Guide: Infill Housing Program – Engineering Requirements

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Supplementary Guide to the Infill Housing Program Guide

September 22, 2026; Doc: 2898717

1. Purpose of the Guide[1]

This guide explains the engineering requirements of the Infill Housing Program and provides applicants guidance on the related process. It is intended to be used in conjunction with the Infill Housing Program Guide.

The *Guide: Infill Housing Program – Engineering Requirements ("Engineering Guide")* outlines the requirements and considerations related to the various housing forms (e.g., inclusion of additional dwelling units to an existing single-family home or an entirely new building). The *Engineering Guide* includes the following sections:

- Transportation
- Water
- Sewer
- Stormwater Management
- Electrical
- Frontage Improvements

[1] Note: This Guide is a summary provided for convenience. In the case of a difference in requirements between this Guide and City regulations, the City regulations shall prevail.

2. Engineering Requirements

2.1 Transportation

RGO-B parcels within 400m of a prescribed bus stop have no off-street vehicle parking requirement.

The remaining transportation requirements for RGO-A and RGO-B parcels are outlined below:

Off-Street Vehicle Parking

- 1.0 off-street parking space per principal dwelling unit;
- 0.5 off-street parking spaces for each of the first 2 secondary suites;
- 1 off-street parking spaces for each additional secondary suite

Off-Street Bicycle Parking

- 1.5 long term spaces per dwelling unit

For additional location and size requirement please refer to the Zoning Bylaw.

2.2 Water

Figure 1 identifies the parcels that have been zoned as RGO-A (up to 4 units) or RGO-B (up to 6 units) and are further color-coded based on what accommodations can be met without additional off-site water system upgrades.

Yellow parcels indicate that a housing form with up to 4 units can be accommodated and green parcels indicate that a housing form with up to 6 units can be accommodated without additional off-site water system upgrades. Red parcels can accommodate a single-family home with a secondary suite and/or a laneway home, or a duplex and/or triplex (for a total of up to 3 dwelling units), without additional off-site watermain upgrades. In the case of a duplex or multiplex (e.g., one building with 2, or 3+ dwelling units), sprinklers will be required. A new water service connection will likely be required; the criteria is outlined in the City's Waterworks Regulation Bylaw No. 7631, 2013.

Some parcels identified in red and yellow may be eligible for additional density. However, additional off-site watermain upgrades would be required. To determine the scope and extent of the upgrades needed to address deficiencies in the water infrastructure, utility modelling will be required.

To determine how much additional density (or how many additional units) can be applied to a particular parcel of interest, refer to the Map of Pre-Zoned Infill Housing Properties.

If an applicant is interested in exploring the extent of the upgrades needed before building to the maximum density (when in excess of what is shown to be viable on Figure 1), then utility modeling is required. To proceed, a Utilities Modelling Analysis Application Form will need to be submitted to the City's Engineering and Public Works department, at engpost@newwestcity.ca. Additional details outlining the requirements are provided in the Development Application Submission Requirements form. The utilities modelling must be conducted in advance of submitting a development application to the City.

Infill Housing – Available Fire Flow

Issuance Date: July 27, 2026

Legend

Fire Flow Availability
- 3-unit Capacity
- 4-unit Capacity
- 6-unit Capacity

- Transit Oriented Development Area
- Property Not Included in the Infill Housing Program

0 0.05 0.1 0.2 0.3 0.4 0.5 KM

Scale: 1:12,500

This map is for reference only. Map data may not be current or otherwise reliable.

Whenever new infill housing is built, the City needs to make sure there's enough water available for firefighters in case of an emergency. This is known as fire flow – the amount of water needed to control or put out a fire, at the right pressure.

This map shows which areas have available fire flow for up to 4 and up to 6 units, and which areas will require upgrades to build more than 3 units on a lot.

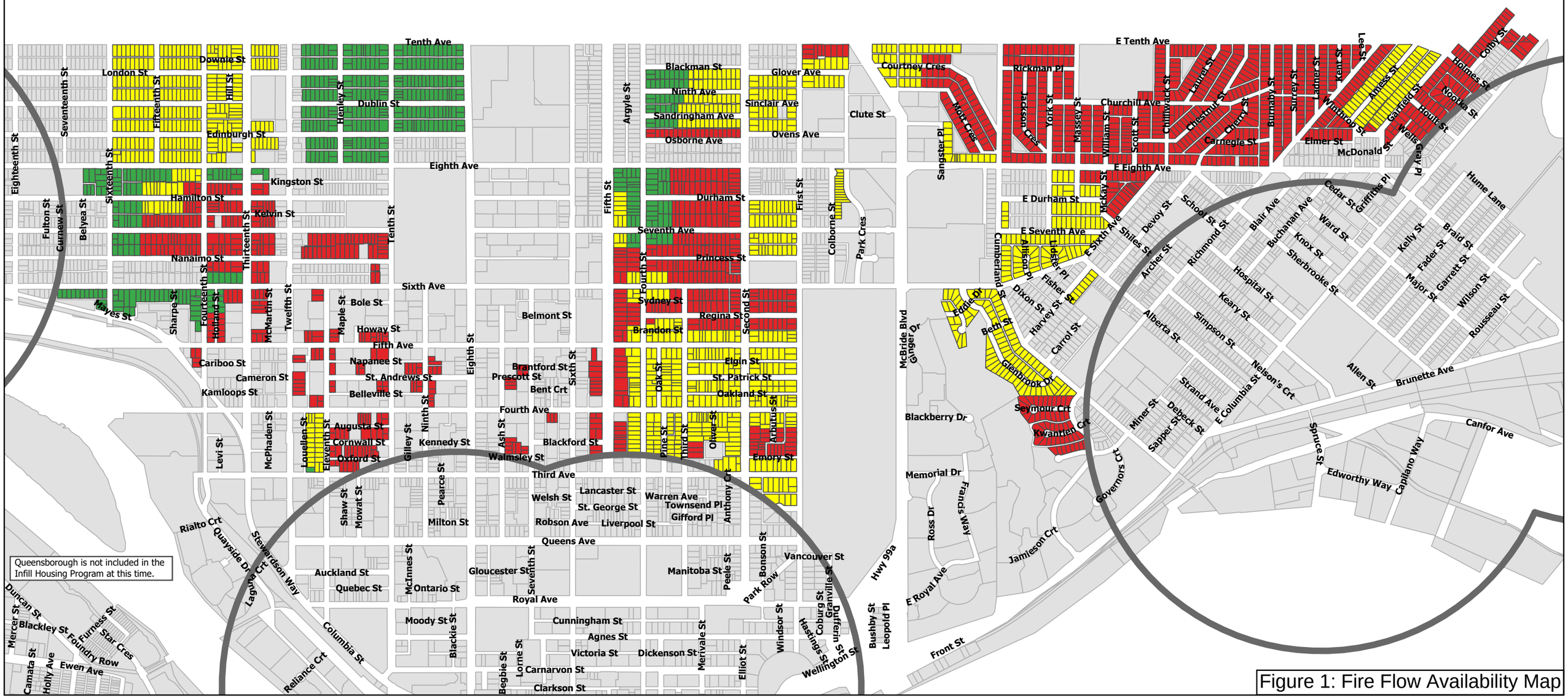


Figure 1: Fire Flow Availability Map

2.3 Sewer

Applicants will be required to provide a dedicated stormwater service, and a dedicated sanitary service up to the property line.

2.4 Stormwater Management

New development projects (including the addition of a laneway home that would impact the amount of pervious area), will be required to meet the on-site stormwater management criteria, outlined in the City's Subdivision and Development Control Bylaw No. 7142, 2007.

In the case of housing forms with 4 or more dwelling units, the City encourages Green Infrastructure (GI)-based strategies to address the on-site stormwater management criteria. The City has worked with an external consultant to develop various GI-based on-site stormwater management options, and the various options are outlined in Attachment 1 – Stormwater Management Standard Detail Drawing Examples.

The standard details provided in Attachment 1 illustrate the various components that would be included in the GI-based on-site stormwater management options. Due to the unique conditions of each site (e.g., varying slopes and infiltrative capacity within the soils), **a design by a professional civil engineer is required to determine the final details of the on-site stormwater management strategy.**

While the final design of the on-site stormwater management plan will need to be provided by the civil engineer, the City's standard details can provide a preliminary basis for developing cost estimates (i.e., an applicant can share the drawings in Attachment 1 with their consultant/engineer in order to determine a high-level understanding of the expected construction costs).

While obtaining the services of a civil engineer is not necessarily a requirement at the development permit (DP) stage, it is highly encouraged, for two reasons:

- A site plan or landscape plan is required as part of the Development Permit (DP) application, which is approved before the Building Permit (BP) stage. Since the stormwater management and drainage plan is not required until the BP stage, it may be prepared after the site or landscape plan has already been approved. If the plans are not coordinated, conflicts may arise that require changes to the approved DP plans. This could result in the DP needing to be reissued.
    - For example, it is important to consider how the stormwater management strategy would be situated on site (e.g., the type of stormwater management strategy, the size, etc.), as this will inform the detailed drawings at the later BP stage. Various options are outlined in Attachment 1 – Stormwater Management Standard Detail Drawing Examples.

- It is important to have sufficient detail at the DP stage, i.e., to not only focus on the proposed dimensions and layout of the proposed building, but to also account for other components, in addition to stormwater management, such as the location of trees, relative to the proposed driveway / access, and to also consider the off-site infrastructure, and how it may interact with the proposed development's layout.

- To understand the potential costs of designing and implementing a stormwater management solution that meets the City's criteria, please refer to the Subdivision and Development Control Bylaw No. 7142, 2007. The stormwater management solutions may include one of the example options listed under Attachment 1.

2.5 Electrical

Applicants should seek advice from consulting professionals and City staff on electrical requirements. Depending on the electrical loading and configuration, some infill housing projects may require on-site pad-mounted transformers (PMT). PMTs must be included on Development Permit drawings and must be located and/or screened for appropriate integration into the public realm.

2.6 Off-Site Improvements

2.6.1 Single-Family Dwelling – Stream A

Criteria of a single-family dwelling, under stream A:

- A maximum of one (1) principal unit (existing); and
- May include renovations, one (1) laneway home, and/or a secondary suite.

The following off-site improvements will be required:

- Payment of a deposit towards the estimated cost of installing, by the City including inspection, of a driveway and/or lane tie-in for the subject property.

- Undergrounding of the existing overhead electrical and telecommunication utilities with an underground system to service the property.

2.6.2 Single-Family Dwelling – Stream B

Criteria of a single-family dwelling, under stream B:

- A maximum of one (1) principal unit (new construction); and
- May include one (1) laneway home, and/or a secondary suite.

In addition to the off-site improvement requirements outlined above (section 2.6.1), the applicant will also be required to provide off-site improvements through a Works and Services Agreement, and subject to an engineering site assessment, additional off-site upgrades may include, but not limited to:

- Reconstruction of all road frontages adjacent to the site complete with new sidewalk, curb and gutter, boulevard improvements (including trees and irrigation), and street lighting.

2.6.3 Infill Housing Stream

Examples of the types of housing forms that would be included under the infill housing stream:

- Multiplexes (e.g., Duplex, Triplex, up to and including a Six-Plex)
- Single-family home (new or existing), with a duplex, tri-plex, or a four-plex (if other zoning requirements are met)

In addition to the off-site improvement requirements outlined above (section 2.6.1), the applicant will also be required to provide off-site improvements through a Works and Services Agreement, and subject to an engineering site assessment, additional off-site upgrades may include, but not limited to:

- Reconstruction of all road frontages adjacent to the site complete with new sidewalk, curb and gutter, boulevard improvements (including trees and irrigation), and street lighting.

3. Summary

Table 1 provides an overview of the engineering requirements for various types of development (e.g., existing homes with proposed laneway homes or entirely new construction).

Table 1: Engineering Requirements Summary

Housing Program	Housing Form	Transportation	Water	On-Site Stormwater Management[3]	Off-Site Improvements
Single-Family Dwelling – Stream A	Existing detached Single-Family Home, adding a secondary suite, and/or a laneway home (up to three dwelling units)	Off-Street Vehicle Parking Refer to Zoning Bylaw section 140.9 Off-Street Bicycle Parking Refer to Zoning Bylaw section 150.3	No additional water system upgrades required	On-site stormwater management is required.	Payment of a deposit, or fee, towards the estimated cost of installing and/or upgrading, by the City including inspection, of the sanitary, storm and water service connections complete with inspection chambers at property line. Payment of a deposit towards the estimated cost of installing, relocating, or reconstructing, by the City including inspection, of a driveway and/or lane tie-in for the subject property. Undergrounding of the existing overhead electrical and telecommunication utilities with an underground system to service the property.
Single-Family Dwelling – Stream B	New detached Single-Family Home (as standalone development) or New detached Single-Family Home with a secondary suite, and/or a laneway home (up to three dwelling units)				Off-site improvements outlined under 'Single-Family Dwelling – Stream A', and subject to engineering site assessment, additional off-site upgrades may include, but not limited to, reconstruction of all road frontages adjacent to the site complete with new sidewalk, curb and gutter, boulevard improvements (including trees and irrigation), and street lighting.
Infill Housing Stream	Housing arrangement with more than 1 Principal dwelling unit, and less than 4 dwelling units	Off-Street Vehicle Parking[4] Off-Street Vehicle Parking 1.0 off-street parking space per principal dwelling unit; 0.5 off-street parking spaces for each of the first 2 secondary suites; 1 off-street parking spaces for each additional secondary suite Off-Street Bicycle Parking 1.5 long term spaces per dwelling unit	No additional water system upgrades required Fire sprinklers will be required.		Off-site improvements outlined under 'Single-Family Dwelling – Stream A', and subject to engineering site assessment, additional off-site upgrades may include, but not limited to, reconstruction of all road frontages adjacent to the site complete with new sidewalk, curb and gutter, boulevard improvements (including trees and irrigation), and street lighting.
	Housing arrangement that consists of up to 4 dwelling units[1]		Fire flow requirement of 100 L/s[2] Fire sprinklers will be required.	On-site stormwater management is required – Green Infrastructure (GI)-based options are encouraged.	
	Housing arrangement that consists of up to 6 dwelling units[1]		Fire flow requirement of 120 L/s[2] Fire sprinklers will be required.		

[1]For clarity, a four-plex consists of four dwelling units, which do not necessarily need to be located in a single building. For example, a four-plex could be configured as two separate duplex buildings, with two dwelling units in each building (e.g., 2 duplexes). A four-plex could also be developed as a single building with four principal dwelling units. The same approach applies to six-plexes, which may be configured as multiple buildings or as a single building containing six principal dwelling units.
[2]Refer to the City's Fire Flow Availability map in Figure 1 to determine which parcels have met the fire flow requirements, and which parcels would require additional watermain upgrades (as a result of the existing water system not meeting the fire flow requirements for 4-plexes and/or 6-plexes).
[3]Refer to Subdivision and Development Control Bylaw No. 7142, 2007, and Attachment 1.
[4]Off-Street Vehicle Parking is not required for units within 400m of a prescribed bus stop per Provincial legislation.

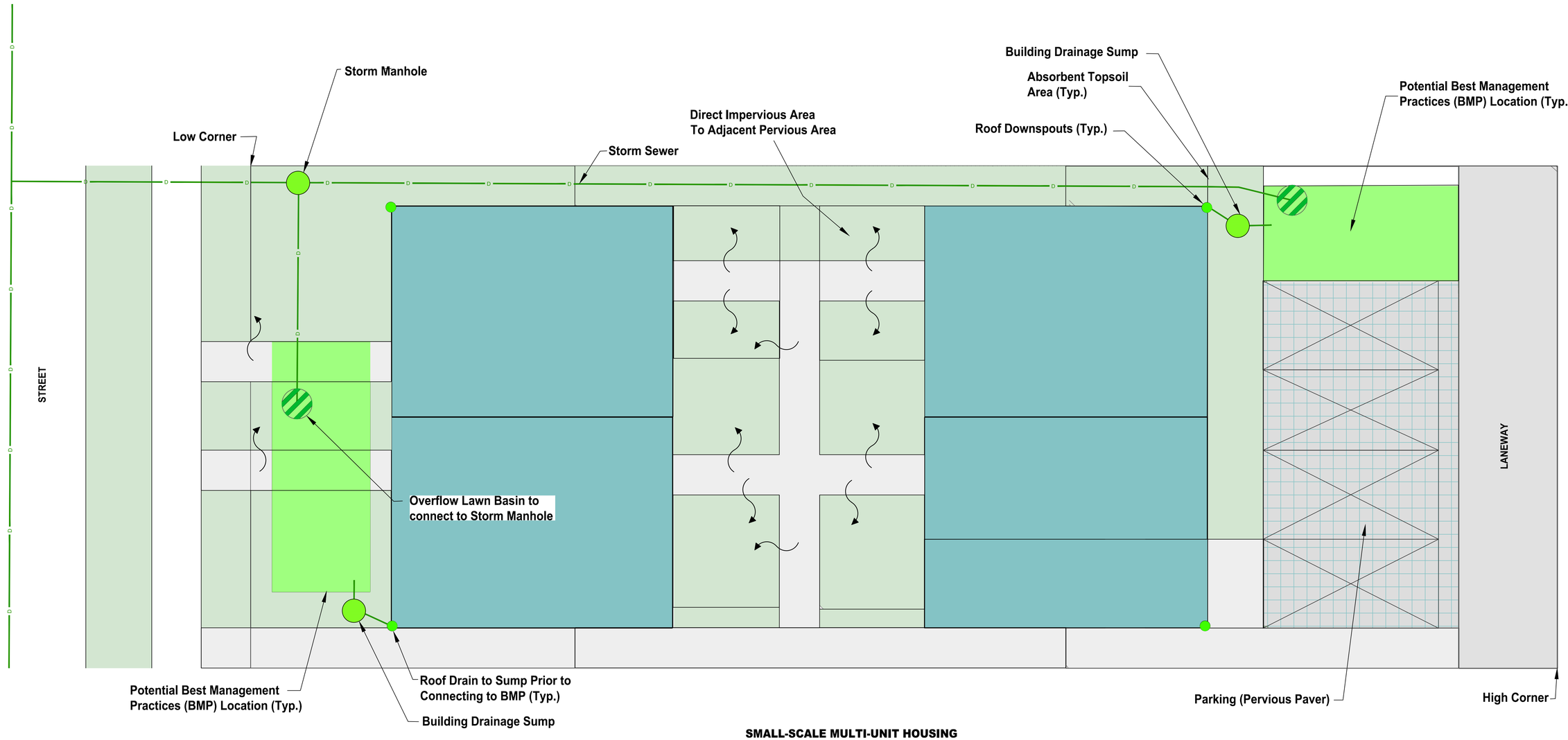
Tips to obtain an initial understanding of the expected costs associated with the Engineering Requirements:

- Hire professionals with experience in understanding the New Westminster context (i.e., civil, mechanical, geotechnical engineers).
- Review the fire flow availability map in Figure 1, with respect to the parcel of interest, to determine the number of units the City's water infrastructure is able to accommodate, without requiring further upgrades:
    - For parcels that have been zoned for density that is higher than what the City's current water infrastructure is able to support, and if the applicant would like to pursue the higher density option, then utilities modelling will be required, refer to Section 2.2 for additional details.
    - Following the completion of the utilities modelling, the City will provide the modelling analysis results to the applicant's civil engineer; and the civil engineer would be able to provide a high-level cost estimate with respect to the proposed watermain upgrades.
- Review the various options of stormwater management strategies (Attachment 1) and the other requirements (e.g., transportation, electrical, and off-site improvements) with a consultant / civil engineer, in order to determine a high-level understanding of the expected construction costs.

Attachment 1

Stormwater Management – Standard Detail Drawing Examples

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SMALL-SCALE MULTI-UNIT HOUSING
DRAINAGE SCHEMATIC
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Legend
- Storm Sewer
- BMP
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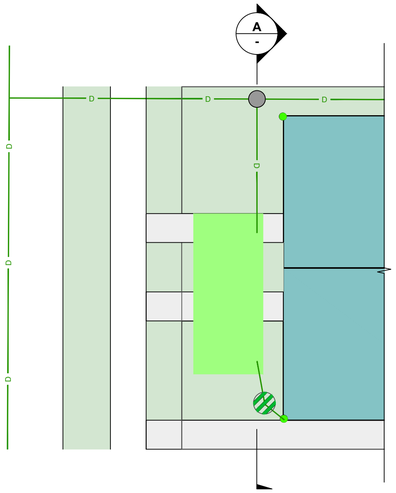
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ON-LOT DRAINAGE FOR SMALL-SCALE MULTI-UNIT HOUSING STANDARD DETAIL DRAWINGS

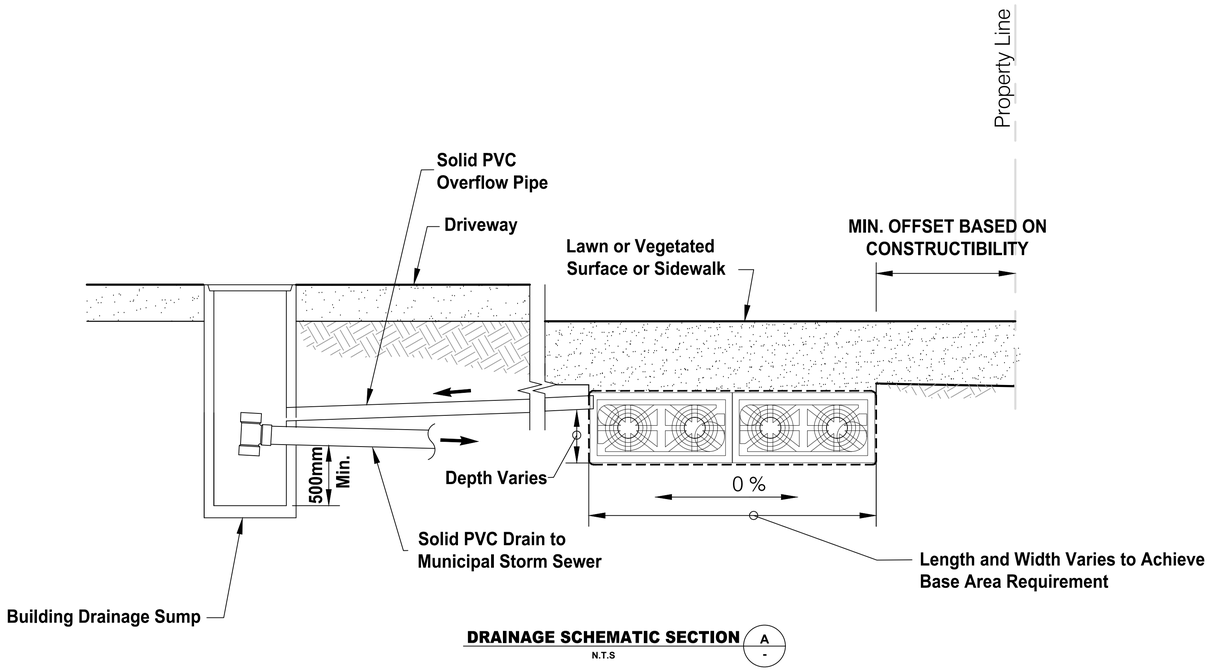
FIGURE 1
TYPICAL SITE DRAINAGE SCHEMATIC

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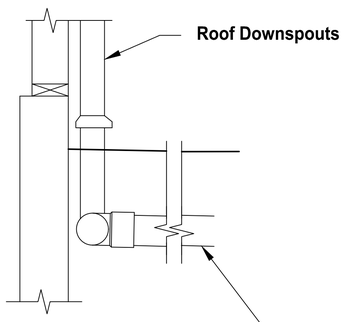
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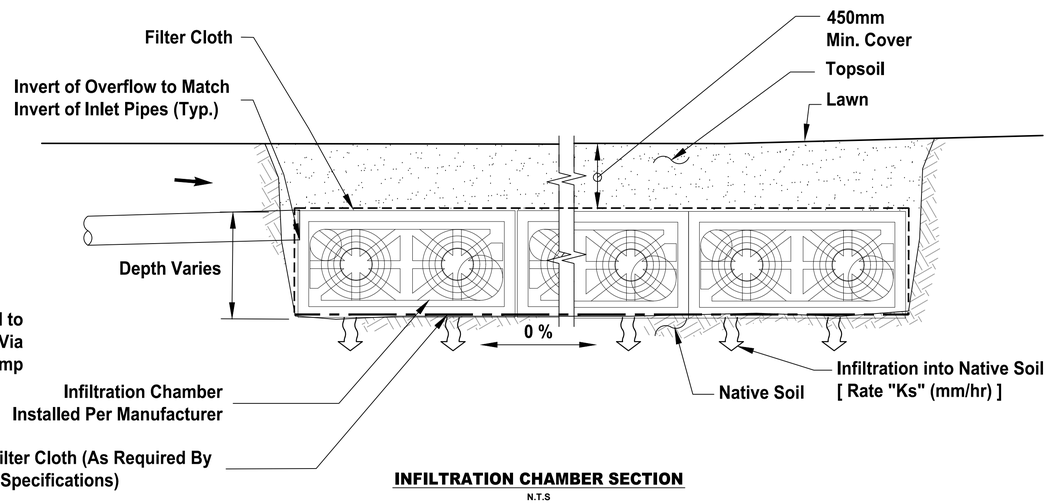
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DRAINAGE SCHEMATIC SECTION A -
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ROOF LEADER DRAINAGE CONNECTION
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INFILTRATION CHAMBER SECTION
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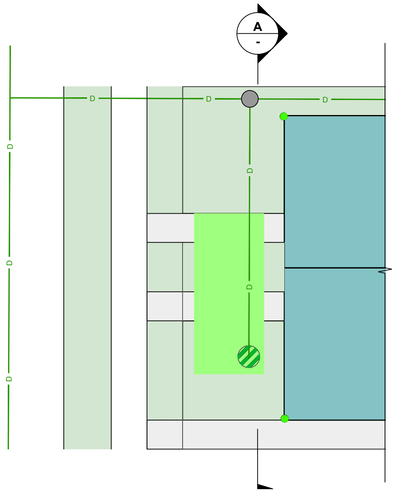
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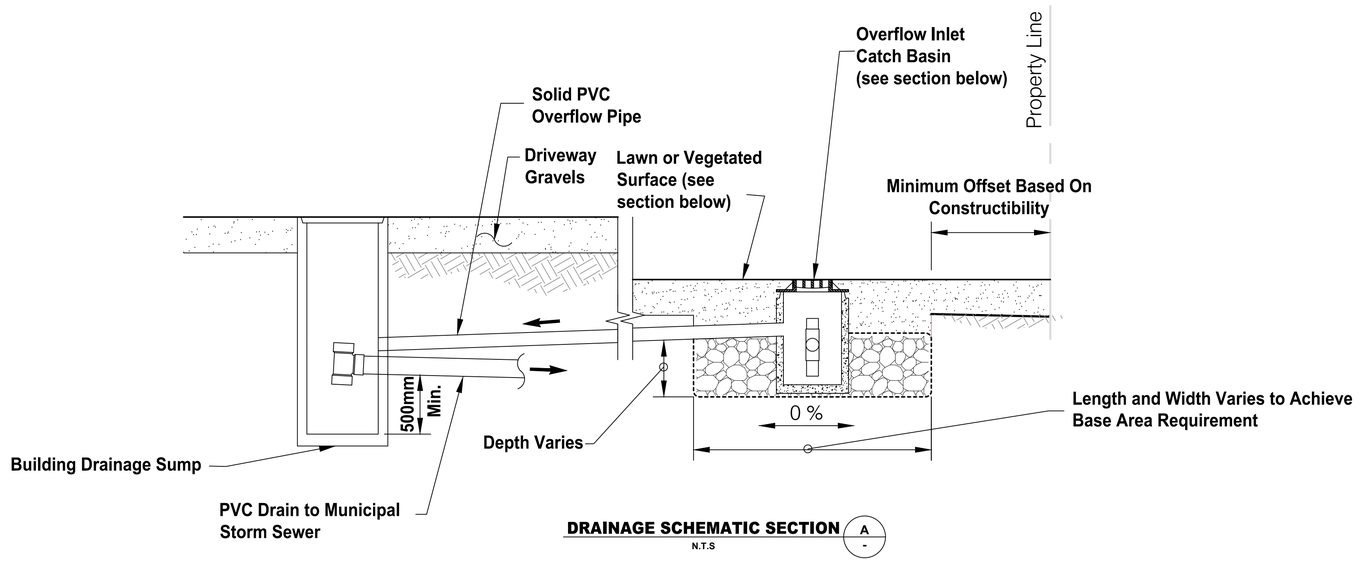
FIGURE 2
INFILTRATION CHAMBER

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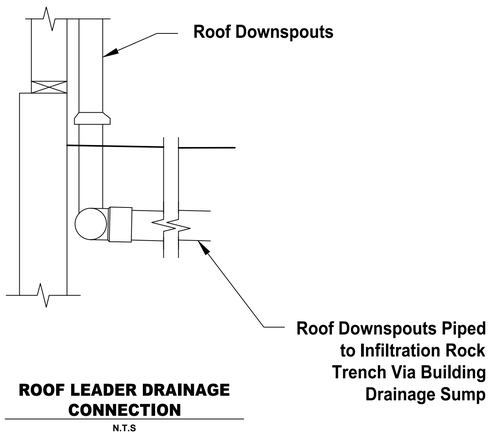
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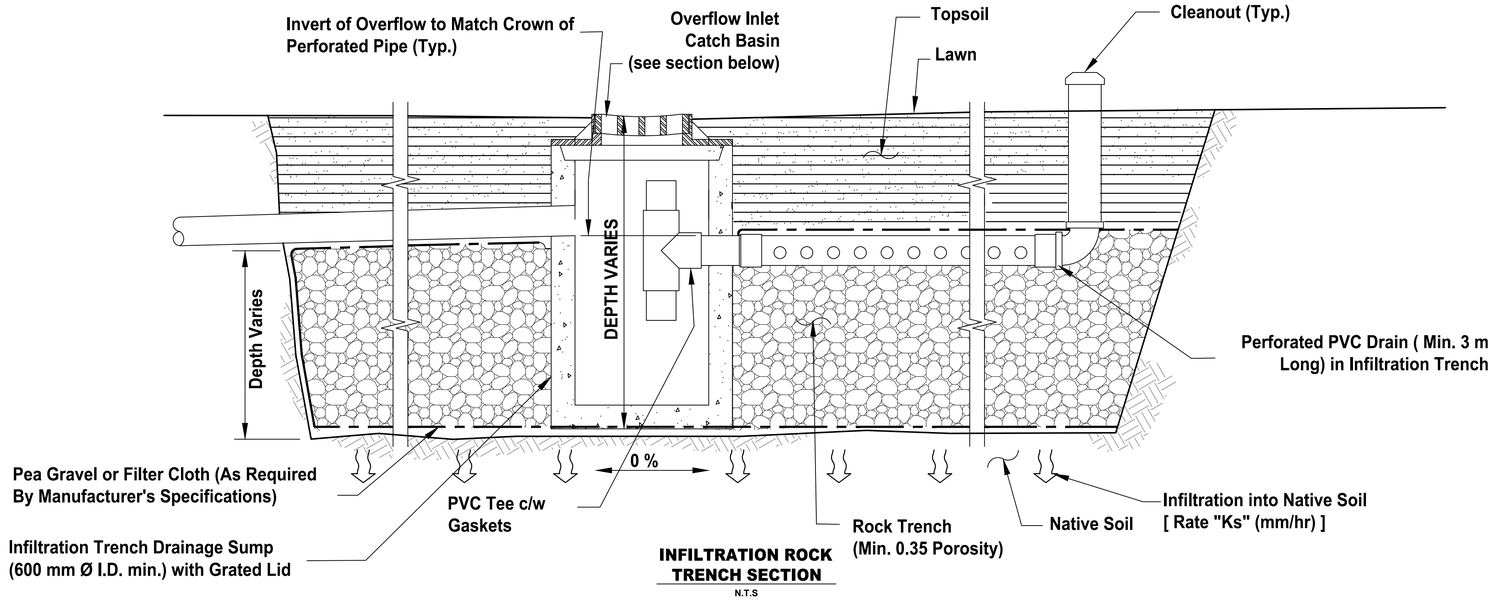
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INFILTRATION ROCK TRENCH SECTION
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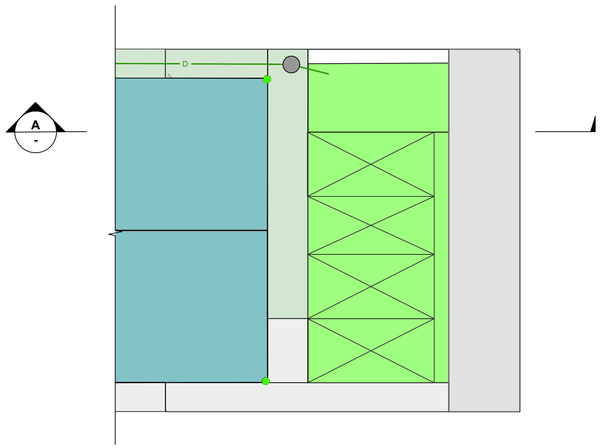
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ON-LOT SMALL-SCALE MULTI-UNIT HOUSING STANDARD DETAIL DRAWINGS

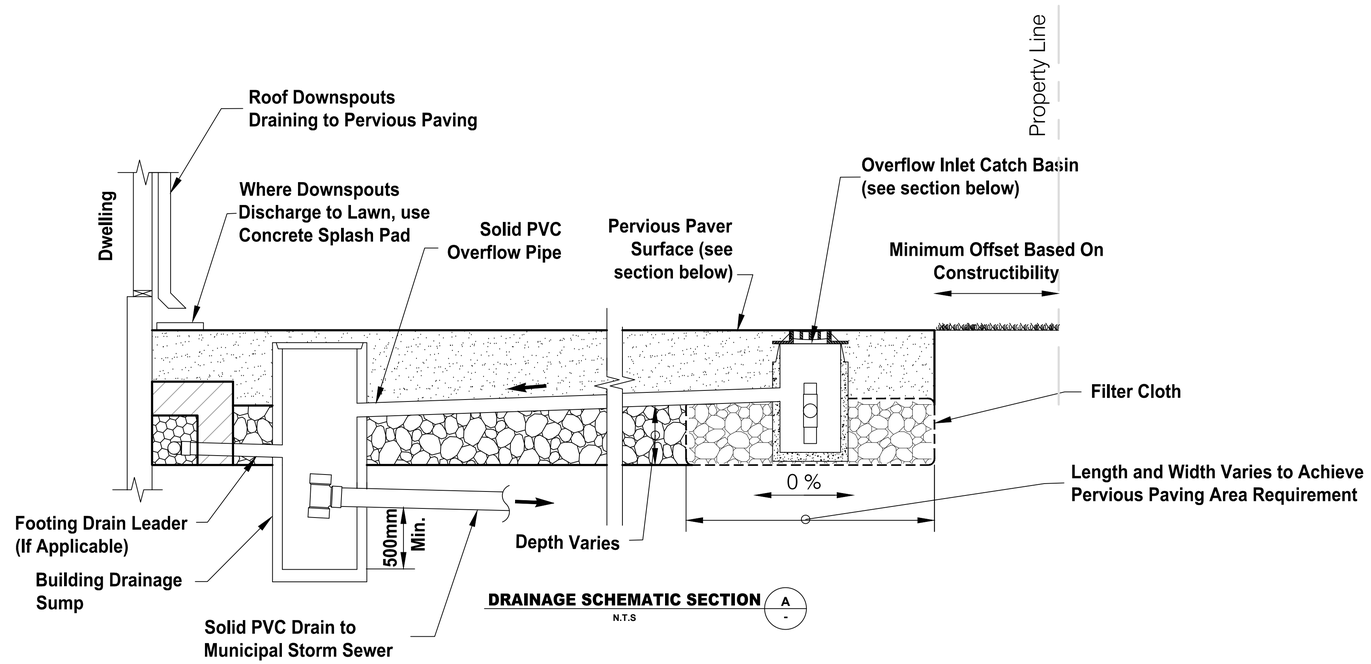
FIGURE 3
INFILTRATION ROCK TRENCH

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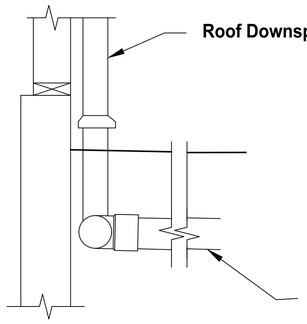
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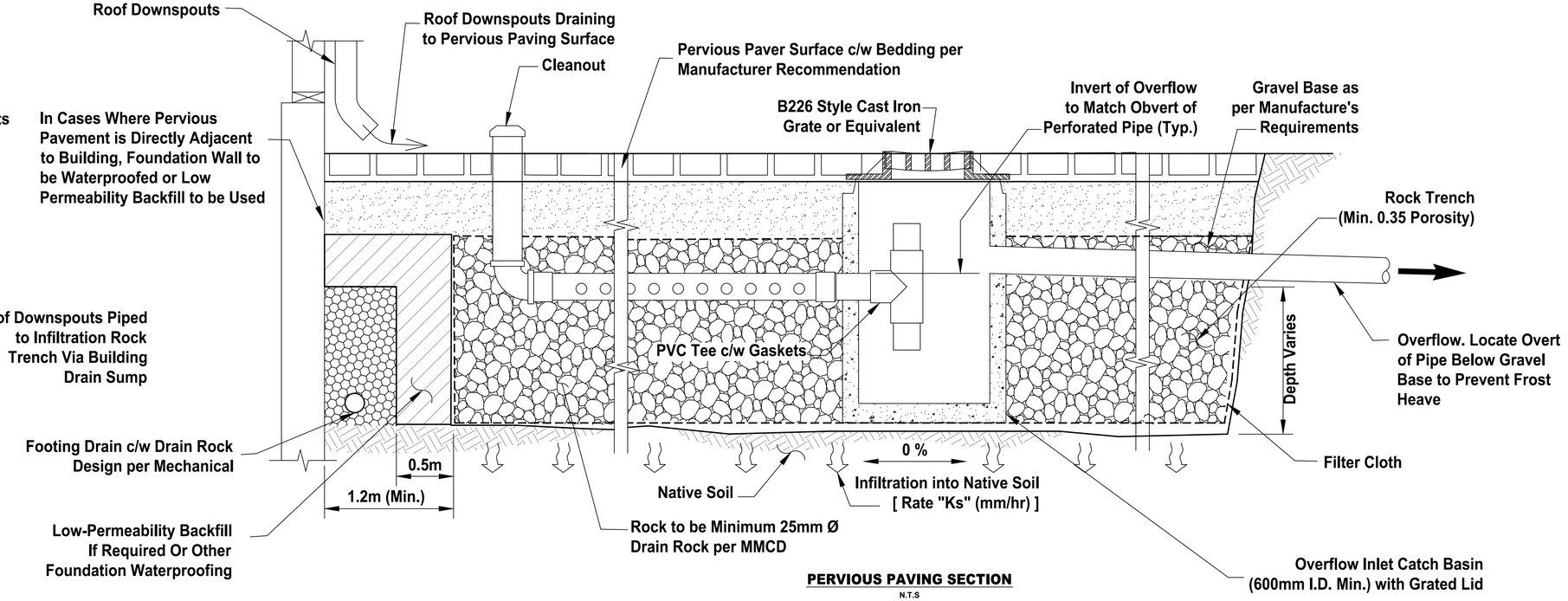
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DRAINAGE SCHEMATIC SECTION A -
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ALTERNATIVE ROOF LEADER DRAINAGE CONNECTION
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PERVIOUS PAVING SECTION
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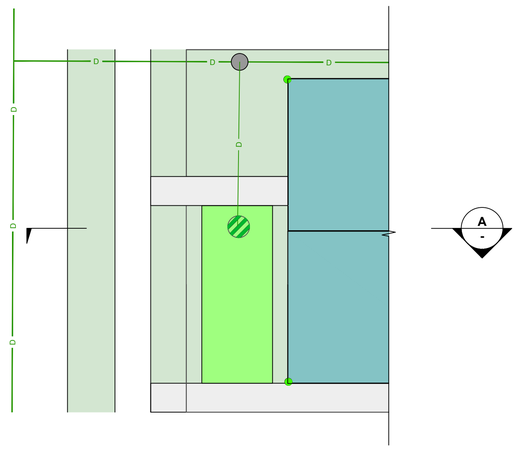
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ON-LOT DRAINAGE FOR SMALL-SCALE MULTI-UNIT HOUSING STANDARD DETAIL DRAWINGS

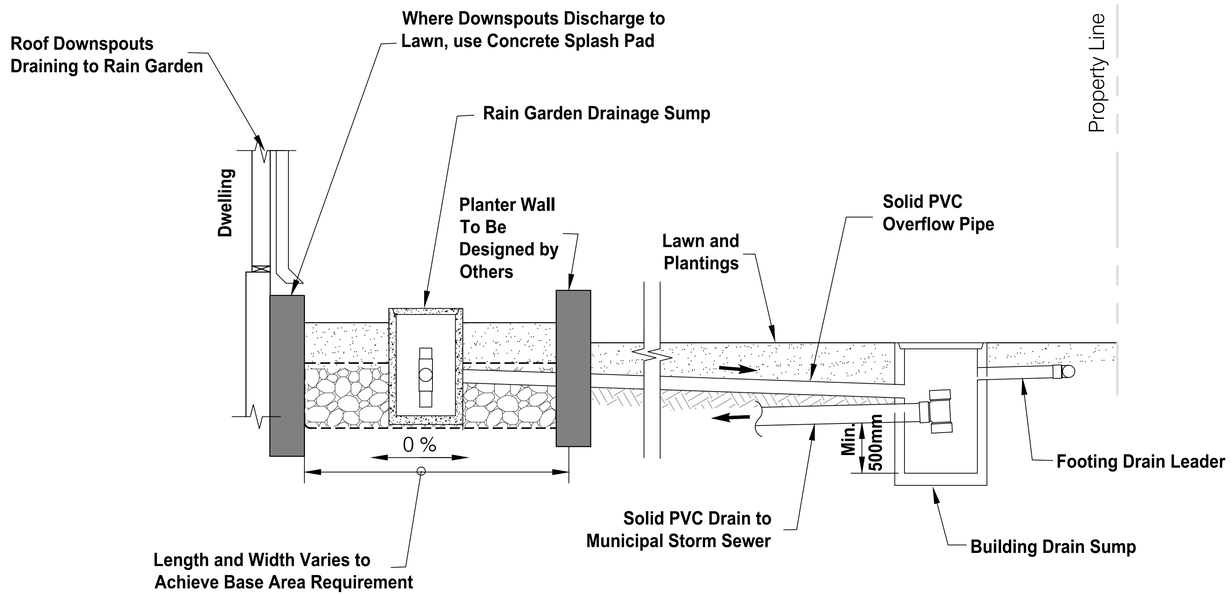
FIGURE 4
PERVIOUS PAVEMENT

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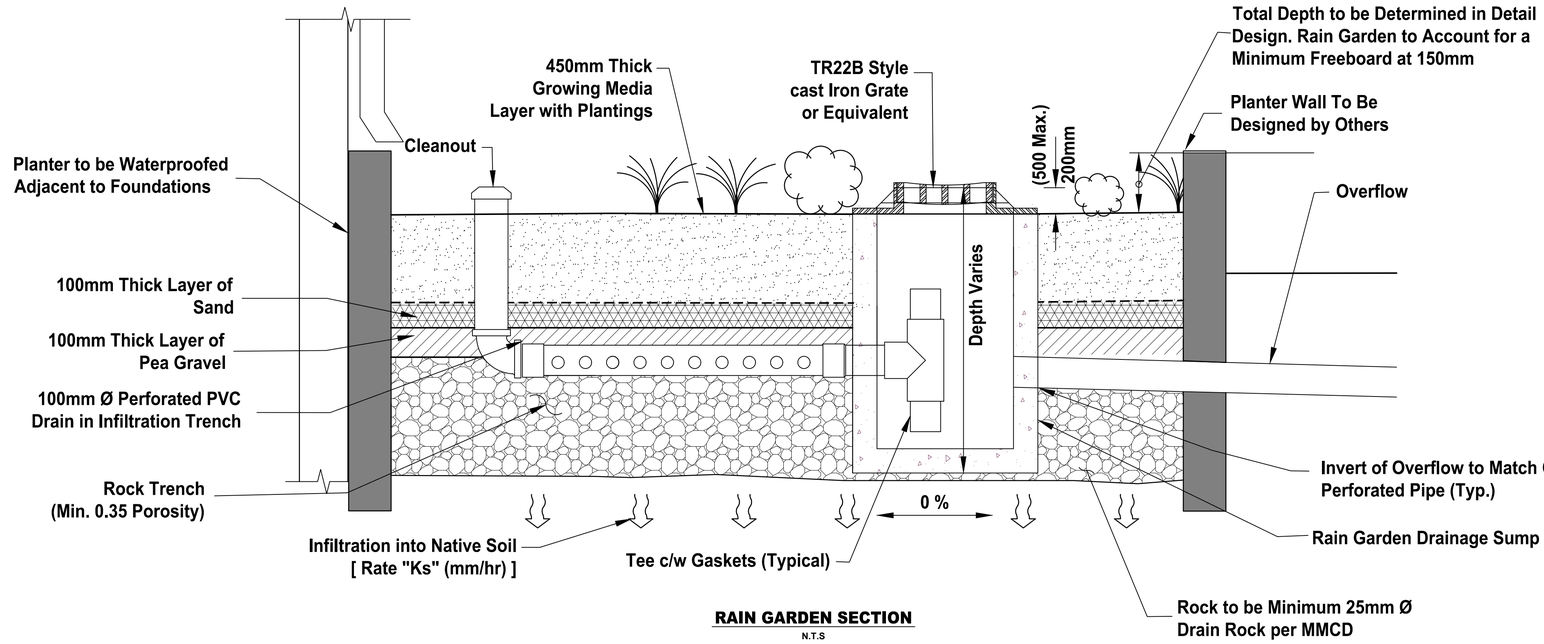
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RAIN GARDEN SECTION
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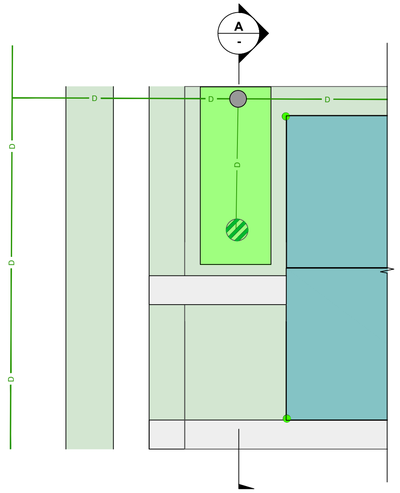
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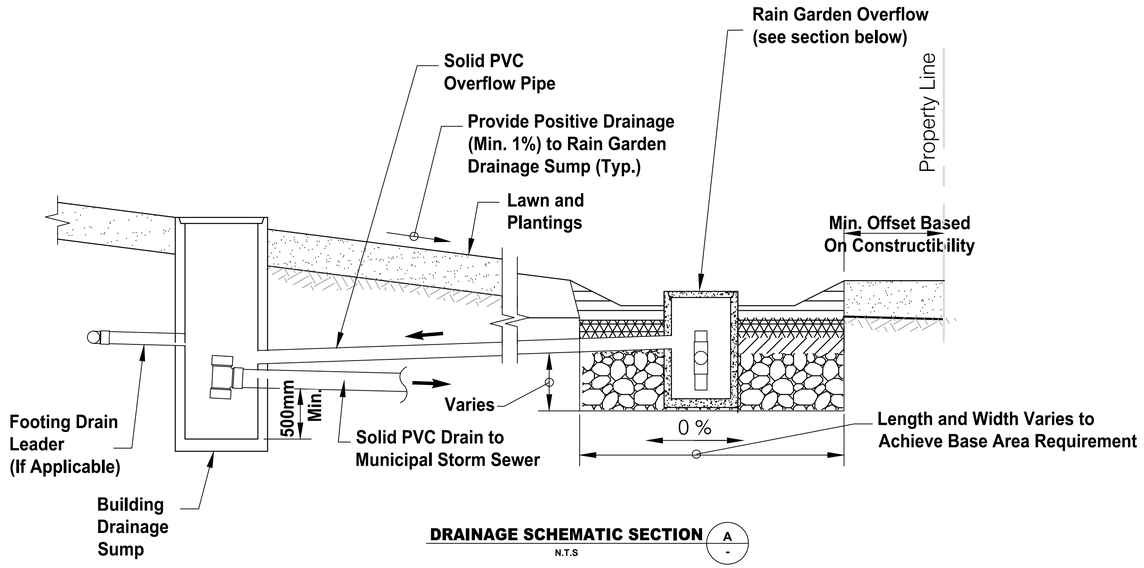
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FIGURE 5
PLANTER STYLE RAIN GARDEN

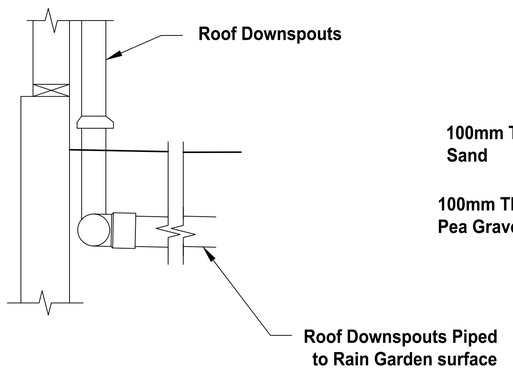
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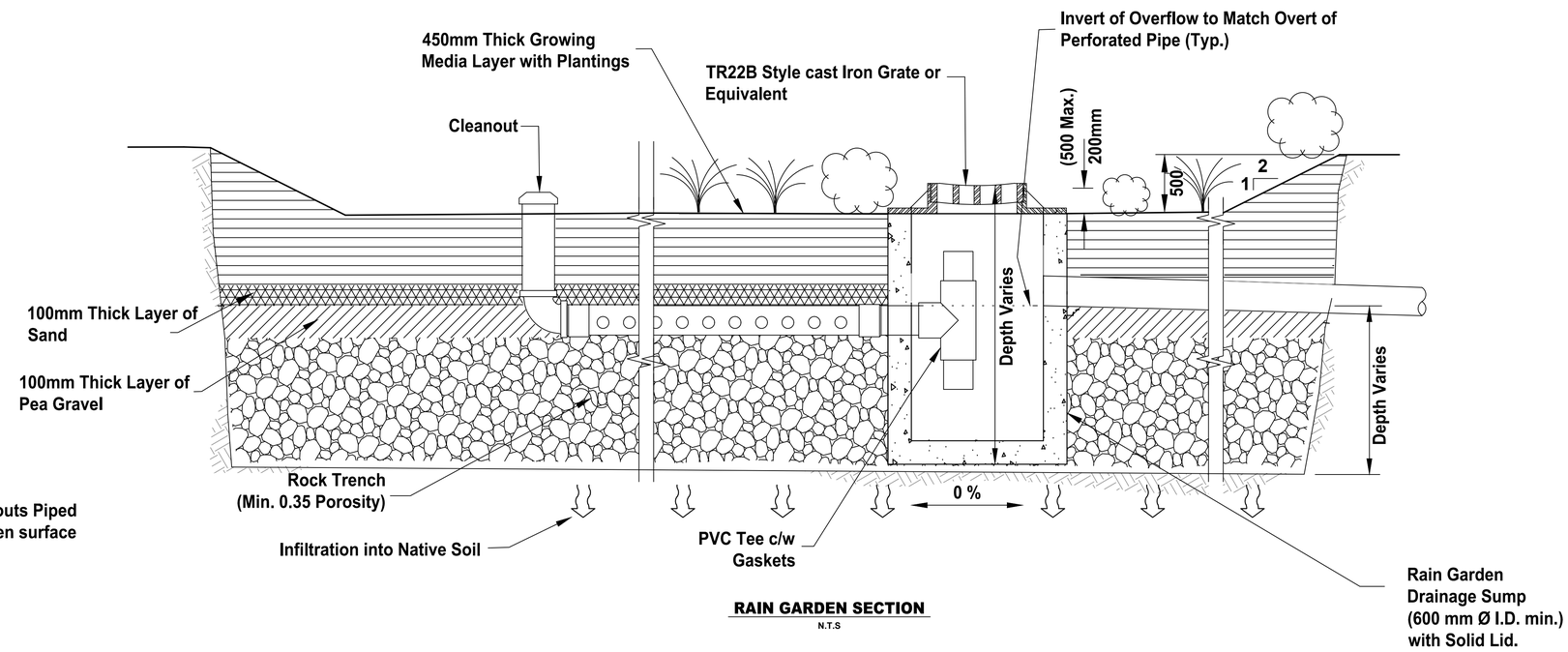
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RAIN GARDEN SECTION
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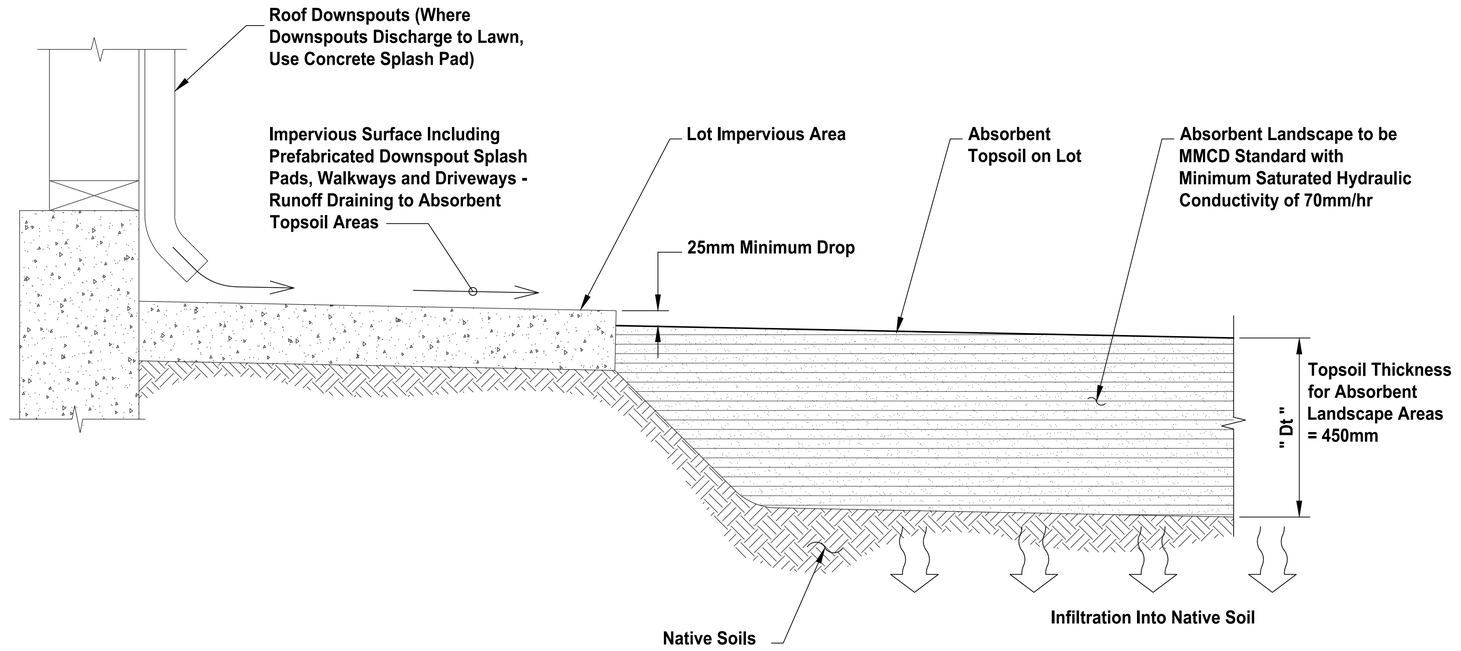
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ON-LOT DRAINAGE FOR SMALL-SCALE MULTI-UNIT HOUSING STANDARD DETAIL DRAWINGS

FIGURE 6
RAIN GARDEN

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ABSORBENT LANDSCAPE SECTION
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ON-LOT DRAINAGE FOR SMALL-SCALE MULTI-UNIT HOUSING STANDARD DETAIL DRAWINGS

FIGURE 7
ABSORBENT LANDSCAPE

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