INFILTRATION SYSTEMS
DESIGN NOTES AND GUIDANCE

PURPOSE:

INFILTRATION SYSTEMS RETAIN RAINWATER RUNOFF BY PROVIDING SURFACE STORAGE, SUBSURFACE STORAGE AND INFILTRATION INTO NATIVE SOIL. THE STORAGE IN INFILTRATION SYSTEMS CAN ALSO REDUCE THE PEAK FLOW ENTERING SEWERS AND REMOVE RAINWATER FROM ENTERING SEWERS.

RELATED DETAILS	
EDGE TREATMENTS:	GI 3.5 - GI 3.6
INLETS:	GI 2.1 - GI 2.5
UNDERDRAINS:	GI 3.7
MONITORING WELL	GI 3.2
CLEANOUTS	GI 3.4
INSPECTION CHAMBERS	GI 3.3
CATCHBASINS	GI 3.1 GI 3.8

DESIGNER NOTES & GUIDELINES:

1. THE DESIGNER MUST ADAPT PLAN AND SECTION DRAWINGS TO ADDRESS SITE-SPECIFIC CONDITIONS.
2. SYSTEM SURFACE AREA, PONDING DEPTH, SOIL DEPTH, AND AGGREGATE STORAGE DEPTH MUST BE SIZED TO MEET PROJECT HYDROLOGIC PERFORMANCE GOALS.
3. PONDING AND SYSTEM DRAWDOWN TIME (i.e., TIME FOR MAXIMUM SURFACE PONDING TO DRAIN THROUGH THE SYSTEM AFTER THE END OF A STORM) RECOMMENDATIONS:
   - ☐ 24 HOUR MAXIMUM SURFACE PONDING DRAWDOWN
   - ☐ 72 HOUR MAXIMUM DRAWDOWN FOR RTT SOIL AND AGGREGATE STORAGE
4. INFILTRATION SYSTEMS MAY BE DESIGNED USING AGGREGATE STORAGE OR PROPRIETARY STORAGE SYSTEMS. ALL PROPOSED PRODUCTS FOR USE IN RIGHT-OF-WAYS MUST MEET CITY OF VANCOUVER SPECIFICATIONS REGARDING LOADING CAPACITY OF RIGHT-OF-WAY INFRASTRUCTURE.
5. WHEN FACILITY CONSTRUCTION IMPACTS EXISTING SIDEWALK, ALL SAW CUTS MUST ADHERE TO CITY OF VANCOUVER REQUIREMENTS. SAW CUTS SHOULD BE ALONG SCORE LINES AND ANY DISTURBED SIDEWALK PANELS SHOULD BE REPLACED IN THEIR ENTIRETY.
6. GI FACILITIES IN PUBLIC RIGHT OF WAY SHALL BE DESIGNED WITH A SAFE, DESIGNATED OVERLAND FLOW PATH TO THE STREET IN THE EVENT THAT THE OVERFLOW STRUCTURE IS OBSTRUCTED OR CLOGGED. THIS FLOW PATH SHOULD BE REFLECTED IN SITE GRADING AND LABELED ON GI DRAWINGS.
7. THE DESIGNER MUST EVALUATE UTILITY SURVEYS FOR POTENTIAL UTILITY CROSSINGS OR CONFLICTS.
8. MINIMUM UTILITY SETBACKS AND PROTECTION MEASURES MUST CONFORM TO CURRENT CITY OF VANCOUVER ASSET PROTECTION STANDARDS AND OTHER UTILITY PROVIDER REQUIREMENTS.\
9. DESIGN OF SUBSURFACE INFILTRATION FACILITIES MUST ALWAYS BE BASED ON SITE-SPECIFIC GEOTECHNICAL ANALYSIS AND MUST CONSIDER THE POTENTIAL IMPACT OF INCREASED INFILTRATION ON SURROUNDING INFRASTRUCTURE.

RELATED SPECIFICATIONS	COV SPEC NO.
- AGGREGATE STORAGE - DRAINAGE FABRIC - LINERS - ENGINEERED SOIL	32 11 23S 31 32 20S 33 47 13.13 32 91 22S

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 OR PARKING LAYBYS)

DESIGNER CHECKLIST (MUST SPECIFY, AS APPLICABLE):

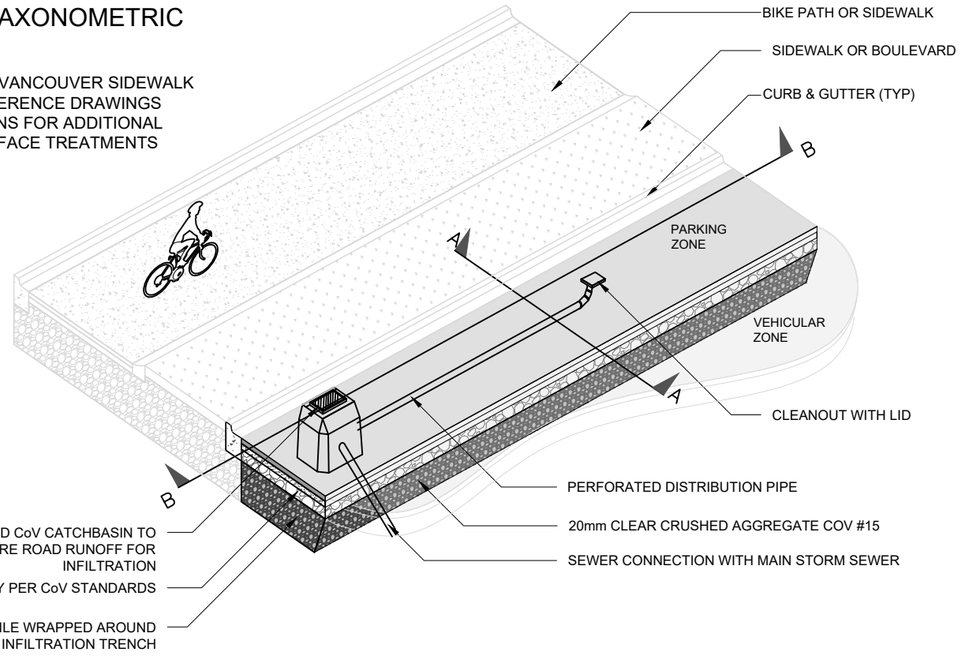
- ☐ SYSTEM WIDTH AND LENGTH
- ☐ DEPTH OF PONDING (IF APPLICABLE)
- ☐ DEPTH OF SYSTEM
- ☐ DEPTH AND TYPE OF AGGREGATE STORAGE
- ☐ SURFACE ELEVATION AT UPSLOPE AND DOWNSLOPE ENDS OF FACILITY
- ☐ DIMENSIONS AND DISTANCE TO EVERY MUNICIPAL SERVICE/UTILITY WITHIN 10m OF THE FACILITY
- ☐ ELEVATIONS OF EVERY INLET, OUTLET, STRUCTURE RIM AND PIPE INVERT
- ☐ TYPE AND DESIGN OF COMPONENTS (E.G., EDGE TREATMENTS, INLETS/GUTTER MODIFICATIONS, UTILITY CROSSINGS, LINER, AND PLANTING DETAILS)

SUB-SURFACE INFILTRATION SYSTEM DRAWING DESCRIPTIONS

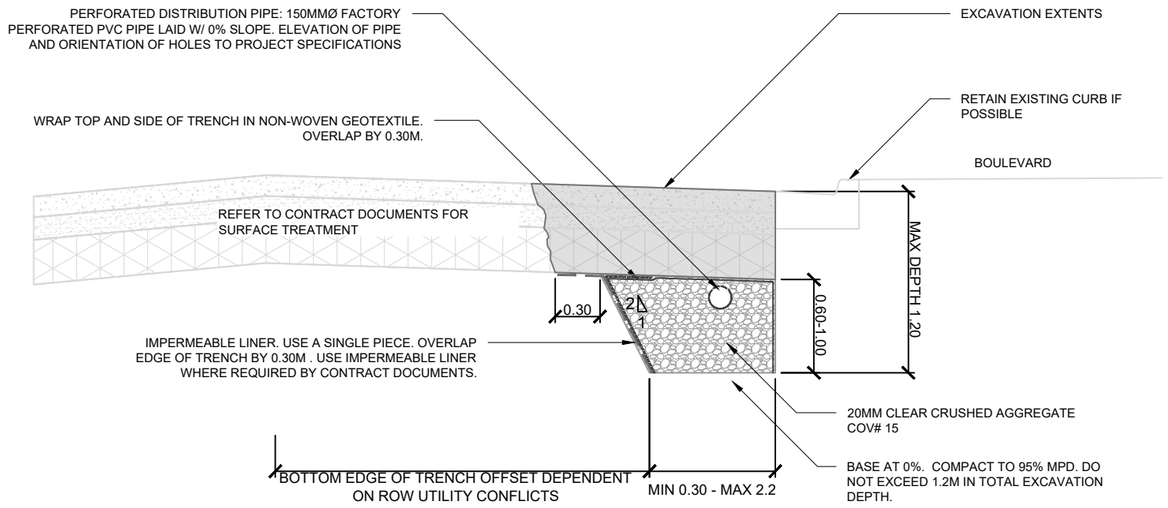
GI6.0A	INFILTRATION SYSTEM DESIGN NOTES	THE SUB-SURFACE INFILTRATION SYSTEMS DESIGN NOTES PROVIDE GUIDANCE TO DESIGNERS ON HOW TO USE AND ADAPT THE TEMPLATE STANDARDS IN THIS SECTION.
GI6.0B	INFILTRATION SYSTEM DRAWING DESCRIPTIONS	THIS DRAWING DESCRIBES THE PURPOSE AND INTENDED USE OF EACH SUB-SURFACE INFILTRATION SYSTEM DRAWING.
GI6.1	RIGHT OF WAY INFILTRATION TRENCH	THIS STANDARD DEPICTS AN INFILTRATION TRENCH BENEATH A PORTION OF ROADWAY DIRECTLY ADJACENT TO A CURB. INFILTRATION TRENCHES ARE FUNCTIONALLY SIMILAR TO TREE TRENCHES BUT ARE DESIGNED UNDER HARDSCAPES. THEY REQUIRE CATCHBASINS TO DIRECT RUNOFF INTO PERFORATED DISTRIBUTION PIPES THAT DRAIN INTO THE VOIDS OF SUBSURFACE AGGREGATE. THE INFILTRATION AREA OF A TREE TRENCH IS OFTEN CONFINED TO MINIMIZE POTENTIAL IMPACTS ON SURROUNDING INFRASTRUCTURE.
GI6.2	RIGHT OF WAY DRY WELL	DRY WELLS DIRECT ROAD RUNOFF INTO A PERFORATED INSPECTION CHAMBER SURROUNDED BY LOOSE AGGREGATE. THESE SYSTEMS CAN ENCOURAGE INFILTRATION IN AREAS WHERE AN INFILTRATION TRENCH IS INFEASIBLE DUE TO SITE CONSTAINTS. OVERFLOW FROM DRY WELLS IS DIRECTED INTO CITY SEWERS.
GI6.3	BOULEVARD INFILTRATION TRENCH	THIS STANDARD DEPICTS AN INFILTRATION TRENCH BENEATH A BOULEVARD AREA. IT IS FUNCTIONALLY SIMILAR TO A ROADWAY INFILTRATION TRENCH BUT WITH ADDITIONAL OPTIONS FOR SUBSURFACE AGGREGATE AND IMPERMEABLE LINER USE.

CONCEPTUAL AXONOMETRIC

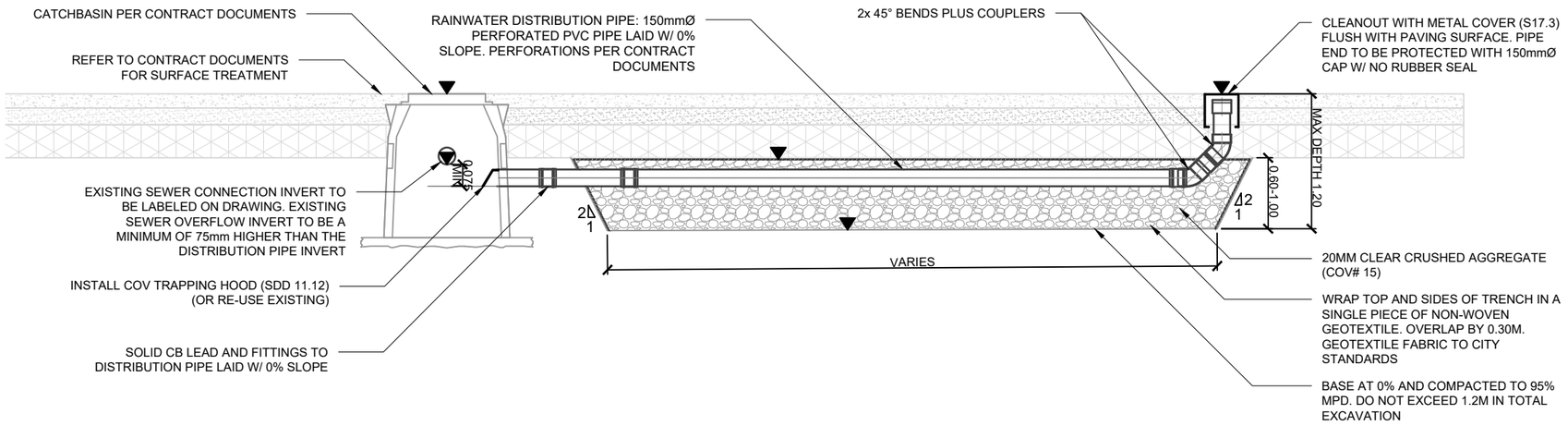
REFER TO CITY OF VANCOUVER SIDEWALK LANDSCAPING REFERENCE DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL GUIDANCE ON SURFACE TREATMENTS



SECTION A-A



SECTION B-B



NOTES

1. LABEL AND DISPLAY ALL UTILITIES AND/OR SERVICES THAT CROSS BELOW OR THROUGH THE INFILTRATION TRENCH ALONG WITH THEIR INVERT ELEVATIONS
2. SHOW ALL UTILITY PROTECTION MEASURES AND SETBACKS FOR SERVICES AND/OR UTILITY CONFLICTS
3. PRE-SURVEY OF THE EXISTING CATCH BASIN (CB) CONDITIONS MUST BE CONDUCTED. THE PICTURES OF CBS (INSIDE AND OUTSIDE) , WELL ORGANIZED AND CORRELATED WITH THE CB LOCATION, ARE SUFFICIENT.
4. CORE OPENING IN THE EXISTING CB WALL TO SUIT PVC PERFORATED PIPE CONNECTION. PVC PIPE IS TO BE SAND BLASTED, COATED WITH ADHESIVE AND SAND (ROUGHEN UP) PRIOR TO THE INSERTION INTO THE CORE. GROUT ANNULAR OPENING AROUND THE PIPE WITH NON-SHRINK GROUT.
5. COV REPRESENTATIVE (SEWER MAINTENANCE INSPECTOR) SHALL INSPECT AND APPROVE THE CONNECTION PRIOR TO THE PIPE BEING BURIED. CONTACT SEWERS AT 604-871-6170 TO ARRANGE FOR INSPECTION. PROVIDE AT LEAST 48 HOURS NOTIFICATION.

▼ INDICATES THAT GRADE MUST BE SPECIFIED ON CONTRACT DRAWINGS

REV.	REVISION DATE	APPROVED

INFILTRATION SYSTEMS
ROADWAY INFILTRATION TRENCH

ISSUE DATE: DECEMBER 2024

APPROVED BY: N. MEAD-FOX

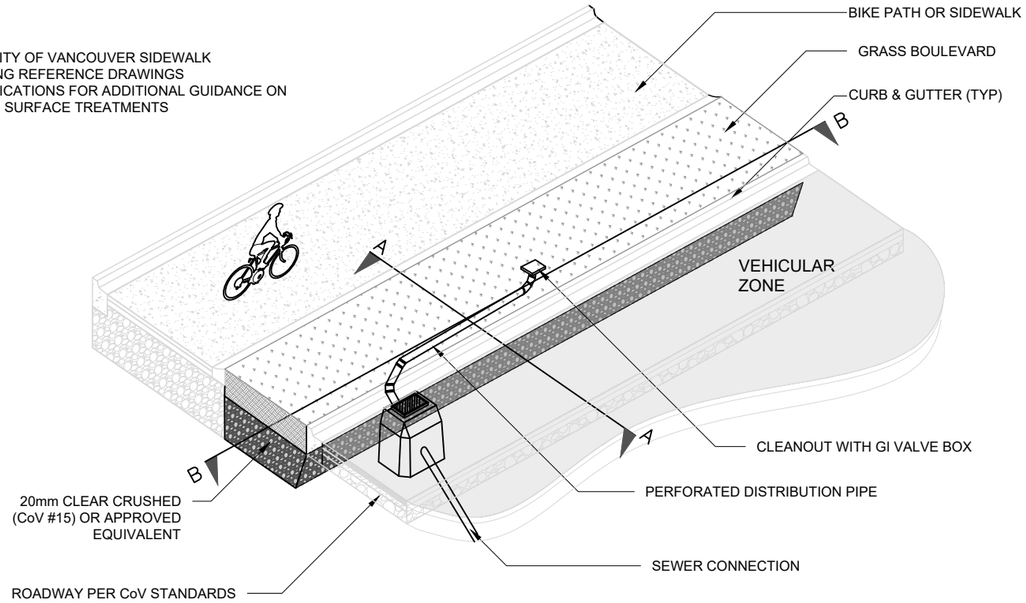
CITY OF VANCOUVER

STANDARD DETAIL DRAWINGS
ENGINEERING SERVICES - VANCOUVER, B.C.

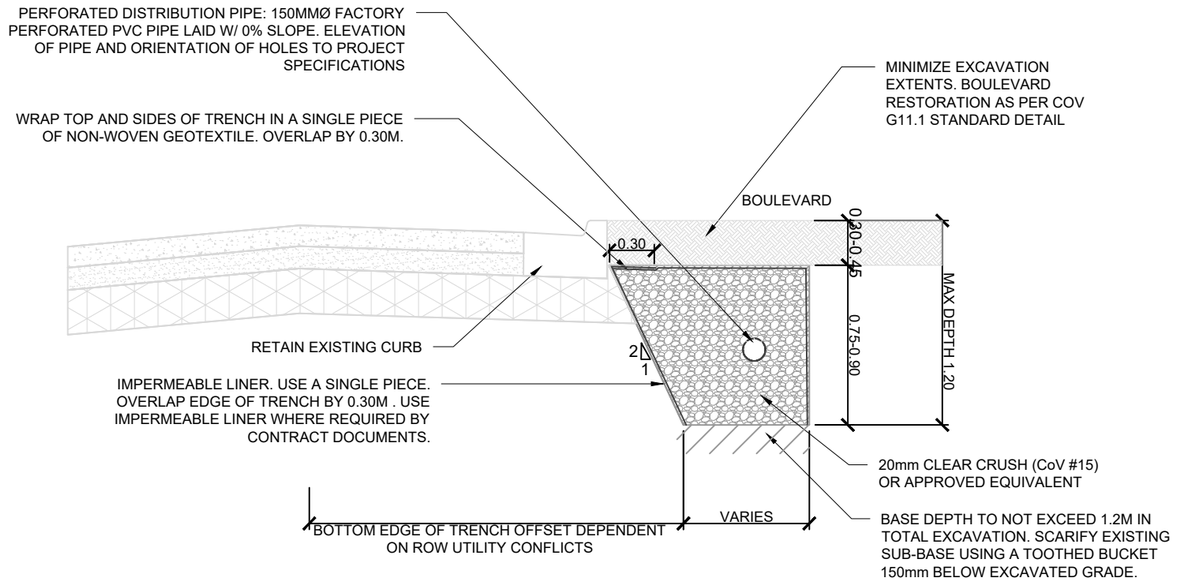
DRAWING No.
GI6.2

CONCEPTUAL AXONOMETRIC

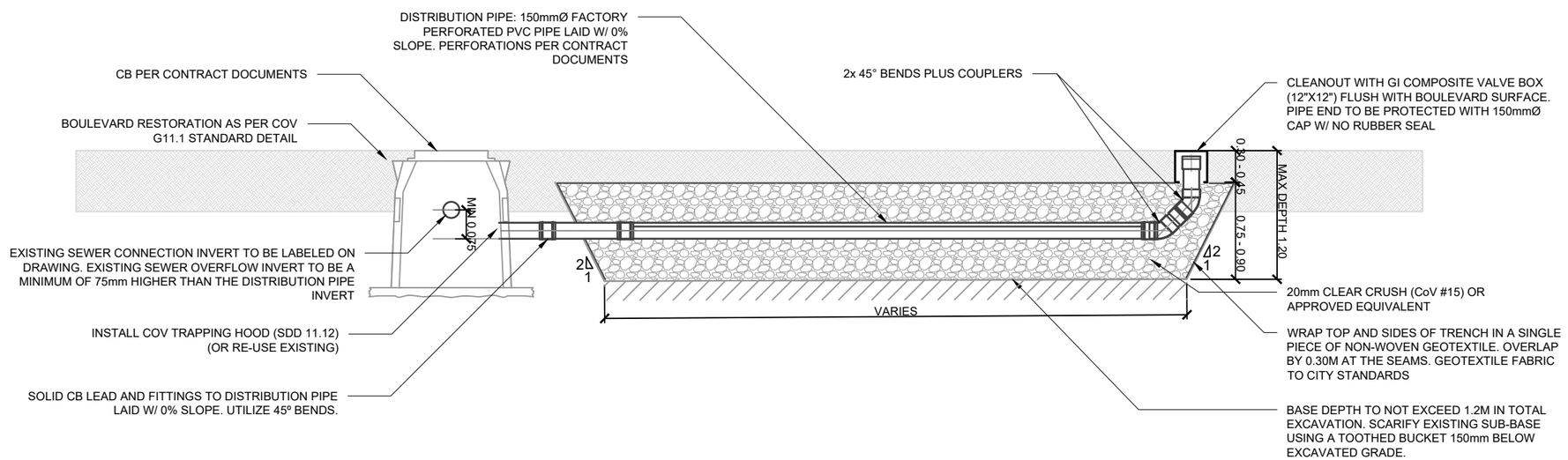
REFER TO CITY OF VANCOUVER SIDEWALK LANDSCAPING REFERENCE DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL GUIDANCE ON BOULEVARD SURFACE TREATMENTS



SECTION A-A



SECTION B-B



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3. ECOWASTE RECYCLED GRANITE (25mm) MAY BE USED AS AN ALTERNATIVE FOR CoV #15 IN BOULEVARD INFILTRATION SYSTEMS
4. PRE-SURVEY OF THE EXISTING CATCH BASIN (CB) CONDITIONS MUST BE CONDUCTED. THE PICTURES OF CBS (INSIDE AND OUTSIDE) , WELL ORGANIZED AND CORRELATED WITH THE CB LOCATION, ARE SUFFICIENT.
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REV.	REVISION DATE	APPROVED

INFILTRATION SYSTEMS
BOULEVARD INFILTRATION TRENCH

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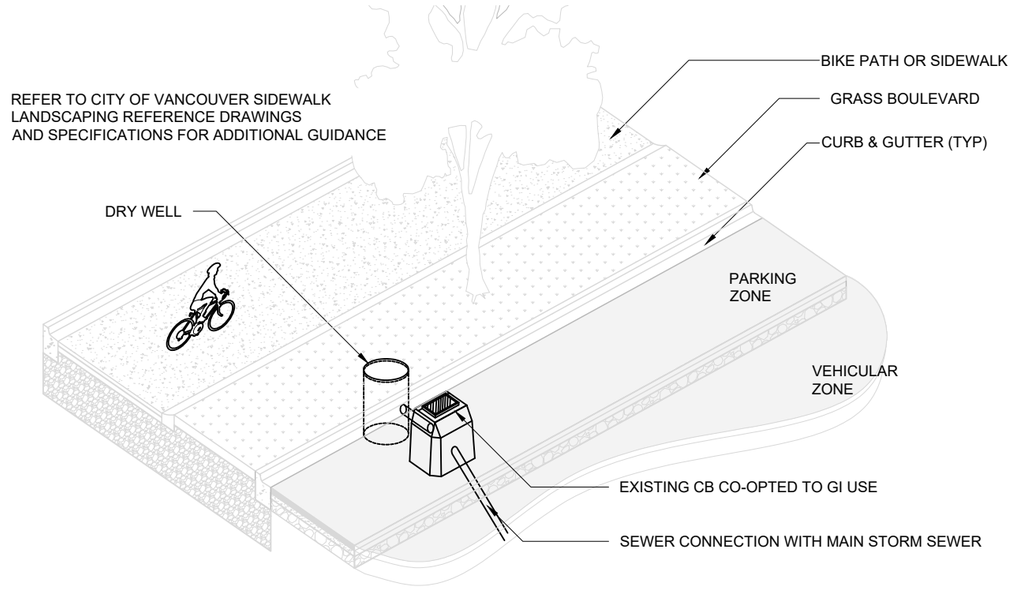
CITY OF VANCOUVER

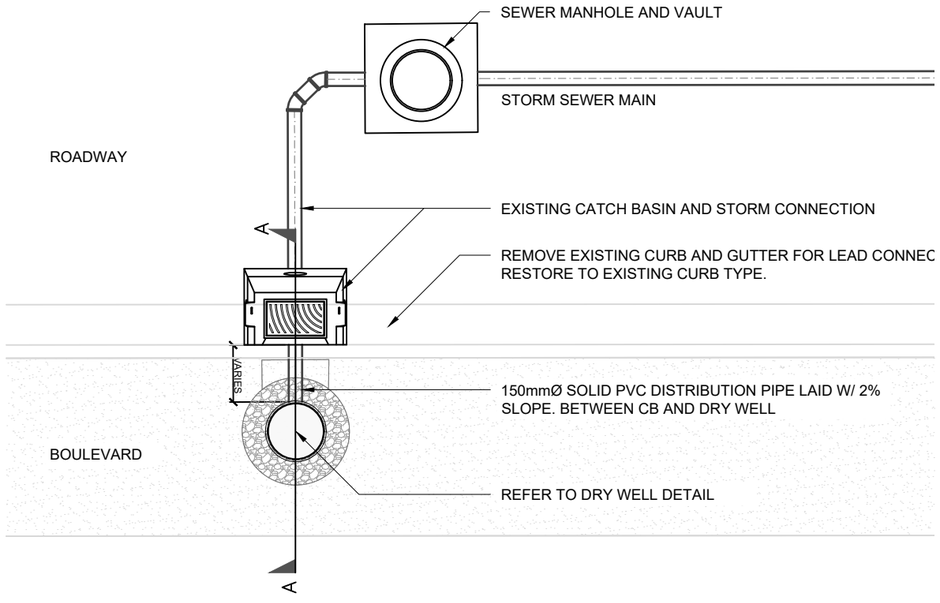
STANDARD DETAIL DRAWINGS
ENGINEERING SERVICES - VANCOUVER, B.C.

DRAWING No.
GI6.3

CONCEPTUAL AXONOMETRIC



PLAN VIEW



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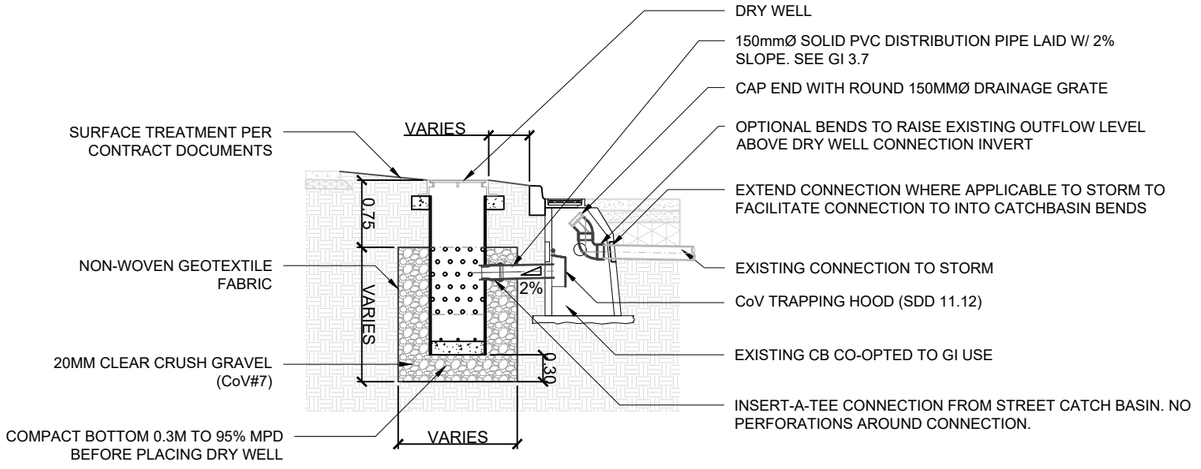
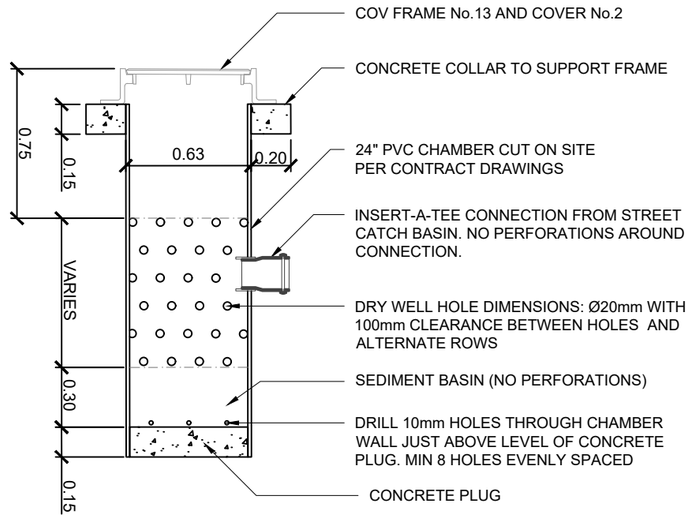


DRY WELL DETAIL



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INFILTRATION SYSTEMS
BOULEVARD DRY WELL

ISSUE DATE: DECEMBER 2024

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