

GI GENERAL COMPONENTS DESIGN NOTES AND GUIDANCE

PURPOSE:

THE FOLLOWING COMPONENTS MAY BE USED IN A VARIETY OF GI SYSTEMS. THESE COMPONENTS SHOW PHYSICAL INFRASTRUCTURE COMPONENTS THAT MAY HAVE FIXED OR VARIED DIMENSIONS.

DESIGNER NOTES & GUIDELINES:

1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE NOTED.
2. THE DESIGNER MUST ADAPT COMPONENT DIMENSIONS TO ADDRESS SITE-SPECIFIC CONDITIONS. DETAILS REQUIRING CUSTOM DIMENSIONS SHOULD BE SHOWN ON CONSTRUCTION DRAWINGS. UNADJUSTED COMPONENTS MAY BE REFERENCED.
3. THE COMPONENTS REQUIRED AND RECOMMENDED FOR SPECIFIC GI SYSTEMS ARE REFERENCED ON THE SYSTEM TEMPLATES SHOWN IN GI STANDARD DRAWING SECTION 4, SECTION 5, AND SECTION 6.
4. THE DESIGNER MUST EVALUATE UTILITY SURVEYS FOR POTENTIAL UTILITY CROSSINGS OR CONFLICTS.
5. MINIMUM UTILITY SETBACKS AND PROTECTION MEASURES MUST CONFORM TO CURRENT CITY OF VANCOUVER ASSET PROTECTION STANDARDS AND OTHER UTILITY PROVIDER REQUIREMENTS.
6. BIORETENTION VEGETATION MUST BE SPECIFIED BY DESIGN PROFESSIONAL PER CoV GREEN INFRASTRUCTURE VEGETATION GUIDANCE

LAYOUT REQUIREMENTS:

1. REFER TO THE CITY OF VANCOUVER ACCESSIBILITY STRATEGY, STANDARD DRAWINGS AND CONSTRUCTION SPECIFICATIONS FOR RIGHT-OF-WAY, PARKING SPACE, AND ACCESSIBLE PATH REQUIREMENTS.
2. LOCATE CURB CUTS AND GUTTER MODIFICATIONS TO AVOID CONFLICTS WITH ACCESSIBILITY REQUIREMENTS (E.G., LOCATE OUTSIDE OF CROSSWALKS).
3. REFER TO THE DESIGN MANUAL FOR GUIDANCE ON PLACING CONCRETE CHECK DAMS

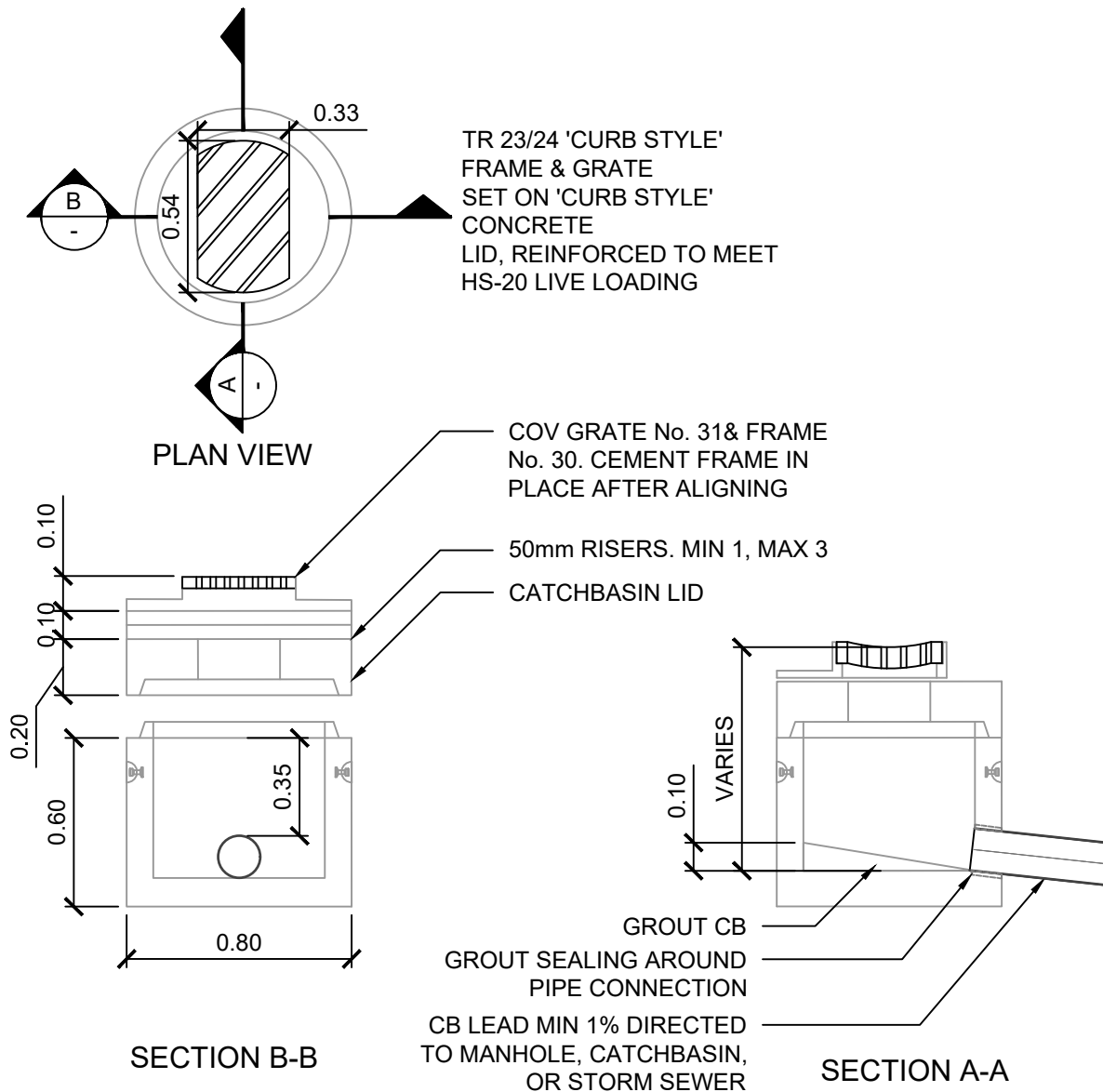
DESIGNER CHECKLIST (MUST SPECIFY, AS APPLICABLE):

- ☐ CONFIRM UTILITY PROTECTION MEASURES WITH GII STAFF
- ☐ CONFIRM MONITORING REQUIREMENTS WITH GII STAFF
- ☐ SELECT CURB EDGES AND BANDING ACCORDING TO GII STAFF INSTRUCTION
- ☐ CONFIRM PERFORATED PIPE LAYOUT AND PERFORATION REQUIREMENTS WITH GII STAFF
- ☐ CONFIRM ACCEPTABILITY OF ALL CATCHBASINS AND INSPECTION CHAMBERS WITH SEWER DEPARTMENT

GENERAL COMPONENT DRAWING DESCRIPTIONS

3.1.	PRECAST CONCRETE CATCHBASIN	PRECAST OFFSET CBS ARE A SHORTENED CATCHBASIN WITH A SMALL SUMP. PRECAST CBS SHOULD BE USED WHEN SDD S11.9 IS INFEASIBLE DUE TO PROJECT CONSTRAINTS. OFFSET CBS ARE TO BE USED WHEN DRAINAGE IS BEING DIRECTED TO ANOTHER FEATURE THAT CAN REPLICATE THE FUNCTION OF THE SUMP SUCH AS AN INSPECTION CHAMBER.
3.2.	MONITORING WELL	MONITORING WELLS ARE USED TO MEASURE THE SATURATION LEVEL OF SOIL IN A GREEN INFRASTRUCTURE SYSTEM. SATURATION LEVEL IS A GOOD INDICATOR OF HOW WELL A GREEN INFRASTRUCTURE SYSTEM IS DRAINING. THIS DRAWING PROVIDES MULTIPLE MONITORING WELLS FOR DIFFERENT SURFACE TREATMENTS.
3.3.	INSPECTION CHAMBER	INSPECTION CHAMBERS ARE USED TO MONITOR DRAINAGE IN LARGER GREEN INFRASTRUCTURE SYSTEMS. THEY CONNECT UNDERDRAINS SUCH AS THOSE IN GI3.7. TO CATCHBASINS AND SEWER LEADS.
3.4.	GI CLEANOUT	CLEANOUTS ARE INSTALLED AT THE "UPSTREAM" END OF PERFORATED PIPES. THEY ARE INSTALLED TO MAKE IT EASIER TO FLUSH UNDERDRAINS AND CLEAR PERFORATIONS.
3.5.	TREE TRENCH CURB EDGES	THESE CURB EDGES ARE DESIGNED TO CONFIN OPEN TREE PIT AREAS. THEY ARE TO BE PLACED PERPENDICULAR TO STREET CURBS AND SIDEWALKS.
3.6.	GI BANDING	GI BANDING IS DESIGNED TO CONFIN GREEN INFRASTRUCTURE ASSETS AND CONTAIN PONDED WATER. BANDING IS USED ALONG THE EDGES OF A GREEN INFRASTRUCTURE SYSTEM THAT ARE NOT ADJACENT TO A ROADWAY. PREFERRED BANDING OPTIONS DEPEND ON THE DEPTH OF PONDING AND THE ADJACENT SURFACE TREATMENT.
3.7.	UNDERDRAIN AND DISTRIBUTION PIPES	PERFORATED PIPES MAY BE USED AS UNDERDRAINS TO SLOWLY REMOVE WATER FROM A GREEN INFRASTRUCTURE ASSET, OR AS DISTRIBUTION PIPES, WHICH CAN CONVEY WATER INTO A GREEN INFRASTRUCTURE ASSET. PERFORATED PIPE DESIGN DEPENDS ON THE DESIRED RATE OF FLOW THROUGH THE PIPE AND THE EXPECTED INFILTRATION RATE OF THE SYSTEM.
3.8.	PVC CATCHBASIN	A PVC CATCHBASIN IS USED TO CAPTURE OVERFLOW FROM A GI SYSTEM AN DIRECT IT INTO THE SEWER SYSTEM. PVC CATCHBASINS MAY ONLY BE USED WHEN SURROUNDED BY GROWING MEDIUM. THEY ARE A MORE AFFORDABLE ALTERNATIVE TO TRADITIONAL CATCHBASINS AND THE OVERLYING DOMED INLET GRATE HELPS PREVENT CLOGGING FROM SEDIMENT AND DEBRIS.

<div>GENERAL COMPONENTS</div> <div>GI COMPONENTS DESIGN GUIDANCE</div>			ISSUE DATE: DECEMBER 2024
			APPROVED BY: <u>N. MEAD-FOX</u>
REV.	REVISION DATE	APPROVED	



NOTES:

1. WHEN SUMP IS INSTALLED ROADSIDE TO CATCHBASIN, CONNECTION PIPE FROM CB TO SUMP SHALL BE DUCTILE IRON OR CONCRETE ENCASED.
2. USE 750mm BARREL AT ALL SAG POINTS.
3. EXPANSION JOINT REQUIRED IN CURB AND GUTTER AT MIDDLE OF CB FRAME FOR 600mm BARREL INSTALLATIONS OR 1m EACH SIDE OF FRAME FOR 750mm BARREL INSTALLATIONS.
4. GROUT TO SEAL PIPE OPENING, LIFTING HOLES, TEMPORARY DRAIN HOLE(S), SECTIONS, AND SPACER RINGS, INSIDE AND OUT.

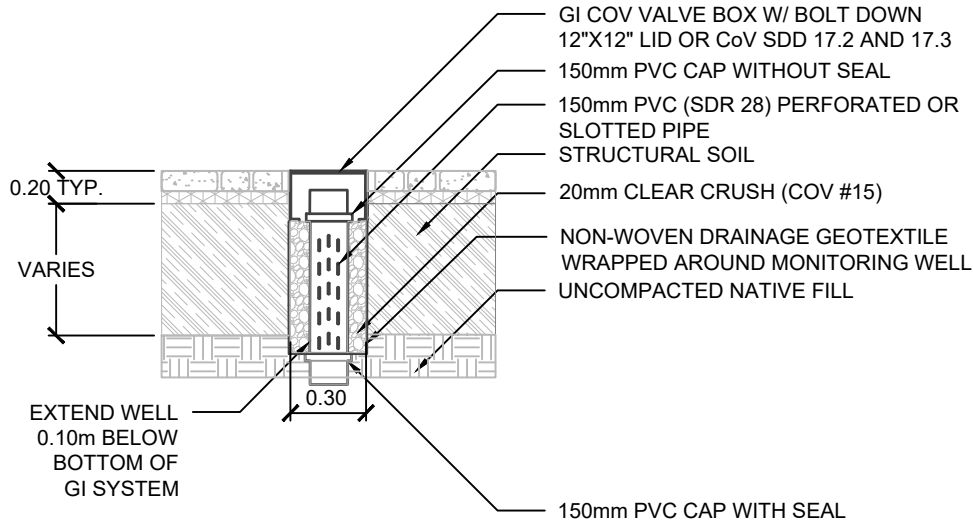
REV.	REVISION DATE	APPROVED

GENERAL COMPONENTS
PRECAST CONCRETE CATCHBASIN

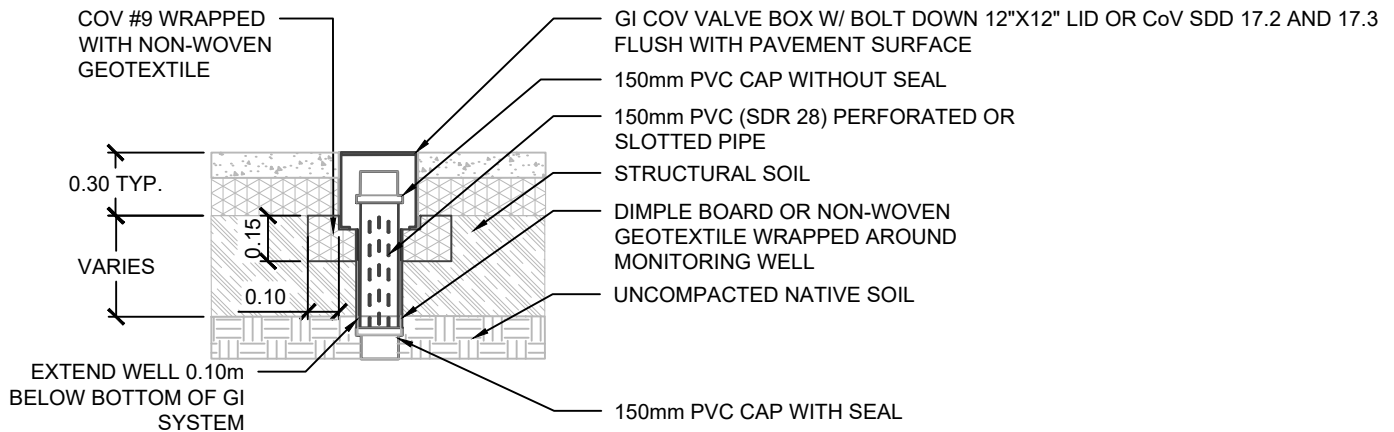
ISSUE DATE: DECEMBER 2024

APPROVED BY: N. MEAD-FOX

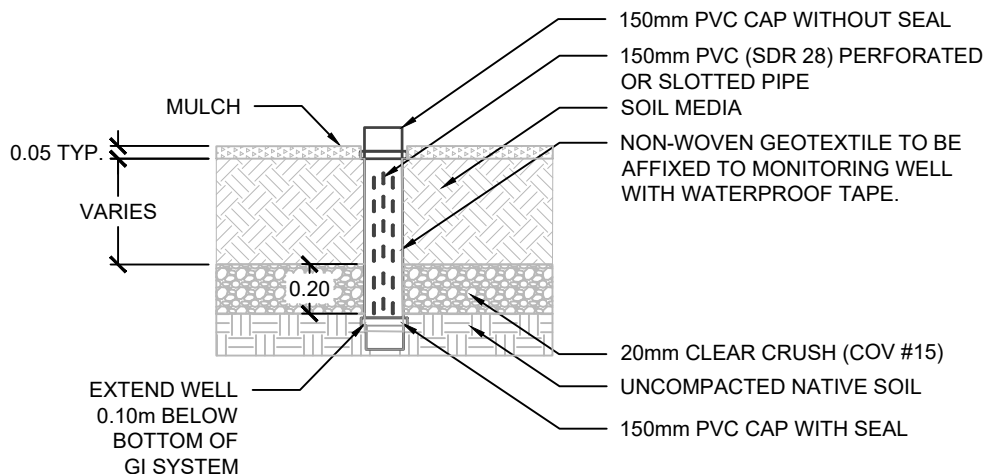
3.2A: MONITORING WELL WITH CLEAR CRUSHED AGGREGATE UNDER PERMEABLE PAVEMENT



3.2B: MONITORING WELL WITH DIMPLE BOARD UNDER PAVEMENT



3.2C: MONITORING WELL IN SOIL



NOTES:

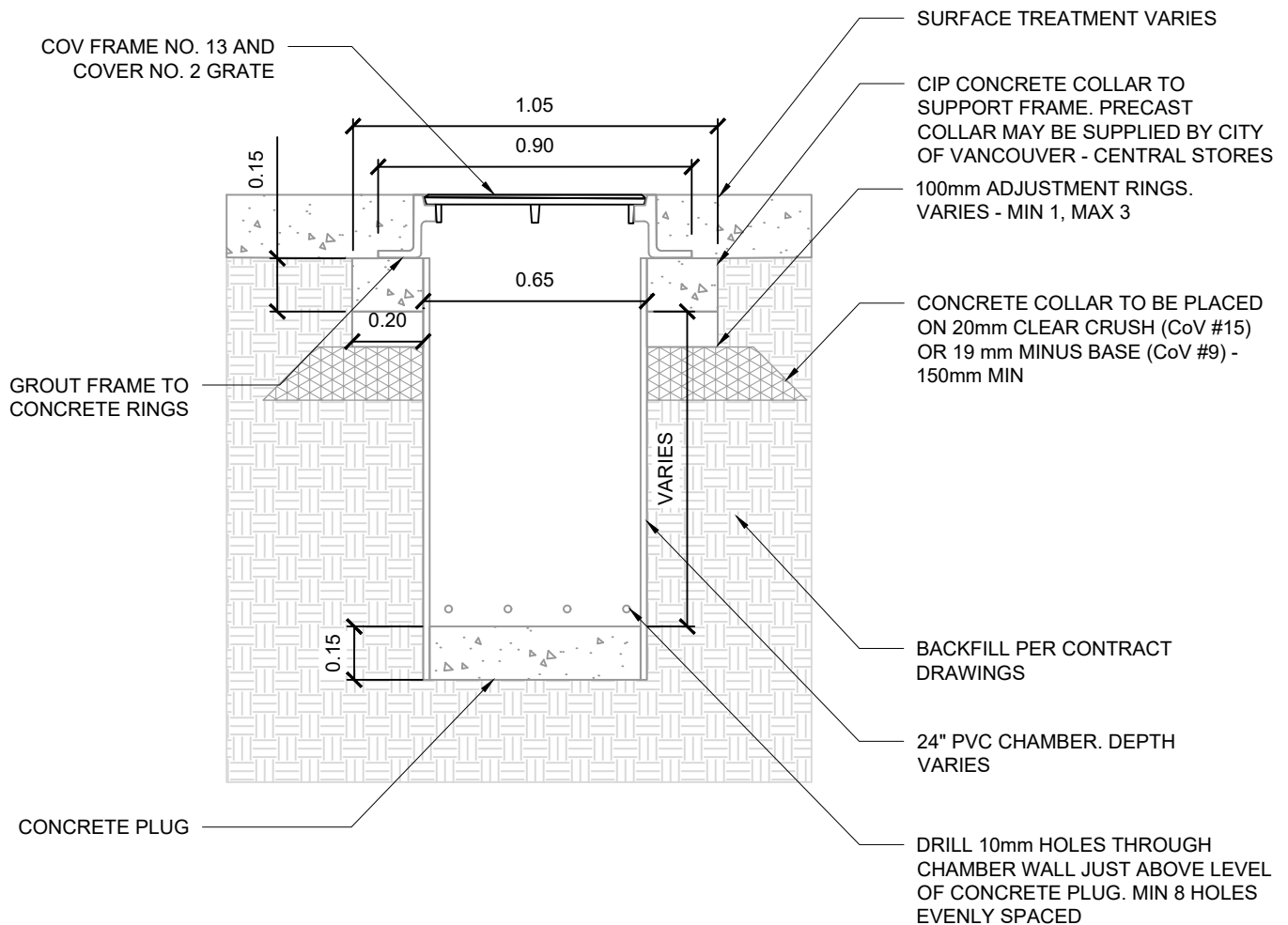
- 3.2A TO BE USED FOR GI UNDER PAVEMENT OR CONCRETE
- 3.2B TO BE USED FOR GI UNDERNEATH PAVEMENT OR CONCRETE WHERE DIMPLE BOARD IS AVAILABLE ON SITE
- 3.2C TO BE USED IN GI WITH EXPOSED VEGETATION

GENERAL COMPONENTS
MONITORING WELL

ISSUE DATE: DECEMBER 2024

APPROVED BY: N. MEAD-FOX

REV.	REVISION DATE	APPROVED



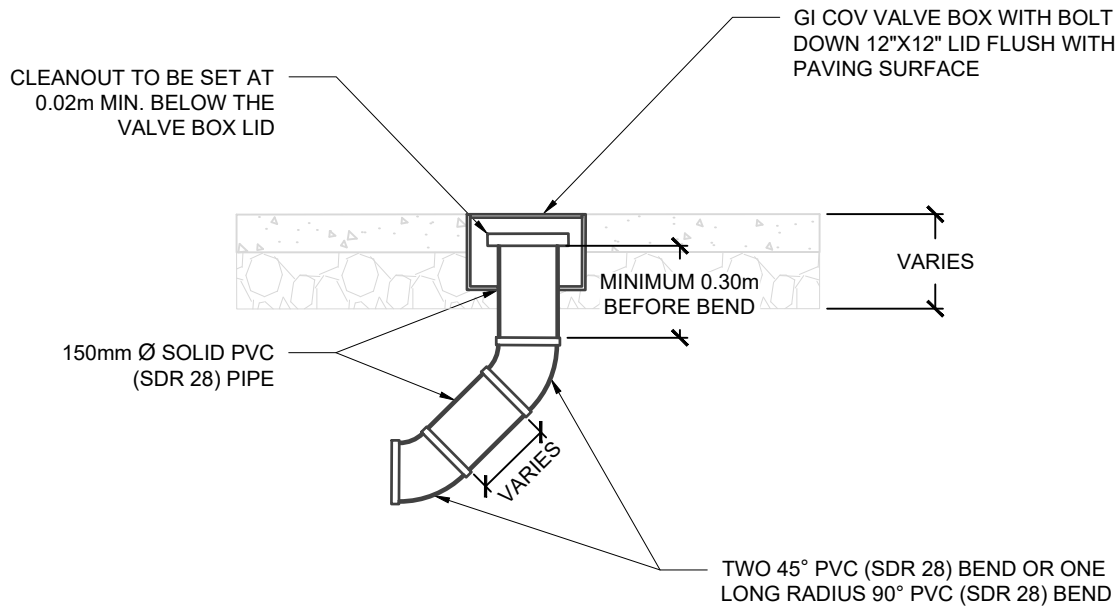
REV.	REVISION DATE	APPROVED

GENERAL COMPONENTS
INSPECTION CHAMBER

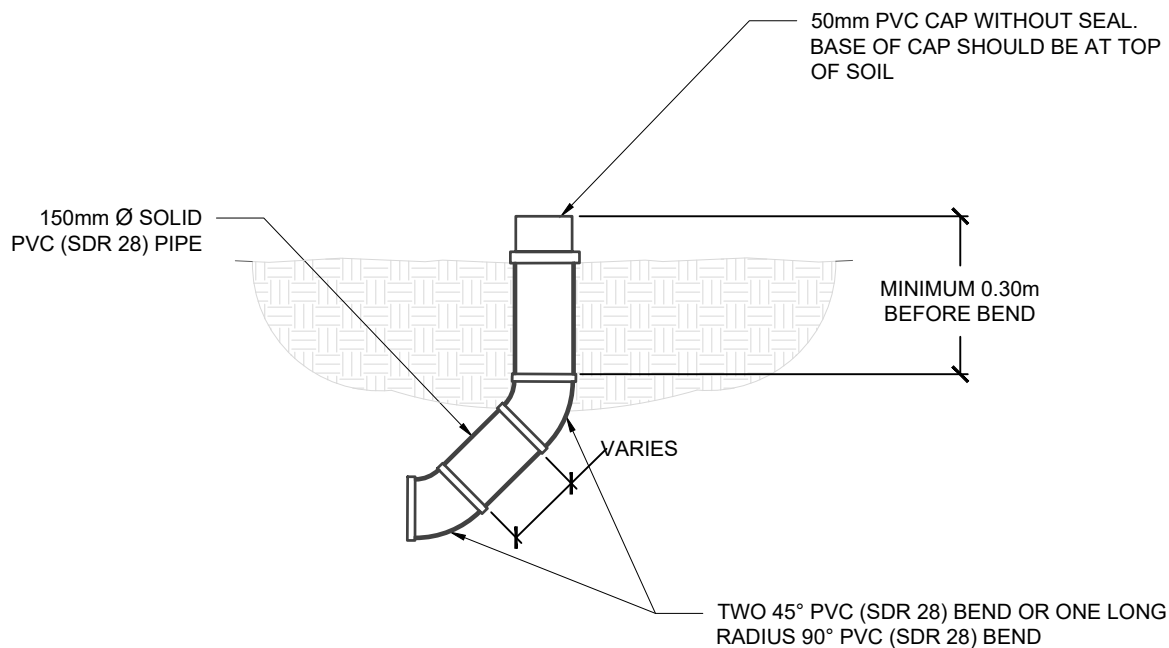
ISSUE DATE: DECEMBER 2024

APPROVED BY: N. MEAD-FOX

3.4A CLEANOUT IN PAVEMENT



3.4B CLEANOUT IN SOIL



REV.	REVISION DATE	APPROVED

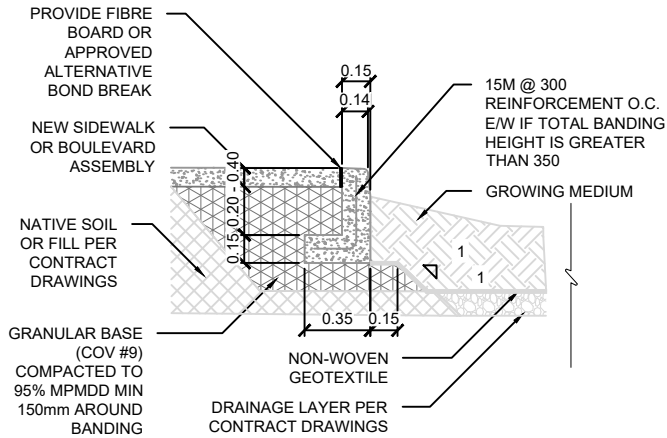
GENERAL COMPONENTS
GI CLEANOUT

ISSUE DATE: DECEMBER 2024

APPROVED BY: N. MEAD-FOX

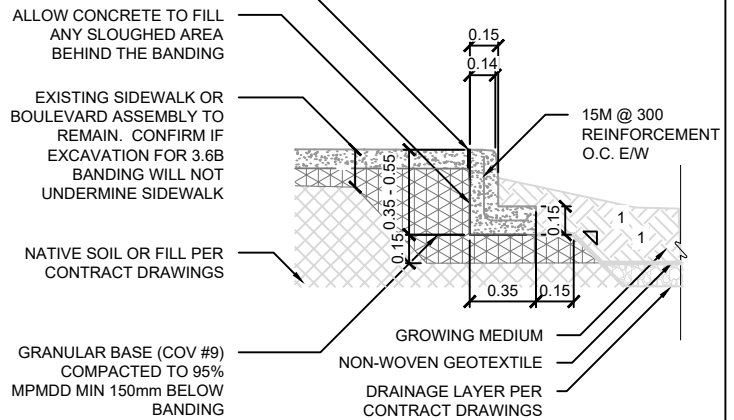
APPROVED BY: N. MEAD-FOX

3.6A: PREFERRED

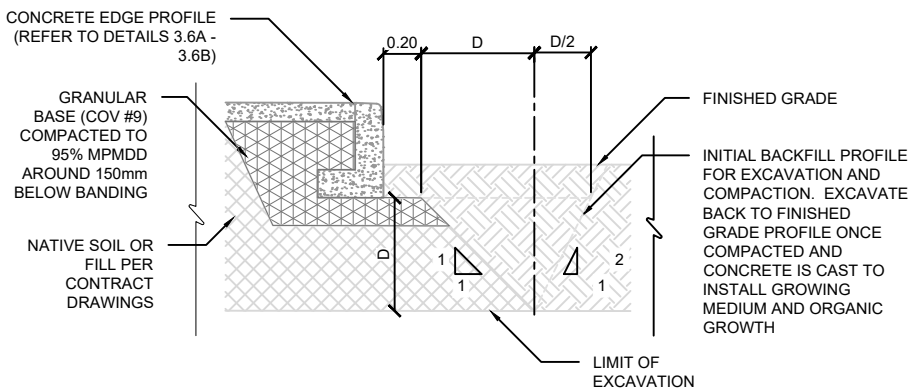


PROVIDE FIBRE BOARD OR
APPROVED ALTERNATIVE
BOND BREAK

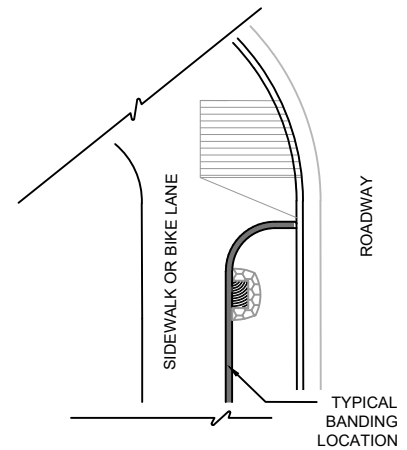
3.6B: ALTERNATE



SOIL EXCAVATION, COMPACTION AND BACKFILLING



PLAN VIEW FOR CONTEXT



NOTES:

1. TYPE A TO BE USED IF ADJACENT SIDEWALK IS BEING RECONSTRUCTED.
2. TYPE B TO BE USED IF ADJACENT SIDEWALK WILL REMAIN.
3. DESIGN CRITERIA, APPLIED LOADING CONSTRAINTS, AND MAXIMUM VERTICAL POINT LOADING FOR VARIOUS COVER WIDTHS MAY BE PROVIDED UPON REQUEST.
4. IF THE ADJACENT SURFACE IS NOT A SIDEWALK (I.E. A RETAINED BOULEVARD) TYPE A AND TYPE B CURBS MAY BE RAISED UP TO 150mm ABOVE THE ADJACENT SURFACE ELEVATION (AS SHOWN IN THE SCHEMATIC TO THE RIGHT) IF REQUIRED BY GRADING CONDITIONS. THE MAXIMUM BANDING HEIGHT SHALL BE 600mm.
5. INSTALL EMBEDDED REINFORCEMENT AND CONCRETE IN CONFORMANCE WITH CITY OF VANCOUVER CONSTRUCTION SPECIFICATIONS.
6. STRUCTURAL MEMBER SIZING AND ORIENTATION OF ELEMENT TO BE CONFIRMED BY THE ENGINEER. REINFORCEMENT TO BE INSTALLED AS OUTLINED IN THIS DRAWING, UNLESS OTHERWISE NOTED BY THE ENGINEER.
7. NOTIFY THE ENGINEER IF EXISTING SITE CONDITIONS DIFFER FROM THOSE SHOWN IN THIS DETAIL.
8. REINFORCEMENT IS NOT REQUIRED IF THE TOTAL HEIGHT OF THE BANDING WALL IS LESS THAN 350mm (NOTE REINFORCEMENT WILL ALWAYS BE REQUIRED WHEN BANDING IS RAISED AS SHOWN IN THE SCHEMATIC TO THE RIGHT).

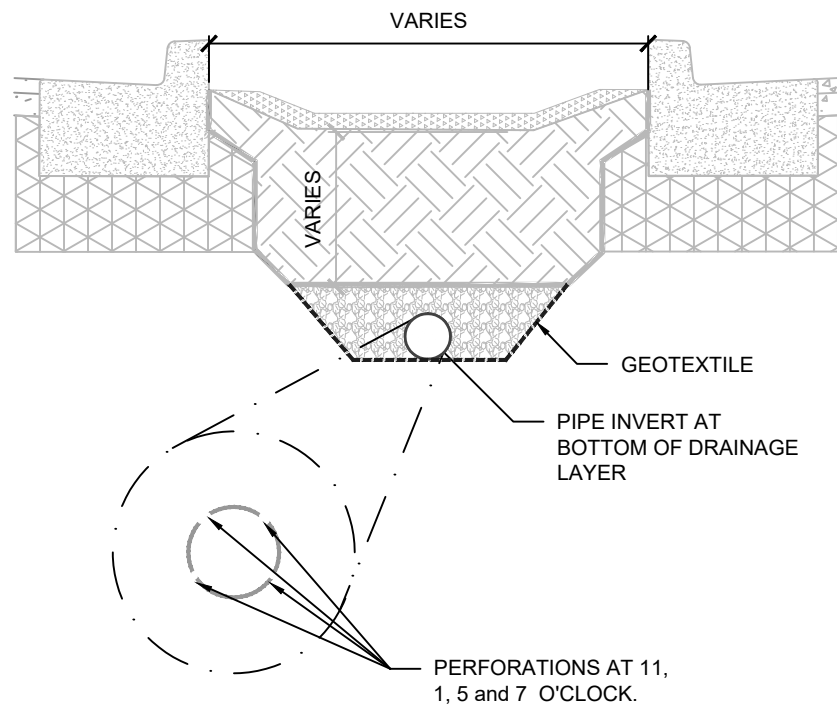
GENERAL COMPONENTS
GI BANDING

ISSUE DATE: DECEMBER 2024

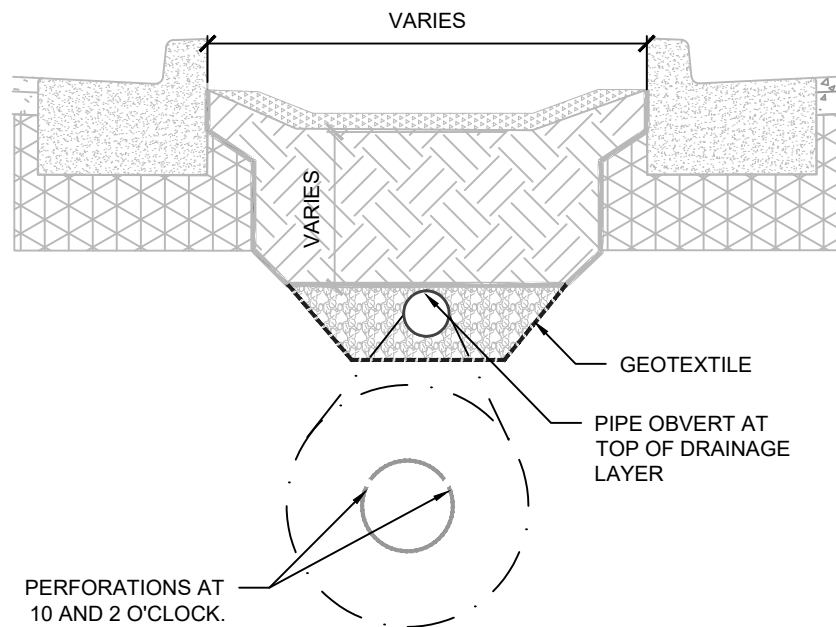
APPROVED BY: N. MEAD-FOX

REV.	REVISION DATE	APPROVED

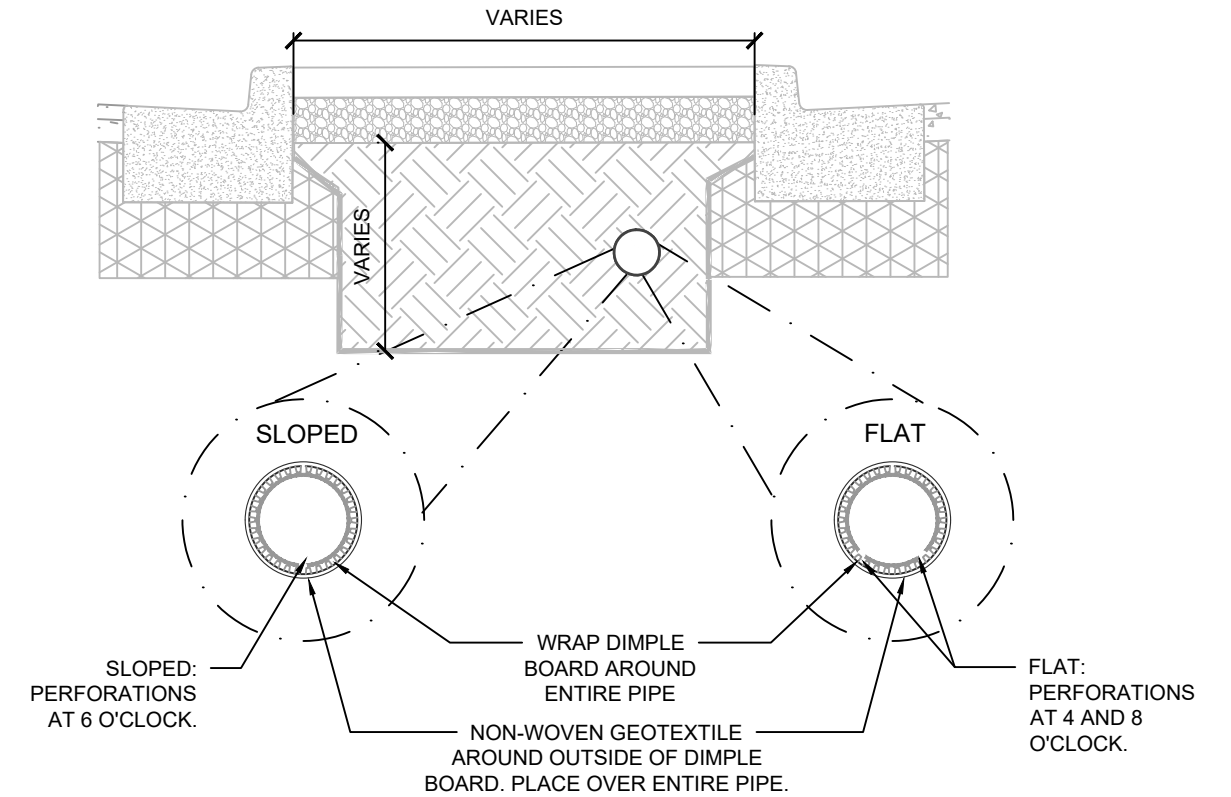
3.7A NON-INFILTRATION
GI UNDERDRAIN



3.7B PARTIALLY INFILTRATING
GI UNDERDRAIN



3.7C FLAT (PREFERRED) OR SLOPED
DISTRIBUTION PIPE



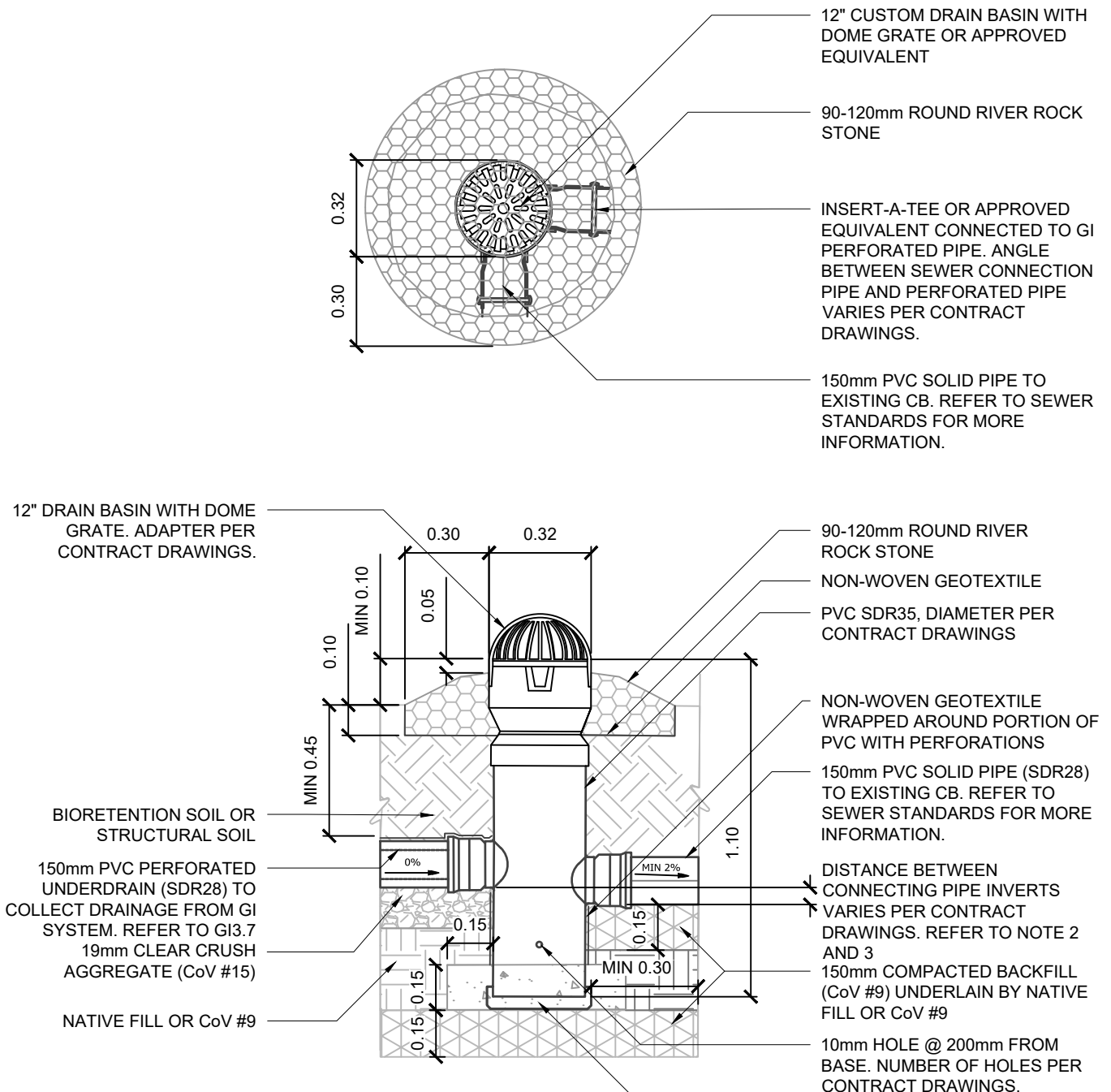
NOTES:

1. TYPE A TO BE USED IF GI ASSET IS NON-INFILTRATING (i.e. FILTRATION ONLY). TYPICALLY USED IN BIORETENTION SYSTEMS.
2. TYPE B TO BE USED IF GI ASSET CAN INFILTRATE BUT REQUIRES AN UNDERDRAIN FOR DRAWDOWN TIMES. TYPICALLY USED IN BIORETENTION SYSTEMS.
3. TYPE C TO BE USED TO DISTRIBUTE RAINWATER IN INFILTRATION TRENCHES AND RAINWATER TREE TRENCHES
4. TYPE D TO BE USED IN A PARTIALLY INFILTRATING OR NON-INFILTRATING RAINWATER TREE TRENCH THAT CONTAINS A DISTRIBUTION PIPE
5. ALL DISTRIBUTION PIPES TO BE LAID AT 0%
6. SUBDRAIN PIPES MAY BE LAID ON A SLOPE THAT MATCHES THE UNDERLYING SUB-BASE AS SHOWN IN 3.7C
7. REFER TO DESIGN MANUAL FOR FURTHER DETAILS REGARDING PERFORATED PIPE DESIGN AND PLACEMENT

REV.	REVISION DATE	APPROVED

GENERAL COMPONENTS
UNDERDRAINS AND DISTRIBUTION PIPES

ISSUE DATE: FEBRUARY 2024
APPROVED BY: N. MEAD-FOX



DESIGNER NOTES

1. THIS CB MAY NOT BE USED IN LIEU OF A SEWERS STANDARD CB OR TO INCREASE THE MAXIMUM CONTRIBUTING DRAINAGE AREA TO A SEWERS CB
2. IF THE PERFORATED PIPE IS TO BE USED AS A DISTRIBUTION PIPE TO CONVEY WATER INTO THE GI SYSTEM, THE INVERT SHOULD BE PLACED BELOW THE INVERT OF THE SEWER CONNECTION.
3. IF THE PERFORATED PIPE IS TO BE USED AS AN UNDERDRAIN TO CONVEY WATER OUT OF THE GI SYSTEM, THE INVERT SHOULD BE PLACED ABOVE THE INVERT OF THE SEWER CONNECTION
4. USE OF THIS PVC CB IS DEPENDENT ON APPROVAL FROM CITY OF VANCOUVER SEWERS AND DRAINAGE DESIGN AND GREEN INFRASTRUCTURE IMPLEMENTATION BRANCHES
5. DRAIN BASIN WITH DOME GRATE AND PVC. DIAMETER PER CONSTRUCTION DRAWINGS

GENERAL COMPONENTS
PVC CATCHBASIN

ISSUE DATE: DECEMBER 2024

APPROVED BY: N. MEAD-FOX

REV.	REVISION DATE	APPROVED