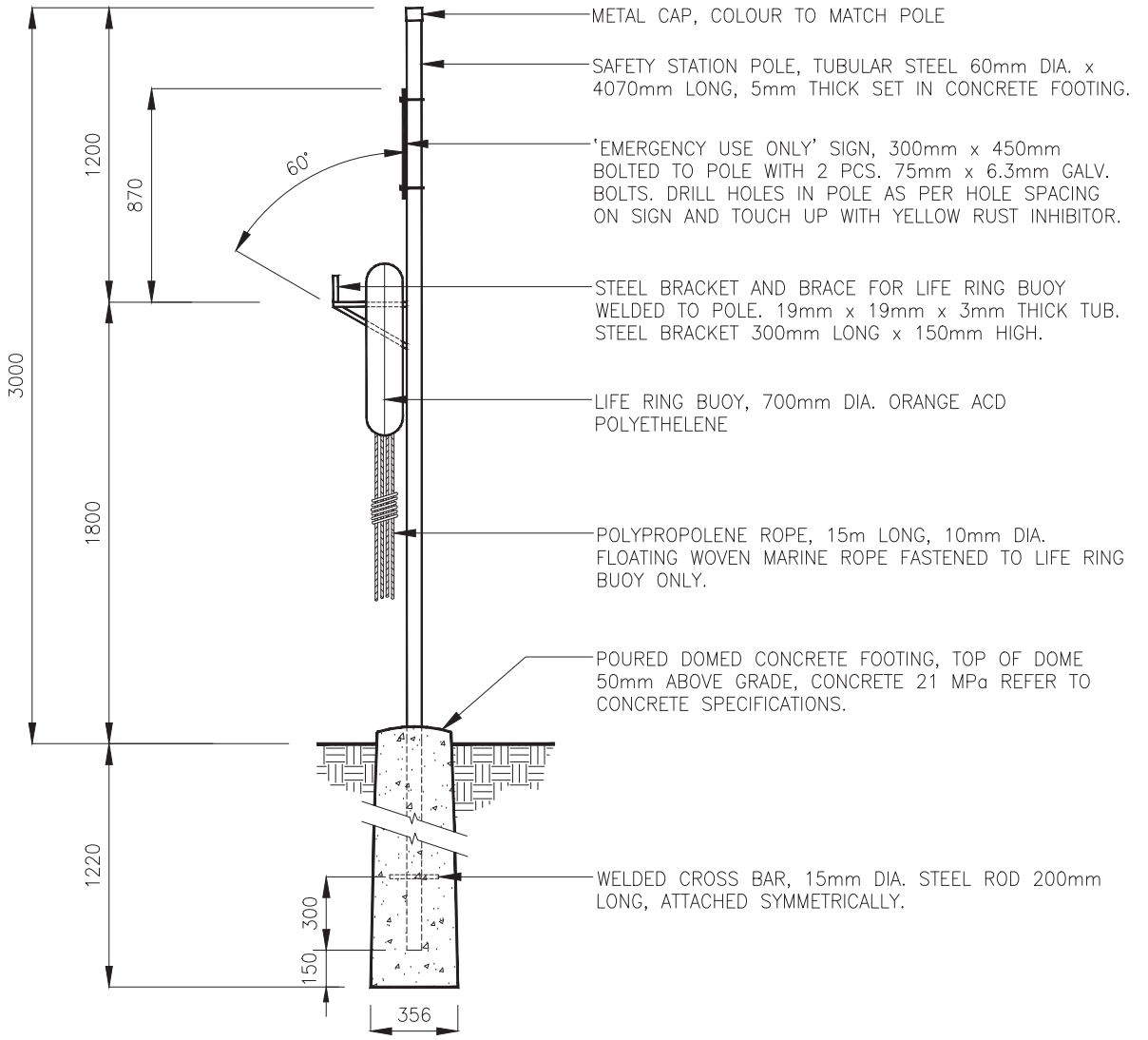
CITY OF VAUGHAN ENGINEERING STANDARD

STORM WATER FACILITY POND WARNING SIGN

NOT TO SCALE DESIGNED: _____

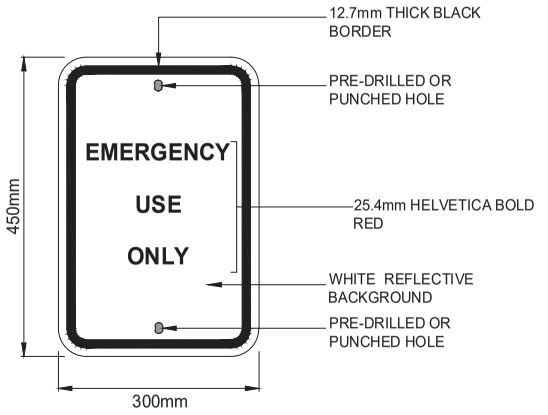
REVISION: 1 DATE: DEC. 2020

STD. DWG.
S-106



NOTES

1. FINISH OF POST AND ALL OTHER STEEL COMPONENTS AND FITTINGS TO BE SAFETY YELLOW GLOSS ENAMEL POWDER COAT APPLICATION. PRIOR TO POWDER COATING, ALL SURFACES TO BE CHEMICALLY CLEANED AND TREATED WITH PARKER BONDERITE AND CHLOROTHENE SOLVENT OR APPROVED EQUAL. POWDER COATING MUST BE A POLYESTER 2000 SERIES APPLIED IN A THICKNESS OF 4–5 MILS BY ELECTROSTATIC COAT AND OVEN CURED TO A SMOOTH AND EVEN SURFACE.
2. NO PLASTIC COMPONENTS ARE TO BE USED EXCEPT WHERE NOTED.



mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

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	REVISIONS	DATE

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

SAFETY STATION FOR PONDS AND WATERWAYS

NOT TO SCALE DESIGNED: _____

REVISION: _____ DATE: DEC. 2020

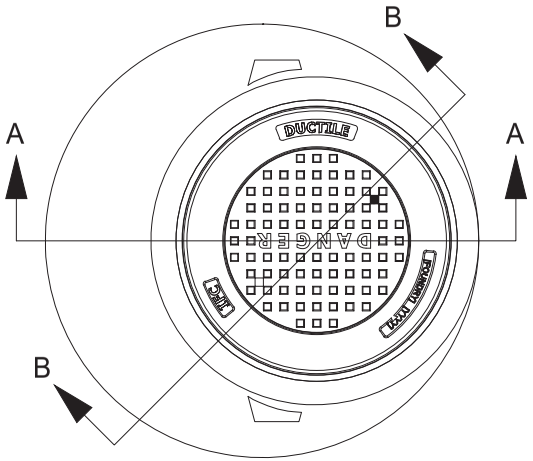
STD. DWG. S - 107

FILE: O:\Infrastructure Delivery\Infrastructure Programming\PMO\City Standards\Design Criteria 2020-21\City Standards Update Folder\CoVStandardDrawings_CAD_2021\S-107 - Safety Station for Ponds & Waterways.dwg

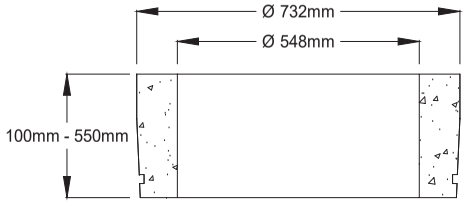
S-108 - SIDE INLET CATCHBASIN DETAILS

CURRENTLY UNDER DEVELOPMENT

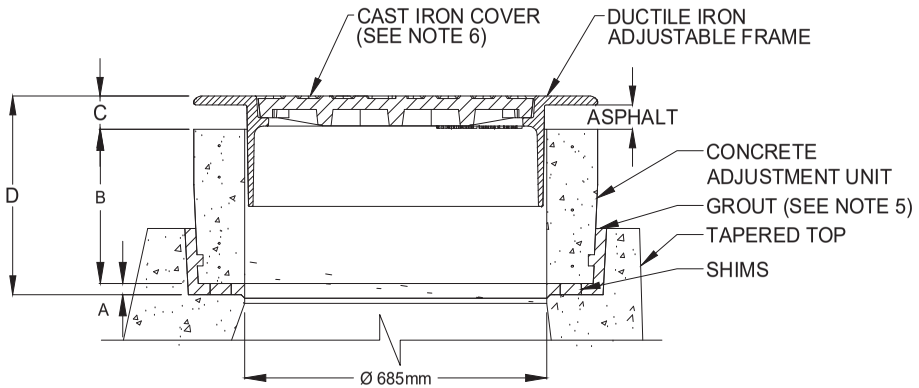
Refer to 2004 Published Edition. Should drawing not be available, please contact the Development Engineering Department at developmentengineering@vaughan.ca



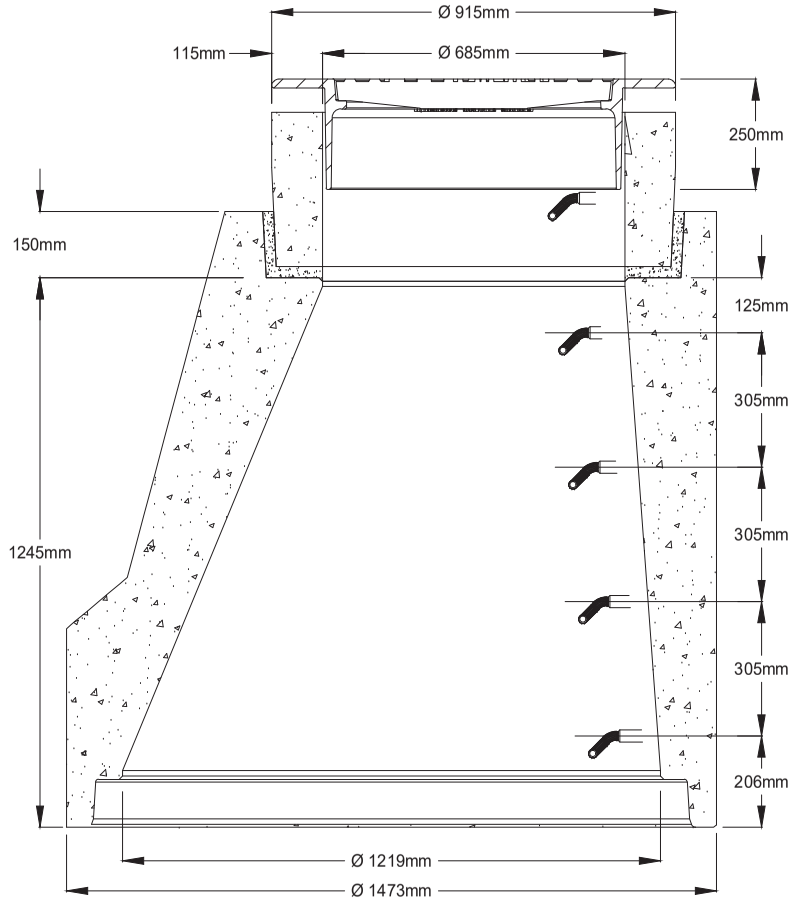
TOP VIEW



CONCRETE ADJUSTMENT UNIT



SECTION B-B



SECTION A-A

DIMENSION	NOTES
A	ADJUSTMENT RANGE: 25mm - 100mm
B	STANDARD HEIGHT, CONCRETE ADJUSTMENT UNIT: 350mm. ALSO AVAILABLE: 100, 150, 200, 250, 300, 400, 450, 500, 550mm
C	DUCTILE IRON FRAME ADJUSTMENT RANGE: 70 - 200 mm.
D	OVERALL ADJUSTMENT: MIN 195 mm (USING 100mm C.A.U.) AND MAX 850 mm (USING 550mm C.A.U.)

NOTES:

1. MINIMUM CONCRETE STRENGTH AT 28 DAYS: 30 MPa.
2. REINFORCEMENT: AS PER CSA A257.4 - 09.
3. 25 mm MINIMUM COVER ON ALL REINFORCING STEEL.
4. CONCRETE ADJUSTMENT UNIT CAN BE ORIENTED TO SUIT HEIGHT AND ANGLE REQUIRED. UNIT DEPICTED IS 350mm.
5. GROUT REQUIREMENTS: NON-SHRINK; MINIMUM 50 MPa AT 28 DAYS; TO BE INSTALLED ONLY AS PER MANUFACTURER APPLICATION GUIDELINES.
6. COVER DEPICTED IS PER OPSD 401.01, TYPE A. OTHER OPS-COMPLIANT COVERS AVAILABLE.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
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VAUGHAN

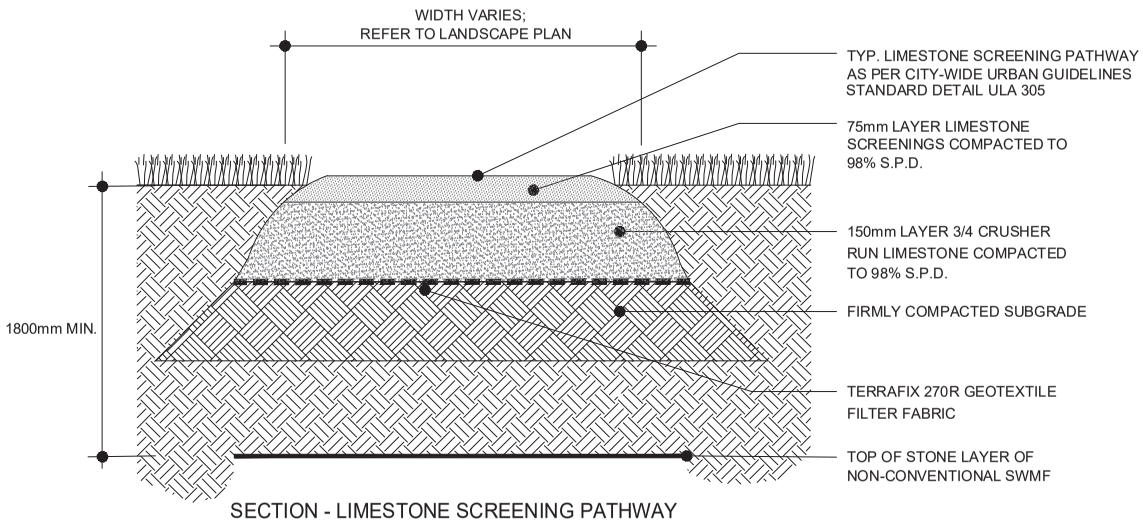
CITY OF VAUGHAN ENGINEERING STANDARD

IFC MAINTENANCE HOLE TAPERED TOP ASSEMBLY

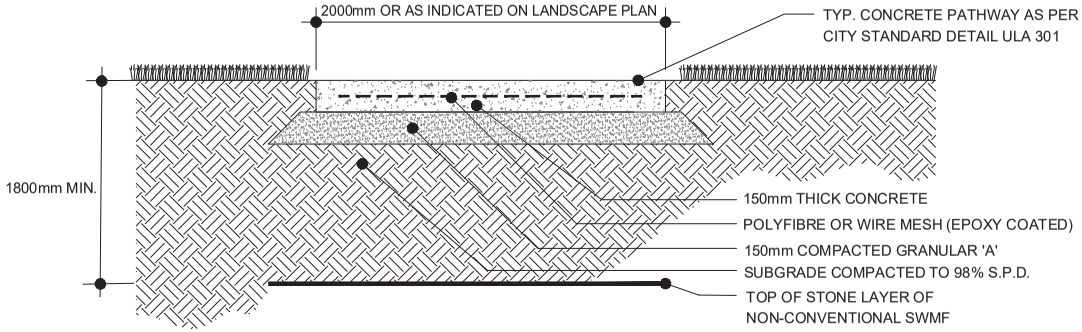
NOT TO SCALE DESIGNED: _____

REVISION: _____ DATE: JUN. 2023

STD. DWG. S - 109



SECTION - LIMESTONE SCREENING PATHWAY
(DERIVED FROM CITY-WIDE URBAN DESIGN
GUIDELINES STANDARD DETAIL ULA 305)



SECTION - CONCRETE PAVING PATHWAY
(DERIVED FROM CITY-WIDE URBAN DESIGN
GUIDELINES STANDARD DETAIL ULA 301)

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. THIS TYPICAL DETAIL IS PROVIDED FOR DESIGN DIRECTION AND IS FOR REFERENCE ONLY. DETAIL MUST BE CERTIFIED BY A PROFESSIONAL ENGINEER IF INCLUDED AS PART OF THE SITE PLAN APPLICATION OR DRAFT PLAN OF SUBDIVISION, AS APPLICABLE.
3. THIS TYPICAL DETAIL IS INTENDED TO DISPLAY DETAILS WITH RESPECT TO PATHWAYS ABOVE NON-CONVENTIONAL SWMF. REFER TO CITY-WIDE URBAN DESIGN GUIDELINES STANDARD DETAIL ULA 301 AND 305 FOR PAVING DETAILS

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
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VAUGHAN

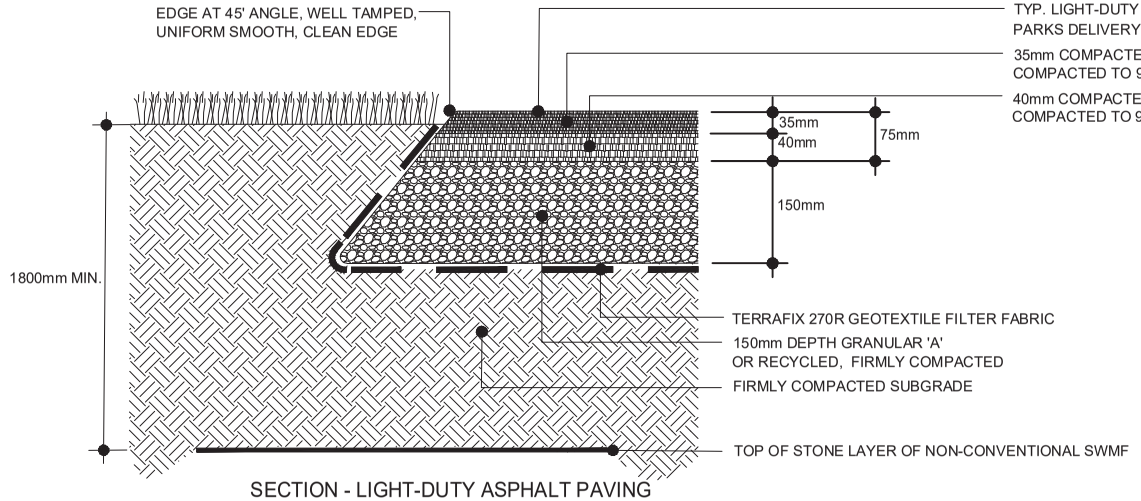
CITY OF VAUGHAN ENGINEERING STANDARD

PATHWAY (TYP.) ABOVE A NON-CONVENTIONAL SWMF

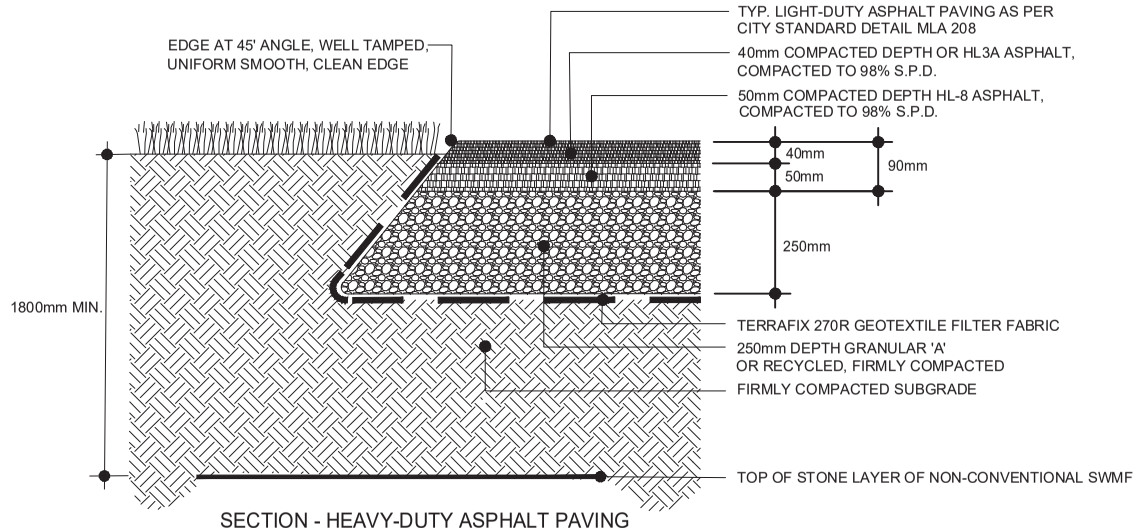
NOT TO SCALE DESIGNED: _____

REVISION: _____ DATE: JAN. 2025

STD. DWG.
S - 110



SECTION - LIGHT-DUTY ASPHALT PAVING
(DERIVED FROM PARKS DELIVERY STANDARD DETAIL MLA 208)



SECTION - HEAVY-DUTY ASPHALT PAVING
(DERIVED FROM PARKS DELIVERY STANDARD DETAIL MLA 209)

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. THIS TYPICAL DETAIL IS PROVIDED FOR DESIGN DIRECTION AND IS FOR REFERENCE ONLY. DETAIL MUST BE CERTIFIED BY A PROFESSIONAL ENGINEER IF INCLUDED AS PART OF THE SITE PLAN APPLICATION OR DRAFT PLAN OF SUBDIVISION, AS APPLICABLE.
3. THIS TYPICAL DETAIL IS INTENDED TO DISPLAY DETAILS WITH RESPECT TO PATHWAYS ABOVE NON-CONVENTIONAL SWMF LOCATED WITHIN PARK. REFER TO PARKS DELIVERY STANDARD DETAILS MLA 208 AND 209 FOR PAVING DETAILS.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
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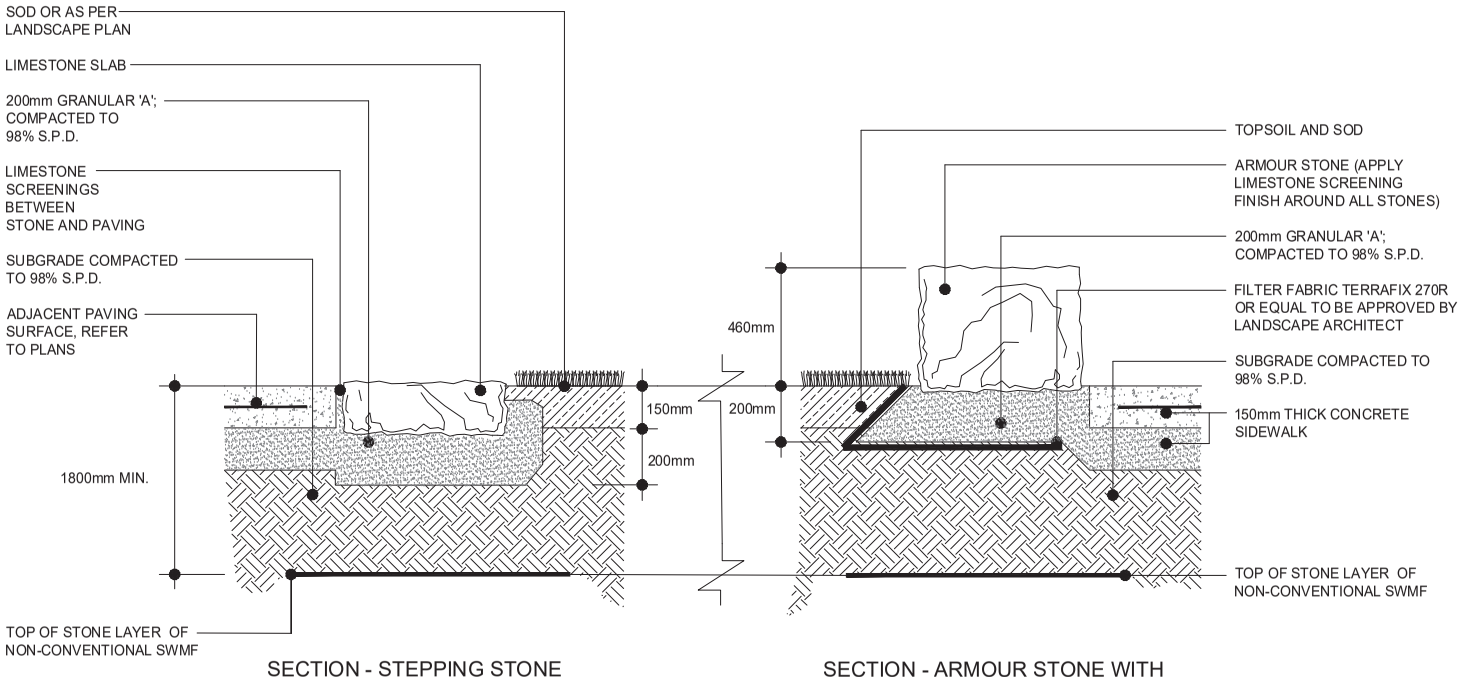
VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

ASPHALT PATHWAYS (TYP.) ABOVE A NON-CONVENTIONAL SWMF LOCATED WITHIN PARK

NOT TO SCALE | DESIGNED: _____ | REVISION: _____ | DATE: JAN. 2025

STD. DWG. S - 111



SECTION - STEPPING STONE ADJACENT WALKWAY

(DERIVED FROM CITY-WIDE URBAN DESIGN GUIDELINES STANDARD DETAIL ULA 311)

SECTION - ARMOUR STONE WITH P-I-P CONCRETE SIDEWALK

(DERIVED FROM CITY-WIDE URBAN DESIGN GUIDELINES STANDARD DETAIL ULA 309)

NOTES:

1. ALL STONES TO BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
2. ALL QUARRY STONE TO HAVE SPLIT OR NATURALLY WEATHERED FACES; NO EXPOSED DRILL MARKINGS.
3. THIS TYPICAL DETAIL IS PROVIDED FOR DESIGN DIRECTION AND IS FOR REFERENCE ONLY. DETAIL MUST BE CERTIFIED BY A PROFESSIONAL ENGINEER IF INCLUDED AS PART OF THE SITE PLAN APPLICATION OR DRAFT PLAN OF SUBDIVISION, AS APPLICABLE.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
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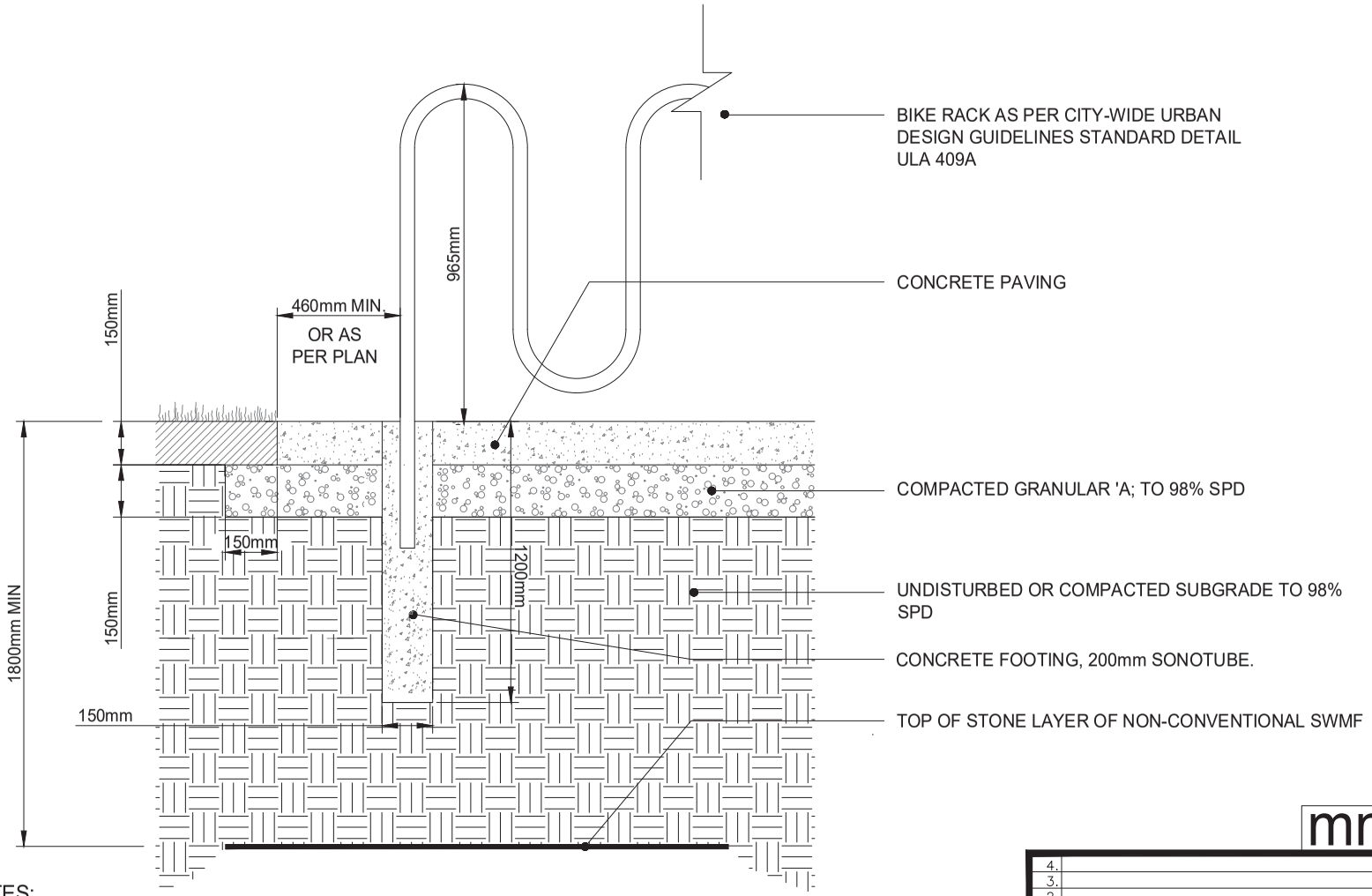
VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

ARMOUR STONE (TYP.) DETAIL ABOVE A NON-CONVENTIONAL SWMF

NOT TO SCALE | DESIGNED: _____ | REVISION: _____ | DATE: JAN. 2025

STD. DWG. S - 112



NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. REFER TO LAYOUT PLAN FOR PLACEMENT/LOCATION OF BIKE RACK.
3. THIS TYPICAL DETAIL IS PROVIDED FOR DESIGN DIRECTION AND IS FOR REFERENCE ONLY. DETAIL MUST BE CERTIFIED BY A PROFESSIONAL ENGINEER IF INCLUDED AS PART OF THE SITE PLAN APPLICATION OR DRAFT PLAN OF SUBDIVISION, AS APPLICABLE.
4. THIS TYPICAL DETAIL IS INTENDED TO DISPLAY DETAILS WITH RESPECT TO BIKE RACKS ABOVE NON-CONVENTIONAL SWMF. REFER TO CITY-WIDE URBAN DESIGN GUIDELINES STANDARD DETAIL ULA 409A FOR BIKE RACK DETAILS.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
4.		
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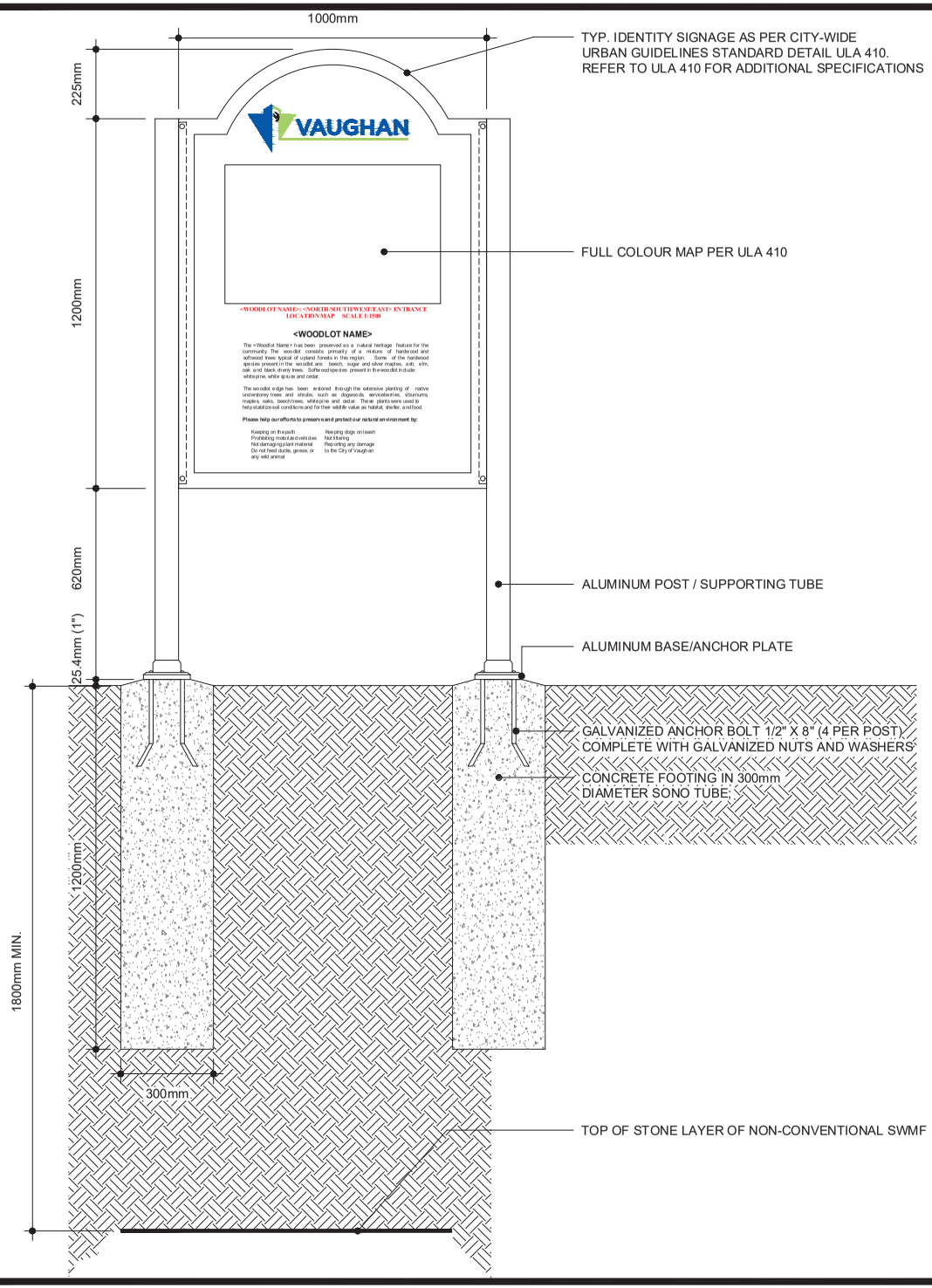
VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

BIKE RACK DETAIL (TYP.) ABOVE A NON-CONVENTIONAL SWMF

NOT TO SCALE | DESIGNED: _____ | REVISION: _____ | DATE: JAN. 2025

STD. DWG. S - 113



NOTES:

1. THIS TYPICAL DETAIL IS INTENDED TO DISPLAY DETAILS WITH RESPECT TO IDENTIFY SIGNAGE ABOVE NON-CONVENTIONAL SWMF. REFER TO CITY-WIDE URBAN DESIGN GUIDELINES STANDARD DETAIL ULA 410 FOR FURTHER DETAIL.
2. THIS TYPICALDETAIL IS PROVIDED FOR DESIGN DIRECTION AND IS FOR REFERENCE ONLY. DETAIL MUST BE CERTIFIED BY A PROFESSIONAL ENGINEER IF INCLUDED AS PART OF THE SITE PLAN APPLICATION OR DRAFT PALN OF SUBDIVISION, AS APPLICABLE.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
4.		
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VAUGHAN

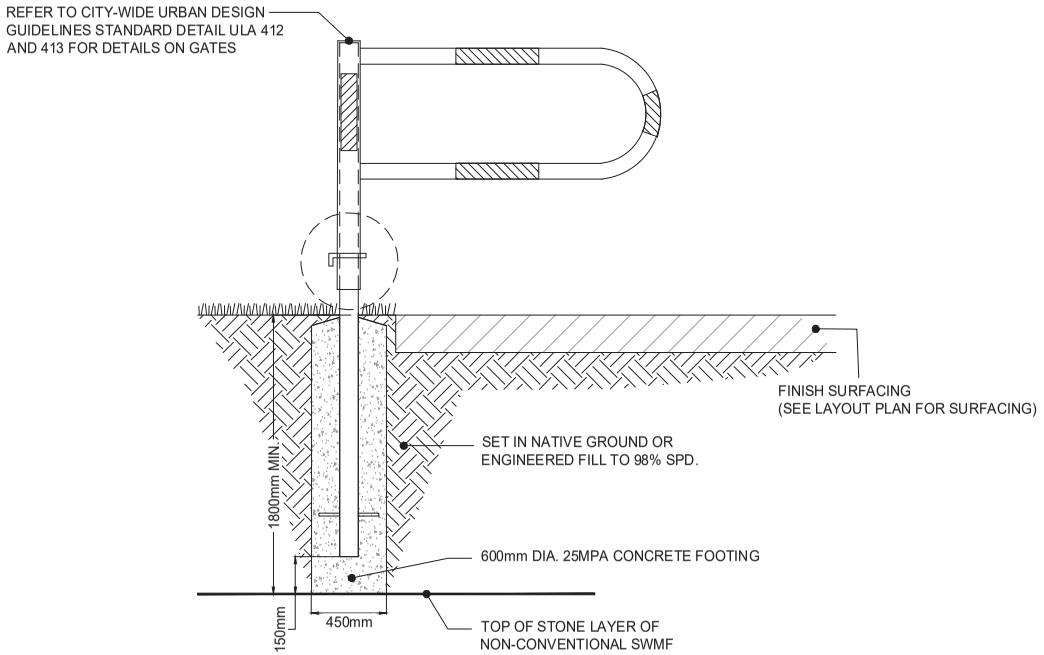
CITY OF VAUGHAN ENGINEERING STANDARD

IDENTITY SIGNAGE (TYP.) ABOVE A NON-CONVENTIONAL SWMF

NOT TO SCALE DESIGNED: _____

REVISION: _____ DATE: JAN. 2025

STD. DWG. S - 114



NOTES:

1. ALL MEASUREMENTS ARE IN MILLIMETRES UNLESS STATED OTHERWISE.
2. THIS TYPICAL DETAIL IS PROVIDED FOR DESIGN DIRECTION AND IS FOR REFERENCE ONLY. DETAIL MUST BE CERTIFIED BY A PROFESSIONAL ENGINEER IF INCLUDED AS PART OF THE SITE PLAN APPLICATION OR DRAFT PLAN OF SUBDIVISION, AS APPLICABLE.
3. THIS TYPICAL DETAIL IS INTENDED TO DISPLAY DETAILS WITH RESPECT TO GATES ABOVE NON-CONVENTIONAL SWMF. REFER TO CITY-WIDE URBAN DESIGN GUIDELINES STANDARD DETAIL ULA 412 AND 413 FOR GATE DETAILS
4. LOCATION TO BE FIELD STAKED AND APPROVED BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
5. PROTECT EXISTING PATHWAYS AND WALKWAYS FROM DAMAGE. CONTRACTOR RESPONSIBLE TO RESTORE ALL DAMAGES AT NO ADDITIONAL COST TO THE CITY.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
4.		
3.		
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1.		

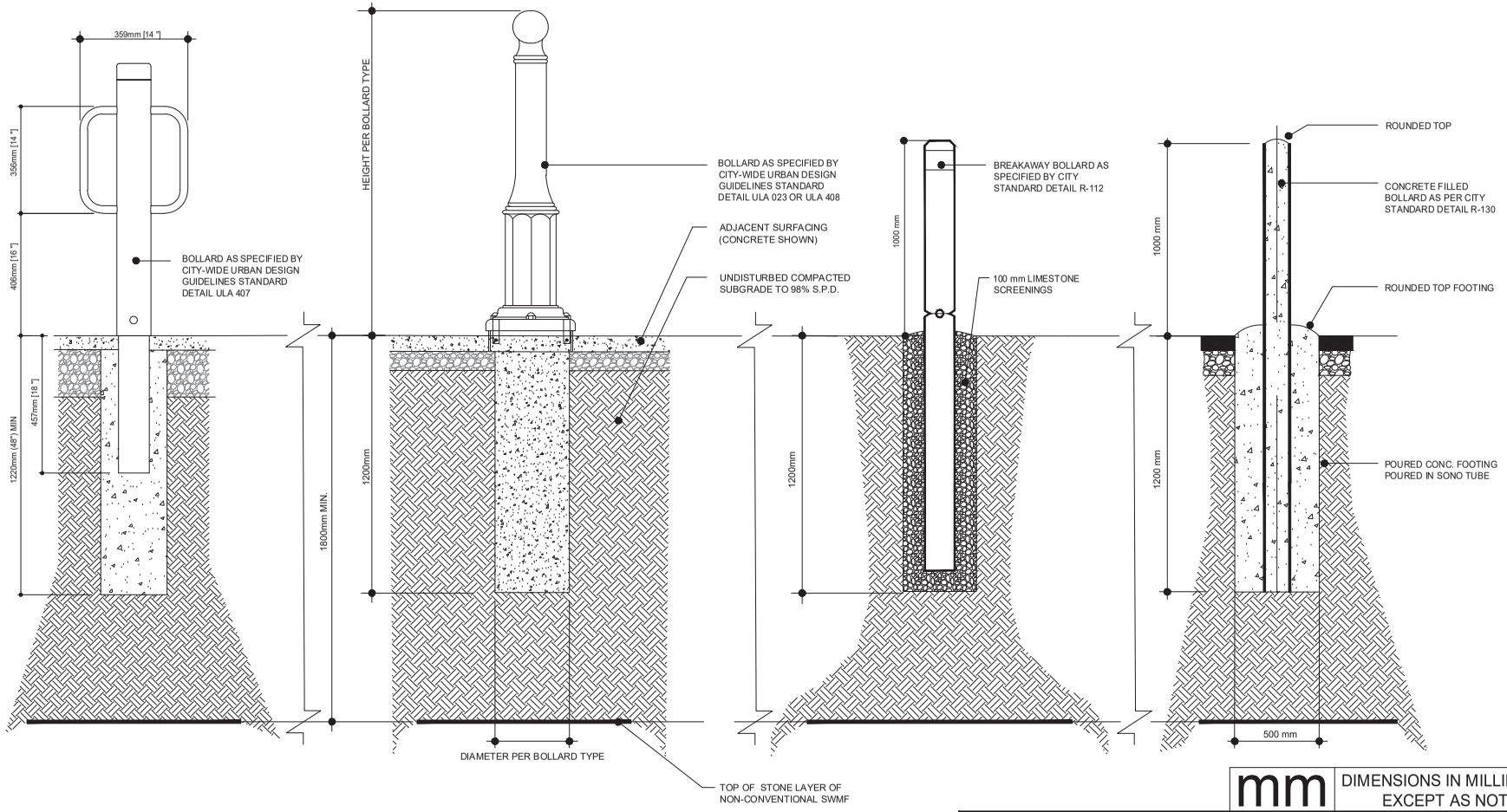
VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

GATE (TYP.) ABOVE A NON-CONVENTIONAL SWMF

NOT TO SCALE | DESIGNED: _____ | REVISION: _____ | DATE: JAN. 2025

STD. DWG. S - 115



mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
4.		
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VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

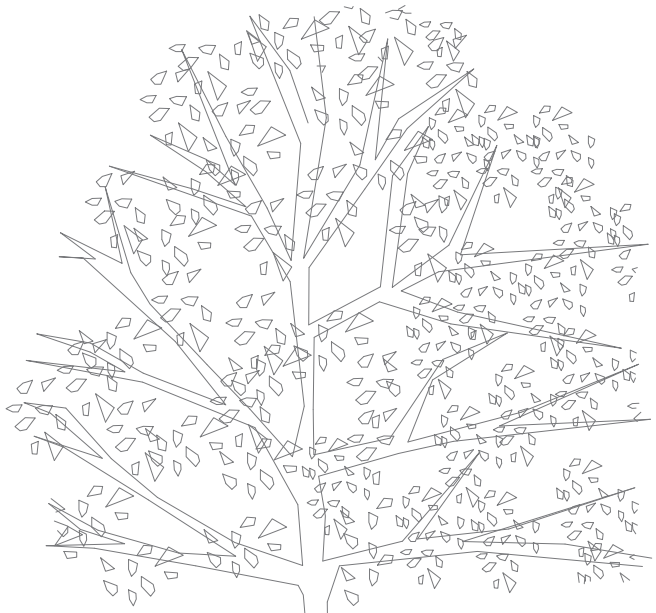
BOLLARD (TYP.) ABOVE A NON-CONVENTIONAL SWMF

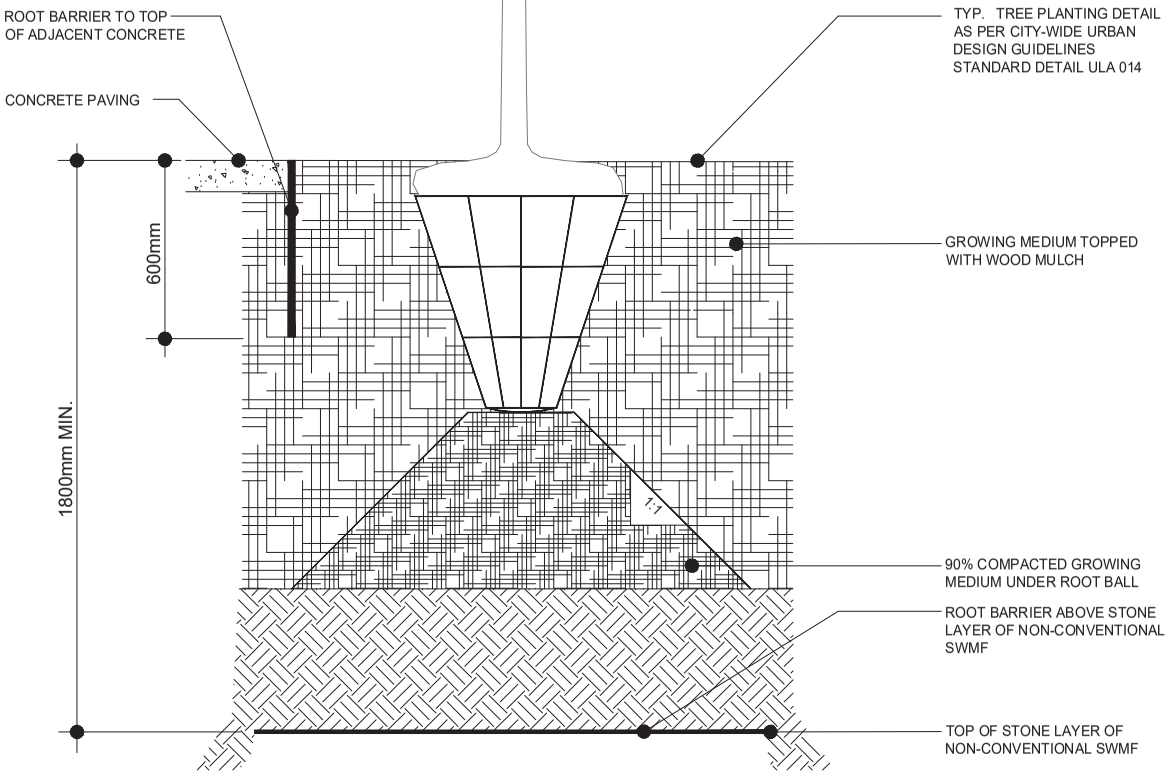
NOT TO SCALE | DESIGNED: _____ | STD. DWG. S - 116

REVISION: _____ | DATE: JAN. 2025

NOTES:

1. THIS TYPICAL DETAIL IS PROVIDED FOR DESIGN DIRECTION AND IS FOR REFERENCE ONLY. DETAIL MUST BE CERTIFIED BY A PROFESSIONAL ENGINEER IF INCLUDED AS PART OF THE SITE PLAN APPLICATION OR DRAFT PLAN OF SUBDIVISION, AS APPLICABLE.
2. THIS TYPICAL DETAIL IS INTENDED TO DISPLAY DETAILS WITH RESPECT TO BOLLARDS ABOVE NON-CONVENTIONAL SWMF. REFER TO CITY-WIDE URBAN DESIGN GUIDELINES STANDARD DETAILS ULA-023, 407 AND 408 FOR BOLLARD DETAILS. REFER TO CITY STANDARD DETAIL R-112 FOR BREAKAWAY BOLLARD DETAILS. REFER TO CITY STANDARD DETAIL R-130 FOR CONCRETE BOLLARD DETAILS.





NOTES:

1. THIS TYPICAL DETAIL IS PROVIDED FOR DEIGN DIRECTION AND IS FOR REFERENCE ONLY. DETAIL MUST BE CERTIFIED BY A PROFESSIONAL ENGINEER IF INCLUDED AS PART OF THE SITE PLAN APPLICATION OR DRAFT PLAN OF SUBDIVISION, AS APPLICABLE.
2. THIS TYPICAL DETAIL IS INTENDED TO DISPLAY DETAILS WITH RESPECT TO TREE PLANTING ABOVE NON-CONVENTIONAL SWMF. REFER TO CITY-WIDE URBAN DESIGN GUIDELINES VOLUME 2 ULA 014 FOR TREE PLANTING DETAILS.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
4.		
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VAUGHAN

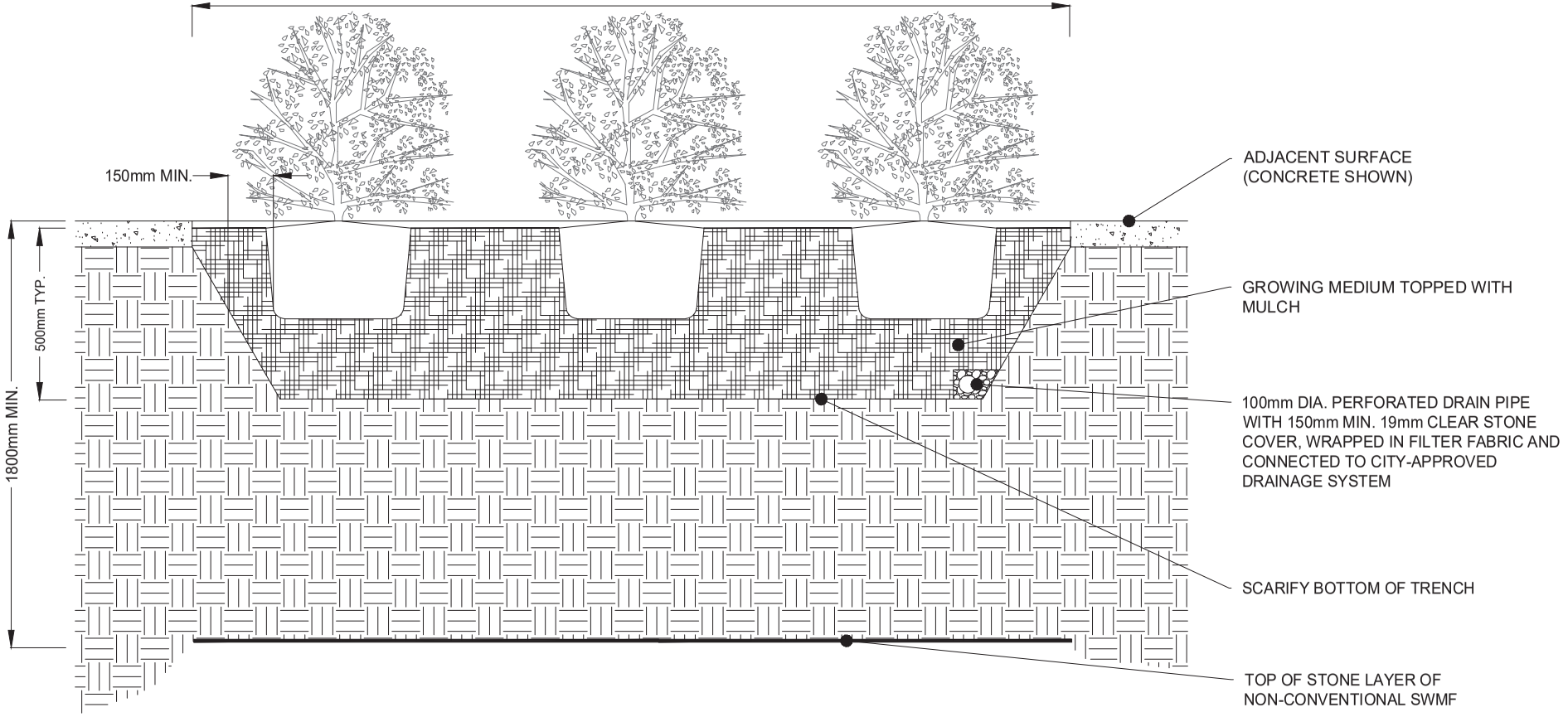
CITY OF VAUGHAN ENGINEERING STANDARD

TREE PLANTING (TYP.) ABOVE A NON-CONVENTIONAL SWMF

NOT TO SCALE | DESIGNED: _____ | REVISION: _____ | DATE: JAN. 2025

STD. DWG. S - 117

TYPICAL SHRUB PLANTING DETAIL AS PER CITY-WIDE URBAN DESIGN GUIDELINES STANDARD DETAIL ULA 015



mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
4.		
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VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

SHRUB PLANTING (TYP.) ABOVE A NON-CONVENTIONAL SWMF

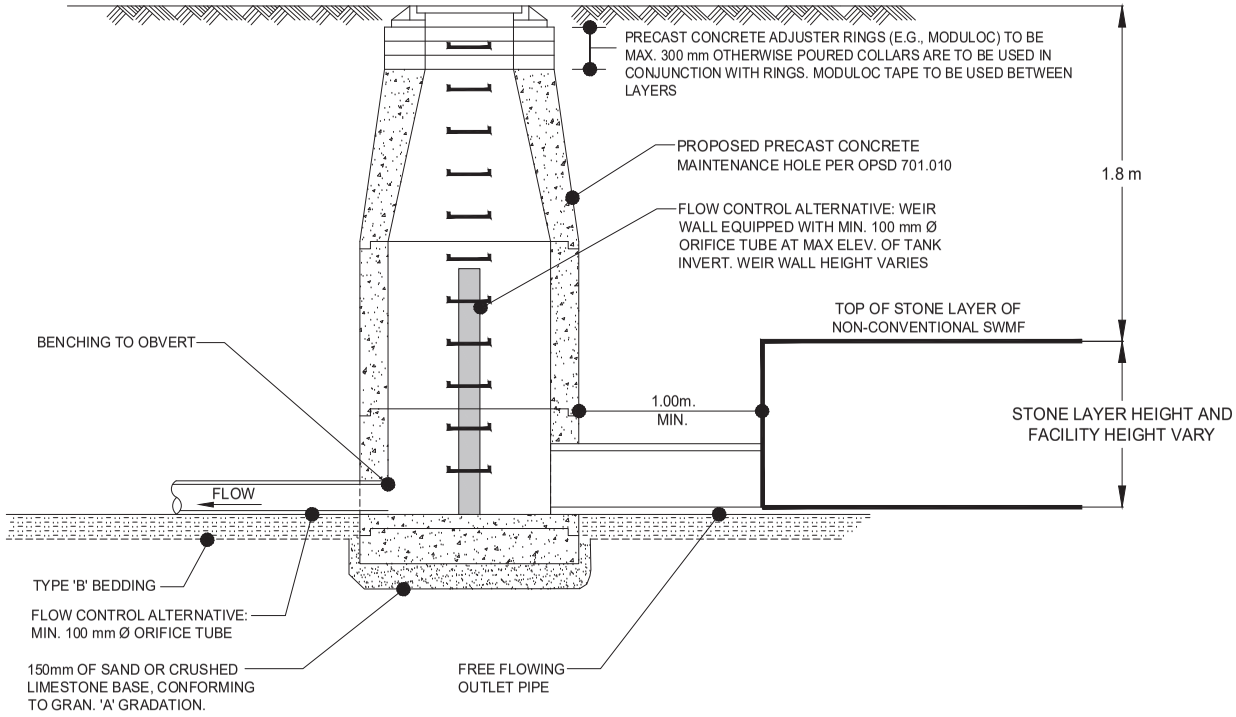
NOT TO SCALE DESIGNED: _____

REVISION: _____ DATE: JAN. 2025

STD. DWG. S - 118

NOTES:

1. THIS TYPICAL DETAIL IS PROVIDED FOR DESIGN DIRECTION AND IS FOR REFERENCE ONLY. DETAIL MUST BE CERTIFIED BY A PROFESSIONAL ENGINEER IF INCLUDED AS PART OF THE SITE PLAN APPLICATION OR DRAFT PLAN OF SUBDIVISION, AS APPLICABLE.
2. THIS TYPICAL DETAIL IS INTENDED TO DISPLAY DETAILS WITH RESPECT TO SHRUB PLANTING ABOVE NON-CONVENTIONAL SWMF. REFER TO CITY-WIDE URBAN DESIGN GUIDELINES STANDARD DETAIL ULA 015 FOR SHRUB PLANTING DETAILS.



NOTES:

1. THIS TYPICAL DETAIL IS PROVIDED FOR DESIGN DIRECTION AND IS FOR REFERENCE ONLY. DETAIL MUST BE CERTIFIED BY A PROFESSIONAL ENGINEER IF INCLUDED AS PART OF THE SITE PLAN APPLICATION OR DRAFT PLAN OF SUBDIVISION, AS APPLICABLE.
2. THIS TYPICAL DETAIL IS INTENDED TO DISPLAY DETAILS WITH RESPECT TO THE NON-CONVENTIONAL SWMF, DOWNSTREAM MANHOLE CONNECTIONS.
3. THIS DETAIL HAS BEEN DERIVED FROM CITY STANDARD DETAIL C-104.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

4.		
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	REVISIONS	DATE

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

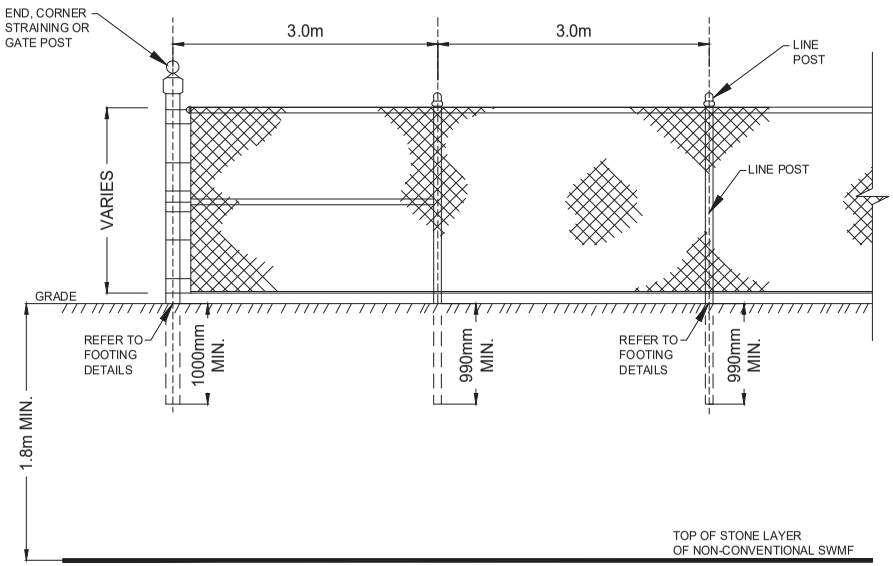
EXAMPLE STORM CONNECTION DOWNSTREAM FROM A NON-CONVENTIONAL SWMF

NOT TO SCALE DESIGNED: _____

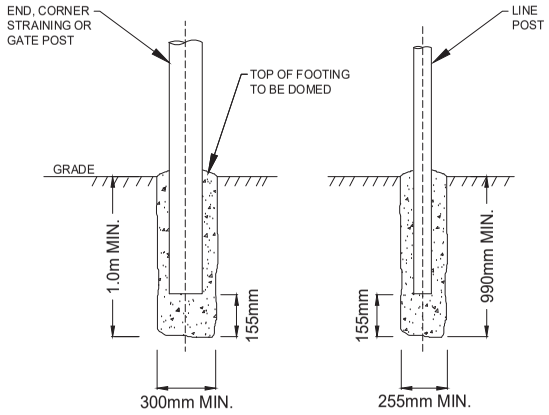
REVISION: _____ DATE: JAN. 2025

STD. DWG.

S - 119



FENCE DETAILS



FOOTING DETAILS

NOTES:

1. THIS TYPICAL DETAIL IS PROVIDED FOR DESIGN DIRECTION AND IS FOR REFERENCE ONLY. DETAIL MUST BE CERTIFIED BY A PROFESSIONAL ENGINEER IF INCLUDED AS PART OF THE SITE PLAN APPLICATION OR DRAFT PLAN OF SUBDIVISION, AS APPLICABLE.
2. THIS TYPICAL DETAIL IS INTENDED TO DISPLAY DETAILS WITH RESPECT TO CHAIN LINK FENCES ABOVE NON-CONVENTIONAL SWMF. REFER TO CITY STANDARD DETAIL FRW-101 FOR ADDITIONAL SPECIFICATIONS ON CHAIN LINK FENCES.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
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VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

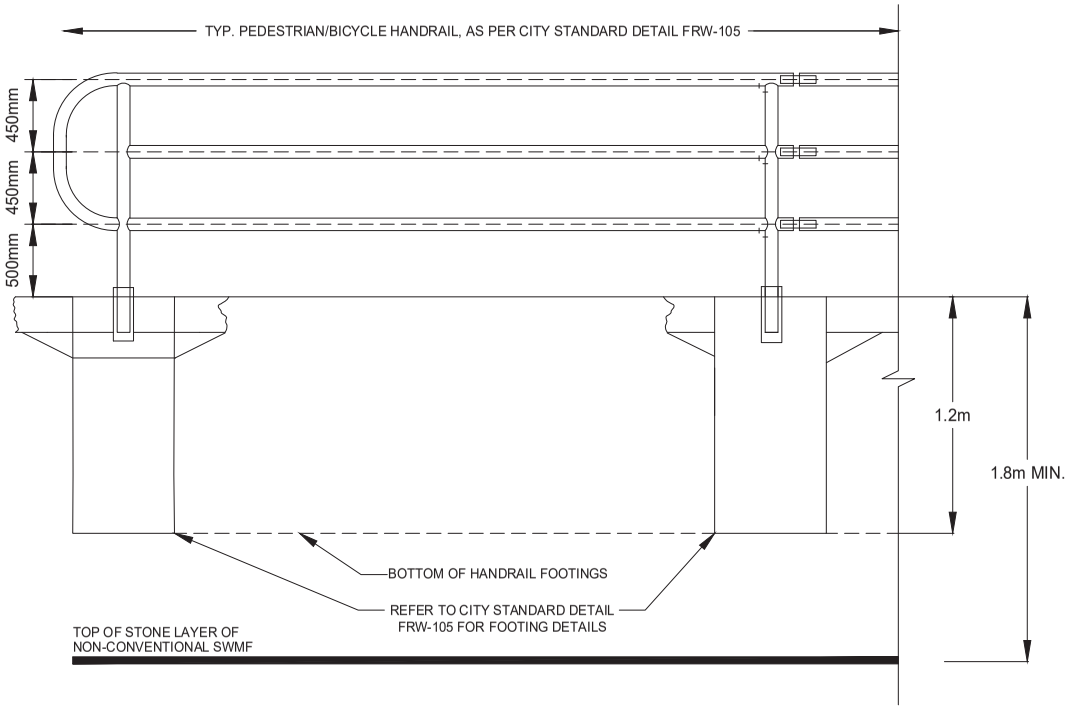
CHAIN LINK SECURITY FENCE (TYP.) ABOVE A NON-CONVENTIONAL SWMF

NOT TO SCALE DESIGNED: _____

REVISION: _____ DATE: JAN. 2025

STD. DWG.

S - 120



NOTES:

1. THIS TYPICAL DETAIL IS PROVIDED FOR DESIGN DIRECTION AND IS FOR REFERENCE ONLY. DETAIL MUST BE CERTIFIED BY A PROFESSIONAL ENGINEER IF INCLUDED AS PART OF THE SITE PLAN APPLICATION OR DRAFT PLAN OF SUBDIVISION, AS APPLICABLE.
2. THIS TYPICAL DETAIL IS INTENDED TO DISPLAY DETAILS WITH RESPECT TO PEDESTRIAN/BICYCLE HANDRAILS ABOVE NON-CONVENTIONAL SWMF. REFER TO CITY STANDARD DETAIL FRW-105 FOR ADDITIONAL SPECIFICATIONS ON HANDRAILS
3. THIS STANDARD TO BE USED IN PLACE OF OPSD 980.101 WHERE ADDITIONAL RAIL HEIGHT IS REQUIRED (SUCH AS BICYCLE TRAIL).

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
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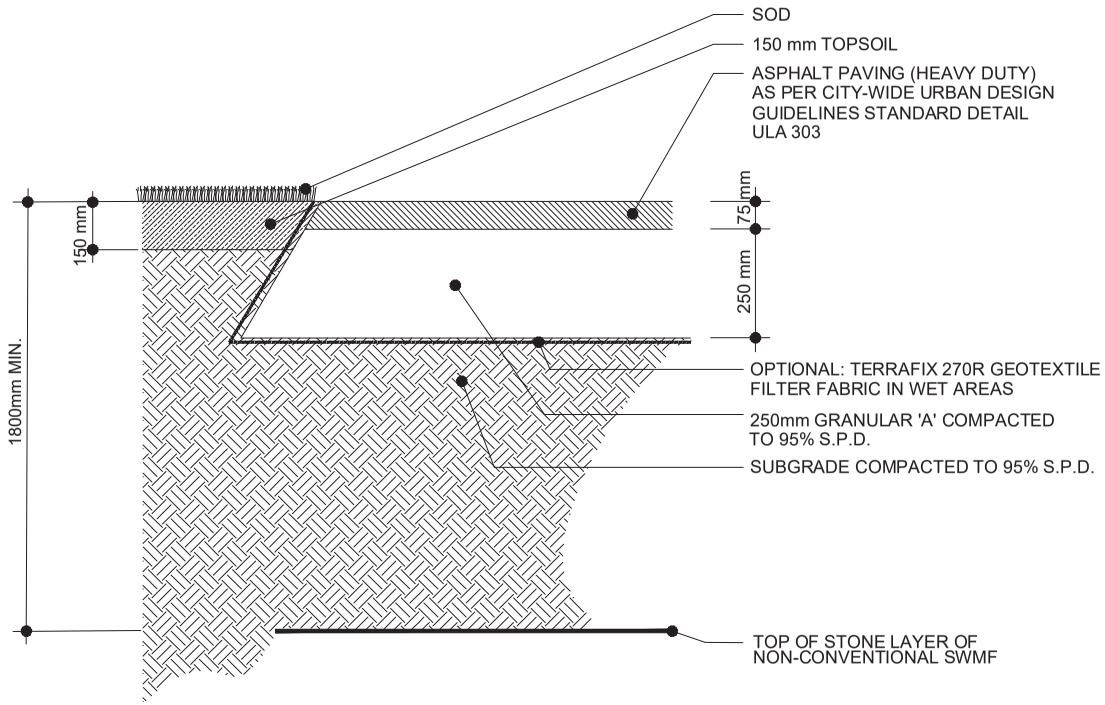
VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

PEDESTRIAN BICYCLE HAND RAIL (TYP.) DETAIL ABOVE A NON-CONVENTIONAL SWMF

NOT TO SCALE	DESIGNED:	STD. DWG.
REVISION:	DATE: JAN. 2025	S - 121



NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. THIS TYPICAL DETAIL IS PROVIDED FOR DESIGN DIRECTION AND IS FOR REFERENCE ONLY. DETAIL MUST BE CERTIFIED BY A PROFESSIONAL ENGINEER IF INCLUDED AS PART OF THE SITE PLAN APPLICATION OR DRAFT PLAN OF SUBDIVISION, AS APPLICABLE.
3. THIS TYPICAL DETAIL IS INTENDED TO DISPLAY DETAILS WITH RESPECT TO PATHWAYS ABOVE NON-CONVENTIONAL SWMF LOCATED WITHIN ROW. REFER TO CITY-WIDE URBAN DESIGN GUIDELINES STANDARD DEATIL ULA 303 FOR HEAVY-DUTY PAVING DETAILS.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
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VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

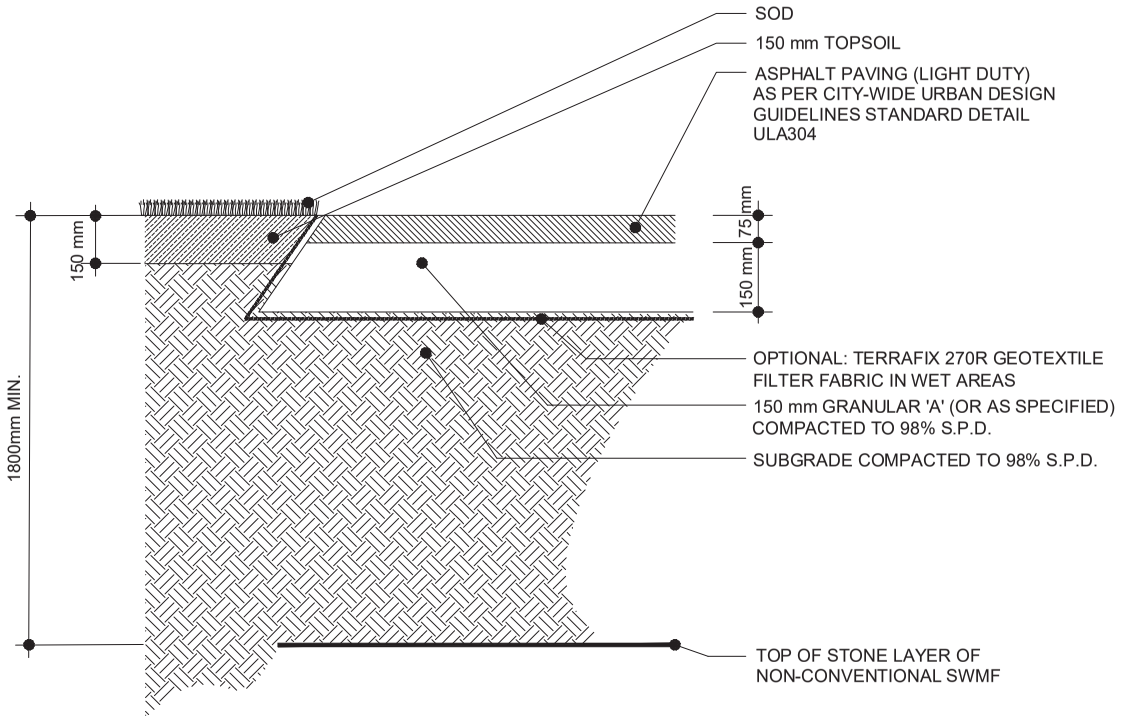
ASPHALT PAVING - HEAVY DUTY (TYP.) ABOVE A NON-CONVENTIONAL SWMF LOCATED WITHIN ROW

NOT TO SCALE DESIGNED: _____

REVISION: _____ DATE: JAN. 2025

STD. DWG.

S - 122



NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. THIS TYPICAL DETAIL IS PROVIDED FOR DESIGN DIRECTION AND IS FOR REFERENCE ONLY. DETAIL MUST BE CERTIFIED BY A PROFESSIONAL ENGINEER IF INCLUDED AS PART OF THE SITE PLAN APPLICATION OR DRAFT PLAN OF SUBDIVISION, AS APPLICABLE.
3. THIS TYPICAL DETAIL IS INTENDED TO DISPLAY DETAILS WITH RESPECT TO PATHWAYS ABOVE NON-CONVENTIONAL SWMF LOCATED WITHIN ROW. REFER TO CITY-WIDE URBAN DESIGN GUIDELINES STANDARD DETAIL ULA 304 FOR LIGHT-DUTY PAVING DETAILS.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
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VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

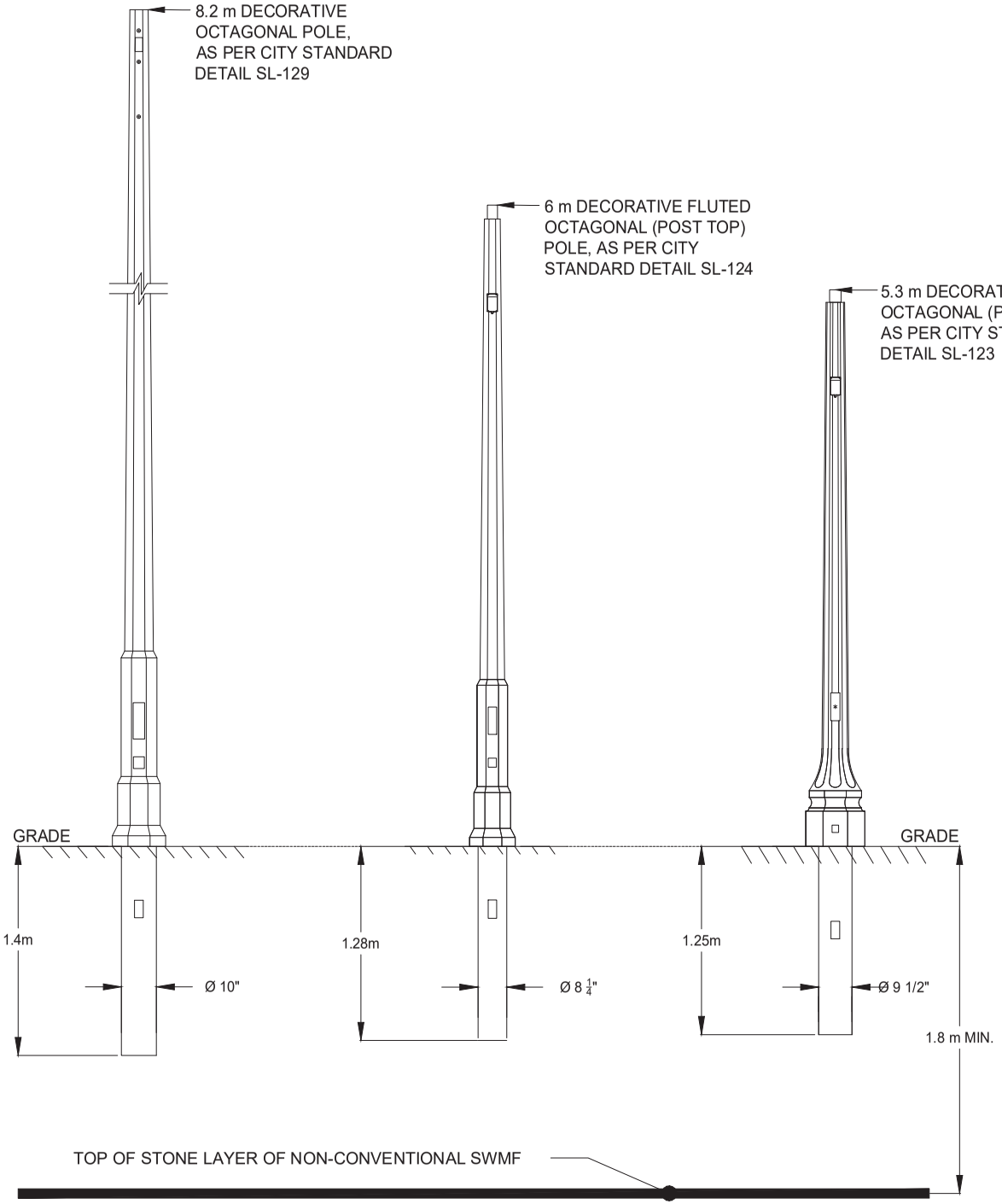
ASPHALT PAVING - LIGHT DUTY (TYP.) ABOVE A NON-CONVENTIONAL SWMF LOCATED WTHIN ROW

NOT TO SCALE DESIGNED: _____

REVISION: _____ DATE: JAN. 2025

STD. DWG.

S - 123



NOTES:

1. THIS TYPICAL DETAIL IS PROVIDED FOR DESIGN DIRECTION AND IS FOR REFERENCE ONLY. DETAIL MUST BE CERTIFIED BY A PROFESSIONAL ENGINEER IF INCLUDED AS PART OF THE SITE PLAN APPLICATION OR DRAFT PLAN OF SUBDIVISION, AS APPLICABLE.
2. THIS TYPICAL DETAIL IS INTENDED TO DISPLAY DETAILS WITH RESPECT TO DECORATIVE POLES ABOVE NON-CONVENTIONAL SWMF. REFER TO CITY STANDARD DETAILS: SL-123, SL-124 AND SL-129 FOR POLE DETAILS.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
4.		
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VAUGHAN

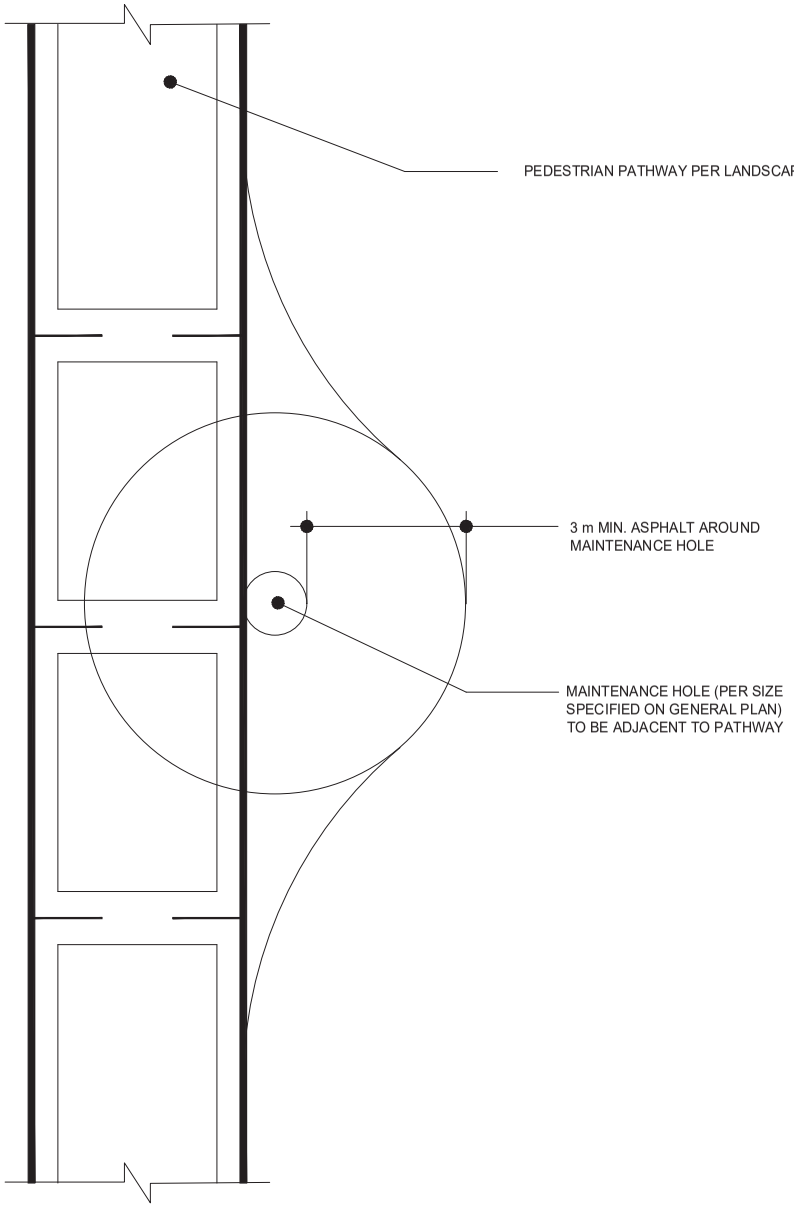
CITY OF VAUGHAN ENGINEERING STANDARD

DECORATIVE POLE (TYP.) ABOVE A NON-CONVENTIONAL SWMF

NOT TO SCALE DESIGNED: _____

REVISION: _____ DATE: JAN. 2025

STD. DWG. S - 124



NOTES:

1. PATHWAY TYPE SHALL BE SPECIFIED IN LANDSCAPE PLAN
2. THIS TYPICAL DETAIL IS PROVIDED FOR DESIGN DIRECTION AND IS FOR REFERENCE ONLY. DETAIL MUST BE CERTIFIED BY A PROFESSIONAL ENGINEER IF INCLUDED AS PART OF THE SITE PLAN APPLICATION OR DRAFT PLAN OF SUBDIVISION, AS APPLICABLE.
3. THIS TYPICAL DETAIL IS INTENDED TO DISPLAY DETAILS WITH RESPECT TO MAINTENANCE HOLES FOR NON-CONVENTIONAL SWMF. REFER TO RELEVANT CITY STANDARDS FOR PAVING/PATHWAY DETAILS.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
4.		
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VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

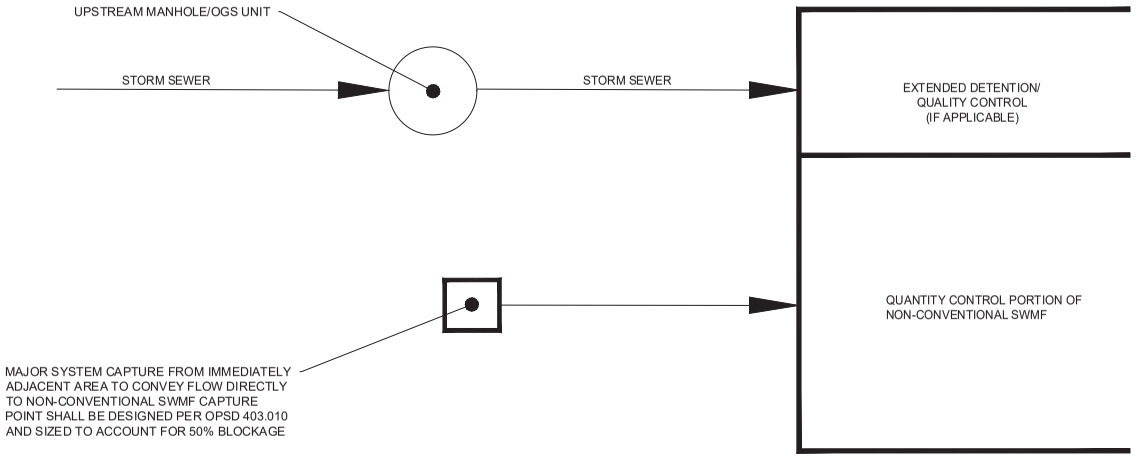
MAINTENANCE HOLE BUMP OUT FROM PEDESTRIAN PATH FOR NON-CONVENTIONAL SWMF

NOT TO SCALE DESIGNED: _____

REVISION: _____ DATE: JAN. 2025

STD. DWG.

S - 125



PLAN VIEW - NON-CONVENTIONAL SWMF
INLET SAMPLE CONFIGURATION

NOTES:

1. DETAIL REPRESENTS MAXIMUM DEPTH TO NON-CONVENTIONAL SWMF'S WITHIN PROPOSED ROW'S AND MAXIMUM INSPECTION/MAINTENANCE PORT SPACING.
2. THIS TYPICAL DETAIL IS PROVIDED FOR DESIGN DIRECTION AND IS FOR REFERENCE ONLY. DETAIL MUST BE CERTIFIED BY A PROFESSIONAL ENGINEER IF INCLUDED AS PART OF THE SITE PLAN APPLICATION OR DRAFT PLAN OF SUBDIVISION, AS APPLICABLE.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
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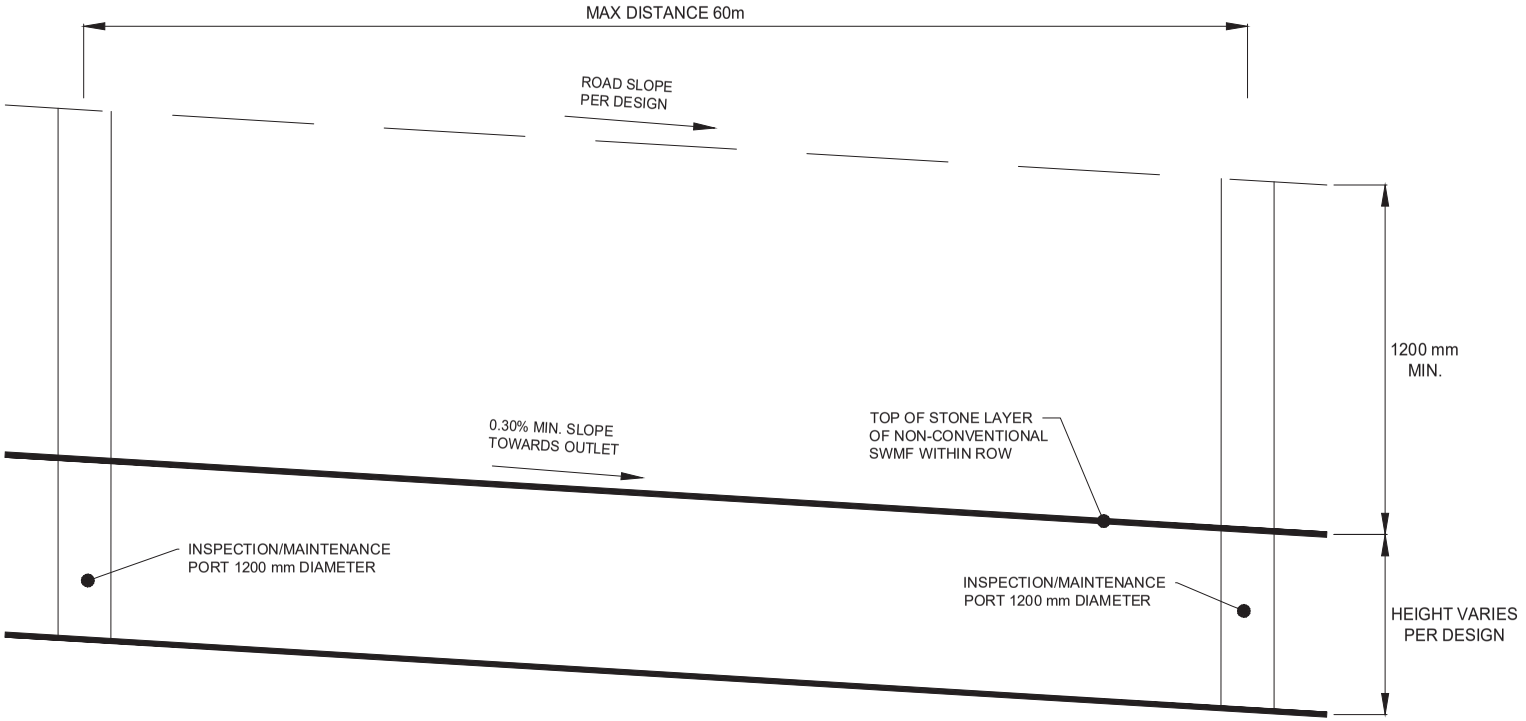
VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

CONCEPTUAL STORM SEWER CONNECTION TO NON-CONVENTIONAL SWMF DETAIL

NOT TO SCALE
DESIGNED: _____
REVISION: _____
DATE: JAN. 2025

STD. DWG.
S - 126



mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

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VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

CONCEPTUAL NON-CONVENTIONAL SWMF WITHIN ROW LAYOUT

NOT TO SCALE DESIGNED: _____

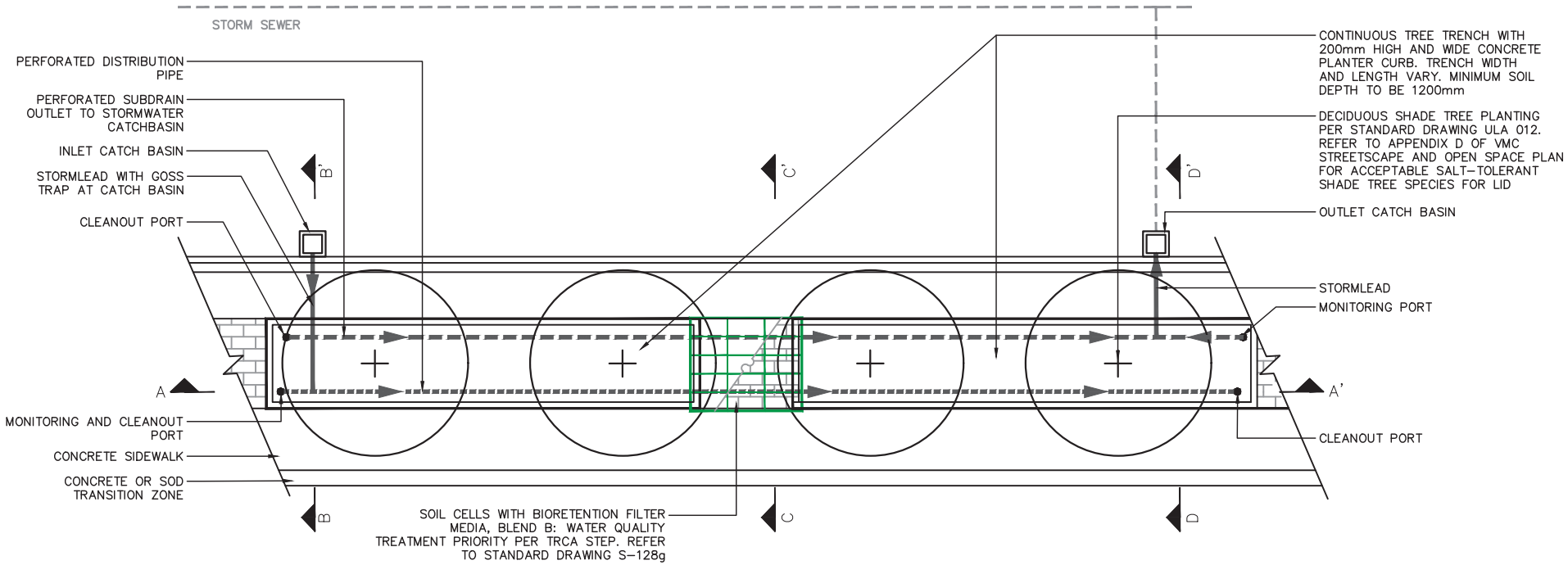
REVISION: _____ DATE: JAN. 2025

STD. DWG.

S - 127

NOTES:

1. DETAIL REPRESENTS MAXIMUM DEPTH TO NON-CONVENTIONAL SWMF'S WITHIN PROPOSED ROW'S AND MAXIMUM INSPECTION/MAINTENANCE PORT SPACING.
2. THIS TYPICAL DETAIL IS PROVIDED FOR DESIGN DIRECTION AND IS FOR REFERENCE ONLY. DETAIL MUST BE CERTIFIED BY A PROFESSIONAL ENGINEER IF INCLUDED AS PART OF THE SITE PLAN APPLICATION OR DRAFT PLAN OF SUBDIVISION, AS APPLICABLE.



NOTES:

1. ALL MEASUREMENTS IN MILLIMETERS UNLESS STATED OTHERWISE.
2. STORMWATER MANAGEMENT TREE TRENCH TO PROVIDE WATER QUALITY CONTROL VIA FILTRATION FOR RIGHT-OF-WAY RUNOFF AND SUPPORT TREE HEALTH AND GROWTH.
3. APPLICANT IS REQUIRED TO PROVIDE SUPPORTING CALCULATIONS FOR QUALITY CONTROL INCLUDING LID FOOTPRINT AND/OR DEPTH. REFER TO STANDARD DRAWING S-128f FOR TRCA LID SIZING CALCULATOR.
4. EACH TREE TO HAVE ACCESS TO A MINIMUM FOR 20M^3 OF BIORETENTION MEDIA IN A SHARED TREE PLANTER OR 30M^3 IN A STANDALONE TREE PLANTER, AS PER CITY OF VAUGHAN STANDARD DETAIL ULA 014.
5. MONITORING AND CLEANOUT PORTS ARE TO BE CAPPED AND SECURED WITH VANDAL-PROOF FASTENERS.
6. ENSURE LID DESIGN ALLOWS FOR DRAINAGE AWAY FROM ANY EXISTING OR PROPOSED BUILDINGS.
7. THIS TYPICAL DETAIL IS PROVIDED FOR DESIGN DIRECTION AND IS FOR REFERENCE ONLY. DETAILED DESIGN MUST BE CERTIFIED BY A PROFESSIONAL ENGINEER.
8. REFER TO THE CITY OF VAUGHAN'S ENGINEERING DESIGN CRITERIA, SECTION 1.3.6.2 STORMWATER MANAGEMENT TREE TRENCH FOR ADDITIONAL INFORMATION.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

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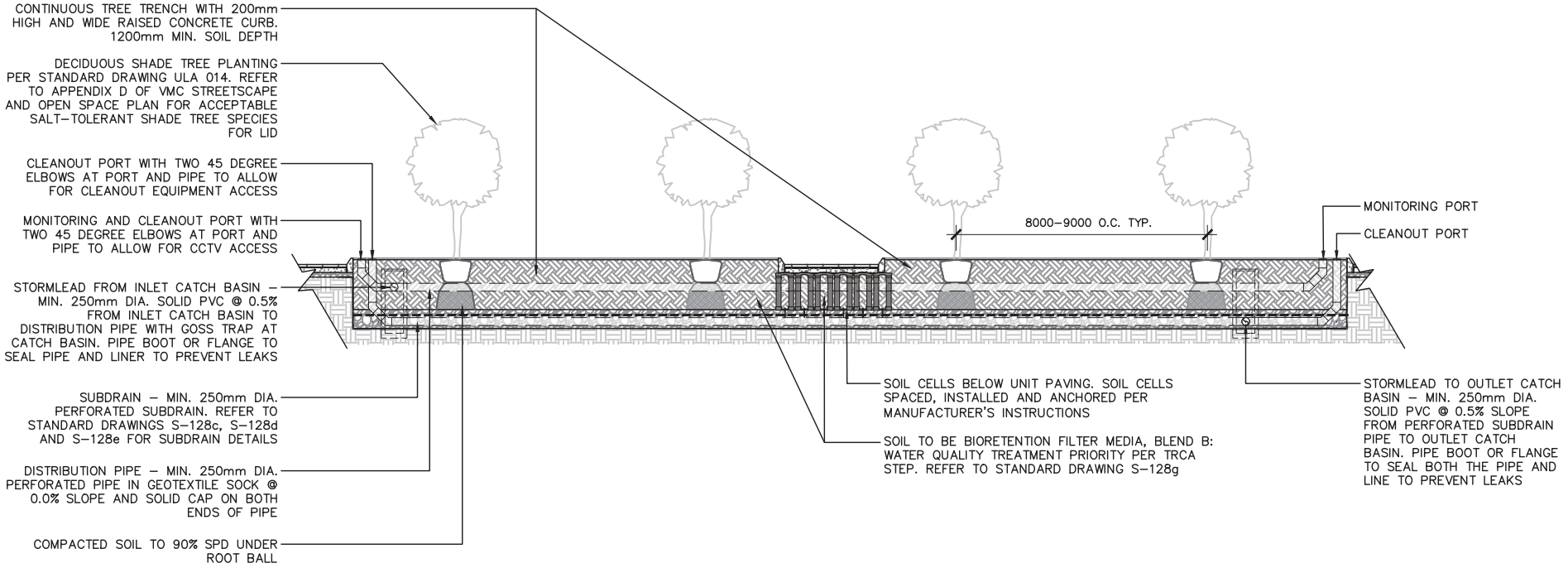
VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

STORMWATER MANAGEMENT TREE TRENCH PLAN VIEW

NOT TO SCALE | DESIGNED: PPSP | REVISION: | DATE: AUG. 2025

STD. DWG. S - 128a



NOTES:
1. ALL MEASUREMENTS IN MILLIMETERS UNLESS STATED OTHERWISE.
2. STORMWATER MANAGEMENT TREE TRENCH TO PROVIDE WATER QUALITY CONTROL VIA FILTRATION FOR RIGHT-OF-WAY RUNOFF AND SUPPORT TREE HEALTH AND GROWTH.
3. APPLICANT IS REQUIRED TO PROVIDE SUPPORTING CALCULATIONS FOR QUALITY CONTROL INCLUDING LID FOOTPRINT AND/OR DEPTH. REFER TO STANDARD DRAWING S-128f FOR TRCA LID SIZING CALCULATOR.
4. EACH TREE TO HAVE ACCESS TO A MINIMUM FOR 20M^3 OF BIORETENTION MEDIA IN A SHARED TREE PLANTER OR 30M^3 IN A STANDALONE TREE PLANTER, AS PER CITY OF VAUGHAN STANDARD DETAIL ULA 014.
5. MONITORING AND CLEANOUT PORTS ARE TO BE CAPPED AND SECURED WITH VANDAL-PROOF FASTENERS.
6. ENSURE LID DESIGN ALLOWS FOR DRAINAGE AWAY FROM ANY EXISTING OR PROPOSED BUILDINGS.
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8. REFER TO THE CITY OF VAUGHAN'S ENGINEERING DESIGN CRITERIA, SECTION 1.3.6.2 STORMWATER MANAGEMENT TREE TRENCH FOR ADDITIONAL INFORMATION.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

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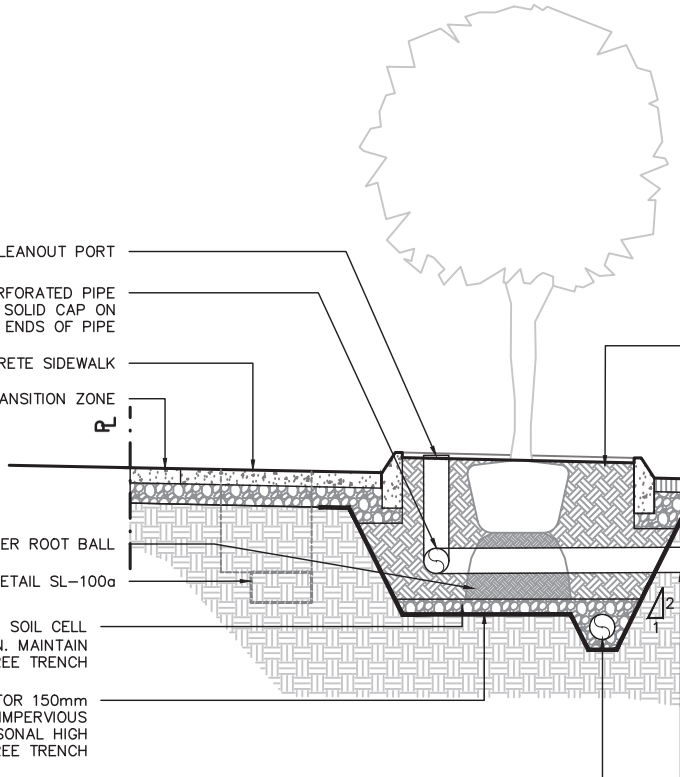
VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

STORMWATER MANAGEMENT TREE TRENCH PROFILE

NOT TO SCALE | DESIGNED: PPSP | REVISION: | DATE: AUG. 2025

STD. DWG. S - 128b



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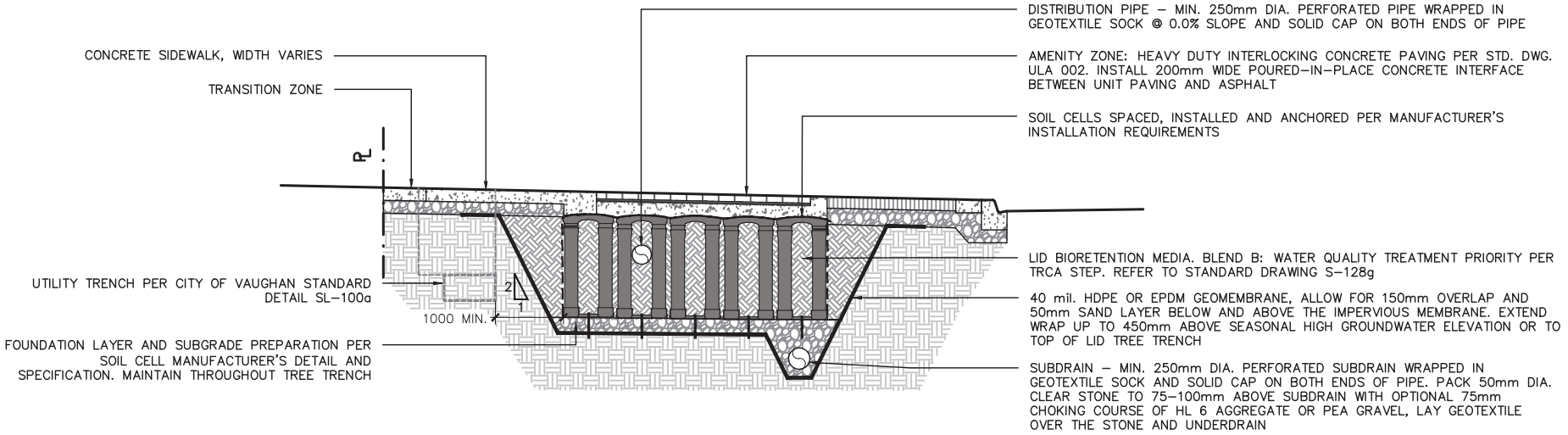
NOTES:
1. ALL MEASUREMENTS IN MILLIMETERS UNLESS STATED OTHERWISE.
2. STORMWATER MANAGEMENT TREE TRENCH TO PROVIDE WATER QUALITY CONTROL VIA FILTRATION FOR RIGHT–OF–WAY RUNOFF AND SUPPORT TREE HEALTH AND GROWTH.
3. APPLICANT IS REQUIRED TO PROVIDE SUPPORTING CALCULATIONS FOR QUALITY CONTROL INCLUDING LID FOOTPRINT AND/OR DEPTH. REFER TO STANDARD DRAWING S–128f FOR TRCA LID SIZING CALCULATOR.
4. EACH TREE TO HAVE ACCESS TO A MINIMUM FOR 20M³ OF BIORETENTION MEDIA IN A SHARED TREE PLANTER OR 30M³ IN A STANDALONE TREE PLANTER, AS PER CITY OF VAUGHAN STANDARD DETAIL ULA 014.
5. MONITORING AND CLEANOUT PORTS ARE TO BE CAPPED AND SECURED WITH VANDAL–PROOF FASTENERS.
6. ENSURE LID DESIGN ALLOWS FOR DRAINAGE AWAY FROM ANY EXISTING OR PROPOSED BUILDINGS.
7. THIS TYPICAL DETAIL IS PROVIDED FOR DESIGN DIRECTION AND IS FOR REFERENCE ONLY. DETAILED DESIGN MUST BE CERTIFIED BY A PROFESSIONAL ENGINEER.
8. REFER TO THE CITY OF VAUGHAN'S ENGINEERING DESIGN CRITERIA, SECTION 1.3.6.2 STORMWATER MANAGEMENT TREE TRENCH FOR ADDITIONAL INFORMATION.

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

STORMWATER MANAGEMENT TREE TRENCH INLET CROSS-SECTION

NOT TO SCALE	DESIGNED: PPSP	STD. DWG.
REVISION:	DATE: AUG. 2025	S - 128c



NOTES:
1. ALL MEASUREMENTS IN MILLIMETERS UNLESS STATED OTHERWISE.
2. STORMWATER MANAGEMENT TREE TRENCH TO PROVIDE WATER QUALITY CONTROL VIA FILTRATION FOR RIGHT–OF–WAY RUNOFF AND SUPPORT TREE HEALTH AND GROWTH.
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4. EACH TREE TO HAVE ACCESS TO A MINIMUM FOR 20M³ OF BIORETENTION MEDIA IN A SHARED TREE PLANTER OR 30M³ IN A STANDALONE TREE PLANTER, AS PER CITY OF VAUGHAN STANDARD DETAIL ULA 014.
5. MONITORING AND CLEANOUT PORTS ARE TO BE CAPPED AND SECURED WITH VANDAL–PROOF FASTENERS.
6. ENSURE LID DESIGN ALLOWS FOR DRAINAGE AWAY FROM ANY EXISTING OR PROPOSED BUILDINGS.
7. THIS TYPICAL DETAIL IS PROVIDED FOR DESIGN DIRECTION AND IS FOR REFERENCE ONLY. DETAILED DESIGN MUST BE CERTIFIED BY A PROFESSIONAL ENGINEER.
8. REFER TO THE CITY OF VAUGHAN'S ENGINEERING DESIGN CRITERIA, SECTION 1.3.6.2 STORMWATER MANAGEMENT TREE TRENCH FOR ADDITIONAL INFORMATION.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

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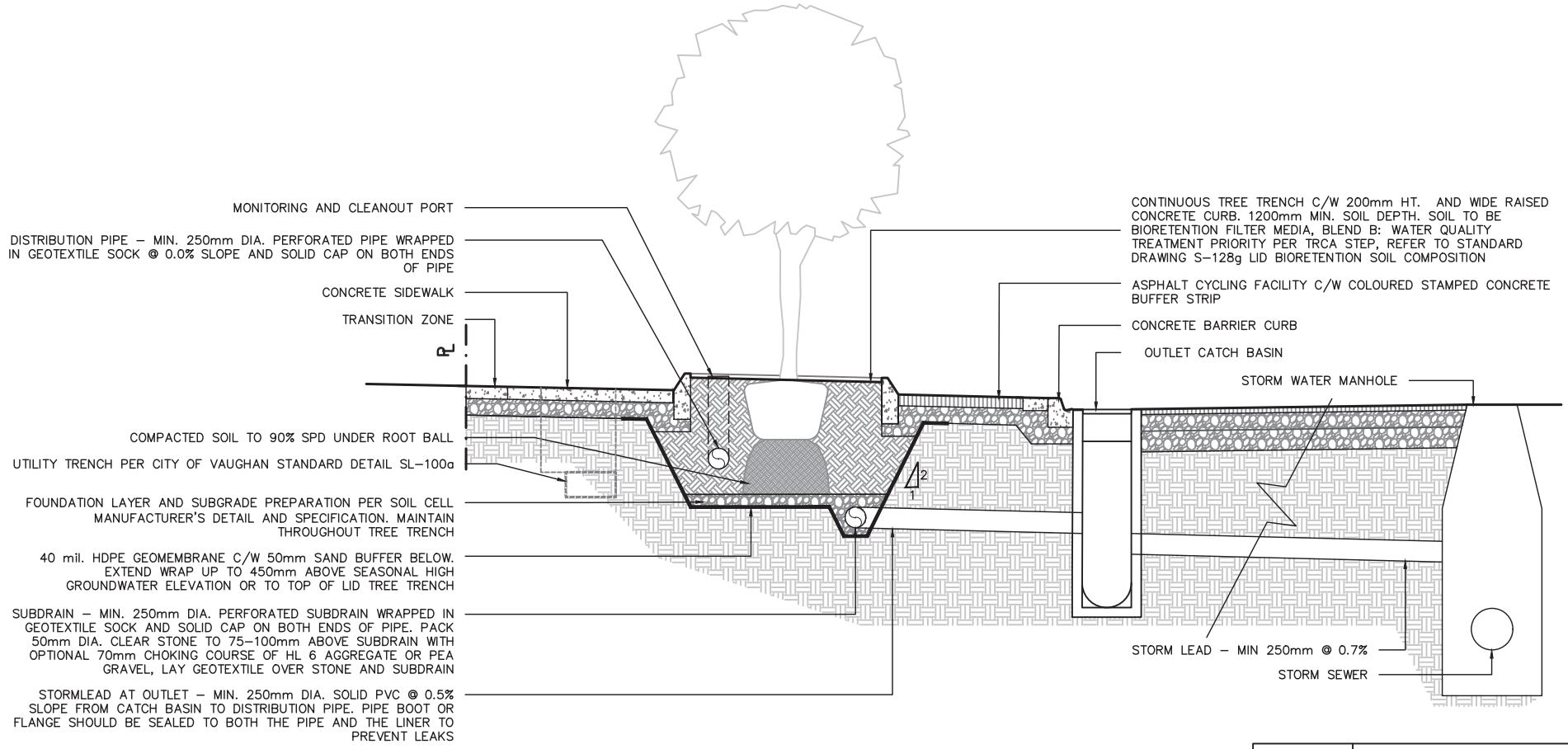
VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

STORMWATER MANAGEMENT TREE TRENCH SOIL CELL CROSS-SECTION

NOT TO SCALE | DESIGNED: PPSP | REVISION: | DATE: AUG. 2025

STD. DWG. S - 128d



NOTES:
1. ALL MEASUREMENTS IN MILLIMETERS UNLESS STATED OTHERWISE.
2. STORMWATER MANAGEMENT TREE TRENCH TO PROVIDE WATER QUALITY CONTROL VIA FILTRATION FOR RIGHT–OF–WAY RUNOFF AND SUPPORT TREE HEALTH AND GROWTH.
3. APPLICANT IS REQUIRED TO PROVIDE SUPPORTING CALCULATIONS FOR QUALITY CONTROL INCLUDING LID FOOTPRINT AND/OR DEPTH. REFER TO STANDARD DRAWING S–128f FOR TRCA LID SIZING CALCULATOR.
4. EACH TREE TO HAVE ACCESS TO A MINIMUM FOR 20M³ OF BIORETENTION MEDIA IN A SHARED TREE PLANTER OR 30M³ IN A STANDALONE TREE PLANTER, AS PER CITY OF VAUGHAN STANDARD DETAIL ULA 014.
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7. THIS TYPICAL DETAIL IS PROVIDED FOR DESIGN DIRECTION AND IS FOR REFERENCE ONLY. DETAILED DESIGN MUST BE CERTIFIED BY A PROFESSIONAL ENGINEER.
8. REFER TO THE CITY OF VAUGHAN'S ENGINEERING DESIGN CRITERIA, SECTION 1.3.6.2 STORMWATER MANAGEMENT TREE TRENCH FOR ADDITIONAL INFORMATION.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

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VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

STORMWATER MANAGEMENT TREE TRENCH OUTLET CROSS-SECTION

NOT TO SCALE | DESIGNED: PPSP
REVISION: _____ | DATE: AUG. 2025

STD. DWG. S - 128e

LID NOTE:

1. LID SIZING BASED ON TRCA'S STEP SIZING TOOL, ACCESSIBLE VIA THE FOLLOWING LINK:
   https://wiki.sustainabletechnologies.ca/wiki/Bioretention:_Sizing_and_modeling
   USING THE "Download the infiltration practice sizing tool" TAB AT THE BOTTOM OF THE WEBPAGE.
2. SCREENCAPTURE BELOW IS PROVIDED FOR REFERENCE ONLY.
3. SWM TREE TRENCH MUST BE STAMPED AND SIGNED BY A QUALIFIED PROFESSIONAL ENGINEER FOR THE DESIGN OF THE LID.

Runoff is directed to a surface ponding area		**Find BMP area**		**Find required BMP depth**		**Runoff is directed to an Internal Water Storage (IWS) Reservoir**
Size surface ponding footprint area, A_p (m_2) based on volume required to capture design storm runoff $A_p = (i*D*A_I)/[d_p' + (K_f*D)]$		Size based on required storage reservoir footprint area, A_r (m^2) $A_r = (i*D*A_I)/[d_i + (f'*D)]$		Size based on required active storage reservoir depth, d_r (m) $d_r = D*[(R*i) - f']*1/n$		Size based on required active storage reservoir footprint area, A_r (m^2) $A_r = (i*D*A_I)/[d_i + (f'*D)]$ (see Depth of infiltration practice is constrained, and/or Drainage area and infiltration practice footprint area are fixed equations)
Catchment impervious area, A_I (m^2)	1000	Catchment impervious area, A_I (m^2)	1000	Catchment impervious area, A_I (m_2)	1000	
Effective depth of surface ponding, d_p' (m)	0.2	Depth of the active storage reservoir, $d_r = (f'*t)/n$ (m)	0.36	Ratio of catchment impervious area to practice permeable (footprint) area, R	6	
Measured infiltration rate of native soil, f (mm/h)	5	Measured infiltration rate of native soil, f (mm/h)	5	Measured infiltration rate of native soil, f (mm/hr)	5	
Infiltration safety factor, z	2.5	Infiltration safety factor, z	2.5	Infiltration safety factor, z	2.5	
Design storm duration, D (h)	4	Design storm duration, D (h)	4	Design storm duration, D (h)	4	
Design storm intensity, i (mm/h)	6.25	Design storm intensity, i (mm/h)	6.25	Design storm intensity, i (mm/h)	6.25	
Minimum saturated hydraulic conductivity of filter media, K_f (mm/h)	75	Porosity of Internal Water Storage (IWS) Reservoir fill material, n	0.4	Porosity of Internal Water Storage (IWS) Reservoir fill material, n	0.4	
Required surface ponding area, A_p (m^2)	**50.00**	**Required storage reservoir footprint area, A_r (m^2)**	**164.47**	**Required active storage reservoir depth, d_r (m)**	**0.36**	
sign infiltration rate of the native soil, f' = (f/1000)/z (m/h)	0.002	Design infiltration rate of the native soil, f' = (f/1000)/z (m/h)	0.002	Design infiltration rate of the native soil, f' = (f/1000)/z (m/h)	0.002	
Estimated time required to drain surface ponding assuming 1D drainage (h)	**2.7**	**Estimated time required to drain the Internal Water Storage (IWS) Reservoir assuming 1D drainage (h), $(d_r*n)/f'$**	**72.0**	**Estimated time required to drain the storage reservoir assuming 1D drainage (h), $(d_r*n)/f'$**	**71.0**	
Ratio of catchment impervious area to practice permeable (footprint) area or I/P ratio, R	**20**	**Ratio of catchment impervious area to practice permeable (footprint) area or I/P ratio, R**	**6**	R*i (m/h)	0.038	
Total water storage volume required, $i*D*A_I$ (m^3)	25.0	Total water storage volume required, $i*D*A_I$ (m^3)	25.0	(R*i)-f' (m/h)	0.0355	
Water depth drained by percolation through the filter media during the design storm. K_f*D (m)	0.300	Water storage depth of Internal Water Storage (IWS) Reservoir, $d_i = d_r*n$ (m)	0.144	D*[(R*i)-f']	0.142	
		Water depth drained by infiltration during design storm, f'*D (m)	0.008	Adapted from CIRIA C753 'The SUDS Manual' (2015)		
		Infiltration water storage + drainage depth, di + (f'*D) (m)	0.152			

Parameter	Recommended range
Ratio of catchment impervious area to practice permeable (footprint) area, or I/P ratio, R	5 to 20
Internal Water Storage (IWS) Reservoir depth, d_r (m)	0.3 to 2.0
Time to fully drain surface ponding (h)	24 to 48
Time to fully drain the Internal Water Storage (IWS) Reservoir (h)	criteria (e.g. 48 to 72 h) or based on long-term average inter-event period for the

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

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VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

STORMWATER MANAGEMENT TREE TRENCH TRCA LID SIZING CALCULATOR

NOT TO SCALE | DESIGNED: PPSP | REVISION: _____ | DATE: AUG. 2025

STD. DWG. S - 128f

BIORETENTION MEDIA:

1. LID BIORETENTION MEDIA IS TO BE "BIORETENTION FILTER MEDIA, BLEND B" AS PER CITY OF TORONTO STANDARDS, BASED ON TORONTO AND REGION CONSERVATION AUTHORITY'S (TRCA) SUSTAINABLE TECHNOLOGY EVALUATION PROGRAM (STEP), TO PROVIDE WATER QUALITY WHILE SUPPORTING TREE GROWTH.
2. BELOW GRAPHIC IS PROVIDED FOR REFERENCE ONLY.

For bioretention and rain gardens requiring high infiltration or pre-treatment mix to the following proportions, by volume:

Topsoil	2 parts topsoil
Coarse sand	3 parts sand
Organic components	1 part organic soil components (leaf and yard waste compost and/or pine bark fines)

The growing medium shall meet the following parameters:

Media specification	**Site-specific goal**	
	Infiltration *Above mix proportions may need to be adjusted to accommodate a greater proportion of sand.*	**Treatment**
Soil particle size distribution		
Sand (0.05 – 2 mm.)	75-90%	65-75%
Silt (0.002 - 0.05 mm)	7-22%	13-30%
Clay (< 0.002 mm)	3-15%	3-15%
Gravel (2.0 – 64 mm.)	less than or equal to 10%	
Chemical analysis	pH: 6.0 – 8.0	
Plant Available Nutrient Levels (ppm)		
Phosphorous	10 – 40	
Potassium	80 – 250	
Calcium	< 5000	
Magnesium	100 – 300	
Percent organic matter	3-10%	
Hydraulic conductivity, saturated, sample compacted to 75-85% maximum dry density.	0.0021-0.0083 cm/s (75-300 mm/h)	6.9 x 10-4 -0.0021 cm/s (25-75 mm/ h)
Cation exchange capacity	> 10 meq/100 g	> 10 meq/100 g

Notes: [1] The component mix above is generated from the Sustainable Technologies Evaluation Program (STEP) for filter media: wiki.sustainabletechnologies.ca/wiki/Bioretention:_Filter_media

[2] The media specifications above are generated from the CSA W-200-18 Design of Bioretention Systems.

[3] Contractors should note that where test results fall outside of specified ranges, the Contract Administrator will examine the extent of variance, as well as any recommendations from the testing laboratory, and determine whether the soil will be accepted, amended or rejected.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

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	REVISIONS	DATE

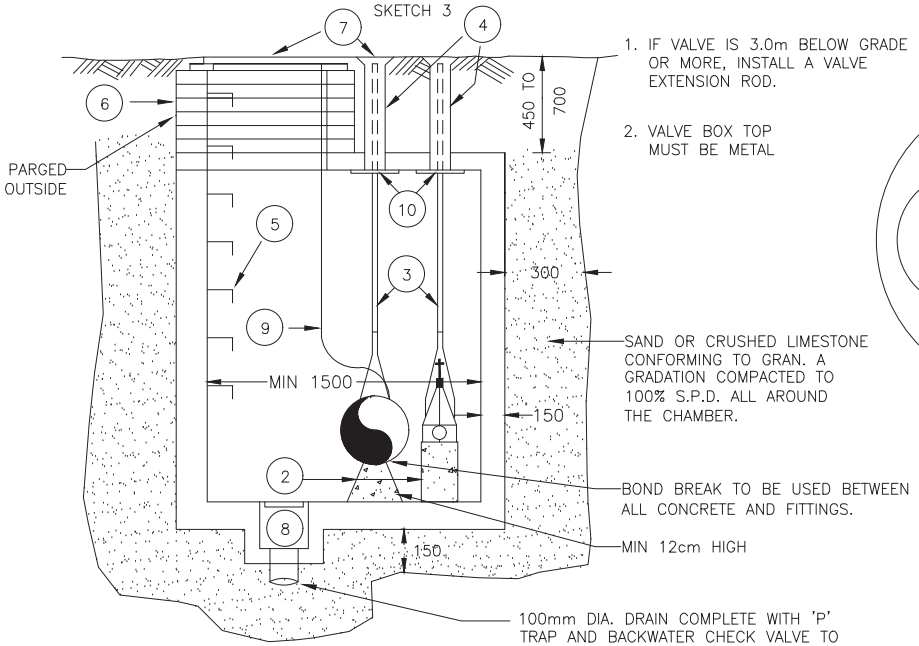
VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

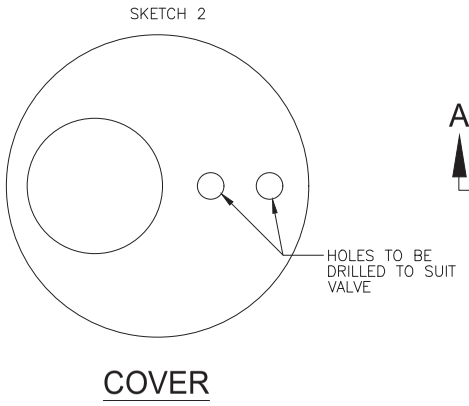
STORMWATER MANAGEMENT TREE TRENCH BIORETENTION MEDIA

NOT TO SCALE | DESIGNED: PPSP | REVISION: | DATE: AUG. 2025

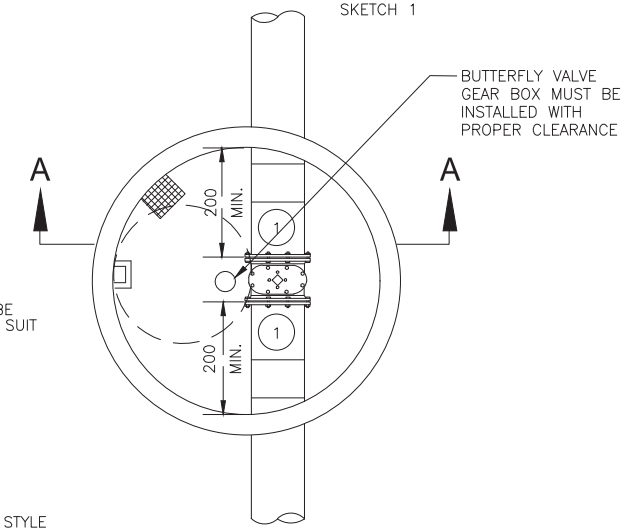
STD. DWG. S - 128g

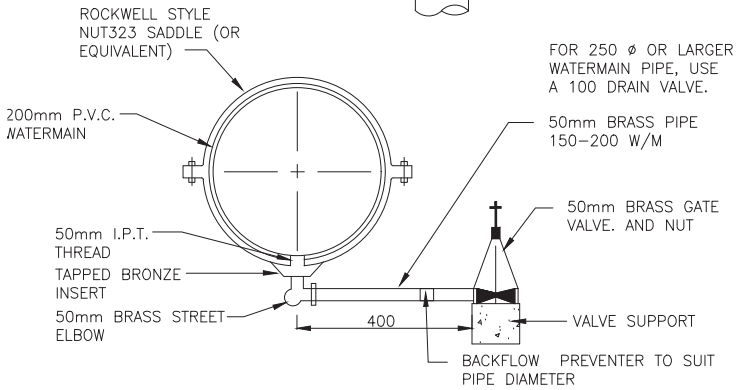


SECTION A - A



COVER





DRAIN VALVE DETAIL WHEN REQUIRED

NOTES

1. CHAMBER TO BE DESIGNED FOR H20 LOADING AT 300mm COVER.
2. VALVES SHALL BE FLANGED TYPE, COMPLETE WITH MECHANICAL JOINT FLANGE ADAPTER.
3. CATHODIC PROTECTION REQUIRED ON ALL METALLIC FITTINGS.
4. LINE VALVES TO OPEN CLOCKWISE EAST OF HWY. 400 OR NORTH OF RUTHERFORD RD., ALL OTHERS TO OPEN COUNTER–CLOCKWISE. (SEE STD. DWG. W–110)
5. FOR PRE–CAST CHAMBER ALL JOINTS SHALL BE SET IN A MORTAR BED AND PARGED OUTSIDE.
6. VALVES UP TO AND INCLUDING 400 mm DIAMETER SHALL BE GATE VALVES OF THE RESILIENT WEDGE TYPE, AWWA STANDARD C509. VALVES LARGER THAN 400mm SHALL BE BUTTERFLY VALVES OR AS SPECIFIED BY THE CITY.
7. RESTRAINTS REQUIRED INSIDE CHAMBER. RESTRAINTS OUTSIDE CHAMBER REQUIRED IN ACCORDANCE WITH STD. DWG. W–105.

LEGEND

(1) WATERMAIN PIPE (SKETCH 1)
(2) CONCRETE VALVE SUPPORT (MIN. 12cm)
(3) SOLID STEEL EXTENSION STEM
(4) VALVE BOX TOP SECTION
(5) ALUMINUM RUNGS AS PER OPSD 406.010
(6) PRECAST CONCRETE ADJUSTER RINGS TO BE MAX. 300 mm OTHERWISE POURED COLLARS ARE TO BE USED IN CONJUNCTION WITH RINGS.
(7) VALVE CHAMBER FRAME & COVER TO BE AS PER OPSD 401.010, LABELLED WATER SET TO FINISHED GRADE.
(8) 400 x 400 x 150 DEEP SUMP WITH REMOVABLE GALVANIZED GRATE.
(9) BRING TRACER WIRE (AWG #9) TO MODULOC UNDER LID WITH ELECTRICAL CLIP ENDS ATTACHED/FASTENED TO THE TOPMOST PORTION OF THE CHAMBER WALL
(10) 6.5m GALV. STEEL PLATE GUIDE FOR STEM EXTENSION PER OPSD 1101.020
(11) VALVE CHAMBER COVER & VALVE BOXES TO BE SET TO FINISH GRADE.

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VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

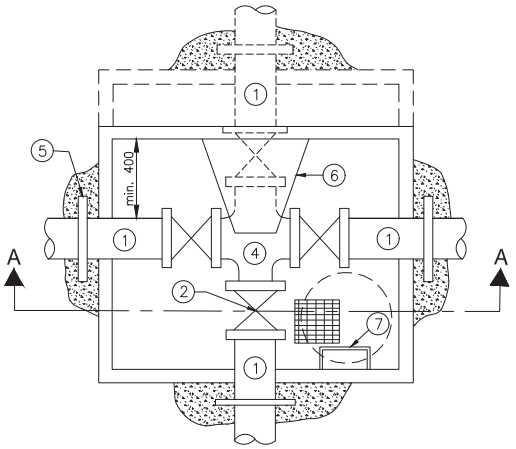
SINGLE VALVE IN CHAMBER

NOT TO SCALE | DESIGNED: _____ | STD. DWG. W - 101

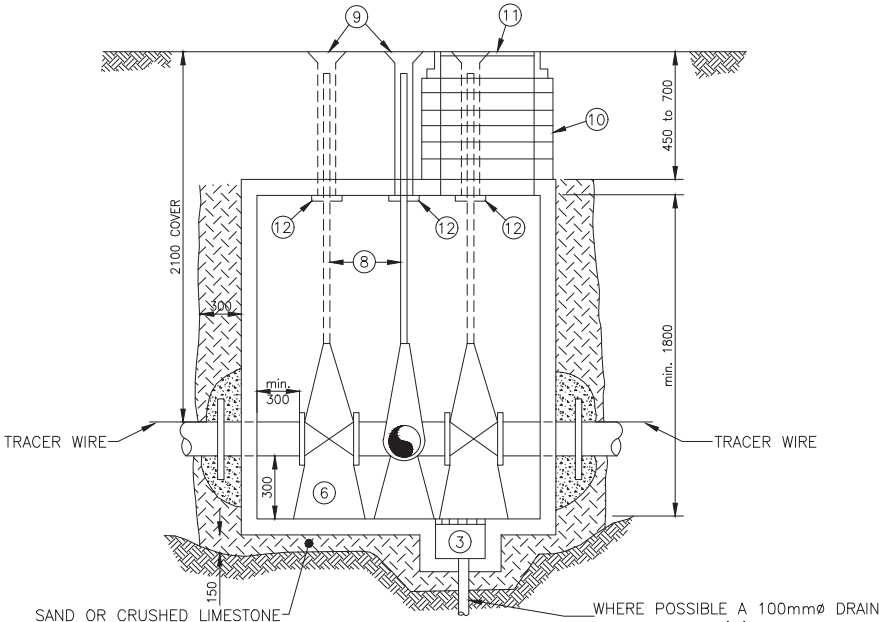
REVISION: _____ | DATE: DEC. 2020

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

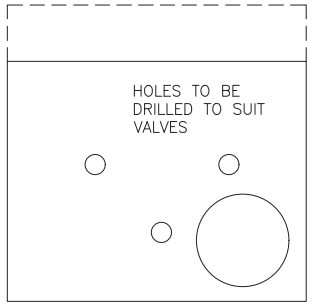
FILE: O:\Infrastructure Delivery\Infrastructure Programming\PMO\City Standards\Design Criteria 2020-21\City Standards Update Folder\CoVStandardDrawings_CAD_2021\W-101 - Single Valve in Chamber.dwg



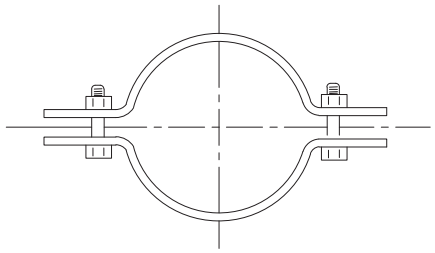
PLAN



SECTION A - A



COVER



TYPICAL PIPE ANCHOR

NOTES

1. CHAMBER TO BE DESIGNED FOR H20 LOADING AT 300mm COVER.
2. VALVES SHALL BE FLANGED TYPE, COMPLETE WITH MECHANICAL JOINT FLANGE ADAPTER.
3. CATHODIC PROTECTION REQUIRED ON ALL METALLIC FITTINGS.
4. LINE VALVES TO OPEN CLOCKWISE EAST OF HWY. 400 OR NORTH OF RUTHERFORD RD., ALL OTHERS TO OPEN COUNTER-CLOCKWISE. (SEE STD. DWG. W-110)
5. FOR PRE-CAST CHAMBER, ALL JOINTS SHALL BE SET IN A MORTAR BED AND PARGED OUTSIDE.
6. RESTRAINTS REQUIRED INSIDE CHAMBER. RESTRAINTS OUTSIDE CHAMBER REQUIRED IN ACCORDANCE WITH STD. DWG. W-105.
7. VALVES UP TO AND INCLUDING 400mm DIA. SHALL BE GATE VALVE OF THE RESILIENT WEDGE TYPE. TYPE AWWA STANDARD C509. VALVES LARGER THAN 400mm SHALL BE BUTTERFLY VALVE OR AS SPECIFIED BY THE CITY
8. USE CONCRETE JOINT TAPE BETWEEN LAYERS OF GRADE ADJUSTMENT UNITS.

LEGEND

(1) PIPE SECTIONS WITH UNIFLANGE FITTINGS THROUGH CHAMBER WALLS.
(2) FLANGE GATE VALVES
(3) 300x300x150 DEEP SUMP WITH REMOVABLE GLAVANIZED GRATE
(4) FLANGE TEE OR CROSS
(5) PIPE ANCHOR EMBEDDED IN CONCRETE
(6) POURED CONCRETE SUPPORT AND THRUST BLOCKS WITH BOND BREAK FOR VALVES, TEES & CROSSES.
(7) ALUMINUM RUNGS AS PER OPSD 406.010
(8) SOLID STEEL EXTENSION STEM.
(9) VALVE BOX TOP SECTION, EACH VALVE SET TO FINISH GRADE
(10) PRECAST CONCRETE ADJUSTER RINGS TO BE MAX. 300 mm OTHERWISE POURED COLLARS ARE TO BE USED IN CONJUNCTION WITH RINGS.
(11) VALVE CHAMBER FRAME & COVER TO BE AS PER OPSD 401.010, LABELLED WATER SET TO FINISHED GRADE.
(12) 6.5mm GALV. STEEL PLATE GUIDE FOR STEM EXTENSION PER O.P.S.D. 1101.020.
(13) TRACER WIRE (AWG #9) - INDEPENDENT TRACER WIRE ON EACH SECTION OF PIPE & LABELLED.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
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VAUGHAN

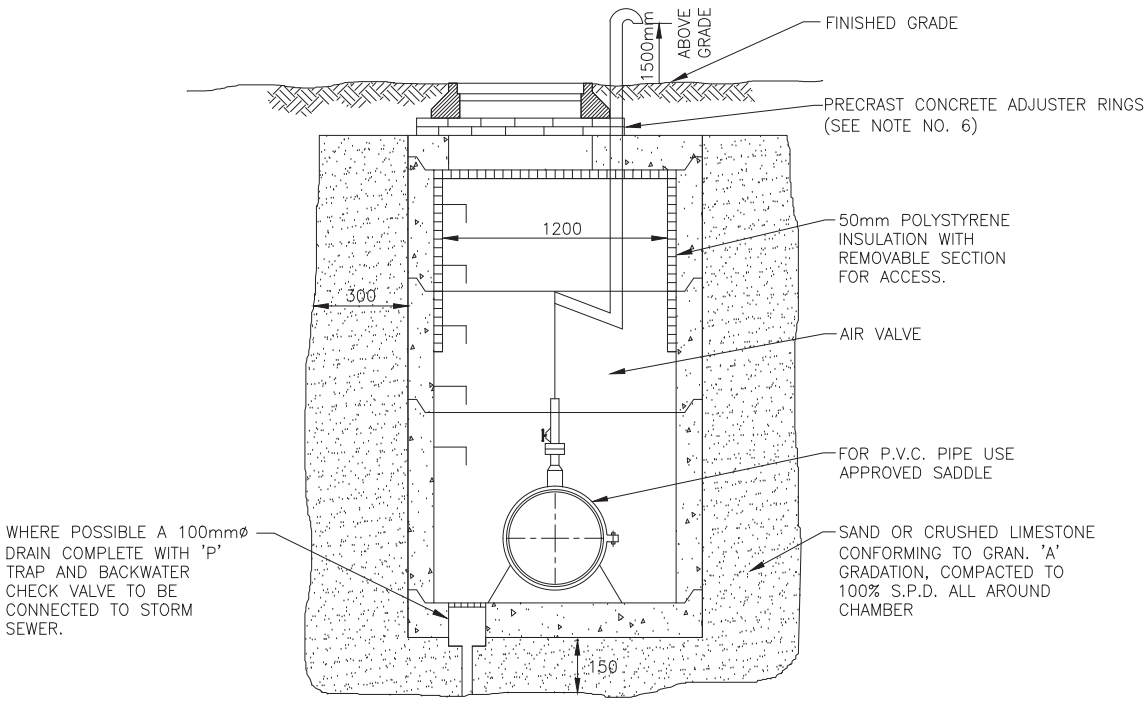
CITY OF VAUGHAN ENGINEERING STANDARD

MULTIPLE VALVE CHAMBER

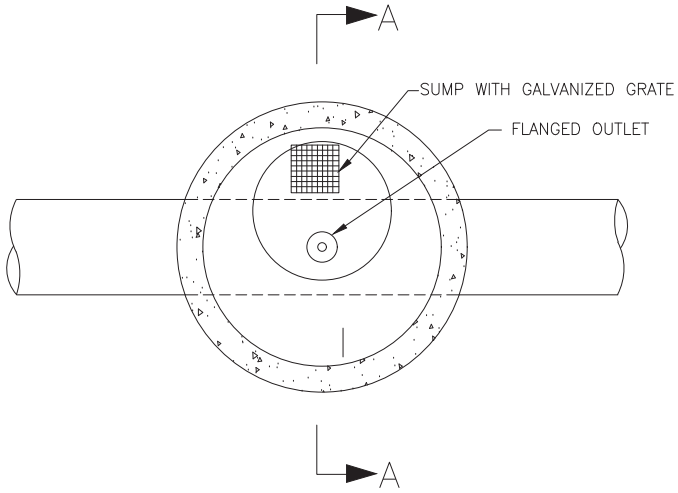
NOT TO SCALE | DESIGNED: _____ | REVISION: _____ | DATE: DEC. 2020

STD. DWG. W - 102

FILE: O:\Infrastructure Delivery\Infrastructure Programming\PMO\City Standards\Design Criteria 2020-21\City Standards Update Folder\CoVStandardDrawings_CAD_2021\W-102 - Multiple Valve Chamber.dwg



SECTION 'A-A'



PLAN

NOTES

1. 25mm,50mm AND 75mm AIR RELEASE/VACCUM VALVE TO BE STAINLESS STEEL FOR SEWAGE APPLICATIONS.
2. GATE VALVE & AIR VALVE TO BE INSULATED WITH FOAMGLASS OR APPROVED EQUAL.
3. FOR PRECAST CHAMBERS ALL JOINTS SHALL BE SET IN A MORTAR BED AND PARGED OUTSIDE.
4. CONTINUOUS RUBBER GASKET BETWEEN PRECAST LAYERS.
5. AIR VENTS TO BE INSTALLED IN BOULEVARD SECTION.
6. PRECAST CONCRETE ADJUSTER RINGS (E.G. MODULOC) TO BE MAX. 300mm OTHERWISE POURED COLLARS ARE TO BE USED IN CONJUNCTION WITH RINGS.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
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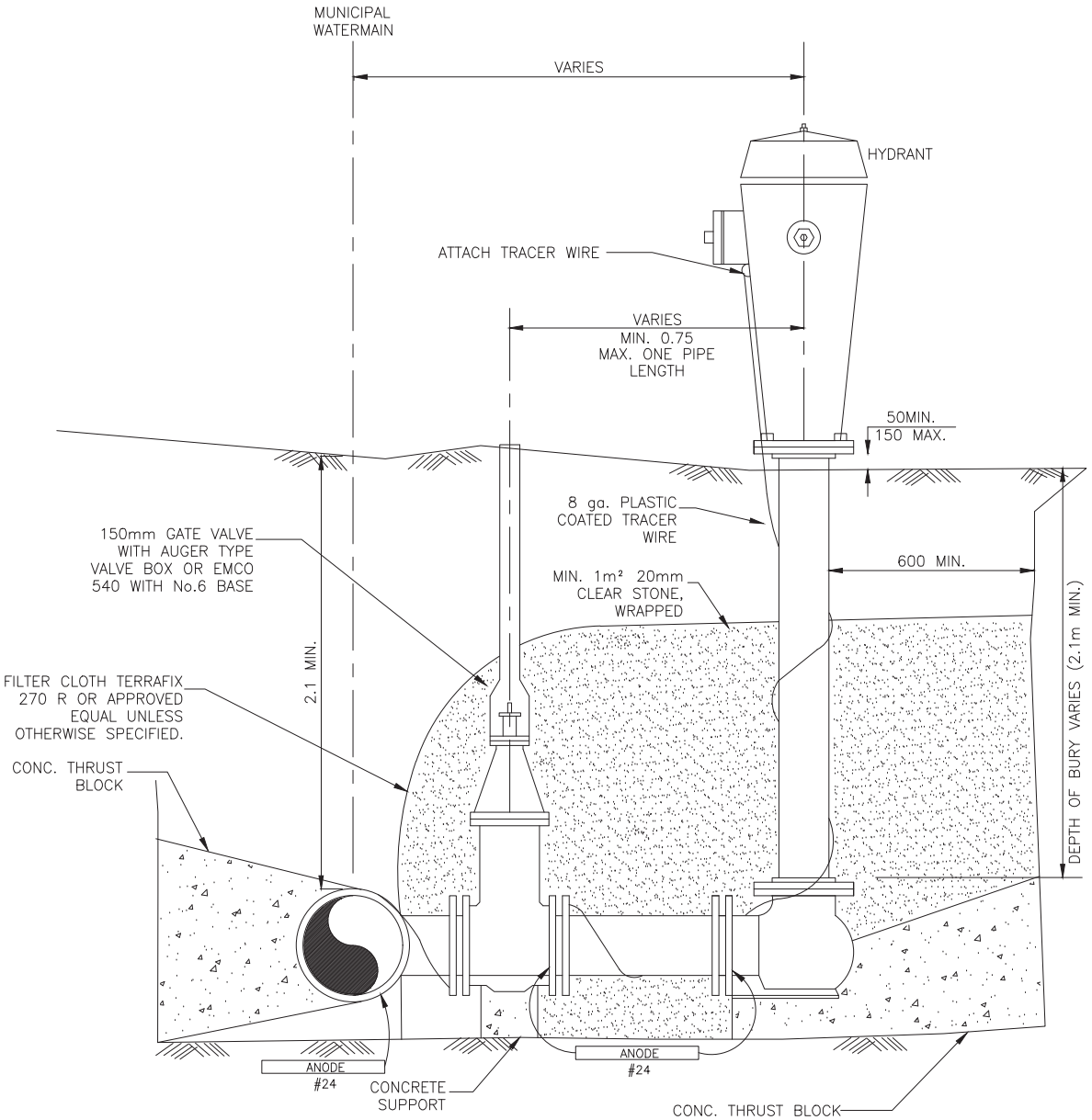
VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

AIR RELEASE VALVE CHAMBER

NOT TO SCALE | DESIGNED: _____ | STD. DWG. W - 103

REVISION: _____ | DATE: DEC. 2020



NOTES

1. ALL HYDRANTS LEADS TO BE 150mm DIA.
2. HYDRANTS TO BE DARLING "CENTURY" OR APPROVED EQUAL.
3. VALVE SHALL BE CONNECTED DIRECTLY TO MUNICIPAL WATERMAIN ANCHOR TEE UNLESS OTHERWISE DIRECTED BY THE CITY.
4. CONCRETE TO BE 20 MPa AT 28 DAYS.
5. ALL CONCRETE THRUST BLOCKS TO BE POURED AGAINST UNDISTURBED GROUND.
6. STONE SHALL BE COMPLETELY ENVELOPED BY FILTER CLOTH.
7. ALL HYDRANTS TO OPEN COUNTER CLOCKWISE.
8. DEPTH OF HYDRANT VARIES ACCORDING TO LOCAL TOPOGRAPHY.
9. 100mm DIA. STORZ CONNECTION ON PUMPER NOZZLE.
10. STORZ CONNECTIONS TO FIRE HYDRANTS TO BE PAINTED BLACK.
11. SECONDARY VALVES TO OPEN CLOCKWISE EAST OF HWY. #400 OR NORTH OF RUTHERFORD ROAD. ALL OTHERS TO OPEN COUNTERCLOCKWISE.
12. DRAIN HOLES TO BE PLUGGED IN AREAS WHERE HYDRANT VALVES ARE INSTALLED BELOW THE GROUND WATER TABLE.
13. CATHODIC PROTECTION REQUIRED ON ALL METALLIC FITTINGS.
14. POLYETHYLENE BOND BREAKER TO BE USED BETWEEN CONCRETE AND FITTINGS.
15. SECONDARY VALVES TO BE LOCATED IN BLVD. (NOT ON ROAD) AND SET TO FINISH GRADE.
16. ONCE THE TRACER WIRE HAS BEEN INSTALLED AND CONSTRUCTION IS COMPLETE, A CONTINUITY TEST SHOULD BE CONDUCTED TO CONFIRM THAT THE TRACER WIRE IS CONTINUOUS AND REMAINS INTACT. IF THERE IS A BREAKAGE IN THE WIRE, THE CONTRACTOR IS RESPONSIBLE TO REPLACE IT AT THEIR OWN COST.

	REVISIONS	DATE
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mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

VAUGHAN

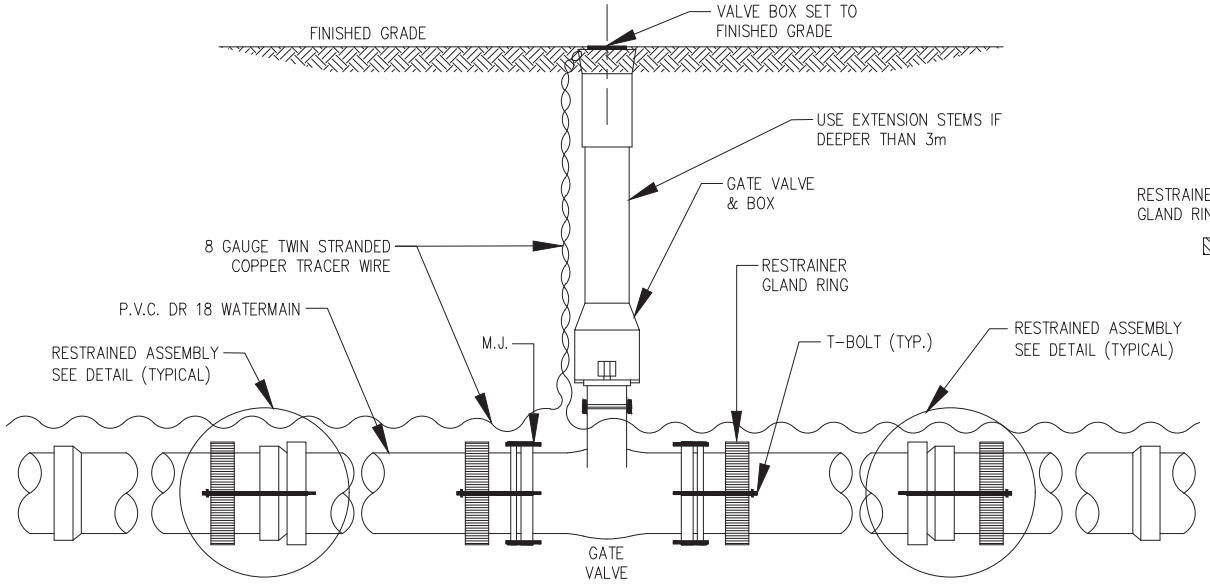
CITY OF VAUGHAN ENGINEERING STANDARD

HYDRANT INSTALLATION

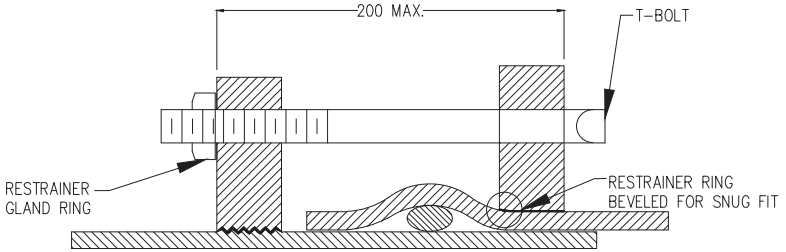
NOT TO SCALE | DESIGNED: _____ | REVISION: _____ | DATE: DEC. 2020

STD. DWG. W - 104

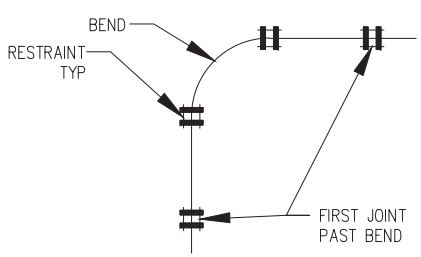
FILE: O:\Infrastructure Delivery\Infrastructure Programming\PMO\City Standards\Design Criteria 2020-21\City Standards Update Folder\CoVStandardDrawings_CAD_2021\W-104 - Hydrant Installation.dwg



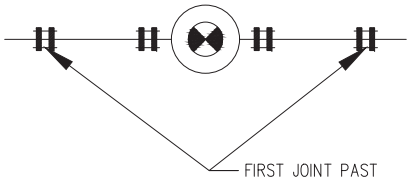
IN-LINE VALVE AND BOX



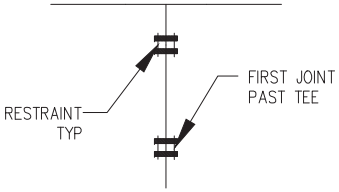
RESTRAINER ASSEMBLY DETAIL



BEND RESTRAINTS



VALVE CHAMBER EXTERNAL RESTRAINTS



TEE RESTRAINTS

NOTES

1. ALL JOINTS WITHIN 2 PIPE LENGTHS EACH SIDE FROM GATE VALVE SHALL BE RESTRAINED WITH MECHANICAL JOINT RESTRAINTS
2. MECHANICAL RESTRAINTS SHALL BE EITHER "UNIFLANGE" OR "MEGALUG" BRAND OR APPROVED EQUIVALENT, AND ARE TO BE USED AS FOLLOWS:

   AT 45°, 22½, AND 11¼ HORIZONTAL AND VERTICAL BENDS – ONE PIPE LENGTH EACH WAY;
   AT TEES – TWO PIPE LENGTHS EACH WAY;
   AT REDUCERS – TWO PIPE LENGTHS EACH WAY;
   AT DEAD END – THREE PIPE LENGTHS;
   AT VALVES – TWO PIPE LENGTHS EACH WAY (EXCLUDING VALVE CHAMBERS);

   NOTE: JOINT RESTRAINTS ARE NOT REQUIRED FOR PIPES CONNECTED WITH HDD CONNECTION JOINTS. (E.G. TERRA BRUTE OR COBRA LOCK JOINTS).
3. CATHODIC PROTECTION (6 LB ANODE) REQUIRED ON ALL RESTRAINERS.
4. WATERMAIN TO BE RESTRAINED IN ALL FILL AREAS, AREAS ANTICIPATED TO BE DISTURBED AND OR AS DIRECTED BY THE CITY
5. WATER REPELLENT COATING WRAP ALL THROW AWAY VALVES AS PER SECTION 1.5.4.6 CORROSION PROTECTION OF METALLIC FITTINGS.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

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1.	UPDATED NOTES 4 & 5	03/24
	REVISIONS	DATE

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

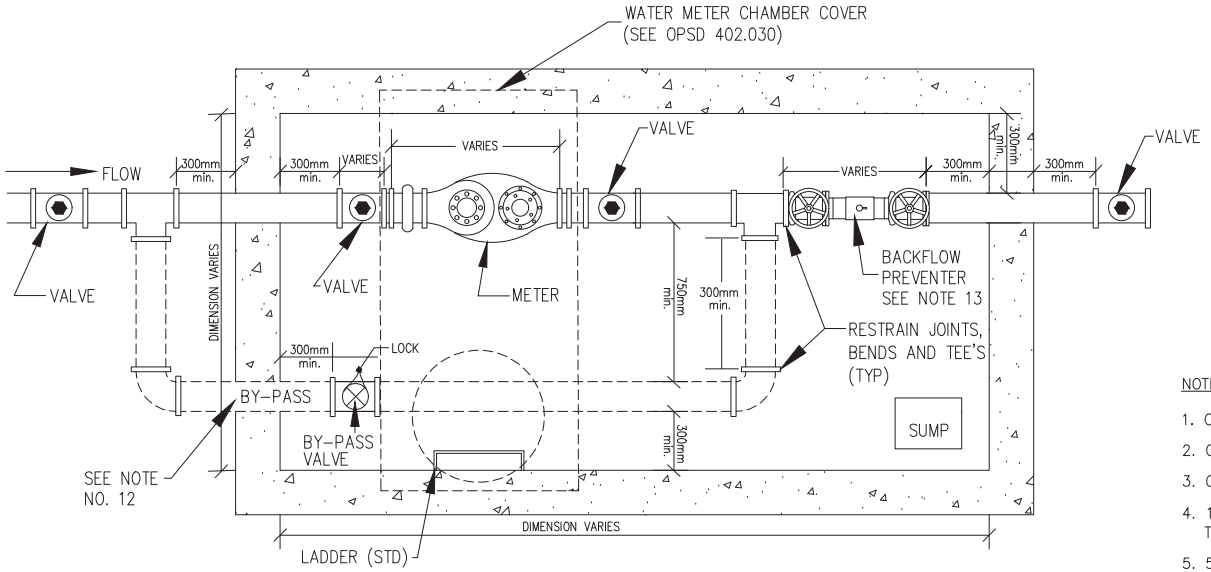
RESTRAINING OF P.V.C. WATERMAIN AT VALVES AND FITTINGS

NOT TO SCALE DESIGNED: _____

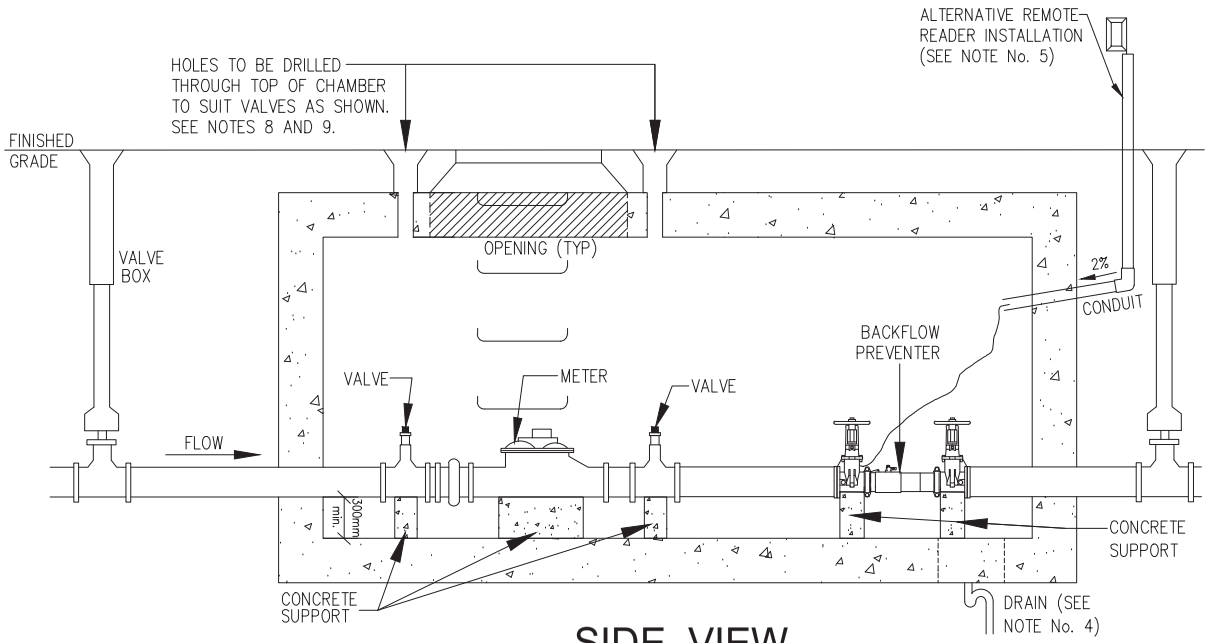
REVISION: 1 DATE: DEC. 2020

STD. DWG. W - 105

FILE: C:\Users\cudiamap\CITY OF VAUGHAN\City Standards - General\Design Criteria 2023\Dev - Standards\CAD\W-105 - Restraining of PVC Watermain Valves & Fitting.dwg



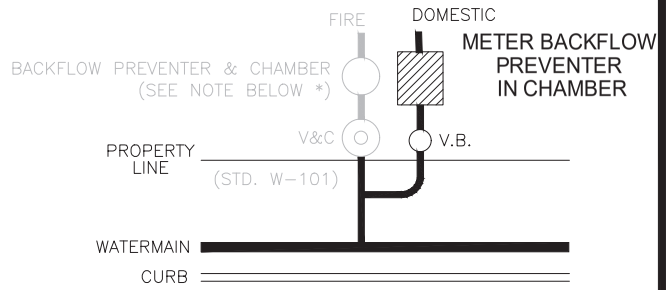
PLAN VIEW



SIDE VIEW

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

TYPICAL INSTALLATION



* BACKFLOW PREVENTER SHALL BE INSTALLED PER STD. W-111 WHEN HYDRANT CONNECTION IS PROPOSED FOR THE DEVELOPMENT

NOTES:

1. CONCRETE TO BE 32MPa COMPRESSIVE STRENGTH.
2. COPPER PIPE TO BE TYPE K.
3. CHAMBER COVER & FRAME TO BE 2 PIECE.
4. 100mm DIA. DRAIN COMPLETE WITH 'P' TRAP AND BACK WATER VALVE TO BE CONNECTED TO STORM SEWER.
5. 50mm CONDUIT TO BE INSTALLED FROM CHAMBER WALL TO AN ACCESSIBLE AND PERMANENT LOCATION APPROVED BY THE CITY.
6. CHAMBER TO BE DESIGNED FOR H20 LOADING AT 300mm COVER.
7. DIMENSIONS OF THE CHAMBER AND ALL INTERNAL CONNECTIONS SHALL BE VERIFIED BEFORE INSTALLATION.
8. VALVES TO BE EQUIPPED WITH KEY TYPE OPERATING NUT.
9. 6.5mm GALV. STEEL PLATE GUIDE FOR STEM EXTENSION PER O.P.S.D. 1101.020.
10. SEE STANDARD DRAWING W-101, W-107 & W-111 FOR ADDITIONAL NOTES.
11. BYPASS PIPE TO BE ONE (1) PIPE SIZE SMALLER THAN SERVICE CONNECTION OR MINIMUM 2" DIAMETER.
12. NO PERSON SHALL INSTALL OR PERMIT THE INSTALLATION OF A BYPASS UNLESS AUTHORIZED BY THE CITY AND THE BYPASS IS VALVED AND LOCKED BY THE CITY.
13. BACKFLOW DEVICE TO BE SELECTED, INSTALLED AND TESTED IN THE CONFORMANCE WITH CSA B64 "SELECTION INSTALLATION OF BACKFLOW PREVENTERS AND AS PER MANUFACTURE RECOMMENDATIONS".

	REVISIONS	DATE
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VAUGHAN

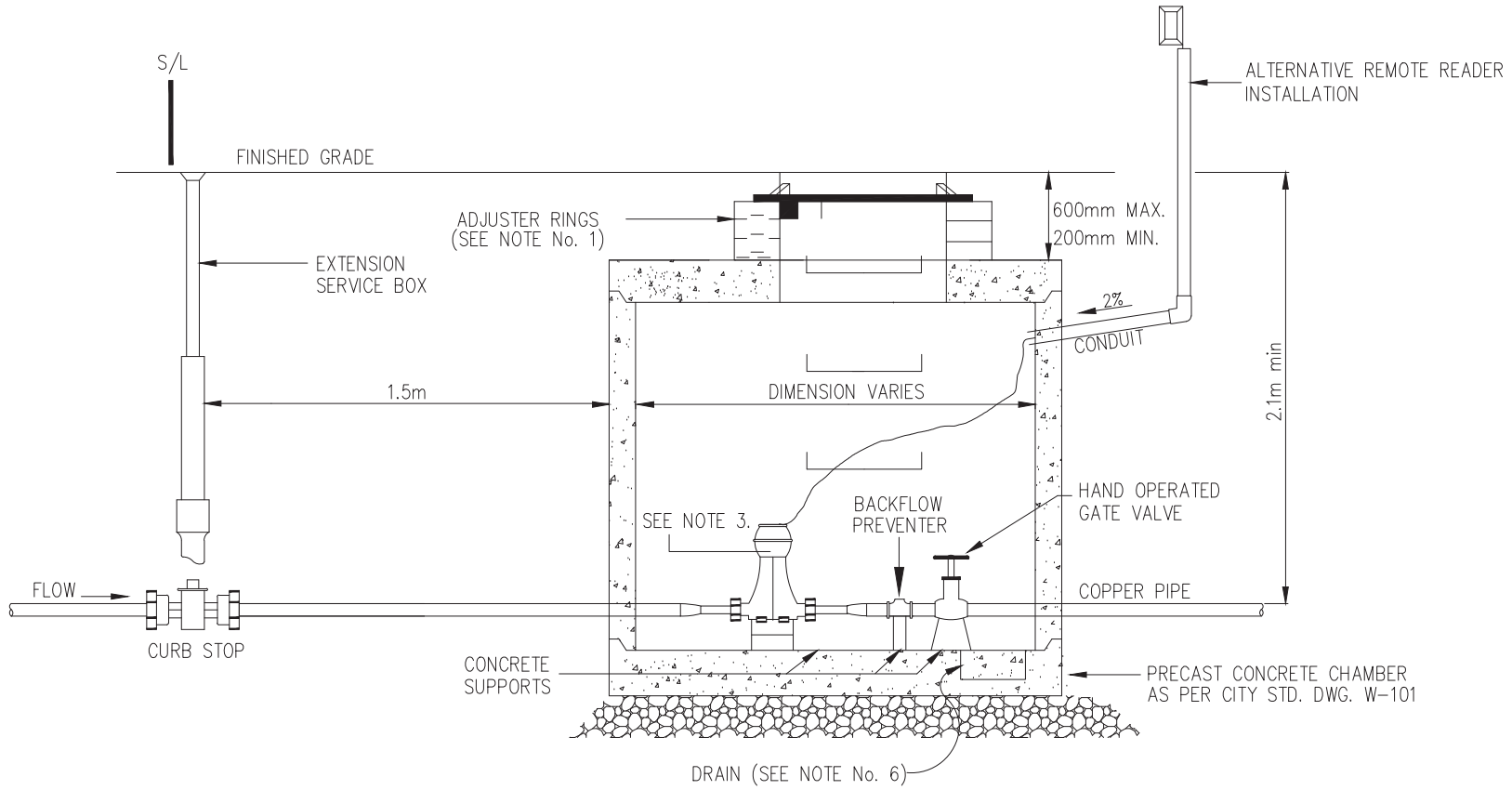
CITY OF VAUGHAN ENGINEERING STANDARD

METER, BACKFLOW PREVENTER IN CHAMBER

NOT TO SCALE | DESIGNED: _____ | REVISION: _____ | DATE: DEC. 2020

STD. DWG. W - 106

FILE: O:\Infrastructure Delivery\Infrastructure Programming\PMO\City Standards\Design Criteria 2020-21\City Standards Update Folder\CoVStandardDrawings_CAD_2021\W-106 - Meter, Backflow Preventer in Chamber.dwg



NOTES

1. PRECAST CONCRETE ADJUSTER RINGS (E.G., MOUDLOC) TO BE MAX. 300 mm OTHERWISE POURED COLLARS ARE TO BE USED IN CONJUNCTION WITH RINGS. MODULOC TAPE TO BE PLACED BETWEEN RINGS.
2. 50mm CONDUIT TO BE INSTALLED FROM CHAMBER WALL TO AN ACCESSIBLE AND PERMANENT LOCATION APPROVED BY THE CITY.
3. REDUCERS AS REQUIRED FOR 40mm AND 50mm METER INSTALLATIONS.
4. 'FORD' LOC PAK COUPLING OR APPROVED EQUAL REQUIRED FOR 40mm AND 50mm METERS.
5. FOR PRE-CAST CHAMBER ALL JOINTS SHALL BE SET IN A MORTAR BED AND PARGED OUTSIDE.
6. 100mm DIA. DRAIN COMPLETE WITH 'P' TRAP AND BACK WATER VALVE TO BE CONNECTED TO STORM SEWER.
7. CONCRETE SUPPORTS TO BE 20MPa COMPRESSIVE STRENGTH.
8. COPPER PIPE TO BE TYPE K HARD.
9. SEE STANDARD DRAWING W-101, W-106 & W-111 FOR ADDITIONAL NOTES.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
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VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

METER CHAMBER FOR COPPER SERVICES

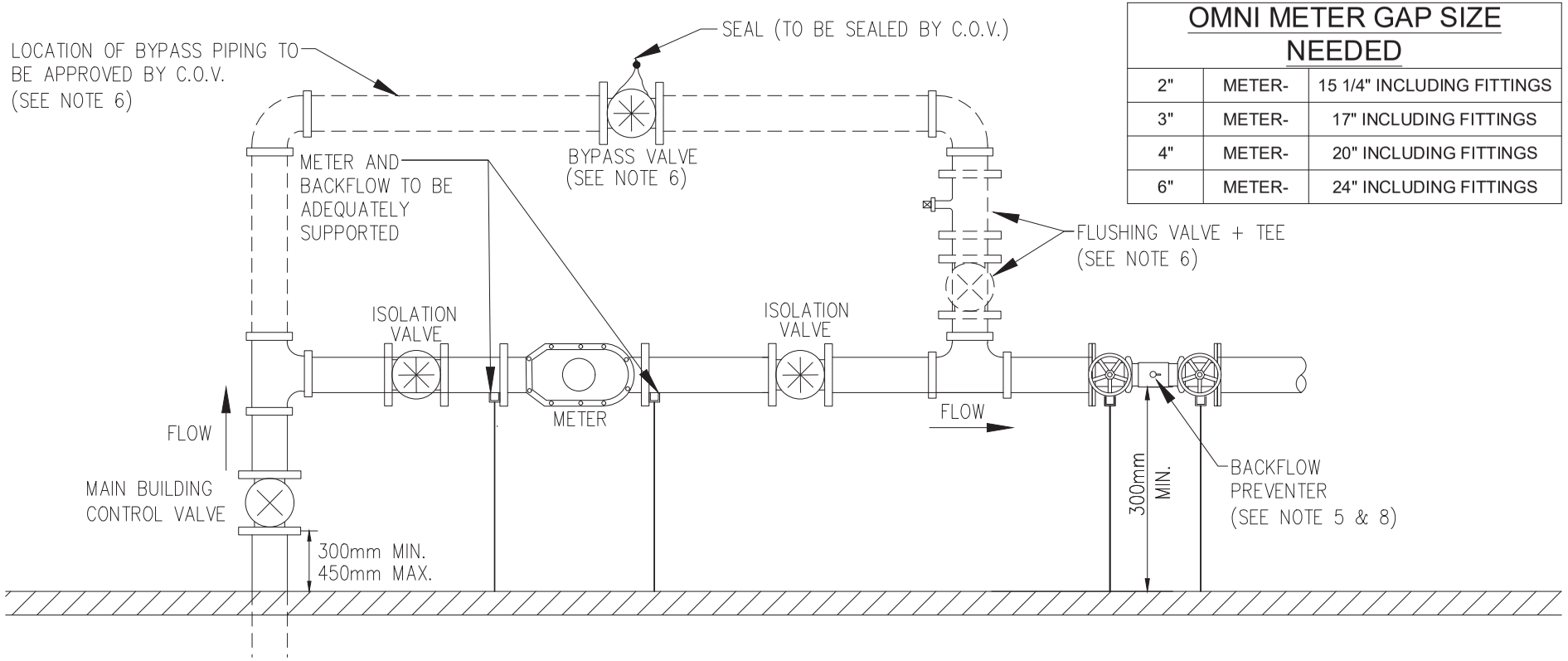
NOT TO SCALE | DESIGNED: _____ | REVISION: _____ | DATE: DEC. 2020

STD. DWG. W - 107

FILE: O:\Infrastructure Delivery\Infrastructure Programming\PMO\City Standards\Design Criteria 2020-21\City Standards Update Folder\CoVStandardDrawings_CAD_2021\W-107 - Meter Chamber for Copper Services.dwg

W-108 - INTENTIONALLY LEFT BLANK

Refer to 2004 Published Edition. Should drawing not be available, please contact the Development Engineering Department at developmentengineering@vaughan.ca



OMNI METER GAP SIZE NEEDED

2"	METER-	15 1/4" INCLUDING FITTINGS
3"	METER-	17" INCLUDING FITTINGS
4"	METER-	20" INCLUDING FITTINGS
6"	METER-	24" INCLUDING FITTINGS

NOTES:

1. MUST HAVE FULLY FUNCTIONAL ISOLATION VALVES:
   A) ON INLET SIDE TO METER
   B) ON OUTLET SIDE TO METER
2. SHALL BE NO CONNECTIONS BEFORE THE METER AND PREMISE BACKFLOW DEVICE.
3. BYPASS NEEDED FOR SERVICES 2" AND GREATER. BYPASS PIPE TO BE ONE (1) PIPE SIZE SMALLER THAN SERVICE CONNECTION OR MINIMUM 2" DIAMETER.
4. STRAINER NOT REQUIRED WITH OMNI METERS.
5. BACKFLOW DEVICE TO BE SELECTED, INSTALLED AND TESTED IN CONFORMANCE WITH C.S.A. B64. SELECTION AND INSTALLATION OF BACKFLOW PREVENTERS AND AS PER MANUFACTURE RECOMMENDATIONS.
6. NO PERSON SHALL INSTALL OR PERMIT THE INSTALLATION OF A BYPASS UNLESS AUTHORIZED BY THE CITY AND THE BYPASS IS VALVED AND LOCKED PROPERLY. IF APPROVED LOCKABLE FLUSHING VALVE AND TEE ARE TO BE INSTALLED.
7. REMOTE READER TO BE ACCESSIBLE FROM OUTSIDE BUILDING.
8. BACKFLOW DEVICE TO COMPLY WITH WITH BYLAW 004-2018 AS AMENDED.
9. WHERE METER ROOM IS NOT ADJACENT TO AN OUTSIDE WALL OR IS BELOW EXTERIOR FINISHED GRADE, CONTRACTOR/APPLICANT SHALL PROVIDE A CONTINUOUS CONDUIT, COMPLETE WITH NYLON FINISH LINE FROM METER ROOM TO 1000mm ABOVE EXTERIOR FINISHED GRADE.
10. BACKFLOW DEVICES ARE PERMITTED TO BE INSTALLED IN PARALLEL ARRANGEMENTS IN ORDER TO ALLOW UNINTERRUPTED SERVICE DURING BACKFLOW MAINTENANCE.
11. ALL PIPING BETWEEN WATER METER AND BACFLOW DEVICE TO BE CLEARLY AND PERMANENTLY LABELLED "NO CONNECTION PERMITTED".

IF RP DEVICE IS INSTALLED DRAINAGE IS REQUIRED AS PER CSA B64. 10-17, 6.8.1 + 6.8.2

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
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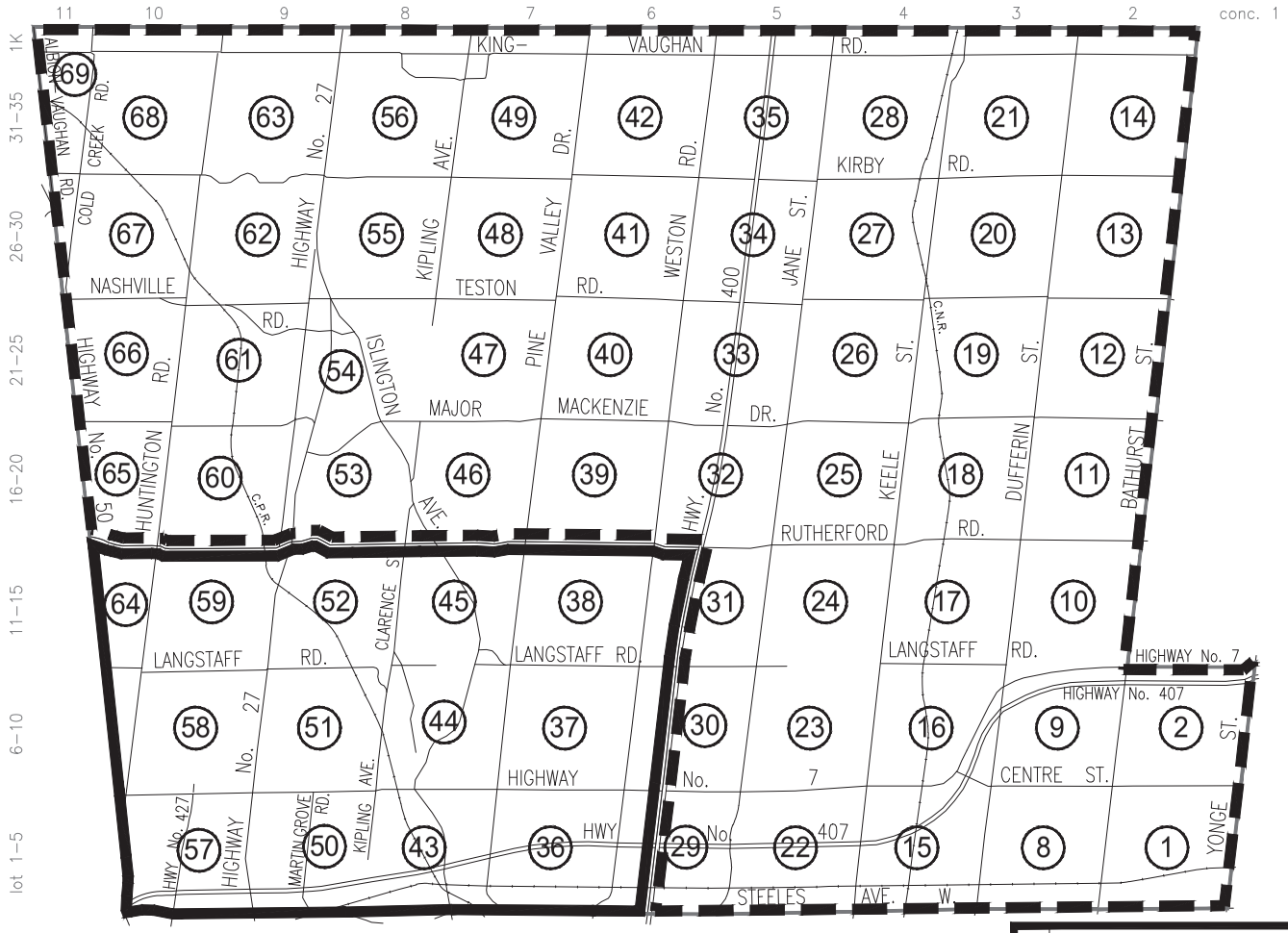
VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

INDUSTRIAL / COMMERCIAL METER with BACKFLOW PREVENTER AND VALVE INSTALLATION (METER ROOM)

NOT TO SCALE
DESIGNED: _____
REVISION: _____
DATE: DEC. 2020

STD. DWG.
W - 109



NOTE
NUMBERS IN CIRCLES ARE DESIGNATED AS 'BLOCK' NUMBERS.

TURN COUNTER-CLOCKWISE
LEFT TO OPEN
RIGHT TO CLOSE

TURN CLOCKWISE
RIGHT TO OPEN
LEFT TO CLOSE

NOTE

1. ALL WATER, HYDRANT SEC. VALVES TO OPEN CLOCKWISE EAST OF HWY. 400 OR NORTH OF RUTHERFORD ROAD. ALL OTHERS TO OPEN COUNTER-CLOCKWISE.

2. ALL HYDRANTS OPEN COUNTER CLOCKWISE

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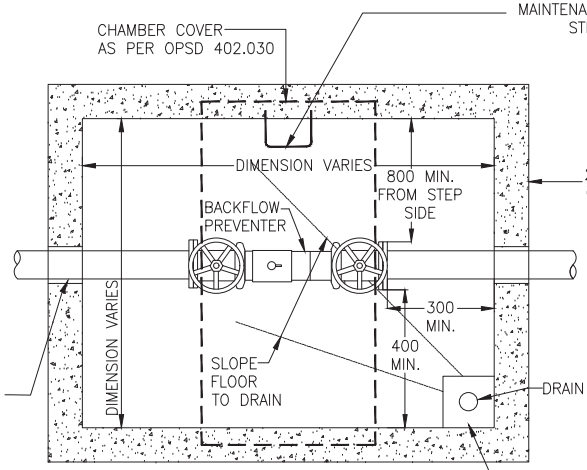
VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

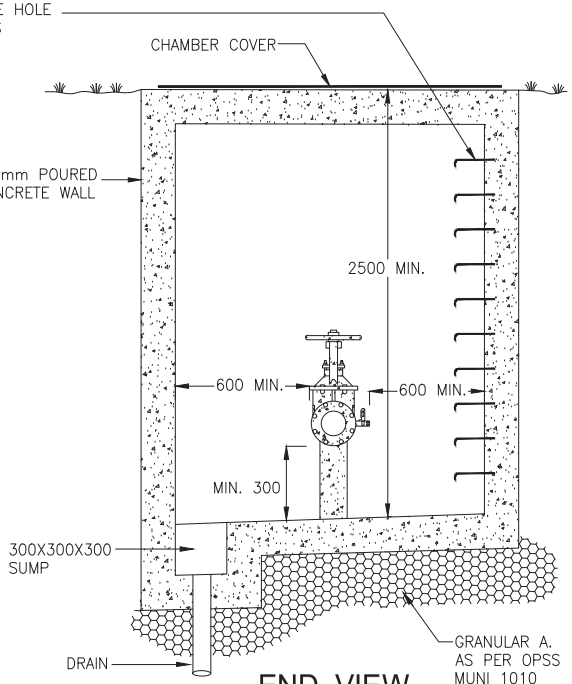
WATER VALVE OPEN / CLOSE DIRECTION

NOT TO SCALE DESIGNED: _____
REVISION: _____ DATE: DEC. 2020

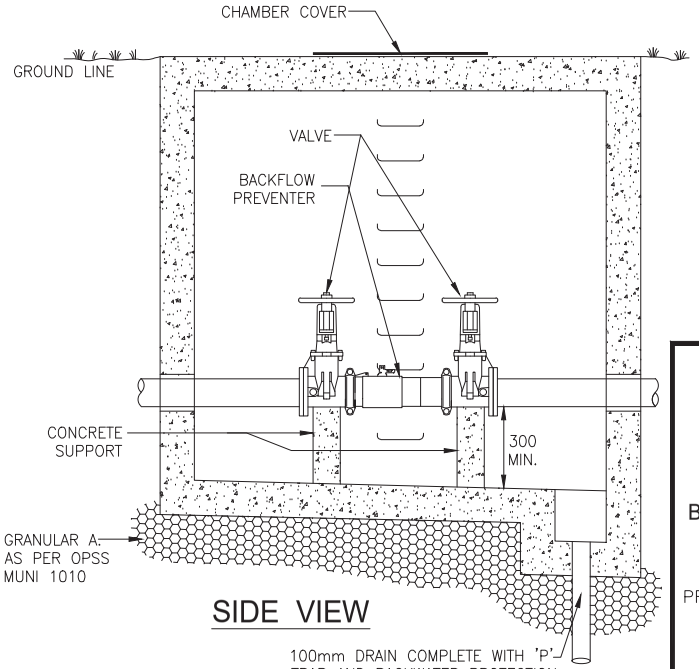
STD. DWG.
W - 110



PLAN VIEW



END VIEW



SIDE VIEW

100mm DRAIN COMPLETE WITH 'P' TRAP AND BACKWATER PROTECTION TO BE CONNECTED TO STORM SEWER.

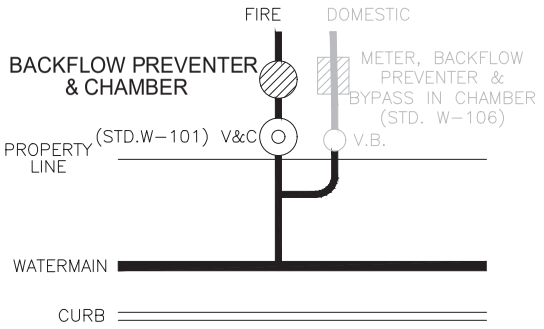
NOTES:

1. BACKFLOW DEVICE TO BE SELECTED, INSTALLED AND TESTED IN CONFORMANCE WITH CSA B64 "SELECTION + INSTALLATION OF BACKFLOW PREVENTERS AND AS PER MANUFACTURER RECOMMENDATIONS.
2. BACKFLOW DEVICE TO COMPLY WITH BY-LAW 004-2018 AS AMMENDED.
3. REDUCED PRESSSURE ASSEMBLY (RP) BACKFLOW PREVENTER ARE NOT PERMITTED IN BELOW GROUND APPLICATIONS.
4. BACKFLOW DEVICE TO REMAIN ACCESSIBLE AT ALL TIMES.
5. THIS DRAWING INDICATES MINIMUM CLEARANCE AND ACCESS ONLY.
6. CHAMBER TO BE OF WATER TIGHT CONSTRUCTION.
7. 100mm DIA. DRAIN COMPLETE WITH 'P' TRAP AND BACK WATER PREVENTER VALVE TO BE CONNECTED TO STORM SEWER.
8. MAINTENANCE HOLE STEPS AS PER OPSD 405.020
9. TEST COCKS ARE TO BE PROTECTED WITH WATER TIGHT PLUGS.
10. MINIMUM DEPTH OF CHAMBER = 2.5 METRES.
11. AS PER ONTARIO BUILDING CODE SECTION 7.6.2.2:
    A) EVERY POTABLE WATER SYSTEM THAT SUPPLIES A FIXTURE OR TANK THAT IS NOT SUBJECT TO PRESSURE ABOVE ATMOSPHERIC SHALL BE PROTECTED AGAINST BACK-SIPHONAGE BY A BACKFLOW PREVENTER.

    B) WHERE A POTABLE WATER SUPPLY IS CONNECTED TO A TANK, COOLING JACKET, LAWN SPRINKLER SYSTEM, YARD HYDRANT OR OTHER DEVICE WHERE A NON-PORTABLE FLUID MAY BE UNDER PRESSURE THAT IS ABOVE ATMOSPHERIC OR THE WATER OUTLET MAY BE SUBMERGED IN THE NON-PORTABLE FLUID, THE WATER SUPPLY SHALL BE PROTECTED AGAINST BACKFLOW BY A BACKFLOW PREVENTER.

    C) WHERE A HOSE BIB IS INSTALLED OUTSIDE A BUILDING, INSIDE A GARAGE, OR WHERE THERE IS AN IDENTIFIABLE RISK OF CONTAMINATION, THE POTABLE WATER SYSTEM SHALL BE PROTECTED AGAINST BY A BACKFLOW PREVENTER.
12. WHERE PRECAST CONCRETE ADJUSTER RINGS (E.G., MODULOC) ARE REQUIRED, THEY ARE TO BE MAX. 300 mm OTHERWISE POURED COLLARS ARE TO BE USED IN CONJUNCTION WITH RINGS.
13. THIS STANDARD APPLIES TO BUILDINGS WITH OUTSIDE HYDRANTS
14. DIMENSIONS OF THE CHAMBER AND ALL INTERNAL CONNECTION SHALL BE VERIFIED BEFORE INSTALLATION.

TYPICAL INSTALLATION



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	REVISIONS	DATE

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

BACKFLOW PREVENTER & CHAMBER FOR 100mm THROUGH 300mm DOUBLE CHECK VALVE ASSEMBLY

NOT TO SCALE DESIGNED: _____

REVISION: _____ DATE: DEC. 2020

STD. DWG.
W - 111

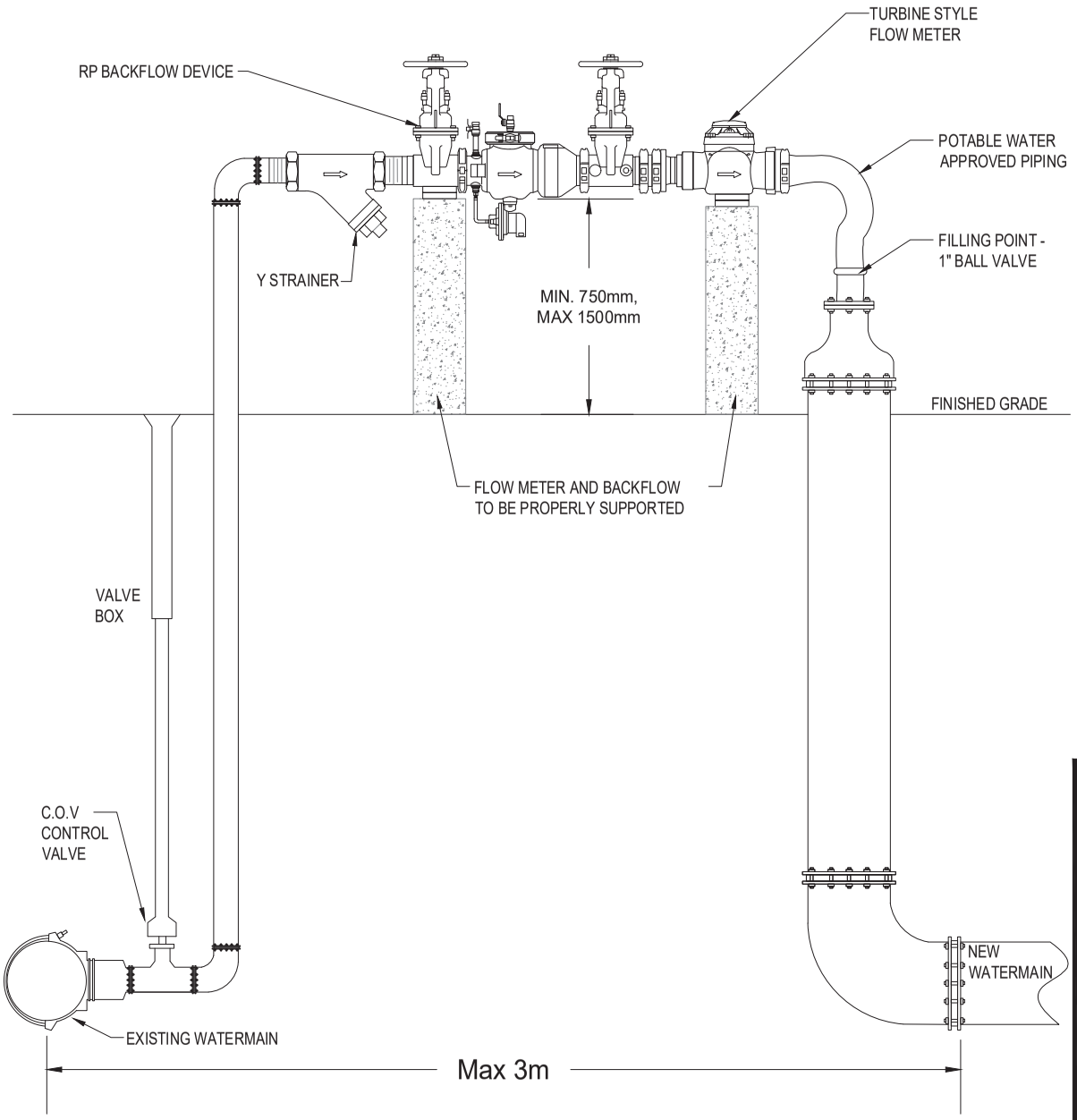
mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

FILE: O:\Infrastructure Delivery\Infrastructure Programming\PMO\City Standards\Design Criteria 2020-21\City Standards Update Folder\CoVStandardDrawings_CAD_2021\W-111 - Backflow Preventer & Chamber.dwg

W-112 - TEMPORARY SUPPLY AND DISINFECTION CONNECTION

CURRENTLY UNDER DEVELOPMENT

Refer to 2004 Published Edition. Should drawing not be available, please contact the Development Engineering Department at developmentengineering@vaughan.ca



SIDE VIEW

CONNECTION SIZE	
WATERMAIN SIZE	MIN. BYPASS SIZE
< 150mm	50mm
200mm - 400mm	100mm
> 450mm	Size to be approved by the City

NOTES:

1. BACKFLOW DEVICE MUST BE A REDUCED PRESSURE PRINCIPLE ASSEMBLY (RP) AND IN CONFORMITY WITH CSA B64.10. BACKFLOW TO BE SUPPLIED AND TESTED BY APPLICANT.
2. BACKFLOW TO BE FIELD TESTED BY A CROSS-CONNECTION CONTROL SPECIALIST WITH VALID OWWA TESTER CERTIFICATE. CITY OF VAUGHAN OPERATOR TO WITNESS ALL FIELD TESTING OF THE BACKFLOW ASSEMBLY. BACKFLOW MUST BE RE-TESTED WHEN RELOCATED, REPAIRED OR REPLACED.
3. BACKFLOW DEVICE TO BE DISCONNECTED FROM BYPASS PIPING DURING WATERMAIN PRESSURE TESTS.
4. ALL NEW PIPING AND FITTINGS TO BE DISINFECTED WITH 1-5% SODIUM HYPOCHLORITE SOLUTION ACCORDING TO AWWA C651.
5. ONLY CITY OF VAUGHAN STAFF TO OPERATE HYDRANT & MUNICIPALITY OWNED VALVES. APPLICANT/CONTRACTOR ARE NOT PERMITTED TO TURN HYDRANT ON/OFF.
6. APPLICANT/CONTRACTOR TO BE RESPONSIBLE FOR ANY DAMAGE TO CITY OF VAUGHAN AND/OR PRIVATE PROPERTY.
7. FREEZING PROTECTION MUST ME PROVIDED AND INSTALLED BY THE APPLICANT WHEN APPLICABLE.

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VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

WATERMAIN BYPASS SETUP

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

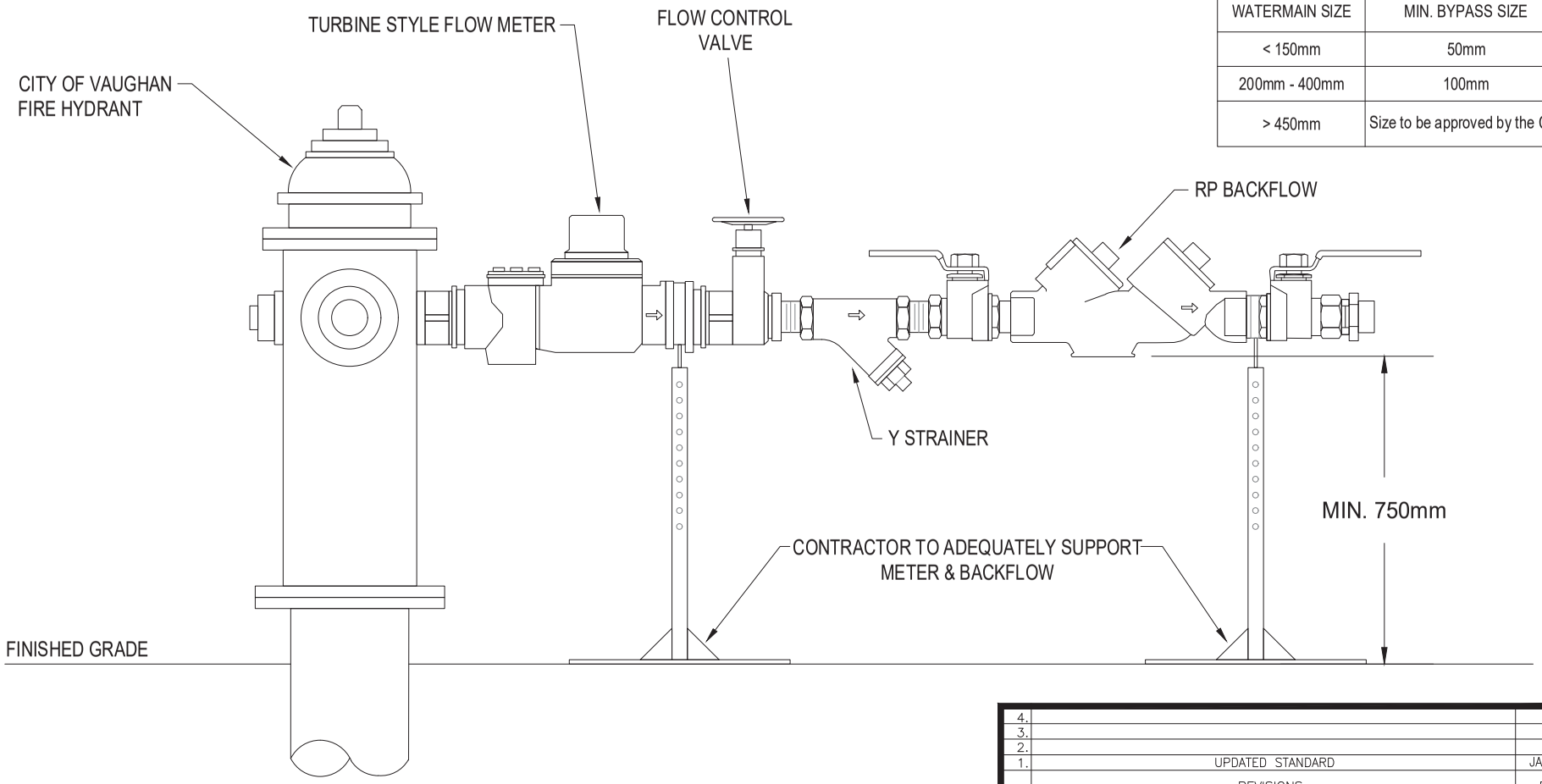
NOT TO SCALE DESIGNED: _____

REVISION: _____ DATE: JAN. 2021

STD. DWG.
W - 113

Acad File: C:\Users\cudiamap\AppData\Local\Temp\AcPublish_11568\W-113--.dwg

CONNECTION SIZE	
WATERMAIN SIZE	MIN. BYPASS SIZE
< 150mm	50mm
200mm - 400mm	100mm
> 450mm	Size to be approved by the City



NOTES:

1. BACKFLOW DEVICE MUST BE A REDUCED PRESSURE PRINCIPLE ASSEMBLY (RP) AND IN CONFORMITY WITH CSA B64.10. BACKFLOW TO BE SUPPLIED AND TESTED BY APPLICANT.
2. BACKFLOW TO BE FIELD TESTED BY A CROSS-CONNECTION CONTROL SPECIALIST WITH VALID OWWA TESTER CERTIFICATE. CITY OF VAUGHAN OPERATOR TO WITNESS ALL FIELD TESTING OF THE BACKFLOW ASSEMBLY. BACKFLOW MUST BE RE-TESTED WHEN RELOCATED, REPAIRED OR REPLACED.
3. BACKFLOW DEVICE TO BE DISCONNECTED FROM BYPASS PIPING DURING WATERMAIN PRESSURE TESTS.
4. ONLY CITY OF VAUGHAN STAFF TO OPERATE HYDRANT & MUNICIPALITY OWNED VALVES. APPLICANT/CONTRACTOR ARE NOT PERMITTED TO TURN HYDRANT ON/OFF.
5. APPLICANT/CONTRACTOR TO BE RESPONSIBLE FOR ANY DAMAGE TO CITY OF VAUGHAN AND/OR PRIVATE PROPERTY.
6. FREEZING PROTECTION MUST ME PROVIDED AND INSTALLED BY THE APPLICANT WHEN APPLICABLE.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
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1.	UPDATED STANDARD	JAN. 21

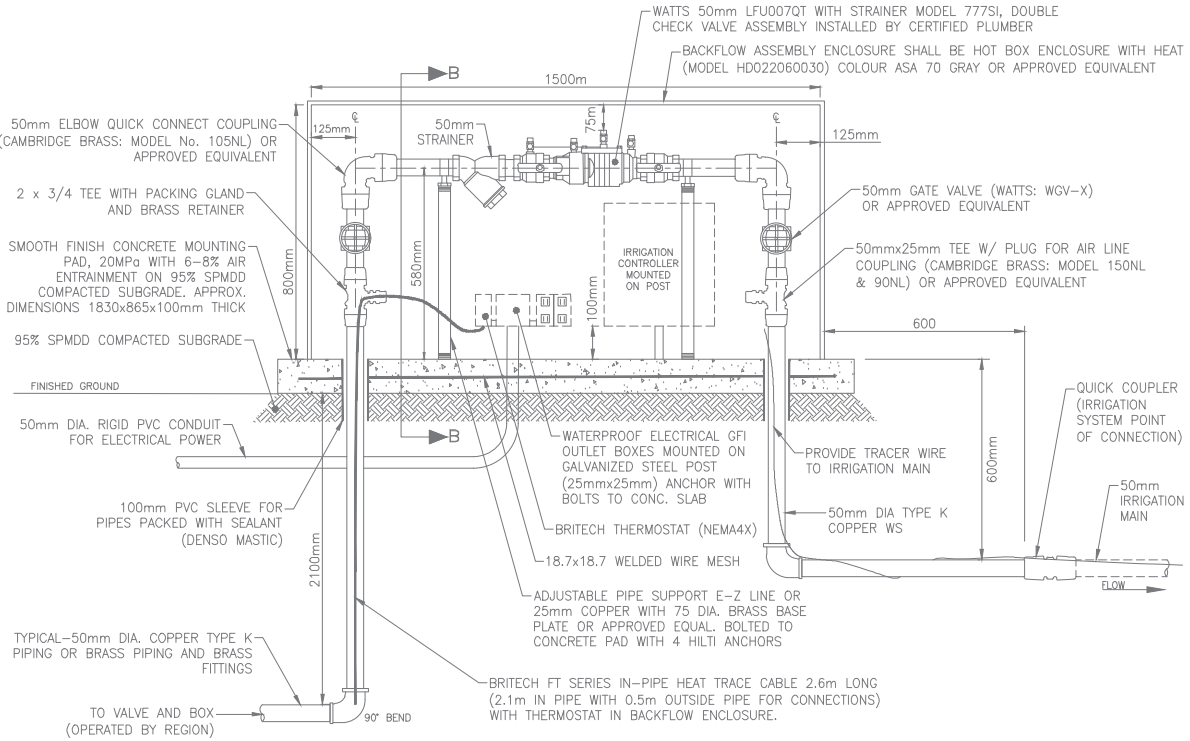
VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

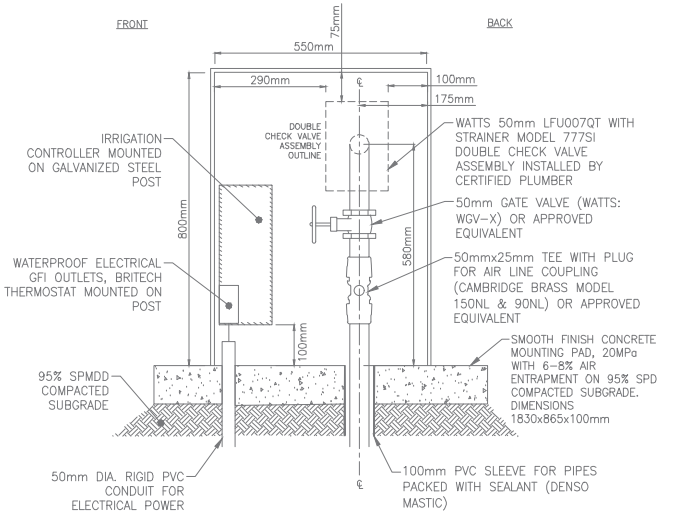
FIRE HYDRANT CONNECTION WITH METER AND BACK FLOW PREVENTER

NOT TO SCALE | DESIGNED: DEPT. ENG. | REVISION: 01 | DATE: JAN. 2021

STD. DWG. W - 114



BACKFLOW PROTECTION ASSEMBLY
OWNED BY YORK REGION

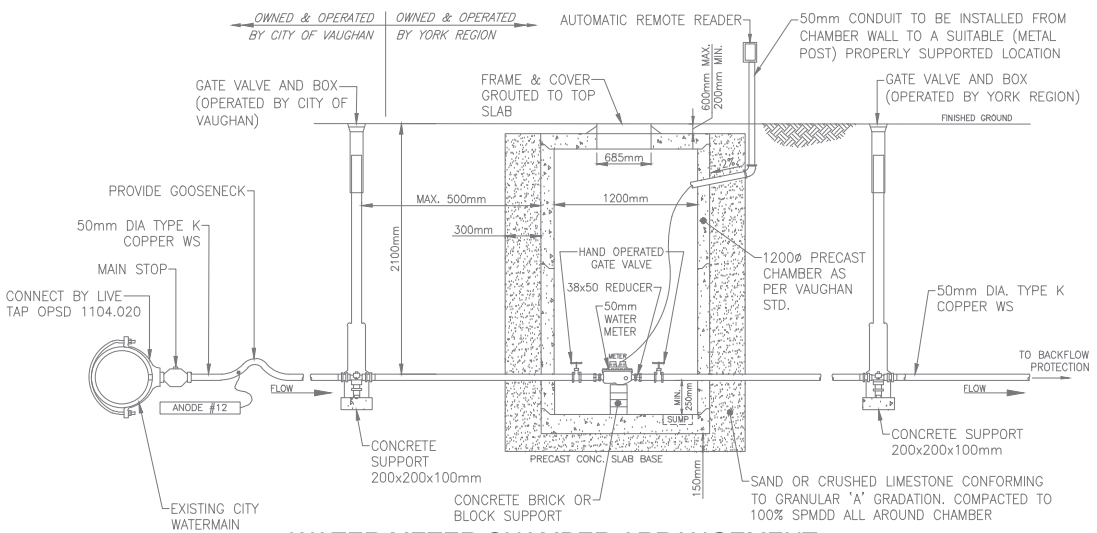


SECTION `B - B'
BACKFLOW PROTECTION ASSEMBLY

NOTES

1. 24LB ANODE COVERING AN AREA OF 150 LINEAR FEET TO BE INSTALLED FOR SERVICE PROTECTION, MIDPOINT ON LENGTH OF PIPE FROM WM TO CITY'S GATE VALVE.
2. SERVICE TO BE TURNED ON AND PRESSURE TESTED PRIOR TO BACKFILLING.

mm	DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED



WATER METER CHAMBER ARRANGEMENT
OWNED BY YORK REGION

5.		
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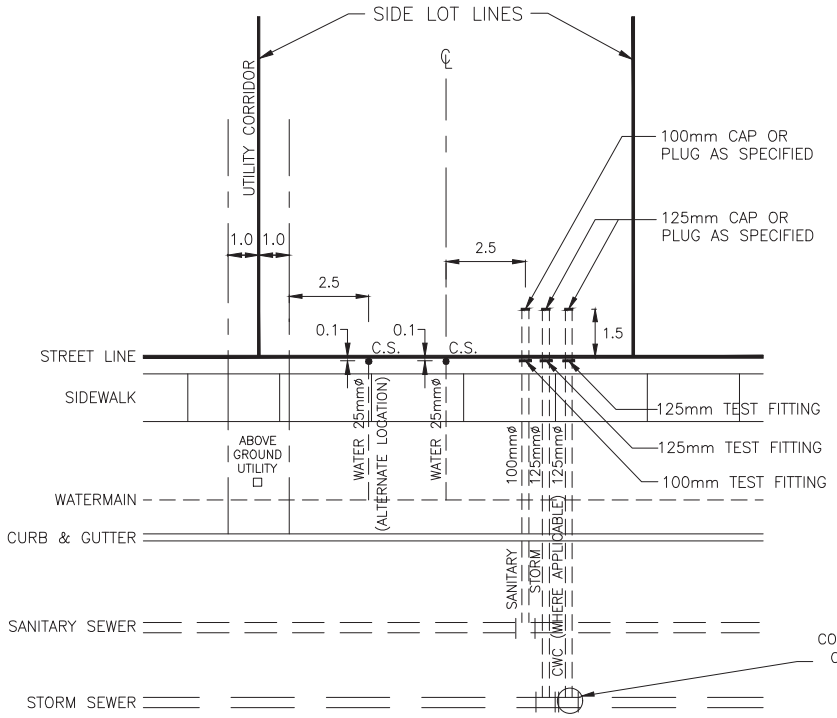
	REVISIONS	DATE

VAUGHAN

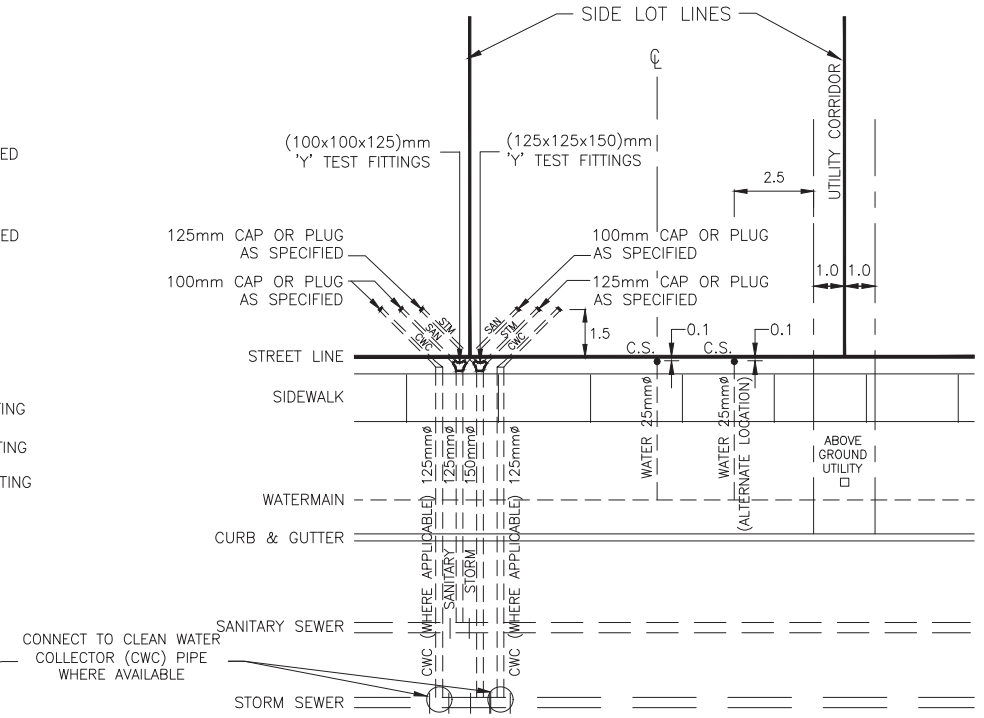
CITY OF VAUGHAN ENGINEERING STANDARD

AUTOMATED IRRIGATION SYSTEM
FOR YORK REGION LANDSCAPE MEDIANS

NOT TO SCALE	DESIGNED:	STD. DWG.
REVISION:	DATE: DEC. 2022	W-118



SINGLE SEWER & SINGLE WATER SERVICE



SINGLE WATER & DOUBLE SEWER SERVICE

NOTES

1. RESIDENTIAL DWELLING SHALL BE SERVICED WITH A MINIMUM 25mm (1") WATER SERVICE CONNECTION. DWELLING STRUCTURES THAT HAVE SPRINKLER SYSTEM AND/OR HIGH HYDRAULIC LOADS AND REQUIRE WATER SERVICE CONNECTION LARGER THAN 25mm (1") SHALL BE SUBJECT TO THE CITY'S APPROVAL.
2. WATER SERVICE CONNECTIONS AND CURB STOPS SHALL BE AS DETAILED ON O.P.S.D. 1104.010 OR 1104.020.
3. SANITARY AND STORM SERVICE CONNECTIONS SHALL BE AS PER O.P.S.D. 1006.010 OR 1006.020 EXCEPT THAT THE CONNECTIONS SHALL EXTEND 1.5m BEYOND THE PROPERTY LINE AND SHALL BE PLUGGED OR CAPPED AT THAT POINT.
4. ALL PVC SANITARY LATERAL PIPE SHALL BE GREEN IN COLOUR.
5. SANITARY TEST FITTINGS SHALL BE LETTERED 'SAN'. FITTINGS AND PLUGS SHALL BE AS PER CITY REQUIREMENTS.
6. ALL PVC STORM LATERAL PIPE SHALL BE WHITE IN COLOUR.
7. STORM TEST FITTING SHALL BE LETTERED 'STM'. FITTINGS AND PLUGS SHALL BE AS PER CITY REQUIREMENTS.
8. MARKERS SHALL BE PLACED AT ENDS OF 'SAN' AND 'STM' CONNECTIONS.
9. WATER SERVICE CURB STOP SHALL BE LOCATED IN THE GRASSED AREA OF THE R.O.W. ANY OTHER LOCATION SHALL BE SUBJECT TO THE CITY'S APPROVAL.
10. CWC SERVICE WITHIN LOT NOT TO BE INSTALLED UNTIL ROOF LEADERS ARE INSTALLED.
11. HOUSE ROOF LEADERS TO DISCHARGE A MINIMUM OF 1.5m FROM ALL BUILDINGS TO GROUND SURFACE BY MEANS OF A SPLASH PAD WHERE CWC ARE NOT AVAILABLE.

LEGEND
CWC – CLEAN WATER COLLECTOR

m DIMENSIONS IN METRES EXCEPT AS NOTED

	REVISIONS	DATE
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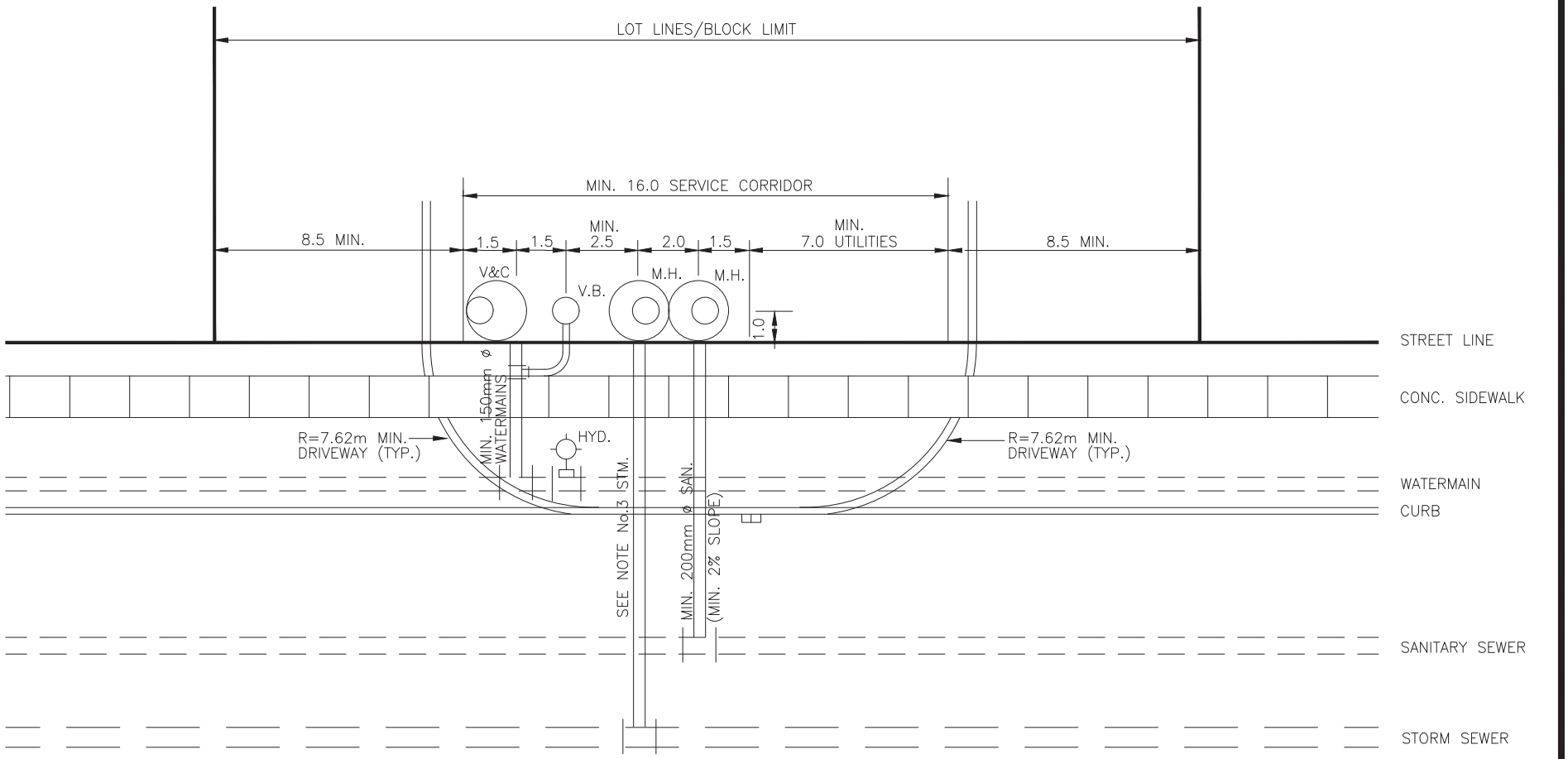
VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

RESIDENTIAL SERVICE CONNECTIONS

NOT TO SCALE
DESIGNED: _____
REVISION: _____
DATE: DEC. 2020

STD. DWG.
C - 101



NOTES

1. ABOVE GROUND UTILITIES TO BE LOCATED MINIMUM 1.0m FROM CURBS, SIDEWALK AND DRIVEWAYS.
2. MAINTENANCE HOLES AND VALVE CHAMBERS FOR SERVICE CONNECTIONS TO BE LOCATED AT 1.0m OFF STREET LINE ON PRIVATE PROPERTY.
3. STORM SEWER CONNECTIONS SHALL BE SIZED BASED UPON STORM WATER MANAGEMENT REQUIREMENTS. SEE STD. C-104.
4. WATER SERVICE CONNECTIONS SHALL BE AS DETAILED ON STANDARD DRAWING C-103.
5. CB TO BE LOCATED WITHIN SERVICE CORRIDOR.

m DIMENSIONS IN METRES EXCEPT AS NOTED

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	REVISIONS	DATE

VAUGHAN

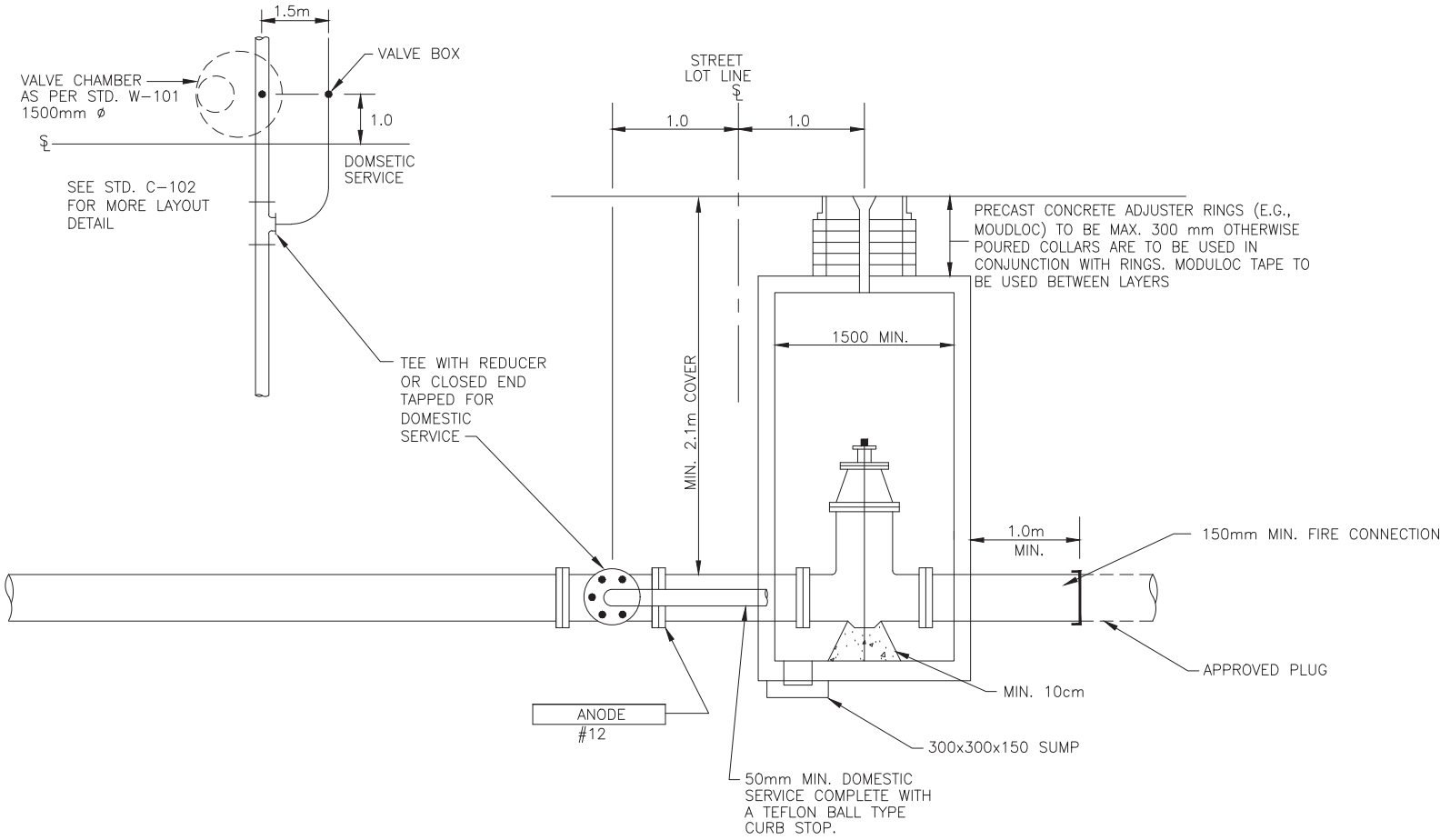
CITY OF VAUGHAN ENGINEERING STANDARD

BLOCK SERVICE CONNECTIONS

NOT TO SCALE | DESIGNED: _____ | REVISION: _____ | DATE: DEC. 2020

STD. DWG. C - 102

FILE: O:\Infrastructure Delivery\Infrastructure Programming\PMO\City Standards\Design Criteria 2020-21\City Standards Update Folder\CoVStandardDrawings_CAD_2021\C-102 - Block Service Connections.dwg



NOTES

1. BOND BREAKER TO BE USED BETWEEN ALL CONCRETE AND FITTINGS.
2. PROVIDE RESTRAINED MECHANICAL JOINTS OR SLIP-ON JOINTS WITH TIE RODS & CLAMPS AS REQUIRED.
3. THRUST BLOCKS SHALL NOT BE USED WITHIN VALVE CHAMBER.
4. THRUST BLOCKS SHALL NOT BE USED ON PVC WATERMAINS.

m DIMENSIONS IN METRES EXCEPT AS NOTED

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	REVISIONS	DATE

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

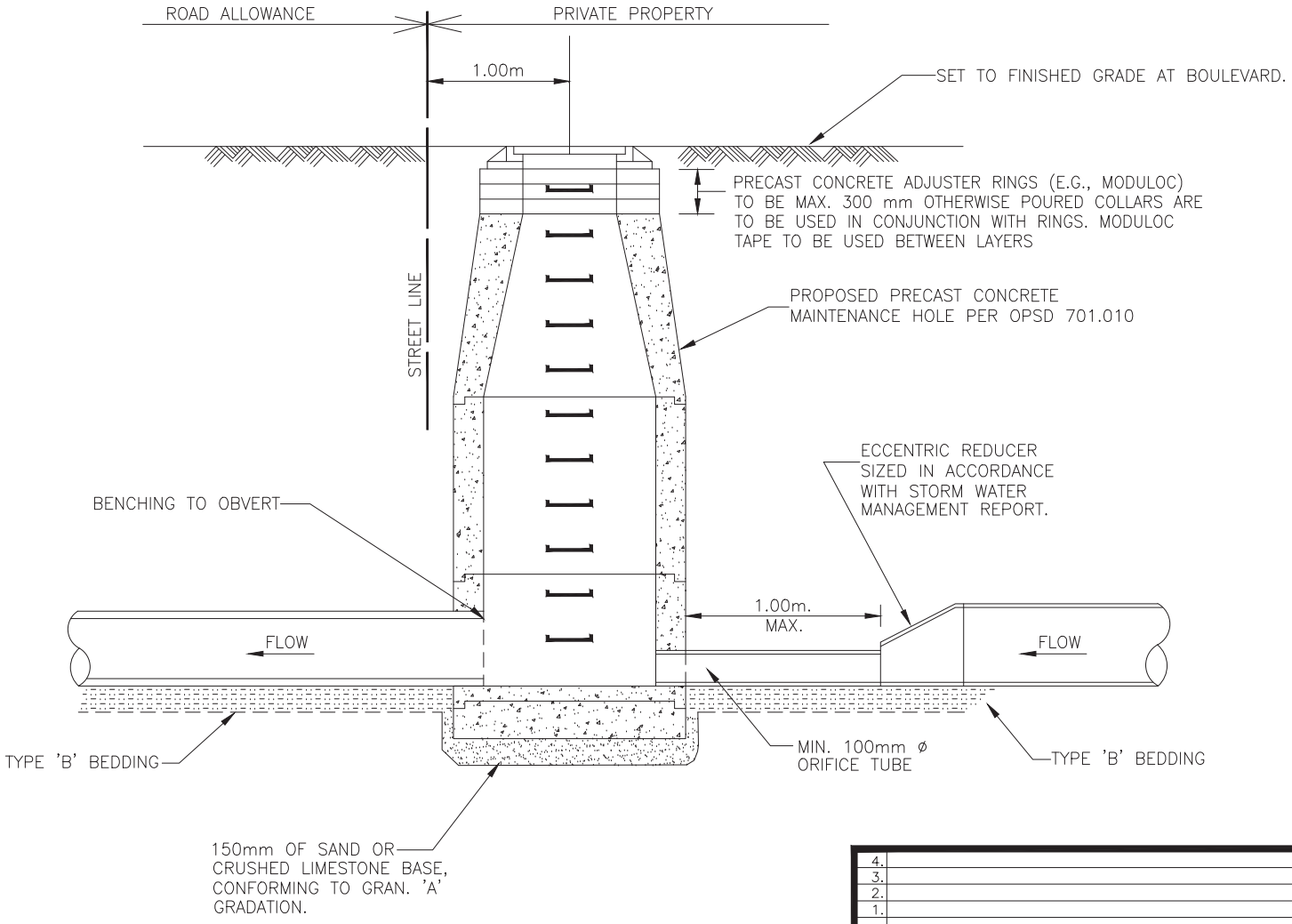
BLOCK WATER CONNECTION

NOT TO SCALE DESIGNED: _____

REVISION: _____ DATE: DEC. 2020

STD. DWG.
C - 103

FILE: O:\Infrastructure Delivery\Infrastructure Programming\PMO\City Standards\Design Criteria 2020-21\City Standards Update Folder\CoVStandardDrawings_CAD_2021\C-103 - Block Water Connection.dwg



NOTE

1. CAST IRON INTEGRATED FRAMES ARE ACCEPTABLE

m DIMENSIONS IN METRES EXCEPT AS NOTED

	REVISIONS	DATE
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VAUGHAN

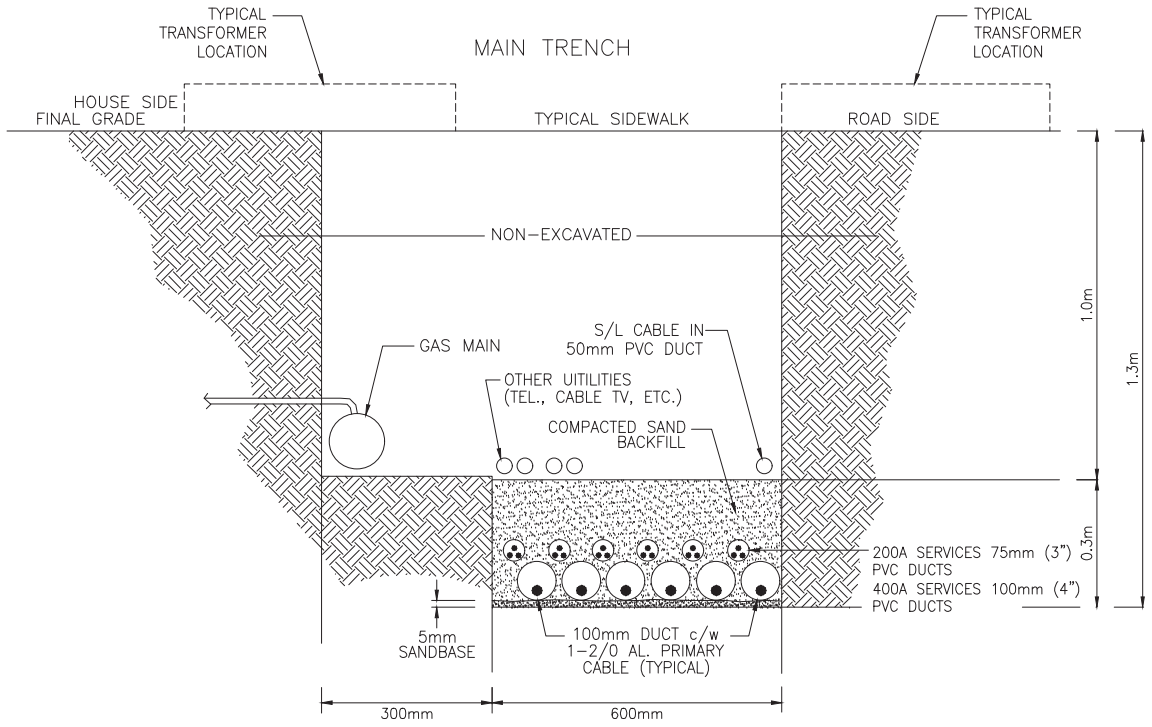
CITY OF VAUGHAN ENGINEERING STANDARD

STORM CONNECTIONS
WITH ORIFICE CONTROL

NOT TO SCALE | DESIGNED: _____

REVISION: _____ | DATE: DEC. 2020

STD. DWG.
C - 104



mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

NOTES:

1. 100mm P.V.C. TYPE II DUCT REQUIRED UNDER PAVED AREAS.
   CAPACITY PER DUCT:
   A) 1-PRIMARY CABLE - 100mm (4")
   B) 2-SECONDARY CABLES [200A-75mm(3") /400A-100mm (4")]

2. 1 SPARE DUCT IS REQUIRED AT EACH CROSSING - 100mm (4")

3. INSTALL PATIO SLABS AT ALL HYDRANT & V.C. LOCATIONS

	REVISIONS	DATE
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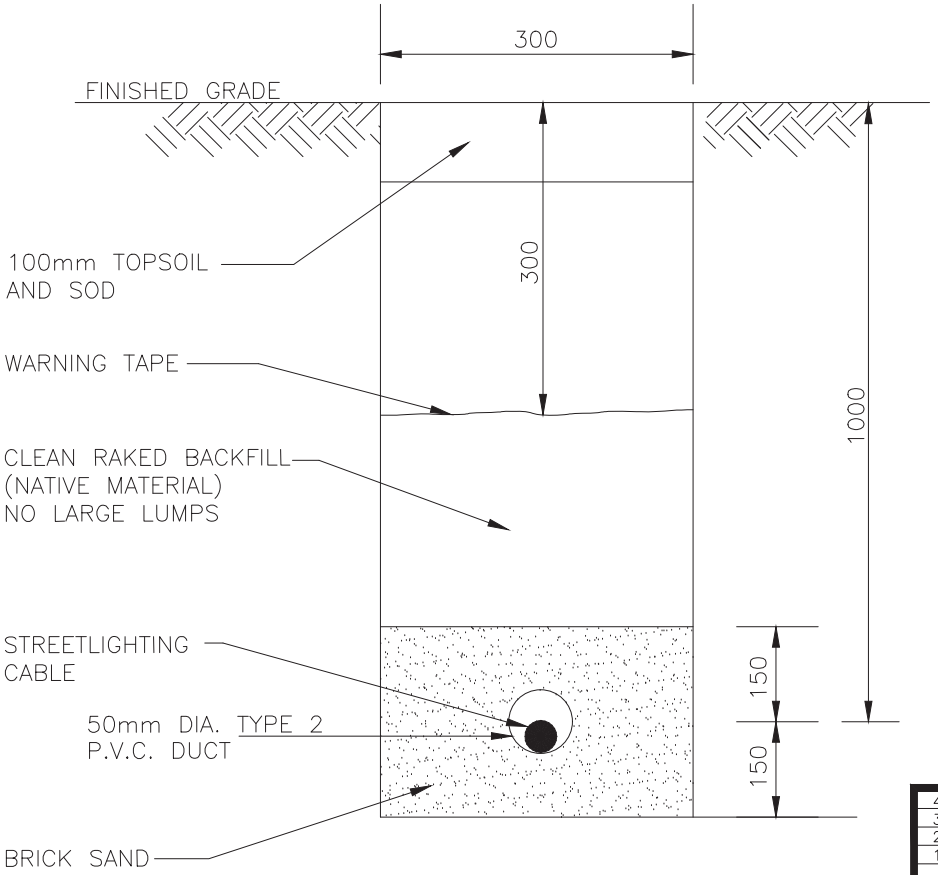
VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

STANDARD TRENCH FOR DIRECT BURIED CABLES

NOT TO SCALE
DESIGNED: _____
REVISION: _____
DATE: 2022

STD. DWG.
SL - 100a



mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

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	REVISIONS	DATE

VAUGHAN

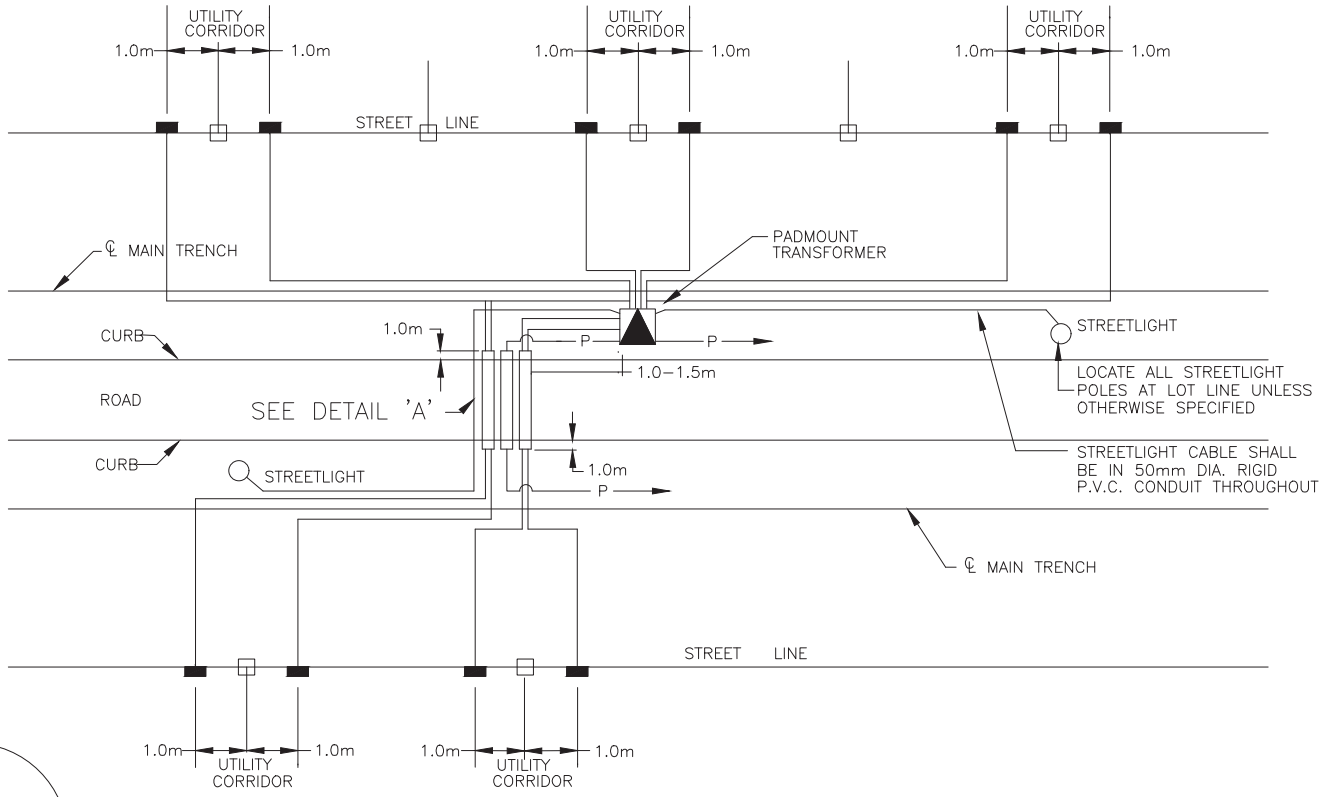
CITY OF VAUGHAN ENGINEERING STANDARD

STANDARD
STREETLIGHTING TRENCH

NOT TO SCALE DESIGNED: _____

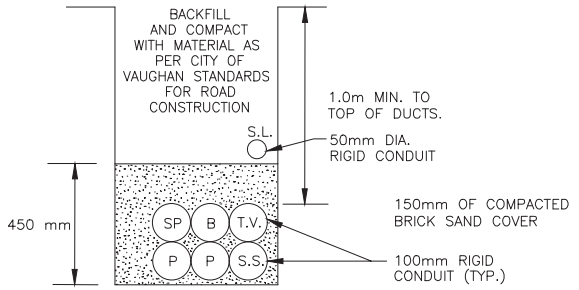
REVISION: _____ DATE: 2022

STD. DWG.
SL - 100b



DETAIL 'A'

TYPICAL DUCT ARRANGEMENT FOR DIRECT BURIED ROAD CROSSING DUCTS



DUCTS

B – BELL CABLE
T.V. – CABLE TELEVISION
P – PRIMARY CABLE (1–PER DUCT)
S.S. – SECONDARY SERVICE (MAX. –2 RUNS PER DUCT)
S.L. – STREETLIGHT CABLE CONDUIT
SP – SPARE CONDUIT

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	REVISIONS	DATE

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

INSTALLATION OF STREETLIGHT CABLE AT ROAD CROSSINGS

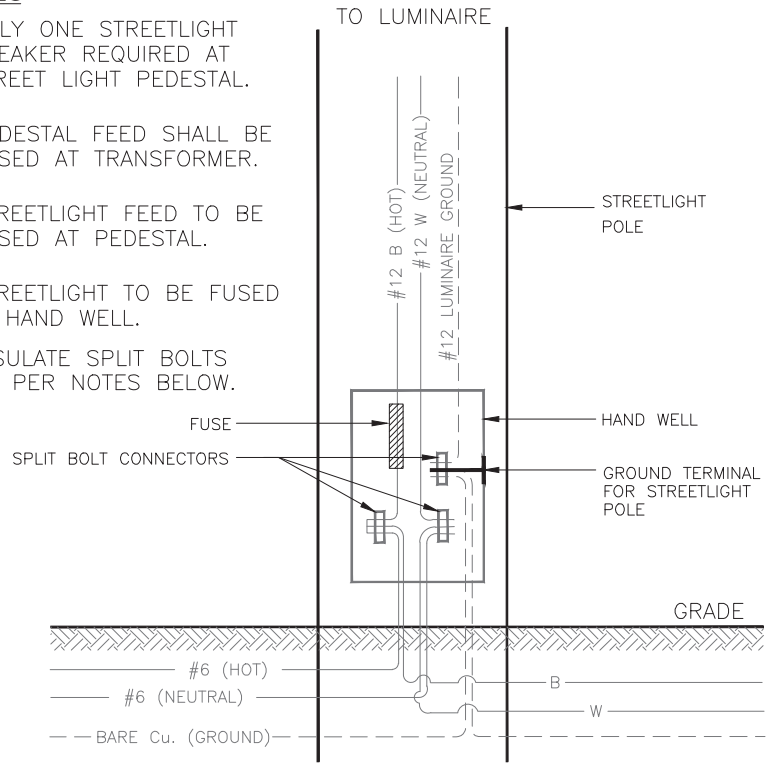
NOT TO SCALE DESIGNED: _____

REVISION: _____ DATE: 2022

STD. DWG.
SL - 101

NOTES

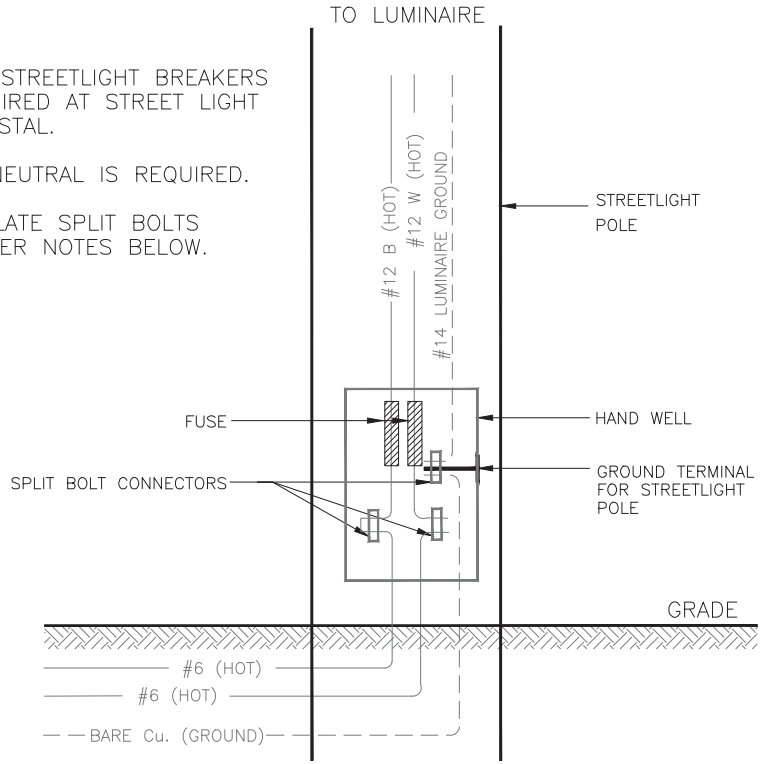
1. ONLY ONE STREETLIGHT BREAKER REQUIRED AT STREET LIGHT PEDESTAL.
2. PEDESTAL FEED SHALL BE FUSED AT TRANSFORMER.
3. STREETLIGHT FEED TO BE FUSED AT PEDESTAL.
4. STREETLIGHT TO BE FUSED IN HAND WELL.
4. INSULATE SPLIT BOLTS AS PER NOTES BELOW.



120V OR 347V STREETLIGHT CONNECTION

NOTES

1. TWO STREETLIGHT BREAKERS REQUIRED AT STREET LIGHT PEDESTAL.
2. NO NEUTRAL IS REQUIRED.
3. INSULATE SPLIT BOLTS AS PER NOTES BELOW.



240V STREETLIGHT CONNECTION

NOTES:

1. SPLIT BOLTS ARE TO BE USED ABOVE GRADE ONLY.
2. SPLIT BOLTS ARE TO BE COVERED USING SAP TAPE AND A FINAL COVERING OF SCOTCH 88.
3. FOR BELOW GRADE CONNECTIONS, A WATER STOP, NON-TENSION SLEEVE IS TO BE USED WITH A HEAT SHRINK PLACED OVER TOP.
4. ALL STREET LIGHT FURNITURE IS TO BE GROUNDED AS PER E.S.A. STANDARDS INCLUDING THE HEAD, POLE PEDESTAL.

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	REVISIONS	DATE

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

STREETLIGHT WIRING CONNECTIONS

NOT TO SCALE

DESIGNED: _____

REVISION: _____

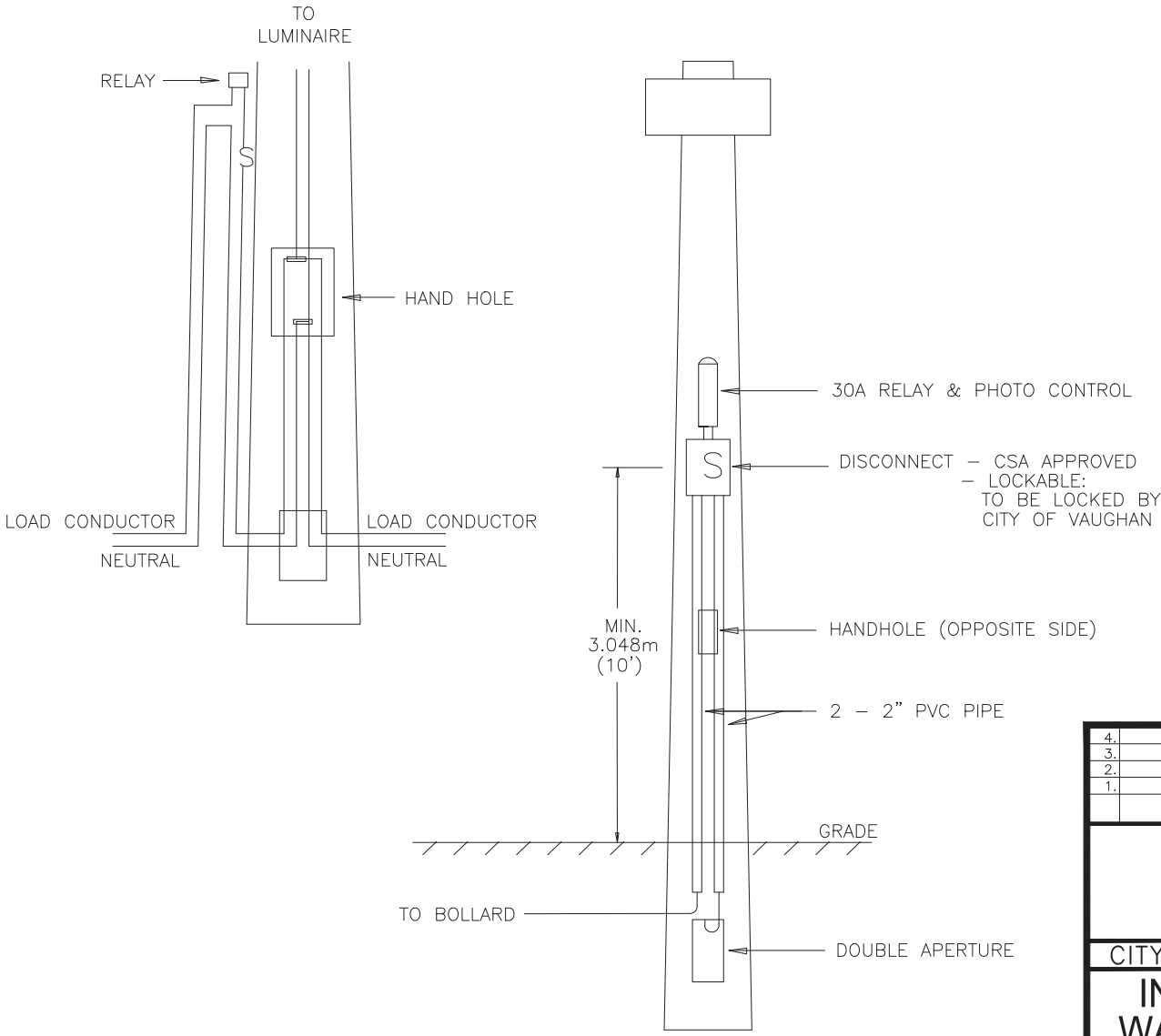
DATE: 2022

STD. DWG.

SL - 102

NOTES

1. INSTALL EQUIPMENT ON OPPOSITE SIDE TO HANDHOLE.
2. CONTRACTOR TO LEAVE ENOUGH CONDUCTOR TO MAKE CONNECTIONS.



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	REVISIONS	DATE

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

INSTALLATION OF BOLLARD WALKWAY LIGHT SERVICE AT STREETLIGHT POLE

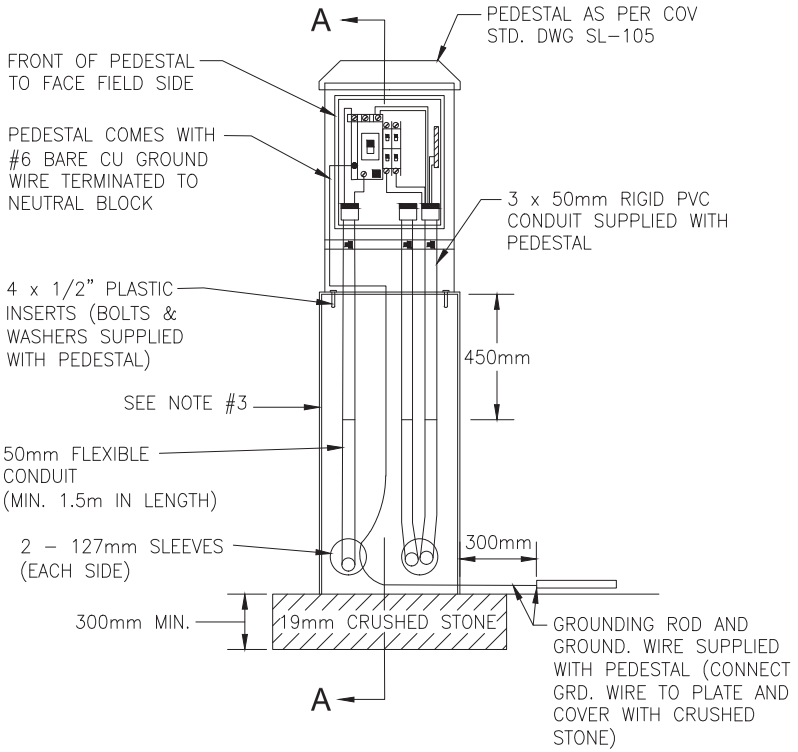
NOT TO SCALE DESIGNED: _____

REVISION: _____ DATE: 2022

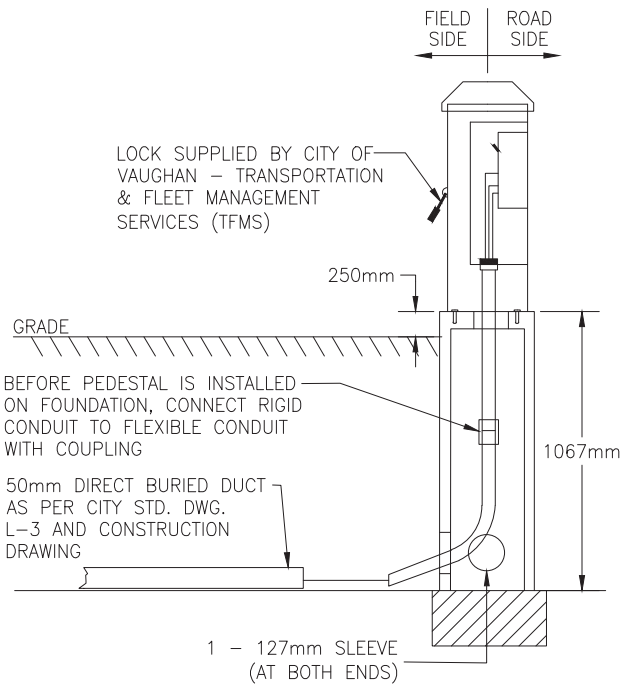
STD. DWG.

SL - 103

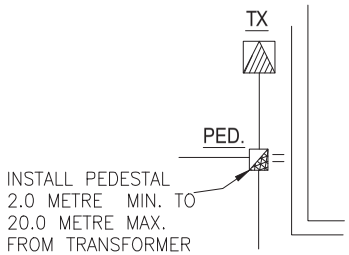
ELECTRICAL SAFETY AUTHORITY WILL INSPECT THE SUPPLY PEDESTAL, STREET LIGHTS AND INSTALLATION OF CABLES IN THE MAIN TRENCH.



FRONT ELEVATION



SECTION 'A - A'



TYPICAL PLAN LAYOUT

NOTES

1. REMOVE ALL LOOSE MATERIAL FROM THE FLOOR OF THE EXCAVATION AND FILL TO FINISHED GRADE OF BEDDING WITH 300mm OF 19mm CRUSHED STONE THOROUGHLY COMPACTED.
2. BACKFILL THE AREA WITH CLEAN EARTH, SAND OR PEA GRAVEL IN THOROUGHLY COMPACTED LAYERS AROUND PERIMETER OF FOUNDATION.
3. CONCRETE FOUNDATION TO BE POURED OR PRECAST AS MANUFACTURED BY BROOKLIN CONCRETE PRODUCTS, PEDESTAL SOLUTIONS INC. OR EQUIVALENT.
4. SUPPLY CABLE FROM TRANSFORMER TO PEDESTAL AND FROM PEDESTAL TO STREET LIGHTS IS #6CU RWU90, XLPE, 600V, CSA APPROVED CABLE.

	REVISIONS	DATE
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VAUGHAN

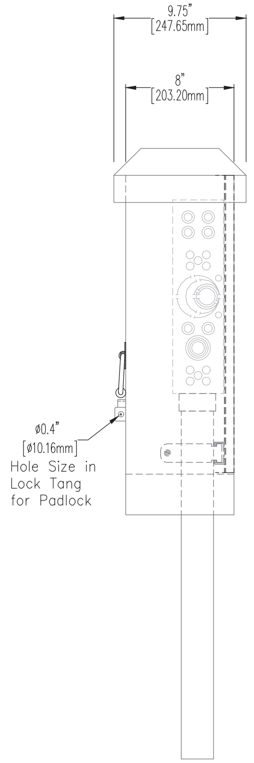
CITY OF VAUGHAN ENGINEERING STANDARD

STREETLIGHT PEDESTAL BASE DETAIL

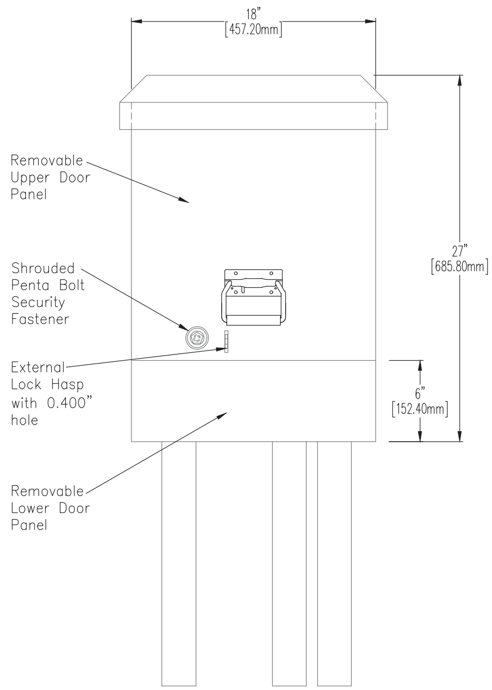
NOT TO SCALE | DESIGNED: _____ | REVISION: _____ | DATE: 2022

STD. DWG. SL - 104

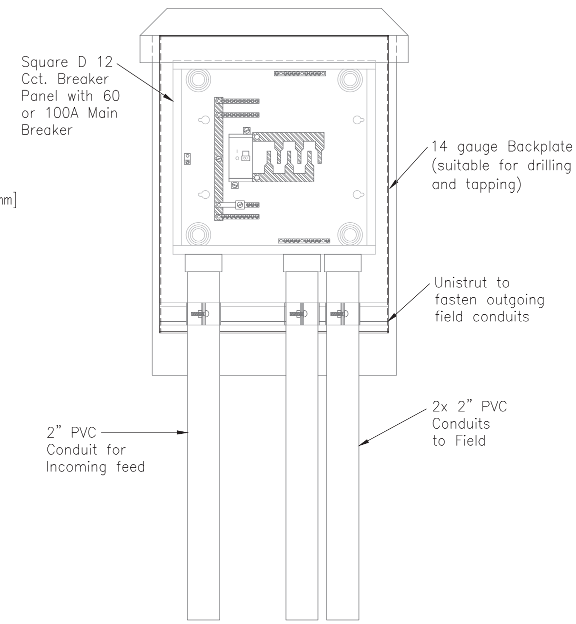
ORDER INFORMATION		
ITEM:	AMPS	QUANTITY
MAIN BREAKER SIZE		1
SINGLE POLE BREAKER		
2 POLE BREAKER		



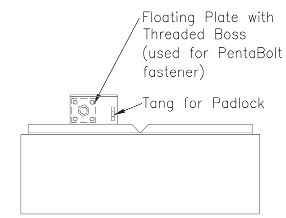
RIGHT SIDE ELEVATION



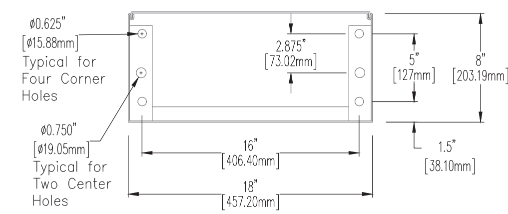
FRONT ELEVATION
WITH FRONT DOOR PANELS



FRONT ELEVATION
FRONT DOOR PANELS REMOVED



LOWER PANEL
(showing Pentabolt Assy and Lock Hasp)



BASE PLATE MOUNTING DIMENSIONS

NOTES
1. PEDESTAL TO BE SUPPLIED WITH PENTA BOLT UNFASTENED.
2. PEDESTAL TO BE SUPPLIED WITHOUT A PENTA BOLT SOCKET WRENCH.
3. CITY OF VAUGHN SHALL SECURE THE PENTA BOLT ON PROJECT COMPLETION AND STREET LIGHTING ASSUMPTIONS BY THE CITY.

	REVISIONS	DATE
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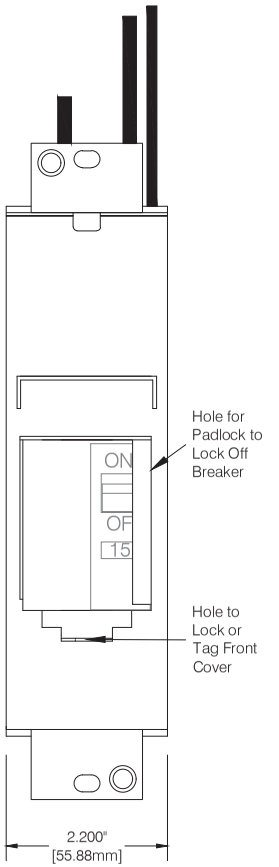
VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

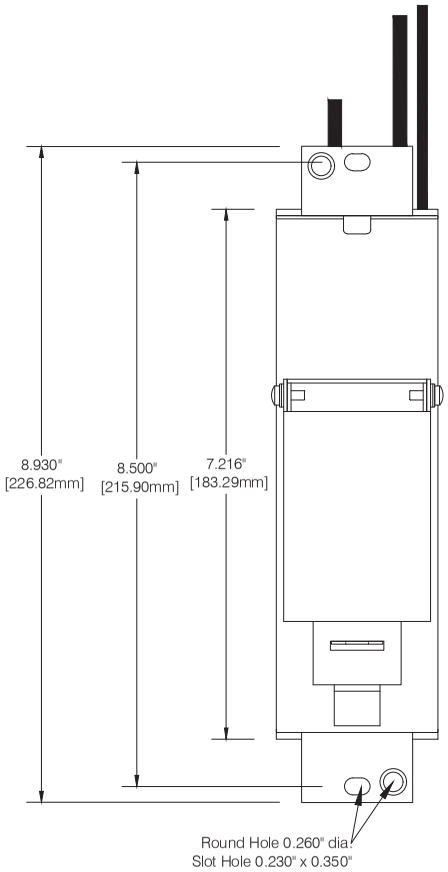
STREETLIGHT PEDESTAL DETAIL

NOT TO SCALE
DESIGNED: ____
REVISION: ____
DATE: 2022
STD. DWG.
SL - 105

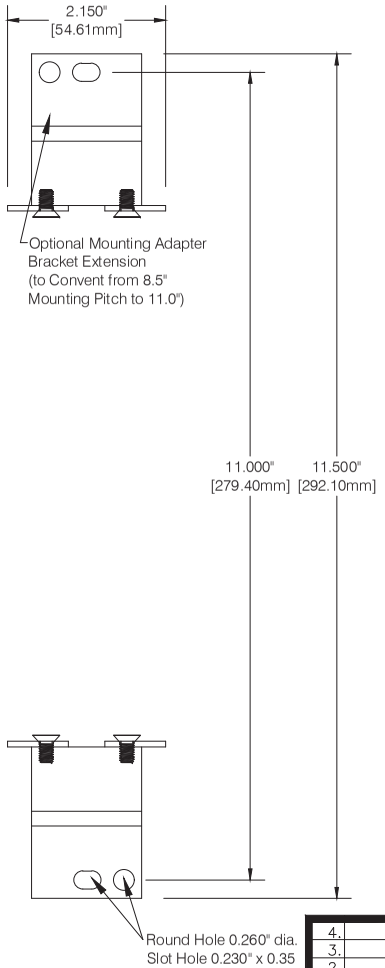
Acad File: C:\Users\cudlamop\OneDrive - City of Vaughan\$ - PP - Req. - Consult Share\$ - In. Req. Services - Map Req\2022\$ - Req. - Other\Eric M\SL - Standardizing Standards\STREETLIGHT STANDARDS - NEW\SL-105 - SL Pedestal Detail.dwg



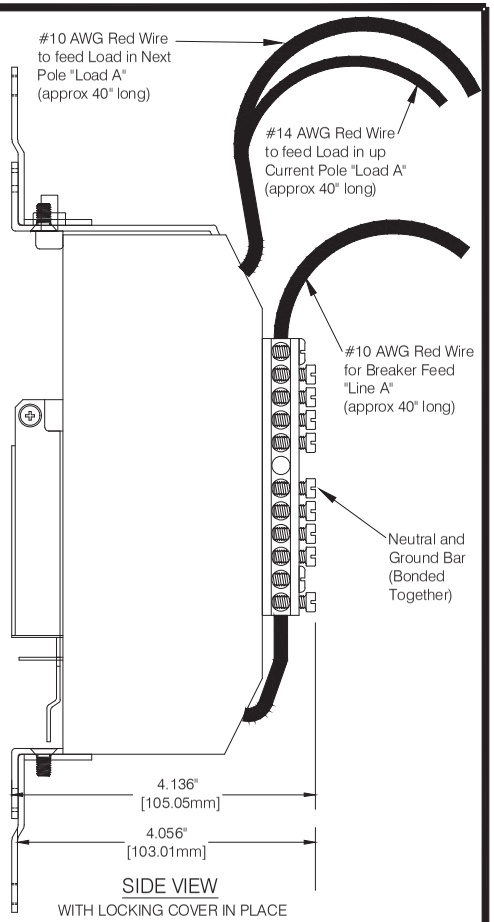
FRONT VIEW
WITH LOCKING COVER PLATE REMOVED



FRONT VIEW
WITH LOCKING COVER IN PLACE



FRONT VIEW
OPT. MOUNTING ADAPTER BRACKET EXTENSION



SIDE VIEW
WITH LOCKING COVER IN PLACE

MATERIAL NOTES:

1. ENCLOSURE MAT'L: 14 GAUGE (0.083") THICK ZINC COATED (GALVANIZED) SHEET METAL.
2. PAINT COLOR: EQUIPMENT GREEN, DARK FOREST GREEN COLOR, PROTECH PS211G58 POWER COAT FINISH.
3. MAIN BREAKER: GE 15A, SINGLE POLE BREAKER. 22KA INTERRUPTING CAPACITY RATED.
4. LOAD NEUTRAL LUGS: 9 LUGS NEUTRAL BAR, #4 AWG TO #14 AWG CAPACITY.
5. IN POLE BREAKER SHALL BE IN ACCORDANCE WITH CSA AND ESA SPECIFICATIONS AND REQUIREMENTS.
6. AS MANUFACTURED BY PSI OR EQUIVALENT.

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1.	UPDATED STANDARD + MATERIAL NOTES	SEPT. 2025
	REVISIONS	DATE

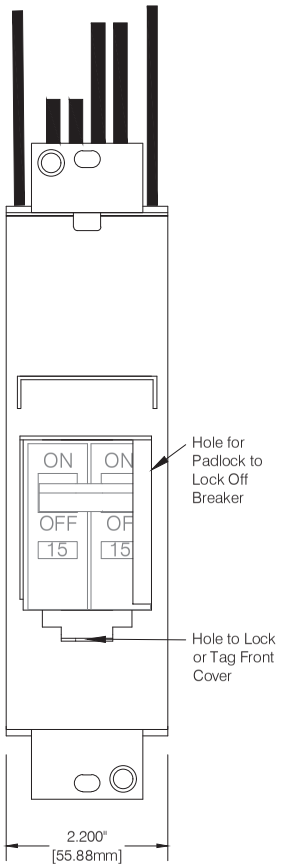
VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

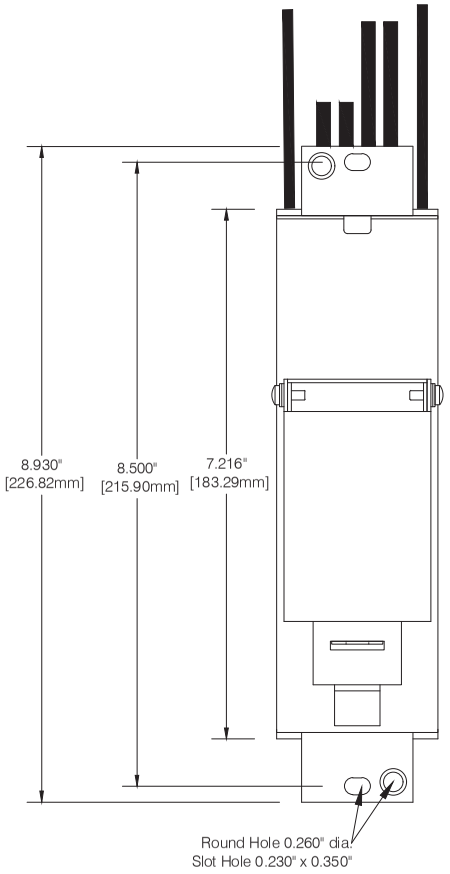
HAND HOLE BREAKER SL1-15

NOT TO SCALE
DESIGNED: TFMS
REVISION: 1
DATE: JAN. 2022

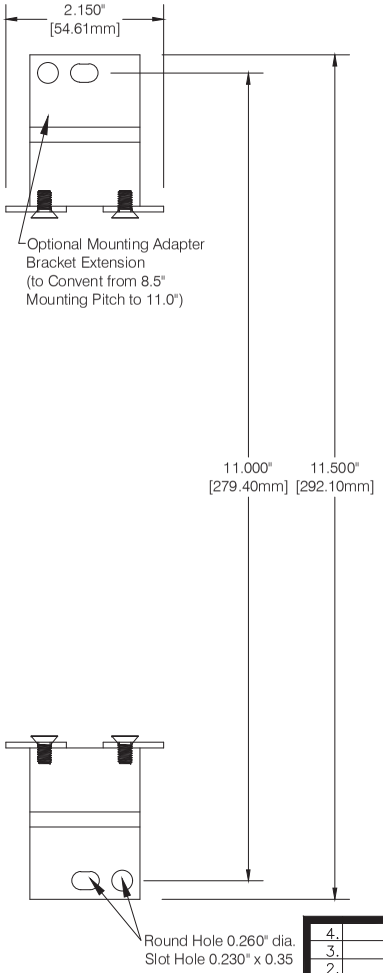
STD. DWG.
SL - 106



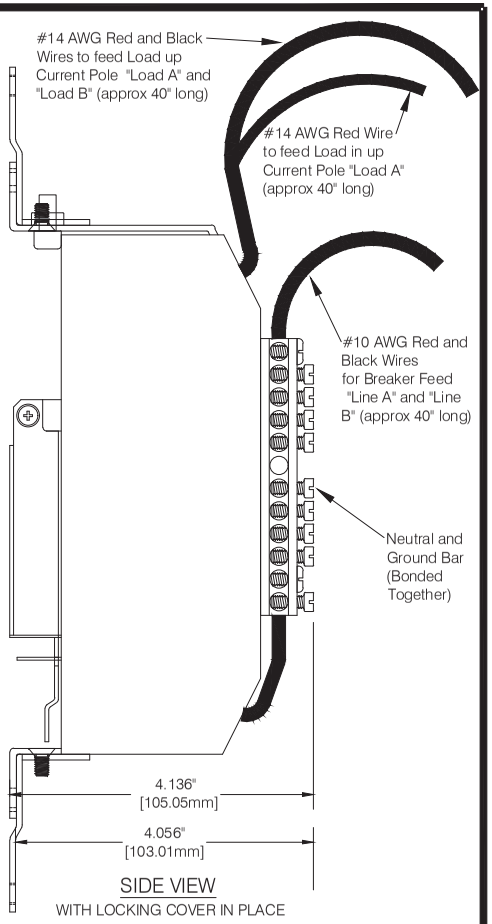
FRONT VIEW
WITH LOCKING COVER PLATE REMOVED



FRONT VIEW
WITH LOCKING COVER IN PLACE



FRONT VIEW
OPT. MOUNTING ADAPTER BRACKET EXTENSION



SIDE VIEW
WITH LOCKING COVER IN PLACE

MATERIAL NOTES:

1. ENCLOSURE MAT'L: 14 GAUGE (0.083") THICK ZINC COATED (GALVANIZED) SHEET METAL.
2. PAINT COLOR: EQUIPMENT GREEN, DARK FOREST GREEN COLOR, PROTECH PS211G58 POWER COAT FINISH.
3. MAIN BREAKER: GE 15A, 2 POLE BREAKER. 22KA INTERRUPTING CAPACITY RATED.
4. LOAD NEUTRAL LUGS: 9 LUGS NEUTRAL BAR, #4 AWG TO #14 AWG CAPACITY.
5. IN POLE BREAKER SHALL BE IN ACCORDANCE WITH CSA AND ESA SPECIFICATIONS AND REQUIREMENTS.
6. AS MANUFACTURED BY PSI OR EQUIVALENT.

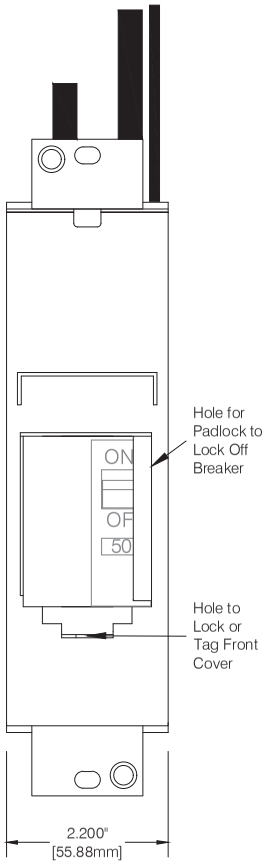
4.		
3.		
2.		
1.	UPDATED STANDARD + MATERIAL NOTES	SEPT. 2025
	REVISIONS	DATE

VAUGHAN

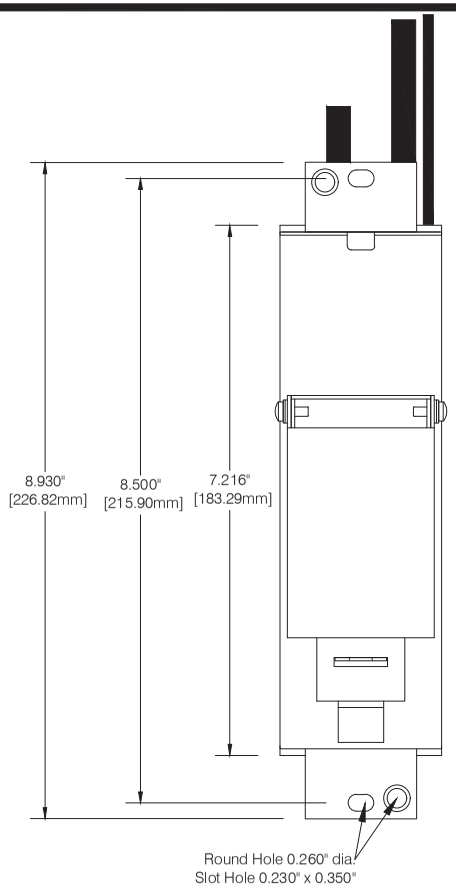
CITY OF VAUGHAN ENGINEERING STANDARD

HAND HOLE BREAKER SL2-15

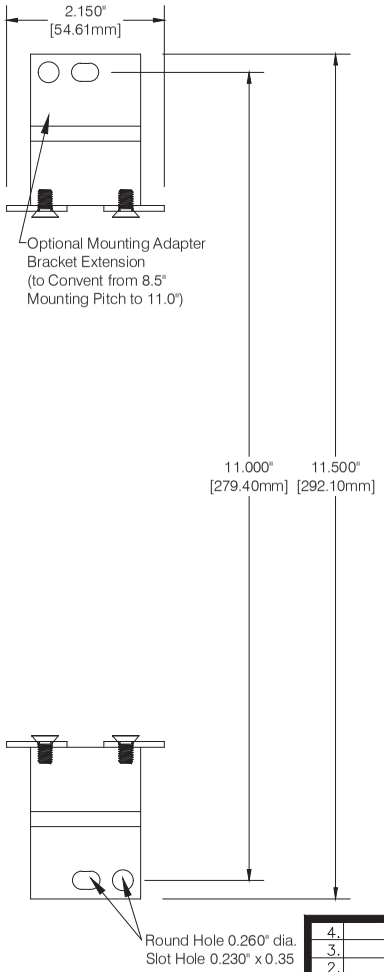
NOT TO SCALE	DESIGNED: TFMS	STD. DWG.
REVISION: 1	DATE: JAN. 2022	SL - 107



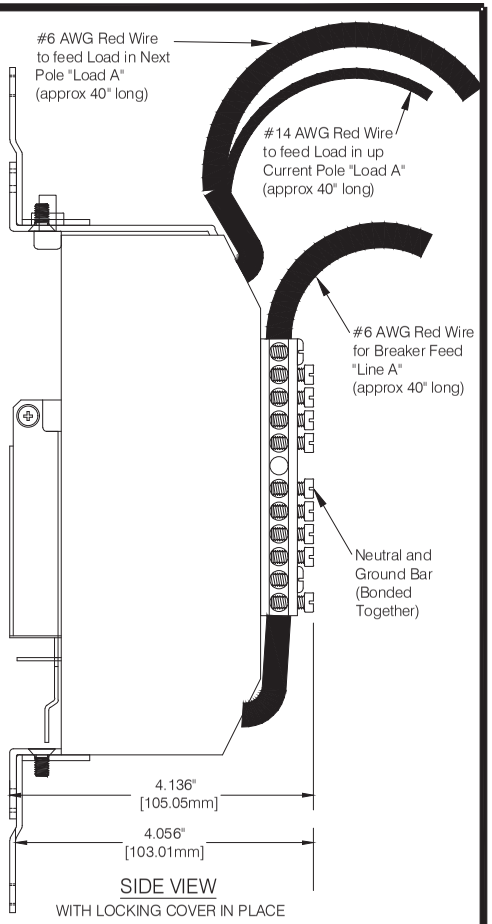
FRONT VIEW
WITH LOCKING COVER PLATE REMOVED



FRONT VIEW
WITH LOCKING COVER IN PLACE



FRONT VIEW
OPT. MOUNTING ADAPTER BRACKET EXTENSION



SIDE VIEW
WITH LOCKING COVER IN PLACE

MATERIAL NOTES:

1. ENCLOSURE MAT'L: 14 GAUGE (0.083") THICK ZINC COATED (GALVANIZED) SHEET METAL.
2. PAINT COLOR: EQUIPMENT GREEN, DARK FOREST GREEN COLOR, PROTECH PS211G58 POWER COAT FINISH.
3. MAIN BREAKER: GE 50A, SINGLE POLE BREAKER, 22KA INTERRUPTING CAPACITY RATED.
3. LOAD NEUTRAL LUGS: 9 LUGS NEUTRAL BAR, #4 AWG TO #14 AWG CAPACITY.
4. IN POLE BREAKER SHALL BE IN ACCORDANCE WITH CSA AND ESA SPECIFICATIONS AND REQUIREMENTS.
5. AS MANUFACTURED BY PSI OR EQUIVALENT.

4.		
3.		
2.		
1.	UPDATED STANDARD + MATERIAL NOTES	SEPT. 2025
	REVISIONS	DATE

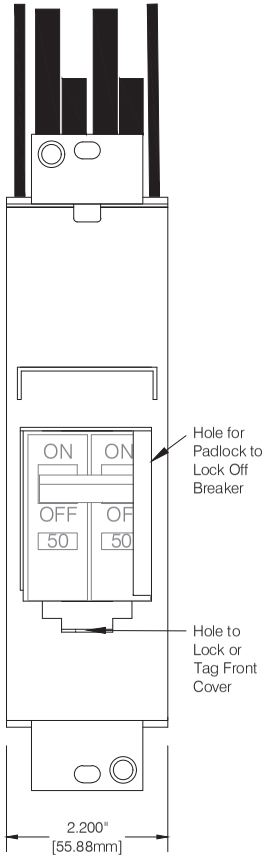
VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

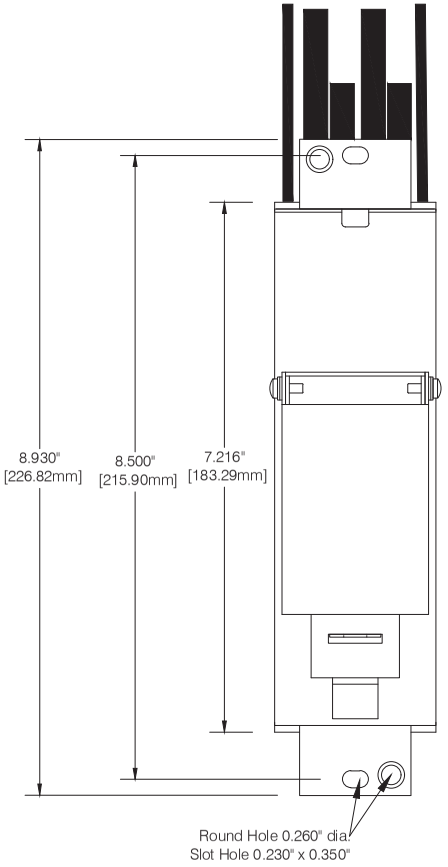
HAND HOLE BREAKER SL1-50

NOT TO SCALE
DESIGNED: TFMS
REVISION: 1
DATE: JAN. 2022

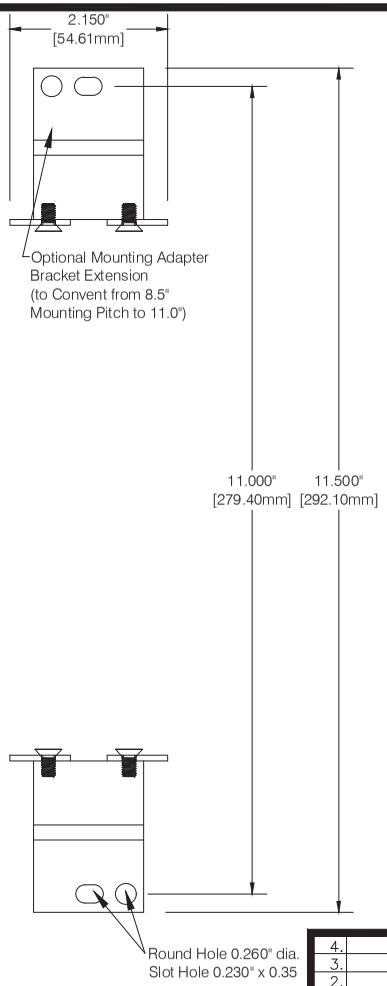
STD. DWG.
SL - 108



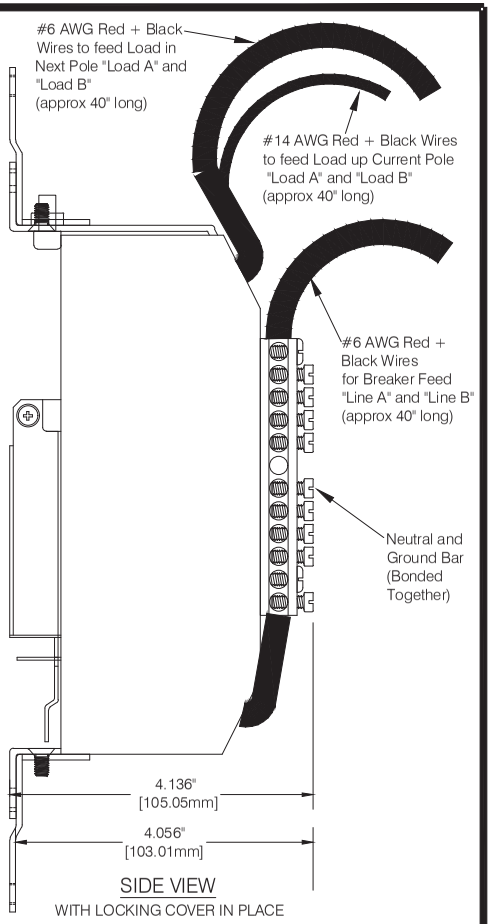
FRONT VIEW
WITH LOCKING COVER PLATE REMOVED



FRONT VIEW
WITH LOCKING COVER IN PLACE



FRONT VIEW
OPT. MOUNTING ADAPTER BRACKET EXTENSION



SIDE VIEW
WITH LOCKING COVER IN PLACE

MATERIAL NOTES:

1. ENCLOSURE MAT'L: 14 GAUGE (0.083") THICK ZINC COATED (GALVANISED) SHEET METAL.
2. PAINT COLOR: EQUIPMENT GREEN, DARK FOREST GREEN COLOR, PROTECH PS211G58 POWER COAT FINISH.
3. MAIN BREAKER: GE 50A, 2 POLE BREAKER, 22KA INTERRUPTING CAPACITY RATED.
4. LOAD NEUTRAL LUGS: 9 LUGS NEUTRAL BAR, #4 AWG TO #14 AWG CAPACITY.
5. IN POLE BREAKER SHALL BE IN ACCORDANCE WITH CSA AND ESA SPECIFICATIONS AND REQUIREMENTS.
6. AS MANUFACTURED BY PSI OR EQUIVALENT.

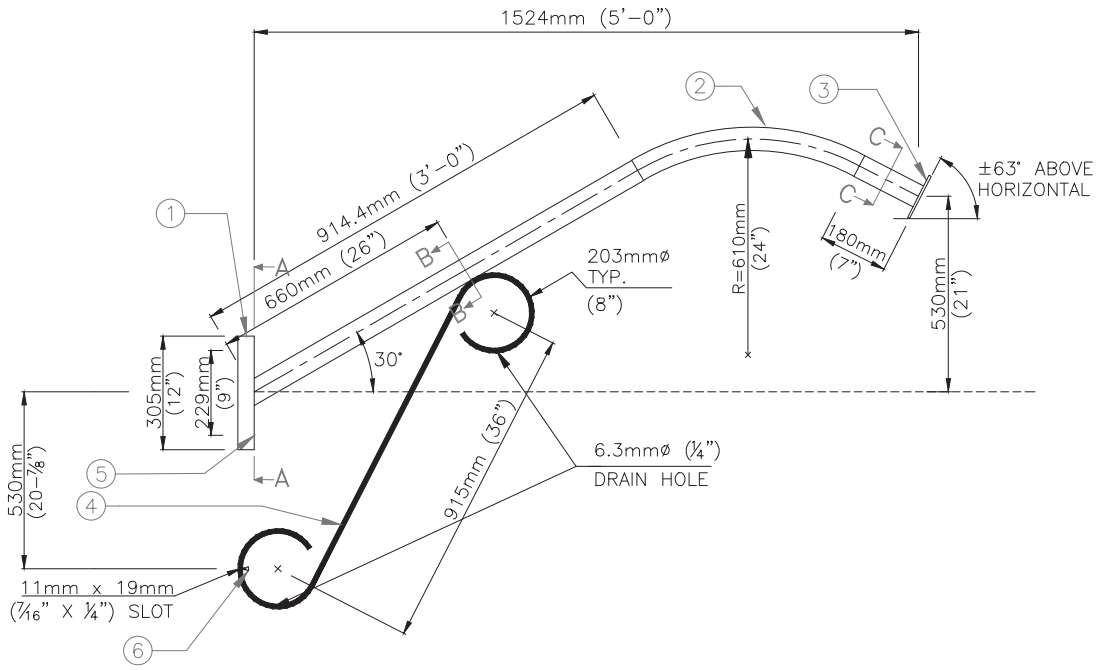
4.		
3.		
2.		
1.	UPDATED STANDARD + MATERIAL NOTES	SEPT. 2025
	REVISIONS	DATE

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

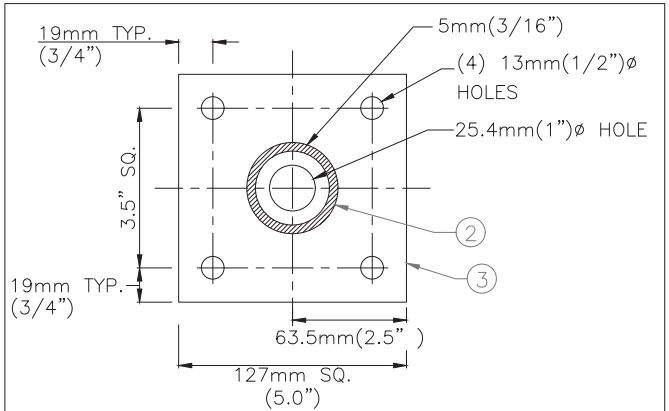
HAND HOLE BREAKER SL2-50

NOT TO SCALE	DESIGNED: TFMS	STD. DWG.
REVISION: 1	DATE: JAN. 2022	SL - 109

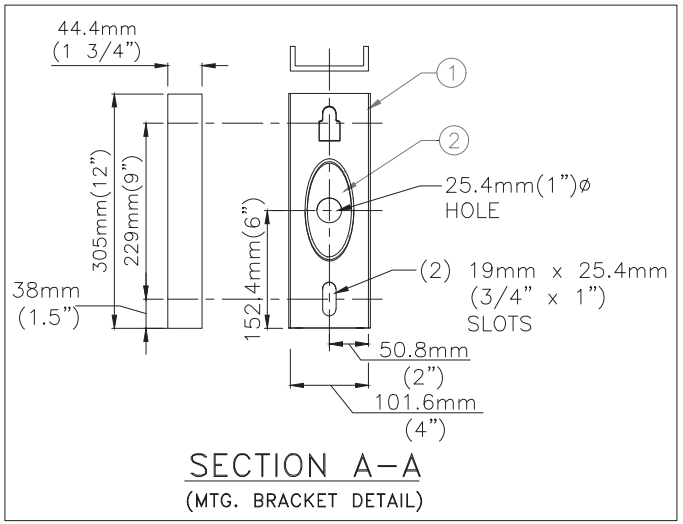


BILL OF MATERIAL			
ITEM #	PART DESCRIPTION	MATERIAL	QTY.
1	4" x 12" LONG CHANNEL	ALUM.	1
2	2.0" ALUMINUM PIPE	ALUM.	1
3	5" SQ. x 1/4" PLATE	ALUM.	1
4	1.5" CHANNEL	ALUM.	1
5	5/8" x 2.75" BOLTS & WASHERS	ST. STEEL	2
6	3/8" x 1.5" BOLT & WASHER	ST. STEEL	1

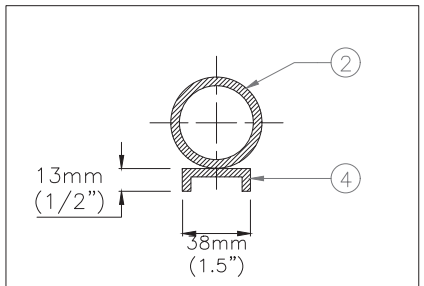
* MAXIMUM LUMINAIRE SIZE ALLOWABLE
50 lbs. – 3 sq.ft. EPA



SECTION C–C
(LUMINAIRE MTG. BRACKET DETAIL)



SECTION A–A
(MTG. BRACKET DETAIL)



SECTION B–B

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

REVISIONS	DATE
4.	
3.	
2.	
1.	

VAUGHAN

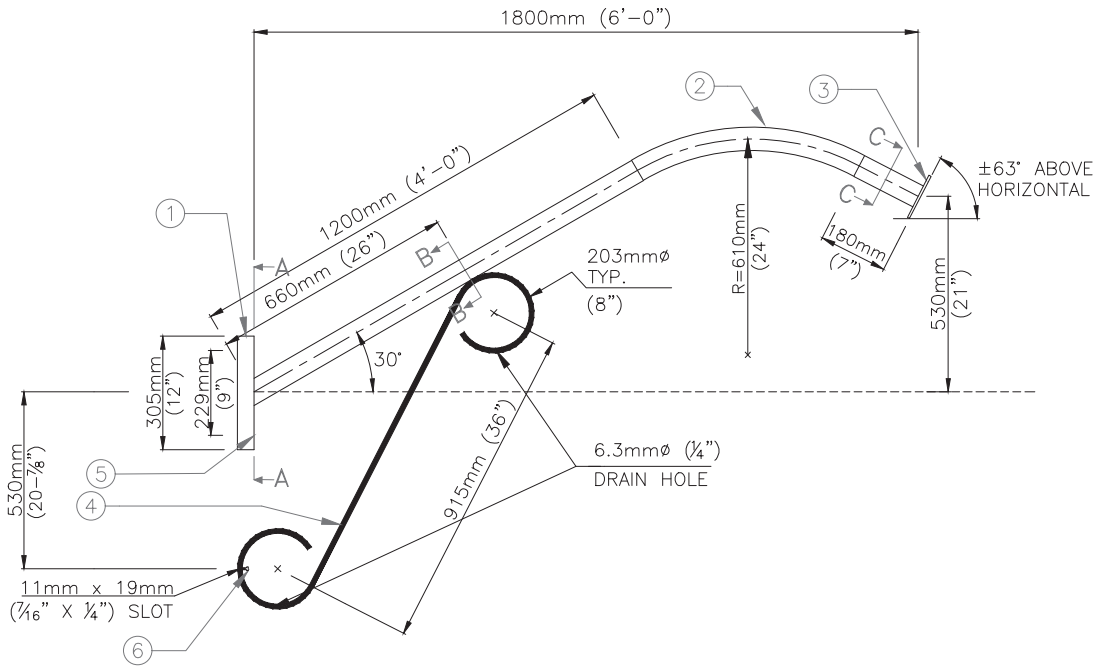
CITY OF VAUGHAN ENGINEERING STANDARD

1.5m (5')
VICTORIAN SCROLL ARM

NOT TO SCALE | DESIGNED: _____ | STD. DWG. SL - 110

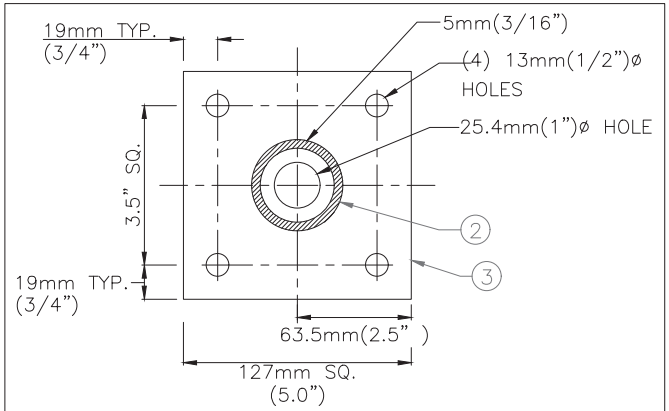
REVISION: _____ | DATE: 2022

VICTORIAN SCROLL ARM

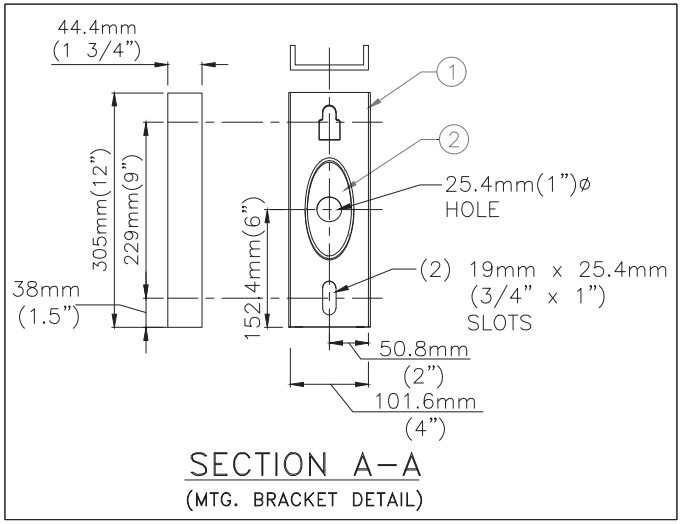


BILL OF MATERIAL			
ITEM #	PART DESCRIPTION	MATERIAL	QTY.
1	4" x 12" LONG CHANNEL	ALUM.	1
2	2.5" SCH. 40 ALUMINUM PIPE	ALUM.	1
3	5" SQ. x 1/4" PLATE	ALUM.	1
4	1.5" CHANNEL	ALUM.	1
5	5/8" x 2.75" BOLTS & WASHERS	ST. STEEL	2
6	3/8" x 1.5" BOLT & WASHER	ST. STEEL	1

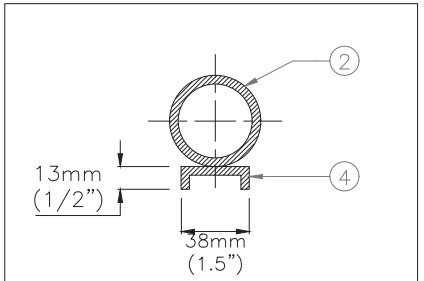
* MAXIMUM LUMINAIRE SIZE ALLOWABLE
50 lbs. – 3 sq.ft. EPA



SECTION C–C
(LUMINAIRE MTG. BRACKET DETAIL)



SECTION A–A
(MTG. BRACKET DETAIL)



SECTION B–B

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
4.		
3.		
2.		
1.		

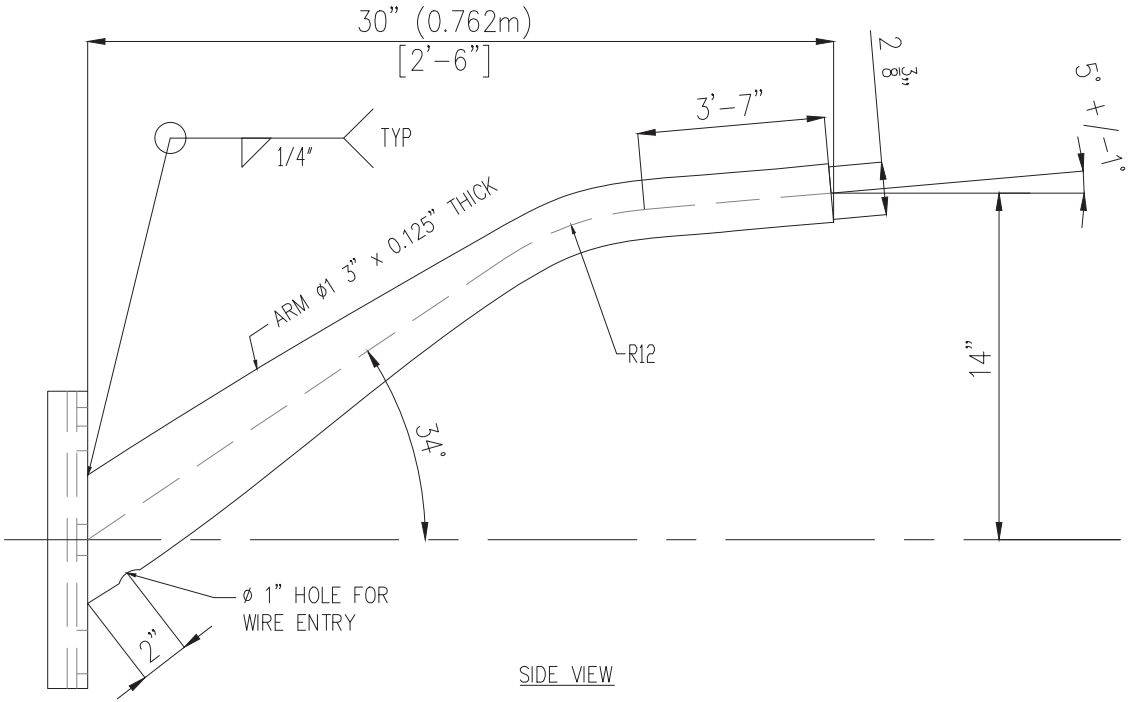
VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

1.8m (6')
VICTORIAN SCROLL ARM

NOT TO SCALE DESIGNED: _____
REVISION: _____ DATE: 2022

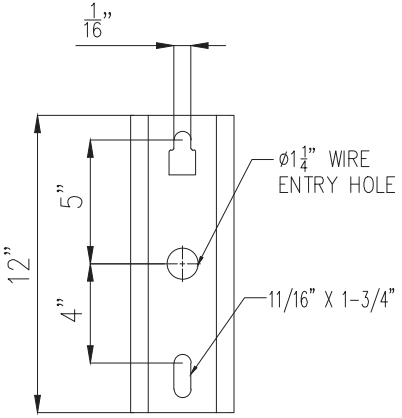
STD. DWG.
SL - 111



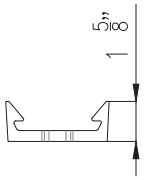
SIDE VIEW

BRACKET DESCRIPTION

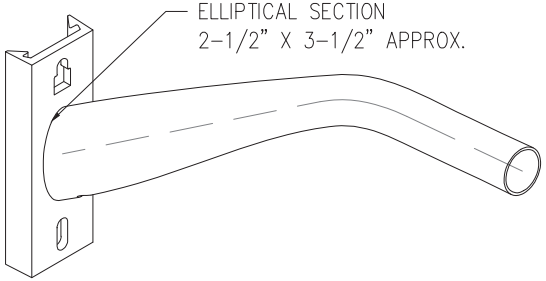
BRACKET LENGTH:	2'-6" / 30"
FINISH:	NATURAL BRUSH FINISH
MATERIAL:	ALUMINUM
CONSTRUCTION:	ARM TEMPERED: T6 – AFTER ALL OPERATIONS. ALL WELDING AS PER CSA 47.2



12" POLE PLATE
SIDE VIEW



12" POLE PLATE
SECTION



3D
SIDE VIEW

4.		
3.		
2.		
1.		
	REVISIONS	DATE

VAUGHAN

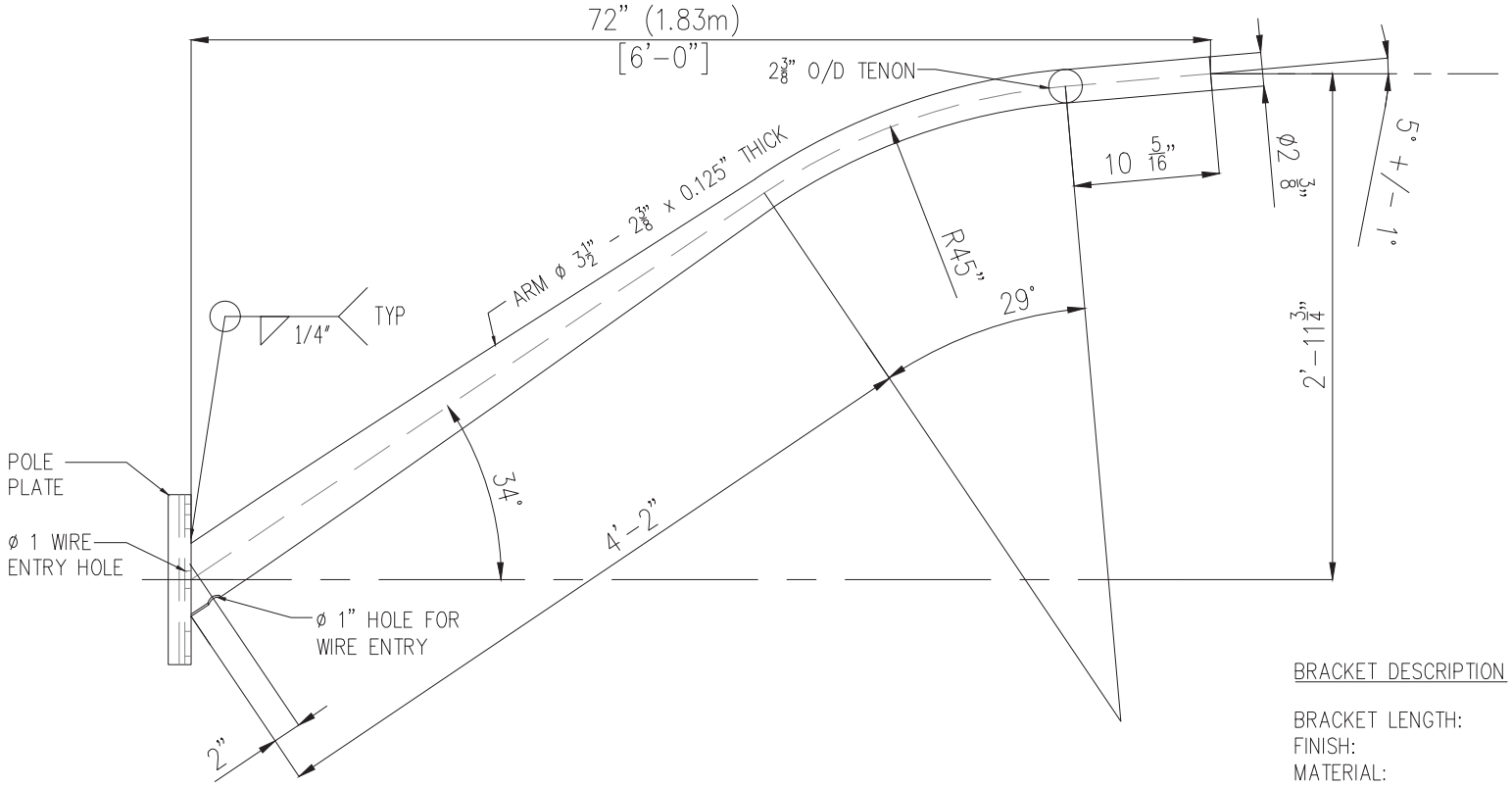
CITY OF VAUGHAN ENGINEERING STANDARD

30" (2.5') ALUMINUM ELLIPTICAL BRACKET

NOT TO SCALE DESIGNED: _____

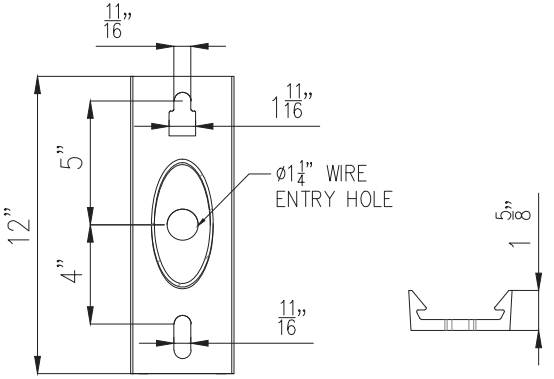
REVISION: _____ DATE: 2022

STD. DWG.
SL-112



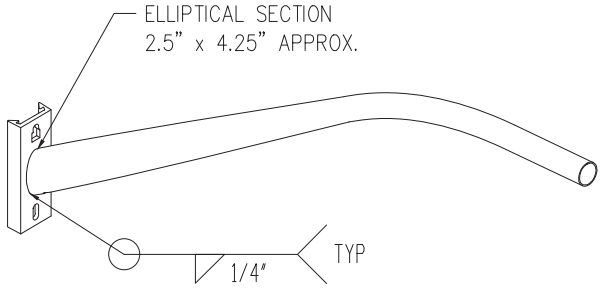
BRACKET DESCRIPTION

BRACKET LENGTH:	6'-0" / 72" / 1.83m
FINISH:	NATURAL BRUSH FINISH
MATERIAL:	ALUMINUM
CONSTRUCTION:	ARM TEMPERED: T6 – AFTER ALL OPERATIONS. ALL WELDING AS PER CSA 47.2



12" POLE PLATE SIDE VIEW

12" POLE PLATE SECTION



3D SIDE VIEW

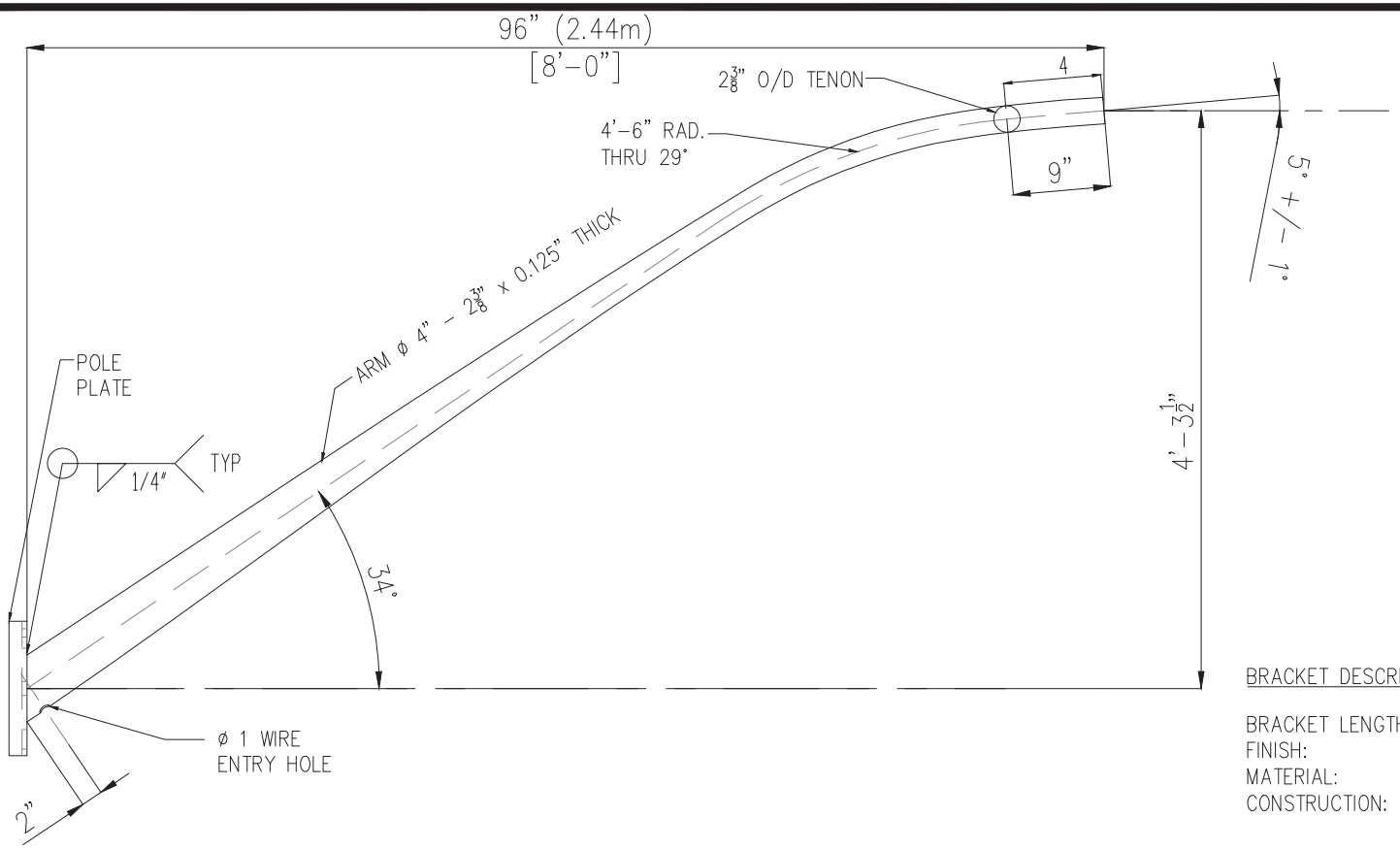
4.		
3.		
2.		
1.		
	REVISIONS	DATE

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

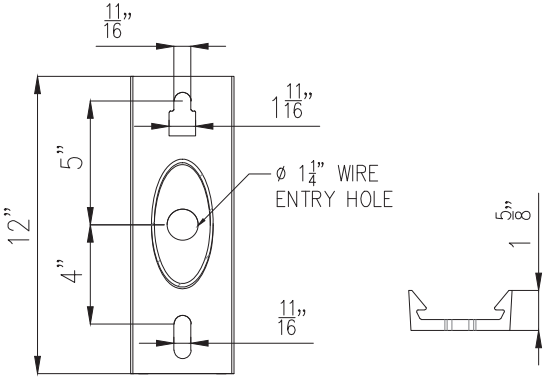
1.83m (6') ALUMINUM ELLIPTICAL BRACKET

NOT TO SCALE	DESIGNED:	STD. DWG.
REVISION:	DATE: 2022	SL-113



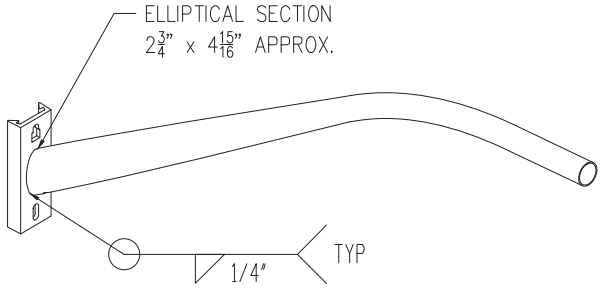
BRACKET DESCRIPTION

BRACKET LENGTH:	8'–0" / 96" / 2.44m
FINISH:	NATURAL BRUSH FINISH
MATERIAL:	ALUMINUM
CONSTRUCTION:	ARM TEMPERED: T6 – AFTER ALL OPERATIONS. ALL WELDING AS PER CSA 47.2



12" POLE PLATE
SIDE VIEW

12" POLE PLATE
SECTION



3D
SIDE VIEW

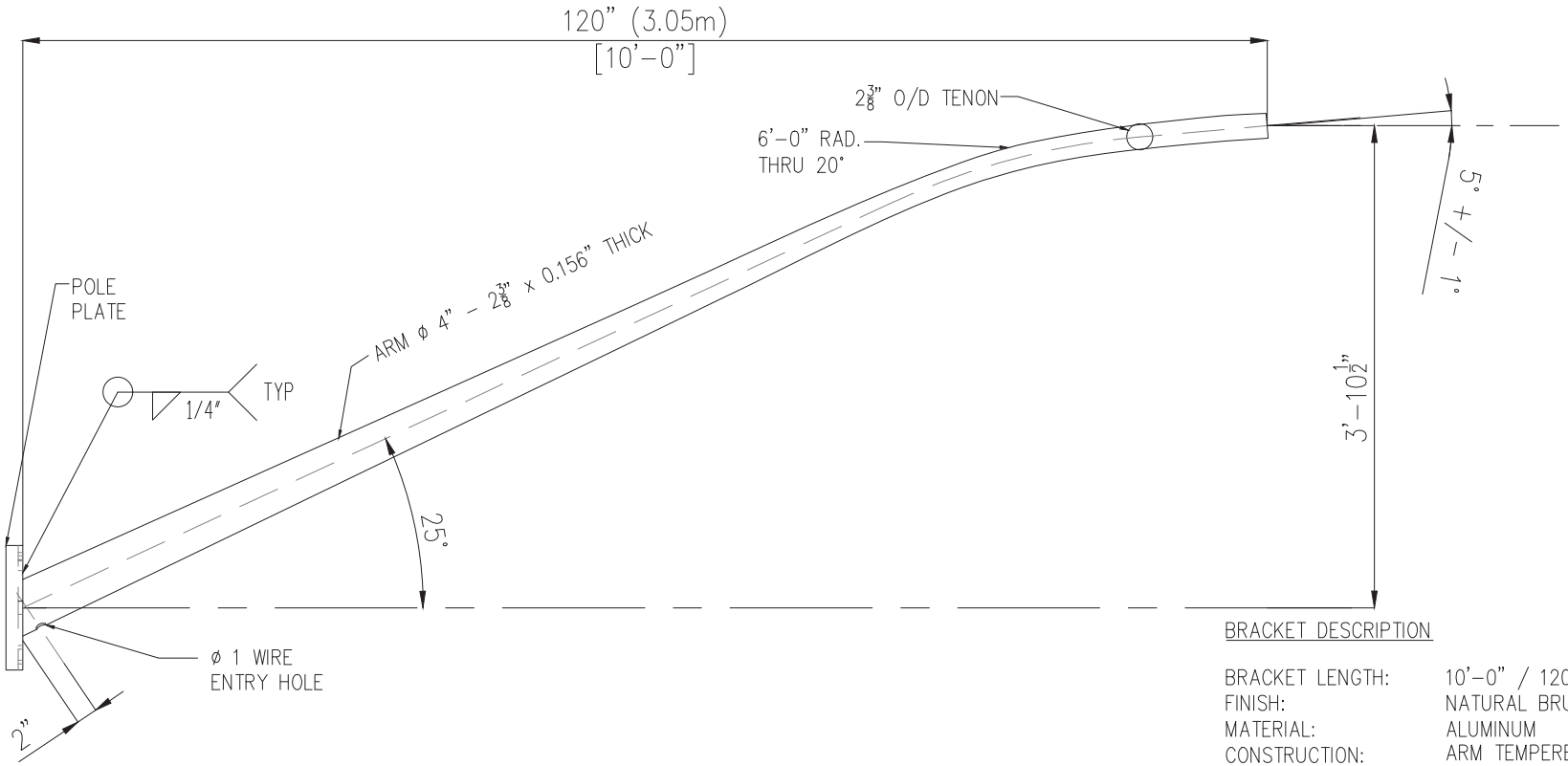
4.		
3.		
2.		
1.		
	REVISIONS	DATE

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

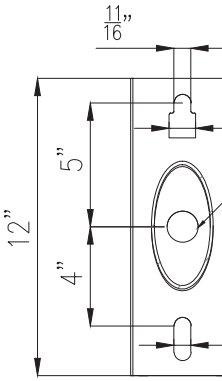
2.44m (8') ALUMINUM ELLIPTICAL BRACKET

NOT TO SCALE	DESIGNED:	STD. DWG.
REVISION:	DATE: 2022	SL-114

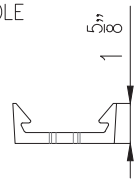


BRACKET DESCRIPTION

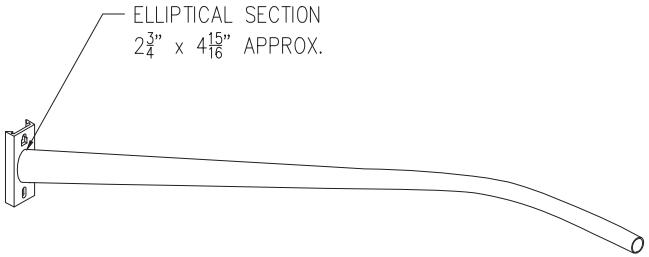
BRACKET LENGTH:	10'-0" / 120" / 3.05m
FINISH:	NATURAL BRUSH FINISH
MATERIAL:	ALUMINUM
CONSTRUCTION:	ARM TEMPERED: T6 – AFTER ALL OPERATIONS. ALL WELDING AS PER CSA 47.2



12" POLE PLATE
SIDE VIEW



12" POLE PLATE
SECTION



3D
SIDE VIEW

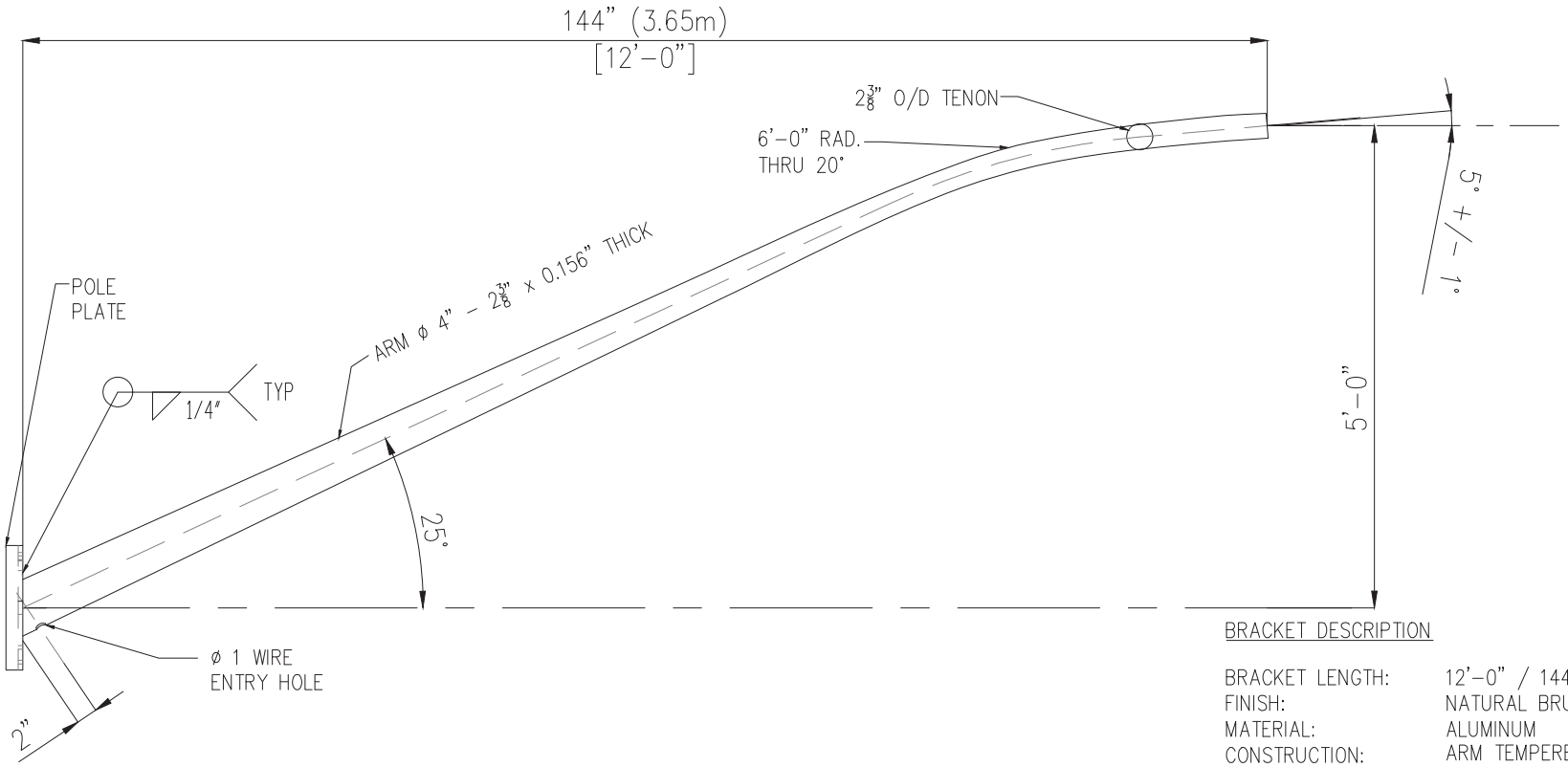
4.		
3.		
2.		
1.		
	REVISIONS	DATE

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

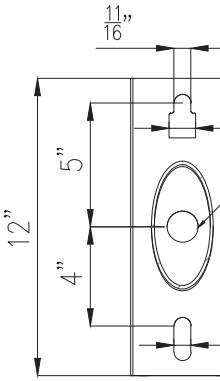
3m (10') ALUMINUM ELLIPTICAL BRACKET

NOT TO SCALE	DESIGNED:	STD. DWG.
REVISION:	DATE: 2022	SL-115

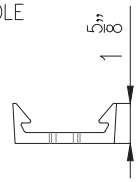


BRACKET DESCRIPTION

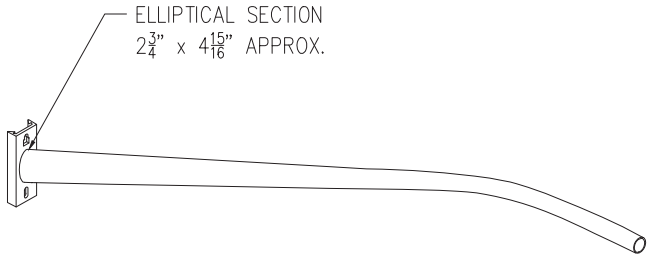
BRACKET LENGTH:	12'-0" / 144" / 3.65m
FINISH:	NATURAL BRUSH FINISH
MATERIAL:	ALUMINUM
CONSTRUCTION:	ARM TEMPERED: T6 – AFTER ALL OPERATIONS. ALL WELDING AS PER CSA 47.2



12" POLE PLATE
SIDE VIEW



12" POLE PLATE
SECTION



3D
SIDE VIEW

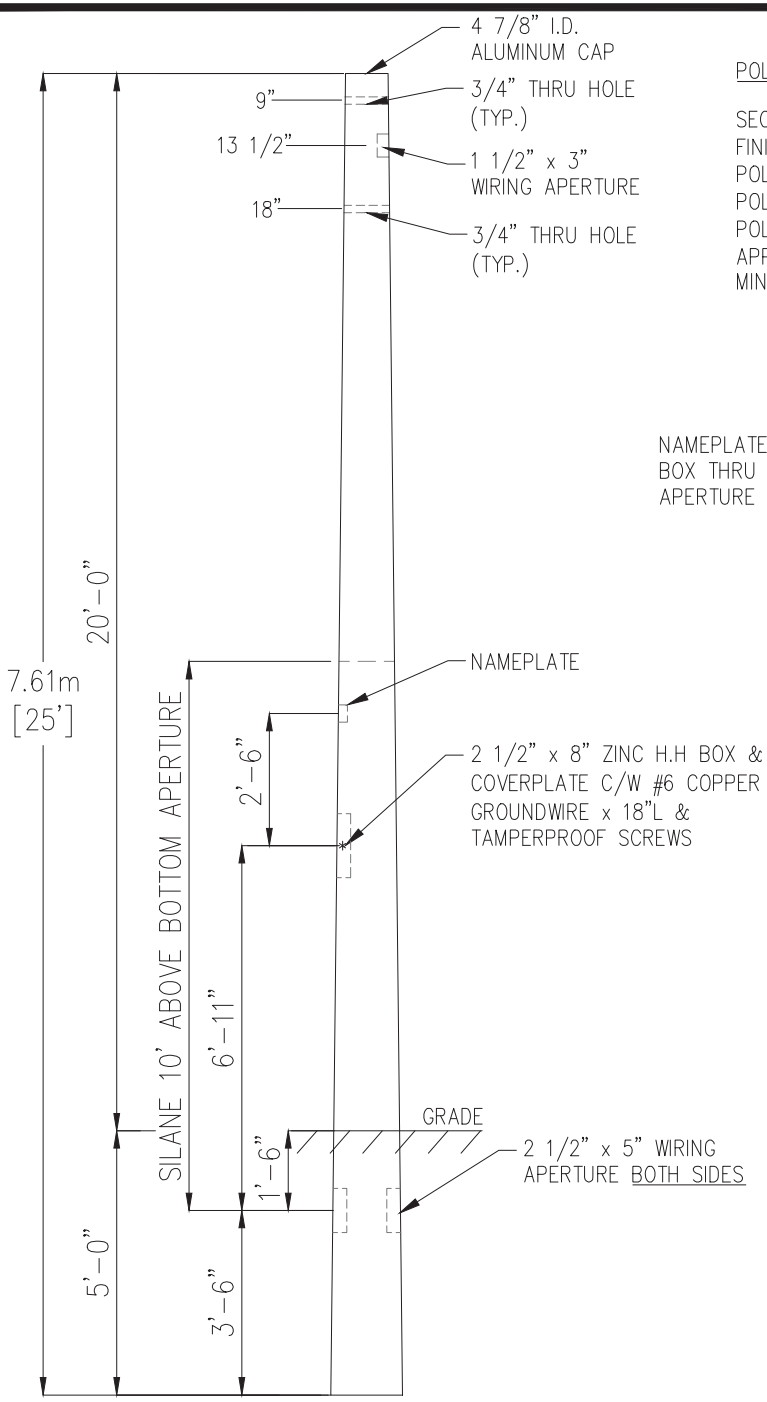
4.		
3.		
2.		
1.		
	REVISIONS	DATE

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

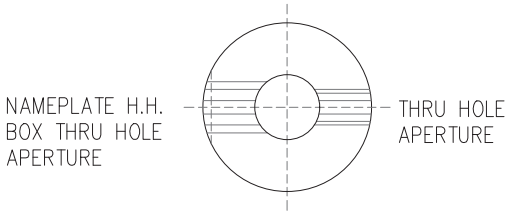
3.65m (12') ALUMINUM ELLIPTICAL BRACKET

NOT TO SCALE	DESIGNED:	STD. DWG.
REVISION:	DATE: 2022	SL-116



POLE DESCRIPTION

SECTION:	ROUND
FINISH:	MOULD FINISH
POLE TOP:	4 3/4" DIA.
POLE BUTT:	9 1/4" DIA.
POLE LENGTH:	25' 0"
APPROX. WGT.:	945 LBS.
MIN. RACEWAY:	1 1/8" ø



TOP VIEW

NOTES:

1. CABLE RACEWAY IN POLE MUST BE OF SUFFICIENT DIAMETER TO ACCOMMODATE A DOUBLE RUN OF U/G CABLE UP TO THE HANDHOLE.
2. COPPER GROUND WIRE AT HANDHOLE IN ACCORDANCE WITH C.S.A. STANDARDS.
3. HANDHOLE AND NAMEPLATE TO BE ON HOUSE SIDE OF POLE.

4.		
3.		
2.		
1.		
	REVISIONS	DATE

VAUGHAN

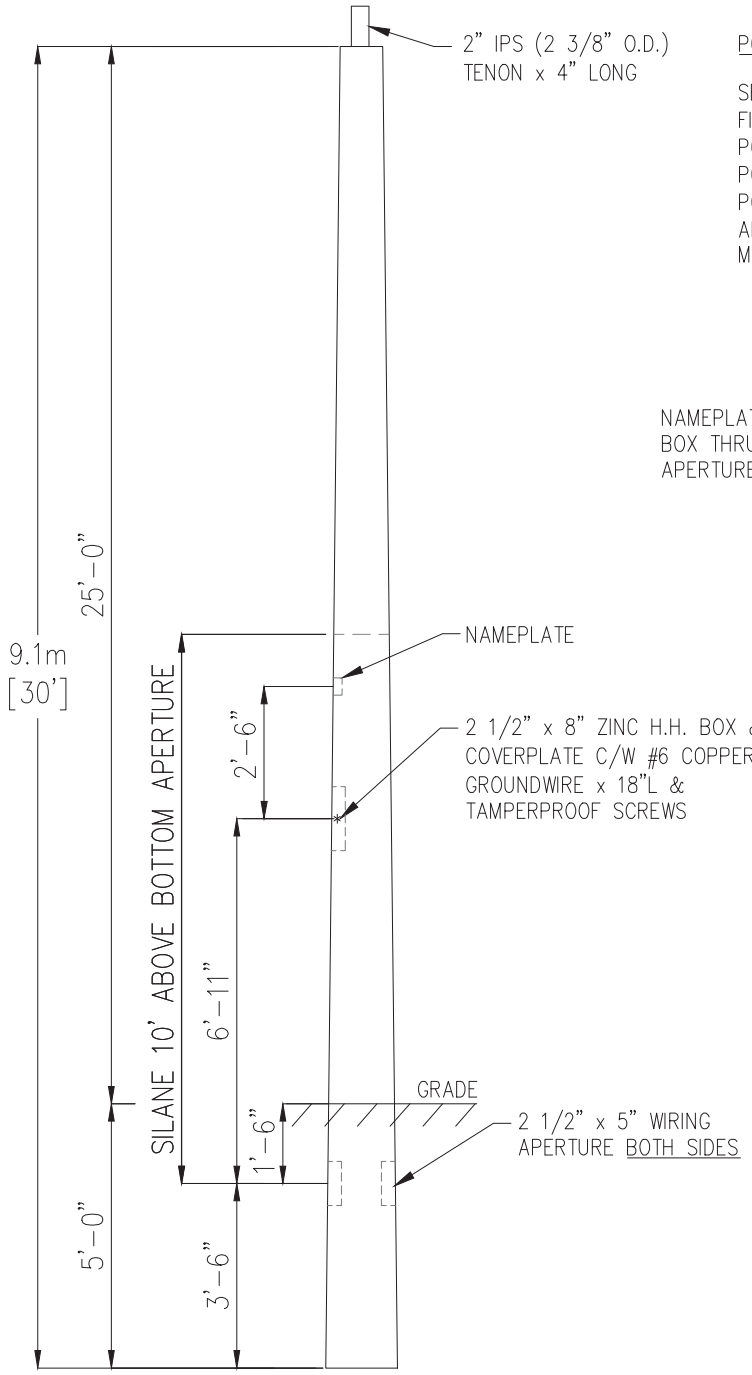
CITY OF VAUGHAN ENGINEERING STANDARD

7.6m (25') TAPERED ROUND CONCRETE POLE

NOT TO SCALE DESIGNED: _____

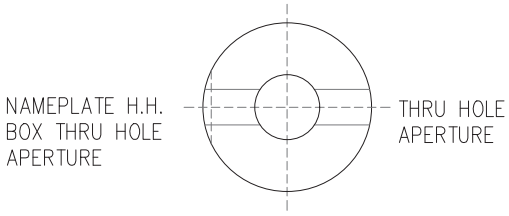
REVISION: _____ DATE: 2022

STD. DWG.
SL-117



POLE DESCRIPTION

SECTION:	ROUND
FINISH:	MOULD FINISH
POLE TOP:	4 3/4" DIA.
POLE BUTT:	10 1/8" DIA.
POLE LENGTH:	30' 0"
APPROX. WGT.:	1,365 LBS.
MIN. RACEWAY:	1 1/8" ø



TOP VIEW

NOTES:

1. CABLE RACEWAY IN POLE MUST BE OF SUFFICIENT DIAMETER TO ACCOMMODATE A DOUBLE RUN OF U/G CABLE UP TO THE HANDHOLE.
2. COPPER GROUND WIRE AT HANDHOLE IN ACCORDANCE WITH C.S.A. STANDARDS.
3. HANDHOLE AND NAMEPLATE TO BE ON HOUSE SIDE OF POLE.

4.		
3.		
2.		
1.		
	REVISIONS	DATE

VAUGHAN

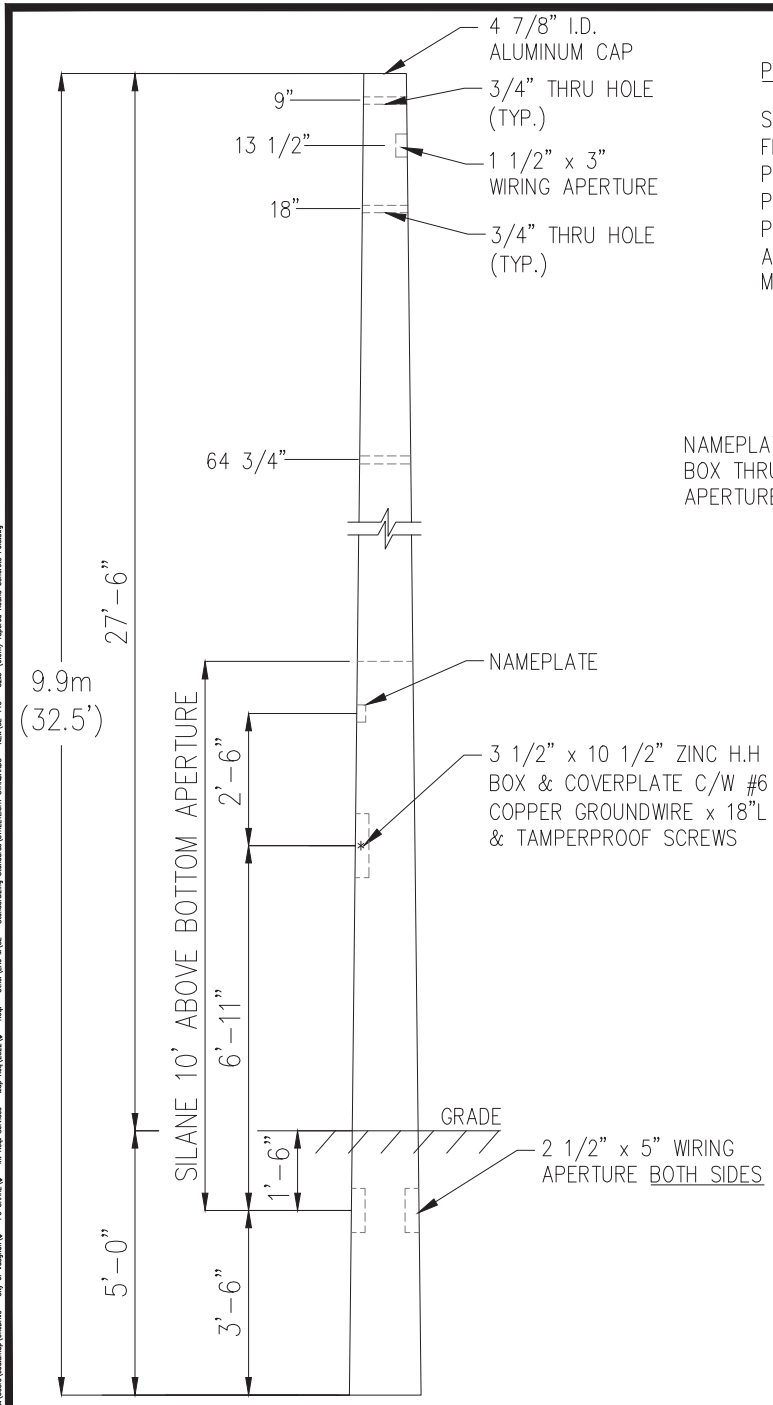
CITY OF VAUGHAN ENGINEERING STANDARD

9.1m (30') TAPERED ROUND CONCRETE POST TOP POLE

NOT TO SCALE DESIGNED: _____

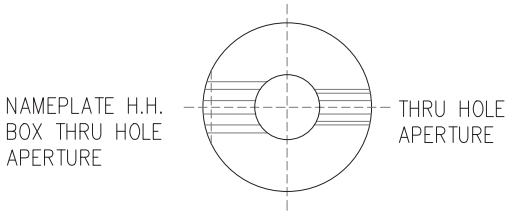
REVISION: _____ DATE: 2022

STD. DWG.
SL-118



POLE DESCRIPTION

SECTION:	ROUND
FINISH:	MOULD FINISH
POLE TOP:	4 3/4" DIA.
POLE BUTT:	10 5/8" DIA.
POLE LENGTH:	32' 6"
APPROX. WGT.:	1,535 LBS.
MIN. RACEWAY:	1 1/8" ø



TOP VIEW

NOTES:

1. CABLE RACEWAY IN POLE MUST BE OF SUFFICIENT DIAMETER TO ACCOMMODATE A DOUBLE RUN OF U/G CABLE UP TO THE HANDHOLE.
2. COPPER GROUND WIRE AT HANDHOLE IN ACCORDANCE WITH C.S.A. STANDARDS.
3. HANDHOLE AND NAMEPLATE TO BE ON HOUSE SIDE OF POLE.

4.		
3.		
2.		
1.		
	REVISIONS	DATE

VAUGHAN

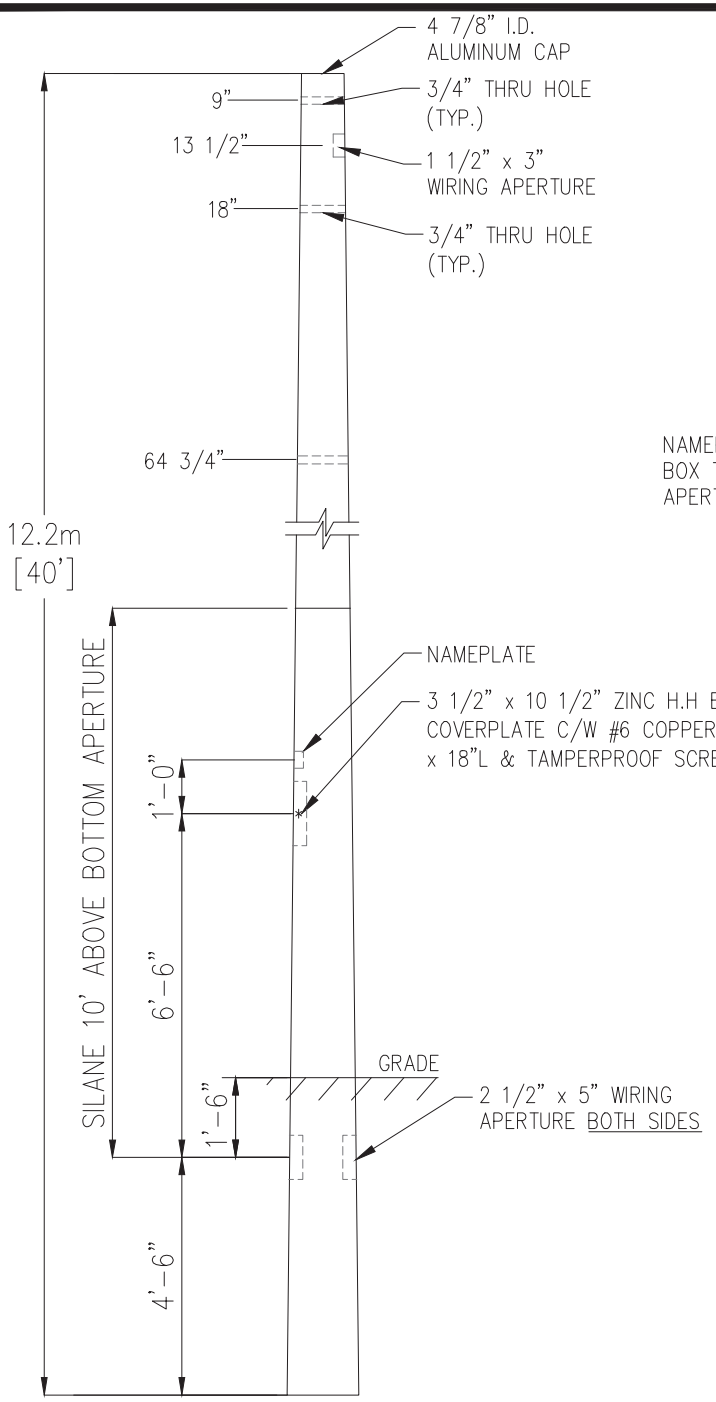
CITY OF VAUGHAN ENGINEERING STANDARD

9.9m (32.5') TAPERED ROUND CONCRETE POLE

NOT TO SCALE DESIGNED: _____

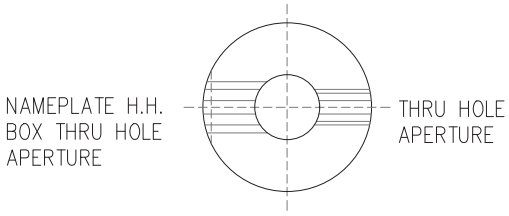
REVISION: _____ DATE: 2022

STD. DWG.
SL-119



POLE DESCRIPTION

SECTION:	ROUND
FINISH:	MOULD FINISH
POLE TOP:	4 3/4" DIA.
POLE BUTT:	11 15/16" DIA.
POLE LENGTH:	40' 0"
APPROX. WGT.:	2,110 LBS.
MIN. RACEWAY:	1 1/8" ø



TOP VIEW

NOTES:

1. CABLE RACEWAY IN POLE MUST BE OF SUFFICIENT DIAMETER TO ACCOMMODATE A DOUBLE RUN OF U/G CABLE UP TO THE HANDHOLE.
2. COPPER GROUND WIRE AT HANDHOLE IN ACCORDANCE WITH C.S.A. STANDARDS.
3. HANDHOLE AND NAMEPLATE TO BE ON HOUSE SIDE OF POLE.

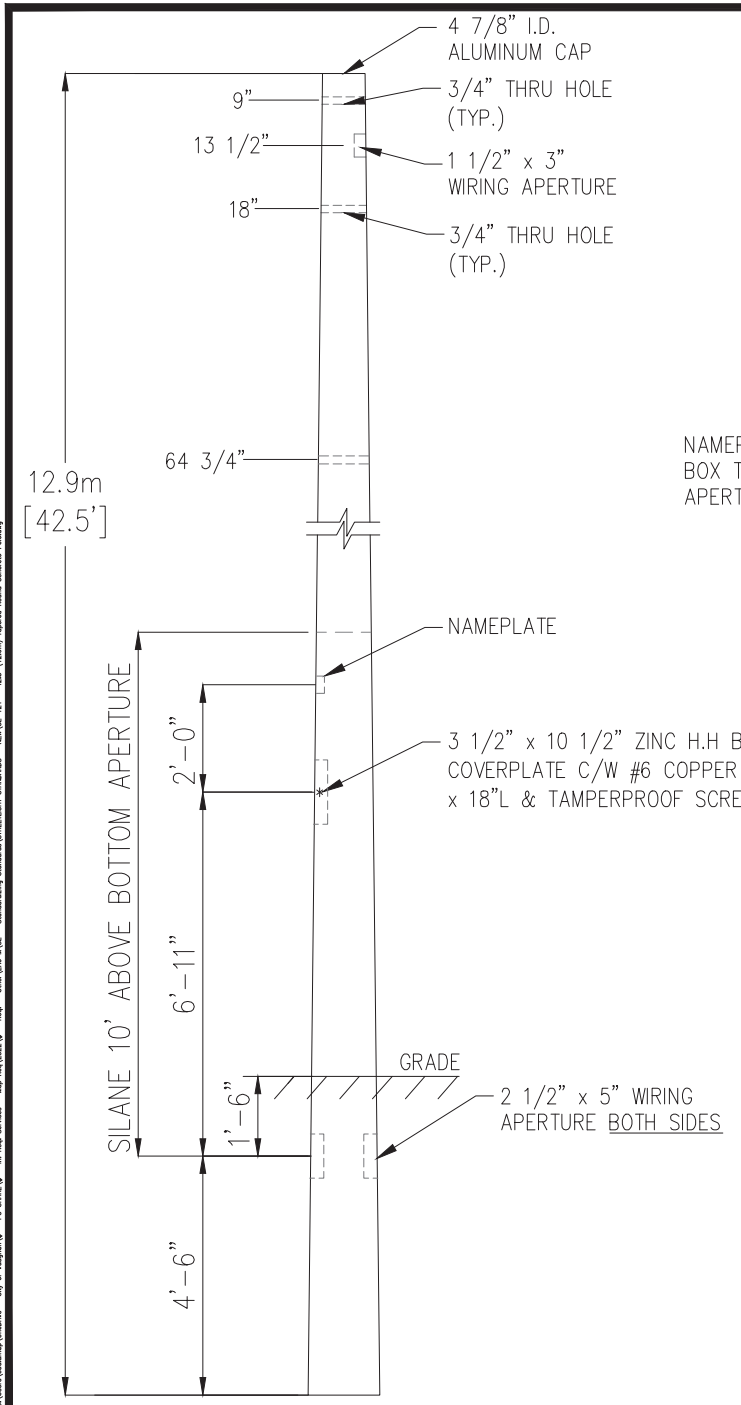
4.		
3.		
2.		
1.		
	REVISIONS	DATE

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

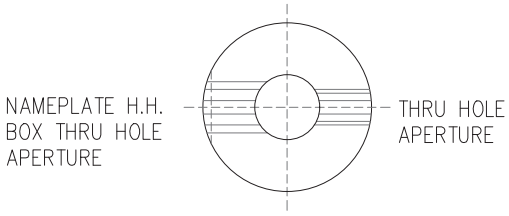
12.2m (40') TAPERED ROUND CONCRETE POLE

NOT TO SCALE	DESIGNED:	STD. DWG.
REVISION:	DATE: 2022	SL-120



POLE DESCRIPTION

SECTION:	ROUND
FINISH:	MOULD FINISH
POLE TOP:	4 3/4" DIA.
POLE BUTT:	12 1/2" DIA.
POLE LENGTH:	42' 6"
APPROX. WGT.:	2,320 LBS.
MIN. RACEWAY:	1 1/8" ø



TOP VIEW

NOTES:

1. CABLE RACEWAY IN POLE MUST BE OF SUFFICIENT DIAMETER TO ACCOMMODATE A DOUBLE RUN OF U/G CABLE UP TO THE HANDHOLE.
2. COPPER GROUND WIRE AT HANDHOLE IN ACCORDANCE WITH C.S.A. STANDARDS.
3. HANDHOLE AND NAMEPLATE TO BE ON HOUSE SIDE OF POLE.

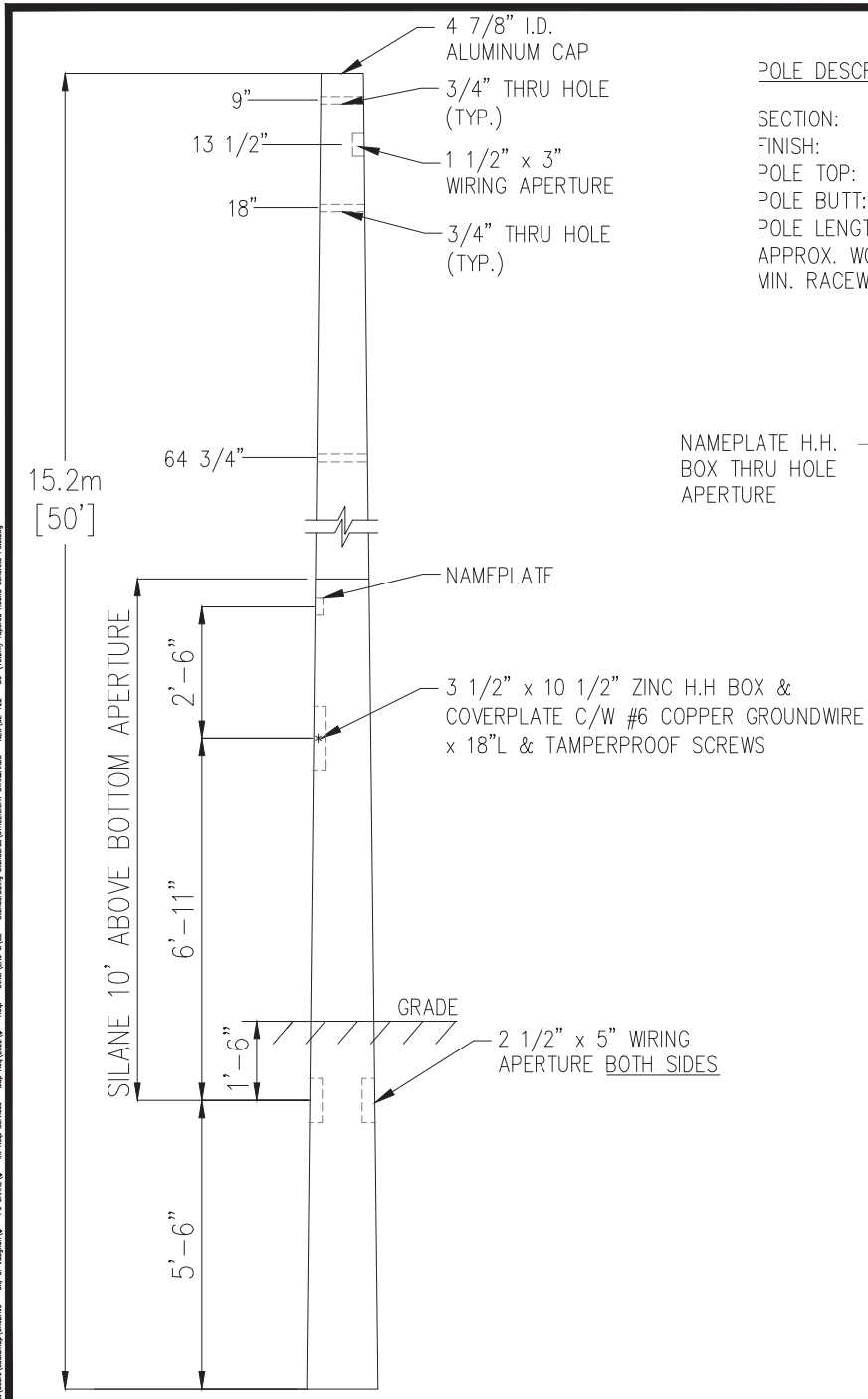
4.		
3.		
2.		
1.		
	REVISIONS	DATE

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

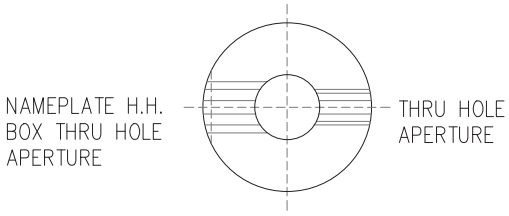
12.9m (42.5') TAPERED ROUND CONCRETE POLE

NOT TO SCALE	DESIGNED:	STD. DWG.
REVISION:	DATE: 2022	SL-121



POLE DESCRIPTION

SECTION:	ROUND
FINISH:	MOULD FINISH
POLE TOP:	6 1/2" DIA.
POLE BUTT:	15 1/2" DIA.
POLE LENGTH:	50' 0"
APPROX. WGT.:	4,500 LBS.
MIN. RACEWAY:	1 1/8" ø



TOP VIEW

NOTES:

1. CABLE RACEWAY IN POLE MUST BE OF SUFFICIENT DIAMETER TO ACCOMMODATE A DOUBLE RUN OF U/G CABLE UP TO THE HANDHOLE.
2. COPPER GROUND WIRE AT HANDHOLE IN ACCORDANCE WITH C.S.A. STANDARDS.
3. HANDHOLE AND NAMEPLATE TO BE ON HOUSE SIDE OF POLE.

4.		
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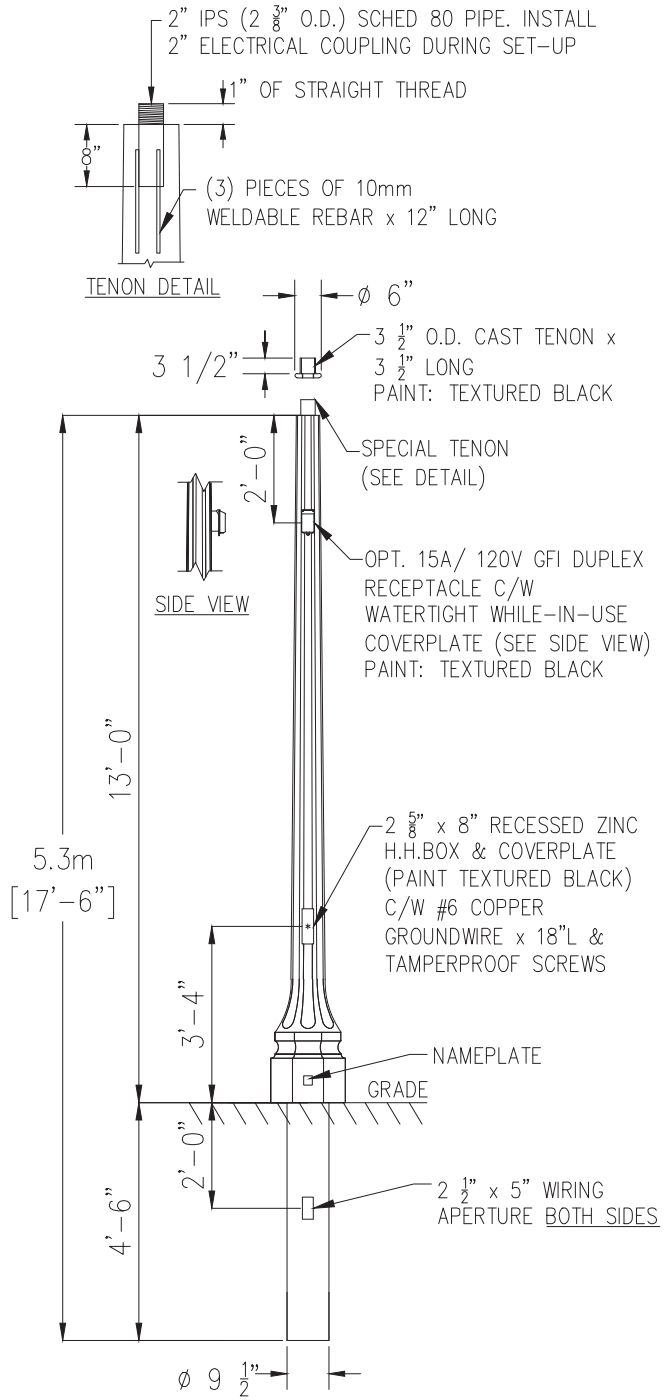
1.		
	REVISIONS	DATE

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

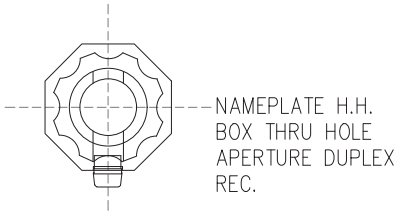
15.2m (50') TAPERED ROUND CONCRETE POLE

NOT TO SCALE	DESIGNED: _____	STD. DWG.
REVISION: _____	DATE: 2022	SL-122



POLE DESCRIPTION

SECTION:	FLUTED OCTAGONAL
FINISH:	ECLIPSE ETCHED
POLE TOP:	5 1/2" DIA.
POLE BUTT:	9 1/2" DIA.
POLE LENGTH:	17' 6"
APPROX. WGT.:	1,075 LBS.
MIN. RACEWAY:	1 1/8" ø
COATING REQ.:	2 COATS ACRYLIC (FULL LENGTH)



TOP VIEW

NOTES:

1. CABLE RACEWAY IN POLE MUST BE OF SUFFICIENT DIAMETER TO ACCOMMODATE A DOUBLE RUN OF U/G CABLE UP TO THE HANDHOLE.
2. COPPER GROUND WIRE AT HANDHOLE IN ACCORDANCE WITH C.S.A. STANDARDS.
3. HANDHOLE AND NAMEPLATE TO BE ON HOUSE SIDE OF POLE.

4.		
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1.		
	REVISIONS	DATE

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

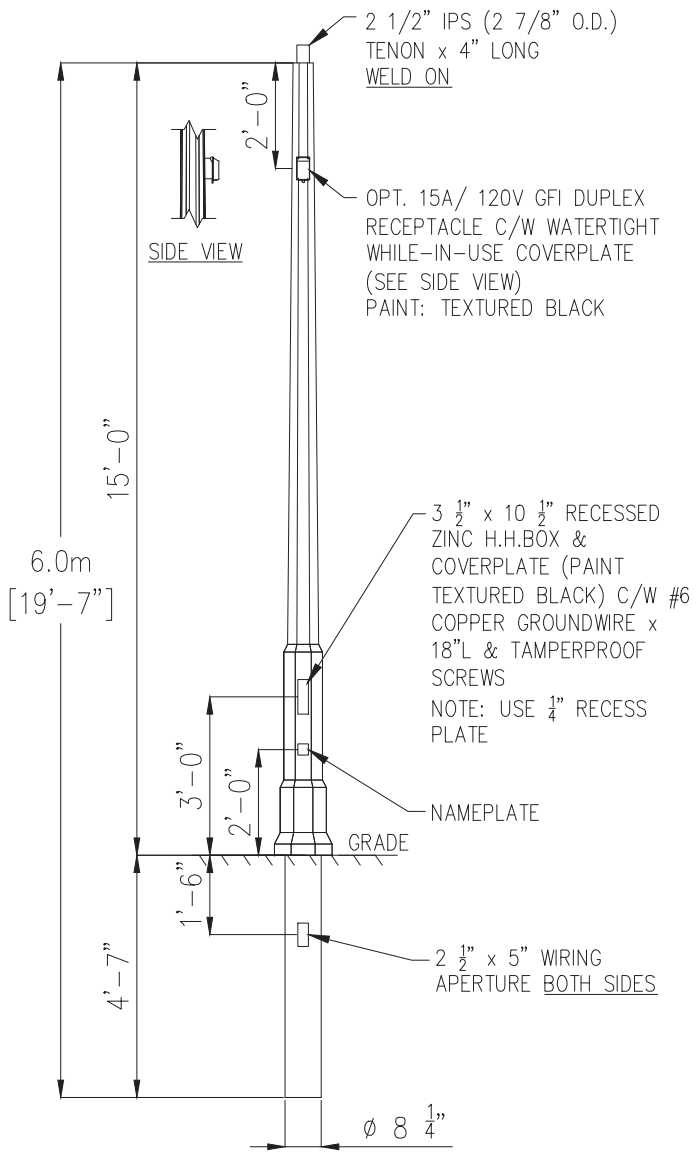
5.3m (17.5') DECORATIVE FLUTED OCTAGONAL (POST TOP) POLE

NOT TO SCALE DESIGNED: _____

REVISION: _____ DATE: 2022

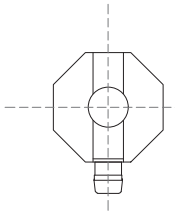
STD. DWG.

SL-123



POLE DESCRIPTION

SECTION:	OCTAGONAL
FINISH:	ECLIPSE POLISHED
POLE TOP:	4" FL/FL
POLE BUTT:	8 1/4" DIA.
POLE LENGTH:	19' 7"
APPROX. WGT.:	740 LBS.
MIN. RACEWAY:	1 1/8" ø
COATING REQ.:	2 COATS ACRYLIC (FULL LENGTH)



TOP VIEW

NOTES:

1. CABLE RACEWAY IN POLE MUST BE OF SUFFICIENT DIAMETER TO ACCOMMODATE A DOUBLE RUN OF U/G CABLE UP TO THE HANDHOLE.
2. COPPER GROUND WIRE AT HANDHOLE IN ACCORDANCE WITH C.S.A. STANDARDS.
3. HANDHOLE AND NAMEPLATE TO BE ON HOUSE SIDE OF POLE.

4.		
3.		
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1.		
	REVISIONS	DATE

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

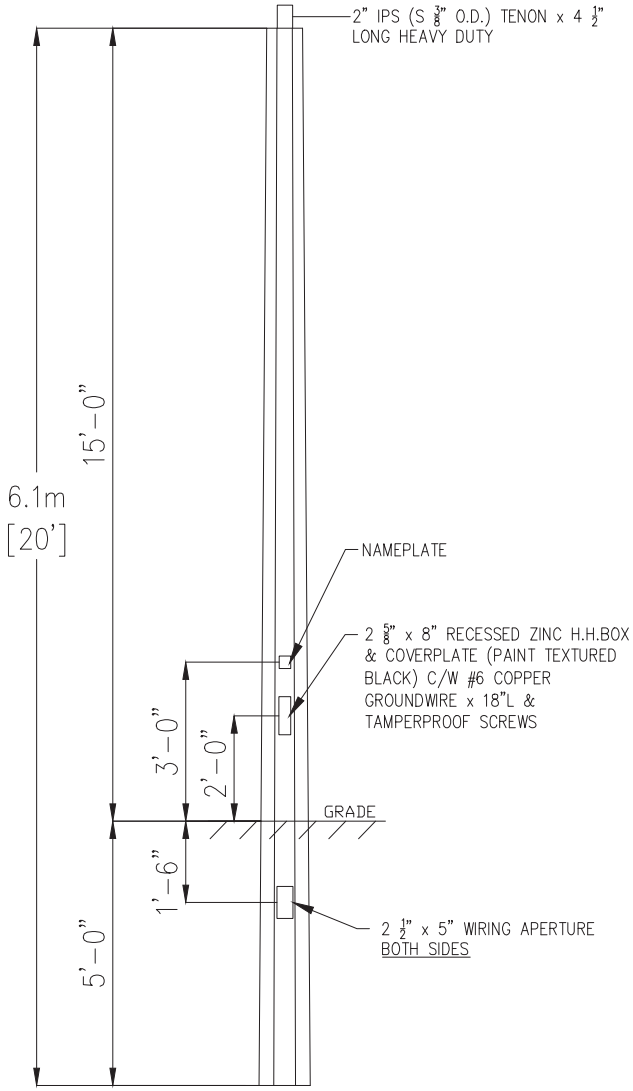
6m (19.6') DECORATIVE OCTAGONAL (POST TOP) POLE

NOT TO SCALE DESIGNED: _____

REVISION: _____ DATE: 2022

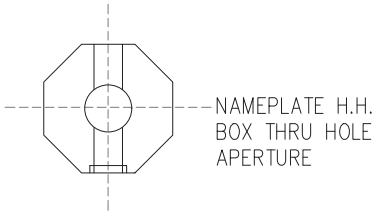
STD. DWG.

SL-124



POLE DESCRIPTION

SECTION:	OCTAGONAL
FINISH:	ECLIPSE ETCHED
POLE TOP:	5 3/8" FL/FL
POLE BUTT:	7 7/8" FL/FL
POLE LENGTH:	20' 0"
APPROX. WGT.:	770 LBS.
MIN. RACEWAY:	1 1/8" ø
COATING REQ.:	2 COATS ACRYLIC (FULL LENGTH)



TOP VIEW

NOTES:

1. CABLE RACEWAY IN POLE MUST BE OF SUFFICIENT DIAMETER TO ACCOMMODATE A DOUBLE RUN OF U/G CABLE UP TO THE HANDHOLE.
2. COPPER GROUND WIRE AT HANDHOLE IN ACCORDANCE WITH C.S.A. STANDARDS.
3. HANDHOLE AND NAMEPLATE TO BE ON HOUSE SIDE OF POLE.

	REVISIONS	DATE
4.		
3.		
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VAUGHAN

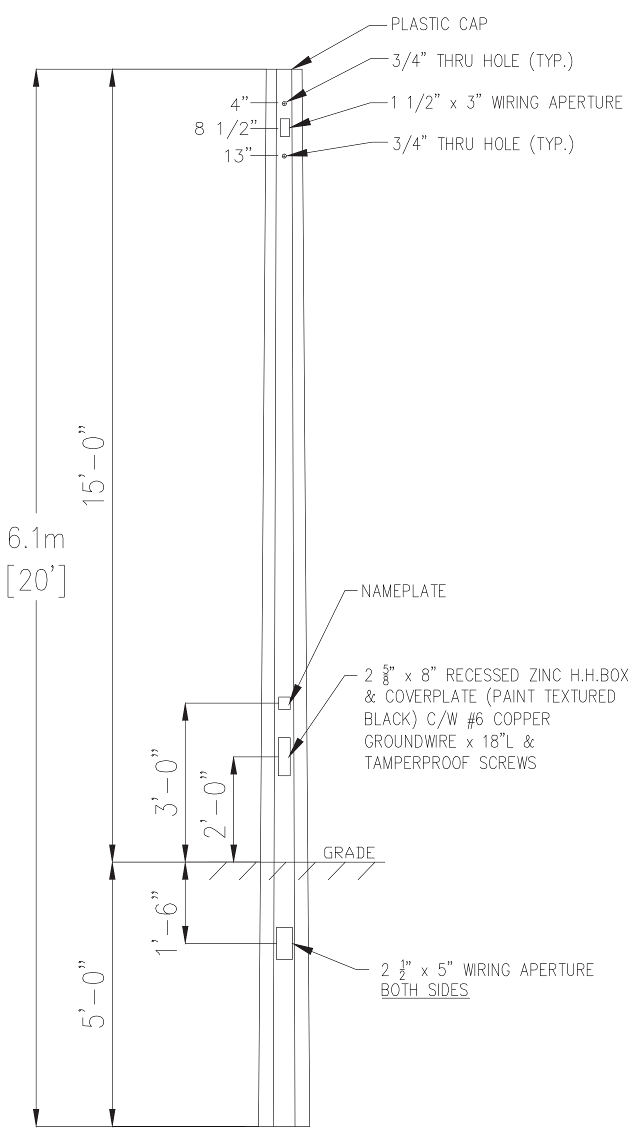
CITY OF VAUGHAN ENGINEERING STANDARD

6.1m (20') TAPERED OCTAGONAL (POST TOP) POLE

NOT TO SCALE DESIGNED: _____

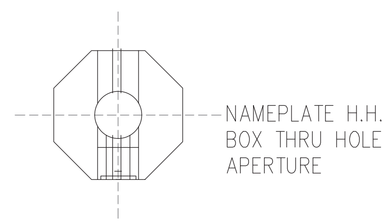
REVISION: _____ DATE: 2022

STD. DWG. SL-125



POLE DESCRIPTION

SECTION:	OCTAGONAL
FINISH:	SALUKI BRONZE POLISHED
POLE TOP:	5 3/8" FL/FL
POLE BUTT:	7 7/8" FL/FL
POLE LENGTH:	20' 0"
APPROX. WGT.:	712 LBS.
MIN. RACEWAY:	1 1/8" ø
COATING REQ.:	2 COATS ACRYLIC (FULL LENGTH)



TOP VIEW

NOTES:

1. CABLE RACEWAY IN POLE MUST BE OF SUFFICIENT DIAMETER TO ACCOMMODATE A DOUBLE RUN OF U/G CABLE UP TO THE HANDHOLE.
2. COPPER GROUND WIRE AT HANDHOLE IN ACCORDANCE WITH C.S.A. STANDARDS.
3. HANDHOLE AND NAMEPLATE TO BE ON HOUSE SIDE OF POLE.

	REVISIONS	DATE
4.		
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VAUGHAN

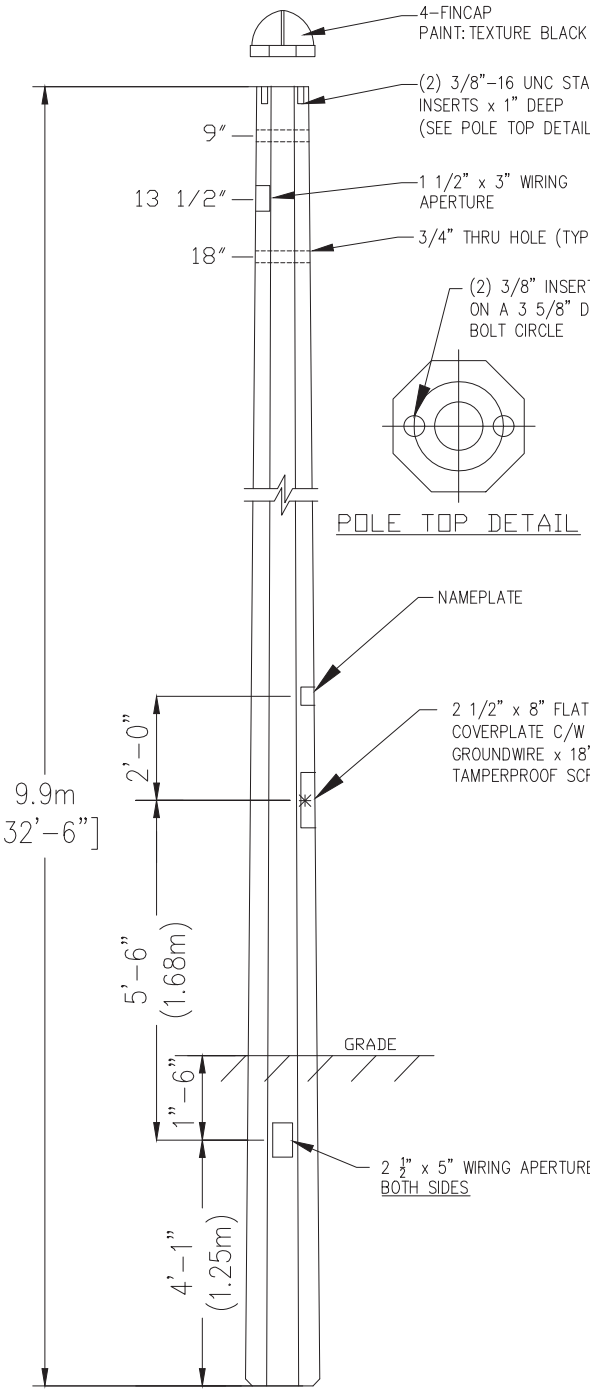
CITY OF VAUGHAN ENGINEERING STANDARD

6.1m (20') TAPERED OCTAGONAL POLE

NOT TO SCALE
DESIGNED: ______
REVISION: ______
DATE: 2022

STD. DWG.
SL-126

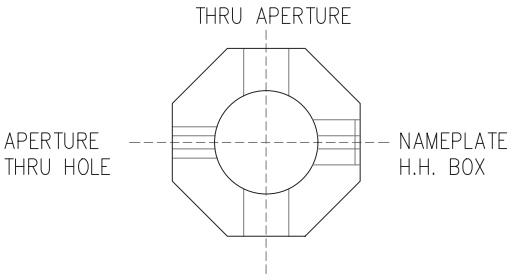
Acad File: C:\Users\cudiamop\OneDrive - City of Vaughan\$ - PC SHARE\$ - In. Req. Services - Map Req\2022\$ - Req. - Other\Eric M\SL - Standardizing Standards\STREETLIGHT STANDARDS - NEW\SL-126 - 20' (6.1m) Tappered Octagonal Poley.dwg



POLE TOP DETAIL

POLE DESCRIPTION

SECTION:	OCTAGONAL
FINISH:	ECLIPSE (BLACK) POLISHED
POLE TOP:	5 3/8" FL/FL
POLE BUTT:	9 7/16" FL/FL
POLE LENGTH:	32' 6"
APPROX. WGT.:	1,500 LBS.
MIN. RACEWAY:	1 1/8" ø
COATING REQ.:	2 COATS ACRYLIC (FULL LENGTH)



TOP VIEW

NOTES:

1. CABLE RACEWAY IN POLE MUST BE OF SUFFICIENT DIAMETER TO ACCOMMODATE A DOUBLE RUN OF U/G CABLE UP TO THE HANDHOLE.
2. COPPER GROUND WIRE AT HANDHOLE IN ACCORDANCE WITH C.S.A. STANDARDS.
3. HANDHOLE AND NAMEPLATE TO BE ON HOUSE SIDE OF POLE.

4.		
3.		
2.		
1.		
	REVISIONS	DATE

VAUGHAN

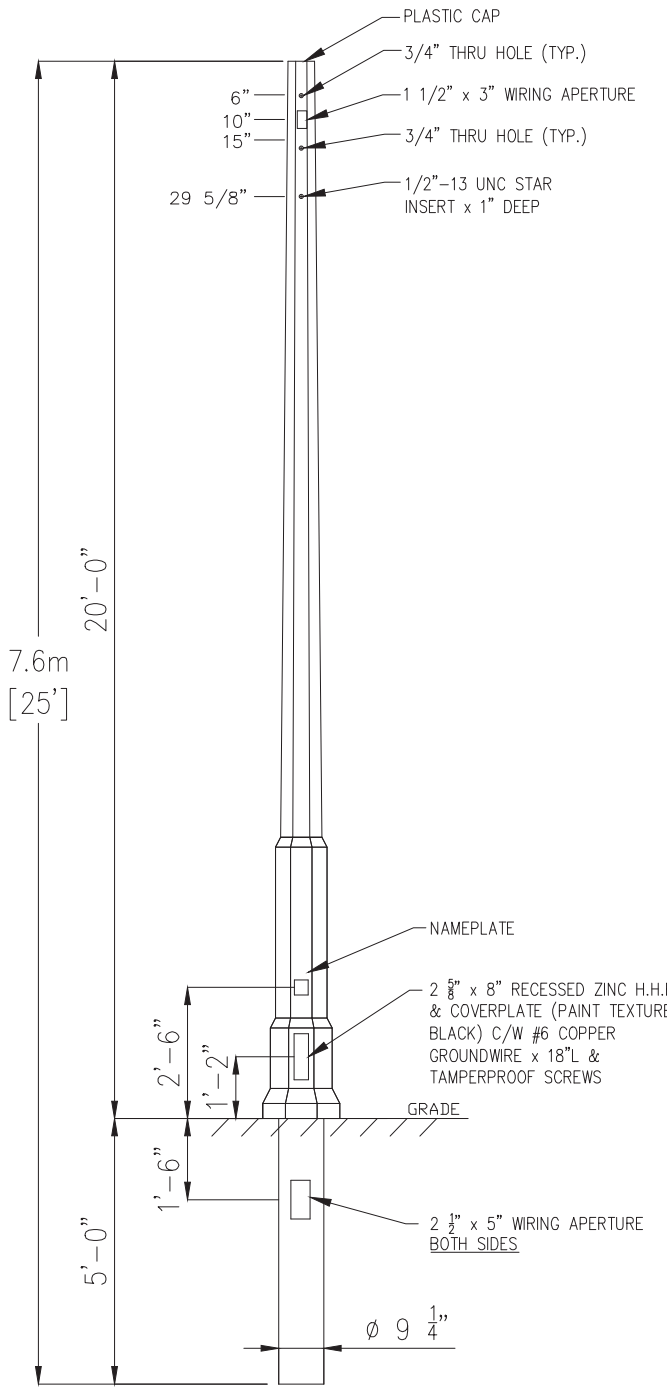
CITY OF VAUGHAN ENGINEERING STANDARD

9.9m (32.5') TAPERED OCTAGONAL POLE

NOT TO SCALE DESIGNED: _____

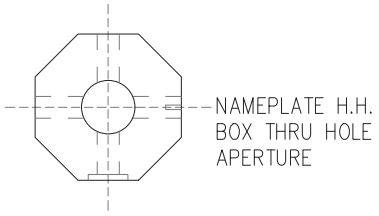
REVISION: _____ DATE: 2022

STD. DWG.
SL-127



POLE DESCRIPTION

SECTION:	OCTAGONAL
FINISH:	ECLIPSE POLISHED
POLE TOP:	4 3/4" FL/FL
POLE BUTT:	9 1/4" FL/FL
POLE LENGTH:	25' 0"
APPROX. WGT.:	1,200 LBS.
MIN. RACEWAY:	1 1/8" ø
COATING REQ.:	2 COATS ACRYLIC (FULL LENGTH)



TOP VIEW

NOTES:

1. CABLE RACEWAY IN POLE MUST BE OF SUFFICIENT DIAMETER TO ACCOMMODATE A DOUBLE RUN OF U/G CABLE UP TO THE HANDHOLE.
2. COPPER GROUND WIRE AT HANDHOLE IN ACCORDANCE WITH C.S.A. STANDARDS.
3. HANDHOLE AND NAMEPLATE TO BE ON HOUSE SIDE OF POLE.

4.		
3.		
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1.		
	REVISIONS	DATE

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

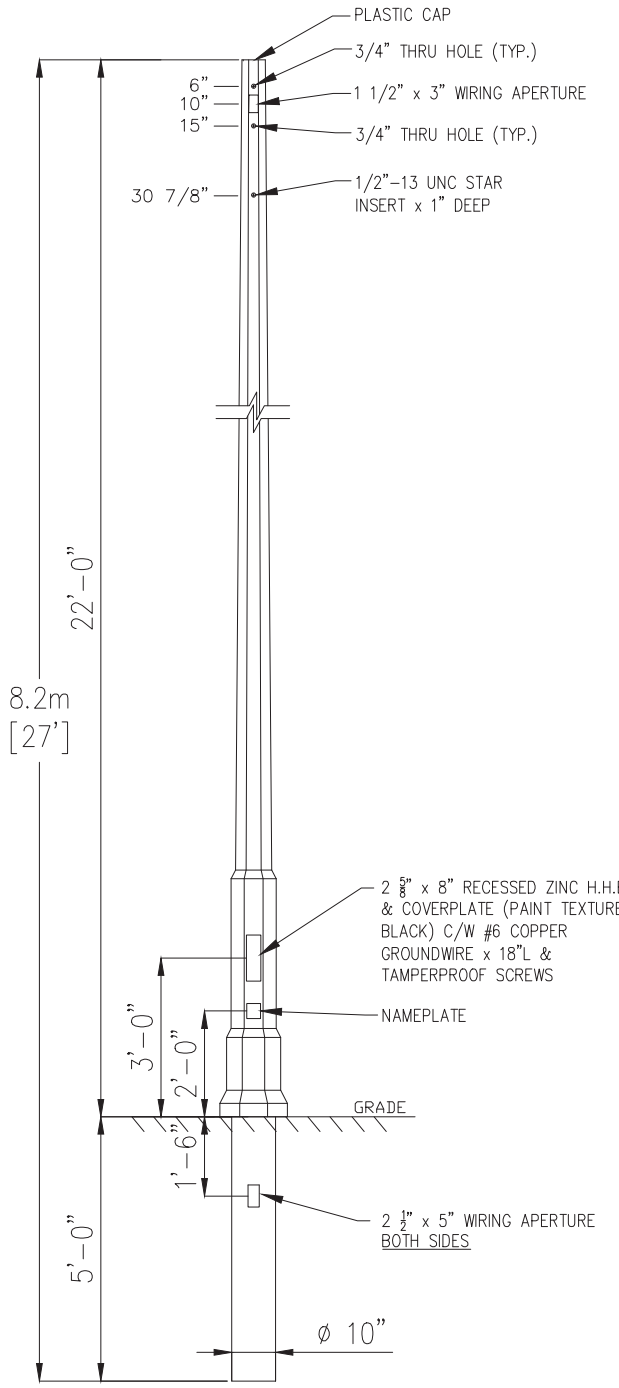
7.6m (25') DECORATIVE OCTAGONAL POLE

NOT TO SCALE DESIGNED: _____

REVISION: _____ DATE: 2022

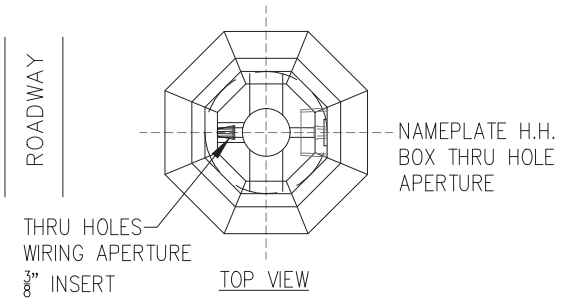
STD. DWG.

SL-128



POLE DESCRIPTION

SECTION:	OCTAGONAL
FINISH:	ECLIPSE POLISHED
POLE TOP:	5 7/16" FL/FL
POLE BUTT:	10" FL/FL
POLE LENGTH:	27' 0"
APPROX. WGT.:	1,445 LBS.
MIN. RACEWAY:	1 1/8" ø
COATING REQ.:	2 COATS ACRYLIC (FULL LENGTH)



NOTES:

1. CABLE RACEWAY IN POLE MUST BE OF SUFFICIENT DIAMETER TO ACCOMMODATE A DOUBLE RUN OF U/G CABLE UP TO THE HANDHOLE.
2. COPPER GROUND WIRE AT HANDHOLE IN ACCORDANCE WITH C.S.A. STANDARDS.
3. HANDHOLE AND NAMEPLATE TO BE ON HOUSE SIDE OF POLE.

4.		
3.		
2.		
1.		
	REVISIONS	DATE

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

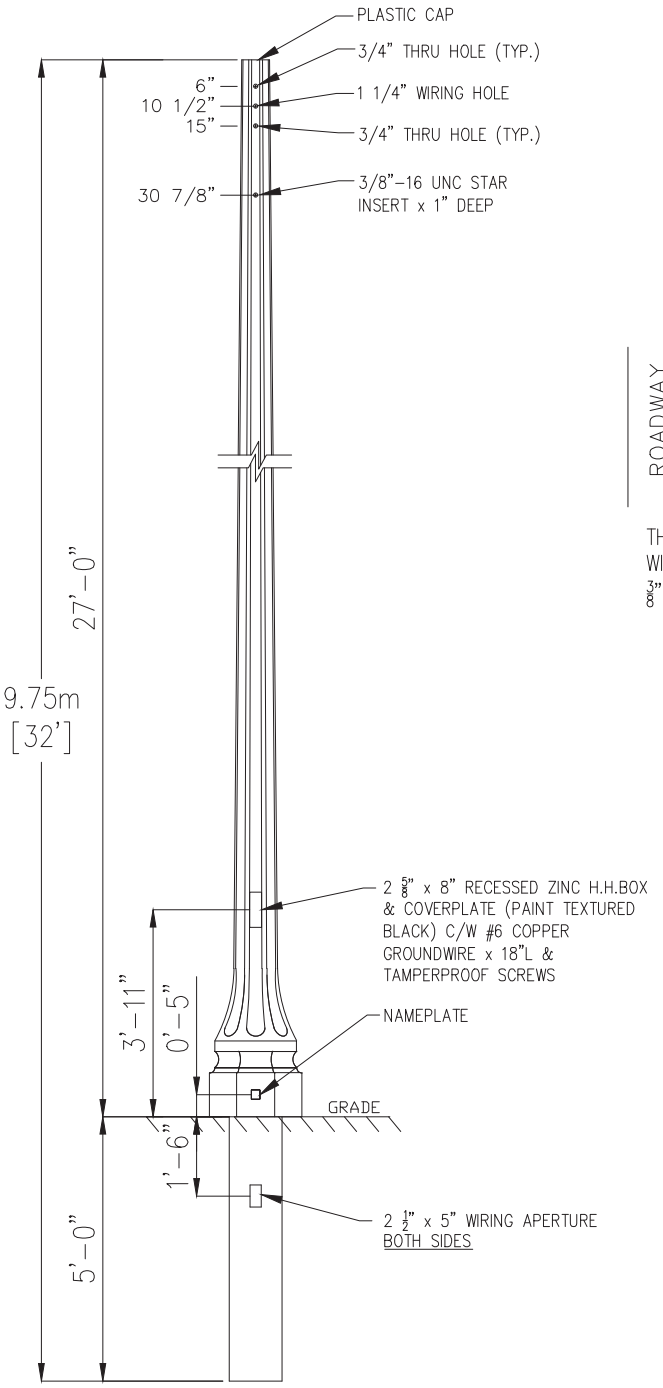
8.2m (27') DECORATIVE OCTAGONAL POLE

NOT TO SCALE DESIGNED: _____

REVISION: _____ DATE: 2022

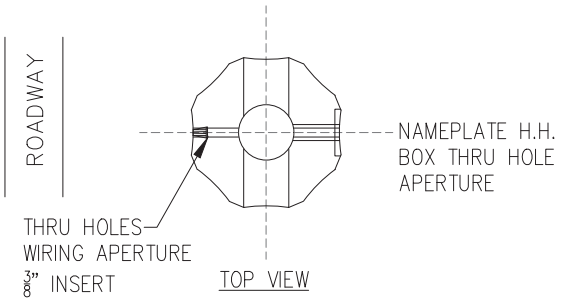
STD. DWG.

SL-129



POLE DESCRIPTION

SECTION:	OCTAGONAL
FINISH:	ECLIPSE POLISHED
POLE TOP:	5 7/16" FL/FL
POLE BUTT:	10" FL/FL
POLE LENGTH:	27' 0"
APPROX. WGT.:	1,445 LBS.
MIN. RACEWAY:	1 1/8" ø
COATING REQ.:	2 COATS ACRYLIC (FULL LENGTH)



NOTES:

1. CABLE RACEWAY IN POLE MUST BE OF SUFFICIENT DIAMETER TO ACCOMMODATE A DOUBLE RUN OF U/G CABLE UP TO THE HANDHOLE.
2. COPPER GROUND WIRE AT HANDHOLE IN ACCORDANCE WITH C.S.A. STANDARDS.
3. HANDHOLE AND NAMEPLATE TO BE ON HOUSE SIDE OF POLE.

	REVISIONS	DATE
4.		
3.		
2.		
1.		

VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

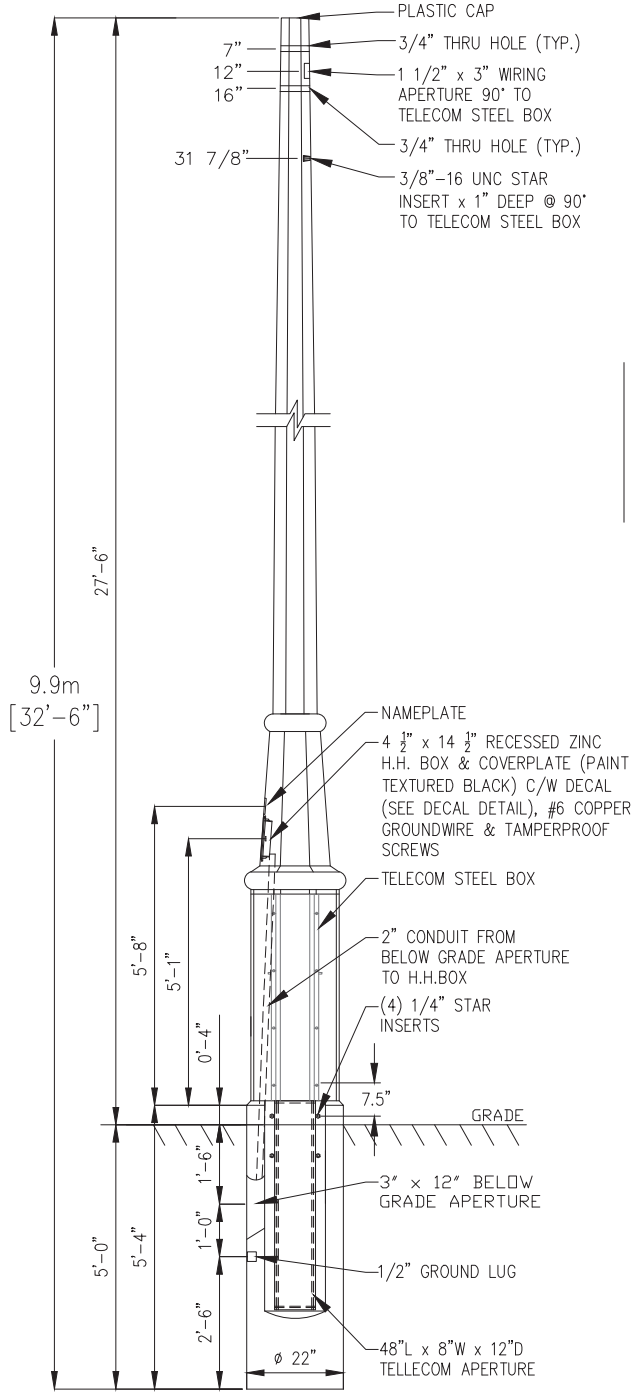
9.75m (32') DECORATIVE FLUTED OCTAGONAL POLE

NOT TO SCALE DESIGNED: _____

REVISION: _____ DATE: 2022

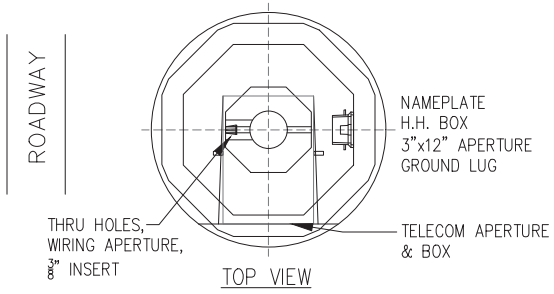
STD. DWG.

SL-130

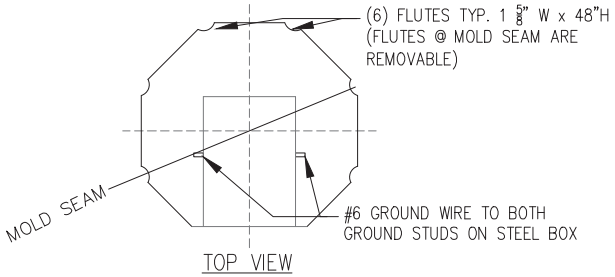


POLE DESCRIPTION

SECTION:	OCTAGONAL
FINISH:	ECLIPSE ETCHED
POLE TOP:	6 1/4" FL/FL
POLE BUTT:	22" DIA.
POLE LENGTH:	32' 6"
APPROX. WGT.:	4,365 LBS.
MIN. RACEWAY:	1 1/8" ø
COATING REQ.:	2 COATS ACRYLIC (FULL LENGTH)



TOP VIEW

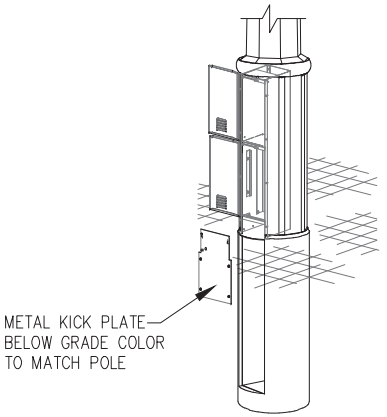


TOP VIEW

DECAL DETAIL

NOTES:

1. CABLE RACEWAY IN POLE MUST BE OF SUFFICIENT DIAMETER TO ACCOMMODATE A DOUBLE RUN OF U/G CABLE UP TO THE HANDHOLE.
2. COPPER GROUND WIRE AT HANDHOLE IN ACCORDANCE WITH C.S.A. STANDARDS.
3. HANDHOLE AND NAMEPLATE TO BE ON HOUSE SIDE OF POLE.
4. METAL DOORS C/W HINGES. COLOR TO MATCH POLE.



CABLE TV & TELEPHONE JOINT USE BOX WILL ACCEPT INSTALLATION OF COPPER, FIBER OR COAX EQUIPMENT FOR BOTH NARROWBAND & BROADBAND NETWORKS.

	REVISIONS	DATE
4.		
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VAUGHAN

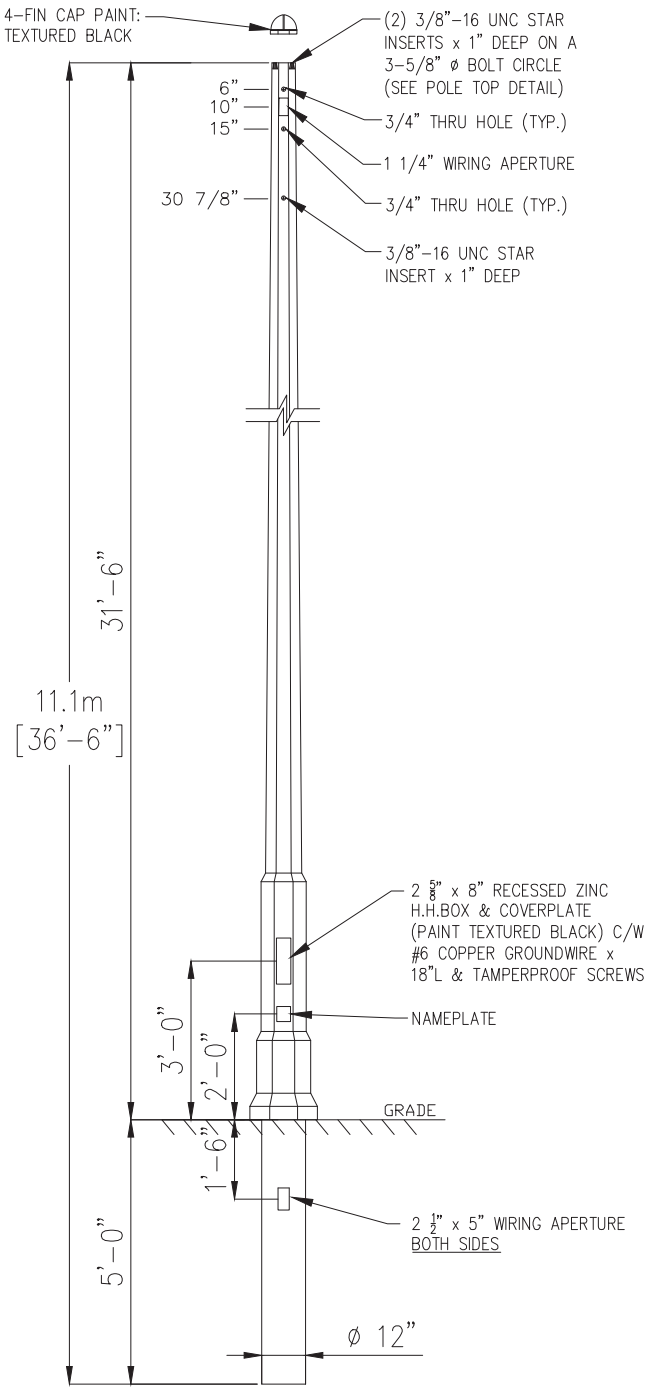
CITY OF VAUGHAN ENGINEERING STANDARD

9.9m (32.5') DECORATIVE MULTI-UTILITY POLE

NOT TO SCALE DESIGNED: _____

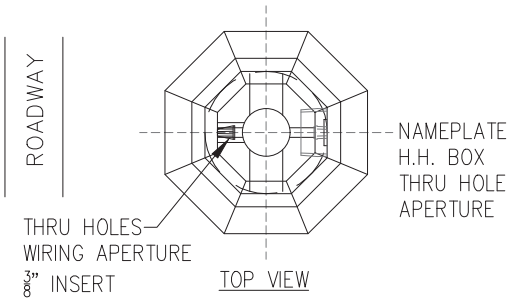
REVISION: _____ DATE: 2022

STD. DWG. SL-131



POLE DESCRIPTION

SECTION:	OCTAGONAL
FINISH:	ECLIPSE ETCHED
POLE TOP:	6 1/4" FL/FL
POLE BUTT:	22" DIA.
POLE LENGTH:	32' 6"
APPROX. WGT.:	4,365 LBS.
MIN. RACEWAY:	1 1/8" ø
COATING REQ.:	2 COATS ACRYLIC (FULL LENGTH)



NOTES:

1. CABLE RACEWAY IN POLE MUST BE OF SUFFICIENT DIAMETER TO ACCOMMODATE A DOUBLE RUN OF U/G CABLE UP TO THE HANDHOLE.
2. COPPER GROUND WIRE AT HANDHOLE IN ACCORDANCE WITH C.S.A. STANDARDS.
3. HANDHOLE AND NAMEPLATE TO BE ON HOUSE SIDE OF POLE.

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	REVISIONS	DATE

VAUGHAN

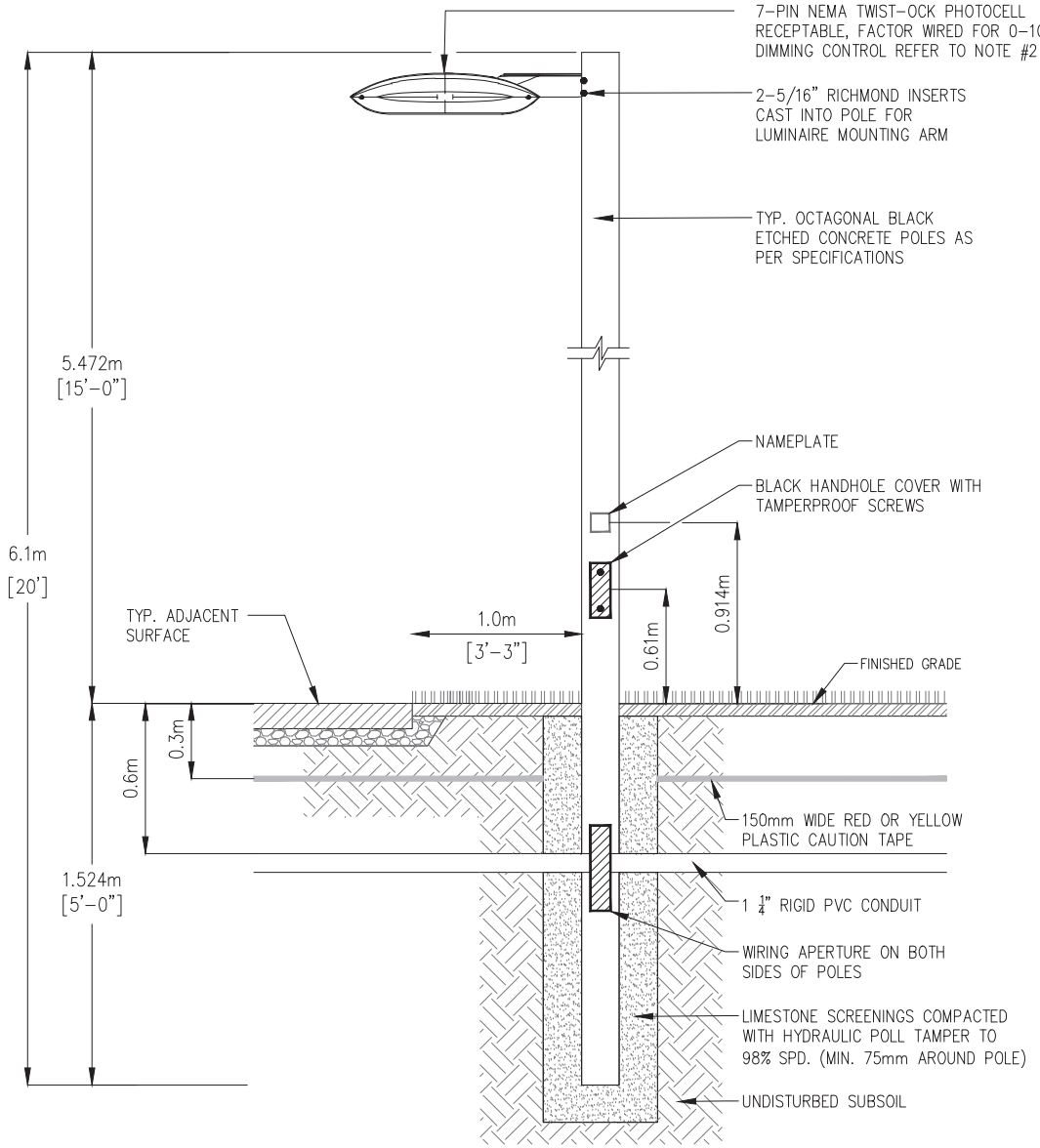
CITY OF VAUGHAN ENGINEERING STANDARD

11.1m (36.5') DECORATIVE OCTAGONAL POLE

NOT TO SCALE DESIGNED: _____

REVISION: _____ DATE: 2022

STD. DWG. SL-132



NOTES:

1. IN ACCORDANCE WITH E.S.A. STANDARDS AND SPECIFICATIONS, WARNING TAPE MUST BE PLACED 0.3m BELOW FINAL GRADE OVER ALL STREETLIGHT DUCTS INSTALLED IN AN OPEN TRENCH METHOD.
2. ALL FIXTURES MUST BE EQUIPPED WITH AN ANSI C136.41 COMPLIANT 7-PIN NEMA TWIST-LOCK PHOTOCELL RECEPTACLE, FACTORY WIRED FOR 0-10V DIMMING CONTROL.
3. CABLE RACEWAY IN POLE MUST BE OF SUFFICIENT DIAMETER TO ACCOMMODATE A DOUBLE RUN OF U/G CABLE UP TO THE HANDHOLE.
4. COPPER GROUND WIRE AT HANDHOLE IN ACCORDANCE WITH C.S.A. STANDARDS.
5. HANDHOLE AND NAMEPLATE TO BE ON HOUSE SIDE OF POLE.

	REVISIONS	DATE
4.		
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VAUGHAN

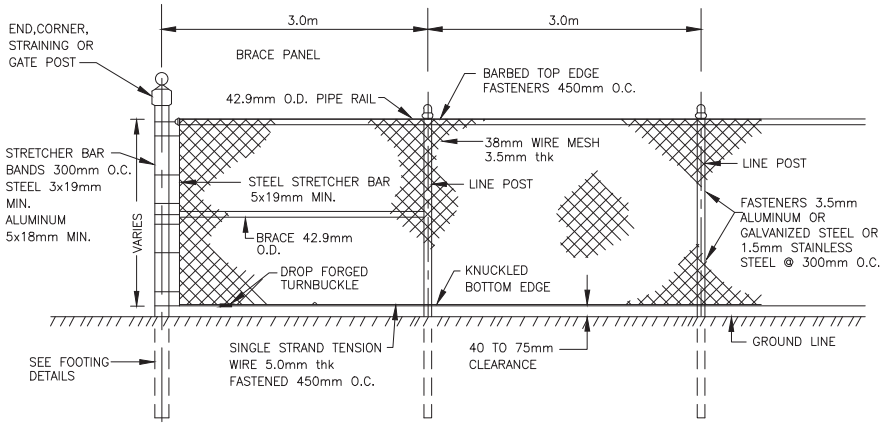
CITY OF VAUGHAN ENGINEERING STANDARD

6.1m (20') POLE ASSEMBLY WALKWAY / PATHWAY LIGHTING

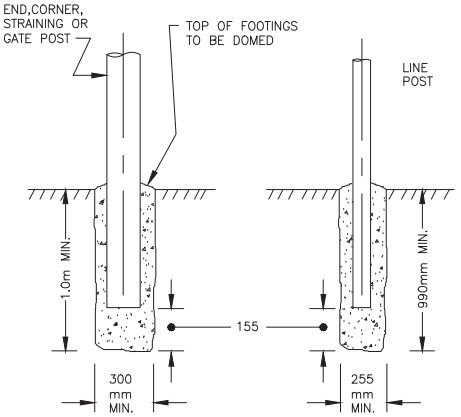
NOT TO SCALE | DESIGNED: _____

REVISION: _____ | DATE: 2023

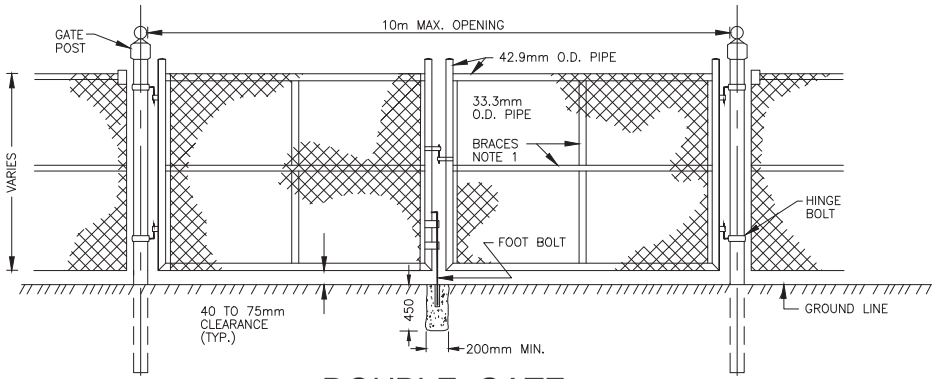
STD. DWG. SL-133



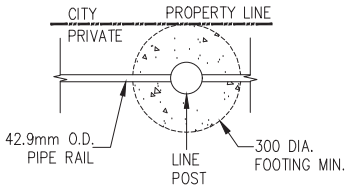
FENCE DETAILS



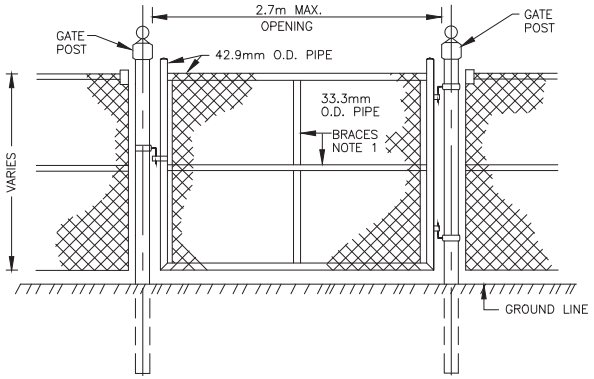
FOOTING DETAILS



DOUBLE GATE



POST DETAIL



SINGLE GATE

POST DETAILS			
DESCRIPTION	OD (mm)	LENGTH NOTE 2	
		STANDARD (m)	STANDARD WALLS(m)
LINE	60.3	2.7	2.0
END,CORNER,STRAINING AND GATE (5.5m MAX OPENING)	88.9	2.9	2.3
GATES (10m MAX OPENING)	114.3	2.9	–

NOTES

1. PIPE BRACES: GATE LEAVES UP TO 1.8m WIDE–REQUIRES HORIZONTAL BRACES ONLY.

   GATE LEAVES OVER 1.8m WIDE–REQUIRES BOTH HORIZONTAL AND VERTICAL BRACES

2. POST LENGTH: FOR FABRIC WIDTHS GREATER THAN 1829mm THE POST SHALL BE INCREASED BY THE AMOUNT OF THE DIFFERENCE.
3. ALL FENCE COMPONENTS TO BE BLACK COATED VINYL.
4. BLACK FABRIC TO BE 3.5mm THICK WIRE WITH BLACK VINYL COATING.
5. ALL PIPING SHALL BE STANDARD CONTINUOUS WELD, SCHEDULE 40 PIPE, GALVANIZED. NO TUBING, CONDUIT OR OPEN SEAM MATERIAL WILL BE PERMITTED.

m DIMENSIONS IN METRES EXCEPT AS NOTED

	REVISIONS	DATE
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VAUGHAN

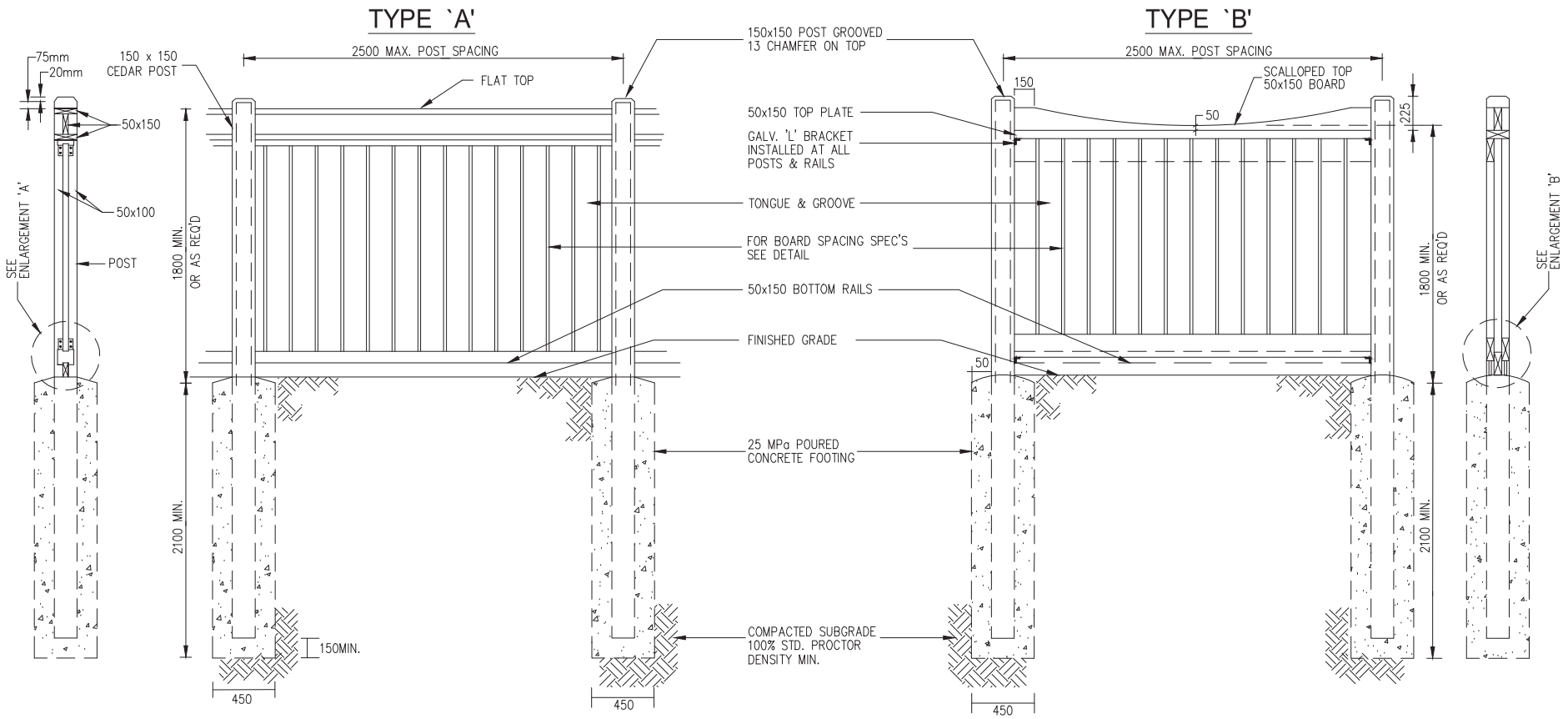
CITY OF VAUGHAN ENGINEERING STANDARD

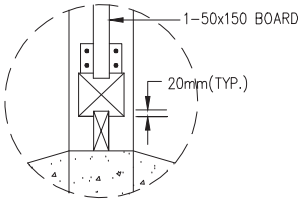
CHAIN LINK SECURITY FENCE

NOT TO SCALE | DESIGNED: _____ | STD. DWG. FRW - 101

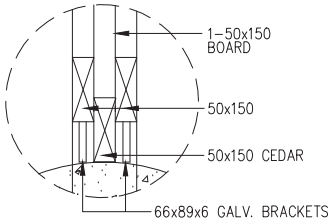
REVISION: _____ | DATE: DEC. 2020

FILE: O:\Infrastructure Delivery\Infrastructure Programming\PMO\City Standards\Design Criteria 2020-21\City Standards Update Folder\CoVStandardDrawings_CAD_2021\FRW-101 - Chain Link Security Fence.dwg

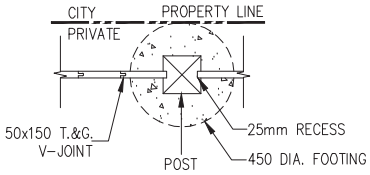




ENLARGEMENT `A'



ENLARGEMENT `B'



TONGUE & GROOVE
DETAIL

NOTE

1. REFER TO STD. DWG. FRW-104 FOR SPECIFICATIONS.
2. FENCE HEIGHT HIGHER THAN 1.8m IS SUBJECT TO THE APPROVAL OF THE CITY.
3. FENCE POSTS TO BE INSTALLED AT ALL LOT CORNERS WHERE IT ABUTS ANOTHER PRIVATE PROPERTY

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
4.		
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VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

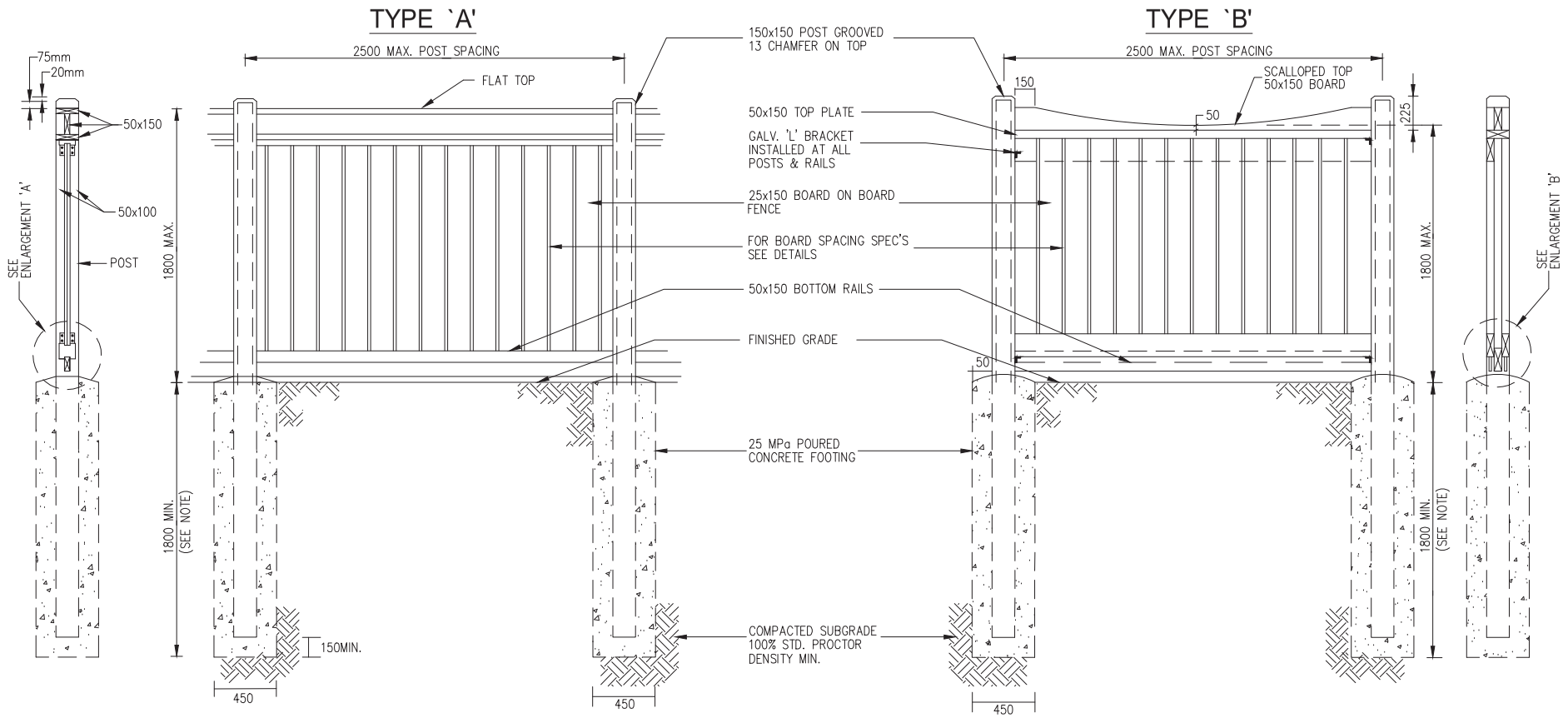
ACOUSTIC WOOD FENCE

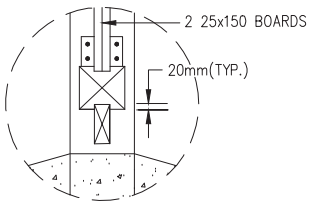
NOT TO SCALE DESIGNED: _____

REVISION: _____ DATE: DEC. 2020

STD. DWG.
FRW - 102

FILE: O:\Infrastructure Delivery\Infrastructure Programming\PMO\City Standards\Design Criteria 2020-21\City Standards Update Folder\CoVStandardDrawings_CAD_2021\FRW-102 - Acoustic Wood Fence.dwg





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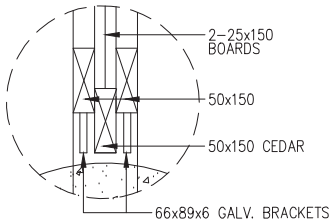

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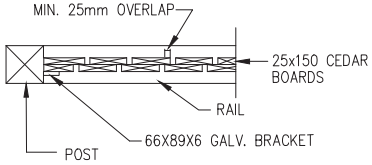

BOARD ON BOARD DETAIL

NOTE

THE DEPTH IS TO BE 1800mm MINIMUM ON NATIVE SOIL.
FOR NON-NATIVE SOIL, OR FENCE HEIGHT GREATER THAN 1800mm, THE DEPTH IS TO BE RECOMMENDED BY A PROFESSIONAL SOIL ENGINEER.

REFER TO STD. DWG. FRW-105 FOR SPECIFICATIONS.

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

	REVISIONS	DATE
4.		
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VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

PRIVACY WOOD FENCE

NOT TO SCALE
DESIGNED: _____
REVISION: _____
DATE: DEC. 2020

STD. DWG.
FRW - 103

FILE: O:\Infrastructure Delivery\Infrastructure Programming\PMO\City Standards\Design Criteria 2020-21\City Standards Update Folder\CoVStandardDrawings_CAD_2021\FRW-103 - Privacy Wood Fence.dwg

NOTES

1. ALL WOOD SHALL BE WESTERN RED CEDAR, SELECTED MAINLY FOR GOOD APPEARANCE AND FREE OF WANE AND BARK POCKETS. ALL TORN GRAIN SHALL BE FREE, ELIMINATED BY SANDING AND PLANING. MEMBERS EXHIBITING MODERATE TO HEAVY KNOTS SHALL BE WELL DISTRIBUTED THROUGHOUT THE INSTALLATION. POST SHALL BE SELECT KNOTTY (NLGA131A) RETENTION OF 20KG/SQ M SURFACE DENSITY.

2. ALL WOOD SHALL BE DRESSED FOUR SIDES.

3. ALL TIMBER CUTS SHALL BE STRAIGHT AND PLUMB.

4. MOISTURE CONTENT OF WOOD SHALL NOT EXCEED 14% AT THE TIME OF CONSTRUCTION.

5. ALL WOOD TO BEAR GRADING STAMP OF C.I.S. CERTIFIED AGENCY.

6. TREAT BOTTOM SKIRT BOARD WITH C.C.A. PRESERVATIVE TO A RETENTION OF 4.0KG/M^3.

7. ALL FENCES SHALL BE INSTALLED WITHIN 30 DAYS OF INSTALLATION, WEATHER PERMITTING.

8. STAIN FOR WOOD FENCE– STAIN SHALL CONSIST OF 2 COATS OF:
   - A BASE OF BLENDED RESINS AND OILS IN A WATER SUSPENSION.
   - SUSPENDED SOLIDS WHICH ARE NOT LESS THAN 21% AND NOT GREATER THAN 31% BY VOLUME.
   - V.O.C.'S (VOLATILE ORGANIC COMPOUNDS) WHICH ARE NOT IN EXCESS OF 350G/L IN ACCORDANCE WITH A.S.T.M. D–2369.
   - LEVELS OF LIQUID MICROBICIDES AND ANY OTHER POTENTIAL TOXIC SUBSTANCES WHICH ARE ENVIRONMENTALLY SAFE (NOT REQUIRING PROVINCIAL OR FEDERAL REGISTRATION).
   - NONE OF THE FOLLOWING HAZARDOUS SUBSTANCES:
     * FOLPET [N–(TRICHLOROMETHYLTHIO) PHTHALIMIDE]
     * BIS (TRIBUTYLTIN) OXIDE
     * COPPER NAPHTHENATE
     * COPPER 8 QUINOLINOLATE
     * ZINC NAPHTHENATE
   - SUFFICIENT OXIDE PIGMENTS TO OBTAIN DESIRED COLOUR TONE AND LEVEL OF OPACITY (COLOUR TO BE APPROVED BY LANDSCAPE ARCHITECT).

9. SECTION OF POST IMBEDDED IN CONCRETE FOOTING TO BE DIPPED IN CREOSOTE.

10. LAG SCREWS AND BOLTS SHALL BE GALVANIZED AND CONFORM TO ASTM A307.

11. ALL GALVANIZING TO BE HOT DIPPED IN CONFORMANCE TO CSA STANDARD 6164.

12. THE ACOUSTIC FENCE SHALL HAVE A MINIMUM FACE DENSITY OF 20 kg/m^2.

13. ALL NAILS GALVANIZED ARDOX, CONFORMING TO CSA STANDARD, AND 75MM UNLESS NOTED OTHERWISE. ALL NAILS TO BE EVENLY SPACED AND SET NOT LESS THAN 25MM FROM EDGE OF ANY MEMBER.

    RAILS – 3 NAILS TO POST AT EACH END, 3 NAILS THRU BOTTOM FRONT RAIL TO VERTICAL MEMBERS AND 3 NAILS TO SKIRT BOARD IN STAGGERED PATTERN. CONTINUE –>

    SKIRT RAIL – 2 NAILS TO POST AT EACH END.

    FACIA BOARD – 2 NAILS (50MM) EACH END TO VERTICAL MEMBERS AND 5 NAILS IN STAGGERED PATTERN ALONG BOARD.

    VERTICAL MEMBERS – 2 NAILS (88MM) TOP AND BOTTOM TO RAILS.

    COPING – 2 NAILS THRU EDGES TO POST AT EACH END AND 6 NAILS THRU TOP TO VERTICAL MEMBERS.

14. COUNTER–SINK ALL LAG SCREWS AND BOLTS AND DRIVE ALL NAIL HEADS BELOW SURFACE OF WOOD.

15. FOUNDATION DESIGN IS BASED ON AN ALLOWABLE SOIL PRESSURE OF 95KN/M^2. OBTAIN PROFESSIONAL SOIL ENGINEER'S APPROVAL BEFORE CASTING CONCRETE FOR FOUNDATION.

16. DESIGN WIND SPEED 80KM/HR, GUST TO 100KM/HR.

17. CONCRETE FOR FOOTINGS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 25 MPA IN 28 DAYS.

18. FOR ACOUSTIC FENCE, BOTTOM RAIL SHALL BE SET ON GRADE. WHERE DRAINAGE IS TO BE CONVEYED THROUGH THE BARRIER, THEN THE DESIGN SHALL COMPLY WITH STANDARD DESIGN CRITERIA FIG. I–6

19. FIRE HOSE ACCESS TO BE DESIGNED IN ACCORDANCE WITH O.P.S.D. 998.101 & 998.131.

20. FENCES CONSTRUCTED ON BERMS:
    A) EXTEND FOOTINGS 300MM INTO UNDISTURBED SUB–GRADE.
    B) COMPACT BERMS TO A MINIMUM OF 100% STANDARD PROCTOR DENSITY.
    C) CONSTRUCT BERMS WITH A 1000MM FLAT TOP AND SIDE SLOPES NO STEEPER THAN 3:1.

	REVISIONS	DATE
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VAUGHAN

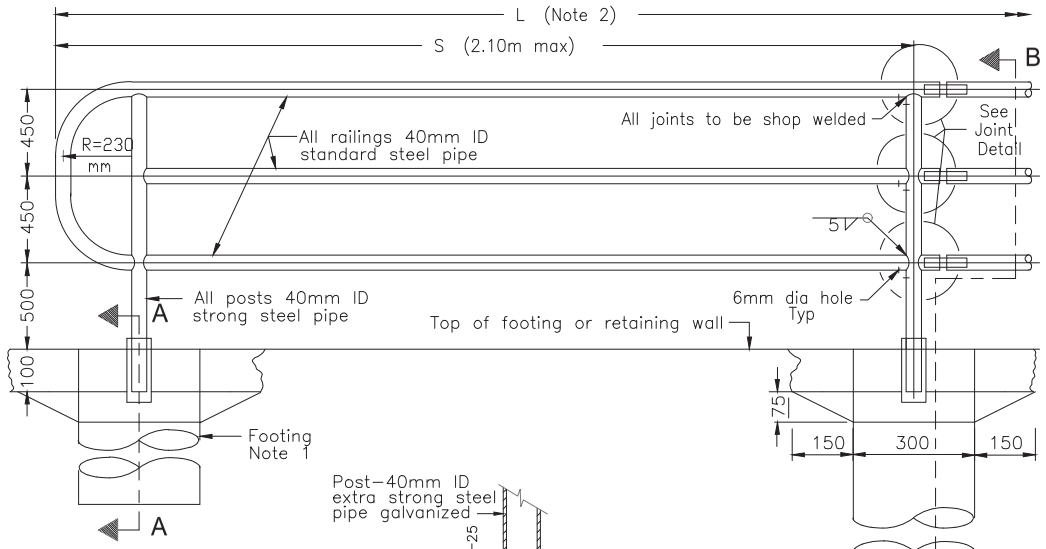
CITY OF VAUGHAN ENGINEERING STANDARD

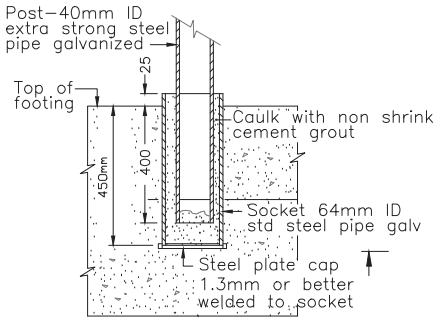
ACOUSTIC / PRIVACY FENCE NOTES

NOT TO SCALE | DESIGNED: _____ | STD. DWG.

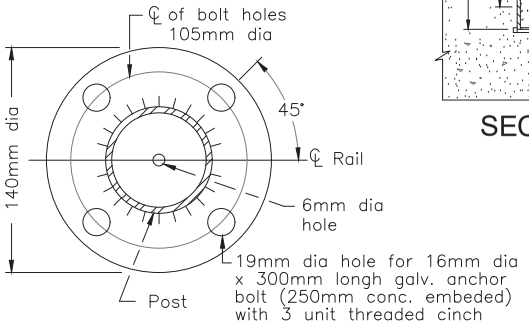
REVISION: _____ | DATE: DEC. 2020 | FRW - 104

FILE: O:\Infrastructure Delivery\Infrastructure Programming\PMO\City Standards\Design Criteria 2020-21\City Standards Update Folder\CoVStandardDrawings_CAD_2021\FRW-104 - Acoustic+Privacy Fence Notes.dwg

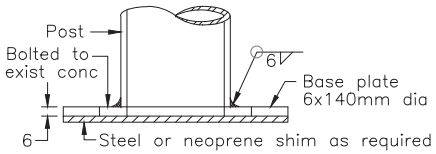




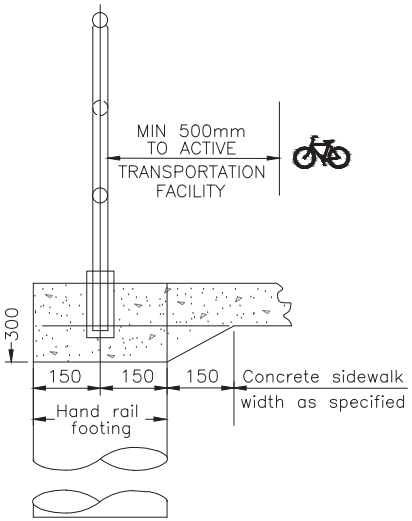
SECTION A - A
Enlarged



PLAN OF BASE PLATE



BASE PLATE ELEVATION
SECTION A - A



SECTION B - B

NOTE:
THIS STANDARD TO BE USED IN PLACE OF OPSD 980.101 WHERE ADDITIONAL RAIL HEIGHT IS REQUIRED (SUCH AS BICYCLE TRAIL).

NOTES:

1 Anchor leveling (base) plates for hand rail posts to be set in centre of 300mm dia.x1200mm deep conc. footings.

2 Number of panels= $\frac{\text{Total length(L)}-600\text{mm}}{\text{Length of panels(S)}}$

3 6mm dia holes are to permit gases to escape during galvanizing.

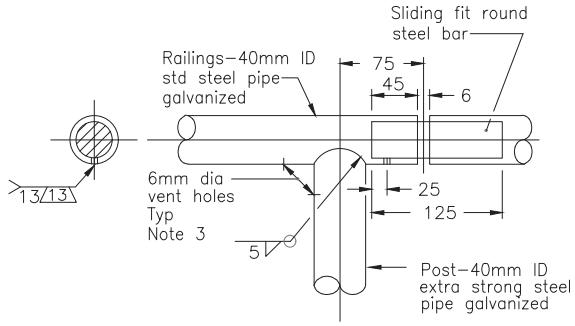
A Class of concrete – 32MPa min after 28 days.

B Hand rail to be hot dip – galvanized after fabrication in conformance with CSA G–164.

C Posts shall be vertical. All exposed corners to be ground smooth.

D Welding shall conform to the latest issue of CSA specification W59.

E Pipe shall be supplied accordance with ASTM Designation A120.



TYPICAL JOINT DETAIL

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	REVISIONS	DATE

VAUGHAN

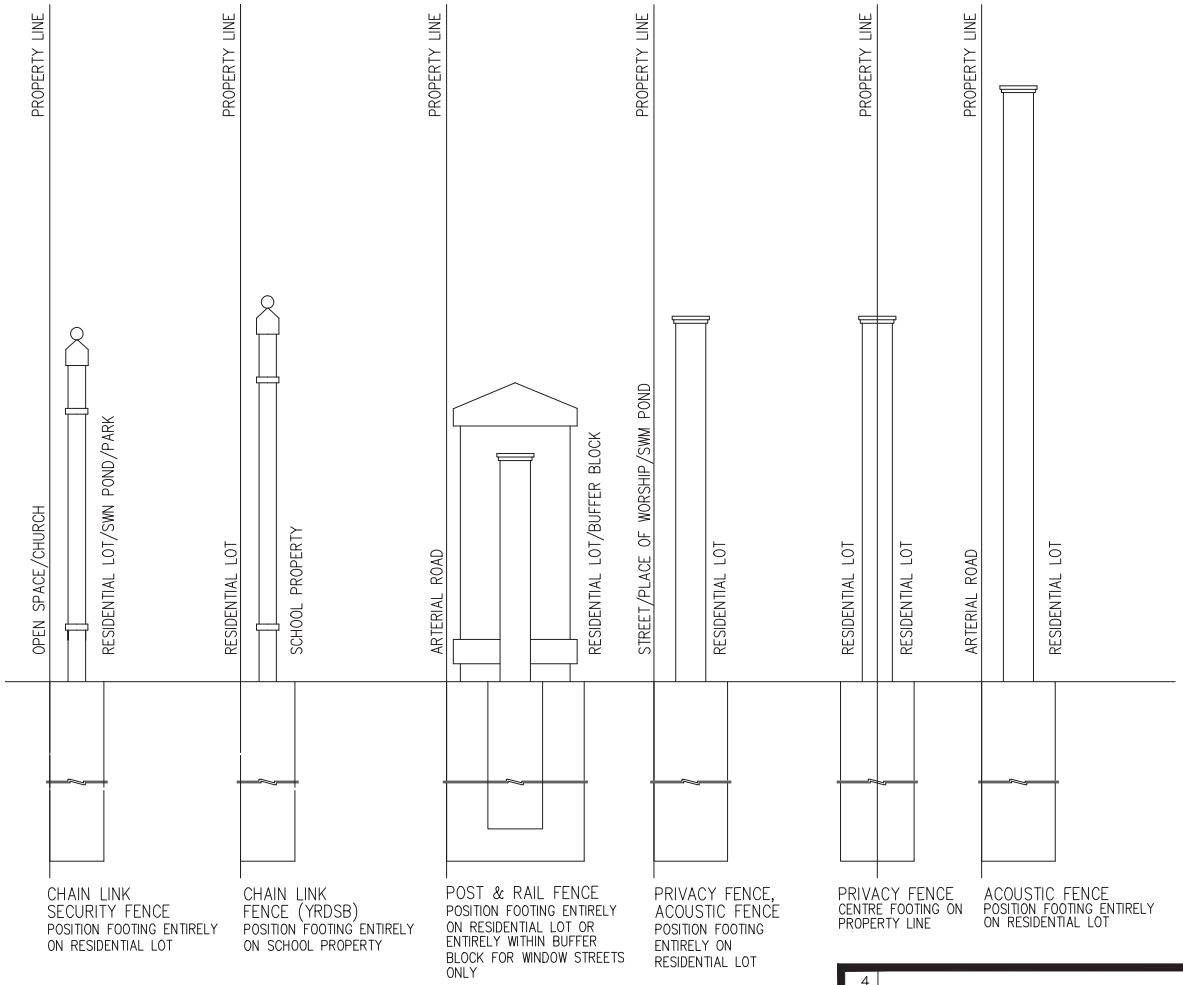
CITY OF VAUGHAN ENGINEERING STANDARD

PEDESTRIAN / BICYCLE HAND RAIL

NOT TO SCALE	DESIGNED:	STD. DWG.
REVISION:	DATE: DEC. 2020	FRW - 105

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

FILE: O:\Infrastructure Delivery\Infrastructure Programming\PMO\City Standards\Design Criteria 2020-21\City Standards Update Folder\CoVStandardDrawings_CAD_2021\FRW-105 – Pedestrian+Bicycle Hand Rail.dwg



NOTES:

1. ALL FENCE, INCLUDING THEIR FOOTINGS/FOUNDATIONS, MUST BE LOCATED ENTIRELY OUTSIDE OF ANY 0.3m RESERVES.

	REVISIONS	DATE
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VAUGHAN

CITY OF VAUGHAN ENGINEERING STANDARD

FENCE TYPES & PLACEMENT

mm DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

NOT TO SCALE DESIGNED: _____

REVISION: _____ DATE: DEC. 2020

STD. DWG. FRW - 106

FILE: O:\Infrastructure Delivery\Infrastructure Programming\PMO\City Standards\Design Criteria 2020-21\City Standards Update Folder\CoVStandardDrawings_CAD_2021\FRW-106 - Fence Types & Placement.dwg